



LSC TRANSPORTATION CONSULTANTS, INC.

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October 25, 2019

Mr. Rick Campbell
1556 Investments, LLC
270 St. Paul Street, Suite 200
Denver, CO 80206

Re: Aurora Community School
Aurora, CO
LSC #190680

Dear Mr. Campbell:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Aurora Community School. As shown on Figure 1, the school is proposing to locate in an existing retail shopping center southeast of the E. 6th Avenue (SH 30)/E. Centretech Parkway intersection in Aurora, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; a traffic signal warrant analysis at the E. 6th Avenue/Jasper Street/Site Access intersection; the site's projected traffic impacts; a recommended circulation plan for drop-off and pick-up operations; and recommended pedestrian accessible routes.

LAND USE AND ACCESS

The site is proposed to include a public charter school with a capacity of 200 students in Phase 1 in late 2019 or early 2020 and a buildout capacity of 600 students by 2022. Access is provided by the various existing retail shopping center access points. Figure 2 shows the conceptual site plan. The school plans to open with about 200 students in Kindergarten and 1st and 2nd grades. Phase 1 will only utilize the north drop-off/pick-up area. The school will add a grade or two per year until they reach a student capacity of 600 in grades Kindergarten through 8th Grade in 2022. Approximately 265 students will utilize the north drop-off/pick-up area and about 335 students will utilize the south drop-off/pick-up area based on feedback from the school. This split will be adjusted as needed to best accommodate future conditions. The school plans to have a 15-minute stagger between the two drop-off/pick-up locations.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

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

- **E. 6th Avenue (SH 30)** is an east-west, four-lane major arterial roadway north of the site. It is classified R-A (Regional Highway) by CDOT. The intersection with E. Centretech Parkway is signalized with auxiliary turn lanes. The posted speed limit in the vicinity of the site is 40 mph. There are existing bus stops near E. Centretech Parkway.
- **E. Centretech Parkway** is a three-lane collector roadway west and south of the site. The intersection with E. 6th Avenue (SH 30) is signalized with auxiliary turn lanes. It connects E. 6th Avenue (SH 30) southeast to Airport Road. The posted speed limit in the vicinity of the site is 25 mph. There are existing bus stops south of E. 6th Avenue (SH 30).

Existing Traffic Conditions

Figure 3 shows the existing traffic volumes, lane geometries, traffic controls, and posted speed limits in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes are from the attached traffic counts conducted by Counter Measures in July, 2019. Figure 3 also shows the lengths of the existing turn lanes in the study area that could be impacted by site traffic.

2022 and 2040 Background Traffic

Figure 4 shows the estimated 2022 background traffic and Figure 5 shows the estimated 2040 background traffic. The background traffic volumes assume an annual growth rate of 0.8 percent on E. 6th Avenue (SH 30) based on CDOT projections.

Existing, 2022 Background, and 2040 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in the study area were analyzed to determine the existing, 2022 background, and 2040 background levels of service using Synchro. The existing traffic signal timing plans were provided by City staff. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **E. 6th Avenue (SH 30)/E. Centretech Parkway/Helena Street:** This signalized intersection currently operates at an overall LOS "B" during both morning and afternoon peak-hours and is expected to do so through 2040 without the addition of site traffic.
- **E. Centretech Parkway/5th Place/North Site Access:** All movements at this unsignalized intersection currently operate at LOS "B" or better and are expected to do so through 2040 without the addition of site traffic.

- **E. 6th Avenue (SH 30)/Jasper Street/Site Access:** All movements at this unsignalized intersection currently operate at LOS “C” or better with the exception of the northbound left/through movement which operates at LOS “F” in the afternoon peak-hour. By 2022 all movements are expected to operate at LOS “D” or better with the exception of the northbound left/through movement which is expected to operate at LOS “F” in both morning and afternoon peak-hours. The southbound approach is expected to operate at LOS “F” in the 2040 morning peak-hour. The southbound and northbound left and through movements are currently five vehicles per hour or lower and will remain low after completion of the school. In addition, both the southbound and northbound right-turn movements have existing acceleration lanes on E. 6th Avenue. This suggests a traffic signal warrant is unlikely to be met and the intersection could potentially be converted to three-quarter movement by others in the future.
- **E. 6th Avenue (SH 30)/RIRO Site Access:** All movements at this unsignalized right-in/right-out intersection currently operate at LOS “B” or better and are expected to do so through 2022. In 2040, all movements are expected to operate at LOS “C” or better.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed land use based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

In Phase 1 in late 2019 or early 2020, the site is projected to generate about 370 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning school peak-hour, which is expected to occur from 7:15 to 8:15 a.m., about 106 vehicles would enter and about 94 vehicles would exit the site. During the afternoon school peak-hour, which is expected to occur from 3:30 to 4:30 p.m., about 61 vehicles would enter and about 72 vehicles would exit.

At buildout in 2022, the site is projected to generate about 1,110 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning school peak-hour, which is expected to occur from 7:15 to 8:15 a.m., about 353 vehicles would enter and about 314 vehicles would exit the site. During the afternoon school peak-hour, which is expected to occur from 3:30 to 4:30 p.m., about 180 vehicles would enter and about 211 vehicles would exit.

Table 2 also shows the number of students planned to be dropped off/picked up at the north side (265 students) and south side (335 students) of the building based on feedback from the school. This split will be adjusted as needed over time to best accommodate future conditions.

TRIP ASSIGNMENT

Figure 6 shows the estimated assignment of Phase 1 site-generated traffic volumes based on 200 students being dropped off/picked up on the north side of the building. Figure 7 shows the estimated assignment of buildout site-generated traffic based on 600 students utilizing both drop-off/pick-up locations. These trip assignments are intended to avoid conflicts with other users of the shopping center, avoid the crossing of site traffic flowing into and out of the site, and help limit queue lengths by encouraging mostly right-turn movements exiting the site. Detailed circulation plans are provided later in this report.

EXISTING PLUS SITE-GENERATED TRAFFIC AND 2022 AND 2040 TOTAL TRAFFIC

Figure 8 shows the existing plus site-generated traffic which are sum of the traffic volumes in Figures 3 and 6. Figure 8 also shows the recommended existing plus site-generated traffic lane geometry and traffic control which is the same as the existing conditions in Figure 3.

Figure 9 shows the 2022 total traffic which is the sum of the traffic volumes in Figures 4 and 7. Figure 9 also shows the recommended 2022 lane geometry and traffic control which is the same as the existing conditions in Figure 3.

Figure 10 shows the 2040 total traffic which is the sum of the traffic volumes in Figures 5 and 7. Figure 10 also shows the recommended 2040 lane geometry and traffic control which is the same as the existing conditions in Figure 3.

PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the existing plus site-generated, 2022 total, and 2040 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

- **E. 6th Avenue (SH 30)/E. Centretech Parkway:** This signalized intersection is expected to operate at an overall LOS “B” during both morning and afternoon peak-hours through 2040 with or without the addition of site traffic.
- **E. Centretech Parkway/5th Place/North Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2040.
- **E. 6th Avenue (SH 30)/Jasper Street/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “D” or better during both peak-hours through 2040 with the following exception: The northbound left/through movement is expected to operate at LOS “F” in one or both peak-hours with or without the addition of site traffic. The southbound approach is expected to operate at LOS “F” in the 2040 morning peak-hour. The southbound and northbound left and through movements are currently five vehicles per hour or lower and will remain low after completion of the school. In addition, both the southbound and northbound right-turn movements have existing acceleration lanes on E. 6th Avenue. This suggests a traffic signal warrant is unlikely to be met and the intersection could potentially be converted to three-quarter movement by others in the future.
- **E. 6th Avenue (SH 30)/RIRO Site Access:** All movements at this unsignalized right-in/right-out intersection are expected to operate at LOS “C” or better through 2040 with or without the addition of site traffic.

CIRCULATION PLAN

Recommended traffic circulation plans for the north and south drop-off/pick-up areas are shown in Figures 11 and 12. Figure 13 shows the two plans consolidated in one figure. The intent of these plans is to avoid blockage of fire lanes, blockage at drive aisles that will likely be used by neighboring businesses, and to avoid conflicts of the internal travel routes. The plans

also identify parking areas that will be reserved for other businesses during the school's drop-off/pick-up operations.

These figures represent the maximum available on-site vehicle storage which will only be utilized if needed based on future demand. Doubled loaded drive aisles will only be used if necessary.

PARKING AVAILABILITY

The applicant has coordinated with the other owners/tenants of the shopping center to verify the number of available parking spaces during drop-off/pick-up operations will be sufficient for their needs. Figure 11 shows there will be a minimum of 212 available parking spaces for other users during the busy drop-off/pick-up times. Colorado Gymnastics and the Church have the highest typical parking demands but their need is off-peak from the busy school times. A letter is included in the appendix from the owner of several adjoining properties in support of the circulation plan.

PEDESTRIAN PLAN

Figure 14 shows the recommended pedestrian routes to/from the school. The north drop-off/pick-up area will need to accommodate a pedestrian accessible route between E. Centretech Parkway and the front building entrance. The south drop-off/pick-up area will need to accommodate a pedestrian accessible crossing route between E. Centretech Parkway and the rear building entrance prior to opening the south drop-off/pick-up area.

TRAFFIC SIGNAL WARRANT ANALYSIS

Figure 3 shows very low peak-hour traffic volumes for the northbound left and through movements and for the southbound left and through movements - each of these movements is currently five vehicles per hour or lower. These four movements are typically the movements that would cause a traffic signal warrant to be met. The proposed site circulation plan would not add trips to any of these movements so the addition of school traffic is not expected to meet a traffic signal warrant at this location. The intersection may need to be converted to three-quarter movement by others in the future.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. In Phase 1 in late 2019 or early 2020, the site is projected to generate about 370 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning school peak-hour, about 106 vehicles would enter and about 94 vehicles would exit the site. During the afternoon school peak-hour, about 61 vehicles would enter and about 72 vehicles would exit.
2. At buildout in 2022, the site is projected to generate about 1,110 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning school peak-hour, about 353 vehicles would enter and about 314 vehicles would exit the site. During the afternoon school peak-hour, about 180 vehicles would enter and about 211 vehicles would exit.

Projected Levels of Service

3. The E. 6th Avenue (SH 30)/E. Centretech Parkway/Helena Street signalized intersection is expected to operate at an overall LOS “B” during both morning and afternoon peak-hour through 2040 with or without the addition of site traffic.
4. All movements at the unsignalized intersections analyzed are expected to operate at LOS “D” or better through 2040 with or without the addition of site traffic with the following exception: The northbound left/through movement at the E. 6th Avenue (SH 30)/Jasper Street/Site Access intersection is expected to operate poorly in 2022 and 2040. The southbound approach is expected to operate at LOS “F” in the 2040 morning peak-hour. The southbound and northbound left and through movements are currently five vehicles per hour or lower and will remain low after completion of the school. In addition, both the southbound and northbound right-turn movements have existing acceleration lanes on E. 6th Avenue. This suggests a traffic signal warrant is unlikely to be met and the intersection could potentially be converted to three-quarter movement by others in the future.

Conclusions

5. The impact of the Aurora Community School can be accommodated by the existing roadway network with implementation of the recommendations below.

Recommendations

6. The north drop-off/pick-up area shown in Figure 11 and a pedestrian accessible route to the north building entrance will be needed for opening day conditions in late 2019 or early 2020 and will require the construction of a roughly 300-foot raised median/island to accommodate the drop-off/pick-up. Other improvements will be needed as well such as ADA ramp adjustments, crosswalk adjustments, etc.
7. The south drop-off/pick-up area shown in Figure 12 will likely be implemented in the near future as the school builds out. A pedestrian accessible route between E. Centretech Parkway and the rear entrance will be needed prior to opening of the south drop-off/pick-up area.
8. Staff/volunteers will be needed to supervise/monitor the circulation and pedestrian routes shown in Figures 11, 12, 13, and 14. These figures show the recommended location of staff/volunteers - some of these locations could potentially be dropped over time as appropriate.

* * * * *

We trust our findings will assist you in gaining approval of the proposed Aurora Community School development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By


Christopher S. McGranahan, PE, PTOE
Principal



CSM/wc

10-25-19

Enclosures: Tables 1 and 2
Figures 1 - 14
Traffic Count Reports
Level of Service Definitions
Level of Service Reports
Letter of Support

Table 1
Intersection Levels of Service Analysis
Aurora Community School
Aurora, CO
LSC #190680; October, 2019

Intersection Location	Traffic Control	Existing Traffic		Existing Plus Site-Generated Traffic		2022 Background Traffic		2022 Total Traffic		2040 Background Traffic		2040 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
<u>E. 6th Avenue (SH 30)/Centrettech Parkway</u>													
EB Left	Signalized	A	A	A	A	A	A	B	B	B	B	C	B
EB Through		A	A	A	A	A	A	B	B	A	B	B	B
EB Right		A	A	A	A	A	A	A	A	A	A	A	A
WB Left		A	A	A	A	A	A	B	B	A	B	B	B
WB Through		A	A	A	A	A	A	B	B	A	A	B	B
WB Right		A	A	A	A	A	A	A	A	A	A	A	A
NB Left		E	E	E	E	E	E	E	E	E	E	E	E
NB Through		D	D	D	D	D	D	D	D	D	D	D	D
NB Right		B	B	D	B	C	B	D	B	C	B	D	C
SB Left		D	D	D	D	D	D	D	D	D	D	D	D
SB Through/Right		E	B	E	B	E	B	D	B	E	B	D	B
Entire Intersection Delay (sec /veh)		10.6	13.2	10.8	13.5	10.8	13.5	17.1	16.8	11.9	14.8	18.9	18.7
Entire Intersection LOS		B	B	B	B	B	B	B	B	B	B	B	B
<u>E. Centrettech Parkway/5th Place/N. Site Access</u>													
NB Left	TWSC	A	A	A	A	A	A	A	A	A	A	A	A
EB Approach		B	B	B	B	B	B	C	C	B	B	C	C
WB Approach		B	B	B	B	B	B	C	C	B	B	C	C
SB Left		A	A	A	A	A	A	A	A	A	A	A	A
Critical Movement Delay		11.5	13.0	11.8	13.3	11.8	13.4	17.3	18.6	13.1	14.8	21.7	21.6
<u>E. 6th Avenue (SH 30)/Jasper Street</u>													
NB Left/Through	TWSC	A	F	A	F	F	F	F	F	F	F	F	F
NB Right		B	B	B	B	B	B	B	B	B	B	B	C
EB Left		B	A	B	B	B	A	B	B	B	B	B	B
WB Left		A	B	B	B	B	B	B	B	B	B	C	B
SB Approach		C	B	C	C	D	C	F	D	F	D	F	F
Critical Movement Delay		21.0	61.4	22.3	80.5	87.2	68.3	233.1	135.0	139.7	121.0	>240	>240
<u>E. 6th Avenue (SH 30)/RIRO Site Access</u>													
NB Right	TWSC RIRO	A	B	B	B	B	B	B	B	B	B	B	B
SB Right		B	B	B	B	B	B	B	B	C	B	C	B
Critical Movement Delay		13.7	11.7	13.9	12.0	13.9	11.9	14.5	12.5	15.6	12.7	16.3	13.9

Trip Generating Category	Quantity	Trip Generation Rates ⁽¹⁾					Vehicle-Trips Generated				
		Average Weekday	AM Peak-Hour		PM Peak-Hour		Average Weekday	AM Peak-Hour		PM School Peak-Hour	
			In	Out	In	Out		In	Out	In	Out
PHASE 1											
Charter School K-8 ^{(2) (3)}	200 Students	1.85	0.528	0.468	0.307	0.360	370	106	94	61	72
BUILDOUT											
Charter School K-8 ^{(4) (5)}	600 Students	1.85	0.589	0.523	0.300	0.352	1,110	353	314	180	211
					North of Building =		490	156	139	80	93
					South of Building =		620	197	175	100	118

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
- (2) ITE Land Use No. 537 - Charter Elementary School - average rates for daily and formula rates for peak-hours.
- (3) All 200 students in Phase 1 will be dropped off/picked up via the north drop-off/pick-up area.
- (4) Assumes 265 elementary school students and 335 middle school students for the purposes of drop-off/pick-up.
- (5) 265 students will use the north drop-off/pick-up area and 335 students will be use the south drop-off/pick-up area. This split will be adjusted over time to best manage circulation within the site.

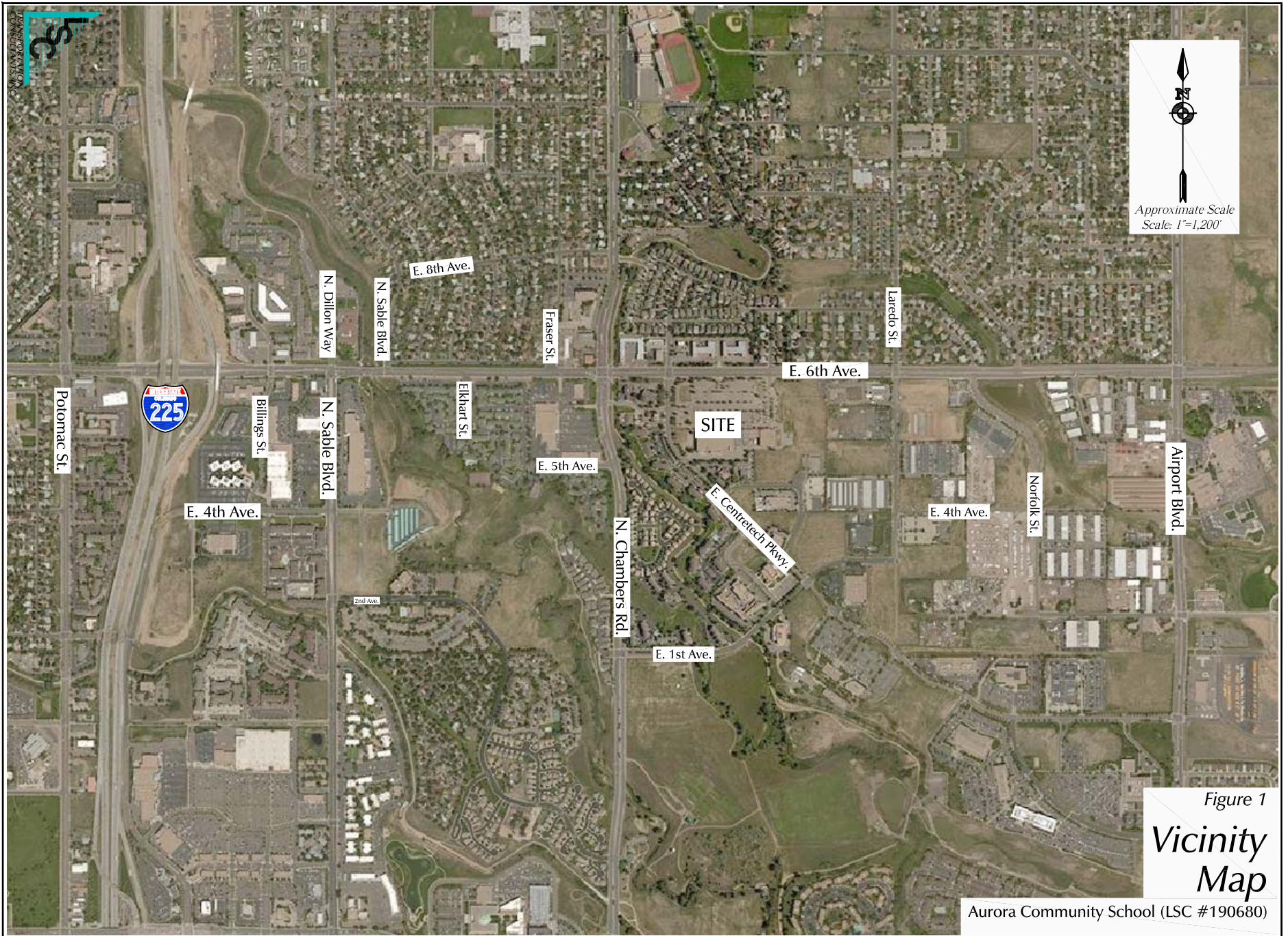


Figure 1
**Vicinity
Map**

Aurora Community School (LSC #190680)



