

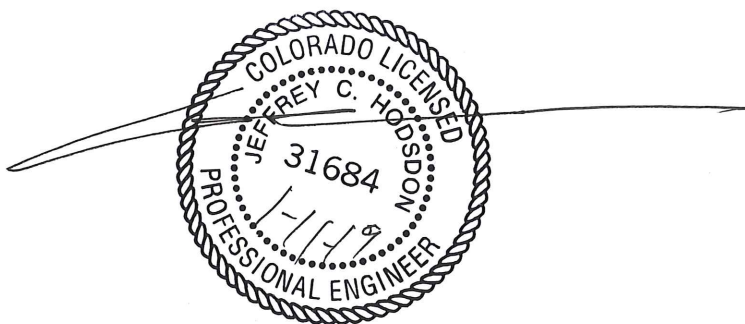


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Grandview Reserve Traffic Impact Analysis (LSC #184840) January 11, 2018

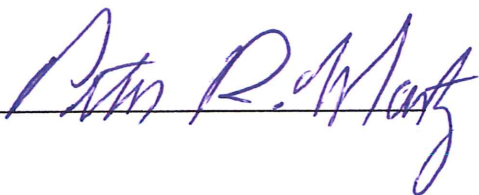
Traffic Engineer's Statement

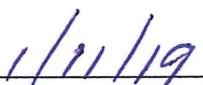
This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Developer's Statement

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




Date



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See comment letter. A detailed review was not performed with this submittal.

January 11, 2019

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

RE: Grandview Reserve
El Paso County, Colorado
Traffic Impact Analysis
LSC #184840

Dear Peter:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the Grandview Reserve residential development in El Paso County, Colorado. As shown in Figure 1, the 765-acre site is located west of the intersection of US Highway 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.
- Findings and recommendations

LAND USE AND ACCESS

Site Plan

Figure 2 shows the proposed site plan (Preliminary Plan). The site is planned to be developed with 184 lots for single-family homes. Access is proposed to Eastonville Road about 2,487 feet northeast of a future access for the Waterbury development (Wading Brook Drive) and to US 24

about 5,350 feet northeast of Stapleton Road. An existing gravel access road located about 285 southwest of the proposed access point could potentially be realigned to form a four-leg intersection with US Highway 24. The site plan also shows a future street connection to the planned Phase 3 of the Waterbury development. The primary roadway within the site is a planned east-west collector roadway between US Highway 24 and Eastonville Road. The local streets within the development would connect to this east-west collector and are planned to be private roads. The site plan also includes right-of-way preservation along the north site boundary for the future Rex Road extension shown on the El Paso County *MTCP and Preserved Corridors Plan*.

Figure 3 shows a more detailed view of the site plan including the proposed spacing of access points along the east-west collector.

The intersections along this east-west collector and the intersection of Eastonville/east-west collector will need to meet County standards for intersection and stopping sight distance.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

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

- **US Highway 24 (US 24)** is generally a two-lane State Highway extending east/west across Colorado connecting the Buena Vista, Colorado Springs, and Limon areas. US 24 is planned to be widened to four lanes through the Falcon area. The US 24 PEL identifies this widening as a high priority with a timeline of less than 10 years. US 24 in the vicinity is classified as an EX – Expressway/Major Bypass by the Colorado Department of Transportation (CDOT). US 24 is shown as a four-lane Principal Arterial on the *MTCP* and the *Preserved Corridor Network Plan*. The posted speed limit on US 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. 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. Rex Road will be extended east through Meridian Ranch to Eastonville Road and ultimately will be extended east to Elbert Road/US Highway 24 as discussed in the Rex Road Corridor section below.

- **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 Highway (US) 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 24. The posted speed limit between Eastonville Road and US 24 is 45 mph.

Existing Traffic Volumes

Figure 4 shows the existing traffic volumes at key intersections in the vicinity of the site. These volumes are based on manual intersection turning movement counts conducted by LSC in May and May 2017, November 2018 and December 2018. The count data sheets are attached for reference. Figure 4 also shows the Colorado Department of Transportation Average Annual Daily Traffic volumes (AADT) on US 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.

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)	V/C⁽¹⁾	Average Control Delay (seconds per vehicle)⁽²⁾
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more

(1) Source: *Transportation Research Circular 212*
 (2) 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 4 presents the results of the existing intersection level of service analysis. The intersections of US 24/Stapleton, Eastonville/Stapleton and Londonderry/Eastonville were analyzed based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The level of service reports are attached.

The southbound left-turn and northbound left-turn and through movements at the two-way, stop-sign-controlled intersection of Stapleton/US 24 are currently operating at a LOS F during the afternoon peak hour.

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.

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.

Rex Road Corridor

The El Paso County 2060 *Corridor Preservation Plan (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 24. However, the Colorado Department of Transportation *US 24 Planning and Environmental Linkages Study Final Corridor Conditions Report (PEL)* dated December 2016 labels the future roadway intersecting US 24 at mile post 324.72 (about one mile southwest of Elbert Road) as "Rex Road." El Paso County Staff prepared and distributed an exhibit depicting three potential alignments of the future Rex Road extension between Eastonville Road and US 24. This exhibit is attached for reference (Appendix Figure A).

Option 1 shows Rex Road extending east from Eastonville Road from about midway between Londonderry Road and the future planned intersection of Rex Road and Londonderry Drive. This option would result in a full-movement intersection at US 24 at the approximate location shown in the PEL study. This option would allow both the currently proposed Grandview Reserve development and the Waterbury development to have access to Rex Road. This Option 1 alignment generally matches the proposed east-west collector roadway depicted on the proposed site plan and is the option selected to coincide with the preferred alignment for this development. One difference is the exhibit shows the connection to US Highway 24 about 280 feet west of the location shown on the site plan, which aligns with the access to eight residential lots on the south side of US Highway 24.

In Option 2 Rex Road would continue east from the planned intersection with Eastonville Road along the north boundary of the site. With Option 2, Rex Road would either intersect Elbert Road north of US 24 or curve to the south near the northeast corner of the Grandview Reserve property and intersect US Highway 24 at or near the current north leg of the Elbert Road/US Highway 24 intersection (and Elbert Road north of US Highway 24 would be realigned to T into Rex Road). Option 2 is generally consistent with the El Paso County 2060 *Corridor Preservation Plan (CPP)*.

In Option 3 Rex Road would also continue east from the planned intersection with Eastonville Road but would then continue southeast through the currently proposed Grandview Reserve development. As with Option 1, Rex Road would intersect US 24 at the approximate location shown in the PEL study. Option 3 would not work as it would bisect the planned development.

SHORT-TERM (YEAR 2023) 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 5 shows the projected background traffic volumes for the short term (2023).

These background traffic volumes have been based on the existing traffic volumes (from Figure 4) plus increases in traffic due to regional growth including buildout of existing and currently proposed subdivisions within the Waterbury development located northeast of the intersection of Eastonville/Stapleton, Meridian Ranch Filings 1-3 and Filings 6-8, Estates Filings 2-3, Meridian Ranch Filing 11, Stonebridge 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, and the Liberty Tree Academy to be located just east of the intersection of Eastonville Road and Motley Road. The short-term background traffic volumes assume Rex Road has not been extended from its existing terminus to Eastonville Road within Meridian Ranch. The background traffic scenarios hypothetically assume the east-west collector through the site, but the background traffic scenarios include only the non-site traffic.

2040 BACKGROUND TRAFFIC

Figure 6 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 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 background traffic scenarios hypothetically assume the east-west collector through the site, but the background traffic scenarios include only the non-site traffic. The 2040 background traffic volumes do not include traffic from Grandview Reserve.

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.

Grandview Reserve is expected to generate about 1,737 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 34 vehicles

would enter and 102 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 115 vehicles would enter and 67 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 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.

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 8 shows the site-generated traffic volumes.

TOTAL TRAFFIC

Figure 9a shows the projected short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 5) plus the site-generated traffic volumes (from Figure 8).

Figure 9b shows the projected level of service based on the short-term total volumes for the key intersections in the vicinity of the site.

Figure 10 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 6) plus the site-generated traffic volumes (from Figure 8).

Figure 10 also shows the projected level of service based on the 2040 total volumes for the key intersections in the vicinity of the site.

PROJECTED LEVELS OF SERVICE

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

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. Figures 5 and 9b show the projected level of service based on the short-term background traffic volumes and short-term total traffic volumes assuming both the existing laneage and the laneage assumed following completion of the PPRTA project (with the addition of northbound and southbound auxiliary turn lanes). Based on the projected short-term background and total traffic volumes, the eastbound approach and westbound left-turn and through movements at this intersection are projected to operate at LOS F during both the morning and afternoon peak hours with or without the addition of southbound and northbound left-turn lanes.

If this intersection were to be converted to all-way stop-sign control, the eastbound approach is projected to operate at LOS F and the westbound left-turn and through movements are projected to operate at LOS E during the morning peak hour. All movements are projected to operate at LOS D or better during the afternoon peak hour assuming all-way stop-sign control.

It is not uncommon for the minor approach volumes to operate at LOS E or LOS F during the peak hours as the volumes approach the thresholds for a traffic signal warrant. This intersection is planned to be signalized in the future, however a traffic signal warrant may not be met in the short term. If signalized, all movements at this intersection are projected to operate at a level of service C or better.

Stapleton/US 24

The intersection of US 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.

Londonderry/Eastonville

The eastbound left-turn movement at the stop-sign-controlled intersection of Londonderry/Eastonville is projected to operate at a LOS F during the morning peak hour based on the projected short-term total morning peak-hour traffic volume and assuming the existing lane geometry. If a northbound left-turn lane is added as part of the PPRTA improvements to Eastonville Road, the eastbound left-turn movement is projected to operate at LOS E during the morning peak hour. By 2040 this movement is projected to operate at LOS F during the morning peak hour even with the addition of a northbound left-turn lane. The poor level of service is due to the sharp peak of high school traffic and will likely only occur during the peak 15-minute period of the high school (7:15 to 7:30 a.m.). This turning movement is likely to remain relatively light even with the planned improvements to Eastonville Road and the extension of Rex Road. As such,

although this intersection is planned to be signalized in the future, a traffic signal warrant may not be met at this intersection even in the long term.

East/West Collector and Eastonville Road

The proposed intersection of the east/west Collector and Eastonville Road is projected to operate at LOS C or better for all movements based on the projected 2040 background and total peak-hour traffic volumes assuming this access point is two-way stop-sign controlled.

East/West Collector and US Highway 24

The proposed intersection of the east/west collector and US 24 is projected to operate at LOS D or better for all movements based on the projected short-term total peak-hour traffic volumes assuming this access point is two-way stop-sign controlled. By 2040 the eastbound and westbound approaches are projected to operate at LOS F during the peak hours based on both the background and total traffic volumes. Based on the projected 2040 total traffic volumes it is unlikely that a four- or eight-hour traffic signal warrant would be met at this intersection. With the planned future widening of US 24, an eastbound left turn acceleration lane could be incorporated into the design and the level of service would improve to likely better than D.

Site Access Points to the East/West Collector

All movements at the site access points to the east/west Collector and the future Waterbury access to the east/west Collector are projected to operate at LOS B or better during the peak hours assuming these intersections are two-way stop-sign controlled.

TRAFFIC SIGNAL WARRANT ANALYSIS

The intersections of Stapleton/Eastonville and Stapleton/US 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 analysis using the peak hours is intended to provide an indication that a warrant may be met or is close to being met. In order for a Four-Hour Traffic Signal Warrant to be satisfied, the volume threshold would need to be met for two additional hours of the day. For example, the four-hour warrant would be satisfied with the volume thresholds met for one hour in the morning, two hours (instead of the one-hour peak) during the afternoon peak period, and an hour during the mid-afternoon. 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 exceeded based on the morning peak hour and the afternoon peak hour based on the projected short-term background and total traffic.

Stapleton/US 24

Table 4 shows the signal warrant analysis for the intersection of Stapleton/US 24 based on the existing traffic volumes. This analysis includes data for four hours—6:30 to 7:30 a.m., 7:30 to 8:30 a.m., 4:00 to 5:00 p.m., and 5:00 to 6:00 p.m. 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. It is very likely that a fourth hour could be found that currently meets the thresholds for a traffic signal warrant. Additional traffic counts would be needed to confirm this.

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*.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- 4 Way Ranch Phase II is expected to generate about 1,737 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 34 vehicles would enter and 102 vehicles would exit the site. During the afternoon peak hour about 115 vehicles would enter and 67 vehicles would exit the site.

Required Improvements

- A list of all improvements in the vicinity of the site is presented in Table 5.

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*, eastbound left-turn lane is projected to be warranted on US 24 approaching the proposed east/west Collector. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the deceleration lane is 900 feet long (including 100 feet of stacking distance) plus a 300-foot taper. The existing bridge over the creek located about 1,130 feet southwest of the access

will limit the length of this auxiliary turn lane. The applicant is submitting a CDOT Form 112 - Design Waiver request to accompany the access permit application.

- 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 24 at the proposed east/west Collector. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the acceleration lane is 1,380 feet long plus a 300-foot taper. The existing bridge over the creek located about 1,130 feet southwest of the access will limit the length of this auxiliary turn lane. The applicant is submitting a CDOT Form 112 - Design Waiver request to accompany the access permit application.
- 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 24 approaching the proposed east/west Collector. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the deceleration lane is 800 feet long plus a 300-foot taper.
- Based on the 2040 total traffic volumes shown in Figure 10 and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)*, a right-turn deceleration lane is projected to be warranted on Eastonville Road approaching the proposed east/west Collector street. Based on a design speed of 40 mph, the prescribed lane length for the deceleration lane is 155 feet plus a 160-foot taper.
- Based on the 2040 total traffic volumes shown in Figure 10 and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)*, a left-turn lane is projected to be warranted on Eastonville Road approaching the proposed east/west Collector. Based on a design speed of 40 mph, the prescribed lane length for the deceleration lane is 255 feet plus a 160-foot taper.
- Based on the short total traffic volumes shown in Figure 9a and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)*, an eastbound left-turn lane is projected to be warranted on the proposed east/west Collector approaching the west site access. Based on a design speed of 50 mph, the prescribed lane length for the deceleration lane is 285 feet plus a 200-foot taper.
- Based on the short total traffic volumes shown in Figure 9a and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)*, a westbound right-turn deceleration lane is projected to be warranted on the proposed east/west Collector approaching the east site access. Based on a design speed of 50 mph, the prescribed lane length for the deceleration lane is 235 feet plus a 200-foot taper.
- LSC recommends the collector street proposed to extend through the site from US Highway 24 northeast to Eastonville Road be classified and constructed as a Rural Major Collector

roadway. Based on ECM criteria, the right-of-way width would be 90 feet. This standard right-of-way may need to be expanded adjacent to required auxiliary right/left turn lanes.

- The *MTCP (2040)* does not indicate the need for a major transportation corridor between Eastonville Road and US Highway 24 in the vicinity of the site, although the *2060 Preserved Corridor Plan* indicates that preservation for potential future right-of-way for an extension of Rex Road to US Highway 24 in the vicinity of Elbert Road. This future transportation corridor is shown as a four-lane Minor Arterial. And would be generally parallel to Latigo Boulevard to the north and Stapleton Road to the south. The plan shows a right-of-way preservation area along the north edge of the site to accommodate this planned extension of Rex Road.
- Appendix Figure A contains an exhibit prepared by El Paso County staff showing three potential road alignments for the future Rex Road corridor. Alignment #2 is essentially the Rex Road extension depicted on the *MTCP 2060 Preserved Corridors Plan*. Alignment #3 would not work as it would bisect the planned development. Alignment #1 generally depicts the proposed Collector roadway planned to provide access to the site and a north connection to the Waterbury development. It would also provide a connection for travel between Eastonville Road and a planned full-movement intersection on US Highway 24. The continuity of this roadway would be about 1.5 miles and would serve as an interim connection between Rex Road and US Highway 24 until (and if) the Rex Road extension shown in the 2060 plan is confirmed as needed in the longer-term future.

* * * * *

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:bjwb

Enclosures: Tables 2-6
Figures 1-11
Appendix Figure A
CDOT Conceptual Layout from PEL
Traffic Count Reports
Level of Service Reports

**Table 2
Trip Generation Estimate
Grandview Reserve**

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾				Total Trips Generated					
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
				In	Out	In	Out		In	Out	In	Out
210	Single-Family Detached Housing	184 DU ⁽²⁾	9.44	0.19	0.56	0.62	0.37	1,737	34	102	115	67

Notes:

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

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

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

Year	AM Peak Hour						PM Peak Hour					
	Peak-Hour Traffic Volumes			Volume Evaluation ⁽¹⁾			Peak-Hour Traffic Volumes			Volume Evaluation ⁽¹⁾		
	Major ⁽²⁾	Minor		Minor St Minimum	EB Met?	WB Met?	Major ⁽²⁾	Minor		Minor St Minimum	EB Met?	WB Met?
EB ⁽³⁾		WB ⁽⁴⁾	EB ⁽³⁾					WB ⁽⁴⁾				
Existing	544	123	48	318	No	No	213	70	123	484	No	No
2023 Background	682	389	194	257	Yes	No	490	299	373	345	No	Yes
2023 Total	715	394	198	243	Yes	No	527	315	375	327	No	Yes

Notes:

- (1) Based on 2 lanes on major approach and 1 lane on minor approach.
- (2) The major street volumes include all (left/through/right) movements on Eastonville Road.
- (3) The EB minor street volumes include all easbound movements (left, through, and right) on Stapleton Drive.
- (4) 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 24
Peak-Hour Four-Hour Vehicular Volume Evaluation**

Time	Traffic Volumes			Volume Evaluation ⁽¹⁾		
	Major ⁽²⁾	Minor		Minor St Minimum	EB Met?	WB Met?
		SEB ⁽³⁾	NWB ⁽⁴⁾			
6:30 AM - 7:30 AM	838	166	75	96	Yes	No
7:30 AM - 8:30 AM	691	77	63	143	No	No
4:00 PM - 5:00 PM	882	109	43	85	Yes	No
5:00 PM - 6:00 PM	932	87	57	80	Yes	No

Notes:

(1) Based on 2 or more lanes on the major approach and 2 or more lanes on the minor approach (70% Factor).

(2) The major street volumes include all (left/through/right) movements on US 24

(3) The SEB minor street volumes include only the easbound left-turn and through movements on Stapleton Dr. The right-turn movements have been excluded

(4) 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	Timing	Responsibility
Roadway Segment Improvements			
1	Eastonville Road - Stapleton to Latigo final grading and paving	TBD by EPC; PPRTA "A-List" Project	PPRTA
2	Construct Rex Road from Eastonville to US 24	Beyond 2040 - Shown on the MTCP 2060 Corridor Preservation Plan	ROW Preservation ONLY - with development projects
3	Stapleton Drive - US 24 to Eastonville Road complete southern (eastbound) half	Shown in 2040 MTCP	El Paso County west of Eastonville Road; Waterbury Metro District east of Eastonville Road.
4	Widen US 24 to provide two lanes in each direction.	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
Stapleton/US 24 Intersection			
5	Convert from Two-Way, Stop-Sign Control to Signal Control	When Traffic Signal Warrant(s) are met (anticipated in the short-term)	CDOT; along with any available escrow collected from area developments through the access permitting process.
Eastonville/Stapleton			
6	Construct northbound and southbound left-turn lanes on Eastonville Rd. approaching Stapleton Dr.	Short-Term	PPRTA/El Paso County ⁽¹⁾
7	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.	PPRTA, or if not included with the Eastonville PPRTA project, EPC with participation via escrow collected by area developments impacting this intersection
Eastonville/Site Access Intersection			
8	Construct a southbound left-turn lane on Eastonville approaching the site access	With site development	Grandview Reserve
9	Construct a northbound right-turn deceleration lane on Eastonville approaching the site access	With site development	Grandview Reserve
US 24/Site Access Intersection			
10	Construct an eastbound left-turn deceleration lane on US 24 approaching the site access (east-west collector)	With site development	Grandview Reserve
11	Construct a westbound right-turn deceleration lane on US 24 approaching the site access (east-west collector)	With site development	Grandview Reserve
12	Construct a westbound right-turn acceleration lane on US 24 at the site access (east-west collector)	With site development	Grandview Reserve
Eastonville/Site Access Intersection			
13	Construct a northbound right-turn deceleration lane on Eastonville approaching the site access	With site development and following the Rex Road connection to Eastonville or potentially in conjunction with the Eastonville PPRTA project	Grandview Reserve
14	Construct a southbound left-turn deceleration lane on Eastonville approaching the site access	Once the southbound left turn volume exceeds 25 vehicles per hour or potentially in conjunction with the Eastonville PPRTA project.	Potentially included as part of the PPRTA design of Eastonville Road OR 4 Way Ranch

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)

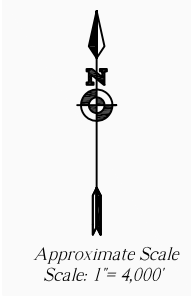


Figure 1
**Vicinity
Map**

Grandview Reserve (LSC #184840)

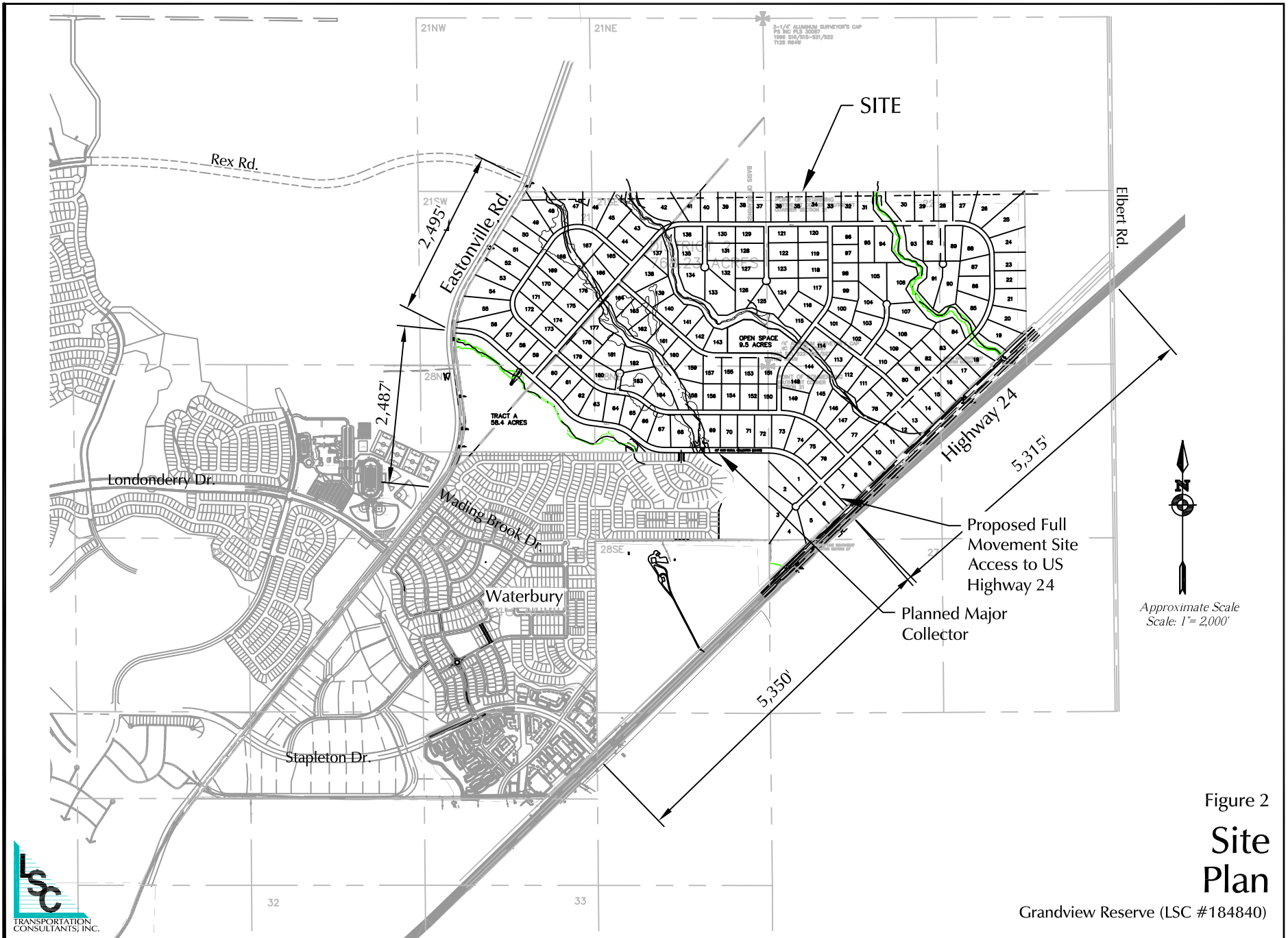


Figure 2

Site Plan

Grandview Reserve (LSC #184840)



