

# **TRANSPORTATION IMPACT STUDY**

Aurora Public Schools Freezer Facility

Prepared for:

Aurora Public Schools  
1369 Airport Boulevard  
Aurora, CO 80011

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# I. INTRODUCTION

## I.A. Summary

Aurora Public Schools (APS) is proposing to develop a freezer facility on an approximately 4.5-acre site in the southeast quadrant of the intersection of Airport Boulevard and Centretech Parkway. The site location is located amongst a larger APS campus which houses the school district's purchasing and transportation departments, including a bus storage lot, along with the Edna and John W. Mosley School and the Aurora Quest School. **Figure 1** illustrates the location of the site and the adjacent primary roadway network. The proposed facility would consist of a 54 thousand square feet (KSF) building. Primary access to the facility will be provided onto Centretech Parkway along the north side of the site. The site will connect to a second existing access further east on Centretech Parkway. **Figure 2** shows the current site plan which depicts building location and site access points. A short-term scenario representing completion of the site in the year 2025 and a long-term future scenario examining the traffic impacts within the context of the year 2050 were analyzed.

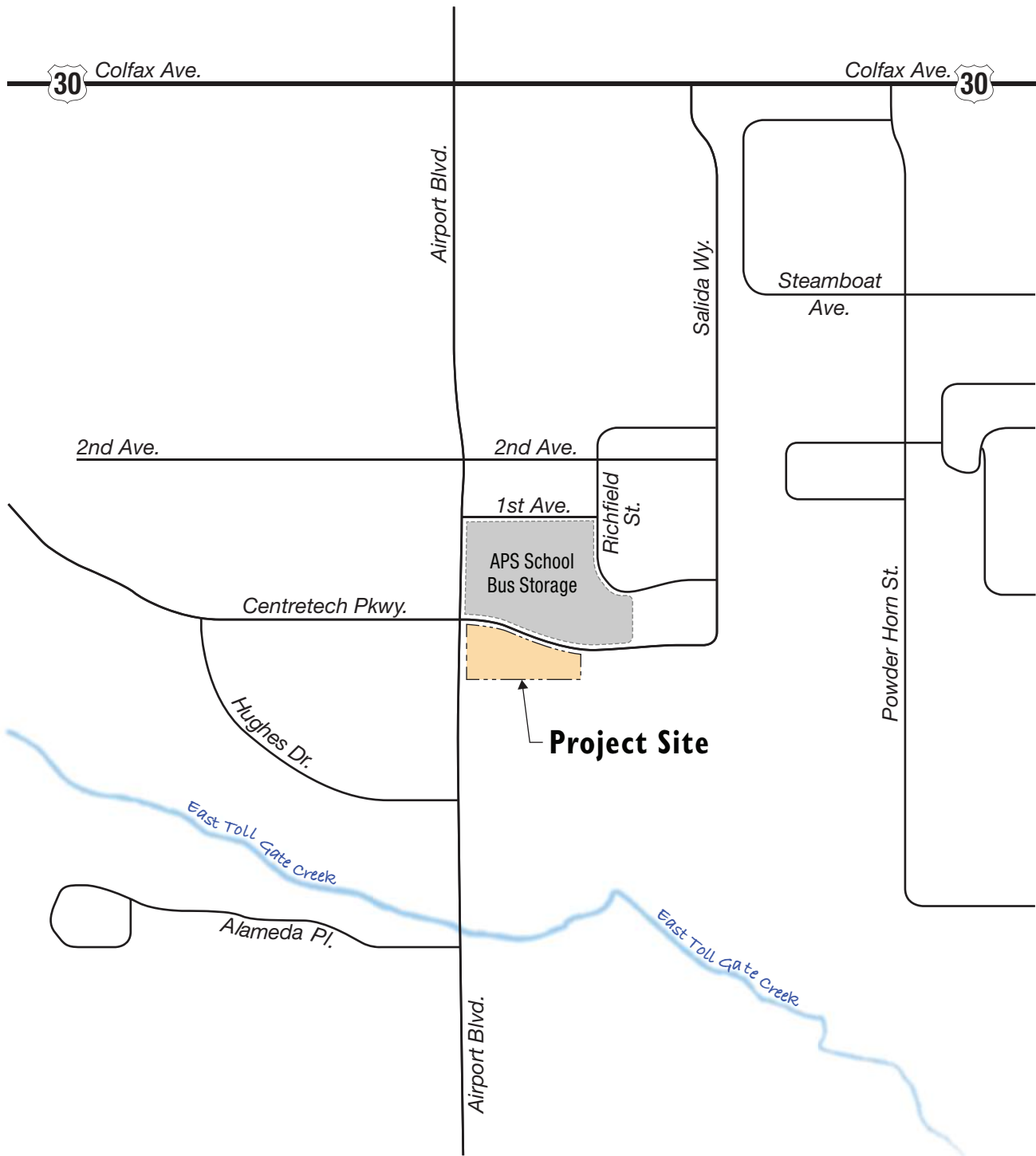
## I.B. Scope of Services

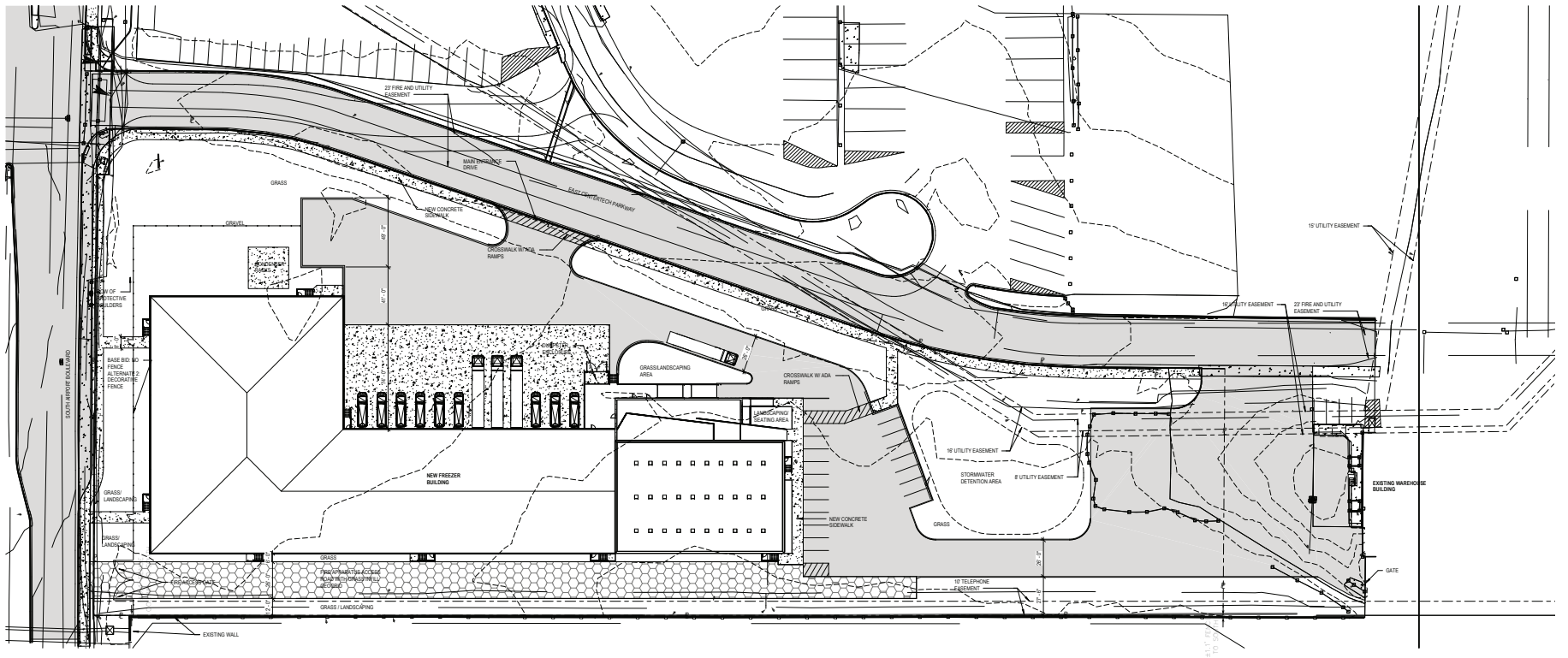
The purpose of this Transportation Impact Study (TIS) is to estimate the potential impacts specific to the proposed development and to identify any resultant required roadway and/or intersection improvements and traffic control needs. This report also includes a queueing analysis for study intersections. The primary focus for traffic operations is at the following intersections:

- Airport Boulevard & Centretech Parkway
- Centretech Parkway & West Site Access (Proposed)
- Centretech Parkway & School Bus Access
- Centretech Parkway & East Site Access

The study will evaluate the following time periods:

- Existing (2024) AM and PM peak hours.
- Buildout (2025) of the development for AM and PM peak hours.
- Future (2050) of the development for AM and PM peak hours.





