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Memorandum

To: El Paso County Traffic Engineering

From: David Kline, PE, PTOE

Date: December 11, 2020

Subject: Liberty Tree Academy – Phase 2 Traffic Analysis

PCD File No.: PPR2018

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.

shouldn' this be just a northbound thru?

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/Right	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.

Please provide an autoturn exhibit at the snaffle bit entrance

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.

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 prior to the Roadway Impact Fee being implemented and therefore the project is not subject to the fee.

Plat approval prior to 2001 does not exclude the development from the road impact fee. Per road impact fee resolution 19-471, effective January 1, 2020 all property in the unincorporated area of the county that receives land use approval is subject to the payment of Road Impact Fees. Please revise.

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.

_ _____ 12/11/2020
David Robert Kline, P.E. #24520 Date

Developer's Statement

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

_____ 12/11/2020
Michael E. Peterson, Board Secretary Date
Liberty Tree Academy Building Corporation
PO Box 64614
Colorado Springs, CO 80962

Attachments:

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

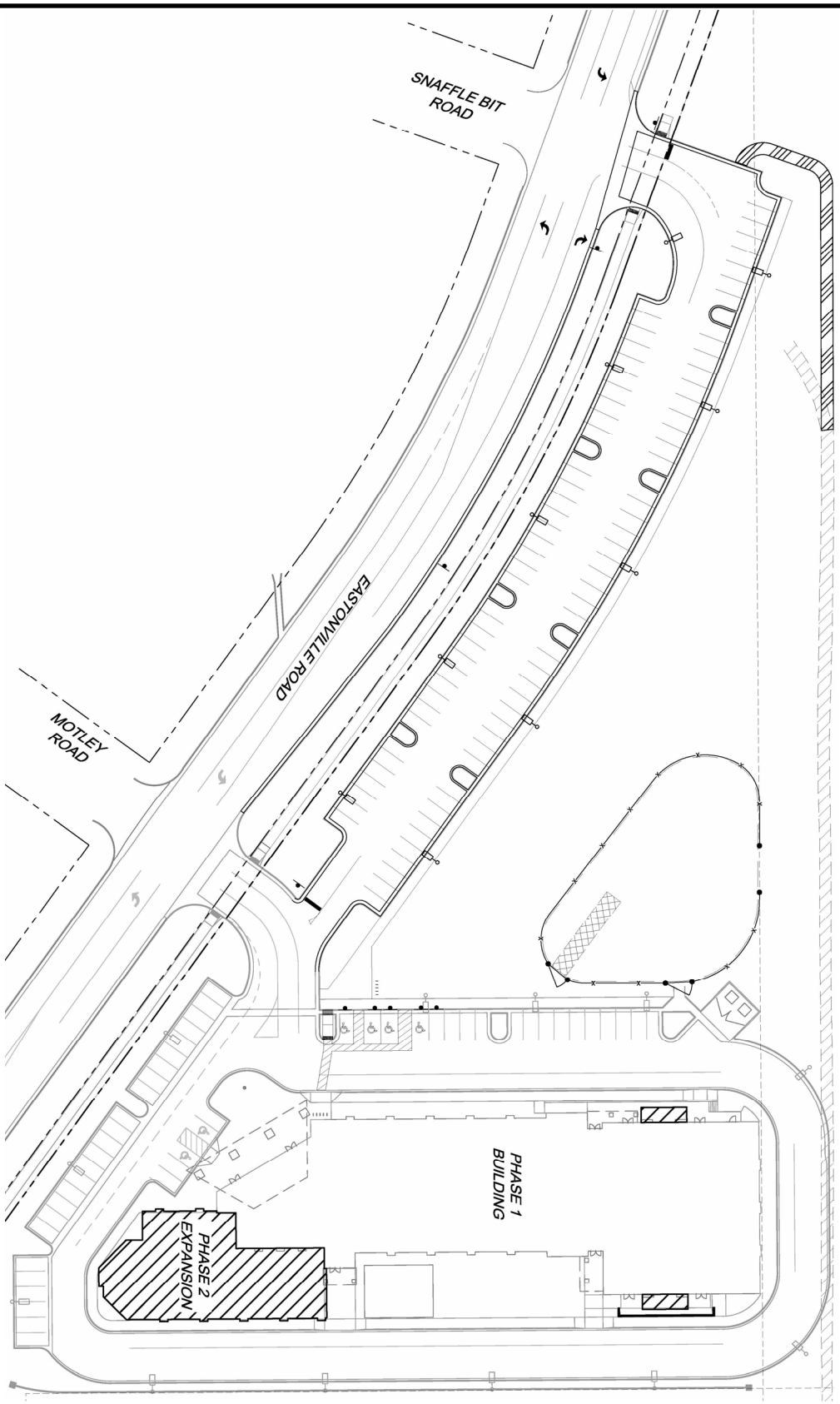
Matrix

LIBERTY TREE ACADEMY

TRAFFIC IMPACT STUDY

Figure 1

VICINITY MAP



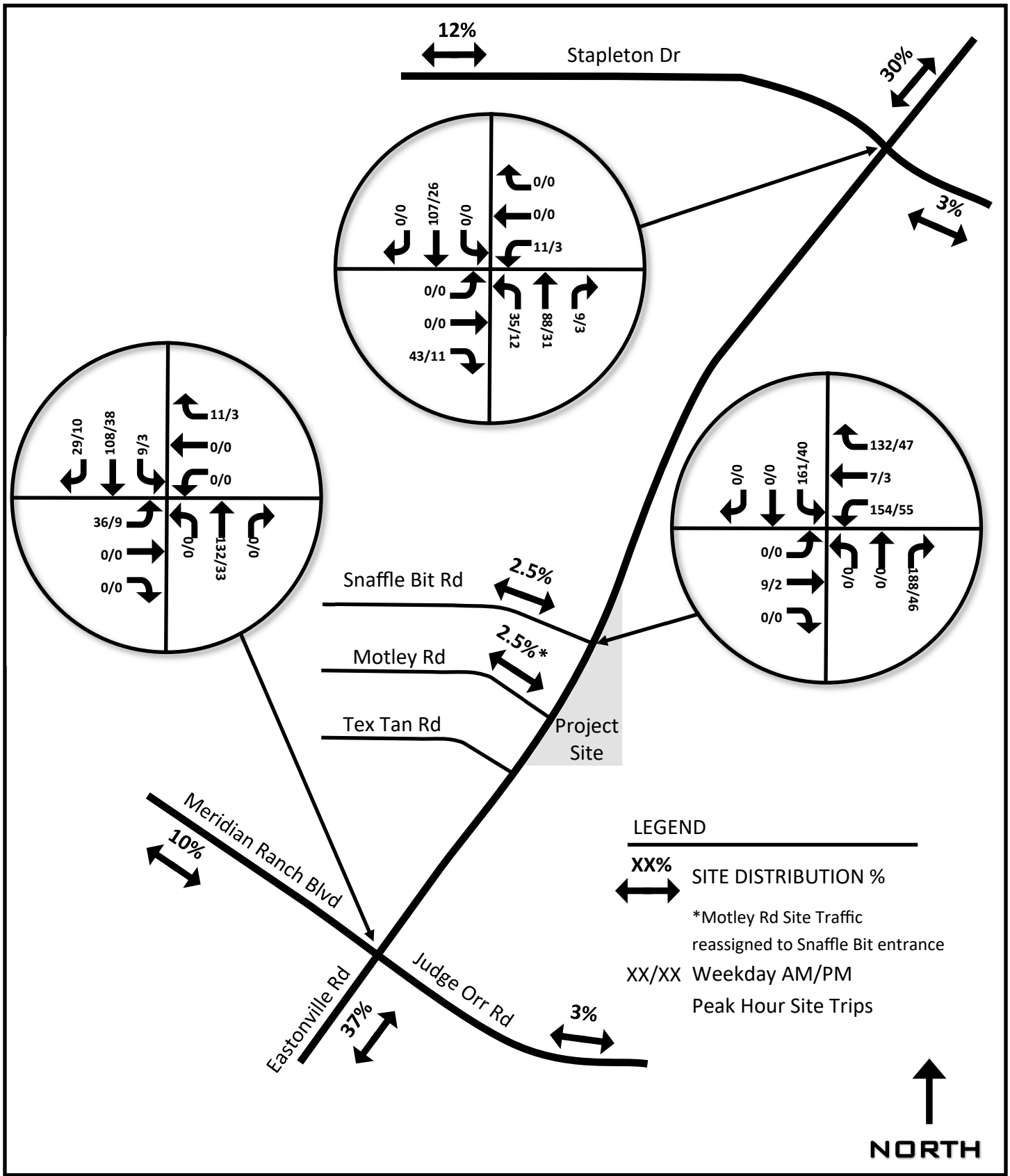
Matrix

LIBERTY TREE ACADEMY

TRAFFIC IMPACT STUDY

Figure 2

SITE PLAN



Matrix

Figure 3

LIBERTY TREE ACADEMY

TRAFFIC IMPACT STUDY

TRIP DISTRIBUTION & SITE TRAFFIC VOLUMES

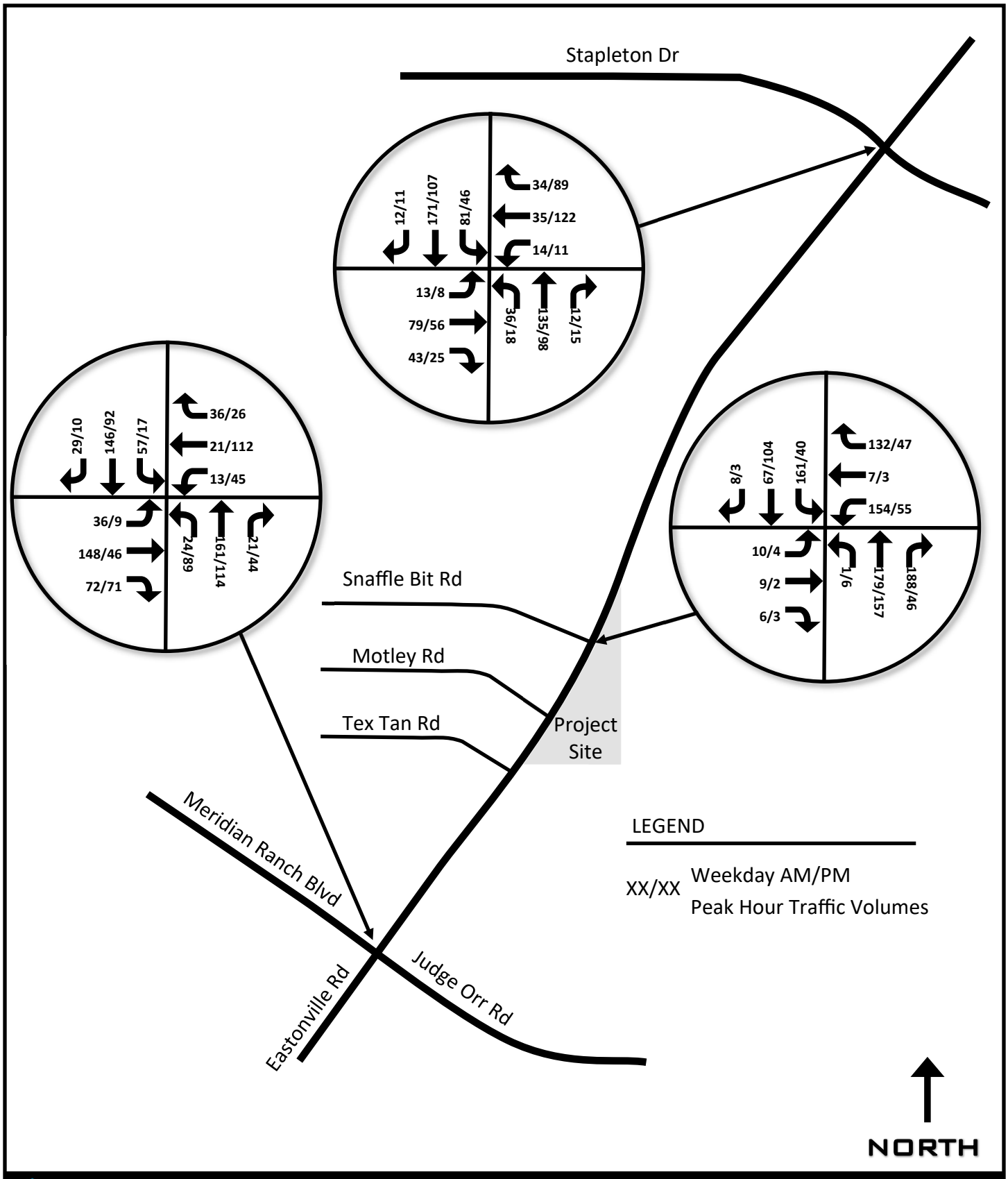


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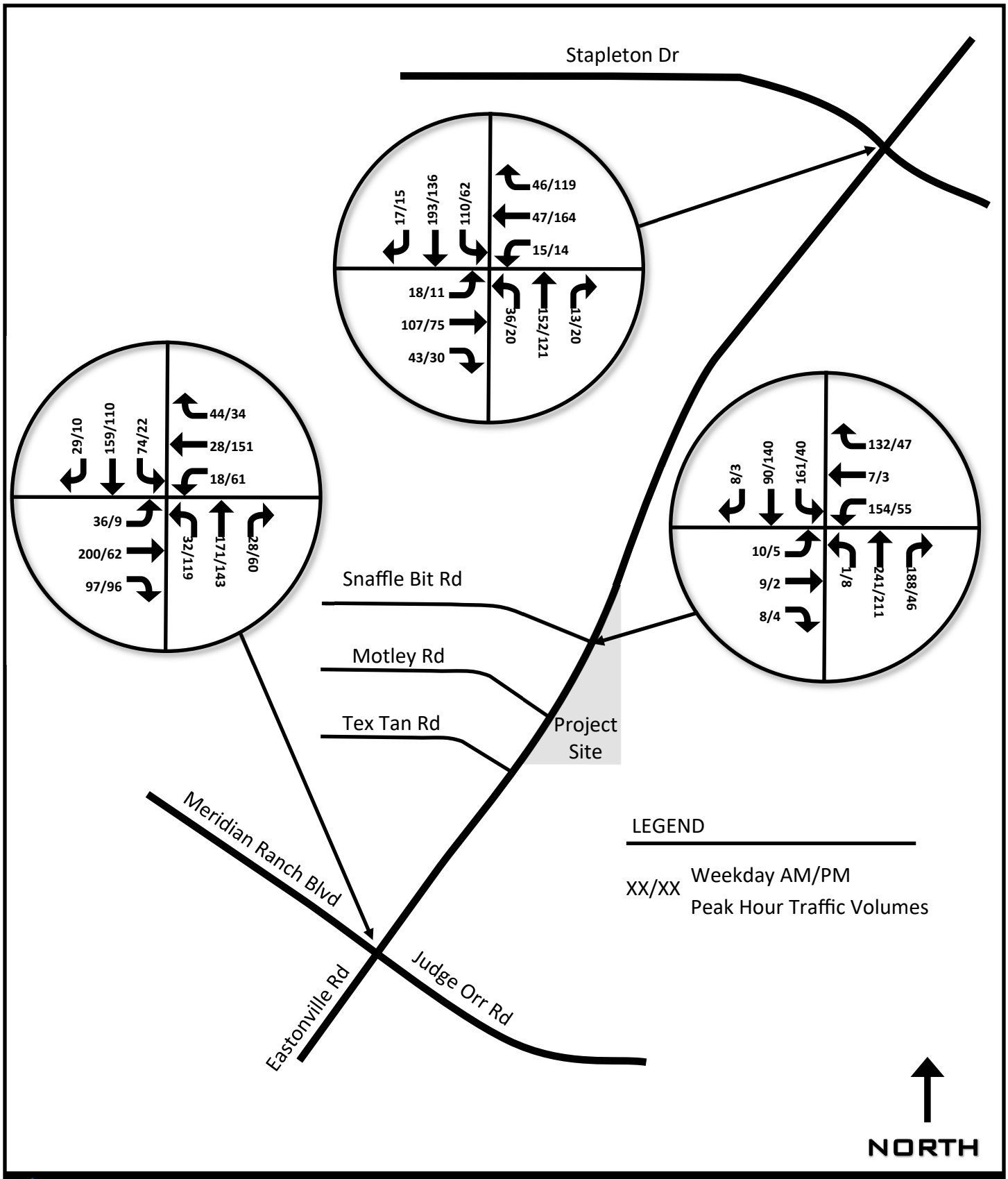
Figure 4