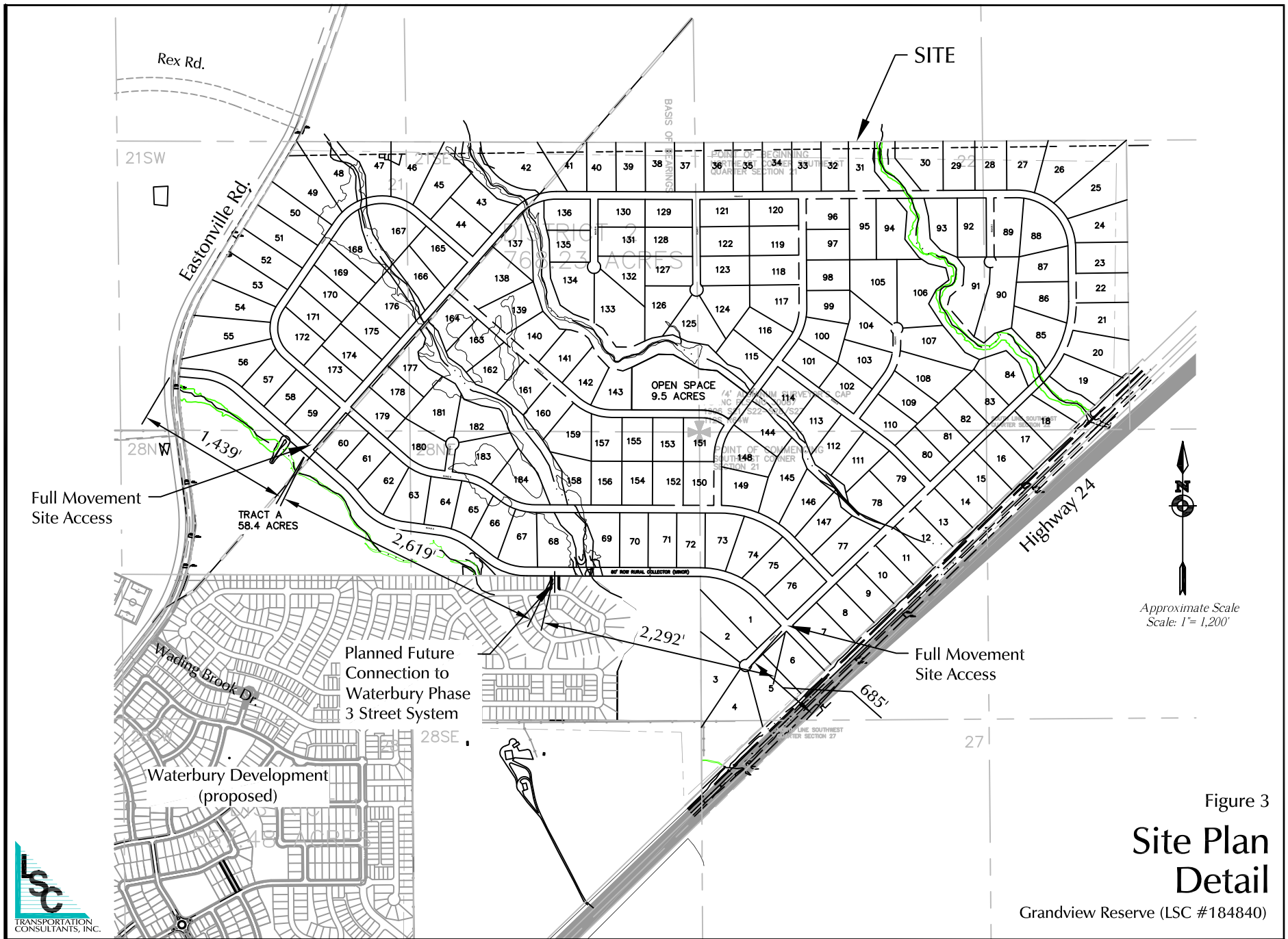
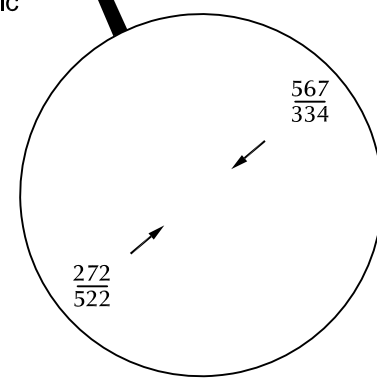
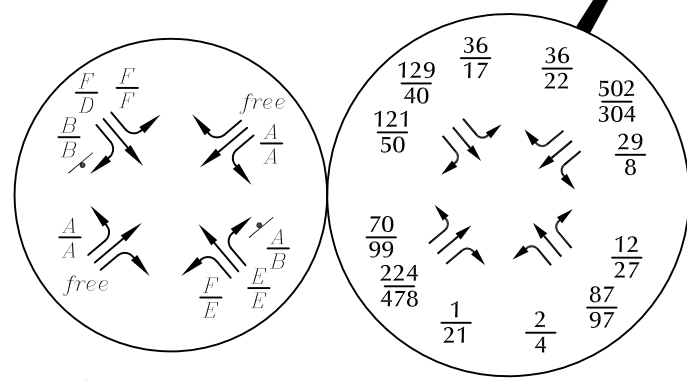
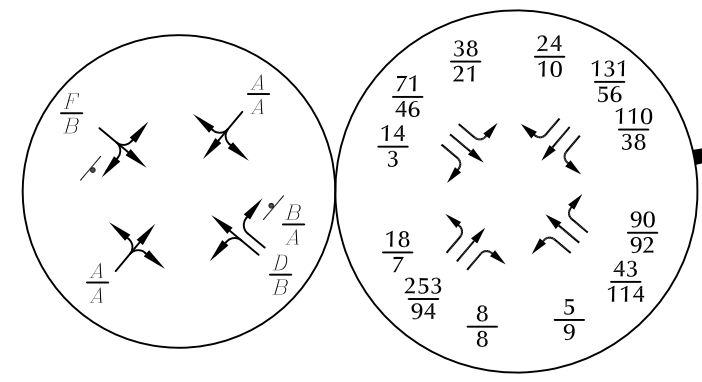
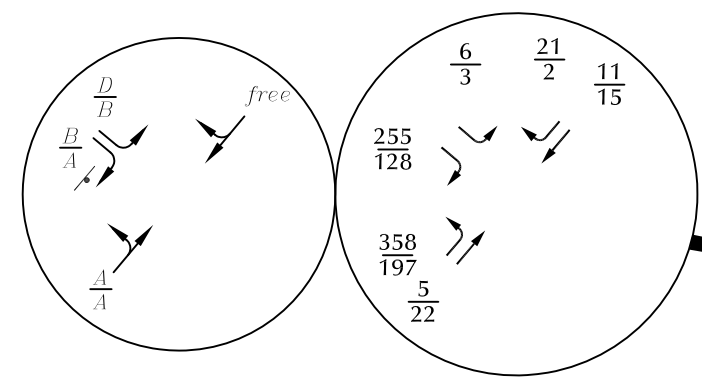
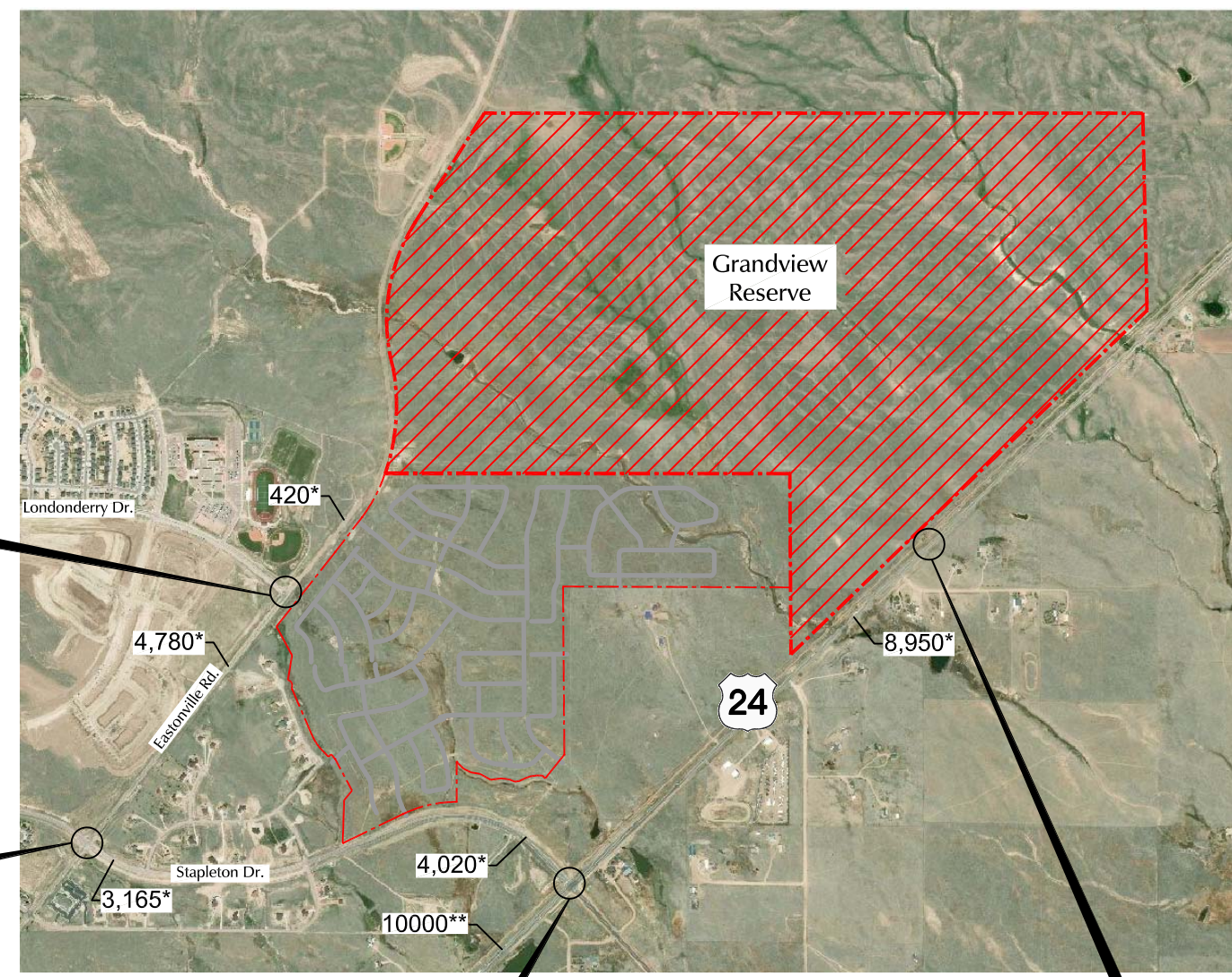
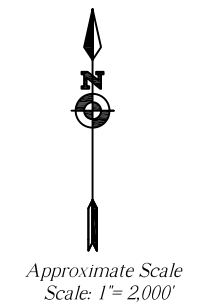


Figure 3
**Site Plan
 Detail**

Grandview Reserve (LSC #184840)

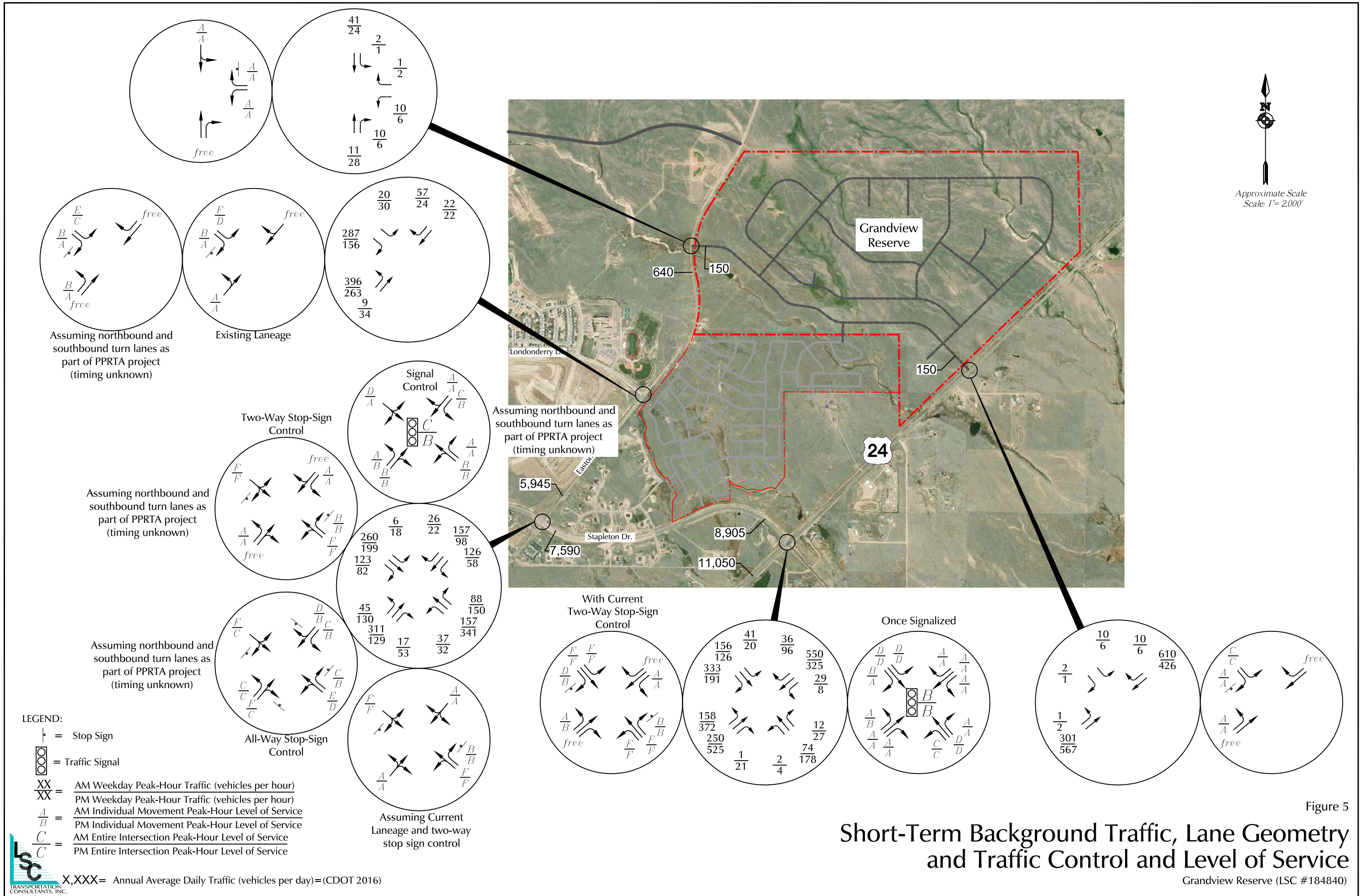


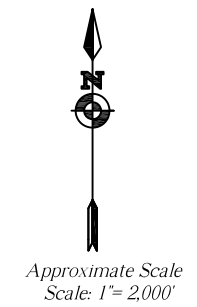
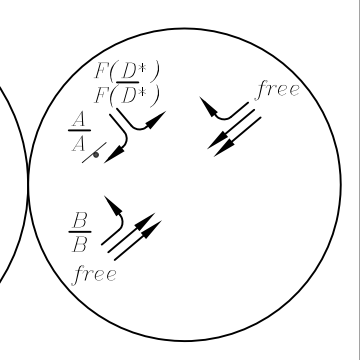
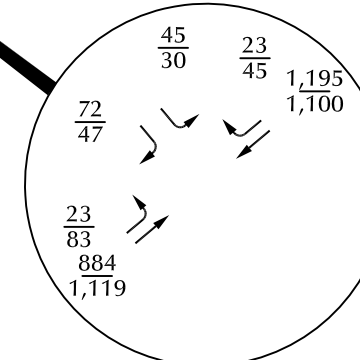
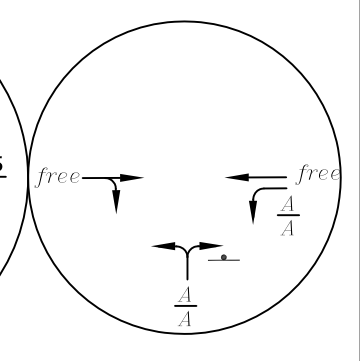
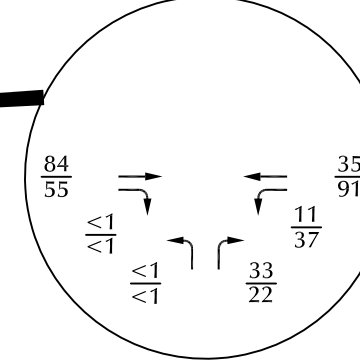
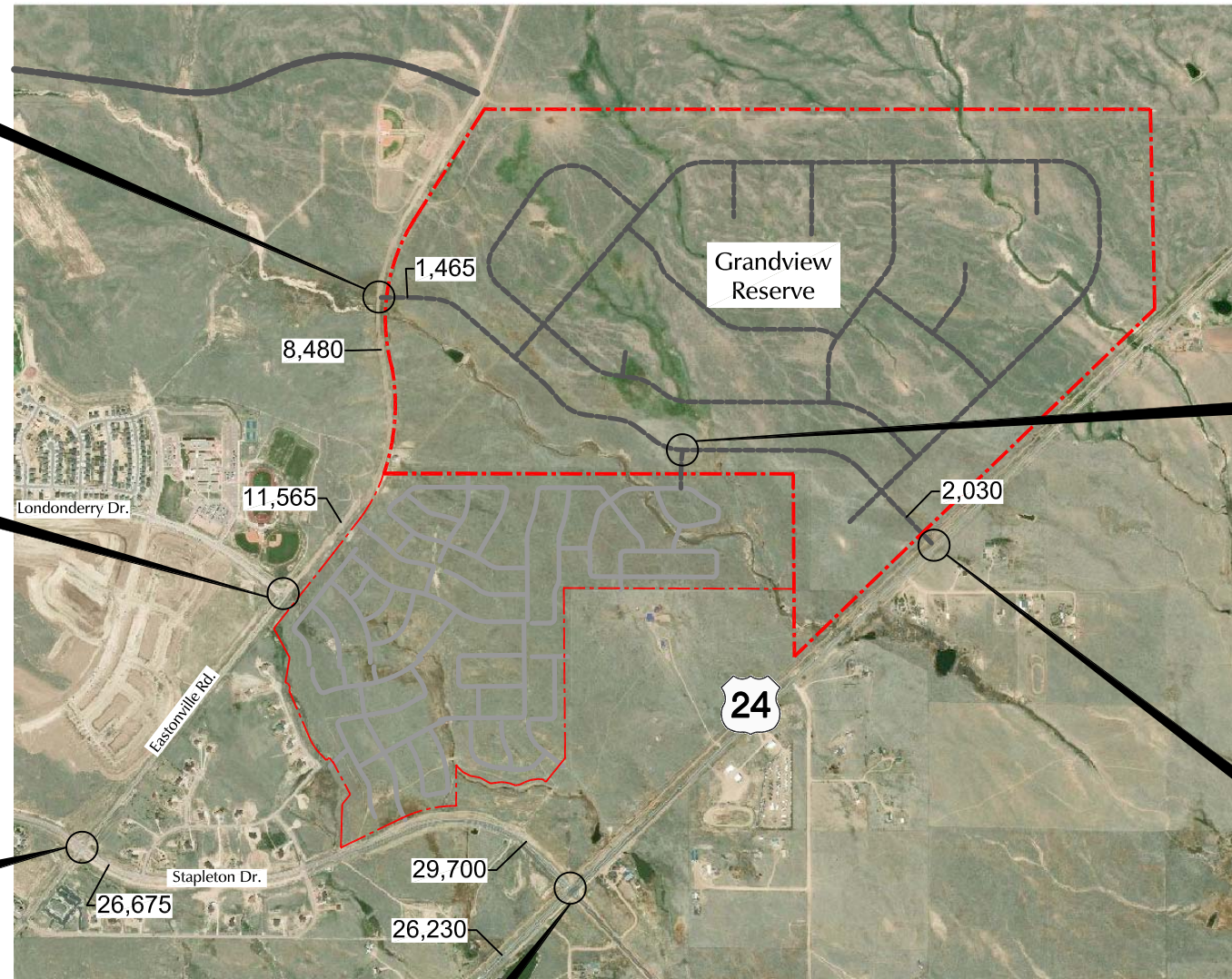
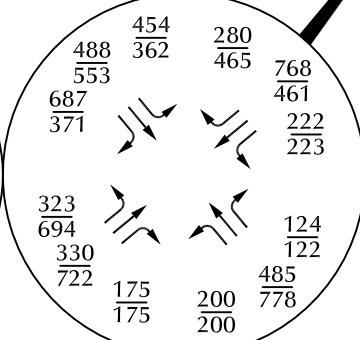
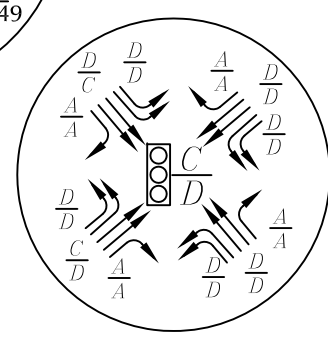
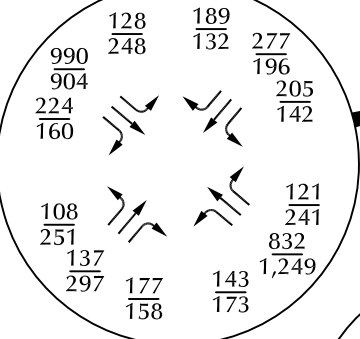
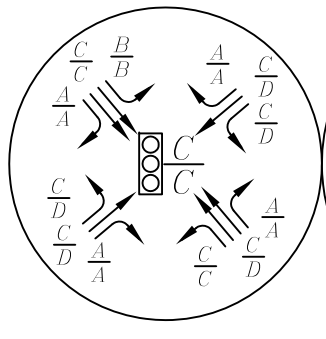
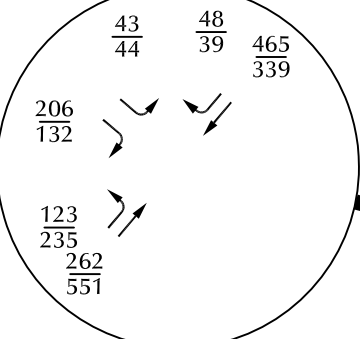
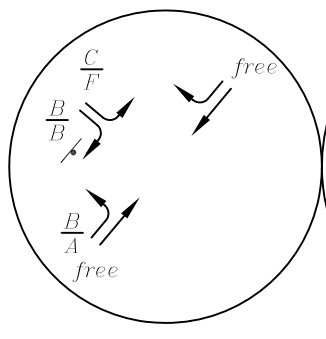
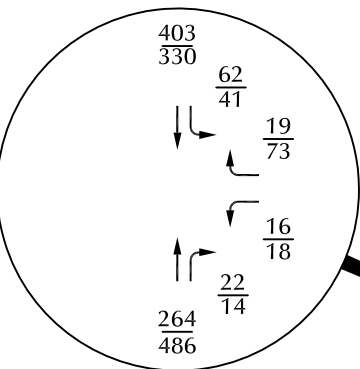
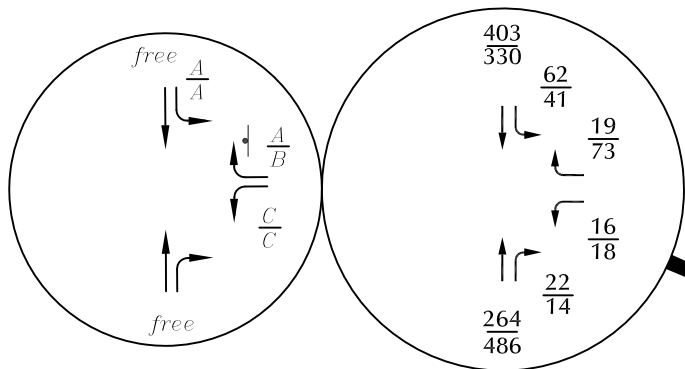


* Estimate by LSC
 ** CDOT 2017 Average Annual Daily Traffic

LEGEND:
 | = Stop Sign
 [] = Traffic Signal
 $\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) Based on counts by LSC Nov. 2018 and Dec. 2018
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
 $\frac{A}{B}$ = 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
 X,XXX = Average Daily Traffic (vehicles per day)

Figure 4
**Existing Traffic, Lane Geometry
 and Traffic Control and Level of Service**
 Grandview Reserve (LSC #184840)





LEGEND:

⊥ = Stop Sign

⊞ = Traffic Signal

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

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

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

$\frac{A}{B}$ = 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

X,XXX = Annual Average Daily Traffic (vehicles per day) = (CDOT 2016)

*Note: With the planned future widening of US 24, an eastbound left-turn acceleration lane could be incorporated into the design and the level of service would improve to likely better than D.