## II. EXISTING CONDITIONS

### II.A. Surrounding Land Use

The site of the proposed freezer facility is surrounded by a mix of land uses including residential neighborhoods, government buildings, warehouses, industrial buildings, office parks, and vacant land. The Aurora Public Schools Transportation Department has a bus storage lot located to the north of the site and the Edna and John W. Mosley P-8 School is east of the bus storage facility. There are several more schools to the north. The Buckley Space Force Base is also located east of the site, but it cannot be accessed using Centretech Parkway. South of the site is the Buckley Family housing development, which has approximately 150 single family homes. To the west of the site across Airport Boulevard is the Raytheon office park.

### II.B. Transportation Network

#### *Roadways*

The existing transportation network near the site includes the intersection of Airport Boulevard and Centretech Parkway. These roadways serve as the western and northern boundaries of the site respectively. Airport Boulevard exists as a divided six-lane major-arterial. Approximately 4 miles north of the site Airport Boulevard merges with Peña Boulevard and continues to Denver International Airport. South of the site Airport Boulevard becomes Buckley Road after crossing Alameda Parkway. Centretech Parkway is a two-lane collector roadway with a center left turn lane. East of the site Centretech Parkway turns north and becomes Salida Way after crossing 2<sup>nd</sup> Avenue. West of the site Centretech parkway turns northeast and serves the Centretech neighborhood.

#### *Traffic Volumes*

Existing traffic volumes in the vicinity of the site are presented on **Figure 3**. The traffic count data can also be found in the **Appendix**. Turning movement counts were collected on May 7<sup>th</sup>, 2024 at the intersection of Airport Boulevard with Centretech Parkway and at the intersection of Centretech Parkway with the school bus storage access. A daily count was collected on Airport Boulevard north of Centretech Parkway, also on May 7<sup>th</sup>, 2024. Daily traffic volumes along Airport Boulevard were found to be 38,400 vehicles per day, with 21,700 vehicles traveling in the northbound direction and 16,700 vehicles traveling in the southbound direction. The AM peak hour for the study area network was determined to be from 7:15 to 8:15 AM and the PM peak hour was from 3:30 to 4:30 PM. Trucks were counted separately from passenger vehicle traffic to develop truck percentages for the study area. The calculated heavy vehicle (HV) percentage was less than 1%. For the analysis a 1% HV percentage was assumed to provide an accurate reflection of the existing roadway network. The existing northbound right-turn volume at the intersection of Airport Boulevard and Centretech Parkway is 174 vehicles during the AM peak hour. There is not currently an exclusive right-turn lane.

#### *Traffic Operations*

Calculations were carried out to assess operations given current traffic demands. These were conducted using techniques documented in the *Highway Capacity Manual (HCM) 6<sup>th</sup> Edition*, (Transportation Research Board, 2016) using the existing traffic volumes and intersection geometry. Level of Service (LOS) is a qualitative measure of traffic operational conditions, based on roadway capacity and vehicle

delay. Levels of service are described by a letter designation ranging from A to F, with LOS A representing free-flow travel, while LOS F represents congested conditions. For signalized intersections, LOS is calculated for the entire intersection while LOS for unsignalized intersections is calculated for movements that must yield right-of-way to other traffic movements.

