

Memorandum

To: El Paso County Traffic Engineering
From: David Kline, PE, PTOE
Date: March 9, 2021
Subject: Liberty Tree Academy – Phase 2 Traffic Analysis

PCD File No.: PPR2018

ACCEPTED for FILE
Engineering Review

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dsdnijkamp

EPC Planning & Community
Development Department

Purpose of Memorandum

The purpose of this Phase 2 Traffic Analysis Memorandum is to provide the traffic related documentation required to support the Liberty Tree Academy – Phase 2 Site Development Plan and Construction Documents submittal and the permitting process. This memorandum relies on much of the technical information presented in the approved Liberty Tree Academy Traffic Impact Study dated August 9, 2018. Matrix Design Group prepared this memorandum on behalf of the Liberty Tree Academy Building Corporation.

Existing/Proposed Site Development

The Liberty Tree Academy site is triangular shape lot, as shown in Figure 1, is bounded by Eastonville Rd on the westerly side, regional drainage channel on the easterly side, and a residential lot on the south. The Liberty Tree Academy consists of two phases:

- Phase 1 opened in the fall of 2019 with the existing conditions highlighted below:
 - The private school opened with an initial kindergarten through 8th grade enrollment of 540 student facility. The single two-story building includes administrative offices, classrooms, gymnasium, warming kitchen, and ancillary rooms.
 - The site is accessed through a single full movement intersection at Eastonville Rd. and Motley Rd. The internal 20 feet wide circulatory roadway has an available queue length of 1,380 feet, in addition to 750 feet of loading and pickup parking.
 - When the existing school parking capacity of 50 parking stalls is reached, additional overflow parking occurs in undeveloped school property north of the building. The addition parking use is attributed to additional support staff, and teachers. In addition, there is a tendency for parents to parking and accompany their children into the building. This pattern results in a longer parking duration than at a typical school. This has become a safety concern and Liberty Academy is interested in having more parking in Phase 2 to address the daily need and accommodate special events.
- Phase 2 is proposed to be opened in the fall of 2021 and includes the following;
 - An additional 14,436 square foot building with classroom and office space. With this new building attached to the original building the total combined floor area will be 56,021 square feet.

- One of the primary interests of Liberty Tree Academy is to provide academic continuation for the elementary school students wanting to enter the 9th, 10th, 11th, and 12th grades. Enrollment to these upper grades will occur gradually as the students age and advance. With this addition, the total enrollment is limited to 740 students.
- The Liberty Tree Academy has prohibited driving age students from bringing vehicles on campus with the intent of eliminating parking demand for the duration of the school day. This is a condition of eligibility for enrollment.
- The site access is proposed to be modified to include an additional full movement intersection at Eastonville Rd. and Snaffle Bit Rd, which is located northerly from the Motley Rd. intersection. The intersection geometry and control will be similar to that at the Eastonville Rd. and Motley Rd intersection.
- The new school circulating drive aisle is aligned parallel to Eastonville Rd. Adjacent to the drive aisle, 90-degree parking is proposed. The length and configuration allow an additional 85 parking stalls. Pedestrian connectivity is proposed through adjacent sidewalks.
- The circulation plan is intended to be modified to support efficient traffic flow and during the peak period and conflicting turn movements will be restricted. This is a dynamic condition managed by the internal school traffic control personnel.
- The Phase 2 circulation plan (see figure attachment) in the AM and PM peak hour calls for closure of the Motley Rd. at Eastonville Rd intersection and all site traffic is proposed to be directed to the Eastonville Rd. and Snaffle Bit Rd. intersection. This is accomplished with movable barricades placed by the school traffic control personnel. All site traffic is circulated through the Phase 2 parking lot and connects to the existing Phase 1 drive aisle and drop off/pick up lanes.

Existing Traffic Condition

Due to the 2020 spring and summer government order to close schools and nonessential businesses for the health and safety of the public traffic data collection in the spring of 2020 would not reflect accurate traffic patterns or conditions. In the absence of this information the 2018 traffic data forecasted to 2021 was used for background traffic condition. The *ITE Trip Generation Manual, Tenth Edition* was used to estimate site traffic generated by Liberty Tree Academy Phases 1 and 2.

Trip Generation

The vehicle trips associated with this development were calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. This methodology consists of choosing an independent variable for the land use for a particular time of day. The independent variable correlates to the variation in trip ends and is related to the land use.

For Phase 1 and 2, the ITE Trip Generation Code 534, Private School (K-8) is used since it most closely represents the Liberty Tree Academy student enrollment. Current enrollment indicates that 67 percentage of students have siblings therefore participating in carpooling, so the trip generation established through ITE may be conservative. An affordable school bus program is also available through the School District. For the purpose of this study trip reduction is not considered for student walking, carpooling, or bus service. Table 1 shows the trips that are expected to be generated by both Phase 1, and Phase 2 student enrollment.

The Liberty Tree Academy has prohibited driving age students from bringing vehicles on campus with the intent of eliminating parking demand for the duration of the school day. This results in a traffic pattern is similar to a K-8 grade private school. In essences, the classrooms are proposed to be filled with non-driving high school students.

Table 1 – Trip Generation

| | Variable | AM Peak | | | PM Peak* | | | Daily | | |
|---|----------|---------|-----|-----|----------|----|-----|-------|-------|-------|
| Land Use – ITE Code 534 | Student | Total | In | Out | Total | In | Out | Total | In | Out |
| Phase 1 Private School (K-8) | 540 | 491 | 270 | 221 | 140 | 64 | 76 | 2,219 | 1,110 | 1,109 |
| Phase 2 Private School (K-8) | 200 | 160 | 88 | 72 | 52 | 24 | 28 | 822 | 411 | 411 |
| | | | | | | | | | | |
| Total Private School (K-8) | 740 | 651 | 358 | 293 | 192 | 88 | 104 | 3,041 | 1,521 | 1,520 |
| | | | | | | | | | | |
| *PM peak hour of adjacent street traffic. | | | | | | | | | | |

Trip Distribution

During the AM and PM peak hours the site access is proposed through the Eastonville Rd/Snaffle Bit Rd intersection. From this intersection arrival and departure site trips are distributed predominately to/from Eastonville Rd with a smaller percentage to/from the west, which serves the adjacent residential area. As a north/south minor arterial roadway Eastonville Rd is anticipated to accommodate 95% of the total site trips, with 50% to/from the south, and 45% to/from the north. Snaffle Bit Rd is anticipated to accommodate 2.5% of the site generated trips. Motley Rd is anticipated to accommodate 2.5% of the site generated trips, however due to site circulation plan these trips are routed to the Eastonville Rd/Snaffle Bit Rd intersection.

The offsite intersections of Eastonville Rd at Stapleton Drive and Eastonville Rd at Meridian/Judge Orr Rd trip distributions have been changed from the Liberty Tree Academy Traffic Impact Study dated August 9, 2018 to reflect proposed developments in the vicinity, presented in separate Traffic Impact Studies. In the case of the Eastonville Rd at Stapleton Drive intersection the site traffic distribution on the west approach was modified to 12% and on the south approach to 30%. This change is associated with residential development north of Stapleton Drive and a new Londonderry Drive at Eastonville Rd intersection. In addition, development traffic west of Eastonville Rd is anticipated to use local roadways and Stapleton Drive. The Eastonville Rd at Meridian/Judge Orr Rd intersection east approach directional distribution was changed to 3 % to correspond with commercial development and lack of residential development east of Eastonville Drive.

Traffic Network

The proposed Eastonville Rd and Snaffle Bit Rd intersection is analyzed with the following intersection configuration.

- Northbound – Left Turn Lane, Thru Lane, and Right Turn Lane
- Southbound – Left Turn Lane, Shared Thru/Right Turn Lane
- Eastbound – Shared Right/Thru/Left Turn Lane
- Westbound – Shared Thru/Left Turn Lane, Right Turn Lane

Two existing unsignalized intersections in close proximity to the Liberty Tree Academy were analyzed. For the intersection configuration see the Liberty Tree Academy Traffic Impact Study, dated August 9, 2018.

- Eastonville Rd at Meridian/Judge Orr Rd
- Eastonville Rd at Stapleton Drive
- Eastonville Rd at Motley Rd – Not Applicable due to peak hour closure.

Future Traffic

Future traffic was developed by adding the peak hour site traffic to Eastonville Rd. background traffic. The background traffic is established based on the adjacent US 24 highway growth rate since the two facilities are in the vicinity to each other and parallel. The US 24 annual growth rate of 1.5% per year is anticipated and is therefore assumed as background for Eastonville Rd, Meridian/Judge Orr Rd and Stapleton Drive. The site traffic is added to the background volumes to get 2040 total traffic. Table 3 and Table 4 show the 2021 and the 2040 total traffic volumes for both the AM and PM peak hours

Traffic Analysis

To determine how efficiently and effectively the four intersections accommodate the build-out traffic volumes, each intersection was analyzed using Synchro 10 software. The results are shown as Levels of Service (LOS). LOS is a qualitative measure used to describe the condition of traffic flow and delay, ranging from excellent conditions at LOS A to very poor conditions at LOS F. LOS D is commonly used as the level of service goal.

Table 2 provides a description of conditions for each LOS at a unsignalized intersection.

Table 2: Signalized Intersection Level of Service Criteria

| Level of Service | Average Total Delay (seconds per vehicle) | Description |
|------------------|---|--|
| A | < 10 | Little or no conflicting traffic for minor street approach. |
| B | >10 to 15 | Minor street begins to notice absence of available gaps. |
| C | >15 to 25 | Minor street begins experiencing delay for available gaps. |
| D | >25 to 35 | Minor street starts to experience queuing. |
| E | >35 to 50 | Extensive minor street queuing due to insufficient gaps. |
| F | > 50 | Insufficient gaps to allow minor street traffic to cross safely through the major street traffic stream. |

Source: *HCM2010 Highway Capacity Manual* (Transportation Research Board, 2010)

Synchro 10 software allows site specific customization by adjusting a variety of variables. The variables are used to calibrate the model to better reflect site specific conditions. One variable “Peak Hour Factor (PHF)” assigns traffic to the intersection based on traffic intensity. Since schools typically have a very intense traffic pattern the PHF was modified to reflect arrival and departure time. The PHF was changed from the standard 0.92 to 0.7 which better reflects the school traffic pattern. The traffic pattern of the school shows a delayed departure pattern since some parent’s park and walk their children to the school building rather than drop them off, thus lengthening the departure duration.