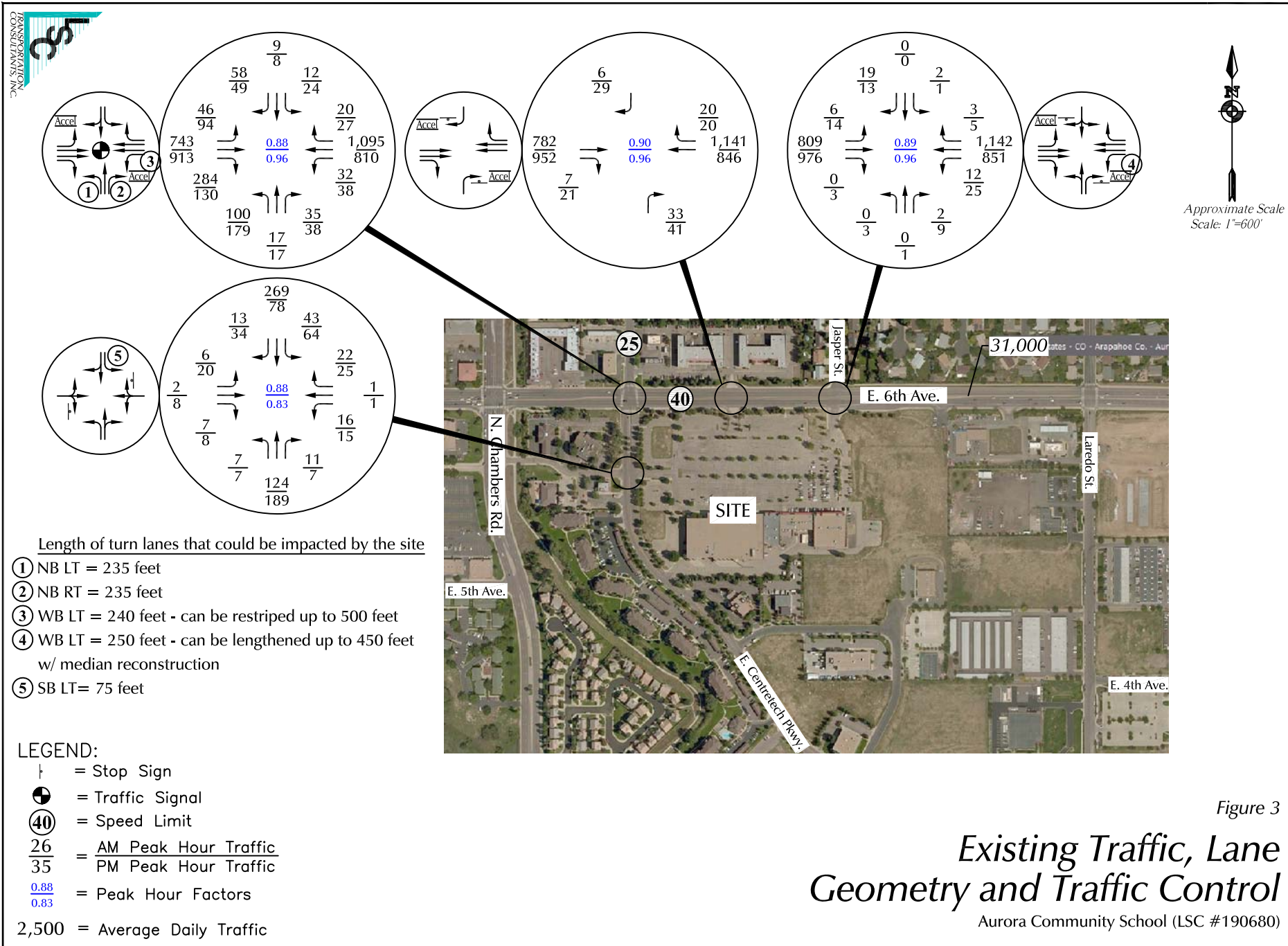
Approximate Scale
Scale: NTS

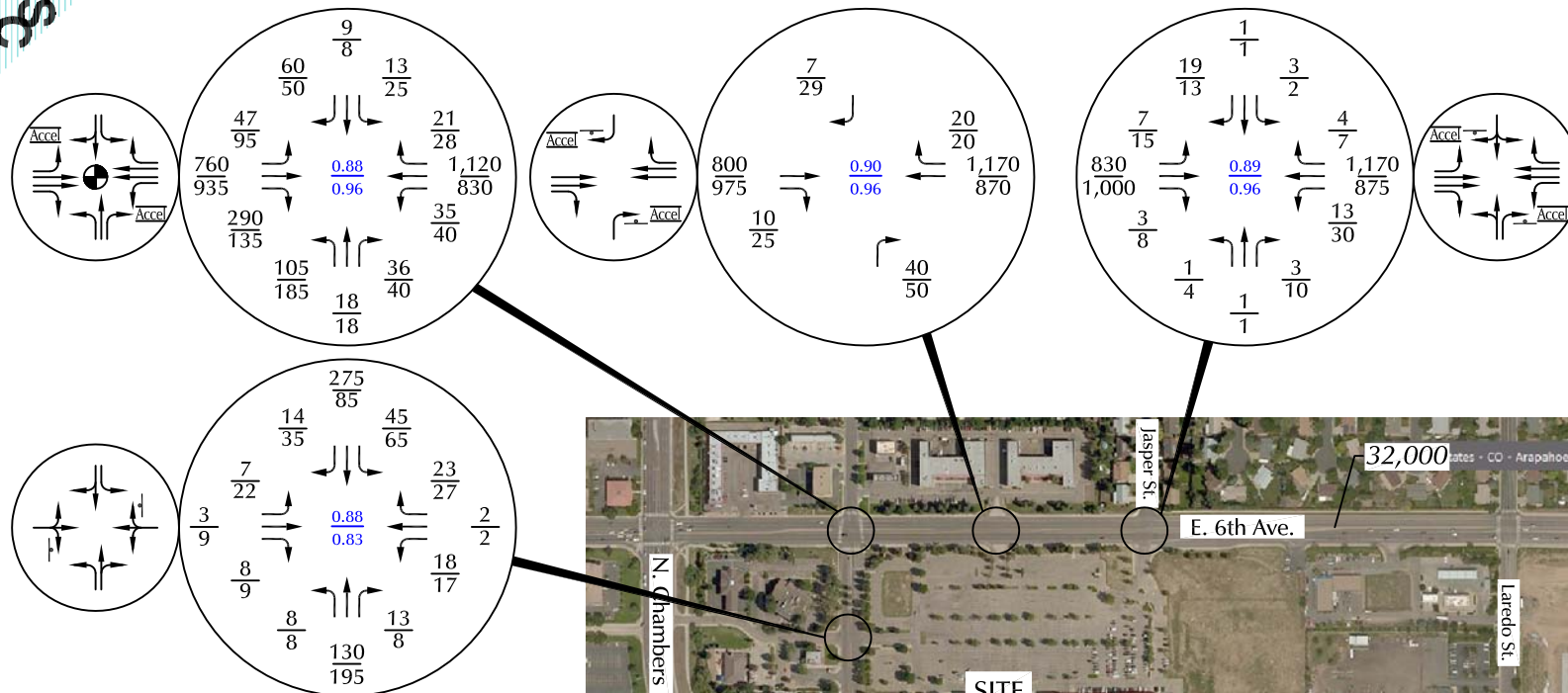


Figure 2

Site Plan

Aurora Community School (LSC #190680)





Note: Assumes annual growth rate of 0.8 percent on E. 6th Avenue (SH 30) per CDOT projections.

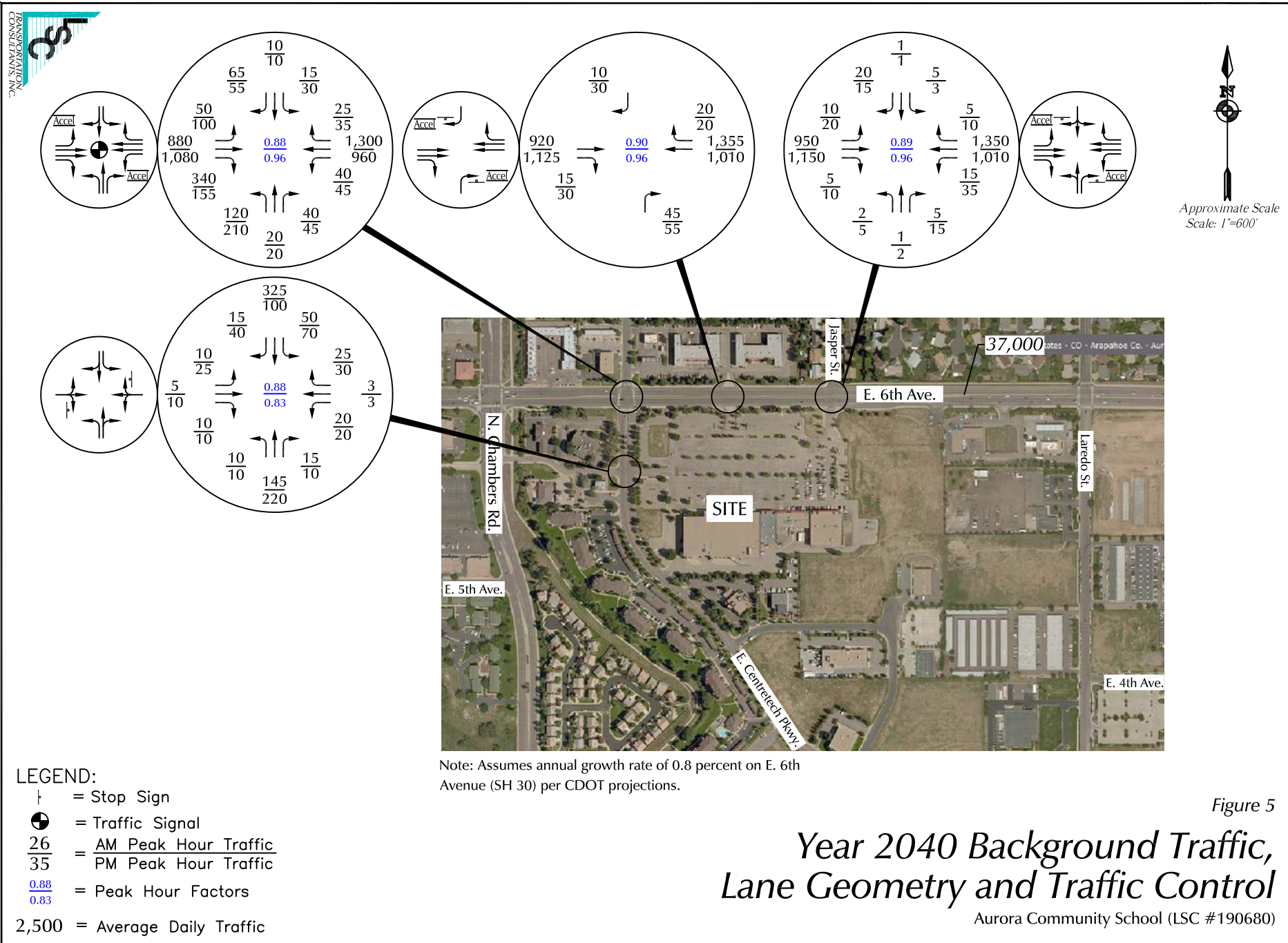
LEGEND:

- = Stop Sign
- = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- $\frac{0.88}{0.83}$ = Peak Hour Factors
- 2,500 = Average Daily Traffic

Figure 4

Year 2022 Background Traffic, Lane Geometry and Traffic Control

Aurora Community School (LSC #190680)





LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
PM Peak Hour Traffic
2,500 = Average Daily Traffic

Notes:

1. This scenario assumes drop-off/pick-up operations on the north side of the building as shown in Figure 11.
2. The school acknowledges not all parents/guardians will specifically follow this circulation plan but it is the schools intent to encourage and/or enforce this plan to the extent possible.

Figure 6

Assignment of Phase 1 Site-Generated Traffic Based on 200 Students

Aurora Community School (LSC #190680)



Approximate Scale
Scale: 1"=600'

Notes:

1. Assumes 265 elementary students and 335 middle school students for the purposes of drop-off/pick-up.
2. This scenario assumes drop-off/pick-up operations both north and south of the building as shown in Figures 11, 12 and 13.

* The WB LT entering movement may need to be eliminated if the movement frequently spills back and blocks westbound through traffic. The existing left-turn lane could be lengthened from about 250 feet to about 450 feet with median construction. The capacity analysis reports show the queue length is expected to be minimal.

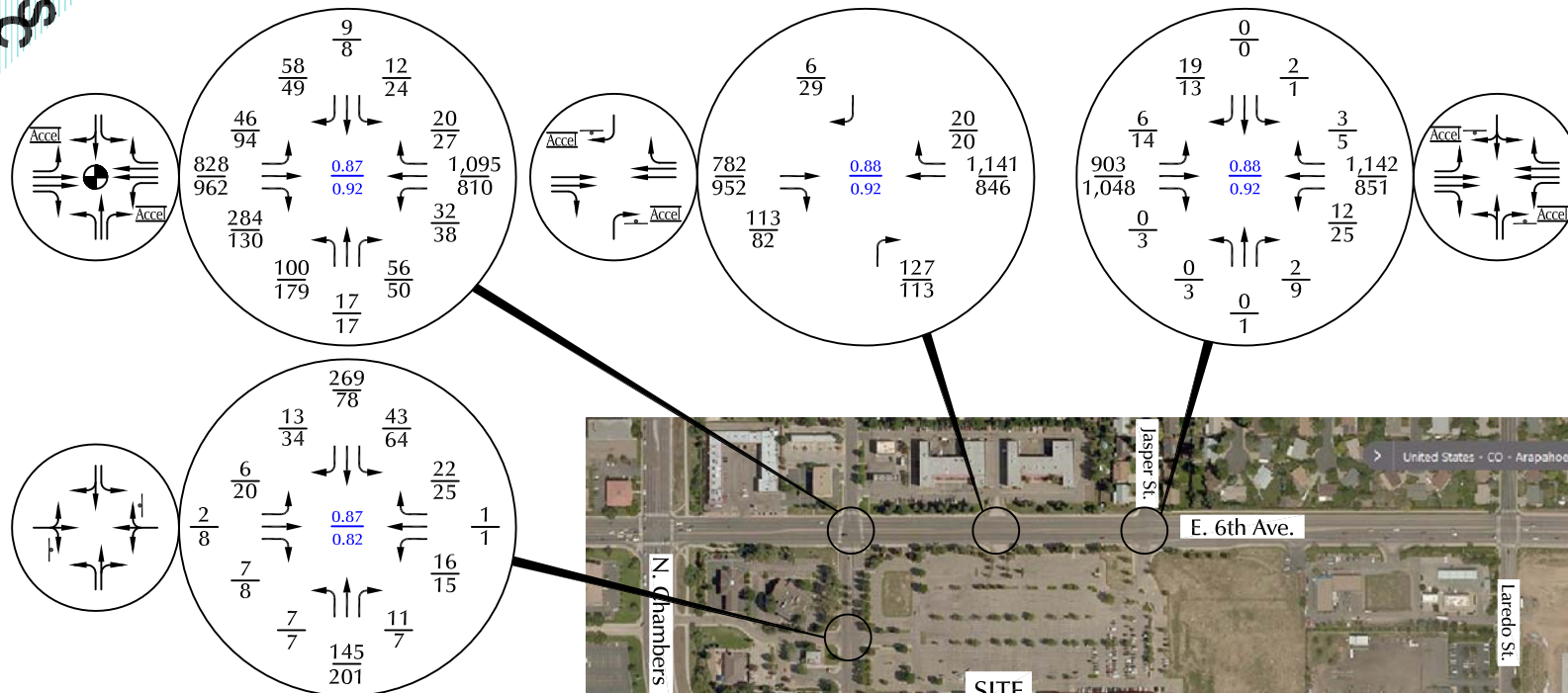
LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic
PM Peak Hour Traffic
2,500 = Average Daily Traffic

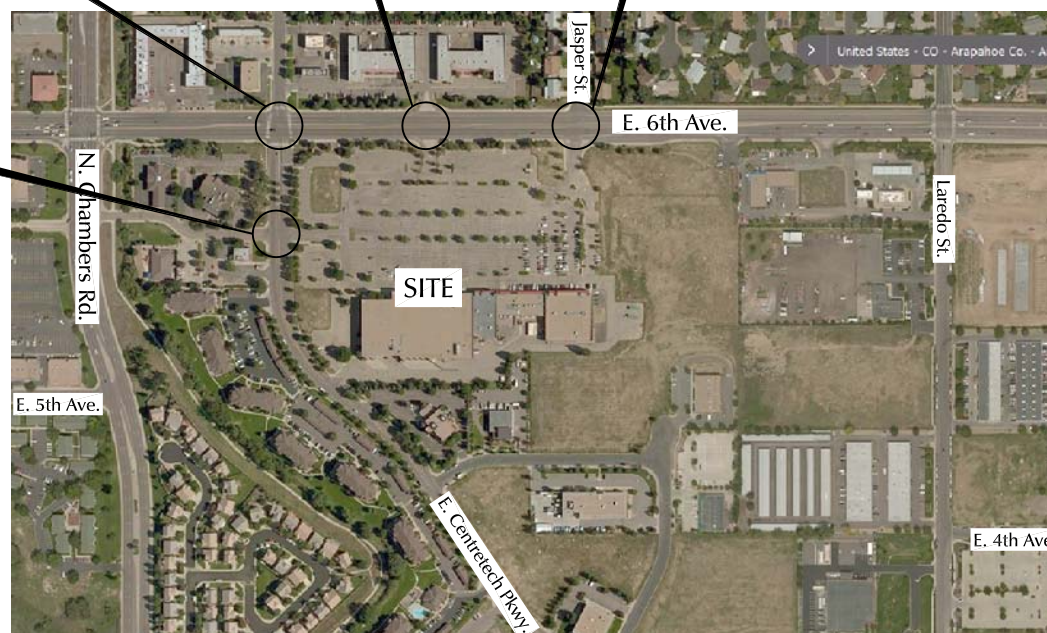
Figure 7

Assignment of Buildout Site-Generated Traffic Based on 600 Students

Aurora Community School (LSC #190680)



Approximate Scale
Scale: 1"=600'



Note: These traffic volumes are the sum of the traffic volumes in Figures 3 and 6.