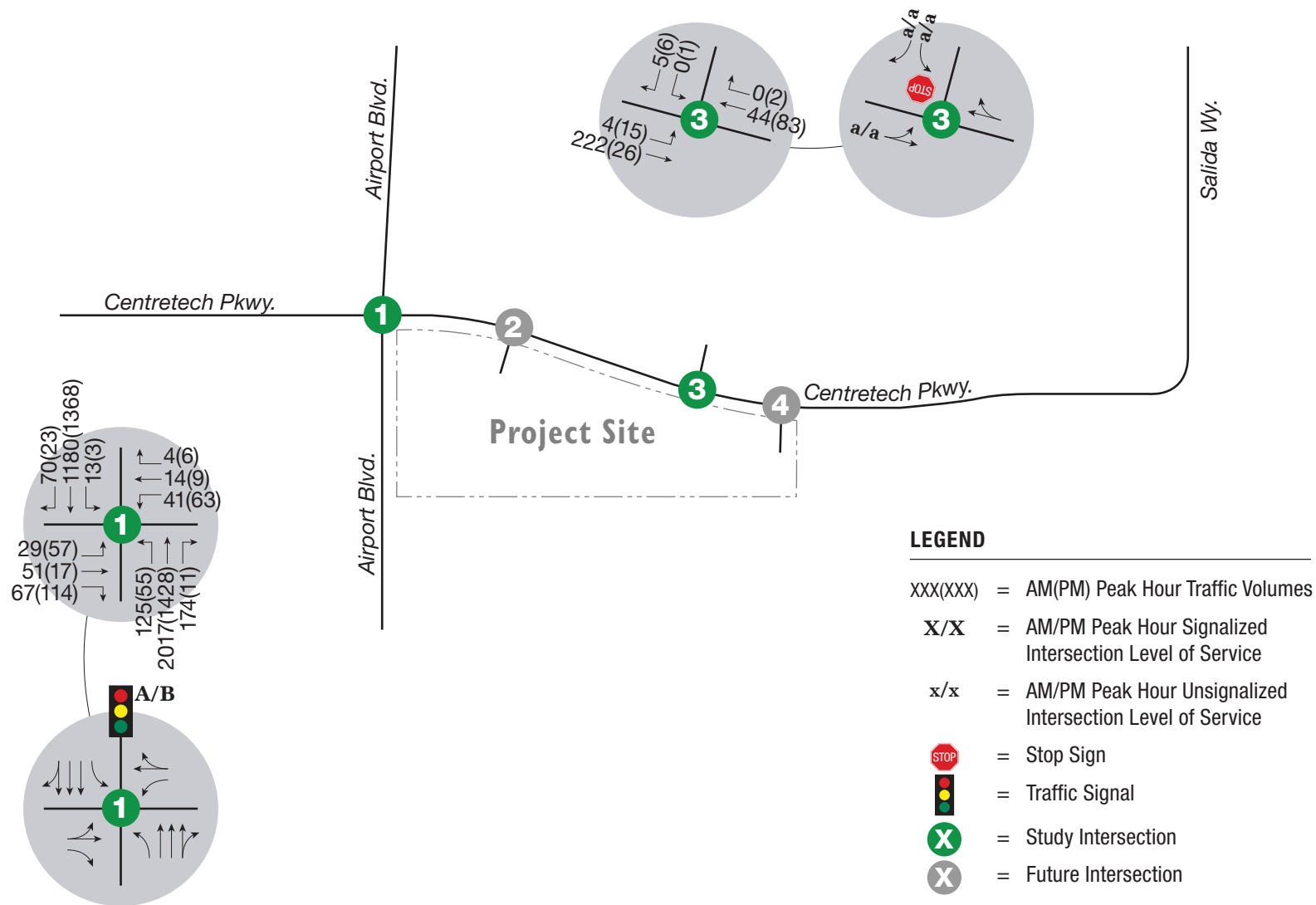
**Table I** summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

**Table I. Level of Service (LOS) Criteria**

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50
HCM 6 <sup>th</sup> Edition, Exhibit 19-8 & Exhibit 20-2		

The signalized intersection of Airport Boulevard and Centretech Parkway operates at LOS A during the AM peak and LOS B during the PM Peak for the existing condition. All movements on the stop-controlled bus access intersection operate at LOS A during both peak hours.





### III. PROPOSED CONDITIONS

#### III.A.Site Trip Generation

Trip generation average rates from the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Tenth Edition, 2017*, were utilized to estimate the traffic generated by the site. Anticipated site use was analyzed from the provided site plan using the appropriate land use types from the *Trip Generation Manual*. Land use code (LUC) 157, which represents high cube cold storage warehouses, was not used because buildings that fall into this category are generally over 200 KSF. The current proposed freezer facility will have a gross floor area of 54 KSF so LUC 150, which covers general warehousing, was used. **Table 2** shows the trip generation for the proposed development, which is estimated to generate 125 trips per day, with 30 vehicle-trips during the AM peak period and 33 vehicle-trips during the PM peak period when built out.