Tables 3 and 4 provide a summary of the 2021 and 2040 analysis respectively. The Synchro output for both is provided as an attachment.

Table 3: 2021 Total Traffic Level of Service

| Intersection | Control | AM LOS | AM Queue | PM LOS | PM Queue |
|--------------------------------------|---------------|--------|----------|--------|----------|
| Eastonville Rd/Snaffle Bit Rd | Un-signalized | | | | |
| -Eastbound Left/Thru/Right | Stop | D | 10 | B | 2 |
| -Westbound Left | Stop | F | 138 | B | 10 |
| -Westbound Thru/Right | Stop | B | 20 | A | 6 |
| -Northbound Left | Free | A | 0 | A | 0 |
| -Northbound Thru | Free | A | 0 | A | 0 |
| -Northbound Right | Free | A | 0 | A | 0 |
| -Southbound Left | Free | A | 16 | A | 2 |
| -Southbound Thru/Right | Free | A | 0 | A | 0 |
| Eastonville Rd/Motley Rd | Un-signalized | N/A | N/A | N/A | N/A |
| Eastonville Rd/Judge Orr Rd | Un-signalized | | | | |
| -Eastbound Left | Stop | B | 4 | A | 2 |
| -Eastbound Thru/Right | Stop | B | 40 | B | 16 |
| -Westbound Left | Stop | B | 2 | A | 6 |
| -Westbound Thru | Stop | A | 2 | B | 16 |
| -Westbound Right | Stop | B | 4 | A | 2 |
| -Northbound Left | Stop | A | 4 | B | 12 |
| -Northbound Thru/Right | Stop | B | 30 | B | 22 |
| -Southbound Left | Stop | B | 8 | A | 2 |
| -Southbound Thru/Right | Stop | B | 28 | B | 14 |
| Eastonville Rd/Stapleton Dr | Un-signalized | | | | |
| -Eastbound Left/Thru/Right | Stop | C | 28 | B | 12 |
| -Westbound Left | Stop | C | 4 | B | 2 |
| -Westbound Thru/Right | Stop | B | 10 | B | 32 |
| -Northbound Left/Thru/Right | Free | A | 2 | A | 0 |
| -Southbound Left/Thru/Right | Free | A | 4 | A | 2 |

Table 4: 2040 Total Traffic TWSC Level of Service

| Intersection | Control | AM LOS | AM Queue | PM LOS | PM Queue |
|--------------------------------------|---------------|--------|----------|--------|----------|
| Eastonville Rd/Snaffle Bit Rd | Un-signalized | | | | |
| -Eastbound Left/Thru/Right | Stop | D | 12 | B | 2 |
| -Westbound Left | Stop | F | 180 | B | 12 |
| -Westbound Thru/Right | Stop | B | 24 | B | 6 |
| -Northbound Left | Free | A | 0 | A | 0 |
| -Northbound Thru | Free | A | 0 | A | 0 |
| -Northbound Right | Free | A | 0 | A | 0 |
| -Southbound Left | Free | A | 16 | A | 2 |
| -Southbound Thru/Right | Free | A | 0 | A | 0 |
| Eastonville Rd/Motley Rd | Un-signalized | N/A | N/A | N/A | N/A |
| Eastonville Rd/Judge Orr Rd | Un-signalized | | | | |
| -Eastbound Left | Stop | B | 6 | B | 2 |
| -Eastbound Thru/Right | Stop | C | 76 | B | 26 |
| -Westbound Left | Stop | B | 2 | B | 10 |
| -Westbound Thru | Stop | B | 4 | B | 26 |
| -Westbound Right | Stop | B | 6 | A | 4 |
| -Northbound Left | Stop | B | 4 | B | 20 |
| -Northbound Thru/Right | Stop | B | 20 | B | 36 |
| -Southbound Left | Stop | B | 12 | B | 4 |
| -Southbound Thru/Right | Stop | B | 36 | B | 20 |
| Eastonville Rd/Stapleton Dr | Un-signalized | | | | |
| -Eastbound Left/Thru/Right | Stop | C | 54 | C | 22 |
| -Westbound Left | Stop | D | 6 | C | 2 |
| -Westbound Thru/Right | Stop | C | 16 | C | 64 |
| -Northbound Left/Thru/Right | Free | A | 2 | A | 0 |
| -Southbound Left/Thru/Right | Free | A | 6 | A | 2 |

As shown in the above tables, all but one intersection is expected to operate at acceptable levels of service in the AM and PM peak hour at build-out scenarios. The lone exception is the Eastonville Rd and Snaffle Bit Rd intersection. In the AM peak hour, this intersection is shown as operating at capacity (LOS F) in both the 2021 and the 2040 total traffic condition. This is due to the exiting westbound left turn. In review analysis indicates that the AM queue length of 180 feet and in the PM is expected. With the addition of the Phase 2 parking aisle the queue is expected to be contained on site.

In addition to considering the school traffic intensity in the Synchro analysis, information presented in the Municipal School Transportation Assistance (MSTA) was considered. The state of North Carolina prepared this research study and found that the school traffic vehicular queue lengths should be considered since insufficient internal circulation pattern, loading area, and parking can create traffic flow problems. Traffic queue analysis is presented in the following sections.

The MSTA offers guidance on internal queue and the Average Queue Length of 1,762 feet is recommended. The existing internal 20-foot wide circulatory roadway has an available queue length of 1,380 feet, plus 750 feet of loading parking for a total 2,130 feet of vehicle storage.

Liberty Tree Academy Phase 2 includes an additional 450 feet of storage for an overall project queue storage of 2,590 feet. As recommended in MSTA the visitor parking is located at the end of the circulatory roadway to minimize congestion. Based on these results the proposed site is in general conformance with the guidelines presented in the MSTA.

Minor Arterial Roadway Access Criteria

County criteria allows access on minor arterial roadway where no local public or private roadway can provide access. This is the case for the proposed access which is the second to the school site and will serve an auxiliary parking lot. Criteria indicates that driveway access separation along a minor arterial roadway is limited to the stopping sight distance, which for a 35-mph posted speed is 455 feet. The distance between the centerlines of the existing school access and the new school access is 480 feet which is within criteria. The proposed school access driveway is located opposite the existing Eastonville Rd/ Snaffle Bit intersection resulting in a symmetric 4-leg intersection. Due to the lot geometric constraints and lack of adjacent local roadway this is the only location for a second access to the school.

Mitigation Improvements

Two improvements that can be considered to mitigate the delay include, 1) changing the intersection control from two-way stop to all-way stop, and 2) changing the intersection to roundabout control.

All Way Stop Control

One way to improve operation at the of Eastonville Rd/Snaffle Bit Rd intersection is to change traffic control from a two way stop control (TWSC) to an all way stop control (AWSC). This can be accomplished without further ROW or major improvements to the roadway. A disadvantage to this option is the increase in delay to Eastonville Rd corridor. Due to this delay this mitigation is not recommended.

Roundabout

Another mitigation option is changing the intersection to a roundabout. This alternative improves overall intersection delay, however, has some challenges in implementation. These challenges include 1) less pedestrian safety due to the free flow traffic condition, 2) Increase ROW need, and 3) increase construction costs associated with removal and replacement of a portion of the existing intersection.

Safety Consideration

Sight lines at the Eastonville Rd/Snaffle Bit Rd intersection are in accordance with County criteria for a minor arterial roadway at 35 mph.

Southbound left turn lane - To minimize southbound left turning vehicle impedance on Eastonville Rd through traffic, a striped left turn lane at the site new entrance (Snaffle Bit) is proposed. The left turn lane geometry consists of a total of 425 feet (140 ft taper, 135 ft lane and 150 ft storage) as indicated per criteria.

Northbound Right Turn Lane - A northbound right turn lane is proposed at the site new entrance. The total 425 feet with the geometry consisting of (140 ft taper, 135 ft lane and 150 ft storage) as indicated per criteria. (See Vehicle Tracking Exhibits in Attachments)

The Eastonville Rd curb return to curb return segment between Snaffle Bit Rd and Motley Road is 420 feet in length, which is insufficient to accommodate left turn lanes in both directions. Due to the existing condition the left turn lane geometry will require a deviation request. The Eastonville Rd northbound left turn lane at Snaffle Bit Rd is proposed to be a total of 175 feet. The left turn lane geometry consists of 140 ft taper, and 35 ft storage, resulting in some deceleration in the through traffic lane.

Due to the limited distance between the intersections, the existing southbound Eastonville Rd left turn at the existing school entrance (Motley Rd) is proposed to be modified. The left turn lane geometry consists of a total of 375 feet (140 ft taper, 85 ft lane and 150 ft storage). Although the existing school traffic circulation plan includes temporary access closure in the AM and PM peak hour modifying the turn lane to favoring this turning movement offers flexibility should the circulation plan change.

Eastonville Rd ROW

To support the ultimate Eastonville Road corridor 10 foot of ROW along the existing easterly ROW is proposed to be dedicated.

Eastonville Rd Sidewalk

The Eastonville Rd. sidewalk along the property frontage is proposed from the existing Phase 1 curb ramp to the new access at Snaffle Bit Rd. ADA compliant curb ramps are proposed at the new access.

Colorado Department of Transportation Access Permit

The need for a Colorado Department of Transportation (CDOT) Access Permit was reviewed at the US 24 at Judge Orr Road intersection. The route to this CDOT intersection, along Eastonville Road and Judge Orr Road through the existing Eastonville Road at Judge Orr Road intersection is approximately 1 mile for the proposed school driveway access. Regional planning documents and existing condition maps indicate the land use east of SH 24 is not conducive to school associated trips. In addition, school trips to and from the south trip are out of the way and are not desirable due travel time delay. These conditions result in a three percent directional distribution at this intersection equating to less than 10 peak hour trips traveling through the US 24 at Judge Orr Road intersection. This traffic volume does not trigger the need for an access permit.