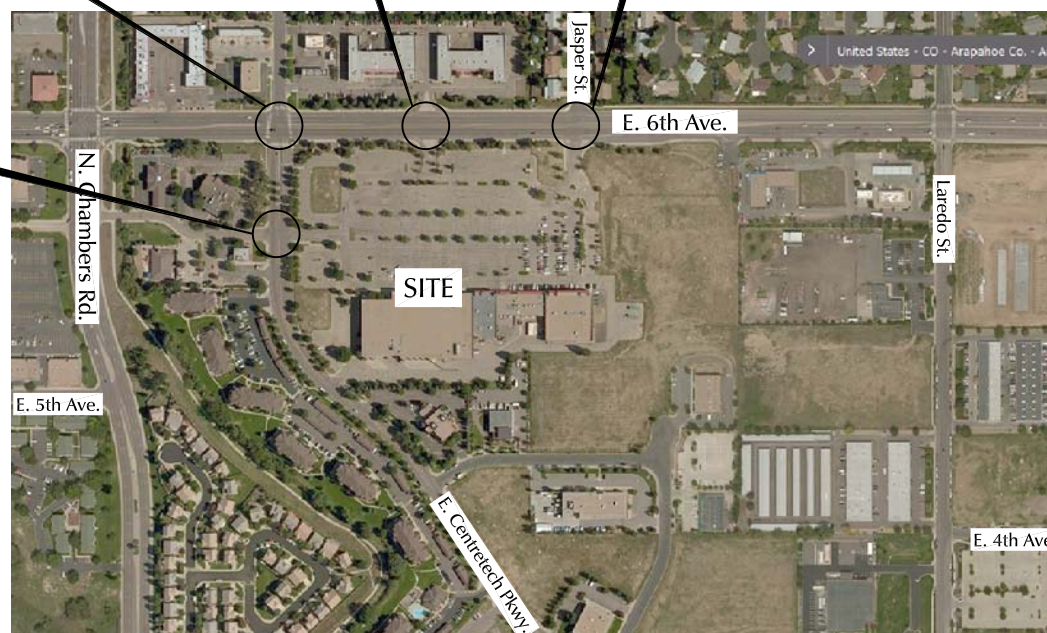
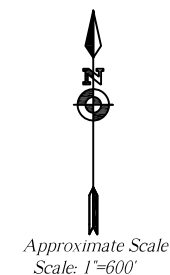
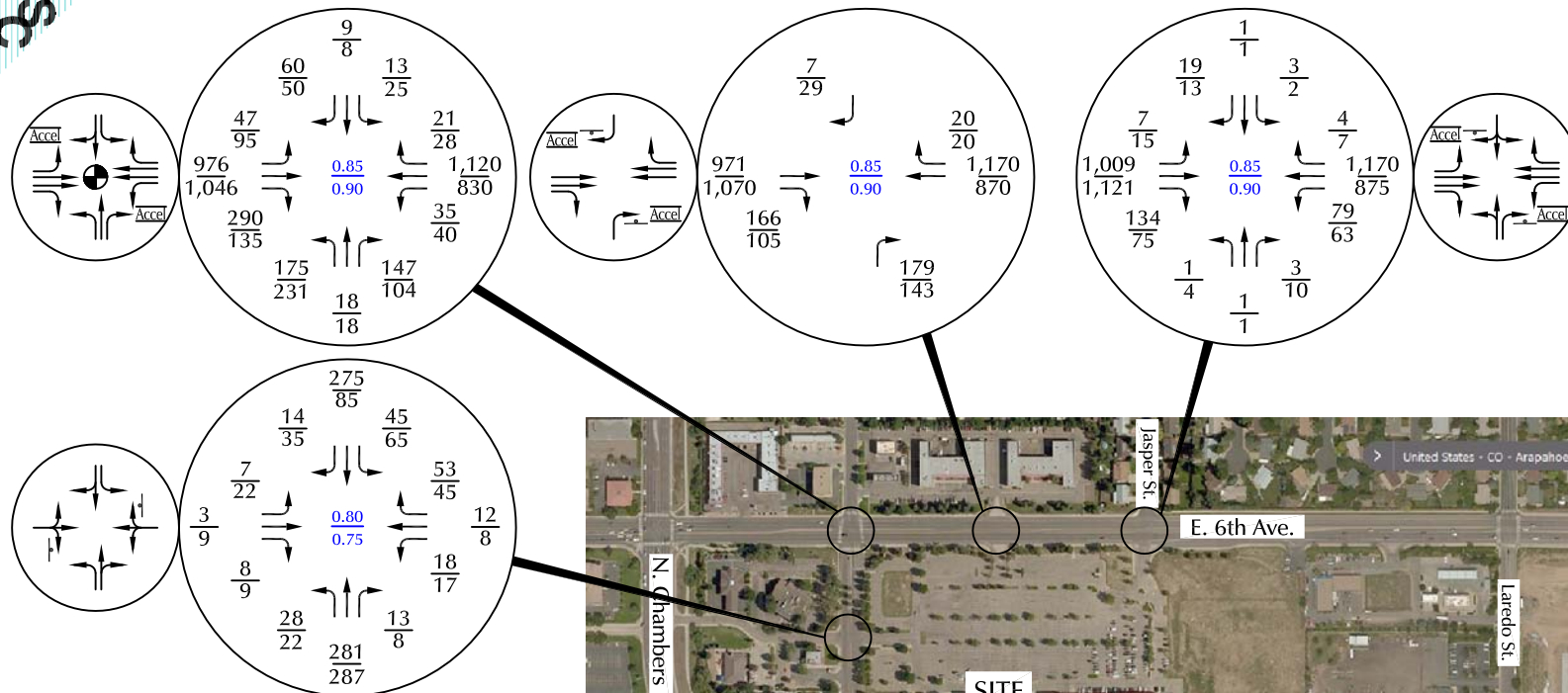
LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- $\frac{0.88}{0.83}$ = Peak Hour Factors

Figure 8

Existing plus Site-Generated Traffic, Lane Geometry and Traffic Control

Aurora Community School (LSC #190680)



Note: These traffic volumes are the sum of the traffic volumes in Figures 4 and 7.

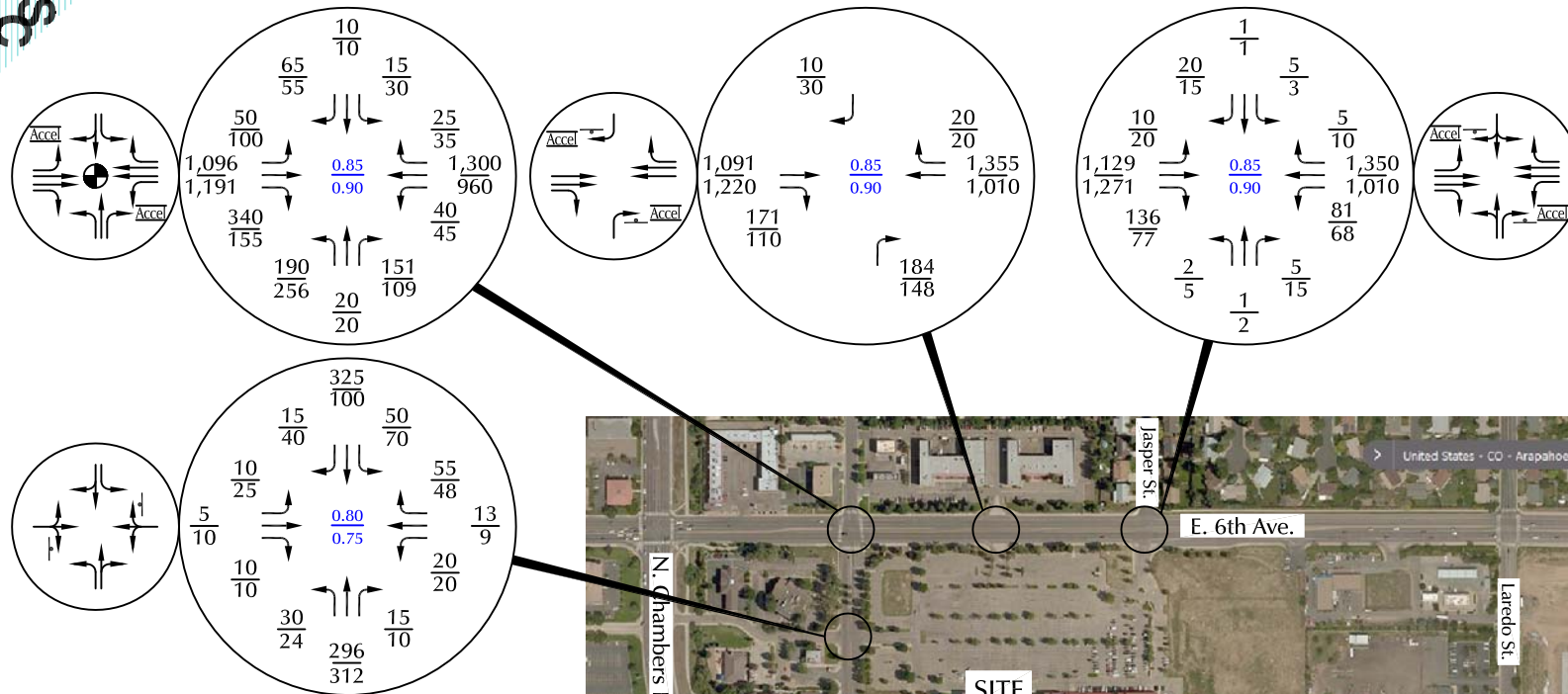
LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- $\frac{0.88}{0.83}$ = Peak Hour Factors

Figure 9

Year 2022 Total Traffic, Lane Geometry and Traffic Control

Aurora Community School (LSC #190680)



Approximate Scale
Scale: 1"=600'



Note: These traffic volumes are the sum of the traffic volumes in Figures 5 and 7.

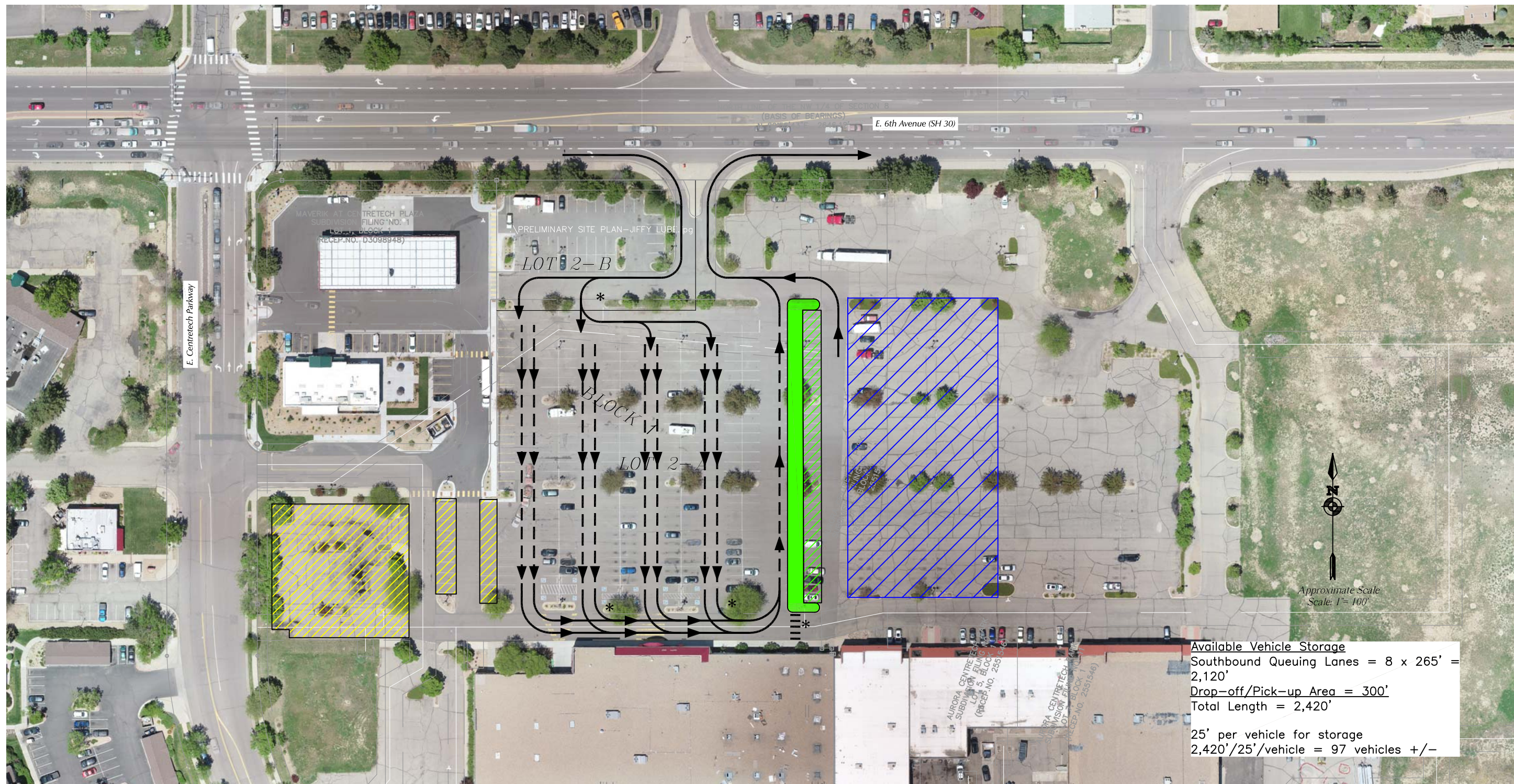
LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- $\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic
- $\frac{0.88}{0.83}$ = Peak Hour Factors

Figure 10

Year 2040 Total Traffic, Lane Geometry and Traffic Control

Aurora Community School (LSC #190680)



LEGEND:

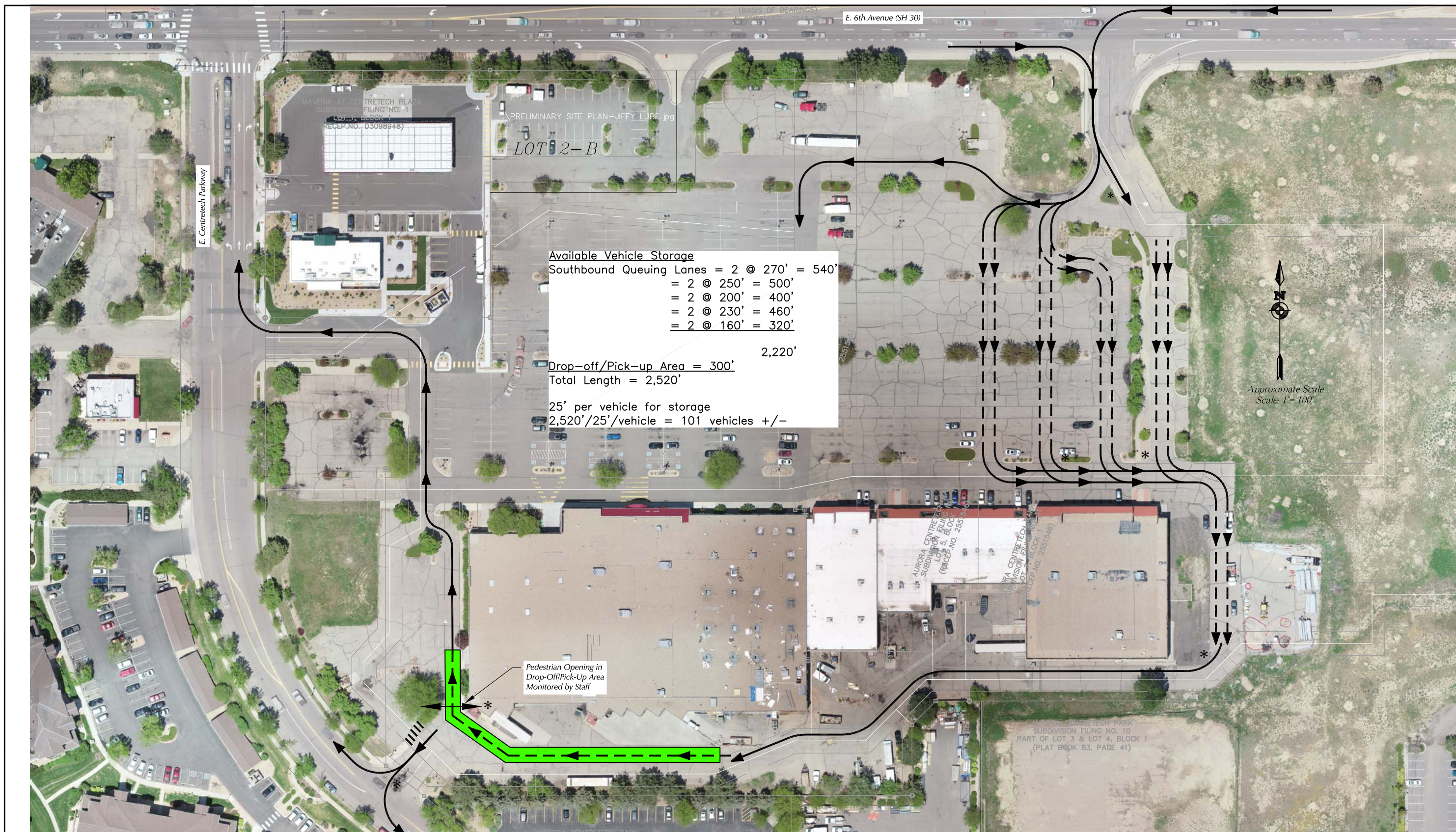
- = Circulation Route - No Stopping or Parking
- = Queuing Area
- = Raised Median/Island for Drop-Off/Pick-Up (300 feet long)
- = Staff/Teacher Parking (+/- 30 spaces)
- = Parking for businesses to the west of the school (+/- 62 spaces)
- = Parking for businesses to the east of the school (+/- 150 spaces)
- * = Potential Location of Staff/Volunteer

Notes:

1. The morning peak hour is expected to have 156 vehicles enter the site and 139 vehicles exit the site. The roughly 97 queuing spaces in the north drop-off/pick-up area will be sufficient because the drop-off operation does not need to store all vehicles at one time because some students arrive and their parent/guardian departs the site before other vehicles arrive in the queue.
2. The afternoon peak hour is expected to have 80 vehicles enter the site and 93 vehicles exit the site. These 80 vehicles can be stored in the north drop-off/pick-up area.
3. This figure represents the maximum available on-site vehicle storage on the north side of the building which will only be utilized if needed based on future demand. Double loaded drive aisles will only be used if necessary.

Figure 11

Circulation Plan
for North Drop-Off/Pick-Up Area
Aurora Community School (LSC #190680)



LEGEND:

- = Circulation Route - No Stopping or Parking
- = Queuing Area
- = 18' Wide (300' +/-) Drop-Off/Pick-Up Area (10' Lane + 8' Pedestrian Walking Area) - located north of existing fire lane
- * = Potential Location of Staff/Volunteer

Notes:

1. The morning peak hour is expected to have 197 vehicles enter the site and 175 vehicles exit the site. The roughly 101 queuing spaces in the south drop-off/pick-up area will be sufficient because the drop-off operation does not need to store all vehicles at one time because some students arrive and their parent/guardian departs the site before other vehicles arrive in the queue.
2. The afternoon peak hour is expected to have 100 vehicles enter the site and 118 vehicles exit the site. These 100 vehicles can be stored in the south drop-off/pick-up area.
3. This figure represents the maximum available on-site vehicle storage on the north side of the building which will only be utilized if needed based on future demand. Double loaded drive aisles will only be used if necessary.

Figure 12

Circulation Plan
for South Drop-Off/Pick-Up Area
Aurora Community School (LSC #190680)



Note: This figure shows the circulation plans for both the north and south sides of the building as well as the maximum areas available for vehicle storage after preserving parking areas and vehicle circulation areas for other businesses in the area. The full vehicle storage areas shown will only be used if necessary to accommodate future demand.