Figure 6
Year 2040 Background Traffic, Lane Geometry and Traffic Control and Level of Service
Grandview Reserve (LSC #184840)






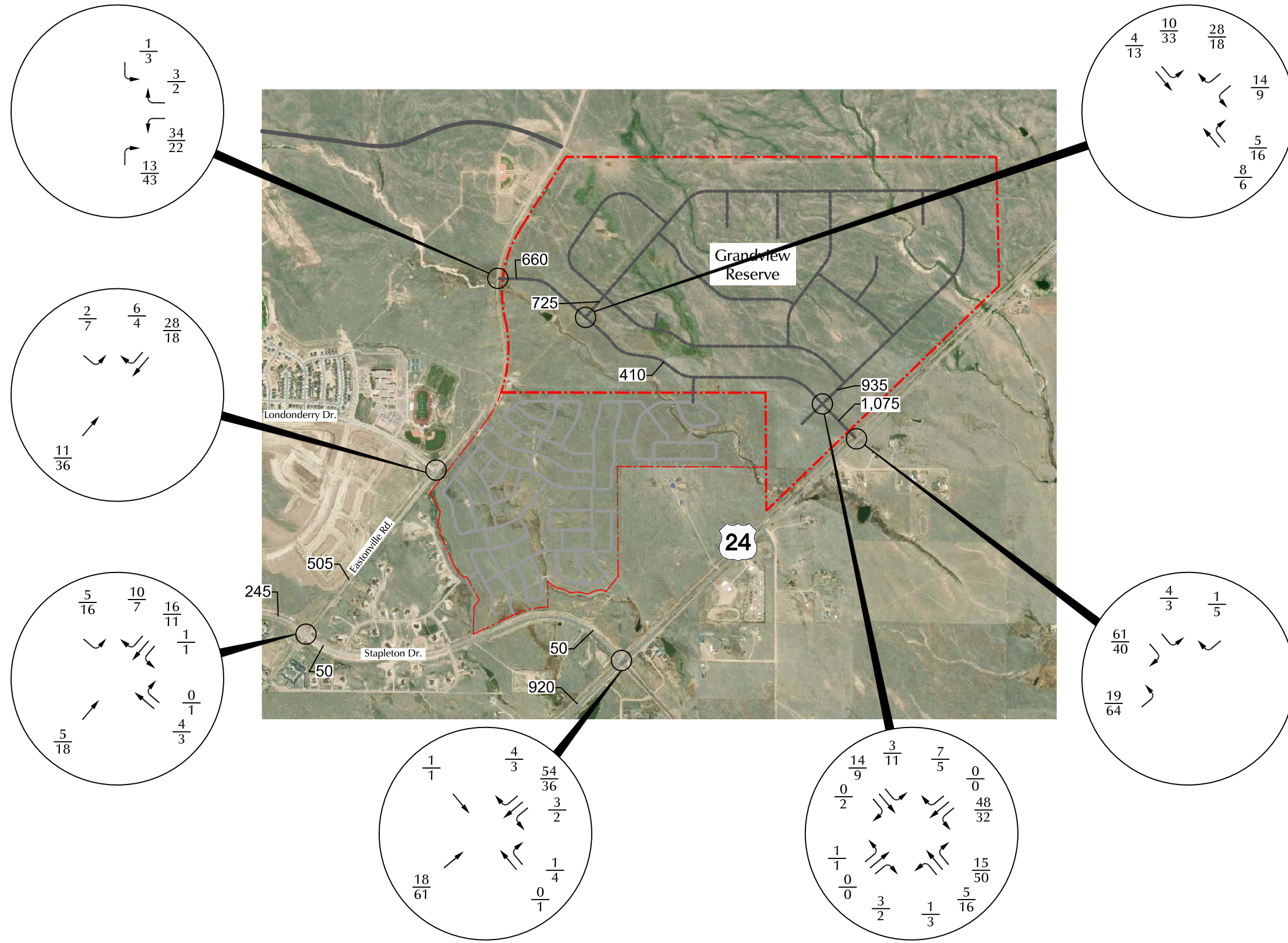

 Approximate Scale
 Scale: 1" = 4,000'

Figure 7

Directional Distribution of Site-Generated Traffic

Grandview Reserve (LSC #184840)


 LEGEND:
 = Percent Directional Distribution



Approximate Scale
Scale: 1"= 2,000'


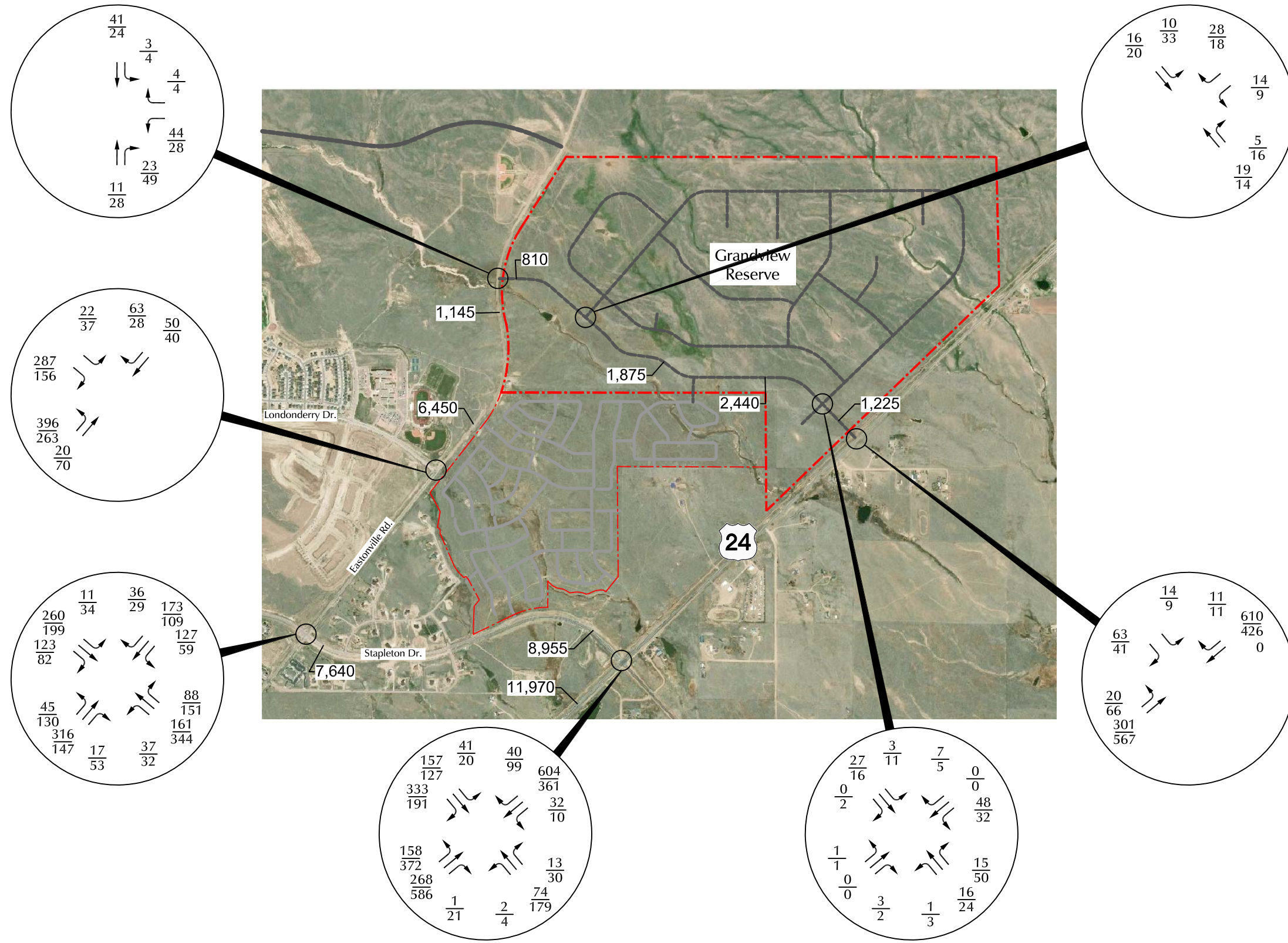
LEGEND:

 $\frac{XX}{XX}$ = 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)=(CDOT 2016)

Figure 8
Assignment of Site-Generated Traffic
 Grandview Reserve (LSC #184840)



Approximate Scale
Scale: 1"= 2,000'

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)=(CDOT 2016)

Figure 9a
**Short-Term
 Total Traffic**
 Grandview Reserve (LSC #184840)

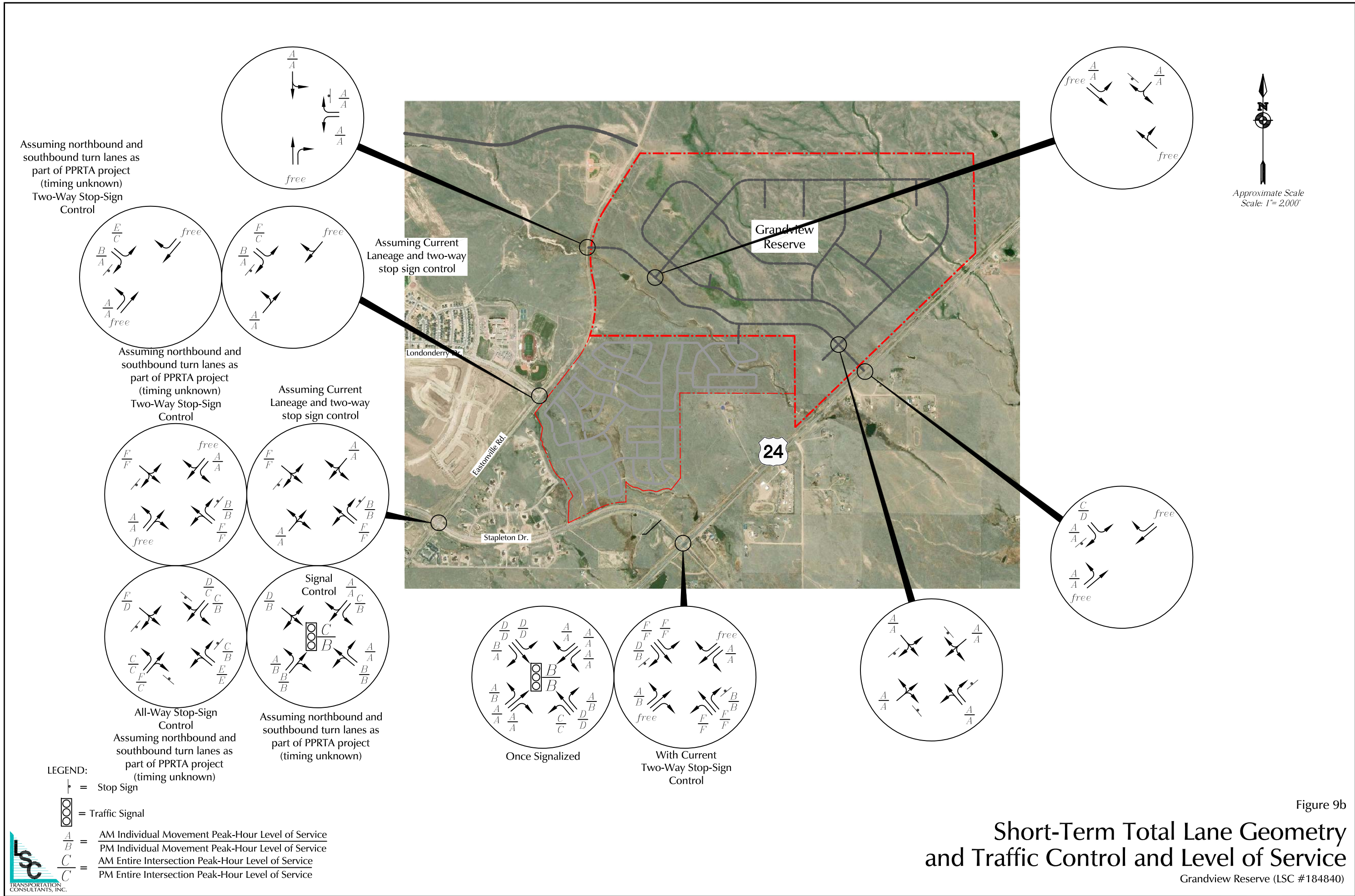
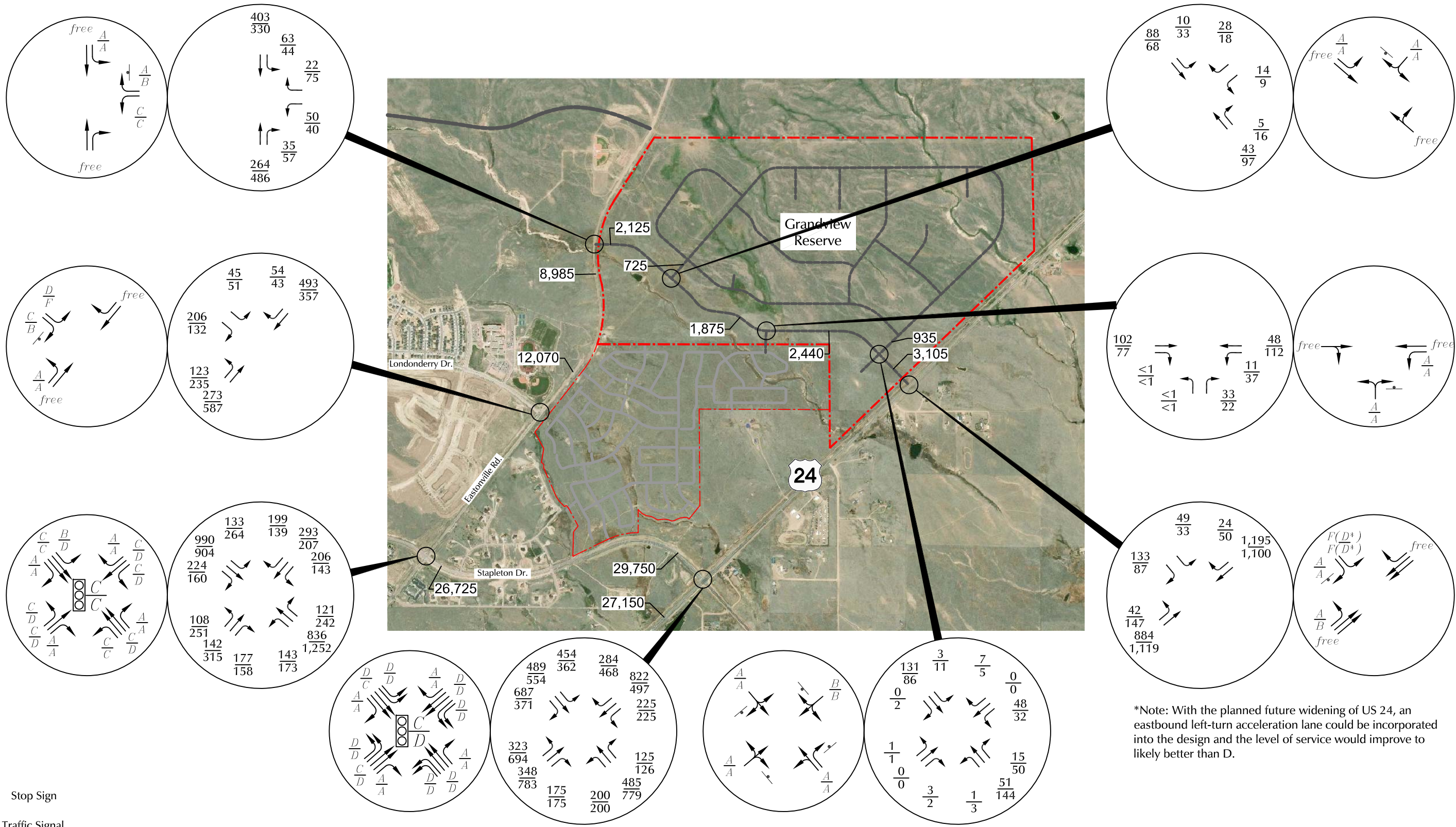


Figure 9b

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

Grandview Reserve (LSC #184840)

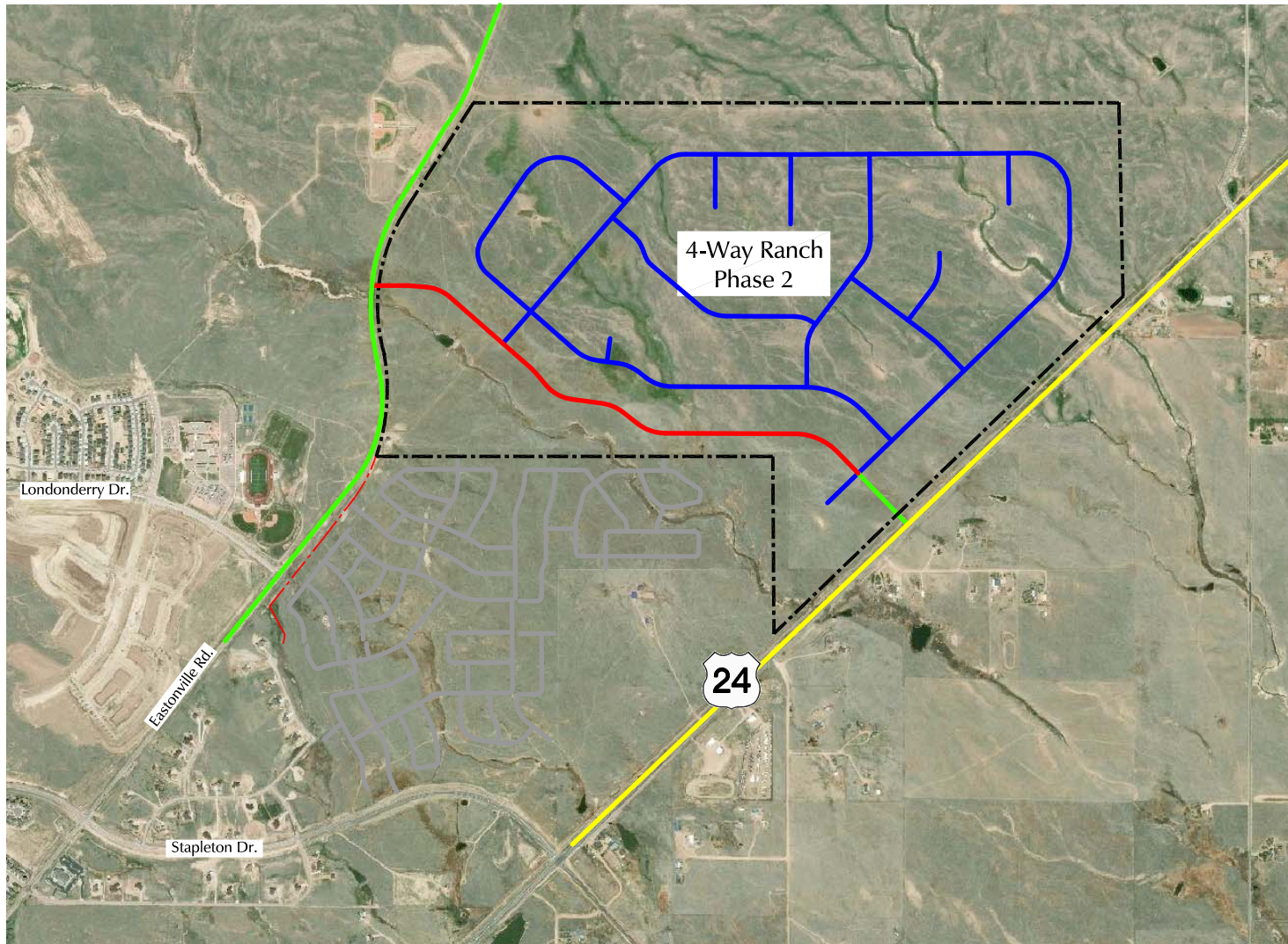



LEGEND:

- ⊥ = Stop Sign
- ⊞ = Traffic Signal
- $\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
- $\frac{A}{B}$ = 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

*Note: With the planned future widening of US 24, an eastbound left-turn acceleration lane could be incorporated into the design and the level of service would improve to likely better than D.

Figure 10
Year 2040 Total Traffic, Lane Geometry, Traffic Control and Level of Service
 Grandview Reserve (LSC #184840)




 Approximate Scale
 Scale: 1" = 2,000'

LEGEND:





-  = Private Streets - Modified Rural Local Standard
-  = Rural Major Collector
-  = Rural Major Collector (Minor Arterial Classification for pavement design and ROW width)
-  = Expressway



Figure 11
**Recommended
 Classifications**
 Grandview Reserve (LSC #184840)

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

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	
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	

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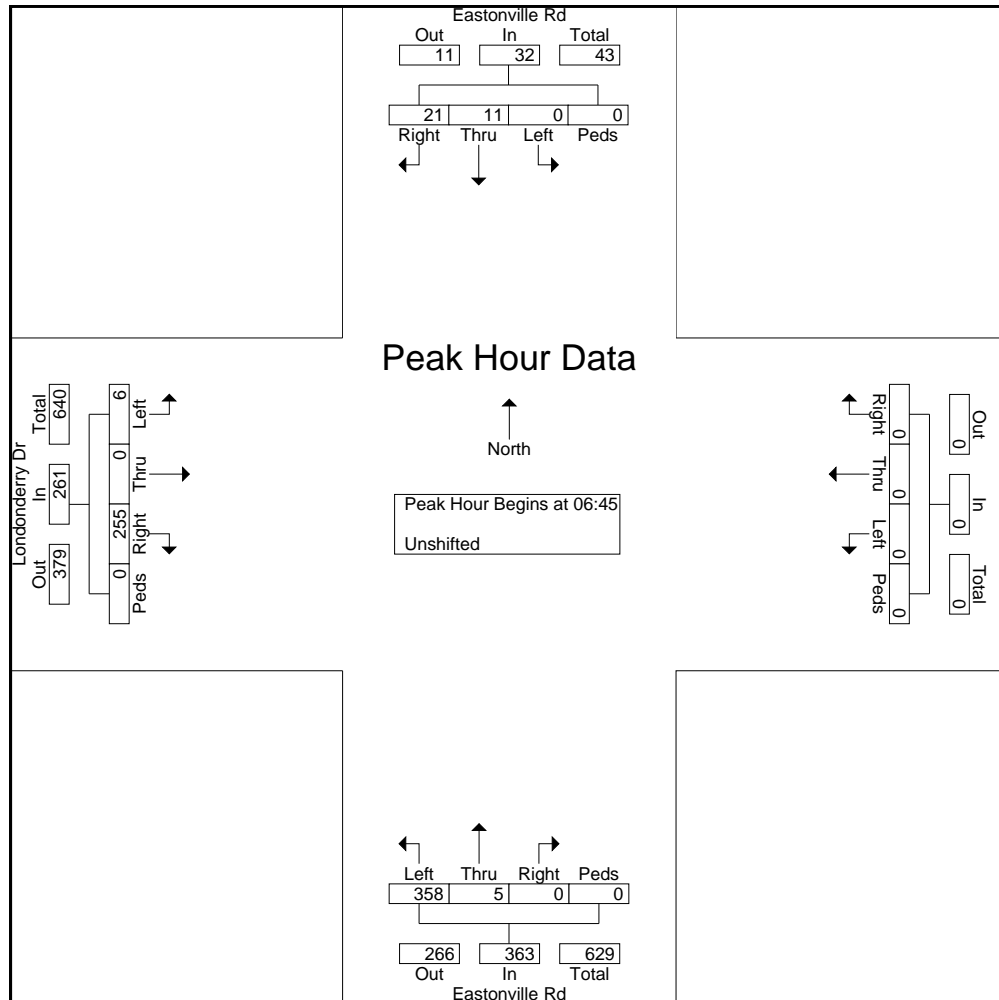
File Name : Eastonville Rd - Londonderry Dr AM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 2