Roadway Impact Fee

The lot associated with Liberty Tree Academy was platted in 2001. Per road impact fee resolution 19-471, effective January 1, 2020 all property in the unincorporated area of the County that receive land use approval is subject to the payment of Road Impact Fees.

Deviation Request

This project proposes two Deviation Request listed below:

- Section 2.3.2 Driveway Access to a Minor Arterial Roadway - Due to lot geometry constraints and lack of local street access.
- Section 2.3.7 Turn Lane Geometry - Due to the limited distance between the two existing intersections the left turn lane geometry is physically unattainable.

Conclusions

The Traffic Impact Study results indicate in the 2021 near term condition and the 2040 long term condition with the Liberty Tree Academy Phase 2, K-12, traffic and the Eastonville Rd/Snaffle Bit Rd intersection operates well with one except. The westbound shared left/through lane experiences internal queue and delay typical of school traffic patterns. The site queue can be accommodated internal within the site drive aisles. Due to introducing Eastonville Rd corridor delay, all-way stop control or roundabout are not recommended. In the near term and long term the project, as proposed, does not adversely impact the existing and proposed intersection operation or roadway corridor.

Traffic Engineer's Statement

This traffic memorandum 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.



David Robert Kline, P.E. #24520

3/9/2021

Date

Developer's Statement

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



Michael E. Peterson, Board Secretary
Liberty Tree Academy Building Corporation
PO Box 64614
Colorado Springs, CO 80962

3/9/2021

Date

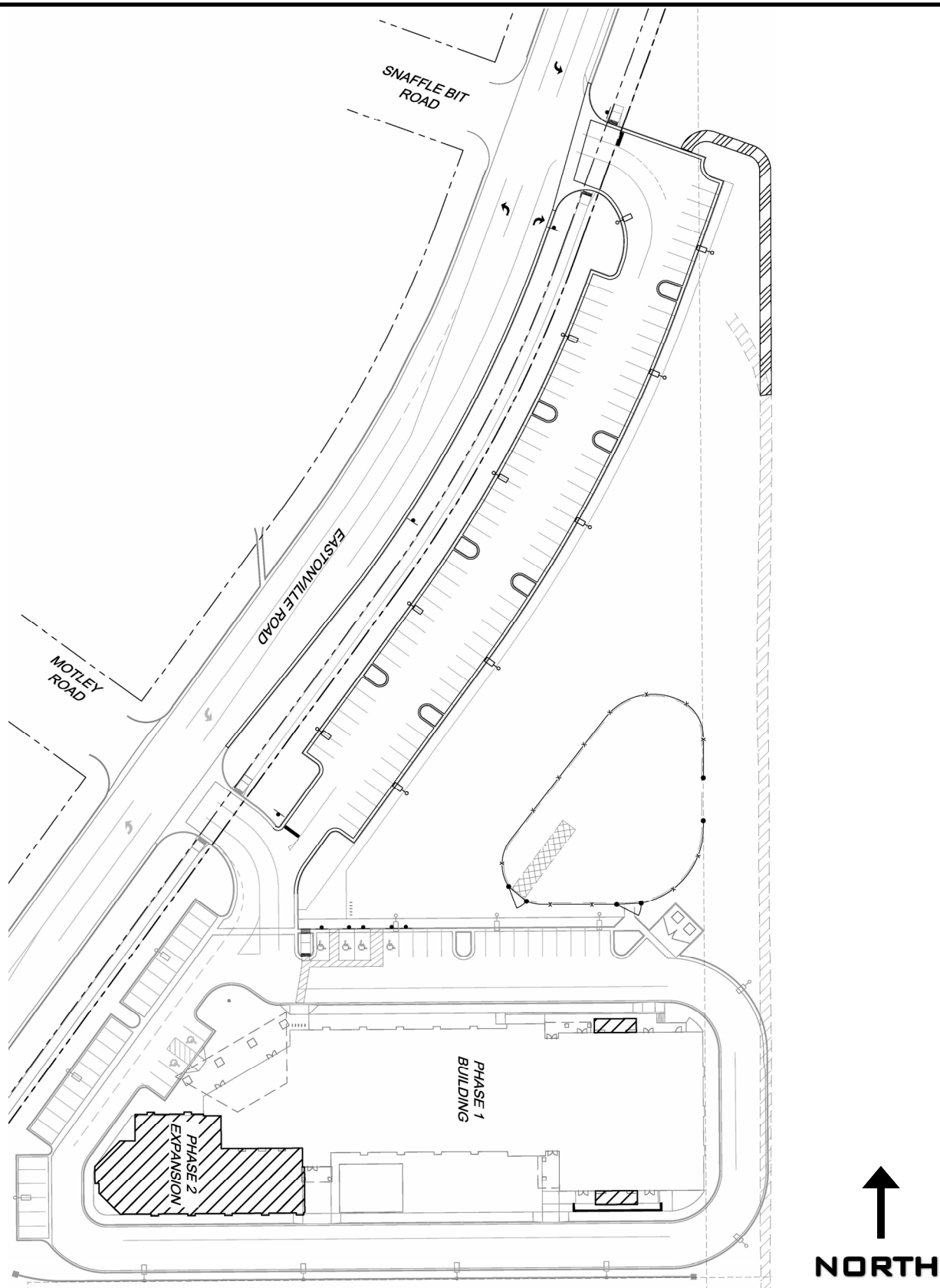
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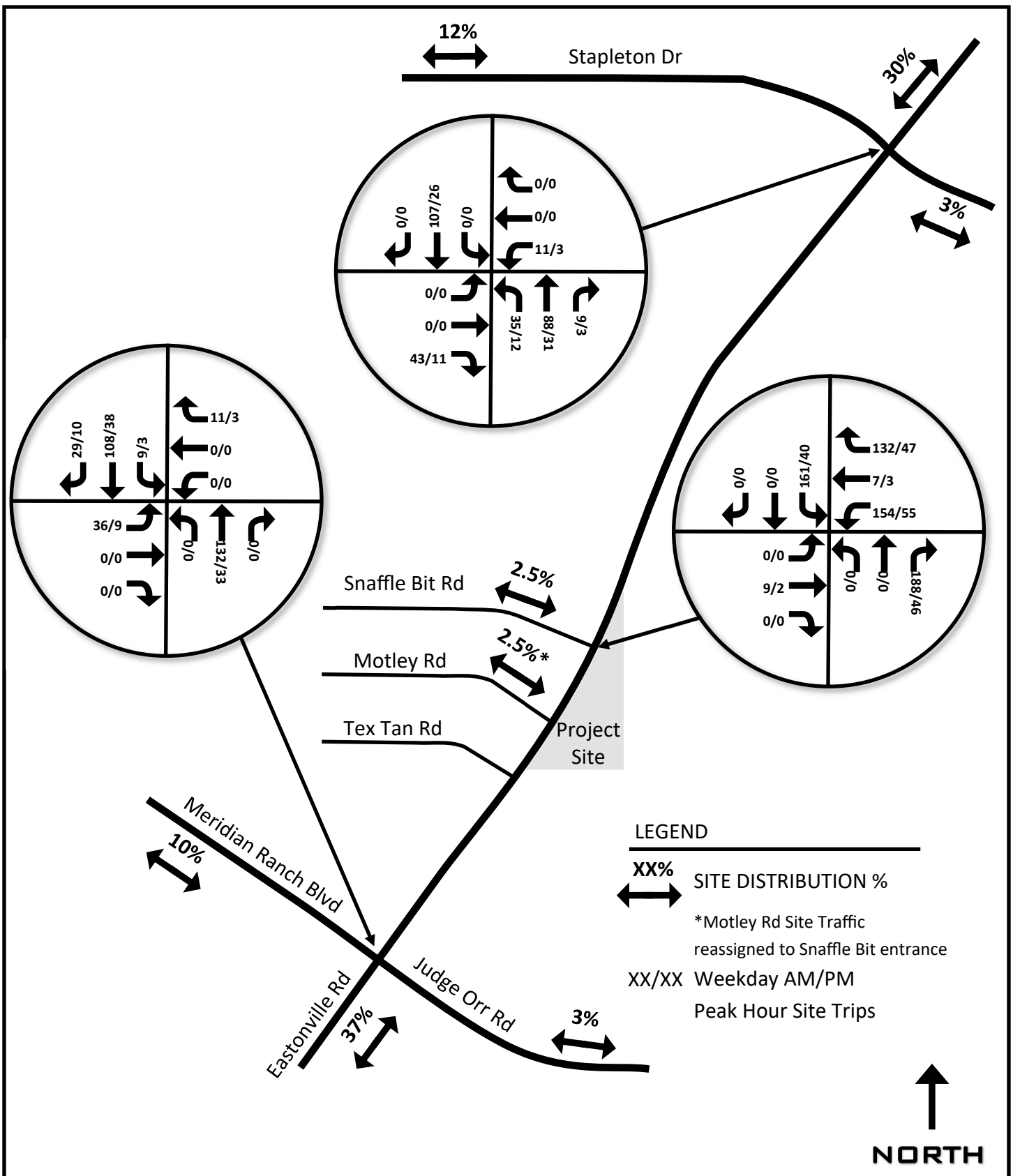
- Figures 1 through 5
- 2021 Total Traffic Synchro Output
- 2040 Total Traffic Synchro Output
- Site Circulation Plan
- MSTA School Traffic Calculations
- Vehicle Tracking Exhibits