Figure 13

Consolidation of Circulation Plans for Drop-Off/Pick-Up Areas

Aurora Community School (LSC #190680)



LEGEND:

-  = Pedestrian Route
-  = Potential Location of Staff/Volunteer to Assist Pedestrians

Figure 14

Pedestrian Routes to/from School

Aurora Community School (LSC #190680)

COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

File Name : JASP6TH
Site Code : 00000015
Start Date : 7/9/2019
Page No : 1

Groups Printed- VEHICLES

	JASPER ST Southbound				6TH AVE Westbound				JASPER ST Northbound				6TH AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	5	1	3	262	1	0	0	0	0	0	0	174	0	0	446
07:15 AM	1	0	2	0	1	307	0	1	0	0	0	0	2	199	0	0	513
07:30 AM	0	0	7	0	5	316	1	0	0	0	1	0	1	225	0	0	556
07:45 AM	1	0	5	0	3	254	1	0	0	0	1	0	3	198	0	0	466
Total	2	0	19	1	12	1139	3	1	0	0	2	0	6	796	0	0	1981
08:00 AM	0	0	0	0	5	220	0	0	0	0	1	2	2	158	0	0	388
08:15 AM	0	0	4	0	5	211	0	0	0	0	0	0	3	169	0	0	392
08:30 AM	0	0	6	0	6	235	0	0	0	0	1	0	2	146	2	0	398
08:45 AM	0	0	7	0	7	192	0	0	0	0	3	0	2	148	0	0	359
Total	0	0	17	0	23	858	0	0	0	0	5	2	9	621	2	0	1537
02:30 PM	0	0	3	1	3	197	0	0	1	0	6	0	2	209	2	0	424
02:45 PM	1	0	2	0	1	189	2	0	0	0	1	2	1	214	0	0	413
Total	1	0	5	1	4	386	2	0	1	0	7	2	3	423	2	0	837
03:00 PM	0	0	5	0	7	212	0	0	1	0	3	0	4	205	1	0	438
03:15 PM	0	0	2	0	0	228	0	0	0	0	1	0	3	226	1	0	461
03:30 PM	0	0	1	0	3	218	2	0	1	0	3	0	3	266	1	1	499
03:45 PM	0	0	2	0	4	214	0	1	1	0	2	0	3	208	1	0	436
Total	0	0	10	0	14	872	2	1	3	0	9	0	13	905	4	1	1834
04:00 PM	1	0	5	0	7	223	2	0	0	0	2	0	5	251	0	0	496
04:15 PM	0	0	5	0	11	199	1	0	1	1	2	0	3	254	1	0	478
Grand Total	4	0	61	2	71	3677	10	2	5	1	27	4	39	3250	9	1	7163
Apprch %	6.0	0.0	91.0	3.0	1.9	97.8	0.3	0.1	13.5	2.7	73.0	10.8	1.2	98.5	0.3	0.0	
Total %	0.1	0.0	0.9	0.0	1.0	51.3	0.1	0.0	0.1	0.0	0.4	0.1	0.5	45.4	0.1	0.0	

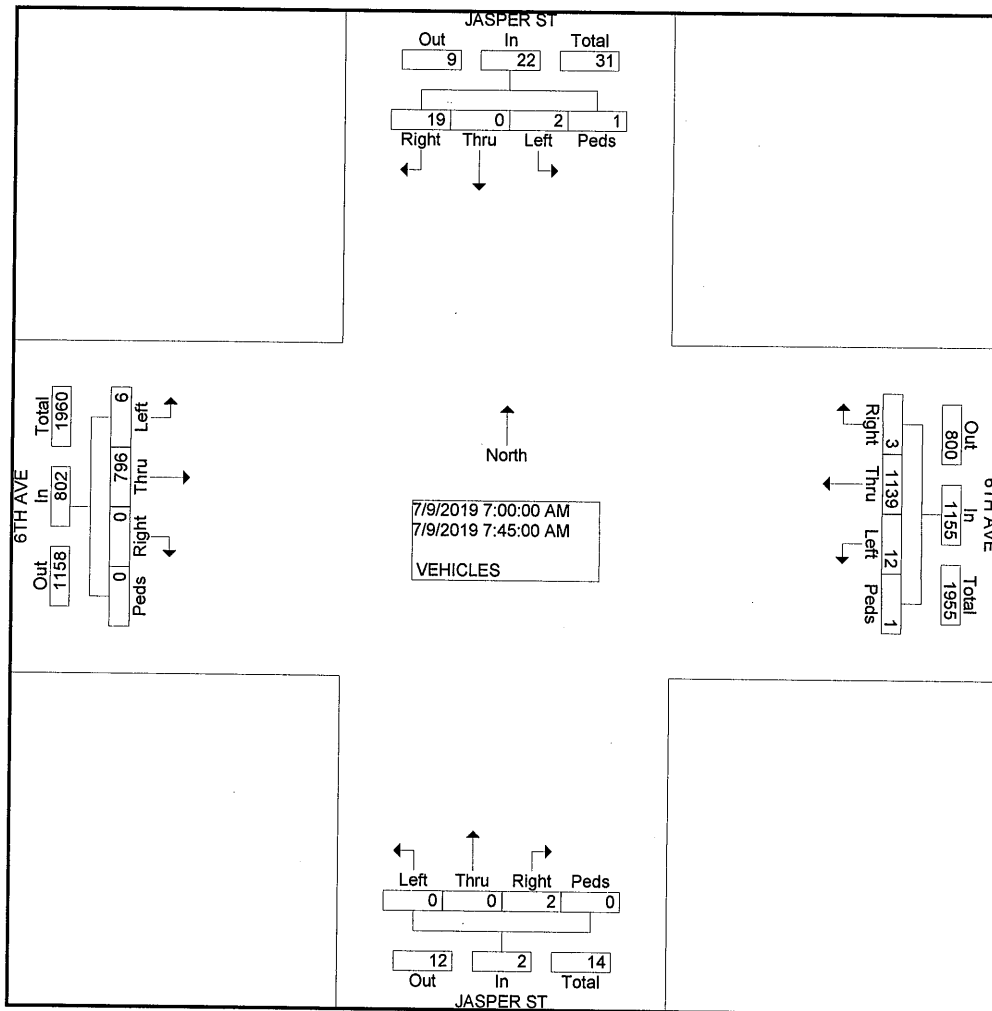
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

File Name : JASP6TH
Site Code : 00000015
Start Date : 7/9/2019
Page No : 2

	JASPER ST Southbound					6TH AVE Westbound					JASPER ST Northbound					6TH AVE Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Intersecti on	07:00 AM																				
Volume	2	0	19	1	22	12	113 9	3	1	1155	0	0	2	0	2	6	796	0	0	802	1981
Percent	9.1	0.0	86. 4	4.5		1.0	98. 6	0.3	0.1		0.0	0.0	100 .0	0.0		0.7	99. 3	0.0	0.0		
07:30 Volume	0	0	7	0	7	5	316	1	0	322	0	0	1	0	1	1	225	0	0	226	556
Peak Factor																					0.891
High Int. Volume	07:30 AM					07:30 AM					07:30 AM					07:30 AM					
Peak Factor	0	0	7	0	7	5	316	1	0	322	0	0	1	0	1	1	225	0	0	226	
	0.78					0.89					0.50					0.88					
	6					7					0					7					



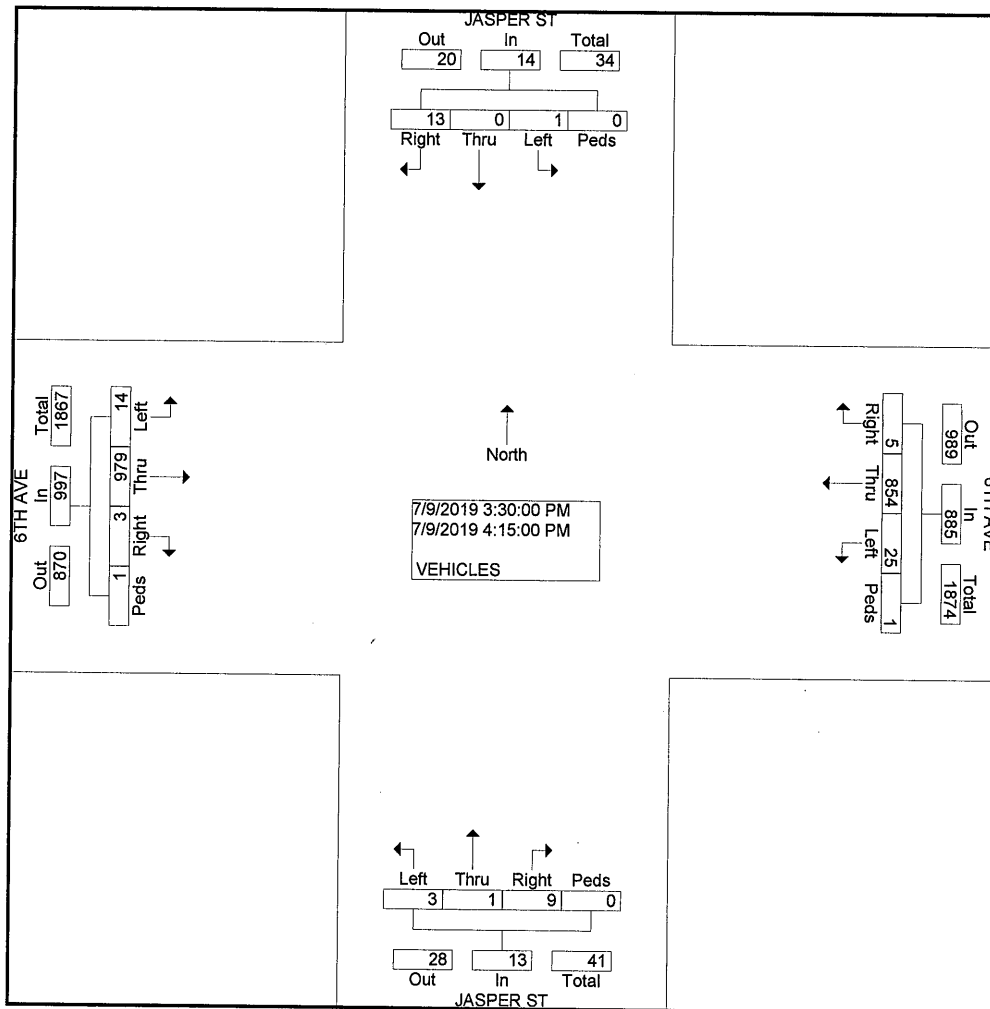
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

File Name : JASP6TH
Site Code : 00000015
Start Date : 7/9/2019
Page No : 2

	JASPER ST Southbound					6TH AVE Westbound					JASPER ST Northbound					6TH AVE Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 03:30 PM to 04:15 PM - Peak 1 of 1																					
Intersecti on	03:30 PM																				
Volume	1	0	13	0	14	25	854	5	1	885	3	1	9	0	13	14	979	3	1	997	1909
Percent	7.1	0.0	92.9	0.0		2.8	96.5	0.6	0.1		23.1	7.7	69.2	0.0		1.4	98.2	0.3	0.1		
03:30 Volume	0	0	1	0	1	3	218	2	0	223	1	0	3	0	4	3	266	1	1	271	499
Peak Factor																					0.956
High Int.	04:00 PM					04:00 PM					03:30 PM					03:30 PM					
Volume	1	0	5	0	6	7	223	2	0	232	1	0	3	0	4	3	266	1	1	271	
Peak Factor	0.58 3					0.95 4					0.81 3					0.92 0					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: MALL ACC W-O JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

File Name : MALL ACC W-O JASPER ST 6TH AVE
Site Code : 00000022
Start Date : 7/9/2019
Page No : 1

Groups Printed- VEHICLES

	SHOPPING ACC W-O JASPER ST Southbound				6TH AVE Westbound				MALL ACC W/O JASPER ST Northbound				6TH AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	1	0	0	266	1	0	0	3	6	1	0	168	2	2	450
07:15 AM	0	0	1	0	0	303	6	0	0	7	5	0	1	196	2	1	522
07:30 AM	0	0	1	0	0	315	8	0	0	3	5	0	0	221	0	1	554
07:45 AM	0	1	2	0	0	254	5	0	0	0	4	0	0	197	3	0	466
Total	0	1	5	0	0	1138	20	0	0	13	20	1	1	782	7	4	1992
08:00 AM	0	0	2	0	0	216	4	0	0	0	9	0	0	151	3	0	385
08:15 AM	0	0	1	0	0	210	5	0	0	0	7	0	0	165	3	0	391
08:30 AM	0	0	3	0	0	233	8	0	0	0	8	0	0	142	1	0	395
08:45 AM	1	0	4	0	0	194	5	0	1	7	5	1	0	144	6	0	368
Total	1	0	10	0	0	853	22	0	1	7	29	1	0	602	13	0	1539
02:30 PM	0	0	3	0	1	197	3	1	0	0	12	1	0	201	4	1	424
02:45 PM	0	0	2	0	0	188	3	1	0	0	15	0	0	200	3	1	413
Total	0	0	5	0	1	385	6	2	0	0	27	1	0	401	7	2	837
03:00 PM	0	0	4	0	1	214	3	1	0	0	11	0	0	199	1	0	434
03:15 PM	0	0	5	3	0	227	3	0	0	0	1	0	1	229	6	3	478
03:30 PM	0	0	5	0	0	212	8	1	0	0	12	0	0	258	4	0	500
03:45 PM	0	2	1	0	0	210	7	0	0	0	5	0	1	207	6	0	439
Total	0	2	15	3	1	863	21	2	0	0	29	0	2	893	17	3	1851
04:00 PM	0	0	14	0	0	226	2	0	0	0	7	0	0	249	3	1	502
04:15 PM	0	1	6	0	1	201	3	0	0	2	15	0	1	243	8	1	482
Grand Total	1	4	55	3	3	3666	74	4	1	22	127	3	4	3170	55	11	7203
Apprch %	1.6	6.3	87.3	4.8	0.1	97.8	2.0	0.1	0.7	14.4	83.0	2.0	0.1	97.8	1.7	0.3	
Total %	0.0	0.1	0.8	0.0	0.0	50.9	1.0	0.1	0.0	0.3	1.8	0.0	0.1	44.0	0.8	0.2	

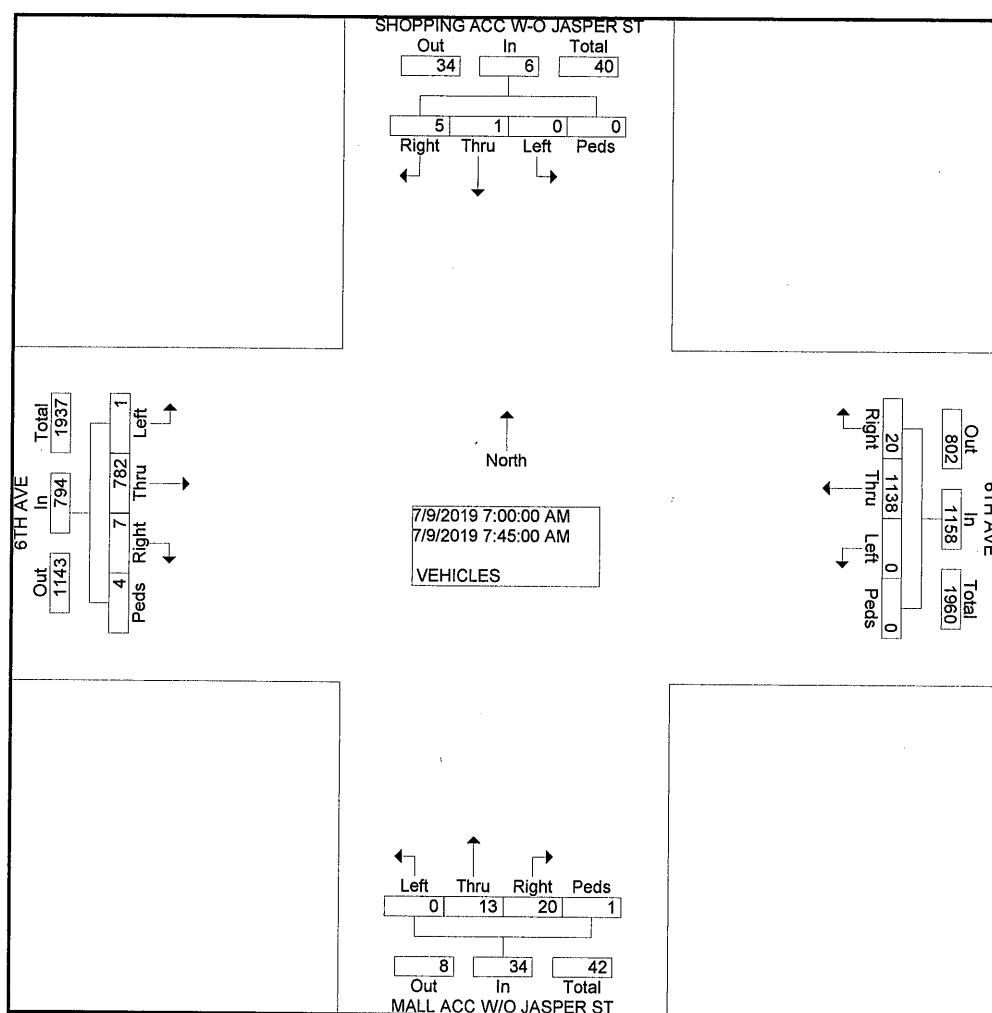
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: MALL ACC W-O JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

File Name : MALL ACC W-O JASPER ST 6TH AVE
Site Code : 00000022
Start Date : 7/9/2019
Page No : 2

	SHOPPING ACC W-O JASPER ST Southbound					6TH AVE Westbound					MALL ACC W/O JASPER ST Northbound					6TH AVE Eastbound					Int. Total
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	0	1	5	0	6	0	113	20	0	1158	0	13	20	1	34	1	782	7	4	794	1992
Percent	0.0	16.7	83.3	0.0		0.0	98.3	1.7	0.0		0.0	38.2	58.8	2.9		0.1	98.5	0.9	0.5		
07:30 Volume	0	0	1	0	1	0	315	8	0	323	0	3	5	0	8	0	221	0	1	222	554
Peak Factor																					0.899
High Int. Volume	07:45 AM					07:30 AM					07:15 AM					07:30 AM					
Peak Factor	0	1	2	0	3	0	315	8	0	323	0	7	5	0	12	0	221	0	1	222	
	0.50					0.89					0.70					0.89					
	0					6					8					4					



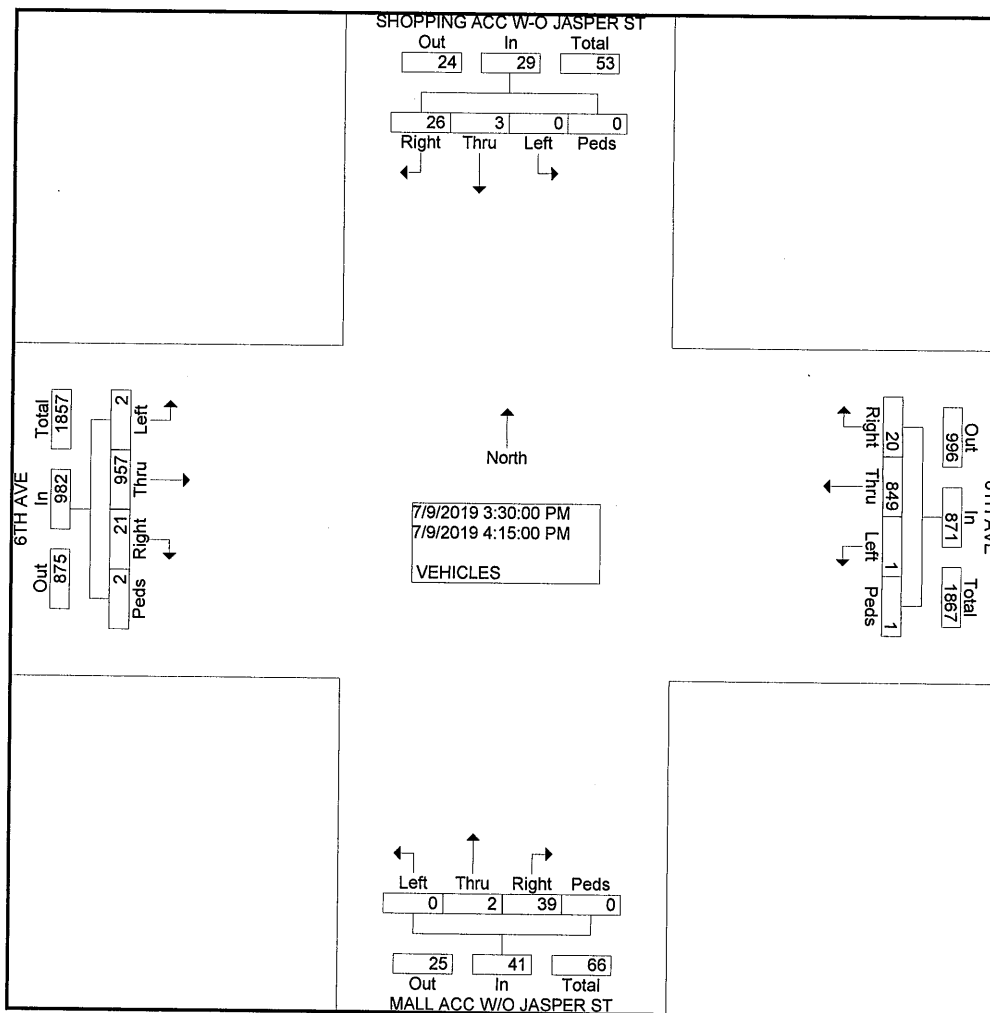
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