Start Time	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 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



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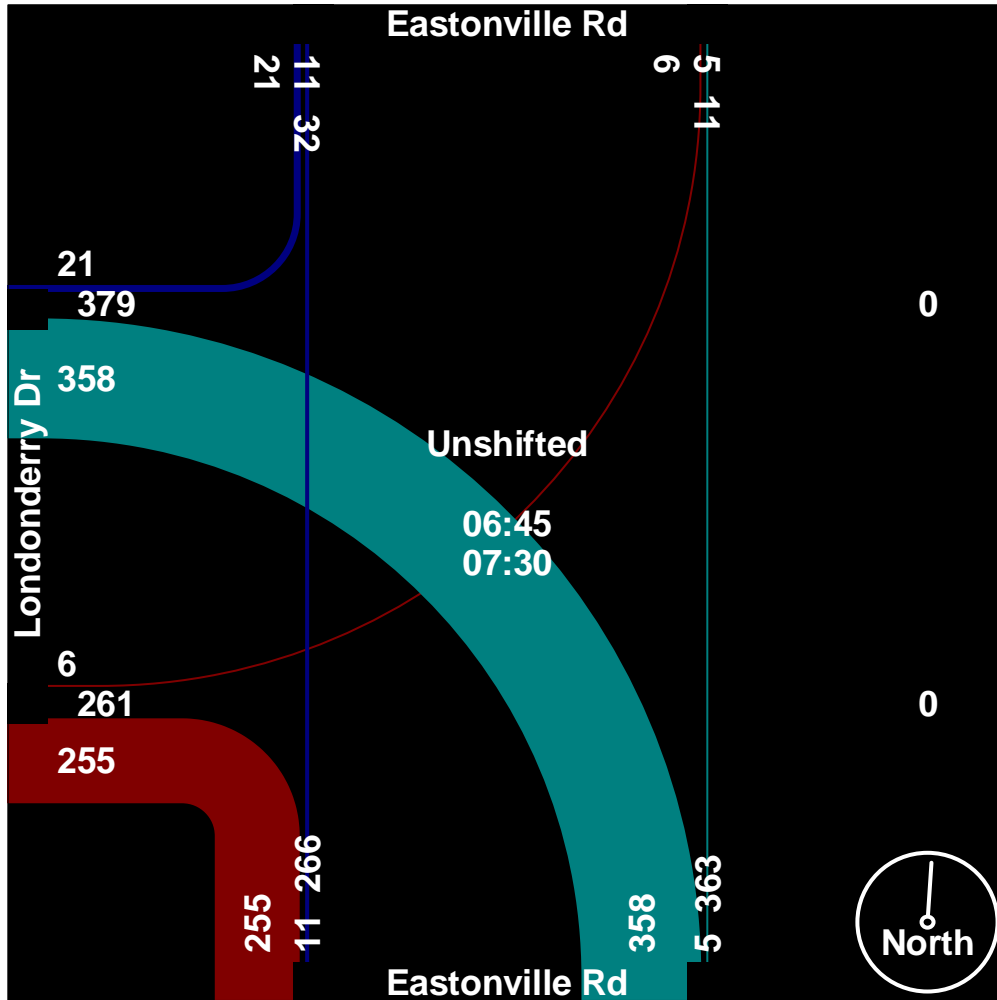
719-633-2868

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

Site Code : 184750

Start Date : 12/11/2018

Page No : 3



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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	

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719-633-2868

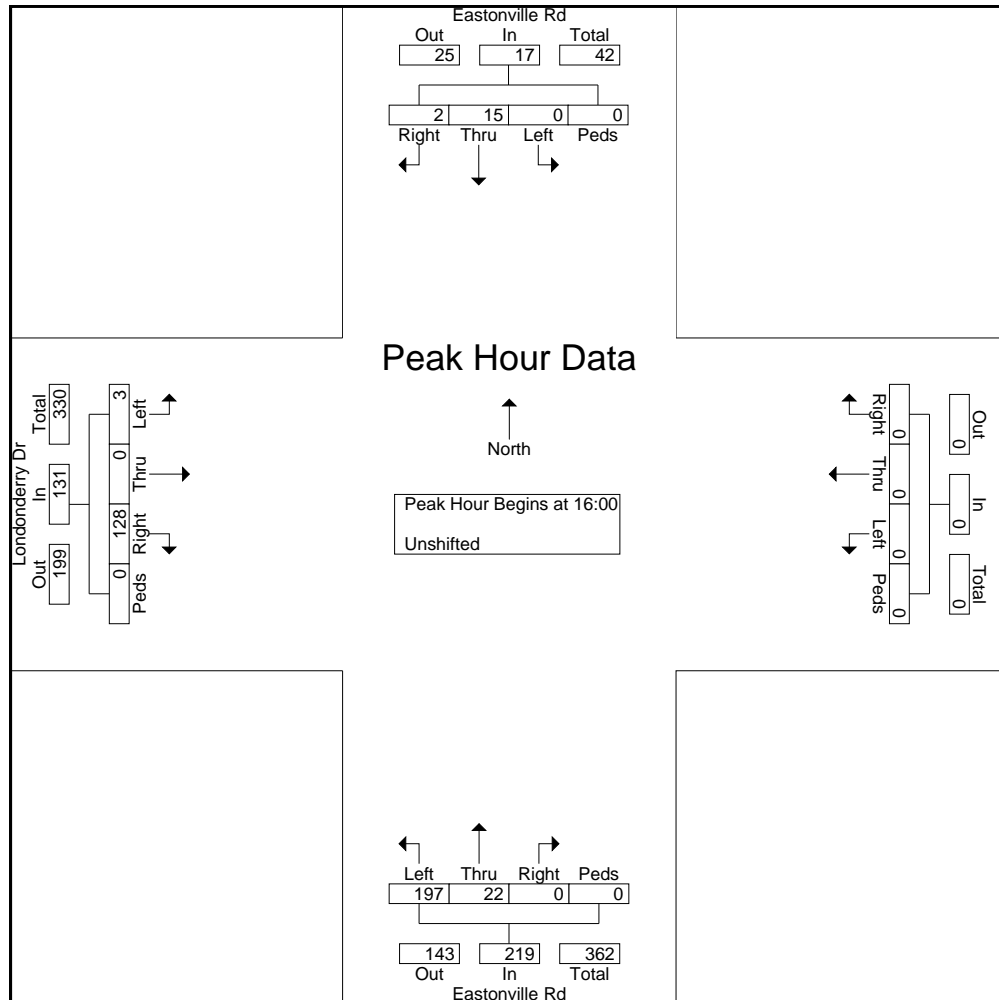
File Name : Eastonville Rd - Londonderry Dr PM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 2

Start Time	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 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



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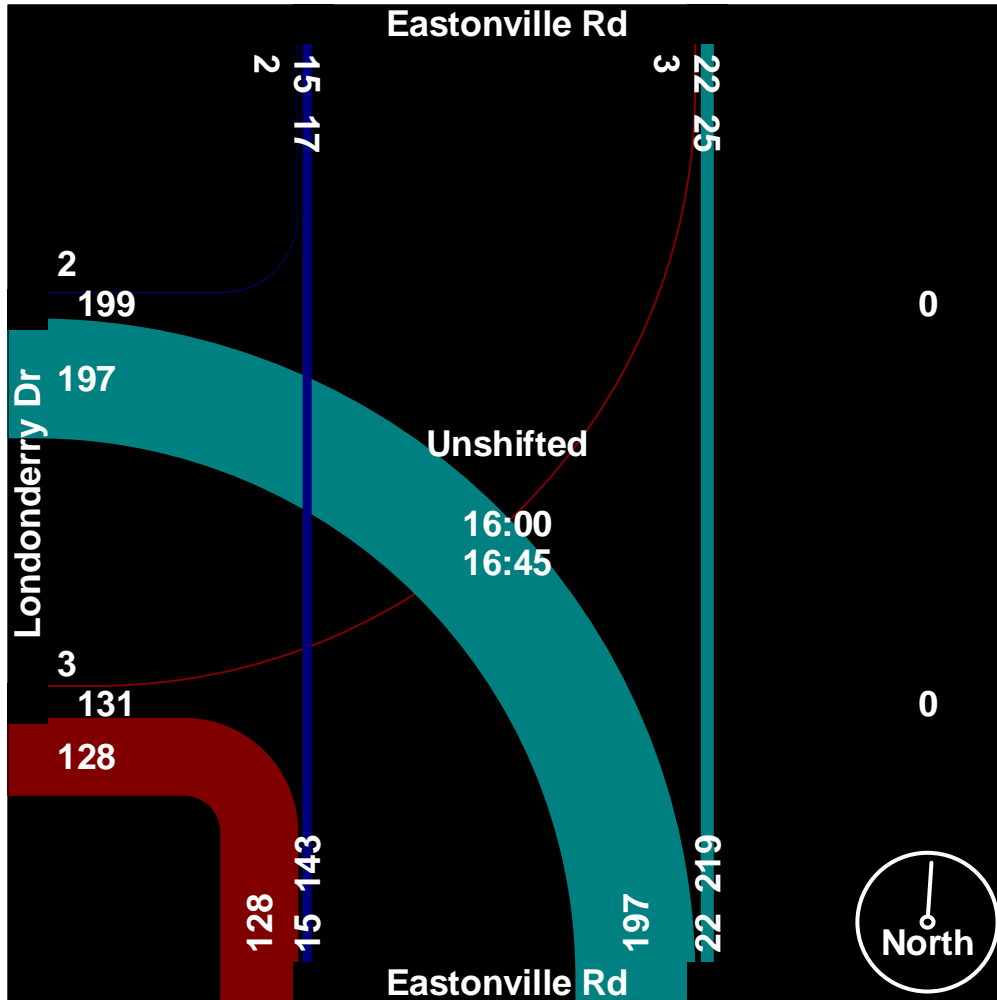
719-633-2868

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

Site Code : 184750

Start Date : 12/11/2018

Page No : 3



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

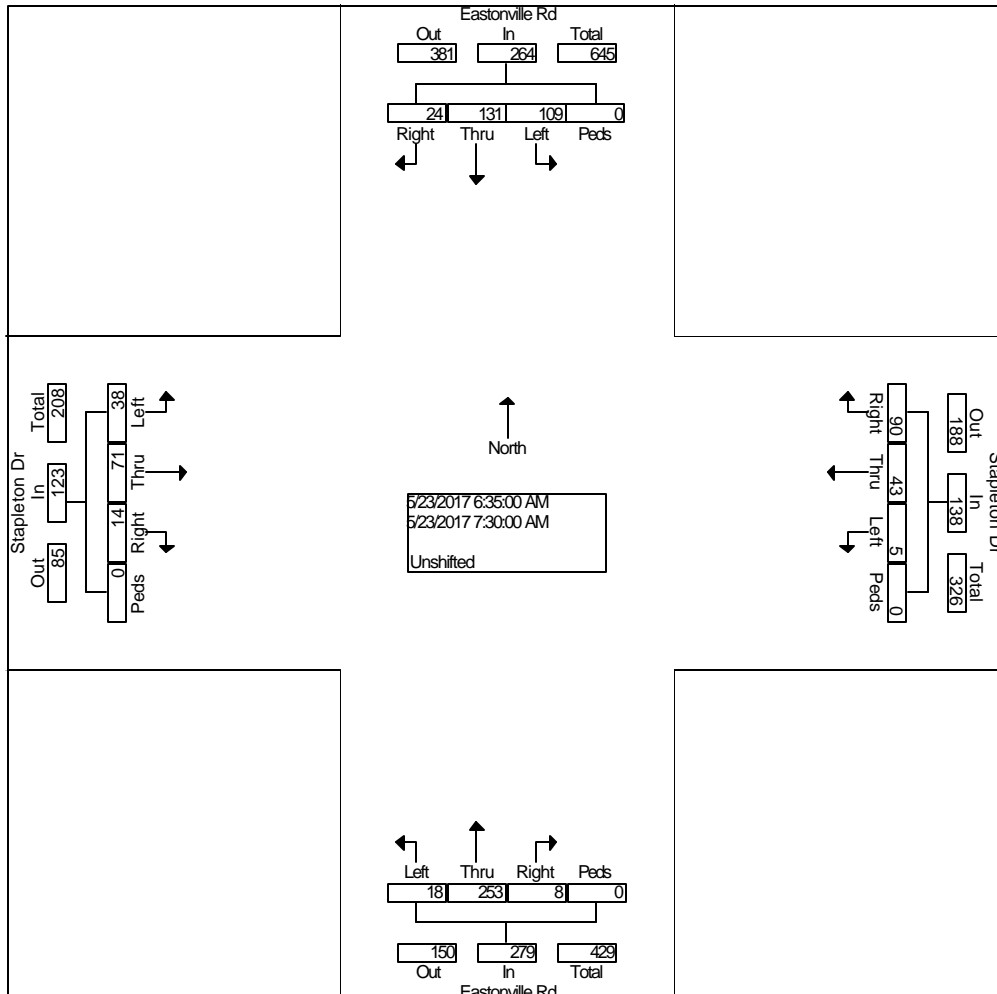
Groups Printed- Unshifted

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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

Start Time	Eastonville Rd From North					Stapleton Dr From East					Eastonville Rd From South					Stapleton Dr From West					Int. 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	Rig ht	Thr u	Lef t	Pe ds	App. 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	49.6	41.3	0.0		65.2	31.2	3.6	0.0		2.9	90.7	6.5	0.0		11.4	57.7	30.9	0.0		
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																					
High Int.	07:25 AM																				
Volume	2	23	14	0	39	15	4	0	0	19	0	39	3	0	42	3	7	5	0	15	0.657
Peak Factor	0.56					0.60					0.55					0.68					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

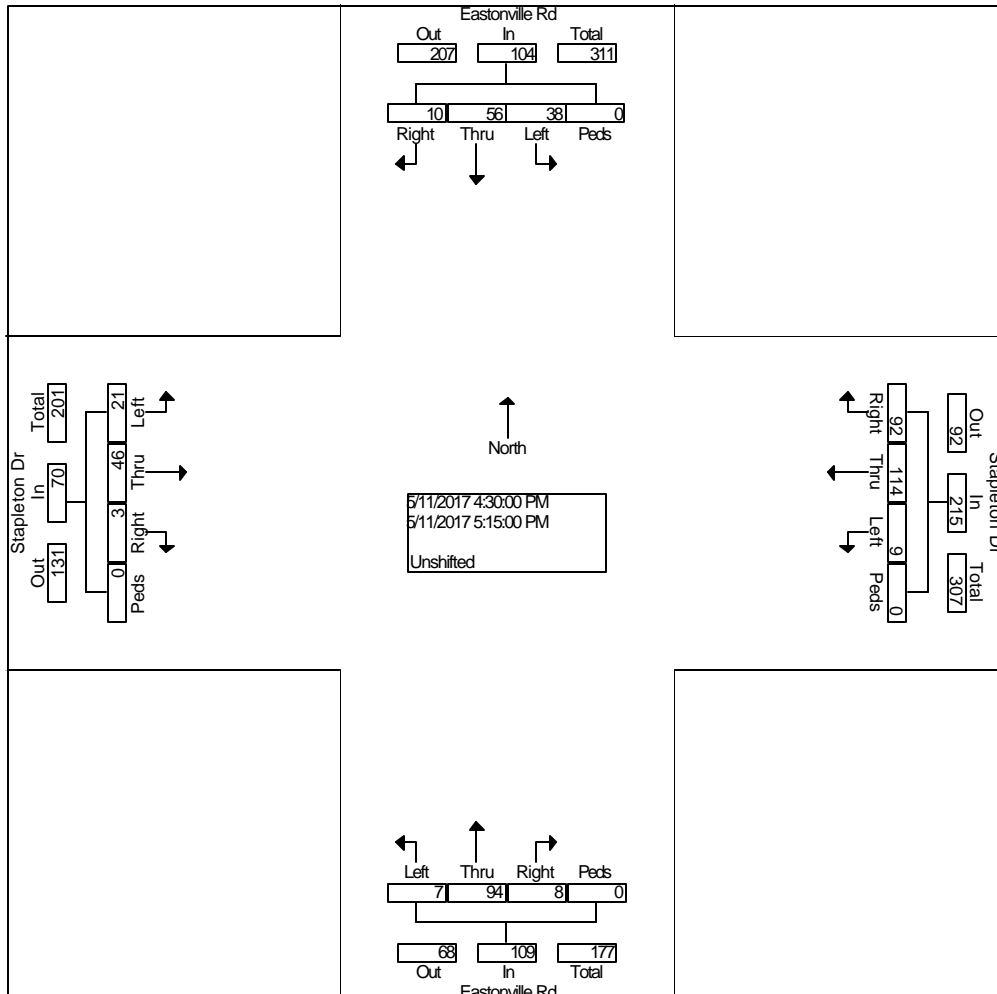
Groups Printed- Unshifted

Start Time	Eastonville Rd From North				Stapleton Dr From East				Eastonville Rd From South				Stapleton Dr From West				Int. Total
	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

Start Time	Eastonville Rd From North					Stapleton Dr From East					Eastonville Rd From South					Stapleton Dr From West					Int. Total
	Rig ht	Thru	Lef t	Pe ds	App. Total	Rig ht	Thru	Lef t	Pe ds	App. Total	Rig ht	Thru	Lef t	Pe ds	App. Total	Rig ht	Thru	Lef t	Pe ds	App. 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	11	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																				
Volume	3	16	12	0	31	28	27	2	0	57	4	34	1	0	39	0	19	2	0	21	0.83
Peak Factor	0.83																				
						05:00 PM					04:45 PM					05:15 PM					
Volume																					
Peak Factor																					



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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

Start Time	Hwy 24 Southbound				Stapleton Dr Westbound				Hwy 24 Northbound				Stapleton Dr Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	

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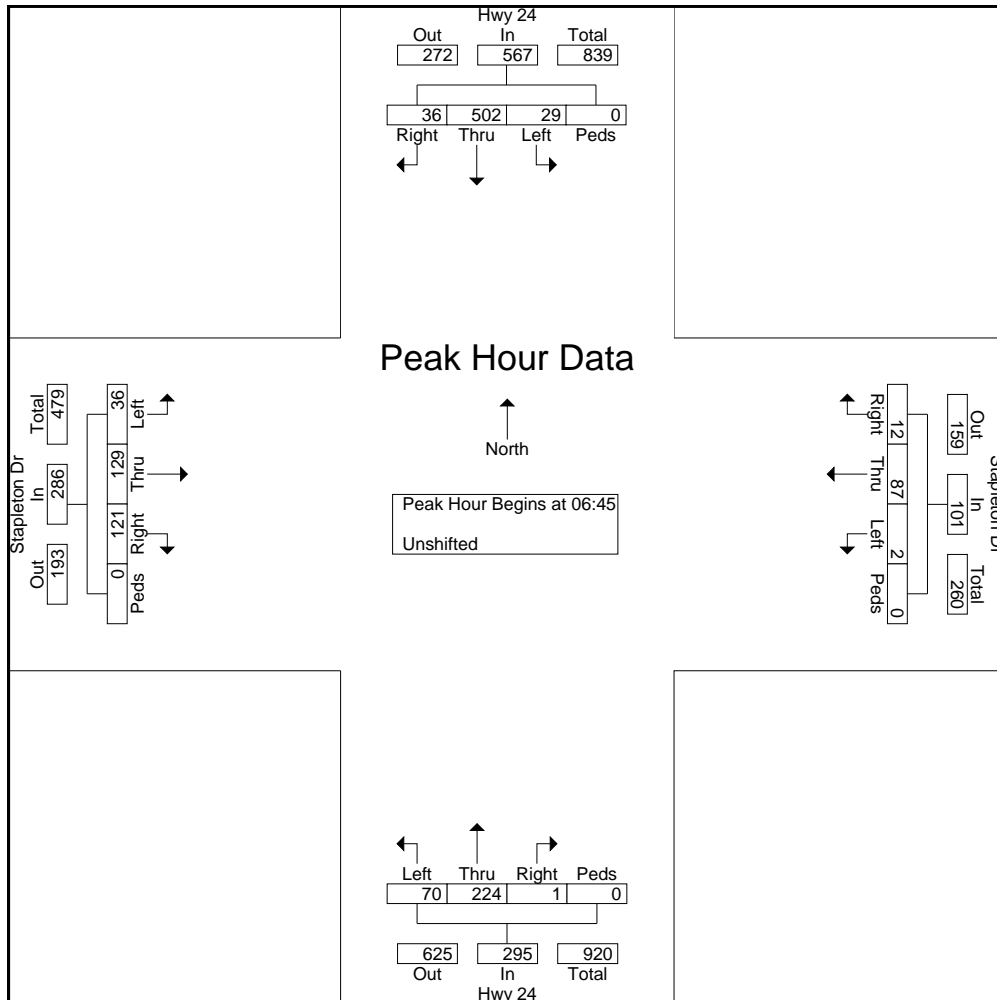
File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

Page No : 2

Start Time	Hwy 24 Southbound					Stapleton Dr Westbound					Hwy 24 Northbound					Stapleton Dr Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 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



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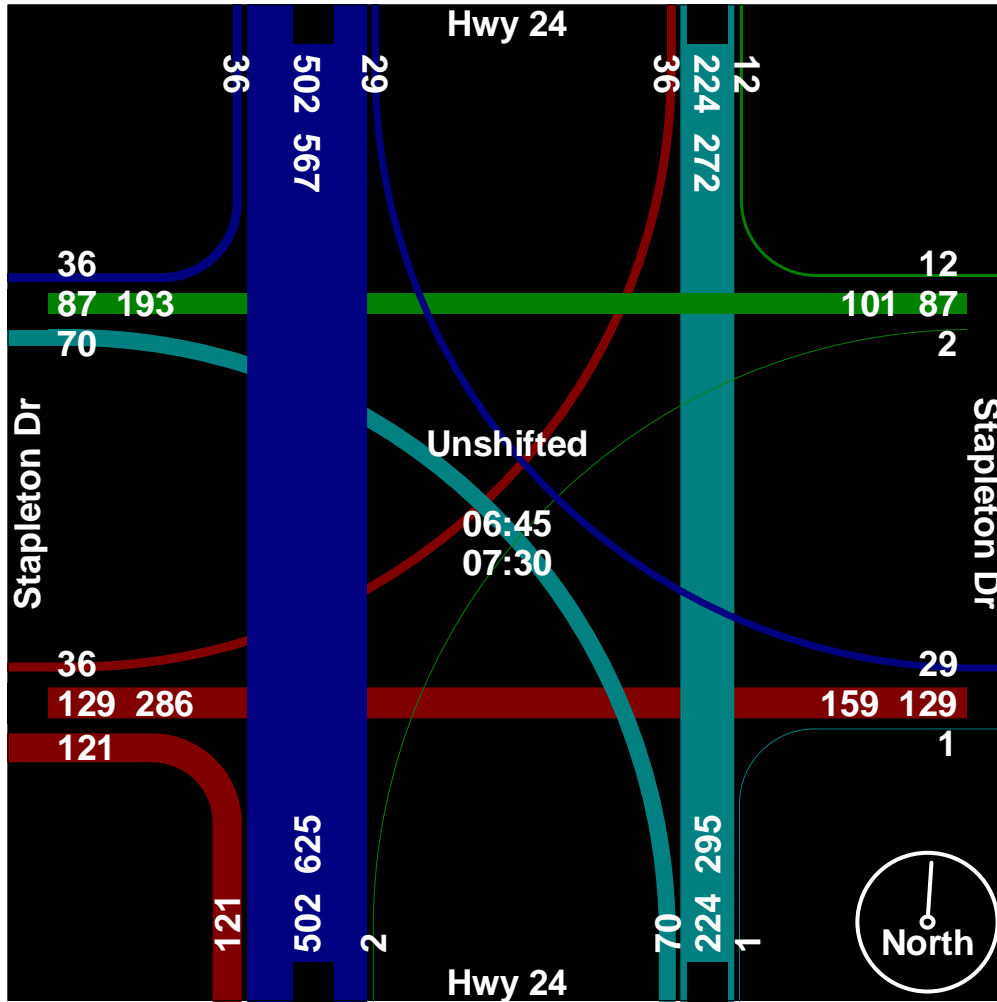
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File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

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

Site Code : 00184750

Start Date : 11/28/2018

Page No : 1

Groups Printed- Unshifted

Start Time	Hwy 24 Southbound				Stapleton Rd Westbound				Hwy 24 Northbound				Stapleton Rd Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
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	