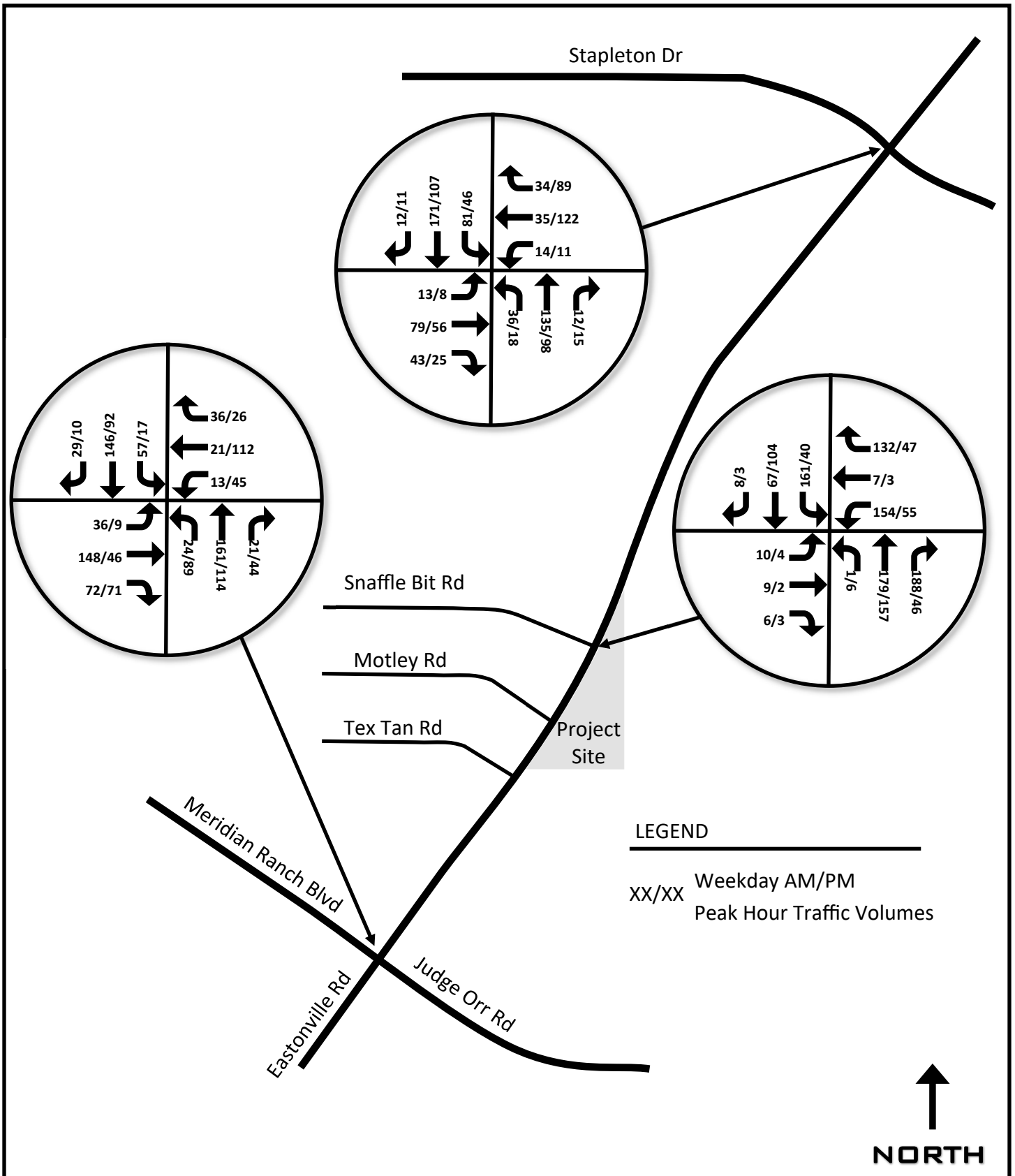


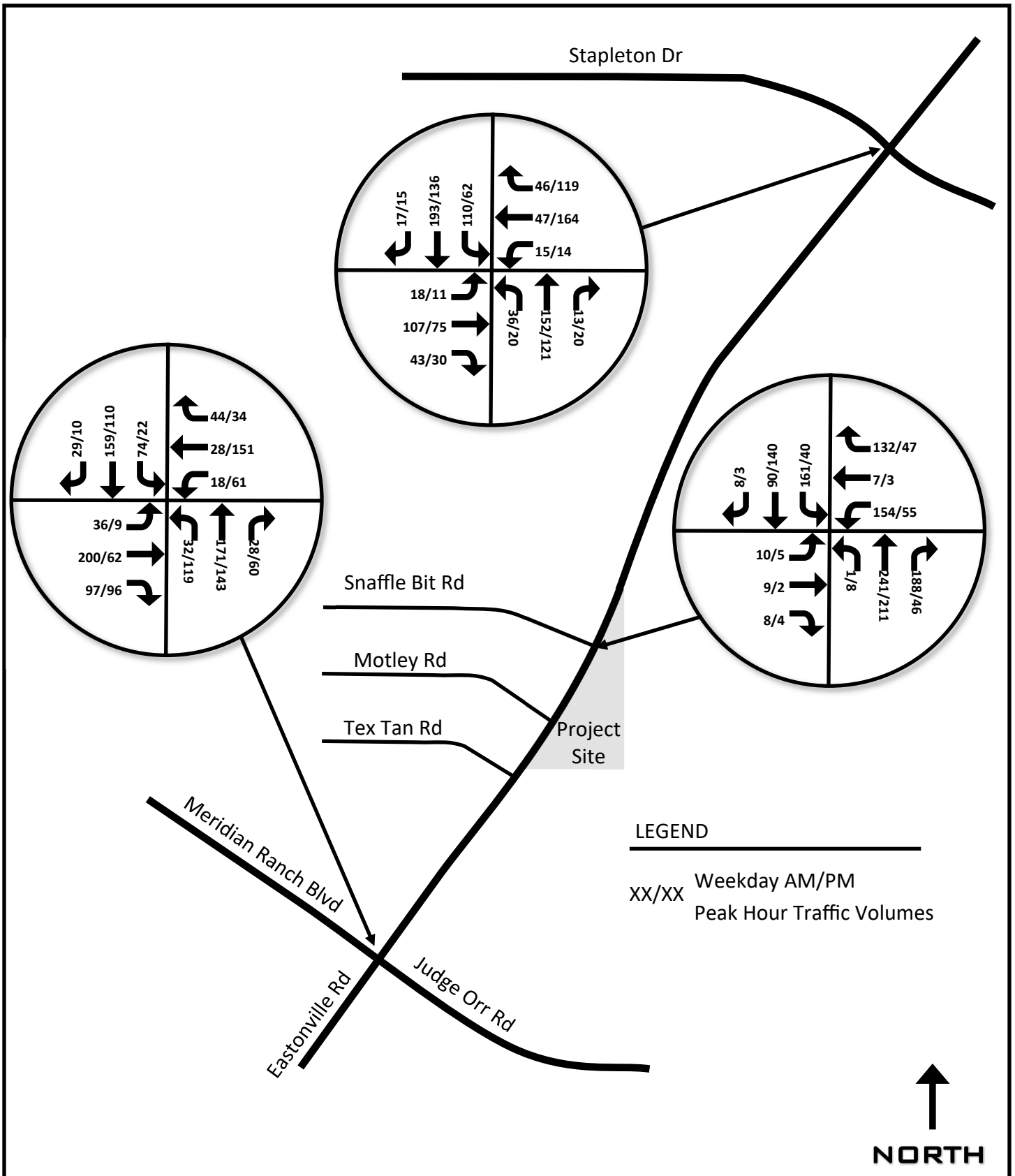
LIBERTY TREE ACADEMY
TRAFFIC IMPACT STUDY

Figure 1
VICINITY MAP









| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | ↔ | ↔ | ↔ | | ↔ | ↔ | |
| Traffic Vol, veh/h | 10 | 0 | 6 | 0 | 0 | 0 | 1 | 357 | 0 | 0 | 299 | 8 |
| Future Vol, veh/h | 10 | 0 | 6 | 0 | 0 | 0 | 1 | 357 | 0 | 0 | 299 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | 0 | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 7 | 0 | 0 | 0 | 1 | 388 | 0 | 0 | 325 | 9 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 720 | 720 | 330 | 723 | 724 | 388 | 334 | 0 | 0 | 388 | 0 | 0 |
| Stage 1 | 330 | 330 | - | 390 | 390 | - | - | - | - | - | - | - |
| Stage 2 | 390 | 390 | - | 333 | 334 | - | - | - | - | - | - | - |
| 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 | 343 | 354 | 712 | 342 | 352 | 660 | 1225 | - | - | 1170 | - | - |
| Stage 1 | 683 | 646 | - | 634 | 608 | - | - | - | - | - | - | - |
| Stage 2 | 634 | 608 | - | 681 | 643 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 343 | 354 | 712 | 339 | 352 | 660 | 1225 | - | - | 1170 | - | - |
| Mov Cap-2 Maneuver | 343 | 354 | - | 339 | 352 | - | - | - | - | - | - | - |
| Stage 1 | 682 | 646 | - | 633 | 607 | - | - | - | - | - | - | - |
| Stage 2 | 633 | 607 | - | 675 | 643 | - | - | - | - | - | - | - |










| Approach | EB | WB | NB | SB |
|----------------------|------|----|----|----|
| HCM Control Delay, s | 13.8 | 0 | 0 | 0 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----------------|-----|-----|-----|
| Capacity (veh/h) | 1225 | - | - | 426 | - | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.041 | - | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 13.8 | 0 | 0 | 0 |
| HCM Lane LOS | A | - | - | B | A | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - | - | 0 |