File Name : MALL ACC W-O JASPER ST 6TH AVE
Site Code : 00000022
Start Date : 7/9/2019
Page No : 2

N/S STREET: MALL ACC W-O JASPER ST
E/W STREET: 6TH AVE
CITY: AURORA
COUNTY: ARAPAHOE

	SHOPPING ACC W-O JASPER ST Southbound					6TH AVE Westbound					MALL ACC W/O JASPER ST Northbound					6TH AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 03:30 PM to 04:15 PM - Peak 1 of 1																					
Intersection	03:30 PM																				
Volume	0	3	26	0	29	1	849	20	1	871	0	2	39	0	41	2	957	21	2	982	1923
Percent	0.0	10.3	89.7	0.0		0.1	97.5	2.3	0.1		0.0	4.9	95.1	0.0		0.2	97.5	2.1	0.2		
04:00 Volume	0	0	14	0	14	0	226	2	0	228	0	0	7	0	7	0	249	3	1	253	502
Peak Factor																					0.958
High Int. Volume	04:00 PM					04:00 PM					04:15 PM					03:30 PM					
Peak Factor	0	0	14	0	14	0	226	2	0	228	0	2	15	0	17	0	258	4	0	262	
	0.51					0.95					0.60					0.93					7
	8					5					3					7					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CENTRETECH PKWY
E/W STREET: 6TH AVE
CITY:
COUNTY:

File Name : CENTRE6THAV
Site Code : 00000025
Start Date : 7/9/2019
Page No : 1

Groups Printed- VEHICLES

	HELENA ST Southbound				6TH AVE Westbound				CENTRETECH PKWY Northbound				6TH AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	1	2	11	0	4	264	3	0	29	2	11	0	9	158	56	0	550
07:15 AM	3	4	16	0	9	290	5	0	19	6	12	0	13	184	65	1	627
07:30 AM	5	1	24	1	13	295	8	1	32	4	5	0	11	211	87	1	699
07:45 AM	3	2	7	0	6	246	4	0	20	5	7	1	13	190	76	1	581
Total	12	9	58	1	32	1095	20	1	100	17	35	1	46	743	284	3	2457
08:00 AM	3	4	11	0	7	206	5	0	18	9	3	0	5	148	91	0	510
08:15 AM	5	3	19	0	5	206	0	0	21	2	10	0	10	153	65	0	499
08:30 AM	3	2	13	0	9	221	6	3	20	4	7	1	9	133	56	3	490
08:45 AM	2	1	15	0	12	178	9	0	25	2	5	1	18	143	60	0	471
Total	13	10	58	0	33	811	20	3	84	17	25	2	42	577	272	3	1970
02:30 PM	7	2	19	0	6	187	7	1	36	2	10	0	11	188	36	4	516
02:45 PM	4	1	17	0	4	183	3	0	35	6	17	0	24	182	40	0	516
Total	11	3	36	0	10	370	10	1	71	8	27	0	35	370	76	4	1032
03:00 PM	6	0	19	0	10	199	9	0	37	4	14	0	25	180	38	1	542
03:15 PM	7	6	16	1	15	211	6	1	27	3	4	0	17	225	33	1	573
03:30 PM	7	1	11	0	10	206	1	0	46	6	12	0	22	243	38	4	607
03:45 PM	6	1	7	0	7	197	7	0	47	3	6	2	23	202	22	1	531
Total	26	8	53	1	42	813	23	1	157	16	36	2	87	850	131	7	2253
04:00 PM	3	4	12	0	13	214	13	0	37	4	9	0	20	240	27	1	597
04:15 PM	8	2	19	0	8	193	6	2	49	4	11	0	29	228	43	1	603
Grand Total	73	36	236	2	138	3496	92	8	498	66	143	5	259	3008	833	19	8912
Apprch %	21.0	10.4	68.0	0.6	3.7	93.6	2.5	0.2	69.9	9.3	20.1	0.7	6.3	73.0	20.2	0.5	
Total %	0.8	0.4	2.6	0.0	1.5	39.2	1.0	0.1	5.6	0.7	1.6	0.1	2.9	33.8	9.3	0.2	

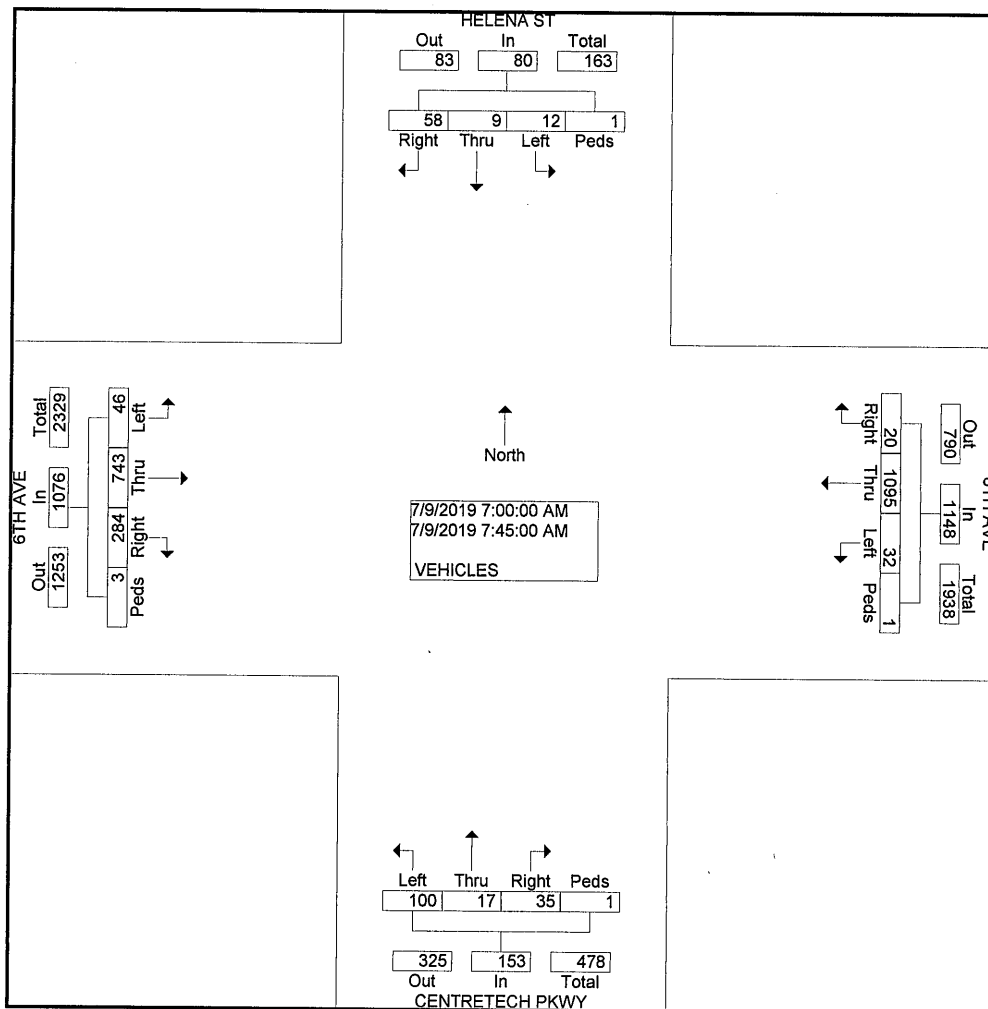
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CENTRETECH PKWY
E/W STREET: 6TH AVE
CITY:
COUNTY:

File Name : CENTRE6THAV
Site Code : 00000025
Start Date : 7/9/2019
Page No : 2

	HELENA ST Southbound					6TH AVE Westbound					CENTRETECH PKWY Northbound					6TH AVE Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 07:00 AM to 09:00 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	12	9	58	1	80	32	109 5	20	1	1148	100	17	35	1	153	46	743	284	3	1076	2457
Percent	15. 0	11. 3	72. 5	1.3		2.8	95. 4	1.7	0.1		65. 4	11. 1	22. 9	0.7		4.3	69. 1	26. 4	0.3		
07:30 Volume	5	1	24	1	31	13	295	8	1	317	32	4	5	0	41	11	211	87	1	310	699
Peak Factor																					0.879
High Int.	07:30 AM					07:30 AM					07:00 AM					07:30 AM					
Volume	5	1	24	1	31	13	295	8	1	317	29	2	11	0	42	11	211	87	1	310	
Peak Factor						0.64 5					0.90 5					0.86 8					



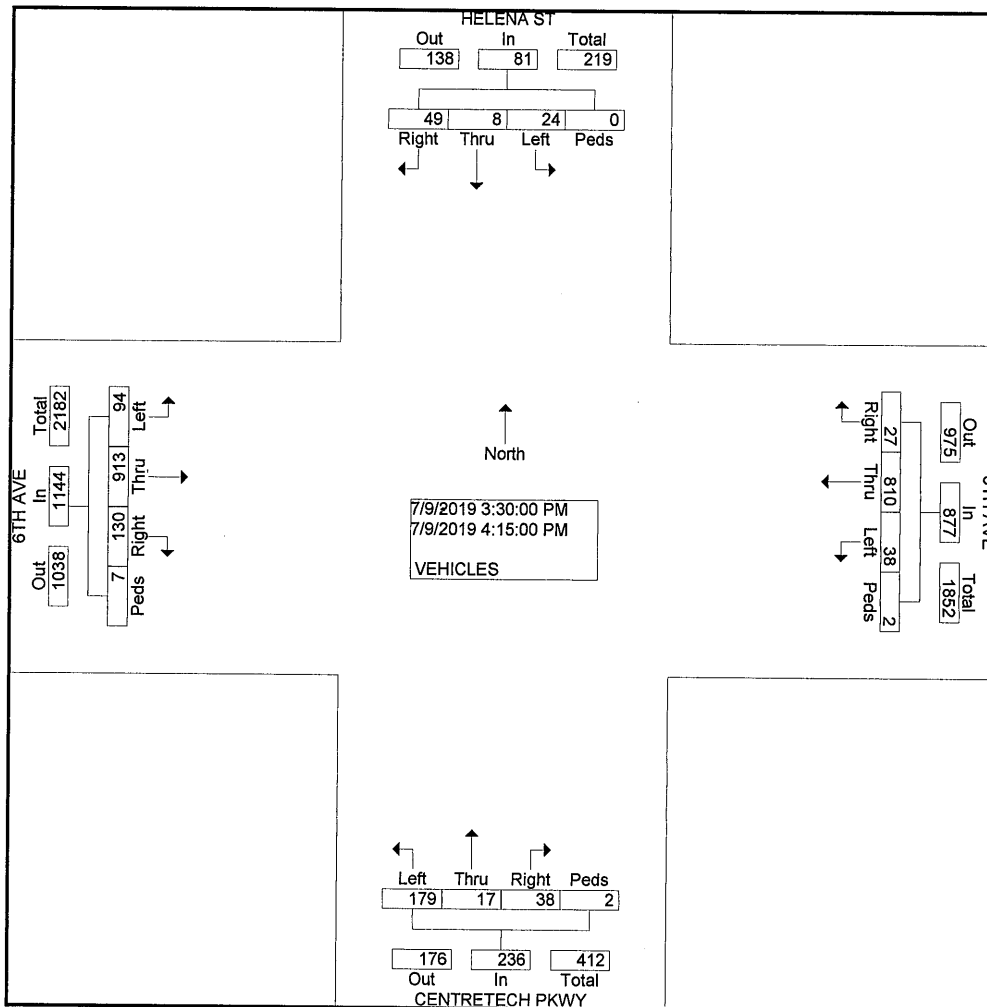
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CENTRETECH PKWY
E/W STREET: 6TH AVE
CITY:
COUNTY:

File Name : CENTRE6THAV
Site Code : 00000025
Start Date : 7/9/2019
Page No : 2

	HELENA ST Southbound					6TH AVE Westbound					CENTRETECH PKWY Northbound					6TH AVE Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 02:30 PM to 04:15 PM - Peak 1 of 1																					
Intersection	03:30 PM																				
Volume	24	8	49	0	81	38	810	27	2	877	179	17	38	2	236	94	913	130	7	1144	2338
Percent	29.6	9.9	60.5	0.0		4.3	92.4	3.1	0.2		75.8	7.2	16.1	0.8		8.2	79.8	11.4	0.6		
03:30 Volume	7	1	11	0	19	10	206	1	0	217	46	6	12	0	64	22	243	38	4	307	607
Peak Factor																					0.963
High Int.	04:15 PM					04:00 PM					03:30 PM					03:30 PM					
Volume	8	2	19	0	29	13	214	13	0	240	46	6	12	0	64	22	243	38	4	307	
Peak Factor	0.698					0.914					0.922					0.932					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CENTRETECH PKWY
E/W STREET: 5TH PL.
CITY: AURORA
COUNTY: ARAPAHOE

File Name : CENTRE5THPL
Site Code : 00000026
Start Date : 7/9/2019
Page No : 1

Groups Printed- VEHICLES

Start Time	CENTRETECH PKWY Southbound				5TH PL. Westbound				CENTRETECH PKWY Northbound				5TH PL. Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	7	55	0	0	4	0	9	0	1	32	2	0	1	0	1	0	112
07:15 AM	11	62	5	0	5	0	5	0	2	31	5	0	1	2	1	0	130
07:30 AM	13	74	4	0	3	0	7	0	4	32	3	0	2	0	3	0	145
07:45 AM	12	68	4	2	4	1	1	0	0	29	1	0	2	0	2	0	126
Total	43	259	13	2	16	1	22	0	7	124	11	0	6	2	7	0	513
08:00 AM	9	92	1	0	4	1	3	1	0	25	1	0	2	1	2	0	142
08:15 AM	6	64	3	0	3	0	2	1	0	30	5	0	1	1	1	0	117
08:30 AM	13	49	5	0	4	0	4	2	1	24	1	0	3	0	2	0	108
08:45 AM	7	55	11	0	4	0	5	0	3	24	2	0	3	1	2	0	117
Total	35	260	20	0	15	1	14	4	4	103	9	0	9	3	7	0	484
02:30 PM	22	19	5	1	3	1	12	0	0	32	0	1	4	0	3	0	103
02:45 PM	17	17	7	0	5	0	15	0	2	39	1	0	4	1	3	0	111
Total	39	36	12	1	8	1	27	0	2	71	1	1	8	1	6	0	214
03:00 PM	14	30	6	0	1	1	8	0	1	42	4	0	5	1	2	0	115
03:15 PM	9	37	5	0	3	0	3	0	0	29	2	0	2	0	3	0	93
03:30 PM	11	23	12	0	4	1	7	0	2	52	4	0	5	0	2	0	123
03:45 PM	15	17	6	0	4	0	5	0	2	46	1	3	5	0	1	0	105
Total	49	107	29	0	12	2	23	0	5	169	11	3	17	1	8	0	436
04:00 PM	15	29	5	0	1	0	3	1	2	42	2	0	5	1	2	0	108
04:15 PM	23	25	11	0	6	0	10	4	1	49	0	0	5	7	3	0	144
Grand Total	204	716	90	3	58	5	99	9	21	558	34	4	50	15	33	0	1899
Apprch %	20.1	70.7	8.9	0.3	33.9	2.9	57.9	5.3	3.4	90.4	5.5	0.6	51.0	15.3	33.7	0.0	
Total %	10.7	37.7	4.7	0.2	3.1	0.3	5.2	0.5	1.1	29.4	1.8	0.2	2.6	0.8	1.7	0.0	

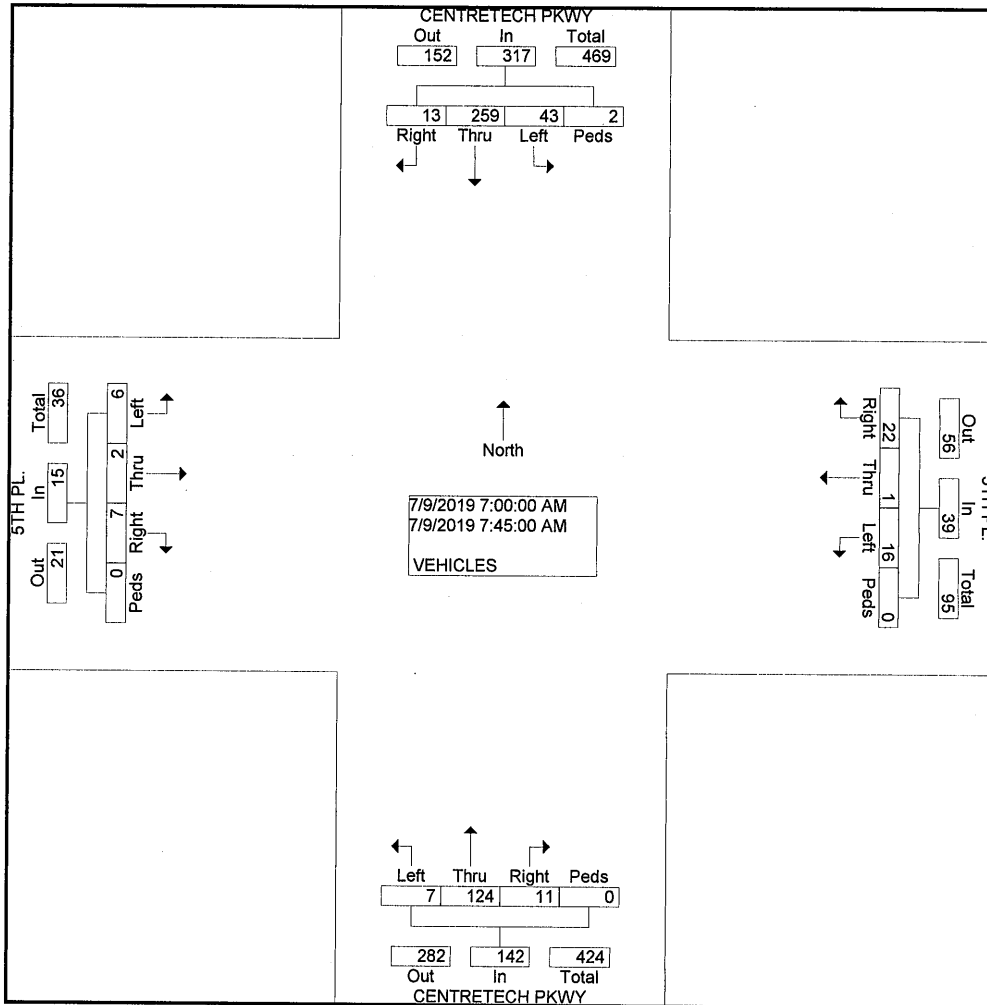
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CENTRETECH PKWY
E/W STREET: 5TH PL.
CITY: AURORA
COUNTY: ARAPAHOE