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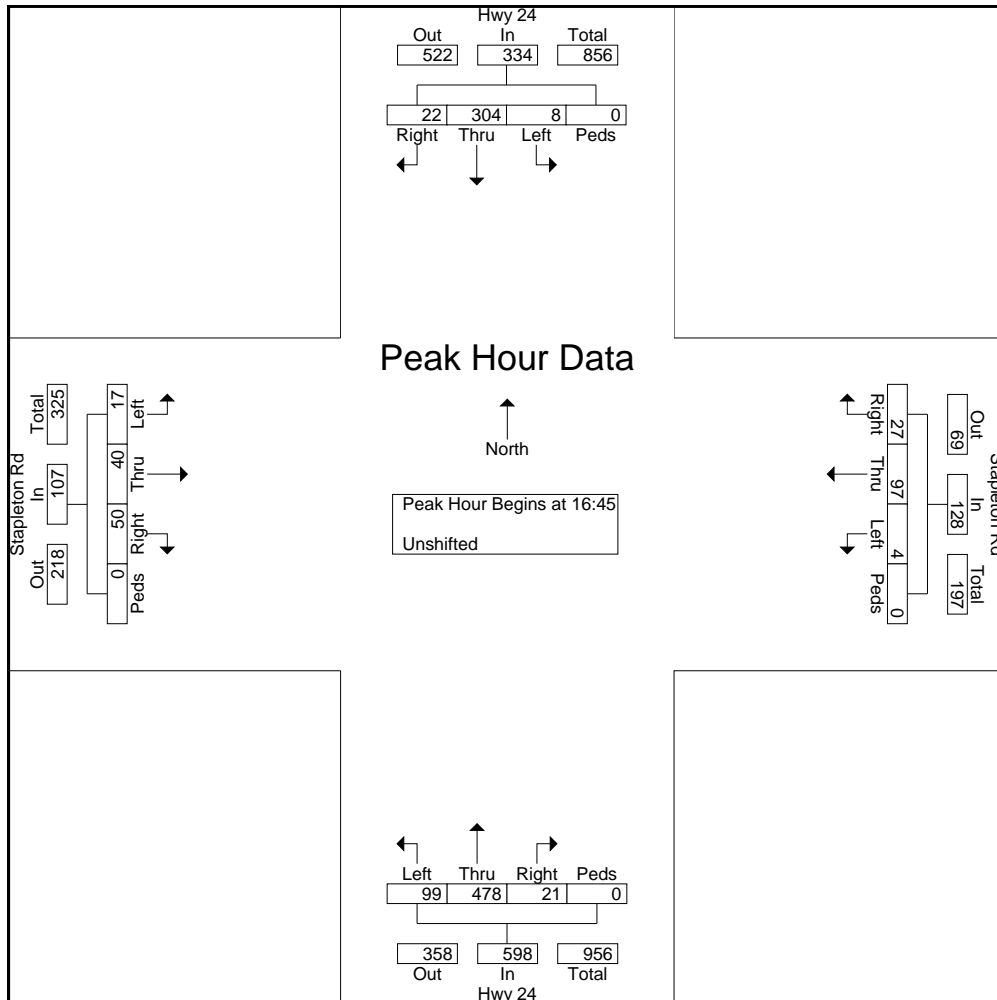
File Name : Hwy 24 - Stapleton Rd PM 11-18

Site Code : 00184750

Start Date : 11/28/2018

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Start Time	Hwy 24 Southbound					Stapleton Rd Westbound					Hwy 24 Northbound					Stapleton Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 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



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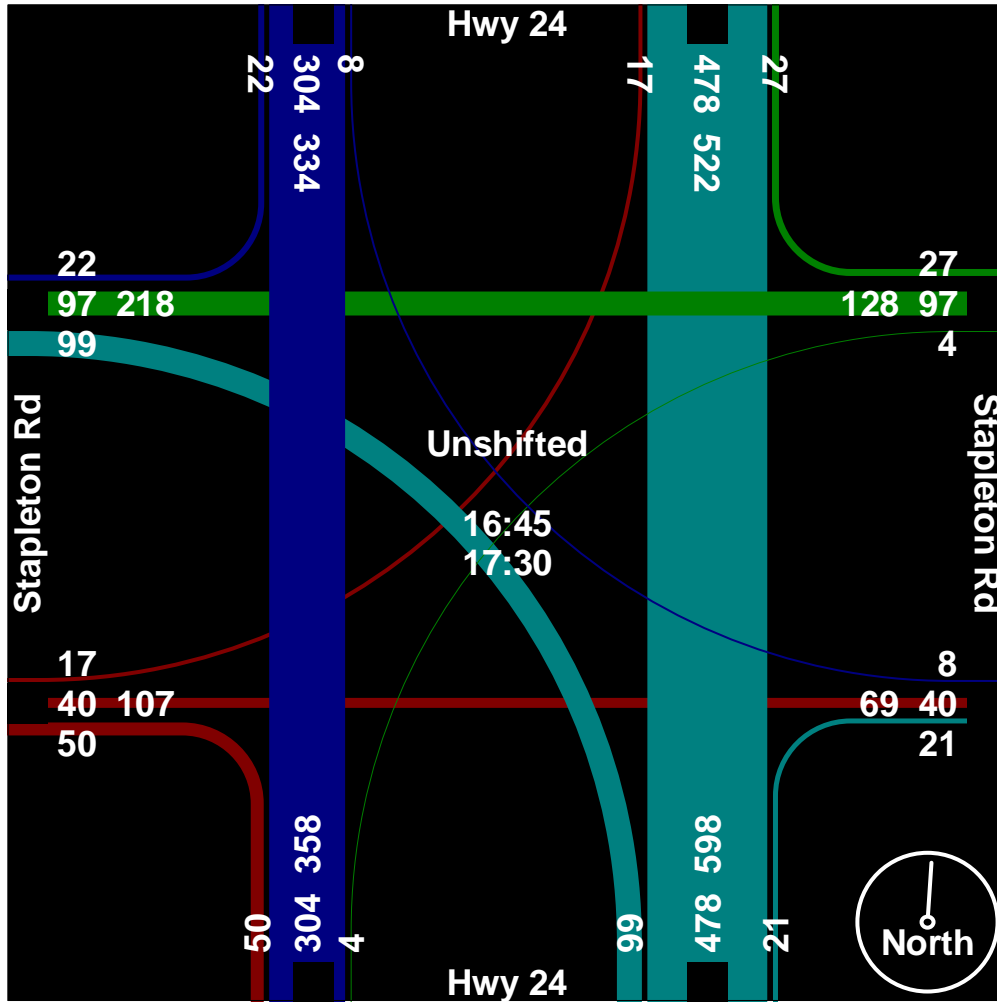
719-633-2868

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

Site Code : 00184750

Start Date : 11/28/2018

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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	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	79	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	166	30

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1042	954	181	1013	963	429	196	0	0	435	0	0
Stage 1	459	459	-	489	489	-	-	-	-	-	-	-
Stage 2	583	495	-	524	474	-	-	-	-	-	-	-
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	208	259	862	217	256	626	1377	-	-	1125	-	-
Stage 1	582	566	-	561	549	-	-	-	-	-	-	-
Stage 2	498	546	-	537	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	114	217	862	114	214	626	1377	-	-	1125	-	-
Mov Cap-2 Maneuver	114	217	-	114	214	-	-	-	-	-	-	-
Stage 1	565	487	-	545	533	-	-	-	-	-	-	-
Stage 2	342	530	-	351	480	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	125.8		19.3		0.5		3.6	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1377	-	-	182	196	626	1125	-	-
HCM Lane V/C Ratio	0.022	-	-	1.024	0.345	0.202	0.124	-	-
HCM Control Delay (s)	7.7	0	-	125.8	32.7	12.2	8.7	0	-
HCM Lane LOS	A	A	-	F	D	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.6	1.4	0.8	0.4	-	-

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	92	92	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	345	526	5	12	31

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1085	28	43	0	0
Stage 1	28	-	-	-	-
Stage 2	1057	-	-	-	-
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	240	1047	1566	-	-
Stage 1	995	-	-	-	-
Stage 2	334	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	159	1047	1566	-	-
Mov Cap-2 Maneuver	159	-	-	-	-
Stage 1	660	-	-	-	-
Stage 2	334	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	8.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1566	-	159	1047	-	-
HCM Lane V/C Ratio	0.336	-	0.051	0.329	-	-
HCM Control Delay (s)	8.5	0	28.9	10.1	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	1.5	-	0.2	1.4	-	-

Intersection												
Int Delay, s/veh	12.4											
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	100	100	100
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	29	502	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1081	1028	502	1189	1063	287	538	0	0	288	0	0
Stage 1	560	560	-	467	467	-	-	-	-	-	-	-
Stage 2	521	468	-	722	596	-	-	-	-	-	-	-
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	195	234	569	165	223	752	1030	-	-	1274	-	-
Stage 1	513	511	-	576	562	-	-	-	-	-	-	-
Stage 2	539	561	-	418	492	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	113	209	569	49	199	752	1030	-	-	1274	-	-
Mov Cap-2 Maneuver	113	209	-	49	199	-	-	-	-	-	-	-
Stage 1	468	499	-	526	513	-	-	-	-	-	-	-
Stage 2	396	512	-	217	481	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	37.6		35.4		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)	1030	-	-	113	209	569	49	199	752	1274	-	-
HCM Lane V/C Ratio	0.087	-	-	0.366	0.709	0.244	0.043	0.465	0.017	0.023	-	-
HCM Control Delay (s)	8.8	-	-	54.2	55.7	13.4	81.8	37.9	9.9	7.9	-	-
HCM Lane LOS	A	-	-	F	F	B	F	E	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.5	4.6	1	0.1	2.2	0.1	0.1	-	-

HCM 6th TWSC
1: Eastonville Rd & Stapleton Dr

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	6.8											
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	97	97	97	100	100	100	68	68	68	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	47	3	9	114	92	10	138	12	38	56	10

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	404	307	61	326	306	144	66	0	0	150	0	0
Stage 1	137	137	-	164	164	-	-	-	-	-	-	-
Stage 2	267	170	-	162	142	-	-	-	-	-	-	-
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	557	607	1004	627	608	903	1536	-	-	1431	-	-
Stage 1	866	783	-	838	762	-	-	-	-	-	-	-
Stage 2	738	758	-	840	779	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	414	586	1004	571	587	903	1536	-	-	1431	-	-
Mov Cap-2 Maneuver	414	586	-	571	587	-	-	-	-	-	-	-
Stage 1	860	761	-	832	757	-	-	-	-	-	-	-
Stage 2	559	753	-	763	757	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.9		11.3		0.5		2.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1536	-	-	529	586	903	1431	-	-
HCM Lane V/C Ratio	0.007	-	-	0.136	0.21	0.102	0.027	-	-
HCM Control Delay (s)	7.4	0	-	12.9	12.8	9.4	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.8	0.3	0.1	-	-

HCM 6th TWSC
2: 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	-	-

Intersection												
Int Delay, s/veh	6.6											
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	23	8	304	22
Future Vol, veh/h	17	40	50	4	97	27	99	478	23	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	100	100	100	100	100	100	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	40	50	4	97	27	106	514	25	9	358	26

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1177	1127	358	1160	1128	514	384	0	0	539	0	0
Stage 1	376	376	-	726	726	-	-	-	-	-	-	-
Stage 2	801	751	-	434	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	168	205	686	172	204	560	1174	-	-	1029	-	-
Stage 1	645	616	-	416	430	-	-	-	-	-	-	-
Stage 2	378	418	-	600	600	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	87	185	686	123	184	560	1174	-	-	1029	-	-
Mov Cap-2 Maneuver	87	185	-	123	184	-	-	-	-	-	-	-
Stage 1	587	610	-	379	391	-	-	-	-	-	-	-
Stage 2	246	380	-	515	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25	37.3	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	-	-	87	185	686	123	184	560	1029	-	-
HCM Lane V/C Ratio	0.091	-	-	0.195	0.216	0.073	0.033	0.527	0.048	0.009	-	-
HCM Control Delay (s)	8.4	-	-	56.2	29.7	10.7	35.3	44.5	11.8	8.5	-	-
HCM Lane LOS	A	-	-	F	D	B	E	E	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.8	0.2	0.1	2.7	0.2	0	-	-

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	6	260	123	37	157	88	45	311	17	126	157	26
Future Vol, veh/h	6	260	123	37	157	88	45	311	17	126	157	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	-	-	-	-	-	-
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	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	394	186	52	221	124	75	518	28	159	199	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1389	1230	216	1506	1232	532	232	0	0	546	0	0
Stage 1	534	534	-	682	682	-	-	-	-	-	-	-
Stage 2	855	696	-	824	550	-	-	-	-	-	-	-
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	~ 178	824	99	~ 177	547	1336	-	-	1023	-	-
Stage 1	530	524	-	440	450	-	-	-	-	-	-	-
Stage 2	353	443	-	367	516	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 134	824	-	~ 133	547	1336	-	-	1023	-	-
Mov Cap-2 Maneuver	-	~ 134	-	-	~ 133	-	-	-	-	-	-	-
Stage 1	487	430	-	404	414	-	-	-	-	-	-	-
Stage 2	117	407	-	~ 20	424	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.9	3.7
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	-	-	-	547	1023	-
HCM Lane V/C Ratio	0.056	-	-	-	-	-	0.227	0.156	-
HCM Control Delay (s)	7.9	0	-	-	-	-	13.5	9.2	0
HCM Lane LOS	A	A	-	-	-	-	B	A	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	-	0.9	0.6	-

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

Intersection						
Int Delay, s/veh	9.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	287	396	9	22	57
Future Vol, veh/h	20	287	396	9	22	57
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	92	92	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	388	582	10	24	85

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1241	67	109	0	0
Stage 1	67	-	-	-	-
Stage 2	1174	-	-	-	-
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	193	997	1481	-	-
Stage 1	956	-	-	-	-
Stage 2	294	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	117	997	1481	-	-
Mov Cap-2 Maneuver	117	-	-	-	-
Stage 1	578	-	-	-	-
Stage 2	294	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	8.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1481	-	117	997	-	-
HCM Lane V/C Ratio	0.393	-	0.231	0.389	-	-
HCM Control Delay (s)	9	0	44.8	10.9	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	1.9	-	0.8	1.9	-	-

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	0	115	-	180	-	-
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	11	1	12	11	2	45

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	61	12	0	0	23
Stage 1	12	-	-	-	-
Stage 2	49	-	-	-	-
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	945	1069	-	-	1592
Stage 1	1011	-	-	-	-
Stage 2	973	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	944	1069	-	-	1592
Mov Cap-2 Maneuver	944	-	-	-	-
Stage 1	1010	-	-	-	-
Stage 2	973	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	944	1069	1592	-
HCM Lane V/C Ratio	-	-	0.012	0.001	0.001	-
HCM Control Delay (s)	-	-	8.9	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	0	-

Intersection												
Int Delay, s/veh	46.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	41	156	333	2	74	12	158	250	1	29	550	36
Future Vol, veh/h	41	156	333	2	74	12	158	250	1	29	550	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	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	179	383	2	79	13	203	321	1	29	550	36

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1382	1336	550	1634	1371	321	586	0	0	322	0	0
Stage 1	608	608	-	727	727	-	-	-	-	-	-	-
Stage 2	774	728	-	907	644	-	-	-	-	-	-	-
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	121	~ 153	535	81	146	720	989	-	-	1238	-	-
Stage 1	483	486	-	415	429	-	-	-	-	-	-	-
Stage 2	391	429	-	330	468	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 44	~ 119	535	-	113	720	989	-	-	1238	-	-
Mov Cap-2 Maneuver	~ 44	~ 119	-	-	113	-	-	-	-	-	-	-
Stage 1	384	475	-	330	341	-	-	-	-	-	-	-
Stage 2	235	341	-	57	457	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	138.1	-	3.7	0.4
HCM LOS	F	-	-	-

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	989	-	-	44	119	535	-	113	720	1238	-	-
HCM Lane V/C Ratio	0.205	-	-	1.071	1.507	0.715	-	0.697	0.018	0.023	-	-
HCM Control Delay (s)	9.6	-	-	\$ 302	\$ 332.4	26.9	-	89.6	10.1	8	-	-
HCM Lane LOS	A	-	-	F	F	D	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	4.4	12.8	5.8	-	3.7	0.1	0.1	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	10	2	1	301	610	10
Future Vol, veh/h	10	2	1	301	610	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	205	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	78	100	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	2	1	386	610	11

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	998	-	621	0	0
Stage 1	610	-	-	-	-
Stage 2	388	-	-	-	-
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	270	0	960	-	-
Stage 1	542	0	-	-	-
Stage 2	686	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	270	-	960	-	-
Mov Cap-2 Maneuver	270	-	-	-	-
Stage 1	541	-	-	-	-
Stage 2	686	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	960	-	270	-	-	-
HCM Lane V/C Ratio	0.001	-	0.04	-	-	-
HCM Control Delay (s)	8.8	-	18.9	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	136.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	6	260	123	37	157	88	45	311	17	126	157	26
Future Vol, veh/h	6	260	123	37	157	88	45	311	17	126	157	26
Peak Hour Factor	0.66	0.66	0.66	0.71	0.71	0.71	0.60	0.60	0.60	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	394	186	52	221	124	75	518	28	159	199	33
Number of Lanes	0	1	0	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	242.6	30.5	172.4	26.3
HCM LOS	F	D	F	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	2%	19%	0%	100%	0%
Vol Thru, %	0%	95%	67%	81%	0%	0%	86%
Vol Right, %	0%	5%	32%	0%	100%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	328	389	194	88	126	183
LT Vol	45	0	6	37	0	126	0
Through Vol	0	311	260	157	0	0	157
RT Vol	0	17	123	0	88	0	26
Lane Flow Rate	75	547	589	273	124	159	232
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.194	1.33	1.449	0.706	0.293	0.432	0.589
Departure Headway (Hd)	10.501	9.934	9.784	11.136	10.291	11.716	11.075
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	344	372	377	328	352	309	329
Service Time	8.201	7.634	7.784	8.836	7.991	9.416	8.775
HCM Lane V/C Ratio	0.218	1.47	1.562	0.832	0.352	0.515	0.705
HCM Control Delay	15.7	193.9	242.6	36.6	17.2	23	28.5
HCM Lane LOS	C	F	F	E	C	C	D
HCM 95th-tile Q	0.7	22.9	27.8	5.1	1.2	2.1	3.5

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	6	260	123	37	157	88	45	311	17	126	157	26
Future Vol, veh/h	6	260	123	37	157	88	45	311	17	126	157	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	-	-	-	-	-	-
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	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	394	186	52	221	124	75	518	28	159	199	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1389	1230	216	1506	1232	532	232	0	0	546	0	0
Stage 1	534	534	-	682	682	-	-	-	-	-	-	-
Stage 2	855	696	-	824	550	-	-	-	-	-	-	-
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	~ 178	824	99	~ 177	547	1336	-	-	1023	-	-
Stage 1	530	524	-	440	450	-	-	-	-	-	-	-
Stage 2	353	443	-	367	516	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 134	824	-	~ 133	547	1336	-	-	1023	-	-
Mov Cap-2 Maneuver	-	~ 134	-	-	~ 133	-	-	-	-	-	-	-
Stage 1	487	430	-	404	414	-	-	-	-	-	-	-
Stage 2	117	407	-	~ 20	424	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.9	3.7
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1336	-	-	-	-	-	547	1023	-
HCM Lane V/C Ratio	0.056	-	-	-	-	-	0.227	0.156	-
HCM Control Delay (s)	7.9	0	-	-	-	-	13.5	9.2	0
HCM Lane LOS	A	A	-	-	-	-	B	A	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	-	0.9	0.6	-

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

Intersection						
Int Delay, s/veh	9.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	287	396	9	22	57
Future Vol, veh/h	20	287	396	9	22	57
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	92	92	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	388	582	10	24	85

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1241	67	109	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	1174	-	-	-	-	-
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	193	997	1481	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	997	1481	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	294	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	8.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1481	-	117	997	-	-
HCM Lane V/C Ratio	0.393	-	0.231	0.389	-	-
HCM Control Delay (s)	9	0	44.8	10.9	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	1.9	-	0.8	1.9	-	-

Timings
1: Eastonville Rd & Stapleton Dr

2023 Background Traffic With PPRTA Improvements

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	6	260	37	157	88	45	311	126	157
Future Volume (vph)	6	260	37	157	88	45	311	126	157
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	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
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	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	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 Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)		15.2		15.2	15.2	18.1	18.1	18.1	18.1
Actuated g/C Ratio		0.35		0.35	0.35	0.42	0.42	0.42	0.42
v/c Ratio		0.93		0.52	0.20	0.16	0.71	0.67	0.30
Control Delay		42.0		17.6	4.3	8.2	15.6	24.9	8.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		42.0		17.6	4.3	8.2	15.6	24.9	8.1
LOS		D		B	A	A	B	C	A
Approach Delay		42.0		13.5			14.7		15.0
Approach LOS		D		B			B		B

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 43.4
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 22.6
 Intersection Capacity Utilization 68.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Timings
6: US 24 & Stapleton Dr

2023 Background Traffic With PPRTA Improvements

AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	156	333	2	74	12	158	250	1	29	550	36
Future Volume (vph)	41	156	333	2	74	12	158	250	1	29	550	36
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	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)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	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	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	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	12.9	12.9	12.9	12.9	12.9	12.9	64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.24	0.66	0.69	0.02	0.29	0.05	0.35	0.24	0.00	0.04	0.41	0.03
Control Delay	36.3	47.5	10.8	32.0	36.1	2.7	6.8	4.7	0.0	4.0	6.0	1.4
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	36.3	47.5	10.8	32.0	36.1	2.7	6.8	4.7	0.0	4.0	6.0	1.4
LOS	D	D	B	C	D	A	A	A	A	A	A	A
Approach Delay		23.6			31.4			5.5			5.6	
Approach LOS		C			C			A			A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.9
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.8
 Intersection Capacity Utilization 67.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: US 24 & Stapleton Dr



Intersection												
Int Delay, s/veh	147.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	22
Future Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	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	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	100	100	100	68	68	68	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	205	85	32	341	150	191	190	78	58	98	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1082	875	109	981	847	229	120	0	0	268	0	0
Stage 1	225	225	-	611	611	-	-	-	-	-	-	-
Stage 2	857	650	-	370	236	-	-	-	-	-	-	-
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	195	288	945	229	~ 299	810	1468	-	-	1296	-	-
Stage 1	778	718	-	481	484	-	-	-	-	-	-	-
Stage 2	352	465	-	650	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	232	945	45	~ 241	810	1468	-	-	1296	-	-
Mov Cap-2 Maneuver	-	232	-	45	~ 241	-	-	-	-	-	-	-
Stage 1	658	684	-	407	409	-	-	-	-	-	-	-
Stage 2	40	393	-	394	676	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 410.2	3.3	2.6
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1468	-	-	-	175	810	1296	-	-
HCM Lane V/C Ratio	0.13	-	-	-	2.131	0.185	0.045	-	-
HCM Control Delay (s)	7.8	0	-	-	\$ 570.9	10.5	7.9	0	-
HCM Lane LOS	A	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	-	29.5	0.7	0.1	-	-

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

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	156	263	34	22	24
Future Vol, veh/h	30	156	263	34	22	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	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	48	252	280	36	26	28

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	636	40	54	0	0
Stage 1	40	-	-	-	-
Stage 2	596	-	-	-	-
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	442	1031	1551	-	-
Stage 1	982	-	-	-	-
Stage 2	550	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	361	1031	1551	-	-
Mov Cap-2 Maneuver	361	-	-	-	-
Stage 1	801	-	-	-	-
Stage 2	550	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	6.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1551	-	361	1031	-	-
HCM Lane V/C Ratio	0.18	-	0.134	0.244	-	-
HCM Control Delay (s)	7.8	0	16.5	9.6	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.5	1	-	-

Intersection						
Int Delay, s/veh	1.1					
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	0	115	-	180	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	94	92	92	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	30	7	1	28

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	60	30	0	0	37
Stage 1	30	-	-	-	-
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	947	1044	-	-	1574
Stage 1	993	-	-	-	-
Stage 2	993	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	946	1044	-	-	1574
Mov Cap-2 Maneuver	946	-	-	-	-
Stage 1	992	-	-	-	-
Stage 2	993	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	946	1044	1574
HCM Lane V/C Ratio	-	-	0.007	0.002	0.001
HCM Control Delay (s)	-	-	8.8	8.5	7.3
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	0

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	20	126	191	4	178	27	372	525	21	8	325	96
Future Vol, veh/h	20	126	191	4	178	27	372	525	21	8	325	96
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	100	100	100	100	100	100	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	126	191	4	178	27	400	565	23	9	382	113