HCM 6th AWSC
6: Eastonville Rd & Meridan/Judge Orr

12/09/2020

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 11.9 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|---|---|------|---|---|---|---|---|------|---|---|------|
| Lane Configurations |  |  | |  |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 36 | 148 | 72 | 13 | 21 | 36 | 24 | 161 | 21 | 57 | 146 | 29 |
| Future Vol, veh/h | 36 | 148 | 72 | 13 | 21 | 36 | 24 | 161 | 21 | 57 | 146 | 29 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 39 | 161 | 78 | 14 | 23 | 39 | 26 | 175 | 23 | 62 | 159 | 32 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|-----|----|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 12.6 | 9.7 | 12 | 11.6 |
| HCM LOS | B | A | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 88% | 0% | 67% | 0% | 100% | 0% | 0% | 83% |
| Vol Right, % | 0% | 12% | 0% | 33% | 0% | 0% | 100% | 0% | 17% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 24 | 182 | 36 | 220 | 13 | 21 | 36 | 57 | 175 |
| LT Vol | 24 | 0 | 36 | 0 | 13 | 0 | 0 | 57 | 0 |
| Through Vol | 0 | 161 | 0 | 148 | 0 | 21 | 0 | 0 | 146 |
| RT Vol | 0 | 21 | 0 | 72 | 0 | 0 | 36 | 0 | 29 |
| Lane Flow Rate | 26 | 198 | 39 | 239 | 14 | 23 | 39 | 62 | 190 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.05 | 0.344 | 0.074 | 0.405 | 0.029 | 0.043 | 0.067 | 0.117 | 0.326 |
| Departure Headway (Hd) | 6.853 | 6.267 | 6.843 | 6.103 | 7.354 | 6.846 | 6.134 | 6.794 | 6.173 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 522 | 572 | 523 | 588 | 485 | 521 | 581 | 527 | 582 |
| Service Time | 4.606 | 4.02 | 4.596 | 3.856 | 5.121 | 4.612 | 3.9 | 4.546 | 3.925 |
| HCM Lane V/C Ratio | 0.05 | 0.346 | 0.075 | 0.406 | 0.029 | 0.044 | 0.067 | 0.118 | 0.326 |
| HCM Control Delay | 10 | 12.3 | 10.1 | 13 | 10.3 | 9.9 | 9.3 | 10.5 | 11.9 |
| HCM Lane LOS | A | B | B | B | B | A | A | B | B |
| HCM 95th-tile Q | 0.2 | 1.5 | 0.2 | 2 | 0.1 | 0.1 | 0.2 | 0.4 | 1.4 |

HCM 6th TWSC
10: Eastonville Rd & Stapleton Dr

12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | ↕ | ↕ | | ↕ | ↕ | | ↕ | ↕ | |
| Traffic Vol, veh/h | 13 | 79 | 43 | 14 | 35 | 34 | 36 | 135 | 12 | 81 | 171 | 12 |
| Future Vol, veh/h | 13 | 79 | 43 | 14 | 35 | 34 | 36 | 135 | 12 | 81 | 171 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| 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 | 14 | 86 | 47 | 15 | 38 | 37 | 39 | 147 | 13 | 88 | 186 | 13 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 638 | 607 | 193 | 667 | 607 | 154 | 199 | 0 | 0 | 160 | 0 | 0 |
| Stage 1 | 369 | 369 | - | 232 | 232 | - | - | - | - | - | - | - |
| Stage 2 | 269 | 238 | - | 435 | 375 | - | - | - | - | - | - | - |
| 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 | 389 | 411 | 849 | 372 | 411 | 892 | 1373 | - | - | 1419 | - | - |
| Stage 1 | 651 | 621 | - | 771 | 713 | - | - | - | - | - | - | - |
| Stage 2 | 737 | 708 | - | 600 | 617 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 321 | 375 | 849 | 271 | 375 | 892 | 1373 | - | - | 1419 | - | - |
| Mov Cap-2 Maneuver | 321 | 375 | - | 271 | 375 | - | - | - | - | - | - | - |
| Stage 1 | 633 | 582 | - | 749 | 693 | - | - | - | - | - | - | - |
| Stage 2 | 649 | 688 | - | 453 | 579 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|------|----|-----|-----|
| HCM Control Delay, s | 16.9 | 14 | 1.5 | 2.4 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------------------|-------|-----|-----|
| Capacity (veh/h) | 1373 | - | - | 447 271 525 | 1419 | - | - |
| HCM Lane V/C Ratio | 0.028 | - | - | 0.328 0.056 0.143 | 0.062 | - | - |
| HCM Control Delay (s) | 7.7 | - | - | 16.9 19.1 13 | 7.7 | - | - |
| HCM Lane LOS | A | - | - | C C B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.4 0.2 0.5 | 0.2 | - | - |

HCM 6th TWSC
14: Eastonville Rd & Snaffle Bit Rd








12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 15.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | ↕ | ↕ | | ↕ | ↕ | ↕ | ↕ | ↕ | |
| Traffic Vol, veh/h | 10 | 9 | 6 | 154 | 7 | 132 | 1 | 179 | 188 | 161 | 67 | 8 |
| Future Vol, veh/h | 10 | 9 | 6 | 154 | 7 | 132 | 1 | 179 | 188 | 161 | 67 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 35 | - | 285 | 285 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 13 | 7 | 220 | 10 | 189 | 1 | 195 | 269 | 230 | 73 | 9 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | | Major2 | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|-------|--------|---|-------|---|---|
| Conflicting Flow All | 969 | 1004 | 78 | 745 | 739 | 195 | 82 | 0 | 0 | 464 | 0 | 0 |
| Stage 1 | 538 | 538 | - | 197 | 197 | - | - | - | - | - | - | - |
| Stage 2 | 431 | 466 | - | 548 | 542 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 233 | 242 | 983 | 330 | 345 | 846 | 1515 | - | - | 1097 | - | - |
| Stage 1 | 527 | 522 | - | 805 | 738 | - | - | - | - | - | - | - |
| Stage 2 | 603 | 562 | - | 521 | 520 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 148 | 191 | 983 | 261 | 272 | 846 | 1515 | - | - | 1097 | - | - |
| Mov Cap-2 Maneuver | 148 | 191 | - | 261 | 272 | - | - | - | - | - | - | - |
| Stage 1 | 526 | 412 | - | 804 | 737 | - | - | - | - | - | - | - |
| Stage 2 | 462 | 561 | - | 396 | 411 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|----|--|----|--|-----|--|
| HCM Control Delay, s | 25.6 | | 39 | | 0 | | 6.8 | |
| HCM LOS | D | | E | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------------|------|-----|-----|
| Capacity (veh/h) | 1515 | - | - | 205 261 765 | 1097 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.148 0.843 0.26 | 0.21 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 25.6 64 11.3 | 9.2 | - | - |
| HCM Lane LOS | A | - | - | D F B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 6.9 1 | 0.8 | - | - |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|-----------------|---|---|---|---|------|---|---|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 4 | 0 | 3 | 0 | 0 | 0 | 6 | 199 | 0 | 0 | 163 | 3 |
| Future Vol, veh/h | 4 | 0 | 3 | 0 | 0 | 0 | 6 | 199 | 0 | 0 | 163 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | 0 | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 0 | 3 | 0 | 0 | 0 | 7 | 216 | 0 | 0 | 177 | 3 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 409 | 409 | 179 | 410 | 410 | 216 | 180 | 0 | 0 | 216 | 0 | 0 |
| Stage 1 | 179 | 179 | - | 230 | 230 | - | - | - | - | - | - | - |
| Stage 2 | 230 | 230 | - | 180 | 180 | - | - | - | - | - | - | - |
| 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 | 553 | 532 | 864 | 552 | 531 | 824 | 1396 | - | - | 1354 | - | - |
| Stage 1 | 823 | 751 | - | 773 | 714 | - | - | - | - | - | - | - |
| Stage 2 | 773 | 714 | - | 822 | 750 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 551 | 529 | 864 | 548 | 528 | 824 | 1396 | - | - | 1354 | - | - |
| Mov Cap-2 Maneuver | 551 | 529 | - | 548 | 528 | - | - | - | - | - | - | - |
| Stage 1 | 819 | 751 | - | 769 | 710 | - | - | - | - | - | - | - |
| Stage 2 | 769 | 710 | - | 819 | 750 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 10.6 | | 0 | | 0.2 | | 0 | | | | | |
| HCM LOS | B | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1396 | - | - | 652 | - | - | 1354 | - | - | | | |
| HCM Lane V/C Ratio | 0.005 | - | - | 0.012 | - | - | - | - | - | | | |
| HCM Control Delay (s) | 7.6 | - | - | 10.6 | 0 | 0 | 0 | - | - | | | |
| HCM Lane LOS | A | - | - | B | A | A | A | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | - | 0 | - | - | | | |










HCM 6th AWSC
6: Eastonville Rd & Meridan/Judge Orr

12/09/2020

Intersection

Intersection Delay, s/veh 10.3

Intersection LOS B








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|---|---|------|---|---|---|---|---|------|---|---|------|
| Lane Configurations |  |  | |  |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 9 | 46 | 71 | 45 | 112 | 26 | 89 | 114 | 44 | 17 | 92 | 10 |
| Future Vol, veh/h | 9 | 46 | 71 | 45 | 112 | 26 | 89 | 114 | 44 | 17 | 92 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 50 | 77 | 49 | 122 | 28 | 97 | 124 | 48 | 18 | 100 | 11 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 10.2 | 10.1 | 10.6 | 10.3 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 72% | 0% | 39% | 0% | 100% | 0% | 0% | 90% |
| Vol Right, % | 0% | 28% | 0% | 61% | 0% | 0% | 100% | 0% | 10% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 89 | 158 | 9 | 117 | 45 | 112 | 26 | 17 | 102 |
| LT Vol | 89 | 0 | 9 | 0 | 45 | 0 | 0 | 17 | 0 |
| Through Vol | 0 | 114 | 0 | 46 | 0 | 112 | 0 | 0 | 92 |
| RT Vol | 0 | 44 | 0 | 71 | 0 | 0 | 26 | 0 | 10 |
| Lane Flow Rate | 97 | 172 | 10 | 127 | 49 | 122 | 28 | 18 | 111 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.173 | 0.274 | 0.019 | 0.208 | 0.091 | 0.208 | 0.043 | 0.035 | 0.191 |
| Departure Headway (Hd) | 6.449 | 5.75 | 6.834 | 5.897 | 6.67 | 6.165 | 5.457 | 6.762 | 6.188 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 557 | 625 | 524 | 608 | 538 | 582 | 656 | 530 | 580 |
| Service Time | 4.183 | 3.484 | 4.573 | 3.635 | 4.407 | 3.901 | 3.194 | 4.5 | 3.927 |
| HCM Lane V/C Ratio | 0.174 | 0.275 | 0.019 | 0.209 | 0.091 | 0.21 | 0.043 | 0.034 | 0.191 |
| HCM Control Delay | 10.5 | 10.7 | 9.7 | 10.2 | 10.1 | 10.5 | 8.4 | 9.7 | 10.4 |
| HCM Lane LOS | B | B | A | B | B | B | A | A | B |
| HCM 95th-tile Q | 0.6 | 1.1 | 0.1 | 0.8 | 0.3 | 0.8 | 0.1 | 0.1 | 0.7 |