File Name : CENTRE5THPL
Site Code : 00000026
Start Date : 7/9/2019
Page No : 2

	CENTRETECH PKWY Southbound					5TH PL. Westbound					CENTRETECH PKWY Northbound					5TH PL. Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Intersection on	07:00 AM																				
Volume	43	259	13	2	317	16	1	22	0	39	7	124	11	0	142	6	2	7	0	15	513
Percent	13.6	81.7	4.1	0.6		41.0	2.6	56.4	0.0		4.9	87.3	7.7	0.0		40.0	13.3	46.7	0.0		
07:30 Volume	13	74	4	0	91	3	0	7	0	10	4	32	3	0	39	2	0	3	0	5	145
Peak Factor																					0.884
High Int.	07:30 AM					07:00 AM					07:30 AM					07:30 AM					
Volume	13	74	4	0	91	4	0	9	0	13	4	32	3	0	39	2	0	3	0	5	
Peak Factor	0.871					0.750					0.910					0.750					



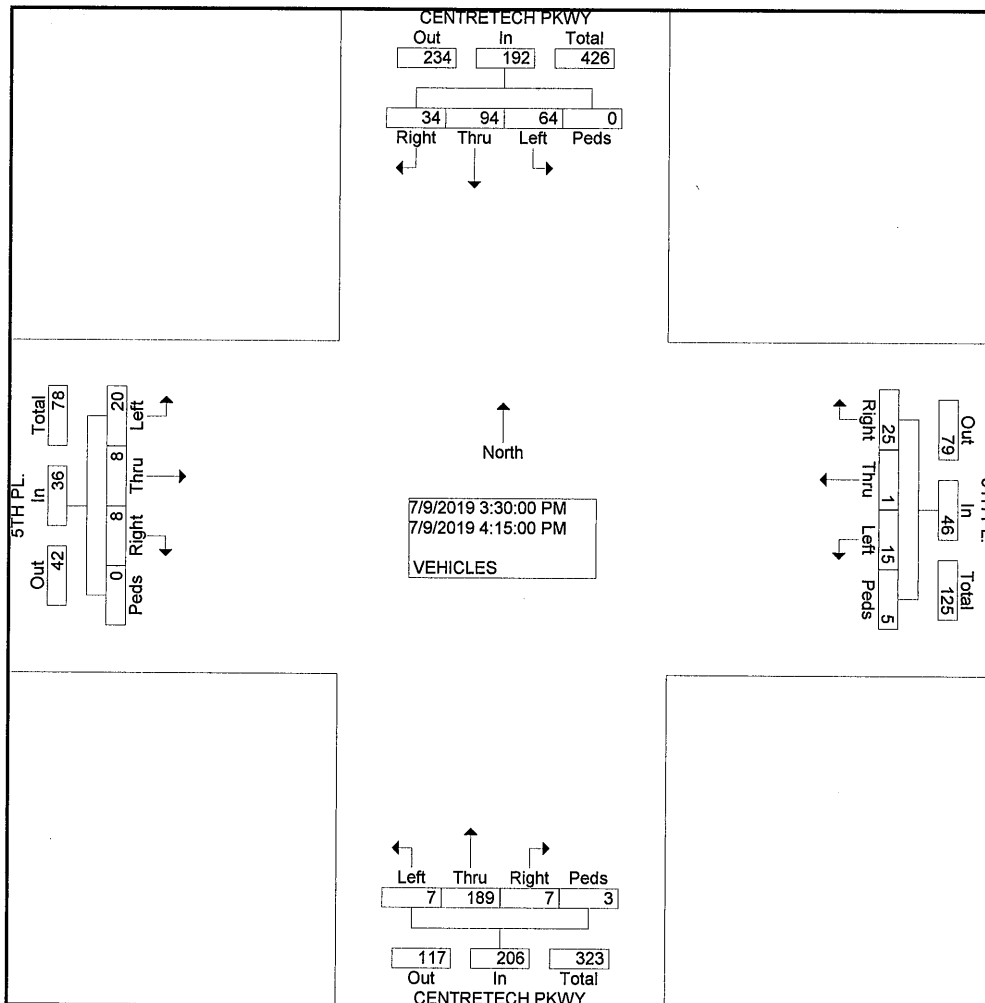
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
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Page No : 2

	CENTRETECH PKWY Southbound					5TH PL. Westbound					CENTRETECH PKWY Northbound					5TH PL. Eastbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Peak Hour From 03:30 PM to 04:15 PM - Peak 1 of 1																					
Intersection	03:30 PM																				
Volume	64	94	34	0	192	15	1	25	5	46	7	189	7	3	206	20	8	8	0	36	480
Percent	33.	49.	17.	0.0		32.	2.2	54.	10.		3.4	91.	3.4	1.5		55.	22.	22.	0.0		
	3	0	7			6		3	9			7				6	2	2			
04:15	23	25	11	0	59	6	0	10	4	20	1	49	0	0	50	5	7	3	0	15	144
Volume																					0.833
Peak Factor																					
High Int.	04:15 PM					04:15 PM					03:30 PM					04:15 PM					
Volume	23	25	11	0	59	6	0	10	4	20	2	52	4	0	58	5	7	3	0	15	
Peak Factor					0.81					0.57				0.88						0.60	
					4					5				8						0	



LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	<u>Average Vehicle Delay</u> sec/vehicle	<u>Operational Characteristics</u>
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition























UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

Timings 3: E. Centretech Parkway & E. 6th Avenue

Existing
AM Peak







											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	46	473	284	32	1095	20	100	17	35	12	9
Future Volume (vph)	46	473	284	32	1095	20	100	17	35	12	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	109.9	109.9	109.9	109.9	109.9	109.9	18.1	18.1	18.1	18.1	18.1
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.18	0.19	0.25	0.05	0.45	0.02	0.67	0.08	0.17	0.08	0.36
Control Delay	6.5	4.4	1.5	4.7	6.1	1.8	75.9	50.9	15.5	50.9	57.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	4.4	1.5	4.7	6.1	1.8	75.9	50.9	15.5	50.9	57.8
LOS	A	A	A	A	A	A	E	D	B	D	E
Approach Delay		3.5			6.0			59.2			56.7
Approach LOS		A			A			E			E
Intersection Summary											
Cycle Length: 140											
Actuated Cycle Length: 140											
Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.67											
Intersection Signal Delay: 10.6						Intersection LOS: B					
Intersection Capacity Utilization 60.4%						ICU Level of Service B					
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

Existing
AM Peak

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	7	16	1	22	7	124	11	43	269	13
Future Vol, veh/h	6	2	7	16	1	22	7	124	11	43	269	13
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	8	18	1	25	8	141	13	49	306	15
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	589	582	314	581	583	148	321	0	0	154	0	0
Stage 1	412	412	-	164	164	-	-	-	-	-	-	-
Stage 2	177	170	-	417	419	-	-	-	-	-	-	-
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	472	456	841	479	455	899	1267	-	-	1426	-	-
Stage 1	686	623	-	838	762	-	-	-	-	-	-	-
Stage 2	825	758	-	681	617	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	444	438	841	458	437	899	1267	-	-	1426	-	-
Mov Cap-2 Maneuver	444	438	-	458	437	-	-	-	-	-	-	-
Stage 1	681	601	-	833	757	-	-	-	-	-	-	-
Stage 2	796	753	-	649	596	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	11.5		11.1			0.4			1			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1267	-	-	568	632	1426	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.03	0.07	0.034	-	-				
HCM Control Delay (s)	7.9	-	-	11.5	11.1	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

Existing
AM Peak

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	6	809	0	12	1142	3	0	0	2	2	0	19
Future Vol, veh/h	6	809	0	12	1142	3	0	0	2	2	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	909	0	13	1283	3	0	0	2	2	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1286	0	0	909	0	0	1591	2235	455	1778	2232	642
Stage 1	-	-	-	-	-	-	923	923	-	1309	1309	-
Stage 2	-	-	-	-	-	-	668	1312	-	469	923	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	535	-	-	745	-	-	72	42	552	52	42	417
Stage 1	-	-	-	-	-	-	290	347	-	168	227	-
Stage 2	-	-	-	-	-	-	414	227	-	544	347	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	535	-	-	745	-	-	67	41	552	51	41	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	67	41	-	51	41	-
Stage 1	-	-	-	-	-	-	286	342	-	166	223	-
Stage 2	-	-	-	-	-	-	386	223	-	535	342	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			11.5			21		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	552	535	-	-	745	-	-	248
HCM Lane V/C Ratio	-	0.004	0.013	-	-	0.018	-	-	0.095
HCM Control Delay (s)	0	11.5	11.8	-	-	9.9	-	-	21
HCM Lane LOS	A	B	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	0	-	-	0.1	-	-	0.3























HCM 6th TWSC
12: Site Access & E. 6th Avenue

Existing
AM Peak

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	782	7	0	1141	20	0	0	33	0	0	6
Future Vol, veh/h	0	782	7	0	1141	20	0	0	33	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	869	8	0	1268	22	0	0	37	0	0	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	435	-	-	634
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*764	0	0	422
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*764	-	-	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.9			13.7		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	764	-	-	-	-	422						
HCM Lane V/C Ratio	0.048	-	-	-	-	0.016						
HCM Control Delay (s)	9.9	-	-	-	-	13.7						
HCM Lane LOS	A	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

Existing
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	94	913	130	38	810	27	179	17	38	24	8
Future Volume (vph)	94	913	130	38	810	27	179	17	38	24	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	98.8	98.8	98.8	98.8	98.8	98.8	24.2	24.2	24.2	24.2	24.2
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.23	0.37	0.11	0.11	0.33	0.02	0.78	0.05	0.13	0.10	0.18
Control Delay	8.6	7.7	1.4	7.6	7.4	2.4	73.4	42.6	12.7	43.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	7.7	1.4	7.6	7.4	2.4	73.4	42.6	12.7	43.9	14.6
LOS	A	A	A	A	A	A	E	D	B	D	B
Approach Delay		7.1			7.2			61.2			23.3
Approach LOS		A			A			E			C

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 13.2

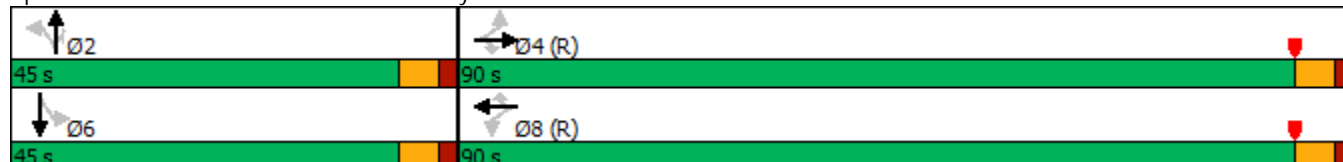
Intersection LOS: B

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

Existing
PM Peak

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	20	8	8	15	1	25	7	189	7	64	78	34
Future Vol, veh/h	20	8	8	15	1	25	7	189	7	64	78	34
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	10	10	18	1	30	8	228	8	77	94	41
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	533	521	115	527	537	232	135	0	0	236	0	0
Stage 1	269	269	-	248	248	-	-	-	-	-	-	-
Stage 2	264	252	-	279	289	-	-	-	-	-	-	-
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	470	467	976	474	457	807	1462	-	-	1331	-	-
Stage 1	757	696	-	756	701	-	-	-	-	-	-	-
Stage 2	741	698	-	748	681	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	429	438	976	439	428	807	1462	-	-	1331	-	-
Mov Cap-2 Maneuver	429	438	-	439	428	-	-	-	-	-	-	-
Stage 1	753	656	-	752	697	-	-	-	-	-	-	-
Stage 2	708	695	-	687	641	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13		11.4			0.3			2.9			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1462	-	-	493	608	1331	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.088	0.081	0.058	-	-				
HCM Control Delay (s)	7.5	-	-	13	11.4	7.9	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.2	-	-				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

Existing
PM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	976	3	25	851	5	3	1	9	1	0	13
Future Vol, veh/h	14	976	3	25	851	5	3	1	9	1	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1017	3	26	886	5	3	1	9	1	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	891	0	0	1020	0	0	1542	1990	509	1477	1988	443
Stage 1	-	-	-	-	-	-	1047	1047	-	938	938	-
Stage 2	-	-	-	-	-	-	495	943	-	539	1050	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	757	-	-	676	-	-	78	60	509	88	60	562
Stage 1	-	-	-	-	-	-	244	303	-	284	341	-
Stage 2	-	-	-	-	-	-	525	339	-	494	302	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	757	-	-	676	-	-	73	57	509	81	57	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	57	-	81	57	-
Stage 1	-	-	-	-	-	-	239	297	-	278	328	-
Stage 2	-	-	-	-	-	-	493	326	-	474	296	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			27.3			14.5		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	68	509	757	-	-	676	-	-	395
HCM Lane V/C Ratio	0.061	0.018	0.019	-	-	0.039	-	-	0.037
HCM Control Delay (s)	61.4	12.2	9.8	-	-	10.5	-	-	14.5
HCM Lane LOS	F	B	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	0.1	-	-	0.1	-	-	0.1























HCM 6th TWSC
12: Site Access & E. 6th Avenue

Existing
PM Peak

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	952	21	0	846	20	0	0	41	0	0	29
Future Vol, veh/h	0	952	21	0	846	20	0	0	41	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	992	22	0	881	21	0	0	43	0	0	30
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	496	-	-	441
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*683	0	0	564
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*683	-	-	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10.6			11.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	683	-	-	-	-	564						
HCM Lane V/C Ratio	0.063	-	-	-	-	0.054						
HCM Control Delay (s)	10.6	-	-	-	-	11.7						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.2						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

Existing + SG
AM Peak

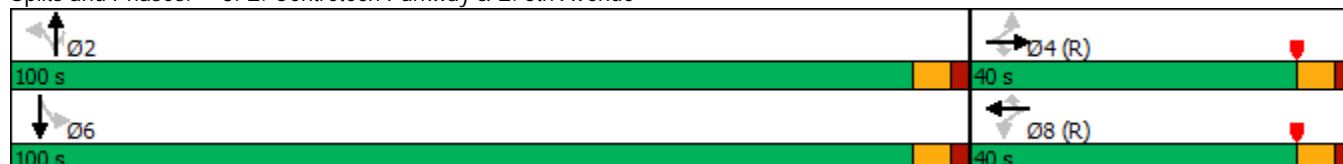
											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	46	828	284	32	1095	20	100	17	56	12	9
Future Volume (vph)	46	828	284	32	1095	20	100	17	56	12	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	109.7	109.7	109.7	109.7	109.7	109.7	18.3	18.3	18.3	18.3	18.3
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.18	0.34	0.26	0.09	0.45	0.02	0.67	0.08	0.28	0.08	0.36
Control Delay	6.7	5.3	3.0	5.2	6.2	1.8	75.7	50.8	37.9	50.7	57.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	5.3	3.0	5.2	6.2	1.8	75.7	50.8	37.9	50.7	57.7
LOS	A	A	A	A	A	A	E	D	D	D	E
Approach Delay		4.8			6.1			61.0			56.6
Approach LOS		A			A			E			E

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 60.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

Existing + SG
AM Peak

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	2	7	16	1	22	7	145	11	43	269	13
Future Vol, veh/h	6	2	7	16	1	22	7	145	11	43	269	13
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	8	18	1	25	8	167	13	49	309	15










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	618	611	317	610	612	174	324	0	0	180	0	0
Stage 1	415	415	-	190	190	-	-	-	-	-	-	-
Stage 2	203	196	-	420	422	-	-	-	-	-	-	-
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	447	435	838	454	434	869	1264	-	-	1396	-	-
Stage 1	682	620	-	812	743	-	-	-	-	-	-	-
Stage 2	799	739	-	678	614	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	419	417	838	433	416	869	1264	-	-	1396	-	-
Mov Cap-2 Maneuver	419	417	-	433	416	-	-	-	-	-	-	-
Stage 1	678	598	-	807	739	-	-	-	-	-	-	-
Stage 2	770	735	-	645	593	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		11.4		0.3		1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1264	-	-	546	603	1396	-
HCM Lane V/C Ratio	0.006	-	-	0.032	0.074	0.035	-
HCM Control Delay (s)	7.9	-	-	11.8	11.4	7.7	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

Existing + SG
AM Peak

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	6	903	0	12	1142	3	0	0	2	2	0	19
Future Vol, veh/h	6	903	0	12	1142	3	0	0	2	2	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1026	0	14	1298	3	0	0	2	2	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1301	0	0	1026	0	0	1717	2369	513	1853	2366	649
Stage 1	-	-	-	-	-	-	1040	1040	-	1326	1326	-
Stage 2	-	-	-	-	-	-	677	1329	-	527	1040	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	528	-	-	673	-	-	58	34	506	46	35	412
Stage 1	-	-	-	-	-	-	246	306	-	164	223	-
Stage 2	-	-	-	-	-	-	409	222	-	502	306	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	528	-	-	673	-	-	54	33	506	45	34	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	33	-	45	34	-
Stage 1	-	-	-	-	-	-	243	302	-	162	218	-
Stage 2	-	-	-	-	-	-	380	217	-	493	302	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			12.1			22.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	506	528	-	-	673	-	-	232
HCM Lane V/C Ratio	-	0.004	0.013	-	-	0.02	-	-	0.103
HCM Control Delay (s)	0	12.1	11.9	-	-	10.5	-	-	22.3
HCM Lane LOS	A	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	-	0	0	-	-	0.1	-	-	0.3























HCM 6th TWSC
12: Site Access & E. 6th Avenue

Existing + SG
AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	782	113	0	1141	20	0	0	127	0	0	6
Future Vol, veh/h	0	782	113	0	1141	20	0	0	127	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	889	128	0	1297	23	0	0	144	0	0	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	445	-	-	649
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*764	0	0	412
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*764	-	-	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10.8			13.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	764	-	-	-	-	412						
HCM Lane V/C Ratio	0.189	-	-	-	-	0.017						
HCM Control Delay (s)	10.8	-	-	-	-	13.9						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.7	-	-	-	-	0.1						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

Timings 3: E. Centretech Parkway & E. 6th Avenue

Existing + SG
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	94	962	130	38	810	27	179	17	50	24	8
Future Volume (vph)	94	962	130	38	810	27	179	17	50	24	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	97.9	97.9	97.9	97.9	97.9	97.9	25.1	25.1	25.1	25.1	25.1
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.19	0.19	0.19	0.19	0.19
v/c Ratio	0.25	0.41	0.12	0.12	0.34	0.03	0.79	0.05	0.16	0.10	0.18
Control Delay	9.4	8.5	1.9	8.3	7.9	2.6	73.2	41.7	11.2	43.0	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	8.5	1.9	8.3	7.9	2.6	73.2	41.7	11.2	43.0	14.2
LOS	A	A	A	A	A	A	E	D	B	D	B
Approach Delay		7.9			7.7			58.5			22.8
Approach LOS		A			A			E			C

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 13.5

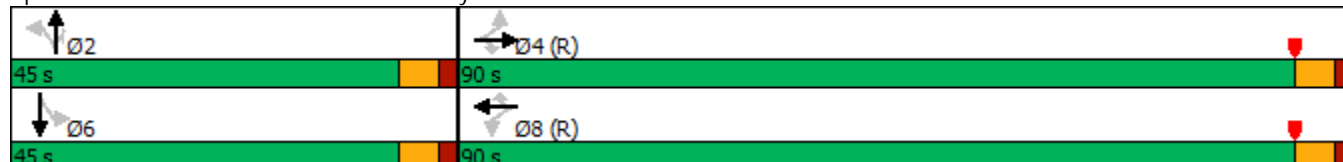
Intersection LOS: B

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

Existing + SG
PM Peak

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	20	8	8	15	1	25	7	201	7	64	78	34
Future Vol, veh/h	20	8	8	15	1	25	7	201	7	64	78	34
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	10	10	18	1	30	9	245	9	78	95	41