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1879	1788	382	1980	1878	565	495	0	0	588	0	0
Stage 1	400	400	-	1365	1365	-	-	-	-	-	-	-
Stage 2	1479	1388	-	615	513	-	-	-	-	-	-	-
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	54	~ 81	665	46	~ 71	524	1069	-	-	987	-	-
Stage 1	626	602	-	182	215	-	-	-	-	-	-	-
Stage 2	157	210	-	479	536	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 50	665	-	~ 44	524	1069	-	-	987	-	-
Mov Cap-2 Maneuver	-	~ 50	-	-	~ 44	-	-	-	-	-	-	-
Stage 1	392	597	-	114	~ 135	-	-	-	-	-	-	-
Stage 2	-	131	-	267	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			4.2	0.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	-	50	665	-	44	524	987	-	-
HCM Lane V/C Ratio	0.374	-	-	-	2.52	0.287	-	4.045	0.052	0.01	-	-
HCM Control Delay (s)	10.4	-	-	-	\$ 864.7	12.6	-	\$ 1558.5	12.2	8.7	-	-
HCM Lane LOS	B	-	-	-	F	B	-	F	B	A	-	-
HCM 95th %tile Q(veh)	1.8	-	-	-	13.1	1.2	-	20.1	0.2	0	-	-

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

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	1	2	567	426	6
Future Vol, veh/h	6	1	2	567	426	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	205	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	93	85	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1	2	610	501	7

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1115	-	508	0	0
Stage 1	501	-	-	-	-
Stage 2	614	-	-	-	-
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	230	0	1057	-	-
Stage 1	609	0	-	-	-
Stage 2	540	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	230	-	1057	-	-
Mov Cap-2 Maneuver	230	-	-	-	-
Stage 1	608	-	-	-	-
Stage 2	540	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1057	-	230	-	-	-
HCM Lane V/C Ratio	0.002	-	0.028	-	-	-
HCM Control Delay (s)	8.4	-	21.1	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	22.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	22
Future Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	22
Peak Hour Factor	0.97	0.97	0.97	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	205	85	32	341	150	191	190	78	58	98	22
Number of Lanes	0	1	0	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	24.5	26.7	18.8	14
HCM LOS	C	D	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	6%	9%	0%	100%	0%
Vol Thru, %	0%	71%	67%	91%	0%	0%	82%
Vol Right, %	0%	29%	27%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	182	299	373	150	58	120
LT Vol	130	0	18	32	0	58	0
Through Vol	0	129	199	341	0	0	98
RT Vol	0	53	82	0	150	0	22
Lane Flow Rate	191	268	308	373	150	58	120
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.441	0.563	0.659	0.782	0.283	0.145	0.277
Departure Headway (Hd)	8.297	7.57	7.692	7.552	6.79	8.972	8.318
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	474	469	477	527	398	430
Service Time	6.071	5.344	5.767	5.323	4.561	6.762	6.108
HCM Lane V/C Ratio	0.442	0.565	0.657	0.782	0.285	0.146	0.279
HCM Control Delay	17.5	19.7	24.5	32.6	12.2	13.3	14.3
HCM Lane LOS	C	C	C	D	B	B	B
HCM 95th-tile Q	2.2	3.4	4.7	7	1.2	0.5	1.1

Intersection												
Int Delay, s/veh	132.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	22
Future Vol, veh/h	18	199	82	32	341	150	130	129	53	58	98	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	97	97	97	100	100	100	68	68	68	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	205	85	32	341	150	191	190	78	58	98	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1082	875	109	981	847	229	120	0	0	268	0	0
Stage 1	225	225	-	611	611	-	-	-	-	-	-	-
Stage 2	857	650	-	370	236	-	-	-	-	-	-	-
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	195	288	945	229	~ 299	810	1468	-	-	1296	-	-
Stage 1	778	718	-	481	484	-	-	-	-	-	-	-
Stage 2	352	465	-	650	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	239	945	51	~ 248	810	1468	-	-	1296	-	-
Mov Cap-2 Maneuver	-	239	-	51	~ 248	-	-	-	-	-	-	-
Stage 1	677	686	-	418	421	-	-	-	-	-	-	-
Stage 2	47	405	-	396	678	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 368.6	3.3	2.6
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1468	-	-	-	186	810	1296	-	-
HCM Lane V/C Ratio	0.13	-	-	-	2.005	0.185	0.045	-	-
HCM Control Delay (s)	7.8	-	-	-	\$ 512.6	10.5	7.9	-	-
HCM Lane LOS	A	-	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-	28.3	0.7	0.1	-	-

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

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	156	263	34	22	24
Future Vol, veh/h	30	156	263	34	22	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	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	48	252	280	36	26	28

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	622	26	54	0	0
Stage 1	26	-	-	-	-
Stage 2	596	-	-	-	-
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	450	1050	1551	-	-
Stage 1	997	-	-	-	-
Stage 2	550	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	369	1050	1551	-	-
Mov Cap-2 Maneuver	369	-	-	-	-
Stage 1	817	-	-	-	-
Stage 2	550	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	6.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1551	-	369	1050	-	-
HCM Lane V/C Ratio	0.18	-	0.131	0.24	-	-
HCM Control Delay (s)	7.8	-	16.2	9.5	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	0.9	-	-

Timings
1: Eastonville Rd & Stapleton Dr

2023 Background Traffic With PPRTA Improvements

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	18	199	32	341	150	130	129	58	98
Future Volume (vph)	18	199	32	341	150	130	129	58	98
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	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
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	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	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 Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)		15.1		15.1	15.1	10.8	10.8	10.8	10.8
Actuated g/C Ratio		0.42		0.42	0.42	0.30	0.30	0.30	0.30
v/c Ratio		0.42		0.50	0.20	0.50	0.47	0.18	0.22
Control Delay		9.9		11.4	2.9	15.2	10.5	10.2	8.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		9.9		11.4	2.9	15.2	10.5	10.2	8.7
LOS		A		B	A	B	B	B	A
Approach Delay		9.9		9.0			12.5		9.2
Approach LOS		A		A			B		A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 35.9
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

























Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Timings
6: US 24 & Stapleton Dr

2023 Background Traffic With PPRTA Improvements

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	126	191	4	178	27	372	525	21	8	325	96
Future Volume (vph)	20	126	191	4	178	27	372	525	21	8	325	96
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	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)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	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	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	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.16	0.47	0.49	0.02	0.66	0.10	0.55	0.42	0.02	0.02	0.28	0.10
Control Delay	35.5	40.4	9.9	32.0	48.0	9.6	9.4	6.0	1.6	3.9	4.9	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	40.4	9.9	32.0	48.0	9.6	9.4	6.0	1.6	3.9	4.9	1.0
LOS	D	D	A	C	D	A	A	A	A	A	A	A
Approach Delay		22.8			42.7			7.2			4.0	
Approach LOS		C			D			A			A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.7
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 12.7
 Intersection Capacity Utilization 68.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: US 24 & Stapleton Dr



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	11	260	123	37	161	88	45	316	17	127	173	36
Future Vol, veh/h	11	260	123	37	161	88	45	316	17	127	173	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	-	-	-	-	-	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	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	394	186	52	227	124	75	527	28	161	219	46

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1431	1269	242	1545	1278	541	265	0	0	555	0	0
Stage 1	564	564	-	691	691	-	-	-	-	-	-	-
Stage 2	867	705	-	854	587	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	~ 168	797	93	~ 166	541	1299	-	-	1015	-	-
Stage 1	510	508	-	435	446	-	-	-	-	-	-	-
Stage 2	348	439	-	353	497	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 125	797	-	~ 124	541	1299	-	-	1015	-	-
Mov Cap-2 Maneuver	-	~ 125	-	-	~ 124	-	-	-	-	-	-	-
Stage 1	467	413	-	398	409	-	-	-	-	-	-	-
Stage 2	109	402	-	~ 10	404	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.9	3.5
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	-	-	-	541	1015	-
HCM Lane V/C Ratio	0.058	-	-	-	-	-	0.229	0.158	-
HCM Control Delay (s)	7.9	0	-	-	-	-	13.6	9.2	0
HCM Lane LOS	A	A	-	-	-	-	B	A	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	-	0.9	0.6	-

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

Intersection						
Int Delay, s/veh	9.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	287	396	20	50	63
Future Vol, veh/h	22	287	396	20	50	63
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	92	92	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	388	582	22	54	94

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1287	101	148	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	1186	-	-	-	-	-
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	181	954	1434	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	954	1434	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	8.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1434	-	107	954	-	-
HCM Lane V/C Ratio	0.406	-	0.278	0.407	-	-
HCM Control Delay (s)	9.2	0	51.1	11.3	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	2	-	1	2	-	-

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↘
Traffic Vol, veh/h	44	4	11	23	3	41
Future Vol, veh/h	44	4	11	23	3	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	0	115	-	180	-	-
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	48	4	12	25	3	45

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	63	12	0	0	37
Stage 1	12	-	-	-	-
Stage 2	51	-	-	-	-
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	1069	-	-	1574
Stage 1	1011	-	-	-	-
Stage 2	971	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	941	1069	-	-	1574
Mov Cap-2 Maneuver	941	-	-	-	-
Stage 1	1009	-	-	-	-
Stage 2	971	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	941	1069	1574	-
HCM Lane V/C Ratio	-	-	0.051	0.004	0.002	-
HCM Control Delay (s)	-	-	9	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection												
Int Delay, s/veh	61.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	41	157	333	2	74	13	158	268	1	32	604	40
Future Vol, veh/h	41	157	333	2	74	13	158	268	1	32	604	40
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	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	180	383	2	79	14	203	344	1	32	604	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1465	1419	604	1720	1458	344	644	0	0	345	0	0
Stage 1	668	668	-	750	750	-	-	-	-	-	-	-
Stage 2	797	751	-	970	708	-	-	-	-	-	-	-
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	106	~ 137	498	70	129	699	941	-	-	1214	-	-
Stage 1	448	456	-	403	419	-	-	-	-	-	-	-
Stage 2	380	418	-	304	438	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 30	~ 105	498	-	99	699	941	-	-	1214	-	-
Mov Cap-2 Maneuver	~ 30	~ 105	-	-	99	-	-	-	-	-	-	-
Stage 1	351	444	-	316	328	-	-	-	-	-	-	-
Stage 2	222	328	-	41	427	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	191.8		3.7	0.4
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	30	105	498	-	99	699	1214	-	-
HCM Lane V/C Ratio	0.215	-	-	1.571	1.719	0.769	-	0.795	0.02	0.026	-	-
HCM Control Delay (s)	9.9	-	-	\$ 571.8	\$ 430.5	32.4	-	118.3	10.3	8	-	-
HCM Lane LOS	A	-	-	F	F	D	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	5.4	14.2	6.8	-	4.3	0.1	0.1	-	-

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

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	14	63	20	301	610	11
Future Vol, veh/h	14	63	20	301	610	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	78	100	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	68	22	386	610	12

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1040	-	622	0	0
Stage 1	610	-	-	-	-
Stage 2	430	-	-	-	-
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	255	0	959	-	-
Stage 1	542	0	-	-	-
Stage 2	656	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	249	-	959	-	-
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	530	-	-	-	-
Stage 2	656	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.4	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	959	-	249	-	-	-
HCM Lane V/C Ratio	0.023	-	0.061	-	-	-
HCM Control Delay (s)	8.8	-	20.4	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	-

HCM 6th TWSC
 29: 4 Way Ranch East Access & E/W Collector

2023 Total Traffic
 AM Peak Hour

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	3	27	0	1	16	15	1	0	3	48	0	7
Future Vol, veh/h	3	27	0	1	16	15	1	0	3	48	0	7
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	-	-	-	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	29	0	1	17	16	1	0	3	52	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	29	0	0	66	70	29	56	54	17
Stage 1	-	-	-	-	-	-	35	35	-	19	19	-
Stage 2	-	-	-	-	-	-	31	35	-	37	35	-
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	1579	-	-	1584	-	-	927	821	1046	941	837	1062
Stage 1	-	-	-	-	-	-	981	866	-	1000	880	-
Stage 2	-	-	-	-	-	-	986	866	-	978	866	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1579	-	-	1584	-	-	919	819	1046	936	834	1062
Mov Cap-2 Maneuver	-	-	-	-	-	-	919	819	-	936	834	-
Stage 1	-	-	-	-	-	-	979	864	-	998	879	-
Stage 2	-	-	-	-	-	-	978	865	-	973	864	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.2			8.6			9		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1011	1579	-	-	1584	-	-	950
HCM Lane V/C Ratio	0.004	0.002	-	-	0.001	-	-	0.063
HCM Control Delay (s)	8.6	7.3	0	-	7.3	0	-	9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	16	19	5	14	28
Future Vol, veh/h	10	16	19	5	14	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	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	11	17	21	5	15	30

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	26	0	0
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	1588	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1588	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1588	-	-	-	1010
HCM Lane V/C Ratio	0.007	-	-	-	0.045
HCM Control Delay (s)	7.3	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Timings

2023 Total Traffic (With PPRTA Improvements)

1: Eastonville Rd & Stapleton Dr

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	11	260	37	161	88	45	316	127	173
Future Volume (vph)	11	260	37	161	88	45	316	127	173
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	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
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	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	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 Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)		15.2		15.2	15.2	18.3	18.3	18.3	18.3
Actuated g/C Ratio		0.35		0.35	0.35	0.42	0.42	0.42	0.42
v/c Ratio		0.95		0.54	0.20	0.16	0.71	0.69	0.34
Control Delay		46.7		18.5	4.4	8.2	15.7	26.6	8.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		46.7		18.5	4.4	8.2	15.7	26.6	8.4
LOS		D		B	A	A	B	C	A
Approach Delay		46.7		14.2			14.8		15.3
Approach LOS		D		B			B		B

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 43.7	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Timings
6: US 24 & Stapleton Dr

2023 Total Traffic (With PPRTA Improvements)

AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	157	333	2	74	13	158	268	1	32	604	40
Future Volume (vph)	41	157	333	2	74	13	158	268	1	32	604	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	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)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	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	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	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	12.9	12.9	12.9	12.9	12.9	12.9	64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.24	0.66	0.71	0.02	0.29	0.05	0.38	0.25	0.00	0.04	0.45	0.03
Control Delay	36.3	47.7	12.9	32.0	36.1	3.3	7.3	4.8	0.0	4.0	6.3	1.4
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	36.3	47.7	12.9	32.0	36.1	3.3	7.3	4.8	0.0	4.0	6.3	1.4
LOS	D	D	B	C	D	A	A	A	A	A	A	A
Approach Delay		24.9			31.2			5.7			5.9	
Approach LOS		C			C			A			A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.9
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.1
 Intersection Capacity Utilization 69.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: US 24 & Stapleton Dr



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	11	260	123	37	161	88	45	316	17	127	173	36
Future Vol, veh/h	11	260	123	37	161	88	45	316	17	127	173	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	-	-	-	-	-	250	0	-	-	400	-	-
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	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	394	186	52	227	124	75	527	28	161	219	46

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1431	1269	242	1545	1278	541	265	0	0	555	0	0
Stage 1	564	564	-	691	691	-	-	-	-	-	-	-
Stage 2	867	705	-	854	587	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	~ 168	797	93	~ 166	541	1299	-	-	1015	-	-
Stage 1	510	508	-	435	446	-	-	-	-	-	-	-
Stage 2	348	439	-	353	497	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 133	797	-	~ 131	541	1299	-	-	1015	-	-
Mov Cap-2 Maneuver	-	~ 133	-	-	~ 131	-	-	-	-	-	-	-
Stage 1	480	427	-	410	420	-	-	-	-	-	-	-
Stage 2	116	414	-	~ 18	418	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.9	3.5
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	-	-	-	541	1015	-
HCM Lane V/C Ratio	0.058	-	-	-	-	-	0.229	0.158	-
HCM Control Delay (s)	7.9	-	-	-	-	-	13.6	9.2	-
HCM Lane LOS	A	-	-	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	-	-	0.9	0.6	-

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

Intersection						
Int Delay, s/veh	9.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	22	287	396	20	50	63
Future Vol, veh/h	22	287	396	20	50	63
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	92	92	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	388	582	22	54	94

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1240	54	148	0	-	0
Stage 1	54	-	-	-	-	-
Stage 2	1186	-	-	-	-	-
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	193	1013	1434	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	1013	1434	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	8.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1434	-	115	1013	-	-
HCM Lane V/C Ratio	0.406	-	0.259	0.383	-	-
HCM Control Delay (s)	9.2	-	46.9	10.7	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	2	-	1	1.8	-	-

Timings

2023 Total Traffic (With PPRTA Improvements)

1: Eastonville Rd & Stapleton Dr

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	11	260	37	161	88	45	316	127	173
Future Volume (vph)	11	260	37	161	88	45	316	127	173
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	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
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	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	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 Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)		15.2		15.2	15.2	18.3	18.3	18.3	18.3
Actuated g/C Ratio		0.35		0.35	0.35	0.42	0.42	0.42	0.42
v/c Ratio		0.95		0.54	0.20	0.16	0.71	0.69	0.34
Control Delay		46.7		18.5	4.4	8.2	15.7	26.6	8.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		46.7		18.5	4.4	8.2	15.7	26.6	8.4
LOS		D		B	A	A	B	C	A
Approach Delay		46.7		14.2			14.8		15.3
Approach LOS		D		B			B		B

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 43.7
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 24.0
 Intersection Capacity Utilization 67.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Timings
6: US 24 & Stapleton Dr

2023 Total Traffic (With PPRTA Improvements)

AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	157	333	2	74	13	158	268	1	32	604	40
Future Volume (vph)	41	157	333	2	74	13	158	268	1	32	604	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	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)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	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	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	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	12.9	12.9	12.9	12.9	12.9	12.9	64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.24	0.66	0.71	0.02	0.29	0.05	0.38	0.25	0.00	0.04	0.45	0.03
Control Delay	36.3	47.7	12.9	32.0	36.1	3.3	7.3	4.8	0.0	4.0	6.3	1.4
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	36.3	47.7	12.9	32.0	36.1	3.3	7.3	4.8	0.0	4.0	6.3	1.4
LOS	D	D	B	C	D	A	A	A	A	A	A	A
Approach Delay		24.9			31.2			5.7			5.9	
Approach LOS		C			C			A			A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.9
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.1
 Intersection Capacity Utilization 69.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: US 24 & Stapleton Dr



Intersection												
Int Delay, s/veh	209.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
Future Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
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	97	97	97	100	100	100	68	68	68	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	205	85	32	344	151	191	216	78	59	109	29

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1127	918	124	1024	893	255	138	0	0	294	0	0
Stage 1	242	242	-	637	637	-	-	-	-	-	-	-
Stage 2	885	676	-	387	256	-	-	-	-	-	-	-
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	182	272	927	214	~ 281	784	1446	-	-	1268	-	-
Stage 1	762	705	-	465	471	-	-	-	-	-	-	-
Stage 2	340	453	-	637	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	217	927	~ 27	~ 224	784	1446	-	-	1268	-	-
Mov Cap-2 Maneuver	-	217	-	~ 27	~ 224	-	-	-	-	-	-	-
Stage 1	640	669	-	391	396	-	-	-	-	-	-	-
Stage 2	~ 30	381	-	381	661	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 606.9	3.1	2.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1446	-	-	-	138	784	1268
HCM Lane V/C Ratio	0.132	-	-	-	2.725	0.193	0.047
HCM Control Delay (s)	7.9	0	-	-	\$ 846.4	10.7	8
HCM Lane LOS	A	A	-	-	F	B	A
HCM 95th %tile Q(veh)	0.5	-	-	-	33.9	0.7	0.1

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

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	156	263	70	40	28
Future Vol, veh/h	37	156	263	70	40	28
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	60	252	280	74	47	33

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	698	64	80	0	0
Stage 1	64	-	-	-	-
Stage 2	634	-	-	-	-
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	407	1000	1518	-	-
Stage 1	959	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	329	1000	1518	-	-
Mov Cap-2 Maneuver	329	-	-	-	-
Stage 1	775	-	-	-	-
Stage 2	529	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	6.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1518	-	329	1000	-	-
HCM Lane V/C Ratio	0.184	-	0.181	0.252	-	-
HCM Control Delay (s)	7.9	0	18.4	9.8	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.7	1	-	-

Intersection

Int Delay, s/veh 2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↘
Traffic Vol, veh/h	28	4	28	49	4	24
Future Vol, veh/h	28	4	28	49	4	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	0	115	-	180	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	94	92	92	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	4	30	53	4	28

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	66	30	0	0	83
Stage 1	30	-	-	-	-
Stage 2	36	-	-	-	-
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	939	1044	-	-	1514
Stage 1	993	-	-	-	-
Stage 2	986	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	936	1044	-	-	1514
Mov Cap-2 Maneuver	936	-	-	-	-
Stage 1	990	-	-	-	-
Stage 2	986	-	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	8.9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt

	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	936	1044	1514	-
HCM Lane V/C Ratio	-	-	0.033	0.004	0.003	-
HCM Control Delay (s)	-	-	9	8.5	7.4	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection

Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Vol, veh/h	20	127	191	4	179	31	372	586	21	10	361	99
Future Vol, veh/h	20	127	191	4	179	31	372	586	21	10	361	99
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	100	100	100	100	100	100	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	127	191	4	179	31	400	630	23	12	425	116

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1996	1902	425	2096	1995	630	541	0	0	653	0	0
Stage 1	449	449	-	1430	1430	-	-	-	-	-	-	-
Stage 2	1547	1453	-	666	565	-	-	-	-	-	-	-
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	45	~ 69	629	38	~ 60	482	1028	-	-	934	-	-
Stage 1	589	572	-	167	200	-	-	-	-	-	-	-
Stage 2	143	195	-	449	508	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 42	629	-	~ 36	482	1028	-	-	934	-	-
Mov Cap-2 Maneuver	-	~ 42	-	-	~ 36	-	-	-	-	-	-	-
Stage 1	360	565	-	102	~ 122	-	-	-	-	-	-	-
Stage 2	-	~ 119	-	239	501	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s					4.1		0.2	
HCM LOS	-		-					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1028	-	-	-	42	629	-	36	482	934	-	-
HCM Lane V/C Ratio	0.389	-	-	-	3.024	0.304	-	4.972	0.064	0.013	-	-
HCM Control Delay (s)	10.7	-	-	-	\$ 1115.3	13.2	-	-\$ 2010	13	8.9	-	-
HCM Lane LOS	B	-	-	-	F	B	-	F	B	A	-	-
HCM 95th %tile Q(veh)	1.9	-	-	-	14	1.3	-	21.1	0.2	0	-	-

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

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	9	41	66	567	426	11
Future Vol, veh/h	9	41	66	567	426	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	93	85	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	45	72	610	501	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1255	-	513	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	754	-	-	-	-	-
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	189	0	1052	-	-	-
Stage 1	609	0	-	-	-	-
Stage 2	465	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	-	1052	-	-	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	465	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.7	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1052	-	176	-	-	-
HCM Lane V/C Ratio	0.068	-	0.056	-	-	-
HCM Control Delay (s)	8.7	-	26.7	0	-	-
HCM Lane LOS	A	-	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	-

HCM 6th TWSC
 29: 4 Way Ranch East Access & E/W Collector

2023 Total Traffic
 PM Peak Hour

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	11	16	2	3	24	50	1	0	2	32	0	5
Future Vol, veh/h	11	16	2	3	24	50	1	0	2	32	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	-	-	-	-	-	115	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	17	2	3	26	54	1	0	2	35	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	19	0	0	104	128	18	75	75	26
Stage 1	-	-	-	-	-	-	42	42	-	32	32	-
Stage 2	-	-	-	-	-	-	62	86	-	43	43	-
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	1518	-	-	1597	-	-	876	763	1061	915	815	1050
Stage 1	-	-	-	-	-	-	972	860	-	984	868	-
Stage 2	-	-	-	-	-	-	949	824	-	971	859	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1518	-	-	1597	-	-	865	755	1061	906	807	1050
Mov Cap-2 Maneuver	-	-	-	-	-	-	865	755	-	906	807	-
Stage 1	-	-	-	-	-	-	964	853	-	976	866	-
Stage 2	-	-	-	-	-	-	942	822	-	961	852	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.8			0.3			8.7			9.1		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	986	1518	-	-	1597	-	-	923
HCM Lane V/C Ratio	0.003	0.008	-	-	0.002	-	-	0.044
HCM Control Delay (s)	8.7	7.4	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection

Int Delay, s/veh 4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	20	14	16	9	18
Future Vol, veh/h	33	20	14	16	9	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	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	36	22	15	17	10	20