HCM 6th TWSC
10: Eastonville Rd & Stapleton Dr

12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|------|---|---|------|
| Int Delay, s/veh | 7.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  | |  |  | |
| Traffic Vol, veh/h | 8 | 56 | 25 | 11 | 122 | 89 | 18 | 98 | 15 | 46 | 107 | 11 |
| Future Vol, veh/h | 8 | 56 | 25 | 11 | 122 | 89 | 18 | 98 | 15 | 46 | 107 | 11 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| 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 | 9 | 61 | 27 | 12 | 133 | 97 | 20 | 107 | 16 | 50 | 116 | 12 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 492 | 385 | 122 | 421 | 383 | 115 | 128 | 0 | 0 | 123 | 0 | 0 |
| Stage 1 | 222 | 222 | - | 155 | 155 | - | - | - | - | - | - | - |
| Stage 2 | 270 | 163 | - | 266 | 228 | - | - | - | - | - | - | - |
| 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 | 487 | 549 | 929 | 543 | 550 | 937 | 1458 | - | - | 1464 | - | - |
| Stage 1 | 780 | 720 | - | 847 | 769 | - | - | - | - | - | - | - |
| Stage 2 | 736 | 763 | - | 739 | 715 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 339 | 523 | 929 | 463 | 524 | 937 | 1458 | - | - | 1464 | - | - |
| Mov Cap-2 Maneuver | 339 | 523 | - | 463 | 524 | - | - | - | - | - | - | - |
| Stage 1 | 769 | 696 | - | 835 | 758 | - | - | - | - | - | - | - |
| Stage 2 | 537 | 752 | - | 632 | 691 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 12.7 | | 13.7 | | 1 | | 2.1 | | | | | |
| HCM LOS | B | | B | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1458 | - | - | 565 | 463 | 644 | 1464 | - | - | | | |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.171 | 0.026 | 0.356 | 0.034 | - | - | | | |
| HCM Control Delay (s) | 7.5 | - | - | 12.7 | 13 | 13.7 | 7.5 | - | - | | | |
| HCM Lane LOS | A | - | - | B | B | B | A | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.6 | 0.1 | 1.6 | 0.1 | - | - | | | |

HCM 6th TWSC
14: Eastonville Rd & Snaffle Bit Rd

12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|---|---|---|------|
| Int Delay, s/veh | 4.1 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  |  |  |  | |
| Traffic Vol, veh/h | 4 | 2 | 3 | 55 | 3 | 47 | 6 | 157 | 46 | 40 | 104 | 3 |
| Future Vol, veh/h | 4 | 2 | 3 | 55 | 3 | 47 | 6 | 157 | 46 | 40 | 104 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 35 | - | 285 | 285 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 3 | 3 | 79 | 4 | 67 | 7 | 171 | 66 | 57 | 113 | 3 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 483 | 480 | 115 | 417 | 415 | 171 | 116 | 0 | 0 | 237 | 0 | 0 |
| Stage 1 | 229 | 229 | - | 185 | 185 | - | - | - | - | - | - | - |
| Stage 2 | 254 | 251 | - | 232 | 230 | - | - | - | - | - | - | - |
| 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 | 494 | 485 | 937 | 546 | 528 | 873 | 1473 | - | - | 1330 | - | - |
| Stage 1 | 774 | 715 | - | 817 | 747 | - | - | - | - | - | - | - |
| Stage 2 | 750 | 699 | - | 771 | 714 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 437 | 462 | 937 | 522 | 503 | 873 | 1473 | - | - | 1330 | - | - |
| Mov Cap-2 Maneuver | 437 | 462 | - | 522 | 503 | - | - | - | - | - | - | - |
| Stage 1 | 770 | 684 | - | 813 | 743 | - | - | - | - | - | - | - |
| Stage 2 | 685 | 696 | - | 732 | 683 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 11.9 | | 11.5 | | 0.2 | | 2.6 | | | | | |
| HCM LOS | B | | B | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1473 | - | - | 534 | 522 | 836 | 1330 | - | - | | | |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.02 | 0.151 | 0.085 | 0.043 | - | - | | | |
| HCM Control Delay (s) | 7.5 | - | - | 11.9 | 13.1 | 9.7 | 7.8 | - | - | | | |
| HCM Lane LOS | A | - | - | B | B | A | A | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.5 | 0.3 | 0.1 | - | - | | | |

HCM 6th TWSC
1: Eastonville Rd & Motley Rd/Liberty Tree

12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | ↔ | ↔ | ↔ | | ↔ | ↔ | |
| Traffic Vol, veh/h | 10 | 0 | 8 | 0 | 0 | 0 | 1 | 419 | 0 | 0 | 352 | 8 |
| Future Vol, veh/h | 10 | 0 | 8 | 0 | 0 | 0 | 1 | 419 | 0 | 0 | 352 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | 0 | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 9 | 0 | 0 | 0 | 1 | 455 | 0 | 0 | 383 | 9 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 845 | 845 | 388 | 849 | 849 | 455 | 392 | 0 | 0 | 455 | 0 | 0 |
| Stage 1 | 388 | 388 | - | 457 | 457 | - | - | - | - | - | - | - |
| Stage 2 | 457 | 457 | - | 392 | 392 | - | - | - | - | - | - | - |
| 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 | 283 | 300 | 660 | 281 | 298 | 605 | 1167 | - | - | 1106 | - | - |
| Stage 1 | 636 | 609 | - | 583 | 568 | - | - | - | - | - | - | - |
| Stage 2 | 583 | 568 | - | 633 | 606 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 283 | 300 | 660 | 277 | 298 | 605 | 1167 | - | - | 1106 | - | - |
| Mov Cap-2 Maneuver | 283 | 300 | - | 277 | 298 | - | - | - | - | - | - | - |
| Stage 1 | 635 | 609 | - | 582 | 567 | - | - | - | - | - | - | - |
| Stage 2 | 583 | 567 | - | 625 | 606 | - | - | - | - | - | - | - |










| Approach | EB | WB | NB | SB |
|----------------------|----|----|----|----|
| HCM Control Delay, s | 15 | 0 | 0 | 0 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----------------|-----|-----|-----|
| Capacity (veh/h) | 1167 | - | - | 379 | - | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.052 | - | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 15 | 0 | 0 | - |
| HCM Lane LOS | A | - | - | C | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | - | - | - |

HCM 6th AWSC
6: Eastonville Rd & Meridan/Judge Orr

12/09/2020

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 14.7 |
| Intersection LOS | B |








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|---|---|------|---|---|---|---|---|------|---|---|------|
| Lane Configurations |  |  | |  |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 36 | 200 | 97 | 18 | 28 | 44 | 32 | 171 | 28 | 74 | 159 | 29 |
| Future Vol, veh/h | 36 | 200 | 97 | 18 | 28 | 44 | 32 | 171 | 28 | 74 | 159 | 29 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 39 | 217 | 105 | 20 | 30 | 48 | 35 | 186 | 30 | 80 | 173 | 32 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 17.5 | 10.6 | 13.9 | 13.2 |
| HCM LOS | C | B | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 86% | 0% | 67% | 0% | 100% | 0% | 0% | 85% |
| Vol Right, % | 0% | 14% | 0% | 33% | 0% | 0% | 100% | 0% | 15% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 32 | 199 | 36 | 297 | 18 | 28 | 44 | 74 | 188 |
| LT Vol | 32 | 0 | 36 | 0 | 18 | 0 | 0 | 74 | 0 |
| Through Vol | 0 | 171 | 0 | 200 | 0 | 28 | 0 | 0 | 159 |
| RT Vol | 0 | 28 | 0 | 97 | 0 | 0 | 44 | 0 | 29 |
| Lane Flow Rate | 35 | 216 | 39 | 323 | 20 | 30 | 48 | 80 | 204 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.072 | 0.414 | 0.08 | 0.59 | 0.044 | 0.064 | 0.09 | 0.166 | 0.387 |
| Departure Headway (Hd) | 7.497 | 6.89 | 7.318 | 6.576 | 8.04 | 7.528 | 6.812 | 7.435 | 6.82 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 478 | 523 | 491 | 552 | 446 | 476 | 526 | 484 | 529 |
| Service Time | 5.235 | 4.629 | 5.031 | 4.289 | 5.786 | 5.274 | 4.558 | 5.157 | 4.542 |
| HCM Lane V/C Ratio | 0.073 | 0.413 | 0.079 | 0.585 | 0.045 | 0.063 | 0.091 | 0.165 | 0.386 |
| HCM Control Delay | 10.8 | 14.4 | 10.7 | 18.3 | 11.2 | 10.8 | 10.2 | 11.6 | 13.8 |
| HCM Lane LOS | B | B | B | C | B | B | B | B | B |
| HCM 95th-tile Q | 0.2 | 2 | 0.3 | 3.8 | 0.1 | 0.2 | 0.3 | 0.6 | 1.8 |