**Table 2. Trip Generation Summary**

Land Use	Intensity	ITE Code	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	54 KSF	150	125	23	7	30	9	24	33

#### III.B.Trip Distribution and Traffic Assignment

Trip distribution estimates for this site were based on existing traffic volumes on the eastern leg of and the expected use of the freezer facility. The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network:

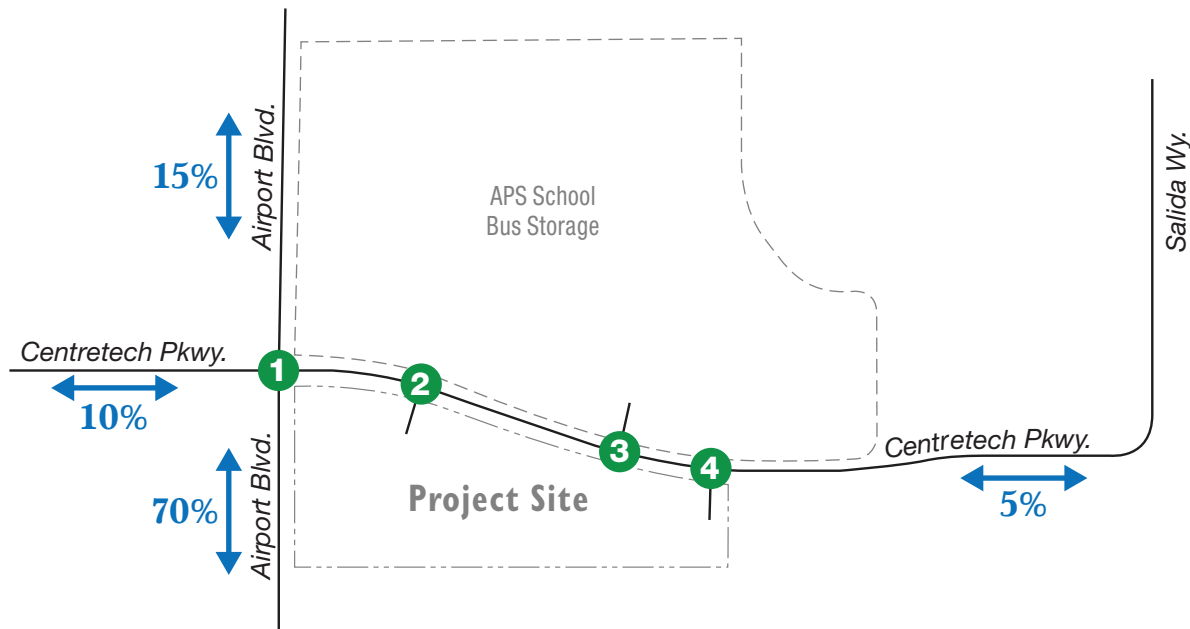
- 15% to/from the north via Airport Boulevard
- 70% to/from the south via Airport Boulevard
- 10% to/from the west via Centretech Parkway
- 5% to/from the east via Centretech Parkway

**Figure 4** shows the site-trip distribution percentages for the overall development. The distribution percentages were used to assign site generated vehicle-trips from the trip generation table above. These percentages dictate the vehicle movements to and from the site. **Figure 4** also shows the anticipated site generated traffic volumes for intersections near the freezer facility.

### **III.C.Background Growth**

The Denver Regional Council of Governments (DRCOG) produces a travel demand model. The 2023 and 2050 average daily traffic (ADT) volumes from that model were used to estimate the growth rate of traffic on Airport Boulevard. In 2018, the City of Aurora completed the NEATS Refresh study, which provides year 2040 and regional buildout transportation recommendations for the roadways and multimodal transportation system within the study area. The NEATS Refresh study area encompassed a regional area extending from approximately between Tower Road east to Schumaker Road, and from Jewell Avenue on the south to 72<sup>nd</sup> Avenue on the north. However, for this study DRCOG was used because it has a more recently updated 2050 projection for Airport Boulevard close to the proposed freezer facility.

The ADT's showed traffic volumes increasing by an average of 1.2% per year along Airport Boulevard. This annual growth rate was used to increase the background traffic volumes for the Buildout (2025) and Future (2050) analysis scenarios. The 1.2% annual growth leads to a growth factor of 1.012 for 2025 and 1.364 for 2050.