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	555	544	116	550	560	250	136	0	0	254	0	0
Stage 1	272	272	-	268	268	-	-	-	-	-	-	-
Stage 2	283	272	-	282	292	-	-	-	-	-	-	-
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	454	453	975	457	443	789	1461	-	-	1311	-	-
Stage 1	754	693	-	738	687	-	-	-	-	-	-	-
Stage 2	724	685	-	745	679	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	-	-	-
Mov Cap-1 Maneuver	413	423	975	422	414	789	1461	-	-	1311	-	-
Mov Cap-2 Maneuver	413	423	-	422	414	-	-	-	-	-	-	-
Stage 1	750	652	-	734	683	-	-	-	-	-	-	-
Stage 2	691	681	-	683	639	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		11.7		0.2		2.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1461	-	-	477 589	1311	-	-
HCM Lane V/C Ratio	0.006	-	-	0.092 0.085	0.06	-	-
HCM Control Delay (s)	7.5	-	-	13.3 11.7	7.9	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.3	0.2	-	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

Existing + SG
PM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1048	3	25	851	5	3	1	9	1	0	13
Future Vol, veh/h	14	1048	3	25	851	5	3	1	9	1	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
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	15	1139	3	27	925	5	3	1	10	1	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	930	0	0	1142	0	0	1686	2153	570	1579	2151	463
Stage 1	-	-	-	-	-	-	1169	1169	-	979	979	-
Stage 2	-	-	-	-	-	-	517	984	-	600	1172	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	731	-	-	608	-	-	61	47	465	74	48	546
Stage 1	-	-	-	-	-	-	205	265	-	268	326	-
Stage 2	-	-	-	-	-	-	509	325	-	455	264	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	731	-	-	608	-	-	56	44	465	68	45	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	44	-	68	45	-
Stage 1	-	-	-	-	-	-	201	259	-	262	312	-
Stage 2	-	-	-	-	-	-	474	311	-	434	258	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			33.7			15.4		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	52	465	731	-	-	608	-	-	363
HCM Lane V/C Ratio	0.084	0.021	0.021	-	-	0.045	-	-	0.042
HCM Control Delay (s)	80.5	12.9	10	-	-	11.2	-	-	15.4
HCM Lane LOS	F	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0.1	-	-	0.1

HCM 6th TWSC
12: Site Access & E. 6th Avenue























Existing + SG
PM Peak

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	952	82	0	846	20	0	0	113	0	0	29
Future Vol, veh/h	0	952	82	0	846	20	0	0	113	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	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	0	1035	89	0	920	22	0	0	123	0	0	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	518	-	-	460
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*683	0	0	548
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*683	-	-	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			11.4			12		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	683	-	-	-	-	548						
HCM Lane V/C Ratio	0.18	-	-	-	-	0.058						
HCM Control Delay (s)	11.4	-	-	-	-	12						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.7	-	-	-	-	0.2						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

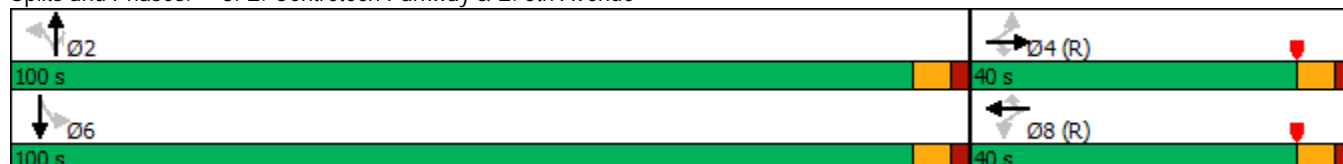
Timings

3: E. Centretech Parkway & E. 6th Avenue

2022 Background
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	47	760	290	35	1120	21	105	18	36	13	9
Future Volume (vph)	47	760	290	35	1120	21	105	18	36	13	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	109.2	109.2	109.2	109.2	109.2	109.2	18.8	18.8	18.8	18.8	18.8
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.19	0.31	0.26	0.09	0.46	0.02	0.68	0.08	0.18	0.08	0.36
Control Delay	7.0	5.3	2.8	5.3	6.5	2.0	75.5	50.3	29.0	50.4	57.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	5.3	2.8	5.3	6.5	2.0	75.5	50.3	29.0	50.4	57.1
LOS	A	A	A	A	A	A	E	D	C	D	E
Approach Delay		4.7			6.4			62.1			56.0
Approach LOS		A			A			E			E
Intersection Summary											
Cycle Length: 140											
Actuated Cycle Length: 140											
Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.68											
Intersection Signal Delay: 10.8						Intersection LOS: B					
Intersection Capacity Utilization 61.5%						ICU Level of Service B					
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2022 Background
AM Peak

Intersection													
Int Delay, s/veh	2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕		↔	↔		↔	↔		
Traffic Vol, veh/h	7	3	8	18	2	23	8	130	13	45	275	14	
Future Vol, veh/h	7	3	8	18	2	23	8	130	13	45	275	14	
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	-	-	-	-	-	-	100	-	-	100	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	8	3	9	20	2	26	9	148	15	51	313	16	
Major/Minor	Minor2		Minor1			Major1			Major2				
Conflicting Flow All	611	604	321	603	605	156	329	0	0	163	0	0	
Stage 1	423	423	-	174	174	-	-	-	-	-	-	-	
Stage 2	188	181	-	429	431	-	-	-	-	-	-	-	
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	461	445	851	468	444	890	1265	-	-	1416	-	-	
Stage 1	685	619	-	828	755	-	-	-	-	-	-	-	
Stage 2	814	750	-	679	613	-	-	-	-	-	-	-	
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-	
Mov Cap-1 Maneuver	431	426	851	445	425	890	1265	-	-	1416	-	-	
Mov Cap-2 Maneuver	431	426	-	445	425	-	-	-	-	-	-	-	
Stage 1	681	597	-	822	750	-	-	-	-	-	-	-	
Stage 2	782	745	-	644	591	-	-	-	-	-	-	-	
Approach	EB		WB			NB			SB				
HCM Control Delay, s	11.8		11.5			0.4			1				
HCM LOS	B		B										
Minor Lane/Major Mvmt	NBL		NBT	NBR	EBLn1WBLn1		SBL	SBT	SBR				
Capacity (veh/h)	1265		-	-	551	606	1416	-	-				
HCM Lane V/C Ratio	0.007		-	-	0.037	0.081	0.036	-	-				
HCM Control Delay (s)	7.9		-	-	11.8	11.5	7.6	-	-				
HCM Lane LOS	A		-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0		-	-	0.1	0.3	0.1	-	-				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2022 Background
AM Peak

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	830	3	13	1170	4	1	1	3	3	1	19
Future Vol, veh/h	7	830	3	13	1170	4	1	1	3	3	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	933	3	15	1315	4	1	1	3	3	1	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1319	0	0	936	0	0	1637	2298	467	1828	2297	658
Stage 1	-	-	-	-	-	-	949	949	-	1345	1345	-
Stage 2	-	-	-	-	-	-	688	1349	-	483	952	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	520	-	-	727	-	-	67	38	542	48	38	407
Stage 1	-	-	-	-	-	-	280	337	-	160	218	-
Stage 2	-	-	-	-	-	-	403	217	-	534	336	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	520	-	-	727	-	-	60	37	542	45	37	407
Mov Cap-2 Maneuver	-	-	-	-	-	-	60	37	-	45	37	-
Stage 1	-	-	-	-	-	-	276	332	-	158	213	-
Stage 2	-	-	-	-	-	-	372	212	-	521	331	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			41.9			31		
HCM LOS							E			D		























Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	46	542	520	-	-	727	-	-	164
HCM Lane V/C Ratio	0.049	0.006	0.015	-	-	0.02	-	-	0.158
HCM Control Delay (s)	87.2	11.7	12	-	-	10.1	-	-	31
HCM Lane LOS	F	B	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0.1	-	-	0.5

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	800	10	0	1170	20	0	0	40	0	0	7
Future Vol, veh/h	0	800	10	0	1170	20	0	0	40	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	889	11	0	1300	22	0	0	44	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	445	-	-	650
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*764	0	0	412
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*764	-	-	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10			13.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	764	-	-	-	-	412						
HCM Lane V/C Ratio	0.058	-	-	-	-	0.019						
HCM Control Delay (s)	10	-	-	-	-	13.9						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings

3: E. Centretech Parkway & E. 6th Avenue

2022 Background
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	95	935	135	40	830	28	185	18	40	25	8
Future Volume (vph)	95	935	135	40	830	28	185	18	40	25	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	98.1	98.1	98.1	98.1	98.1	98.1	24.9	24.9	24.9	24.9	24.9
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.24	0.38	0.12	0.12	0.34	0.03	0.78	0.06	0.13	0.10	0.18
Control Delay	9.2	8.2	1.6	8.1	7.8	2.6	73.0	41.9	12.3	43.2	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	8.2	1.6	8.1	7.8	2.6	73.0	41.9	12.3	43.2	14.1
LOS	A	A	A	A	A	A	E	D	B	D	B
Approach Delay		7.5			7.6			60.6			22.9
Approach LOS		A			A			E			C

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 135
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.5
Intersection Capacity Utilization 61.9%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service B

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2022 Background
PM Peak

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	22	9	9	17	2	27	8	195	8	65	85	35
Future Vol, veh/h	22	9	9	17	2	27	8	195	8	65	85	35
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	11	11	20	2	33	10	235	10	78	102	42
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	557	544	123	550	560	240	144	0	0	245	0	0
Stage 1	279	279	-	260	260	-	-	-	-	-	-	-
Stage 2	278	265	-	290	300	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	452	453	966	457	443	799	1450	-	-	1321	-	-
Stage 1	748	689	-	745	693	-	-	-	-	-	-	-
Stage 2	728	689	-	737	673	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	410	423	966	420	414	799	1450	-	-	1321	-	-
Mov Cap-2 Maneuver	410	423	-	420	414	-	-	-	-	-	-	-
Stage 1	742	648	-	740	688	-	-	-	-	-	-	-
Stage 2	691	684	-	674	634	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13.4		11.8			0.3			2.8			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1450	-	-	475	582	1321	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.101	0.095	0.059	-	-				
HCM Control Delay (s)	7.5	-	-	13.4	11.8	7.9	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.2	-	-				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2022 Background
PM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1000	8	30	875	7	4	1	10	2	1	13
Future Vol, veh/h	15	1000	8	30	875	7	4	1	10	2	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1042	8	31	911	7	4	1	10	2	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	918	0	0	1050	0	0	1592	2054	521	1527	2055	456
Stage 1	-	-	-	-	-	-	1074	1074	-	973	973	-
Stage 2	-	-	-	-	-	-	518	980	-	554	1082	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	739	-	-	659	-	-	72	55	500	80	55	551
Stage 1	-	-	-	-	-	-	235	294	-	271	329	-
Stage 2	-	-	-	-	-	-	509	326	-	484	292	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	739	-	-	659	-	-	66	51	500	73	51	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	51	-	73	51	-
Stage 1	-	-	-	-	-	-	230	288	-	265	314	-
Stage 2	-	-	-	-	-	-	472	311	-	462	286	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			31			22.1		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	62	500	739	-	-	659	-	-	227
HCM Lane V/C Ratio	0.084	0.021	0.021	-	-	0.047	-	-	0.073
HCM Control Delay (s)	68.3	12.4	10	-	-	10.7	-	-	22.1
HCM Lane LOS	F	B	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0.1	-	-	0.2























HCM 6th TWSC
12: Site Access & E. 6th Avenue

2022 Background
PM Peak

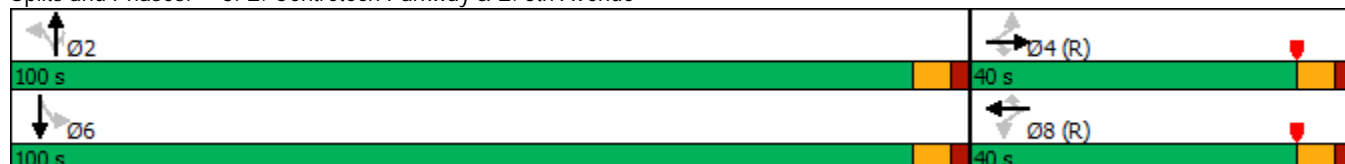
Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	975	25	0	870	20	0	0	50	0	0	29
Future Vol, veh/h	0	975	25	0	870	20	0	0	50	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1016	26	0	906	21	0	0	52	0	0	30
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	508	-	-	453
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*683	0	0	554
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*683	-	-	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10.7			11.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	683	-	-	-	-	554						
HCM Lane V/C Ratio	0.076	-	-	-	-	0.055						
HCM Control Delay (s)	10.7	-	-	-	-	11.9						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.2						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

2022 Total
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	47	976	290	35	1120	21	175	18	147	13	9
Future Volume (vph)	47	976	290	35	1120	21	175	18	147	13	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	98.1	98.1	98.1	98.1	98.1	98.1	29.9	29.9	29.9	29.9	29.9
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.26	0.46	0.30	0.15	0.53	0.02	0.74	0.05	0.49	0.05	0.24
Control Delay	14.0	11.2	6.3	11.2	12.2	3.9	65.6	39.3	44.4	39.1	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	11.2	6.3	11.2	12.2	3.9	65.6	39.3	44.4	39.1	44.4
LOS	B	B	A	B	B	A	E	D	D	D	D
Approach Delay		10.2			12.0			55.1			43.6
Approach LOS		B			B			E			D
Intersection Summary											
Cycle Length: 140											
Actuated Cycle Length: 140											
Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.74											
Intersection Signal Delay: 17.1											
Intersection Capacity Utilization 65.4%											
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2022 Total
AM Peak

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↘		↙	↘	
Traffic Vol, veh/h	7	3	8	18	12	53	28	281	13	45	275	14
Future Vol, veh/h	7	3	8	18	12	53	28	281	13	45	275	14
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	4	10	23	15	66	35	351	16	56	344	18
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	935	902	353	901	903	359	362	0	0	367	0	0
Stage 1	465	465	-	429	429	-	-	-	-	-	-	-
Stage 2	470	437	-	472	474	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	271	808	262	271	685	1220	-	-	1192	-	-
Stage 1	642	588	-	604	584	-	-	-	-	-	-	-
Stage 2	574	579	-	636	581	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	199	251	808	242	251	685	1220	-	-	1192	-	-
Mov Cap-2 Maneuver	199	251	-	242	251	-	-	-	-	-	-	-
Stage 1	623	560	-	586	567	-	-	-	-	-	-	-
Stage 2	490	562	-	594	553	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	17.3		16.5			0.7			1.1			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1220	-	-	316	416	1192	-	-				
HCM Lane V/C Ratio	0.029	-	-	0.071	0.249	0.047	-	-				
HCM Control Delay (s)	8	-	-	17.3	16.5	8.2	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	1	0.1	-	-				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2022 Total
AM Peak

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1009	134	79	1170	4	1	1	3	3	1	19
Future Vol, veh/h	7	1009	134	79	1170	4	1	1	3	3	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1187	158	93	1376	5	1	1	4	4	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1381	0	0	1345	0	0	2078	2770	594	2172	2923	688
Stage 1	-	-	-	-	-	-	1203	1203	-	1562	1562	-
Stage 2	-	-	-	-	-	-	875	1567	-	610	1361	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	492	-	-	508	-	-	31	19	448	26	15	389
Stage 1	-	-	-	-	-	-	196	256	-	117	171	-
Stage 2	-	-	-	-	-	-	310	170	-	448	215	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	492	-	-	508	-	-	23	15	448	21	12	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	23	15	-	21	12	-
Stage 1	-	-	-	-	-	-	193	252	-	115	140	-
Stage 2	-	-	-	-	-	-	237	139	-	435	212	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.9	101.1	67
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	18	448	492	-	-	508	-	-	84
HCM Lane V/C Ratio	0.131	0.008	0.017	-	-	0.183	-	-	0.322
HCM Control Delay (s)	233.1	13.1	12.4	-	-	13.7	-	-	67
HCM Lane LOS	F	B	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.4	0	0.1	-	-	0.7	-	-	1.2























HCM 6th TWSC
12: Site Access & E. 6th Avenue

2022 Total
AM Peak

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	971	166	0	1170	20	0	0	179	0	0	7
Future Vol, veh/h	0	971	166	0	1170	20	0	0	179	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1142	195	0	1376	24	0	0	211	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	571	-	-	688
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*675	0	0	389
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*675	-	-	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			12.7			14.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	675	-	-	-	-	389						
HCM Lane V/C Ratio	0.312	-	-	-	-	0.021						
HCM Control Delay (s)	12.7	-	-	-	-	14.5						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	1.3	-	-	-	-	0.1						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

2022 Total
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	95	1046	135	40	830	28	231	18	104	25	8
Future Volume (vph)	95	1046	135	40	830	28	231	18	104	25	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	92.0	92.0	92.0	92.0	92.0	92.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.30	0.48	0.13	0.17	0.38	0.03	0.84	0.05	0.27	0.09	0.16
Control Delay	13.0	11.8	2.8	11.8	10.6	3.1	72.4	37.2	12.8	38.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	11.8	2.8	11.8	10.6	3.1	72.4	37.2	12.8	38.3	12.2
LOS	B	B	A	B	B	A	E	D	B	D	B
Approach Delay		11.0			10.4			53.0			20.0
Approach LOS		B			B			D			C

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 16.8

Intersection LOS: B

Intersection Capacity Utilization 67.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2022 Total
PM Peak

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	22	9	9	17	8	45	22	287	8	65	85	35
Future Vol, veh/h	22	9	9	17	8	45	22	287	8	65	85	35
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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	12	12	23	11	60	29	383	11	87	113	47










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	793	763	137	770	781	389	160	0	0	394	0	0
Stage 1	311	311	-	447	447	-	-	-	-	-	-	-
Stage 2	482	452	-	323	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	308	334	948	321	326	659	1430	-	-	1165	-	-
Stage 1	717	666	-	591	573	-	-	-	-	-	-	-
Stage 2	565	570	-	707	650	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	253	303	948	285	296	659	1430	-	-	1165	-	-
Mov Cap-2 Maneuver	253	303	-	285	296	-	-	-	-	-	-	-
Stage 1	703	616	-	579	562	-	-	-	-	-	-	-
Stage 2	494	559	-	633	601	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.6		15		0.5		2.9	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1430	-	-	317 452	1165	-	-
HCM Lane V/C Ratio	0.021	-	-	0.168 0.206	0.074	-	-
HCM Control Delay (s)	7.6	-	-	18.6 15	8.3	-	-
HCM Lane LOS	A	-	-	C C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6 0.8	0.2	-	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2022 Total
PM Peak

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1121	75	63	875	7	4	1	10	2	1	13
Future Vol, veh/h	15	1121	75	63	875	7	4	1	10	2	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	1246	83	70	972	8	4	1	11	2	1	14
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	980	0	0	1329	0	0	1907	2400	623	1770	2475	486
Stage 1	-	-	-	-	-	-	1280	1280	-	1112	1112	-
Stage 2	-	-	-	-	-	-	627	1120	-	658	1363	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	700	-	-	515	-	-	42	33	429	53	29	527
Stage 1	-	-	-	-	-	-	175	235	-	223	282	-
Stage 2	-	-	-	-	-	-	438	280	-	420	214	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	700	-	-	515	-	-	35	28	429	44	24	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	28	-	44	24	-
Stage 1	-	-	-	-	-	-	171	229	-	218	244	-
Stage 2	-	-	-	-	-	-	366	242	-	397	209	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.9			54.1			33.7		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	33	429	700	-	-	515	-	-	143			
HCM Lane V/C Ratio	0.168	0.026	0.024	-	-	0.136	-	-	0.124			
HCM Control Delay (s)	135	13.6	10.3	-	-	13.1	-	-	33.7			
HCM Lane LOS	F	B	B	-	-	B	-	-	D			
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0.5	-	-	0.4			

HCM 6th TWSC
12: Site Access & E. 6th Avenue

2022 Total
PM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1070	105	0	870	20	0	0	143	0	0	29
Future Vol, veh/h	0	1070	105	0	870	20	0	0	143	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1189	117	0	967	22	0	0	159	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	595	-	-	484
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*636	0	0	529
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	1	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*636	-	-	529
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.5	12.2
HCM LOS			B	B























Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	636	-	-	-	-	529
HCM Lane V/C Ratio	0.25	-	-	-	-	0.061
HCM Control Delay (s)	12.5	-	-	-	-	12.2
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	-	0.2