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	32	0	118
Stage 1	-	-	24
Stage 2	-	-	94
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1580	-	1052
Stage 1	-	-	999
Stage 2	-	-	930
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1580	-	1052
Mov Cap-2 Maneuver	-	-	858
Stage 1	-	-	976
Stage 2	-	-	930

Approach

	EB	WB	SB
HCM Control Delay, s	4.6	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1580	-	-	-	978
HCM Lane V/C Ratio	0.023	-	-	-	0.03
HCM Control Delay (s)	7.3	-	-	-	8.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	25.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
Future Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
Peak Hour Factor	0.97	0.97	0.97	1.00	1.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	205	85	32	344	151	191	216	78	59	109	29
Number of Lanes	0	1	0	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	29.8	30.4	21.5	15
HCM LOS	D	D	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	11%	9%	0%	100%	0%
Vol Thru, %	0%	73%	63%	91%	0%	0%	79%
Vol Right, %	0%	27%	26%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	200	315	376	151	59	138
LT Vol	130	0	34	32	0	59	0
Through Vol	0	147	199	344	0	0	109
RT Vol	0	53	82	0	151	0	29
Lane Flow Rate	191	294	325	376	151	59	138
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.452	0.638	0.728	0.817	0.296	0.153	0.332
Departure Headway (Hd)	8.635	7.924	8.071	7.936	7.171	9.329	8.654
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	459	451	459	504	386	417
Service Time	6.335	5.624	6.071	5.636	4.871	7.046	6.371
HCM Lane V/C Ratio	0.454	0.641	0.721	0.819	0.3	0.153	0.331
HCM Control Delay	18.3	23.6	29.8	37.4	12.9	13.7	15.6
HCM Lane LOS	C	C	D	E	B	B	C
HCM 95th-tile Q	2.3	4.4	5.8	7.7	1.2	0.5	1.4

Intersection												
Int Delay, s/veh	168.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
Future Vol, veh/h	34	199	82	32	344	151	130	147	53	59	109	29
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	97	97	97	100	100	100	68	68	68	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	205	85	32	344	151	191	216	78	59	109	29

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1127	918	124	1024	893	255	138	0	0	294	0	0
Stage 1	242	242	-	637	637	-	-	-	-	-	-	-
Stage 2	885	676	-	387	256	-	-	-	-	-	-	-
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	182	272	927	214	~ 281	784	1446	-	-	1268	-	-
Stage 1	762	705	-	465	471	-	-	-	-	-	-	-
Stage 2	340	453	-	637	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	225	927	36	~ 232	784	1446	-	-	1268	-	-
Mov Cap-2 Maneuver	-	225	-	36	~ 232	-	-	-	-	-	-	-
Stage 1	661	672	-	404	409	-	-	-	-	-	-	-
Stage 2	38	393	-	383	663	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 487.4	3.1	2.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1446	-	-	-	159	784	1268	-	-
HCM Lane V/C Ratio	0.132	-	-	-	2.365	0.193	0.047	-	-
HCM Control Delay (s)	7.9	-	-	-	\$ 678.8	10.7	8	-	-
HCM Lane LOS	A	-	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	31.6	0.7	0.1	-	-

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

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	37	156	263	70	40	28
Future Vol, veh/h	37	156	263	70	40	28
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	60	252	280	74	47	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	681	47	80	0	-	0
Stage 1	47	-	-	-	-	-
Stage 2	634	-	-	-	-	-
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	416	1022	1518	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	339	1022	1518	-	-	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	6.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1518	-	339	1022	-	-
HCM Lane V/C Ratio	0.184	-	0.176	0.246	-	-
HCM Control Delay (s)	7.9	-	17.9	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.6	1	-	-

Timings
1: Eastonville Rd & Stapleton Dr

2023 Total Traffic
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	34	199	32	344	151	130	147	59	109
Future Volume (vph)	34	199	32	344	151	130	147	59	109
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	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
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	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	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 Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)		15.1		15.1	15.1	11.0	11.0	11.0	11.0
Actuated g/C Ratio		0.42		0.42	0.42	0.30	0.30	0.30	0.30
v/c Ratio		0.46		0.51	0.20	0.50	0.51	0.18	0.24
Control Delay		10.8		11.8	3.0	15.2	11.5	10.2	8.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		10.8		11.8	3.0	15.2	11.5	10.2	8.6
LOS		B		B	A	B	B	B	A
Approach Delay		10.8		9.3			12.9		9.0
Approach LOS		B		A			B		A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 36.2
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 10.7
 Intersection Capacity Utilization 69.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Timings
6: US 24 & Stapleton Dr

2023 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	127	191	4	179	31	372	586	21	10	361	99
Future Volume (vph)	20	127	191	4	179	31	372	586	21	10	361	99
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	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)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	70.0	70.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	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	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	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	64.0	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.16	0.47	0.49	0.02	0.67	0.12	0.58	0.46	0.02	0.02	0.31	0.10
Control Delay	35.5	40.4	9.9	32.0	48.1	11.0	10.3	6.5	1.6	4.0	5.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	40.4	9.9	32.0	48.1	11.0	10.3	6.5	1.6	4.0	5.1	1.0
LOS	D	D	A	C	D	B	B	A	A	A	A	A
Approach Delay		22.9			42.4			7.8			4.2	
Approach LOS		C			D			A			A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.7
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 12.7
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: US 24 & Stapleton Dr



Timings
1: Eastonville Rd & Stapleton Dr

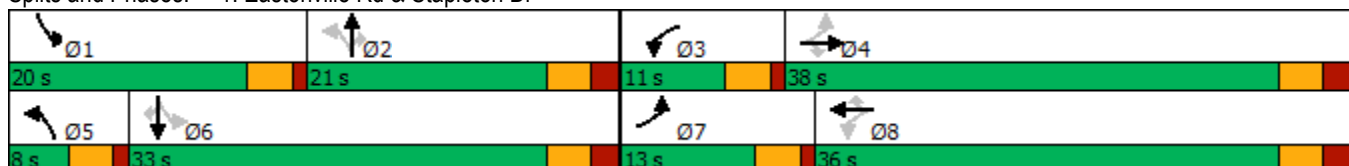
2040 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	990	224	143	832	121	108	137	177	205	277	189
Future Volume (vph)	128	990	224	143	832	121	108	137	177	205	277	189
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	9.0	9.0	8.0	9.0	9.0
Total Split (s)	13.0	38.0	38.0	11.0	36.0	36.0	8.0	21.0	21.0	20.0	33.0	33.0
Total Split (%)	14.4%	42.2%	42.2%	12.2%	40.0%	40.0%	8.9%	23.3%	23.3%	22.2%	36.7%	36.7%
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	Max	Max	None	Max	Max
Act Effct Green (s)	39.5	30.3	30.3	37.1	29.0	29.0	23.0	18.0	18.0	35.4	28.2	28.2
Actuated g/C Ratio	0.46	0.35	0.35	0.43	0.34	0.34	0.27	0.21	0.21	0.41	0.33	0.33
v/c Ratio	0.49	0.83	0.33	0.64	0.73	0.20	0.35	0.37	0.39	0.42	0.48	0.30
Control Delay	18.8	32.6	4.2	27.8	29.5	2.2	23.4	34.2	7.9	20.3	27.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	32.6	4.2	27.8	29.5	2.2	23.4	34.2	7.9	20.3	27.5	5.0
LOS	B	C	A	C	C	A	C	C	A	C	C	A
Approach Delay		26.5			26.3			20.4			19.0	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 85.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.3
 Intersection LOS: C
 Intersection Capacity Utilization 70.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	43	206	123	262	465	48
Future Vol, veh/h	43	206	123	262	465	48
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	217	129	276	489	51

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1023	489	540	0	-	0
Stage 1	489	-	-	-	-	-
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	261	579	1028	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	579	1028	-	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	588	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1028	-	228	579	-	-
HCM Lane V/C Ratio	0.126	-	0.199	0.375	-	-
HCM Control Delay (s)	9	-	24.7	14.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	1.7	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	16	19	264	22	62	403
Future Vol, veh/h	16	19	264	22	62	403
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	115	-	180	180	-
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	17	20	278	23	65	424

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	832	278	0	0	301	0
Stage 1	278	-	-	-	-	-
Stage 2	554	-	-	-	-	-
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	339	761	-	-	1260	-
Stage 1	769	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	321	761	-	-	1260	-
Mov Cap-2 Maneuver	321	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	321	761	1260	-
HCM Lane V/C Ratio	-	-	0.052	0.026	0.052	-
HCM Control Delay (s)	-	-	16.8	9.9	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.2	-

Timings
6: US 24 & Stapleton Dr

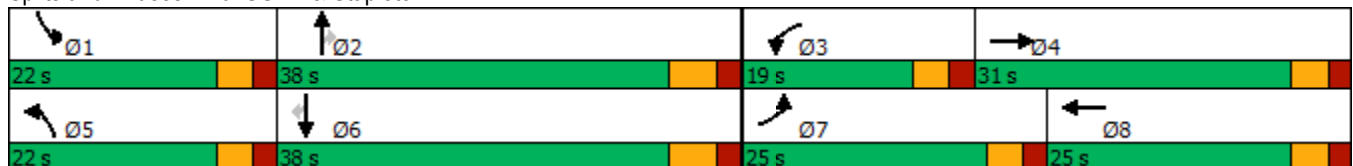
2040 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	488	687	200	485	124	323	330	175	222	768	280
Future Volume (vph)	454	488	687	200	485	124	323	330	175	222	768	280
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Detector Phase	7	4		3	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
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	11.0	11.0	10.0	11.0	11.0
Total Split (s)	25.0	31.0		19.0	25.0		22.0	38.0	38.0	22.0	38.0	38.0
Total Split (%)	22.7%	28.2%		17.3%	22.7%		20.0%	34.5%	34.5%	20.0%	34.5%	34.5%
Yellow Time (s)	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
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	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	18.3	25.3	104.8	11.5	18.5	104.8	14.8	34.5	34.5	12.5	32.1	32.1
Actuated g/C Ratio	0.17	0.24	1.00	0.11	0.18	1.00	0.14	0.33	0.33	0.12	0.31	0.31
v/c Ratio	0.80	0.60	0.46	0.56	0.82	0.08	0.70	0.30	0.29	0.57	0.72	0.43
Control Delay	53.0	39.2	1.0	50.9	53.8	0.1	51.7	28.2	5.5	50.0	37.9	5.6
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	53.0	39.2	1.0	50.9	53.8	0.1	51.7	28.2	5.5	50.0	37.9	5.6
LOS	D	D	A	D	D	A	D	C	A	D	D	A
Approach Delay		26.9			44.8			32.6			32.8	
Approach LOS		C			D			C			C	

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 104.8
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 32.8
 Intersection LOS: C
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: US 24 & Stapleton Dr



Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	45	72	23	884	1195	23
Future Vol, veh/h	45	72	23	884	1195	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
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	47	76	24	931	1258	24

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	2237	-	1282	0	0
Stage 1	1258	-	-	-	-
Stage 2	979	-	-	-	-
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	~ 47	0	541	-	-
Stage 1	268	0	-	-	-
Stage 2	364	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 45	-	541	-	-
Mov Cap-2 Maneuver	~ 45	-	-	-	-
Stage 1	256	-	-	-	-
Stage 2	364	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	291.9	0.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	541	-	45	-	-	-
HCM Lane V/C Ratio	0.045	-	1.053	-	-	-
HCM Control Delay (s)	12	-	291.9	0	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	4.4	-	-	-

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

Intersection

Int Delay, s/veh 2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	84	0	11	35	0	33
Future Vol, veh/h	84	0	11	35	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	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	88	0	12	37	0	35

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	88	0	149 88
Stage 1	-	-	-	-	88 -
Stage 2	-	-	-	-	61 -
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	-	-	1508	-	843 970
Stage 1	-	-	-	-	935 -
Stage 2	-	-	-	-	962 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1508	-	836 970
Mov Cap-2 Maneuver	-	-	-	-	836 -
Stage 1	-	-	-	-	928 -
Stage 2	-	-	-	-	962 -

Approach

	EB	WB	NB
HCM Control Delay, s	0	1.8	8.8
HCM LOS			A

Minor Lane/Major Mvmt

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	970	-	-	1508	-
HCM Lane V/C Ratio	0.036	-	-	0.008	-
HCM Control Delay (s)	8.8	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Timings
1: Eastonville Rd & Stapleton Dr

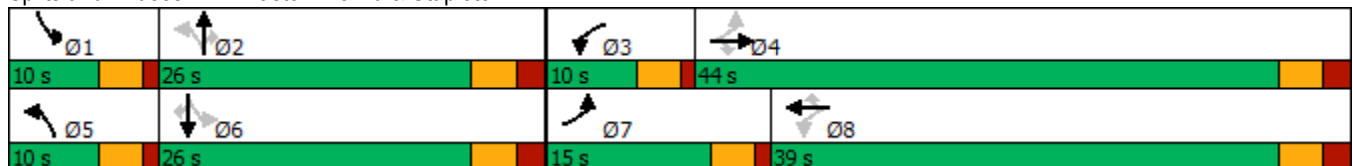
2040 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	248	904	160	173	1249	241	251	297	158	142	196	132
Future Volume (vph)	248	904	160	173	1249	241	251	297	158	142	196	132
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	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)	15.0	44.0	44.0	10.0	39.0	39.0	10.0	26.0	26.0	10.0	26.0	26.0
Total Split (%)	16.7%	48.9%	48.9%	11.1%	43.3%	43.3%	11.1%	28.9%	28.9%	11.1%	28.9%	28.9%
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 Effct Green (s)	50.1	39.1	39.1	41.1	34.1	34.1	25.5	18.5	18.5	25.5	18.5	18.5
Actuated g/C Ratio	0.57	0.45	0.45	0.47	0.39	0.39	0.29	0.21	0.21	0.29	0.21	0.21
v/c Ratio	0.84	0.60	0.21	0.63	0.96	0.33	0.81	0.80	0.36	0.63	0.53	0.30
Control Delay	43.8	20.8	3.3	22.3	43.5	4.8	46.0	48.8	6.8	35.1	35.7	4.5
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	43.8	20.8	3.3	22.3	43.5	4.8	46.0	48.8	6.8	35.1	35.7	4.5
LOS	D	C	A	C	D	A	D	D	A	D	D	A
Approach Delay		23.0			35.7			38.4			26.8	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 87.6
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 31.1
 Intersection LOS: C
 Intersection Capacity Utilization 87.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	44	132	235	551	339	39
Future Vol, veh/h	44	132	235	551	339	39
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	139	247	580	357	41

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1431	357	398	0	-	0
Stage 1	357	-	-	-	-	-
Stage 2	1074	-	-	-	-	-
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	148	687	1161	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	687	1161	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	328	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.5	2.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1161	-	116	687	-	-
HCM Lane V/C Ratio	0.213	-	0.399	0.202	-	-
HCM Control Delay (s)	8.9	-	55.3	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	1.7	0.8	-	-

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	18	73	486	14	41	330
Future Vol, veh/h	18	73	486	14	41	330
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	115	-	180	180	-
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	19	77	512	15	43	347

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	945	512	0	0	527	0
Stage 1	512	-	-	-	-	-
Stage 2	433	-	-	-	-	-
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	291	562	-	-	1040	-
Stage 1	602	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	279	562	-	-	1040	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	279	562	1040	-
HCM Lane V/C Ratio	-	-	0.068	0.137	0.041	-
HCM Control Delay (s)	-	-	18.8	12.4	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.5	0.1	-

Timings
6: US 24 & Stapleton Dr

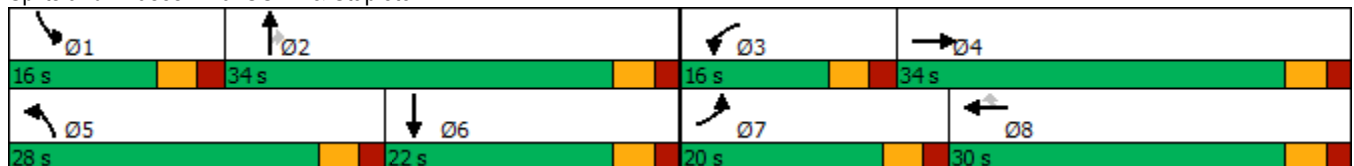
2040 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	553	371	200	778	122	694	722	175	223	461	465
Future Volume (vph)	362	553	371	200	778	122	694	722	175	223	461	465
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	28.0	34.0	34.0	16.0	22.0	
Total Split (%)	20.0%	34.0%		16.0%	30.0%	30.0%	28.0%	34.0%	34.0%	16.0%	22.0%	
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 Effct Green (s)	14.2	28.7	98.4	10.2	24.6	24.6	22.4	29.1	29.1	10.4	17.1	98.4
Actuated g/C Ratio	0.14	0.29	1.00	0.10	0.25	0.25	0.23	0.30	0.30	0.11	0.17	1.00
v/c Ratio	0.77	0.57	0.25	0.59	0.92	0.24	0.91	0.70	0.31	0.65	0.76	0.31
Control Delay	51.9	32.3	0.4	49.7	53.7	2.4	54.2	35.5	5.7	51.4	48.3	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	51.9	32.3	0.4	49.7	53.7	2.4	54.2	35.5	5.7	51.4	48.3	0.5
LOS	D	C	A	D	D	A	D	D	A	D	D	A
Approach Delay		28.6			47.3			40.3			29.3	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 98.4
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 36.4
 Intersection LOS: D
 Intersection Capacity Utilization 81.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: US 24 & Stapleton Dr



Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	30	47	83	1119	1100	45
Future Vol, veh/h	30	47	83	1119	1100	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
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	32	49	87	1178	1158	47

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	2510	-	1205	0	-
Stage 1	1158	-	-	-	-
Stage 2	1352	-	-	-	-
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	~ 31	0	579	-	-
Stage 1	299	0	-	-	-
Stage 2	241	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 26	-	579	-	-
Mov Cap-2 Maneuver	~ 26	-	-	-	-
Stage 1	254	-	-	-	-
Stage 2	241	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	\$ 471	0.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	579	-	26	-	-	-
HCM Lane V/C Ratio	0.151	-	1.215	-	-	-
HCM Control Delay (s)	12.3	-	\$ 471	0	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	0.5	-	3.8	-	-	-

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

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	55	0	37	91	0	22
Future Vol, veh/h	55	0	37	91	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	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	58	0	39	96	0	23

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	58	0	232 58
Stage 1	-	-	-	-	58 -
Stage 2	-	-	-	-	174 -
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	-	-	1546	-	756 1008
Stage 1	-	-	-	-	965 -
Stage 2	-	-	-	-	856 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1546	-	737 1008
Mov Cap-2 Maneuver	-	-	-	-	737 -
Stage 1	-	-	-	-	941 -
Stage 2	-	-	-	-	856 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1008	-	-	1546	-
HCM Lane V/C Ratio	0.023	-	-	0.025	-
HCM Control Delay (s)	8.7	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Timings
1: Eastonville Rd & Stapleton Dr

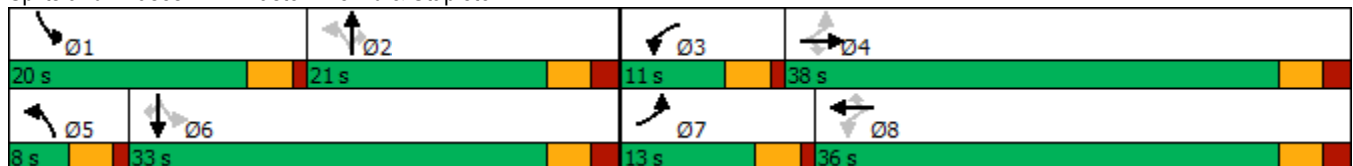
2040 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	990	224	143	836	121	108	142	177	206	293	199
Future Volume (vph)	133	990	224	143	836	121	108	142	177	206	293	199
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	9.0	9.0	8.0	9.0	9.0	8.0	9.0	9.0	8.0	9.0	9.0
Total Split (s)	13.0	38.0	38.0	11.0	36.0	36.0	8.0	21.0	21.0	20.0	33.0	33.0
Total Split (%)	14.4%	42.2%	42.2%	12.2%	40.0%	40.0%	8.9%	23.3%	23.3%	22.2%	36.7%	36.7%
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	Max	Max	None	Max	Max
Act Effct Green (s)	39.6	30.3	30.3	37.0	29.0	29.0	23.0	18.0	18.0	35.4	28.2	28.2
Actuated g/C Ratio	0.46	0.35	0.35	0.43	0.34	0.34	0.27	0.21	0.21	0.41	0.33	0.33
v/c Ratio	0.51	0.83	0.33	0.64	0.74	0.20	0.36	0.38	0.39	0.42	0.50	0.32
Control Delay	19.3	32.6	4.2	27.9	29.7	2.2	23.5	34.4	7.9	20.4	28.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	32.6	4.2	27.9	29.7	2.2	23.5	34.4	7.9	20.4	28.1	4.9
LOS	B	C	A	C	C	A	C	C	A	C	C	A
Approach Delay		26.6			26.4			20.7			19.2	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 85.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.4
 Intersection LOS: C
 Intersection Capacity Utilization 71.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	45	206	123	273	493	54
Future Vol, veh/h	45	206	123	273	493	54
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	217	129	287	519	57

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1064	519	576	0	-	0
Stage 1	519	-	-	-	-	-
Stage 2	545	-	-	-	-	-
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	247	557	997	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	215	557	997	-	-	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	997	-	215	557	-	-
HCM Lane V/C Ratio	0.13	-	0.22	0.389	-	-
HCM Control Delay (s)	9.1	-	26.4	15.5	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.8	1.8	-	-

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	50	22	264	35	63	403
Future Vol, veh/h	50	22	264	35	63	403
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	115	-	180	180	-
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	53	23	278	37	66	424

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	834	278	0	0	315
Stage 1	278	-	-	-	-
Stage 2	556	-	-	-	-
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	338	761	-	-	1245
Stage 1	769	-	-	-	-
Stage 2	574	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	320	761	-	-	1245
Mov Cap-2 Maneuver	320	-	-	-	-
Stage 1	728	-	-	-	-
Stage 2	574	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	320	761	1245	-
HCM Lane V/C Ratio	-	-	0.164	0.03	0.053	-
HCM Control Delay (s)	-	-	18.5	9.9	8.1	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.2	-

Intersection

Int Delay, s/veh 4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑↑	↑↑	↗
Traffic Vol, veh/h	49	133	42	884	1195	24
Future Vol, veh/h	49	133	42	884	1195	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
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	52	140	44	931	1258	25

Major/Minor

	Minor2	Major1	Major2		
Conflicting Flow All	1812	-	1283	0	0
Stage 1	1258	-	-	-	-
Stage 2	554	-	-	-	-
Critical Hdwy	6.84	-	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	-	2.22	-	-
Pot Cap-1 Maneuver	70	0	537	-	-
Stage 1	231	0	-	-	-
Stage 2	539	0	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	64	-	537	-	-
Mov Cap-2 Maneuver	64	-	-	-	-
Stage 1	212	-	-	-	-
Stage 2	539	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	166.9	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt

	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	537	-	64	-	-	-
HCM Lane V/C Ratio	0.082	-	0.806	-	-	-
HCM Control Delay (s)	12.3	-	166.9	0	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	3.7	-	-	-

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	102	0	11	48	0	33
Future Vol, veh/h	102	0	11	48	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	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	107	0	12	51	0	35

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	107	0	182
Stage 1	-	-	-	-	107
Stage 2	-	-	-	-	75
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1484	-	807
Stage 1	-	-	-	-	917
Stage 2	-	-	-	-	948
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1484	-	801
Mov Cap-2 Maneuver	-	-	-	-	801
Stage 1	-	-	-	-	910
Stage 2	-	-	-	-	948

Approach

	EB	WB	NB
HCM Control Delay, s	0	1.4	8.9
HCM LOS			A

Minor Lane/Major Mvmt

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	947	-	-	1484	-
HCM Lane V/C Ratio	0.037	-	-	0.008	-
HCM Control Delay (s)	8.9	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
29: 4 Way Ranch East Access & E/W Collector