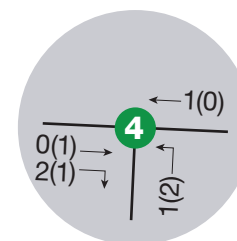
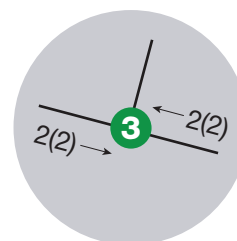
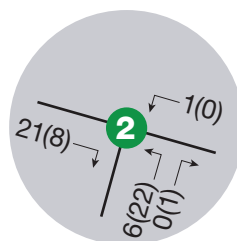
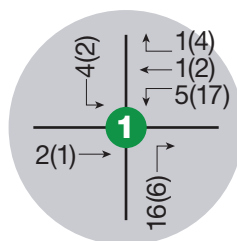


#### LEGEND

xxx(xxx) = AM(PM) Peak Hour Traffic Volumes

XX% = Site Trip Distribution

X = Study Intersection



## IV. FUTURE CONDITIONS

### IV.A. Buildout (2025) Traffic Conditions

#### *Traffic Volumes*

The 2025 Background peak hour traffic volumes were estimated using the existing peak hour traffic volumes grown by 1.2 percent. The background volumes for 2025 are shown on **Figure 5**. The site generated traffic volumes illustrated on **Figure 4** were added to the short-term background traffic volumes found on **Figure 5** to produce the total 2025 traffic volumes shown on **Figure 6**.

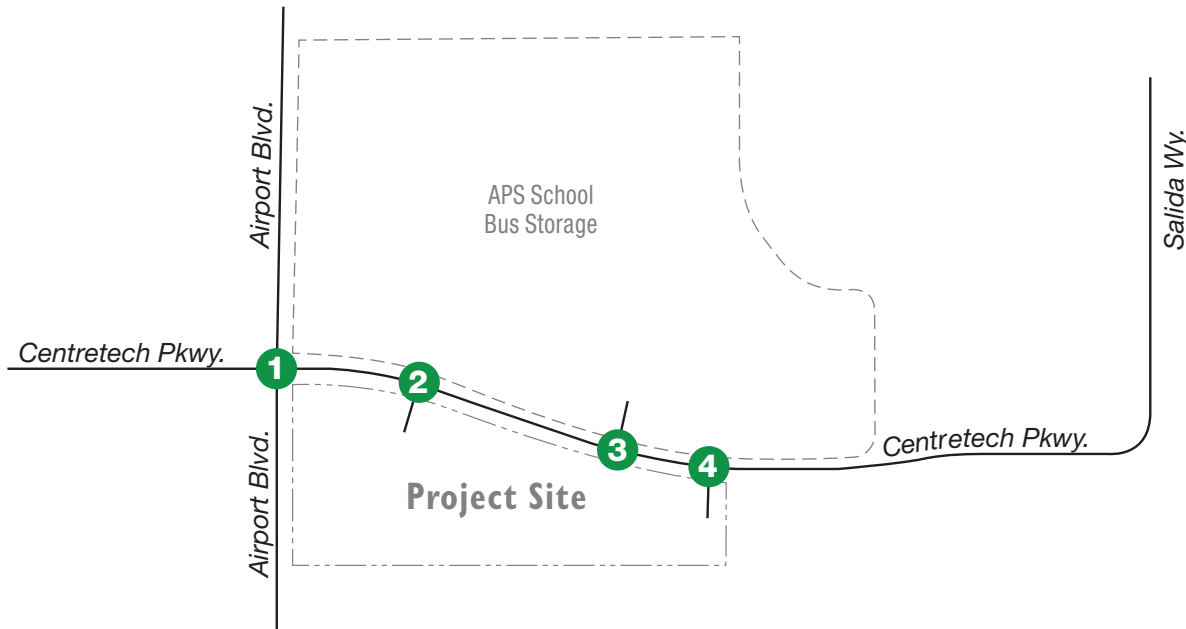
#### *Traffic Control and Operations*

The 2025 background LOS results and intersection lane configurations are included on **Figure 5**. The intersection of Airport Boulevard and Centretech Parkway will function at LOS A during the AM peak period and LOS B during the PM peak hour period. All unsignalized movements are expected to operate at LOS B or better for AM and PM peak hour periods. Calculations used techniques documented in the *Highway Capacity Manual* (Transportation Research Board, 2016) using anticipated traffic volumes and intersection geometry.