LIBERTY TREE ACADEMY

TRAFFIC IMPACT STUDY

2021 AM AND PM TOTAL TRAFFIC VOLUMES



Matrix

LIBERTY TREE ACADEMY

TRAFFIC IMPACT STUDY

Figure 5

2040 AM AND PM TOTAL TRAFFIC VOLUMES

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	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1225	-	-	426	-	-	1170	-	-
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	-	-

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

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	EBLn1	WBLn1	WBLn2	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	-	-

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	EBLn1	WBLn1	WBLn2	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	EBLn1	WBLn1	WBLn2	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	-	-

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

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	EBLn1	WBLn1	WBLn2	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	-	-

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	EBLn1	WBLn1	WBLn2	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	-	-

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	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1167	-	-	379	-	-	1106	-	-
HCM Lane V/C Ratio	0.001	-	-	0.052	-	-	-	-	-
HCM Control Delay (s)	8.1	-	-	15	0	0	0	-	-
HCM Lane LOS	A	-	-	C	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0	-	-

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

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	EBLn1	WBLn1	WBLn2	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	-	-

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	EBLn1	WBLn1	WBLn2	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	EBLn1	WBLn1	WBLn2	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	-	-

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

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	EBLn1	WBLn1	WBLn2	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	-	-

Intersection	
Int Delay, s/veh	3.8

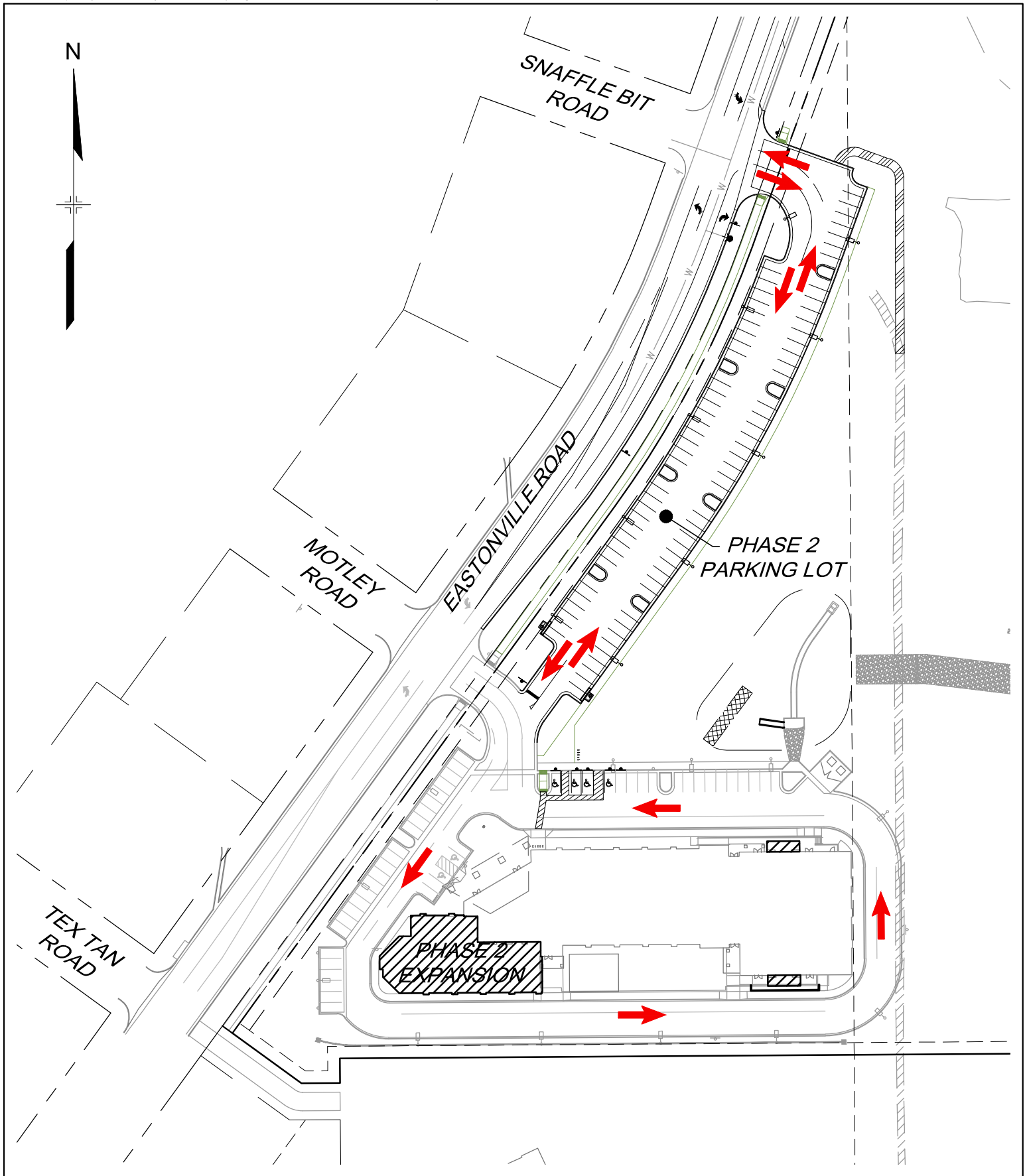
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	4	55	3	47	8	211	46	40	140	3
Future Vol, veh/h	5	2	4	55	3	47	8	211	46	40	140	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	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	EBLn1	WBLn1	WBLn2	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	-	-

R:\20.995.002 (Liberty Tree Academy Additional Svcs)\Dwg\Exhibits\TIS_Circulation-Plan_20201208.dwg



Matrix
Excellence by Design

CIRCULATION EXHIBIT

LIBERTY TREE ACADEMY - PHASE 2

DECEMBER 2020

FIGURE No. 1

MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates

(These numbers do not reflect peak hour traffic volumes)

School Name:

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

Version: 102816

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)

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
										30%
Pre-K & K	54	1	2		22	11	244	64	47	317
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 >>>>>>

	529

Pre-K & K

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN	30	1	2	33	22			22
OUT	30	1		31	22	1	2	25
		AM Pre-K-K Trips		64		PM PK-K Trips		47

1-10

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN	297	1	22	320	181			181
OUT	297			297	181	1	22	204
		AM K-10 Trips		618		PM K-10 Trips		385

11th

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

12th

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

			ADT
			111
All AM TRIPS	In	354	
	Out	329	
	Total	682	1003
All PM TRIPS	In	203	
	Out	229	
	Total	432	1114

Calculated 6/25/2020 By:_____