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

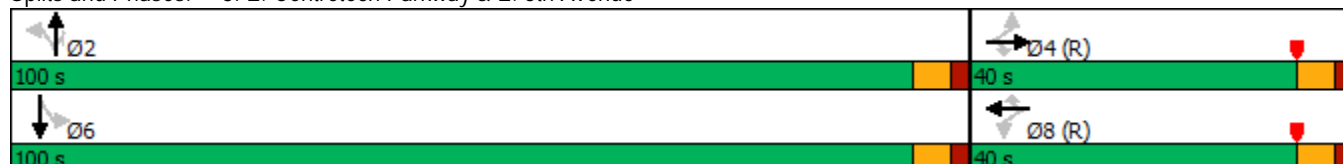
Timings

3: E. Centretech Parkway & E. 6th Avenue

2040 Background
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	50	880	340	40	1300	25	120	20	40	15	10
Future Volume (vph)	50	880	340	40	1300	25	120	20	40	15	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	107.1	107.1	107.1	107.1	107.1	107.1	20.9	20.9	20.9	20.9	20.9
Actuated g/C Ratio	0.76	0.76	0.76	0.76	0.76	0.76	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.27	0.37	0.31	0.12	0.55	0.02	0.70	0.08	0.18	0.08	0.35
Control Delay	10.4	6.4	3.8	6.5	8.3	2.5	74.2	48.3	29.4	48.3	55.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	6.4	3.8	6.5	8.3	2.5	74.2	48.3	29.4	48.3	55.5
LOS	B	A	A	A	A	A	E	D	C	D	E
Approach Delay		5.9			8.1			61.4			54.3
Approach LOS		A			A			E			D
Intersection Summary											
Cycle Length: 140											
Actuated Cycle Length: 140											
Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.70											
Intersection Signal Delay: 11.9						Intersection LOS: B					
Intersection Capacity Utilization 64.9%						ICU Level of Service C					
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue












HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2040 Background
AM Peak

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↗		↙	↗	
Traffic Vol, veh/h	10	5	10	20	3	25	10	145	15	50	325	15
Future Vol, veh/h	10	5	10	20	3	25	10	145	15	50	325	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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	6	11	23	3	28	11	165	17	57	369	17
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	703	696	378	696	696	174	386	0	0	182	0	0
Stage 1	492	492	-	196	196	-	-	-	-	-	-	-
Stage 2	211	204	-	500	500	-	-	-	-	-	-	-
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	398	390	*809	404	390	869	1204	-	-	1393	-	-
Stage 1	637	577	-	806	739	-	-	-	-	-	-	-
Stage 2	791	733	-	629	571	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	368	370	*809	379	370	869	1204	-	-	1393	-	-
Mov Cap-2 Maneuver	368	370	-	379	370	-	-	-	-	-	-	-
Stage 1	631	553	-	799	732	-	-	-	-	-	-	-
Stage 2	755	726	-	588	548	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.1		12.5		0.5		1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1204	-	-	471	535	1393	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.06	0.102	0.041	-	-				
HCM Control Delay (s)	8	-	-	13.1	12.5	7.7	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2040 Background
AM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	950	5	15	1350	5	2	1	5	5	1	20
Future Vol, veh/h	10	950	5	15	1350	5	2	1	5	5	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1067	6	17	1517	6	2	1	6	6	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1523	0	0	1073	0	0	1882	2646	534	2107	2646	759
Stage 1	-	-	-	-	-	-	1089	1089	-	1551	1551	-
Stage 2	-	-	-	-	-	-	793	1557	-	556	1095	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	434	-	-	645	-	-	43	23	491	29	23	349
Stage 1	-	-	-	-	-	-	230	290	-	119	173	-
Stage 2	-	-	-	-	-	-	348	172	-	483	288	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	434	-	-	645	-	-	37	22	491	26	22	349
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	22	-	26	22	-
Stage 1	-	-	-	-	-	-	224	283	-	116	169	-
Stage 2	-	-	-	-	-	-	315	168	-	464	281	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			60.1			65		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	30	491	434	-	-	645	-	-	88
HCM Lane V/C Ratio	0.112	0.011	0.026	-	-	0.026	-	-	0.332
HCM Control Delay (s)	139.7	12.4	13.5	-	-	10.7	-	-	65
HCM Lane LOS	F	B	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.3	0	0.1	-	-	0.1	-	-	1.3























HCM 6th TWSC
12: Site Access & E. 6th Avenue

2040 Background
AM Peak

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	0	920	15	0	1355	20	0	0	45	0	0	10
Future Vol, veh/h	0	920	15	0	1355	20	0	0	45	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1022	17	0	1506	22	0	0	50	0	0	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	511	-	-	753
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*697	0	0	352
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*697	-	-	352
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			10.6			15.6		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	697	-	-	-	-	352						
HCM Lane V/C Ratio	0.072	-	-	-	-	0.032						
HCM Control Delay (s)	10.6	-	-	-	-	15.6						
HCM Lane LOS	B	-	-	-	-	C						
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

2040 Background
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	100	1080	155	45	960	35	210	20	45	30	10
Future Volume (vph)	100	1080	155	45	960	35	210	20	45	30	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	95.4	95.4	95.4	95.4	95.4	95.4	27.6	27.6	27.6	27.6	27.6
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.71	0.71	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.31	0.45	0.14	0.16	0.40	0.03	0.81	0.06	0.13	0.11	0.18
Control Delay	12.1	10.0	2.3	10.1	9.4	2.9	72.5	39.8	11.0	41.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	10.0	2.3	10.1	9.4	2.9	72.5	39.8	11.0	41.2	13.2
LOS	B	B	A	B	A	A	E	D	B	D	B
Approach Delay		9.3			9.2			60.0			22.1
Approach LOS		A			A			E			C
Intersection Summary											
Cycle Length: 135											
Actuated Cycle Length: 135											
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.81											
Intersection Signal Delay: 14.8						Intersection LOS: B					
Intersection Capacity Utilization 67.3%						ICU Level of Service C					
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2040 Background
PM Peak

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	25	10	10	20	3	30	10	220	10	75	100	40
Future Vol, veh/h	25	10	10	20	3	30	10	220	10	75	100	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	12	12	24	4	36	12	265	12	90	120	48










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	639	625	144	631	643	271	168	0	0	277	0	0
Stage 1	324	324	-	295	295	-	-	-	-	-	-	-
Stage 2	315	301	-	336	348	-	-	-	-	-	-	-
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	400	407	957	404	397	768	1426	-	-	1286	-	-
Stage 1	714	660	-	713	669	-	-	-	-	-	-	-
Stage 2	696	665	-	703	643	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	-	-	-
Mov Cap-1 Maneuver	356	376	957	366	366	768	1426	-	-	1286	-	-
Mov Cap-2 Maneuver	356	376	-	366	366	-	-	-	-	-	-	-
Stage 1	708	614	-	707	664	-	-	-	-	-	-	-
Stage 2	654	660	-	633	598	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.8		12.9		0.3		2.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	420 520	1286	-	-
HCM Lane V/C Ratio	0.008	-	-	0.129 0.123	0.07	-	-
HCM Control Delay (s)	7.5	-	-	14.8 12.9	8	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.4	0.2	-	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2040 Background
PM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1150	10	35	1010	10	5	2	15	3	1	15
Future Vol, veh/h	20	1150	10	35	1010	10	5	2	15	3	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	1198	10	36	1052	10	5	2	16	3	1	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1062	0	0	1208	0	0	1839	2374	599	1766	2374	526
Stage 1	-	-	-	-	-	-	1240	1240	-	1124	1124	-
Stage 2	-	-	-	-	-	-	599	1134	-	642	1250	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	652	-	-	573	-	-	47	34	445	53	34	496
Stage 1	-	-	-	-	-	-	186	245	-	219	279	-
Stage 2	-	-	-	-	-	-	455	276	-	429	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	652	-	-	573	-	-	41	31	445	45	31	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	31	-	45	31	-
Stage 1	-	-	-	-	-	-	180	237	-	212	261	-
Stage 2	-	-	-	-	-	-	411	259	-	397	235	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	47.6	33.3
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	445	652	-	-	573	-	-	147
HCM Lane V/C Ratio	0.192	0.035	0.032	-	-	0.064	-	-	0.135
HCM Control Delay (s)	121	13.4	10.7	-	-	11.7	-	-	33.3
HCM Lane LOS	F	B	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0.2	-	-	0.5























HCM 6th TWSC
12: Site Access & E. 6th Avenue

2040 Background
PM Peak

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	1125	30	0	1010	20	0	0	55	0	0	30
Future Vol, veh/h	0	1125	30	0	1010	20	0	0	55	0	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1172	31	0	1052	21	0	0	57	0	0	31
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	586	-	-	526
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*613	0	0	496
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*613	-	-	496
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			11.5			12.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	613	-	-	-	-	496						
HCM Lane V/C Ratio	0.093	-	-	-	-	0.063						
HCM Control Delay (s)	11.5	-	-	-	-	12.7						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0.2						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

2040 Total
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	50	1096	340	40	1300	25	190	20	151	15	10
Future Volume (vph)	50	1096	340	40	1300	25	190	20	151	15	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	100.0	100.0	100.0	100.0	100.0
Total Split (%)	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	71.4%	71.4%	71.4%	71.4%	71.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effect Green (s)	95.7	95.7	95.7	95.7	95.7	95.7	32.3	32.3	32.3	32.3	32.3
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.40	0.53	0.36	0.22	0.63	0.03	0.74	0.06	0.46	0.06	0.24
Control Delay	23.5	13.4	7.8	14.5	15.4	4.9	63.8	37.4	42.2	37.2	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	13.4	7.8	14.5	15.4	4.9	63.8	37.4	42.2	37.2	42.5
LOS	C	B	A	B	B	A	E	D	D	D	D
Approach Delay		12.5			15.2			53.3			41.6
Approach LOS		B			B			D			D

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 63 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 18.9

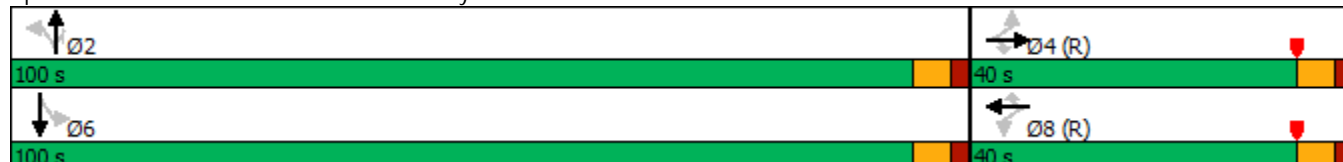
Intersection LOS: B

Intersection Capacity Utilization 68.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2040 Total
AM Peak

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	10	5	10	20	13	55	30	296	15	50	325	15
Future Vol, veh/h	10	5	10	20	13	55	30	296	15	50	325	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	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	6	13	25	16	69	38	370	19	63	406	19










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1040	1007	416	1007	1007	380	425	0	0	389	0	0
Stage 1	542	542	-	456	456	-	-	-	-	-	-	-
Stage 2	498	465	-	551	551	-	-	-	-	-	-	-
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	199	225	762	213	225	667	1152	-	-	1170	-	-
Stage 1	586	540	-	584	568	-	-	-	-	-	-	-
Stage 2	554	563	-	578	534	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	157	206	762	191	206	667	1152	-	-	1170	-	-
Mov Cap-2 Maneuver	157	206	-	191	206	-	-	-	-	-	-	-
Stage 1	567	511	-	565	549	-	-	-	-	-	-	-
Stage 2	466	544	-	531	505	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.7		19.8		0.7		1.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1152	-	-	247 352	1170	-	-
HCM Lane V/C Ratio	0.033	-	-	0.127 0.313	0.053	-	-
HCM Control Delay (s)	8.2	-	-	21.7 19.8	8.2	-	-
HCM Lane LOS	A	-	-	C C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4 1.3	0.2	-	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2040 Total
AM Peak

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1129	136	81	1350	5	2	1	5	5	1	20
Future Vol, veh/h	10	1129	136	81	1350	5	2	1	5	5	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1328	160	95	1588	6	2	1	6	6	1	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1594	0	0	1488	0	0	2337	3136	664	2467	3290	794
Stage 1	-	-	-	-	-	-	1352	1352	-	1778	1778	-
Stage 2	-	-	-	-	-	-	985	1784	-	689	1512	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	407	-	-	448	-	-	19	11	403	15	9	331
Stage 1	-	-	-	-	-	-	158	217	-	85	134	-
Stage 2	-	-	-	-	-	-	266	133	-	402	181	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	407	-	-	448	-	-	13	8	403	11	7	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	13	8	-	11	7	-
Stage 1	-	-	-	-	-	-	153	211	-	83	106	-
Stage 2	-	-	-	-	-	-	193	105	-	382	176	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.9			175.8			225.8		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	11	403	407	-	-	448	-	-	40
HCM Lane V/C Ratio	0.321	0.015	0.029	-	-	0.213	-	-	0.765
HCM Control Delay (s)	\$ 445.2	14.1	14.1	-	-	15.2	-	-	225.8
HCM Lane LOS	F	B	B	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.8	0	0.1	-	-	0.8	-	-	2.8























HCM 6th TWSC
12: Site Access & E. 6th Avenue

2040 Total
AM Peak

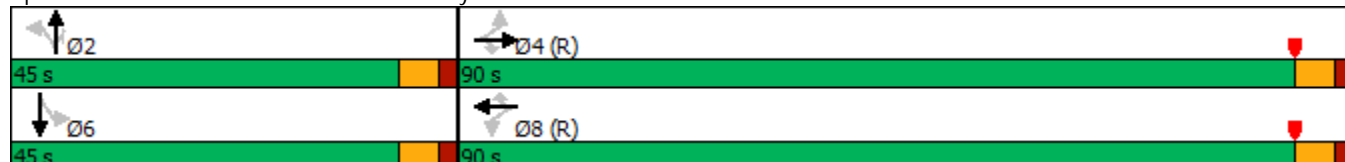
Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	1091	171	0	1355	20	0	0	184	0	0	10
Future Vol, veh/h	0	1091	171	0	1355	20	0	0	184	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1284	201	0	1594	24	0	0	216	0	0	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	642	-	-	797
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*630	0	0	329
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*630	-	-	329
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			13.7			16.3		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	630	-	-	-	-	329						
HCM Lane V/C Ratio	0.344	-	-	-	-	0.036						
HCM Control Delay (s)	13.7	-	-	-	-	16.3						
HCM Lane LOS	B	-	-	-	-	C						
HCM 95th %tile Q(veh)	1.5	-	-	-	-	0.1						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings 3: E. Centretech Parkway & E. 6th Avenue

2040 Total
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	100	1191	155	45	960	35	256	20	109	30	10
Future Volume (vph)	100	1191	155	45	960	35	256	20	109	30	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	90.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	89.8	89.8	89.8	89.8	89.8	89.8	33.2	33.2	33.2	33.2	33.2
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.67	0.67	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.40	0.56	0.16	0.26	0.45	0.04	0.87	0.05	0.28	0.10	0.16
Control Delay	17.2	14.0	3.6	15.3	12.3	3.7	74.7	36.1	20.3	37.4	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	14.0	3.6	15.3	12.3	3.7	74.7	36.1	20.3	37.4	11.9
LOS	B	B	A	B	B	A	E	D	C	D	B
Approach Delay		13.1			12.1			57.3			19.9
Approach LOS		B			B			E			B
Intersection Summary											
Cycle Length: 135											
Actuated Cycle Length: 135											
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.87											
Intersection Signal Delay: 18.7						Intersection LOS: B					
Intersection Capacity Utilization 72.9%						ICU Level of Service C					
Analysis Period (min) 15											

Splits and Phases: 3: E. Centretech Parkway & E. 6th Avenue



HCM 6th TWSC
6: E. Centretech Parkway & Site Access

2040 Total
PM Peak

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	25	10	10	20	9	48	24	312	10	70	100	40
Future Vol, veh/h	25	10	10	20	9	48	24	312	10	70	100	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	13	13	27	12	64	32	416	13	93	133	53










Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	871	839	160	846	859	423	186	0	0	429	0	0
Stage 1	346	346	-	487	487	-	-	-	-	-	-	-
Stage 2	525	493	-	359	372	-	-	-	-	-	-	-
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	271	300	936	284	292	631	1403	-	-	1130	-	-
Stage 1	694	645	-	562	550	-	-	-	-	-	-	-
Stage 2	536	547	-	681	628	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	1	-	-	-	-	-
Mov Cap-1 Maneuver	217	269	936	248	262	631	1403	-	-	1130	-	-
Mov Cap-2 Maneuver	217	269	-	248	262	-	-	-	-	-	-	-
Stage 1	678	592	-	549	537	-	-	-	-	-	-	-
Stage 2	460	534	-	603	576	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.6		17		0.5		2.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1403	-	-	276	403	1130	-
HCM Lane V/C Ratio	0.023	-	-	0.217	0.255	0.083	-
HCM Control Delay (s)	7.6	-	-	21.6	17	8.5	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	1	0.3	-

HCM 6th TWSC
9: Jasper Street & E. 6th Avenue

2040 Total
PM Peak

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1271	77	68	1010	10	5	2	15	3	1	15
Future Vol, veh/h	20	1271	77	68	1010	10	5	2	15	3	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	1412	86	76	1122	11	6	2	17	3	1	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1133	0	0	1498	0	0	2170	2741	706	2025	2816	561
Stage 1	-	-	-	-	-	-	1456	1456	-	1274	1274	-
Stage 2	-	-	-	-	-	-	714	1285	-	751	1542	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	612	-	-	444	-	-	26	20	378	34	18	471
Stage 1	-	-	-	-	-	-	136	193	-	177	236	-
Stage 2	-	-	-	-	-	-	388	233	-	369	175	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	612	-	-	444	-	-	20	16	378	25	14	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	20	16	-	25	14	-
Stage 1	-	-	-	-	-	-	131	186	-	171	196	-
Stage 2	-	-	-	-	-	-	308	193	-	336	169	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.9			102.8			60.8		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	19	378	612	-	-	444	-	-	85
HCM Lane V/C Ratio	0.409	0.044	0.036	-	-	0.17	-	-	0.248
HCM Control Delay (s)	290.8	15	11.1	-	-	14.8	-	-	60.8
HCM Lane LOS	F	C	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.1	0.1	0.1	-	-	0.6	-	-	0.9

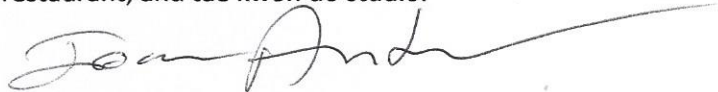
HCM 6th TWSC
12: Site Access & E. 6th Avenue

2040 Total
PM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	1220	110	0	1010	20	0	0	148	0	0	30
Future Vol, veh/h	0	1220	110	0	1010	20	0	0	148	0	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1356	122	0	1122	22	0	0	164	0	0	33
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	678	-	-	561
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*567	0	0	471
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*567	-	-	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			13.9			13.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1						
Capacity (veh/h)	567	-	-	-	-	471						
HCM Lane V/C Ratio	0.29	-	-	-	-	0.071						
HCM Control Delay (s)	13.9	-	-	-	-	13.2						
HCM Lane LOS	B	-	-	-	-	B						
HCM 95th %tile Q(veh)	1.2	-	-	-	-	0.2						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

To Whom This May Concern,

I, Ioannis Adrianakos, give permission at the shopping center known as 6th and Centretech, to allow cars for the Aurora Charter School to stage, in front of, or behind my buildings. They are allowed to do this during normal school hours and special events. My buildings include the Lady fitness Center, Chinese restaurant, and tae kwon do studio.

A handwritten signature in black ink, appearing to read 'Ioan Andrianakos', with a long horizontal flourish extending to the right.

Ioannis Andrianakos