The 2025 Buildout LOS results and intersection lane configurations are included on **Figure 6**. The results are the same as the 2025 Background condition except for the northbound movements of the western site access during the AM peak period. This leg operates at LOS A in the background condition and LOS B in the total condition. Operation analysis worksheets are included in the **Appendix**.

It is recommended that an exclusive northbound right-turn lane be constructed at the intersection of Centretech Parkway and Airport Boulevard due to the high volume of movement during the AM peak hour. AM peak hour volumes are projected at 176 in the background and 192 during the total for the 2025 buildout scenarios. Although exclusive right-turn lanes are generally not required for approaches with three through lanes, the northbound right-turn volume is far above the 50-vehicle threshold stated in the CDOT State Highway Access Code (SHAC). Such a high turning volume has the potential to negatively impact operations and create adverse safety conditions when made from a shared lane.

#### **Figure 5. Buildout (2025) Background Volumes**





## LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

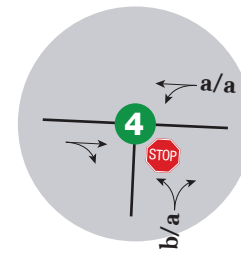
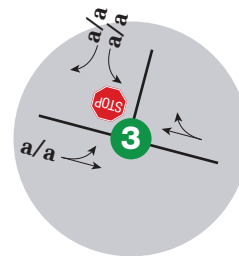
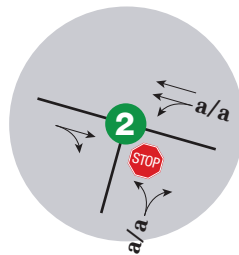
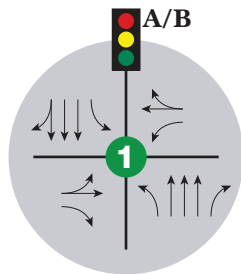
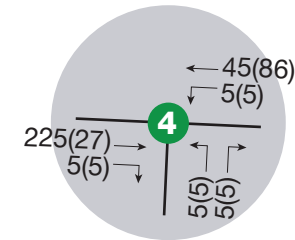
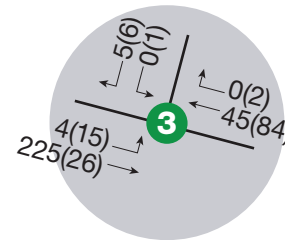
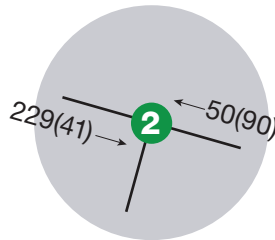
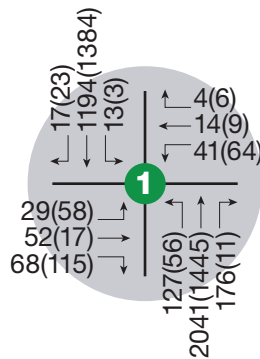
**X/X** = AM/PM Peak Hour Signalized Intersection Level of Service

**x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal

 = Study Intersection



## IV.B. Future (2050) Traffic Conditions

### *Traffic Volumes*

The 2050 background traffic has been estimated using traffic volume projections from the DRCOG traffic demand model. A growth factor of 1.36 was applied to existing traffic volumes. **Figure 7** shows the projected long-term background traffic demands along the study area roadways and intersections.

The site generated traffic volumes illustrated on **Figure 4** were added to the long-term future background traffic volumes on **Figure 7** to produce the total 2050 traffic volumes shown on **Figure 8**.

### *Traffic Control and Operations*

The background 2050 level of service (LOS) results and intersection lane configurations are included on **Figure 7**. Background traffic operates at LOS B or better during both AM and PM time periods at the intersection on Airport Blvd and Centretch Parkway as well as all stop-controlled movements on unsignalized intersections..

The 2050 total traffic LOS values are the same as 2050 background conditions except for the northbound movement at the western site access intersection during the AM peak period. That movement operates at LOS A in the background condition and LOS B in the total traffic condition. Operation analysis worksheets are included in the **Appendix**.

It is recommended that an exclusive northbound right-turn lane be constructed at the intersection of Centretch Parkway and Airport Boulevard due to the high volume of movement during the AM peak hour. AM peak hour volumes are projected at 237 in the background and 253 during the total for the 2050 future scenarios. Although exclusive right-turn lanes are generally not required for approaches with three through lanes, the northbound right-turn volume is far above the 50-vehicle threshold stated in the CDOT SHAC. Such a high turning volume has the potential to negatively impact operations and create adverse safety conditions when made from a shared lane.