HCM 6th TWSC
10: Eastonville Rd & Stapleton Dr








12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|------|---|---|------|
| Int Delay, s/veh | 8.9 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  | |  |  | |
| Traffic Vol, veh/h | 18 | 107 | 43 | 15 | 47 | 46 | 36 | 152 | 13 | 110 | 193 | 17 |
| Future Vol, veh/h | 18 | 107 | 43 | 15 | 47 | 46 | 36 | 152 | 13 | 110 | 193 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| 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 | 20 | 116 | 47 | 16 | 51 | 50 | 39 | 165 | 14 | 120 | 210 | 18 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 760 | 716 | 219 | 791 | 718 | 172 | 228 | 0 | 0 | 179 | 0 | 0 |
| Stage 1 | 459 | 459 | - | 250 | 250 | - | - | - | - | - | - | - |
| Stage 2 | 301 | 257 | - | 541 | 468 | - | - | - | - | - | - | - |
| 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 | 323 | 356 | 821 | 307 | 355 | 872 | 1340 | - | - | 1397 | - | - |
| Stage 1 | 582 | 566 | - | 754 | 700 | - | - | - | - | - | - | - |
| Stage 2 | 708 | 695 | - | 525 | 561 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 244 | 316 | 821 | 190 | 315 | 872 | 1340 | - | - | 1397 | - | - |
| Mov Cap-2 Maneuver | 244 | 316 | - | 190 | 315 | - | - | - | - | - | - | - |
| Stage 1 | 565 | 517 | - | 732 | 680 | - | - | - | - | - | - | - |
| Stage 2 | 599 | 675 | - | 351 | 513 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 24.8 | | 16.5 | | 1.4 | | 2.7 | | | | | |
| HCM LOS | C | | C | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1340 | - | - | 361 190 460 | 1397 | - | - | | | | | |
| HCM Lane V/C Ratio | 0.029 | - | - | 0.506 0.086 0.22 | 0.086 | - | - | | | | | |
| HCM Control Delay (s) | 7.8 | - | - | 24.8 25.7 15 | 7.8 | - | - | | | | | |
| HCM Lane LOS | A | - | - | C D C | A | - | - | | | | | |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.7 0.3 0.8 | 0.3 | - | - | | | | | |

HCM 6th TWSC
14: Eastonville Rd & Snaffle Bit Rd

12/09/2020










| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|---|---|---|------|
| Int Delay, s/veh | 21.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  |  |  |  | |
| Traffic Vol, veh/h | 10 | 9 | 8 | 154 | 7 | 132 | 1 | 241 | 188 | 161 | 90 | 8 |
| Future Vol, veh/h | 10 | 9 | 8 | 154 | 7 | 132 | 1 | 241 | 188 | 161 | 90 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 35 | - | 285 | 285 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 13 | 9 | 220 | 10 | 189 | 1 | 262 | 269 | 230 | 98 | 9 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 1061 | 1096 | 103 | 838 | 831 | 262 | 107 | 0 | 0 | 531 | 0 | 0 |
| Stage 1 | 563 | 563 | - | 264 | 264 | - | - | - | - | - | - | - |
| Stage 2 | 498 | 533 | - | 574 | 567 | - | - | - | - | - | - | - |
| 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 | 202 | 213 | 952 | 286 | 305 | 777 | 1484 | - | - | 1036 | - | - |
| Stage 1 | 511 | 509 | - | 741 | 690 | - | - | - | - | - | - | - |
| Stage 2 | 554 | 525 | - | 504 | 507 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 123 | 166 | 952 | 221 | 237 | 777 | 1484 | - | - | 1036 | - | - |
| Mov Cap-2 Maneuver | 123 | 166 | - | 221 | 237 | - | - | - | - | - | - | - |
| Stage 1 | 510 | 396 | - | 740 | 689 | - | - | - | - | - | - | - |
| Stage 2 | 413 | 524 | - | 376 | 394 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 28.5 | | 61.3 | | 0 | | 6.5 | | | | | |
| HCM LOS | D | | F | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1484 | - | - | 185 221 697 | 1036 | - | - | | | | | |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.175 0.995 0.285 | 0.222 | - | - | | | | | |
| HCM Control Delay (s) | 7.4 | - | - | 28.5 105.7 12.2 | 9.5 | - | - | | | | | |
| HCM Lane LOS | A | - | - | D F B | A | - | - | | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.6 9 1.2 | 0.8 | - | - | | | | | |

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|-----------------|---|---|---|---|------|---|---|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 5 | 0 | 4 | 0 | 0 | 0 | 8 | 252 | 0 | 0 | 202 | 3 |
| Future Vol, veh/h | 5 | 0 | 4 | 0 | 0 | 0 | 8 | 252 | 0 | 0 | 202 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | 0 | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 0 | 4 | 0 | 0 | 0 | 9 | 274 | 0 | 0 | 220 | 3 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 514 | 514 | 222 | 516 | 515 | 274 | 223 | 0 | 0 | 274 | 0 | 0 |
| Stage 1 | 222 | 222 | - | 292 | 292 | - | - | - | - | - | - | - |
| Stage 2 | 292 | 292 | - | 224 | 223 | - | - | - | - | - | - | - |
| 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 | 471 | 464 | 818 | 470 | 464 | 765 | 1346 | - | - | 1289 | - | - |
| Stage 1 | 780 | 720 | - | 716 | 671 | - | - | - | - | - | - | - |
| Stage 2 | 716 | 671 | - | 779 | 719 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 469 | 461 | 818 | 465 | 461 | 765 | 1346 | - | - | 1289 | - | - |
| Mov Cap-2 Maneuver | 469 | 461 | - | 465 | 461 | - | - | - | - | - | - | - |
| Stage 1 | 775 | 720 | - | 711 | 666 | - | - | - | - | - | - | - |
| Stage 2 | 711 | 666 | - | 775 | 719 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 11.3 | | 0 | | 0.2 | | 0 | | | | | |
| HCM LOS | B | | A | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1346 | - | - | 579 | - | - | 1289 | - | - | | | |
| HCM Lane V/C Ratio | 0.006 | - | - | 0.017 | - | - | - | - | - | | | |
| HCM Control Delay (s) | 7.7 | - | - | 11.3 | 0 | 0 | 0 | - | - | | | |
| HCM Lane LOS | A | - | - | B | A | A | A | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - | - | 0 | - | - | | | |

HCM 6th AWSC
6: Eastonville Rd & Meridan/Judge Orr

12/09/2020

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 12.2 |
| Intersection LOS | B |








| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|---|---|------|---|---|---|--|---|------|---|---|------|
| Lane Configurations |  |  | |  |  |  |  |  | |  |  | |
| Traffic Vol, veh/h | 9 | 62 | 96 | 61 | 151 | 34 | 119 | 143 | 60 | 22 | 110 | 10 |
| Future Vol, veh/h | 9 | 62 | 96 | 61 | 151 | 34 | 119 | 143 | 60 | 22 | 110 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 67 | 104 | 66 | 164 | 37 | 129 | 155 | 65 | 24 | 120 | 11 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|----------------------------|------|------|------|------|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 12.2 | 11.7 | 12.7 | 11.8 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 70% | 0% | 39% | 0% | 100% | 0% | 0% | 92% |
| Vol Right, % | 0% | 30% | 0% | 61% | 0% | 0% | 100% | 0% | 8% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 119 | 203 | 9 | 158 | 61 | 151 | 34 | 22 | 120 |
| LT Vol | 119 | 0 | 9 | 0 | 61 | 0 | 0 | 22 | 0 |
| Through Vol | 0 | 143 | 0 | 62 | 0 | 151 | 0 | 0 | 110 |
| RT Vol | 0 | 60 | 0 | 96 | 0 | 0 | 34 | 0 | 10 |
| Lane Flow Rate | 129 | 221 | 10 | 172 | 66 | 164 | 37 | 24 | 130 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.251 | 0.385 | 0.02 | 0.312 | 0.134 | 0.307 | 0.062 | 0.05 | 0.25 |
| Departure Headway (Hd) | 6.998 | 6.284 | 7.476 | 6.533 | 7.251 | 6.743 | 6.032 | 7.46 | 6.895 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 511 | 569 | 476 | 546 | 492 | 530 | 589 | 477 | 518 |
| Service Time | 4.774 | 4.06 | 5.266 | 4.322 | 5.034 | 4.526 | 3.815 | 5.25 | 4.684 |
| HCM Lane V/C Ratio | 0.252 | 0.388 | 0.021 | 0.315 | 0.134 | 0.309 | 0.063 | 0.05 | 0.251 |
| HCM Control Delay | 12.1 | 13 | 10.4 | 12.3 | 11.2 | 12.5 | 9.2 | 10.6 | 12 |
| HCM Lane LOS | B | B | B | B | B | B | A | B | B |
| HCM 95th-tile Q | 1 | 1.8 | 0.1 | 1.3 | 0.5 | 1.3 | 0.2 | 0.2 | 1 |