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	3	131	0	1	51	15	1	0	3	48	0	7
Future Vol, veh/h	3	131	0	1	51	15	1	0	3	48	0	7
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	-	-	-	-	-	115	-	-	-	-	-	-
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	3	138	0	1	54	16	1	0	3	51	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	70	0	0	138	0	0	212	216	138	202	200	54
Stage 1	-	-	-	-	-	-	144	144	-	56	56	-
Stage 2	-	-	-	-	-	-	68	72	-	146	144	-
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	1531	-	-	1446	-	-	745	682	910	756	696	1013
Stage 1	-	-	-	-	-	-	859	778	-	956	848	-
Stage 2	-	-	-	-	-	-	942	835	-	857	778	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1446	-	-	738	680	910	751	694	1013
Mov Cap-2 Maneuver	-	-	-	-	-	-	738	680	-	751	694	-
Stage 1	-	-	-	-	-	-	857	776	-	954	847	-
Stage 2	-	-	-	-	-	-	934	834	-	852	776	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			9.2			10		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	860	1531	-	-	1446	-	-	777
HCM Lane V/C Ratio	0.005	0.002	-	-	0.001	-	-	0.075
HCM Control Delay (s)	9.2	7.4	0	-	7.5	0	-	10
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection

Int Delay, s/veh 2.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	10	88	43	5	14	28
Future Vol, veh/h	10	88	43	5	14	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	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	11	93	45	5	15	29

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	50	0	-	0	163	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	115	-
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	1557	-	-	-	828	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1557	-	-	-	822	1021
Mov Cap-2 Maneuver	-	-	-	-	822	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	910	-

Approach EB WB SB

HCM Control Delay, s	0.7	0	9
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1557	-	-	-	945
HCM Lane V/C Ratio	0.007	-	-	-	0.047
HCM Control Delay (s)	7.3	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Timings
1: Eastonville Rd & Stapleton Dr

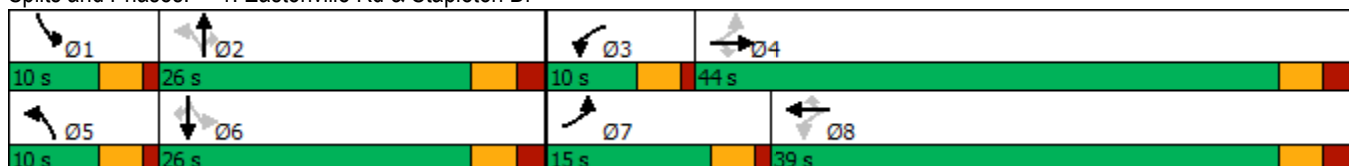
2040 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	904	160	173	1252	242	251	315	158	143	207	139
Future Volume (vph)	264	904	160	173	1252	242	251	315	158	143	207	139
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	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)	15.0	44.0	44.0	10.0	39.0	39.0	10.0	26.0	26.0	10.0	26.0	26.0
Total Split (%)	16.7%	48.9%	48.9%	11.1%	43.3%	43.3%	11.1%	28.9%	28.9%	11.1%	28.9%	28.9%
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 Effct Green (s)	50.0	39.0	39.0	41.0	34.0	34.0	26.0	19.0	19.0	26.0	19.0	19.0
Actuated g/C Ratio	0.57	0.44	0.44	0.47	0.39	0.39	0.30	0.22	0.22	0.30	0.22	0.22
v/c Ratio	0.90	0.61	0.21	0.64	0.96	0.34	0.82	0.83	0.35	0.67	0.54	0.31
Control Delay	53.5	21.1	3.3	22.8	45.1	4.8	47.9	51.4	6.8	38.2	36.1	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	53.5	21.1	3.3	22.8	45.1	4.8	47.9	51.4	6.8	38.2	36.1	5.1
LOS	D	C	A	C	D	A	D	D	A	D	D	A
Approach Delay		25.4			36.9			40.5			28.0	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 88
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 32.8
 Intersection LOS: C
 Intersection Capacity Utilization 89.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Stapleton Dr



Intersection

Int Delay, s/veh 5.1

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	51	132	235	587	357	43
Future Vol, veh/h	51	132	235	587	357	43
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	139	247	618	376	45

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1488	376	421	0	-	0
Stage 1	376	-	-	-	-	-
Stage 2	1112	-	-	-	-	-
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	137	670	1138	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	107	670	1138	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	315	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s 27.6 2.6 0
HCM LOS D

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1138	-	107	670	-	-
HCM Lane V/C Ratio	0.217	-	0.502	0.207	-	-
HCM Control Delay (s)	9	-	68.5	11.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.3	0.8	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	40	75	486	57	44	330
Future Vol, veh/h	40	75	486	57	44	330
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	115	-	180	180	-
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	42	79	512	60	46	347

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	951	512	0	0	572	0
Stage 1	512	-	-	-	-	-
Stage 2	439	-	-	-	-	-
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	288	562	-	-	1001	-
Stage 1	602	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	275	562	-	-	1001	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	275	562	1001	-
HCM Lane V/C Ratio	-	-	0.153	0.14	0.046	-
HCM Control Delay (s)	-	-	20.4	12.5	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.5	0.1	-

Timings
6: US 24 & Stapleton Dr

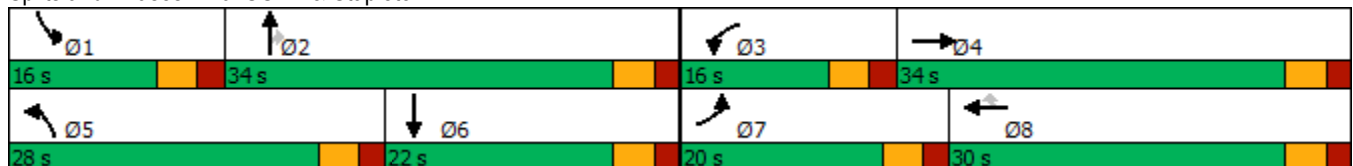
2040 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	554	371	200	779	126	694	783	175	225	497	468
Future Volume (vph)	362	554	371	200	779	126	694	783	175	225	497	468
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	28.0	34.0	34.0	16.0	22.0	
Total Split (%)	20.0%	34.0%		16.0%	30.0%	30.0%	28.0%	34.0%	34.0%	16.0%	22.0%	
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 Effct Green (s)	14.2	28.7	98.4	10.2	24.6	24.6	22.4	29.1	29.1	10.5	17.2	98.4
Actuated g/C Ratio	0.14	0.29	1.00	0.10	0.25	0.25	0.23	0.30	0.30	0.11	0.17	1.00
v/c Ratio	0.77	0.57	0.25	0.59	0.93	0.25	0.91	0.76	0.31	0.65	0.82	0.31
Control Delay	51.9	32.4	0.4	49.7	53.9	2.7	54.2	37.6	5.7	51.5	52.0	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	51.9	32.4	0.4	49.7	53.9	2.7	54.2	37.6	5.7	51.5	52.0	0.5
LOS	D	C	A	D	D	A	D	D	A	D	D	A
Approach Delay		28.6			47.3			41.1			31.4	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 98.4
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 37.1
 Intersection Capacity Utilization 82.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 6: US 24 & Stapleton Dr



Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↑↑	↑↑	↗
Traffic Vol, veh/h	33	87	147	1119	1100	50
Future Vol, veh/h	33	87	147	1119	1100	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	205	0	800	-	-	800
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	35	92	155	1178	1158	53

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2057	- 1211	0 - 0
Stage 1	1158	- -	- - -
Stage 2	899	- -	- - -
Critical Hdwy	6.84	- 4.14	- - -
Critical Hdwy Stg 1	5.84	- -	- - -
Critical Hdwy Stg 2	5.84	- -	- - -
Follow-up Hdwy	3.52	- 2.22	- - -
Pot Cap-1 Maneuver	48	0 572	- - -
Stage 1	261	0 -	- - -
Stage 2	358	0 -	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	35	- 572	- - -
Mov Cap-2 Maneuver	35	- -	- - -
Stage 1	190	- -	- - -
Stage 2	358	- -	- - -

Approach	EB	NB	SB
HCM Control Delay, s	320.5	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	572	-	35	-	-	-
HCM Lane V/C Ratio	0.271	-	0.992	-	-	-
HCM Control Delay (s)	13.6	-	320.5	0	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	1.1	-	3.6	-	-	-

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

Intersection

Int Delay, s/veh 1.9

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	77	0	37	112	0	22
Future Vol, veh/h	77	0	37	112	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	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	81	0	39	118	0	23

Major/Minor Major1 Major2 Minor1

Conflicting Flow All	0	0	81	0	277	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	196	-
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	-	-	1517	-	713	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1517	-	694	979
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	837	-

Approach EB WB NB

HCM Control Delay, s	0	1.8	8.8
HCM LOS			A

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	979	-	-	1517	-
HCM Lane V/C Ratio	0.024	-	-	0.026	-
HCM Control Delay (s)	8.8	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM 6th TWSC
 29: 4 Way Ranch East Access & E/W Collector

2040 Total Traffic
 PM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	11	86	2	3	144	50	1	0	2	32	0	5
Future Vol, veh/h	11	86	2	3	144	50	1	0	2	32	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	-	-	-	-	-	115	-	-	-	-	-	-
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	12	91	2	3	152	53	1	0	2	34	0	5

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	205	0	0	93	0	0	303	327	92	275	275	152
Stage 1	-	-	-	-	-	-	116	116	-	158	158	-
Stage 2	-	-	-	-	-	-	187	211	-	117	117	-
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	1366	-	-	1501	-	-	649	591	965	677	632	894
Stage 1	-	-	-	-	-	-	889	800	-	844	767	-
Stage 2	-	-	-	-	-	-	815	728	-	888	799	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1366	-	-	1501	-	-	640	584	965	670	625	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	584	-	670	625	-
Stage 1	-	-	-	-	-	-	881	793	-	836	765	-
Stage 2	-	-	-	-	-	-	809	727	-	878	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	9.4	10.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	825	1366	-	-	1501	-	-	693
HCM Lane V/C Ratio	0.004	0.008	-	-	0.002	-	-	0.056
HCM Control Delay (s)	9.4	7.7	0	-	7.4	0	-	10.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	68	97	16	9	18
Future Vol, veh/h	33	68	97	16	9	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	-	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	35	72	102	17	9	19

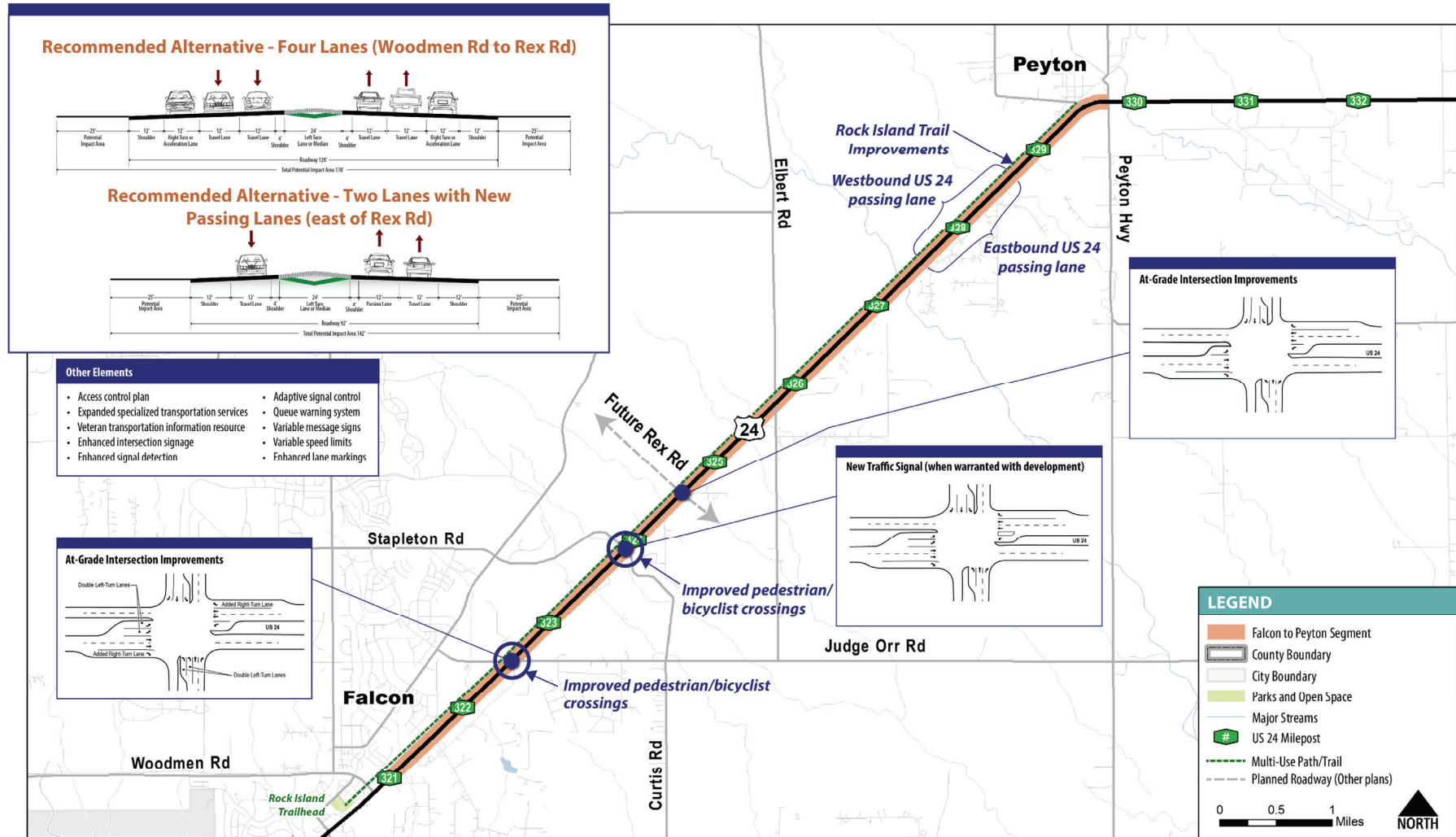
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	119	0	253
Stage 1	-	-	111
Stage 2	-	-	142
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1469	-	942
Stage 1	-	-	914
Stage 2	-	-	885
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1469	-	942
Mov Cap-2 Maneuver	-	-	718
Stage 1	-	-	892
Stage 2	-	-	885

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1469	-	-	-	853
HCM Lane V/C Ratio	0.024	-	-	-	0.033
HCM Control Delay (s)	7.5	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

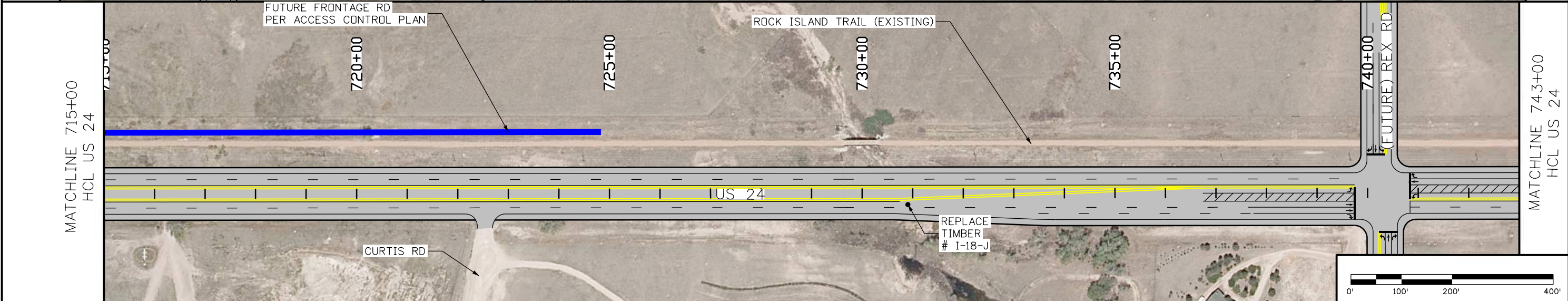
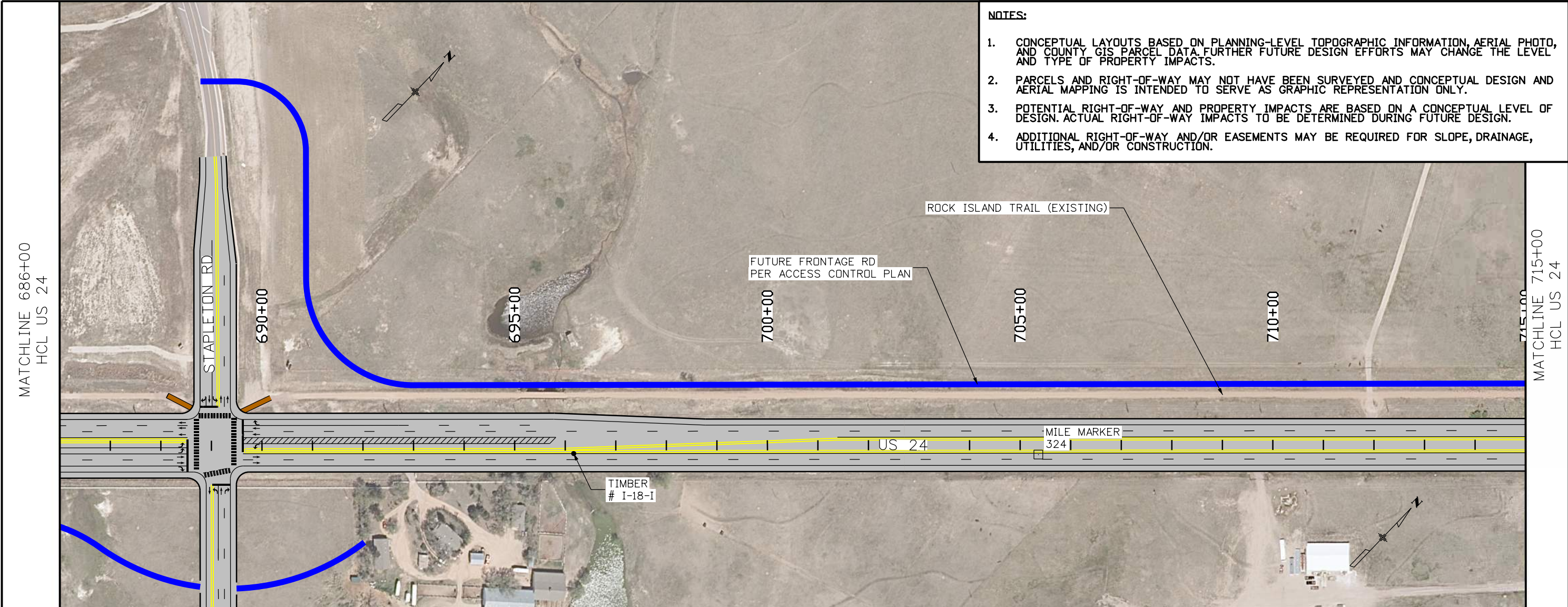


Figure 4. Falcon (Woodmen Road) to Peyton - Recommendations



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- NOTES:**
1. CONCEPTUAL LAYOUTS BASED ON PLANNING-LEVEL TOPOGRAPHIC INFORMATION, AERIAL PHOTO, AND COUNTY GIS PARCEL DATA. FURTHER FUTURE DESIGN EFFORTS MAY CHANGE THE LEVEL AND TYPE OF PROPERTY IMPACTS.
 2. PARCELS AND RIGHT-OF-WAY MAY NOT HAVE BEEN SURVEYED AND CONCEPTUAL DESIGN AND AERIAL MAPPING IS INTENDED TO SERVE AS GRAPHIC REPRESENTATION ONLY.
 3. POTENTIAL RIGHT-OF-WAY AND PROPERTY IMPACTS ARE BASED ON A CONCEPTUAL LEVEL OF DESIGN. ACTUAL RIGHT-OF-WAY IMPACTS TO BE DETERMINED DURING FUTURE DESIGN.
 4. ADDITIONAL RIGHT-OF-WAY AND/OR EASEMENTS MAY BE REQUIRED FOR SLOPE, DRAINAGE, UTILITIES, AND/OR CONSTRUCTION.



Print Date: 11/28/2017

File Name: Plan_014_FalconPeyton_[ALT4].dgn

Horiz. Scale: 1:200 Vert. Scale: As Noted

Unit Information Unit Leader Initials

0000	Sheet Revisions		
	Date:	Comments	Init.



Colorado Department of Transportation

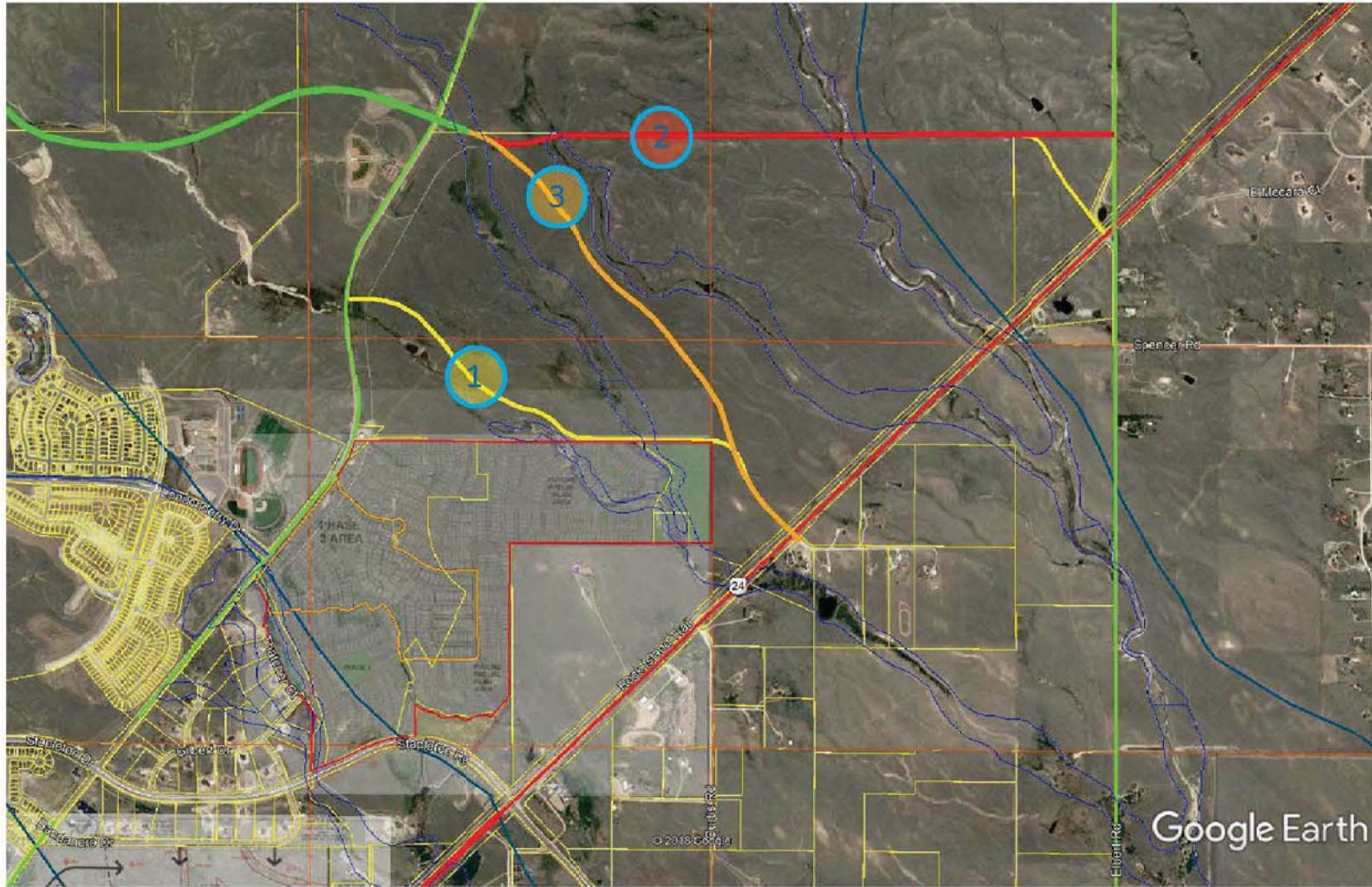
905 Erie Avenue
Pueblo, CO 81002
Phone: 719-546-5408

Region 2

As Constructed
No Revisions:
Revised:
Void:

US 24 FALCON TO PEYTON STA 686+00 TO STA 743+00	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: RDWY	Subset Sheets: of -

Project No./Code
Sheet Number



Approximate Scale
Scale: NTS

Appendix Figure 1

Rex Road Potential Alignments (Exhibit Prepared by El Paso County Staff)

Grandview Reserve (LSC #184840)

Markup Summary

dsdrice (2)



Subject: Highlight
Page Label: 2
Author: dsdrice
Date: 5/13/2019 1:15:49 PM
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Subject: Text Box
Page Label: 2
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Date: 5/13/2019 1:16:12 PM
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See comment letter. A detailed review was not performed with this submittal.