HCM 6th TWSC
10: Eastonville Rd & Stapleton Dr

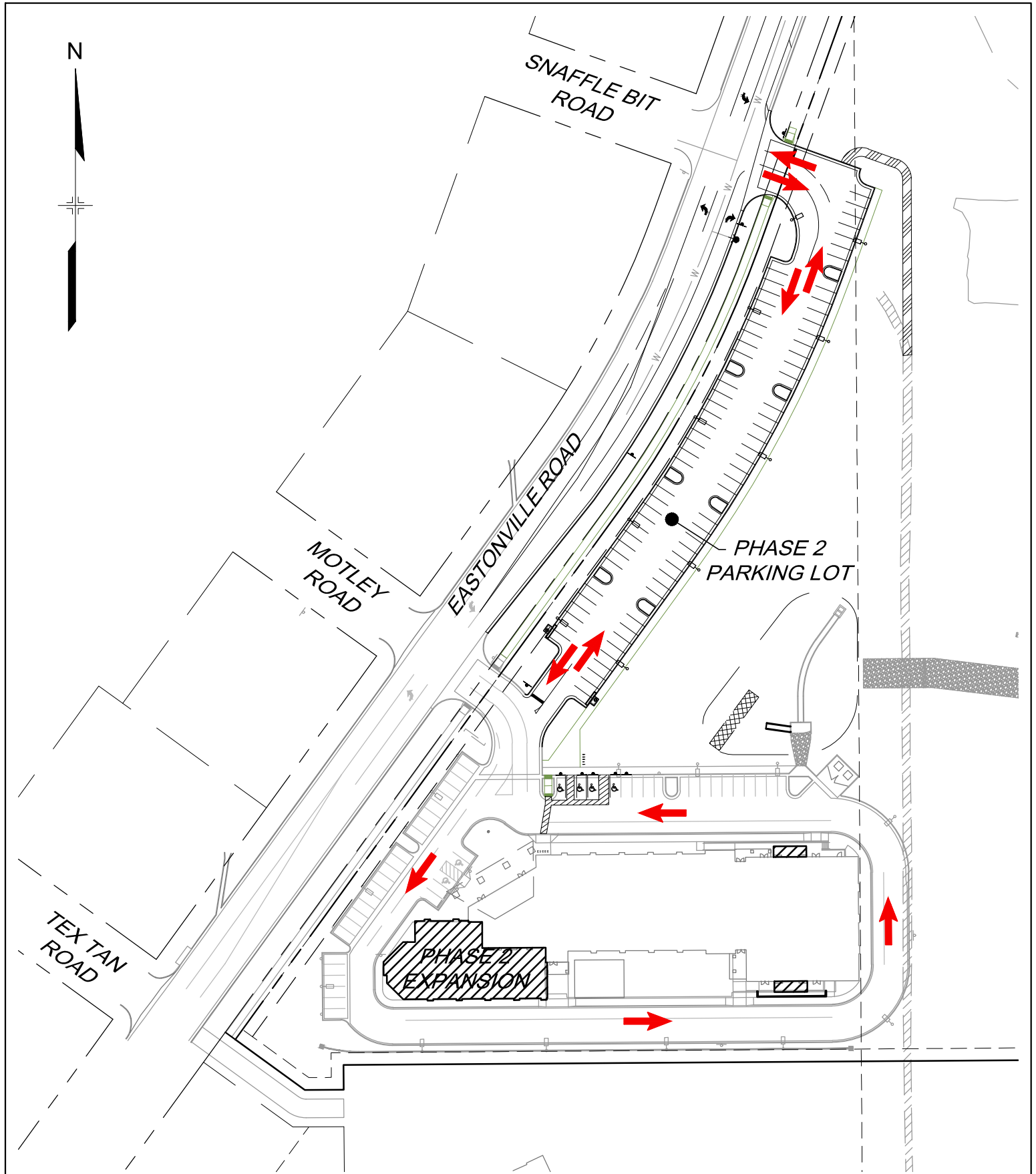
12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|------|---|---|------|
| Int Delay, s/veh | 10 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  | |  |  | |
| Traffic Vol, veh/h | 11 | 75 | 30 | 14 | 164 | 119 | 20 | 121 | 20 | 62 | 136 | 15 |
| Future Vol, veh/h | 11 | 75 | 30 | 14 | 164 | 119 | 20 | 121 | 20 | 62 | 136 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 0 | - | - | 0 | - | - |
| 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 | 82 | 33 | 15 | 178 | 129 | 22 | 132 | 22 | 67 | 148 | 16 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 631 | 488 | 156 | 535 | 485 | 143 | 164 | 0 | 0 | 154 | 0 | 0 |
| Stage 1 | 290 | 290 | - | 187 | 187 | - | - | - | - | - | - | - |
| Stage 2 | 341 | 198 | - | 348 | 298 | - | - | - | - | - | - | - |
| 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 | 394 | 480 | 890 | 456 | 482 | 905 | 1414 | - | - | 1426 | - | - |
| Stage 1 | 718 | 672 | - | 815 | 745 | - | - | - | - | - | - | - |
| Stage 2 | 674 | 737 | - | 668 | 667 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 224 | 450 | 890 | 361 | 452 | 905 | 1414 | - | - | 1426 | - | - |
| Mov Cap-2 Maneuver | 224 | 450 | - | 361 | 452 | - | - | - | - | - | - | - |
| Stage 1 | 707 | 640 | - | 802 | 733 | - | - | - | - | - | - | - |
| Stage 2 | 430 | 725 | - | 535 | 636 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 15.6 | | 18.3 | | 0.9 | | 2.2 | | | | | |
| HCM LOS | C | | C | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1414 | - | - | 465 361 572 | 1426 | - | - | | | | | |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.271 0.042 0.538 | 0.047 | - | - | | | | | |
| HCM Control Delay (s) | 7.6 | - | - | 15.6 15.4 18.4 | 7.7 | - | - | | | | | |
| HCM Lane LOS | A | - | - | C C C | A | - | - | | | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 1.1 0.1 3.2 | 0.1 | - | - | | | | | |

HCM 6th TWSC
14: Eastonville Rd & Snaffle Bit Rd

12/09/2020

| Intersection | | | | | | | | | | | | |
|--------------------------|--------|---|--------|---|---|-------|---|---|---|---|---|---|
| Int Delay, s/veh | 3.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  | |  |  |  |  |  |  |
| Traffic Vol, veh/h | 5 | 2 | 4 | 55 | 3 | 47 | 8 | 211 | 46 | 40 | 140 | 3 |
| Future Vol, veh/h | 5 | 2 | 4 | 55 | 3 | 47 | 8 | 211 | 46 | 40 | 140 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | - | 35 | - | 285 | 285 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 70 | 92 | 70 | 70 | 70 | 92 | 92 | 70 | 70 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 3 | 4 | 79 | 4 | 67 | 9 | 229 | 66 | 57 | 152 | 3 |
| | | | | | | | | | | | | |
| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
| Conflicting Flow All | 584 | 581 | 154 | 518 | 516 | 229 | 155 | 0 | 0 | 295 | 0 | 0 |
| Stage 1 | 268 | 268 | - | 247 | 247 | - | - | - | - | - | - | - |
| Stage 2 | 316 | 313 | - | 271 | 269 | - | - | - | - | - | - | - |
| 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 | 423 | 425 | 892 | 468 | 463 | 810 | 1425 | - | - | 1266 | - | - |
| Stage 1 | 738 | 687 | - | 757 | 702 | - | - | - | - | - | - | - |
| Stage 2 | 695 | 657 | - | 735 | 687 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 370 | 403 | 892 | 445 | 439 | 810 | 1425 | - | - | 1266 | - | - |
| Mov Cap-2 Maneuver | 370 | 403 | - | 445 | 439 | - | - | - | - | - | - | - |
| Stage 1 | 734 | 656 | - | 752 | 698 | - | - | - | - | - | - | - |
| Stage 2 | 629 | 653 | - | 695 | 656 | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | | | | |
| HCM Control Delay, s | 12.8 | | 12.6 | | 0.2 | | 2.1 | | | | | |
| HCM LOS | B | | B | | | | | | | | | |
| | | | | | | | | | | | | |
| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1WBLn2 | SBL | SBT | SBR | | | | | |
| Capacity (veh/h) | 1425 | - | - | 474 | 445 | 771 | 1266 | - | - | | | |
| HCM Lane V/C Ratio | 0.006 | - | - | 0.027 | 0.177 | 0.093 | 0.045 | - | - | | | |
| HCM Control Delay (s) | 7.5 | - | - | 12.8 | 14.8 | 10.1 | 8 | - | - | | | |
| HCM Lane LOS | A | - | - | B | B | B | A | - | - | | | |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.6 | 0.3 | 0.1 | - | - | | | |



MSTA School Traffic Calculations

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

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

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

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

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

School Name: Type: Private / Non-urban Charter
Version: 102816

| MSTA School Queue Input | | | | | Calculations | | | | | |
|-------------------------|--------------------|-----------------|---------------|-----------------|-------------------|------------------|----------------------|----------------|----------------|--------------------|
| Grade Level | Student Population | Number of Buses | Staff Members | Student Drivers | PM Total Vehicles | PM Peak Vehicles | Average Queue Length | Total AM Trips | Total PM Trips | High Demand Length |
| Pre-K & K | 54 | 1 | 2 | | 22 | 11 | 244 | 64 | 47 | 30% |
| 1-10 | 686 | 1 | 22 | | 181 | 69 | 1518 | 618 | 385 | 1973 |
| 11th | | | | | | | | | | |
| 12th | | | | | | | | | | |
| Sum >> | 740 | 2 | 24 | | 203 | 80 | 1762 | 682 | 432 | 2291 |

Yes - If Pre-K & K students are provided parking spaces at or above their PM Peak Vehicles >>>>>

| Pre-K & K | | | | |
|--------------------|---------|-------|-------|--------------------|
| AM Trips Generated | | | | PM Trips Generated |
| Direction | Parents | Buses | Staff | Trips |
| IN | 30 | 1 | 2 | 33 |
| OUT | 30 | 1 | | 31 |
| AM Pre-K-K Trips | | | | 64 |

| PM Trips Generated | | | |
|--------------------|-------|-------|-------|
| Parents | Buses | Staff | Trips |
| 22 | | | 22 |
| 22 | 1 | 2 | 25 |
| PM PK-K Trips | | | 47 |

| 1-10 | | | | |
|--------------------|---------|-------|-------|--------------------|
| AM Trips Generated | | | | PM Trips Generated |
| Direction | Parents | Buses | Staff | Trips |
| IN | 297 | 1 | 22 | 320 |
| OUT | 297 | | | 297 |
| AM K-10 Trips | | | | 618 |

| PM Trips Generated | | | |
|--------------------|-------|-------|-------|
| Parents | Buses | Staff | Trips |
| 181 | | | 181 |
| 181 | 1 | 22 | 204 |
| PM K-10 Trips | | | 385 |

| 11th | | | | |
|--------------------|---------|-------|-------|--------------------|
| AM Trips Generated | | | | PM Trips Generated |
| Direction | Parents | Buses | Staff | Trips |
| IN | | | | |
| OUT | | | | |
| AM 11 Trips | | | | |

| PM Trips Generated | | | |
|--------------------|-------|-------|-------|
| Parents | Buses | Staff | Trips |
| | | | |
| | | | |
| PM 11 Trips | | | |

| 12th | | | | |
|--------------------|---------|-------|-------|--------------------|
| AM Trips Generated | | | | PM Trips Generated |
| Direction | Parents | Buses | Staff | Trips |
| IN | | | | |
| OUT | | | | |
| AM 12 Trips | | | | |

| PM Trips Generated | | | |
|--------------------|-------|-------|-------|
| Parents | Buses | Staff | Trips |
| | | | |
| | | | |
| PM 12 Trips | | | |

| All AM TRIPS | | |
|--------------|-----|-------|
| In | Out | Total |
| 354 | 329 | 682 |

| All PM TRIPS | | |
|--------------|-----|-------|
| In | Out | Total |
| 203 | 229 | 432 |

| ADT | |
|------|--|
| 111 | |
| 1003 | |
| 1114 | |