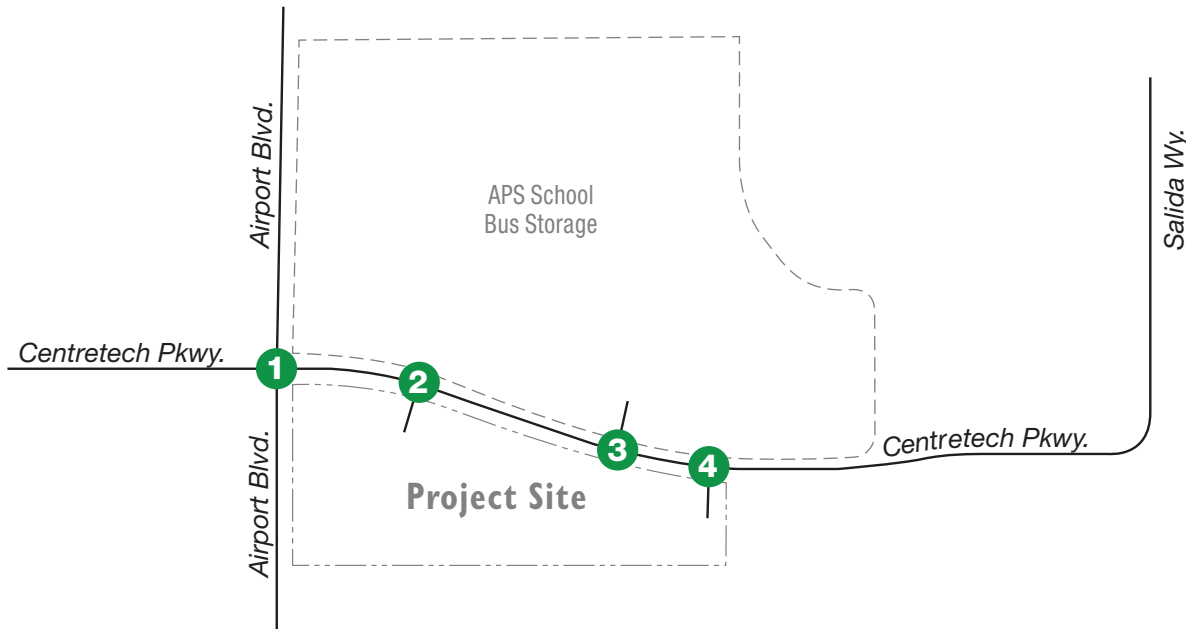
### *Queue Length Analysis*

City of Aurora *Traffic Impact Study Guidelines* indicate that the CDOT *State Highway Access Code (SHAC)* be used to determine storage and taper lengths of auxiliary lanes. These values sometimes yield conservative results and provide storage well in excess of 95<sup>th</sup> percentile queues (which already incorporate a heavy vehicle percentage). Rather, the recommendation is that the values in **Table 5** corresponding to the 95<sup>th</sup> percentile lengths be used for storage lengths, plus a lead-in taper. It was assumed that Airport Boulevard is classified as NR-B Non-Rural Arterials. Table 4-8 in the *SHAC* was used to determine the recommended storage lengths. Existing turn bays are greater than the expected queue lengths for all movements.

**Left turn lane storage lengths.** At signalized intersections, the greater of the HCM 6<sup>th</sup> Edition or Synchro methodology queue calculations were reported. For unsignalized intersections, the HCM 6<sup>th</sup> Edition calculation was reported.

**Through movements.** For signalized intersections, Synchro calculation results were reported. No through movement queues are reported for unsignalized intersections as the through movements are free.

**Right turn movements.** The Synchro queue length was utilized for signalized intersections. HCM 6<sup>th</sup> Edition information was not used because HCM's signalized intersection methodology does not account for right turns on red. For unsignalized intersections, HCM 6<sup>th</sup> Edition calculation was reported.





## LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

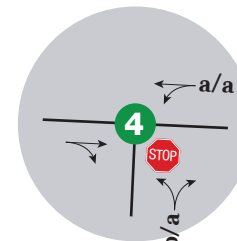
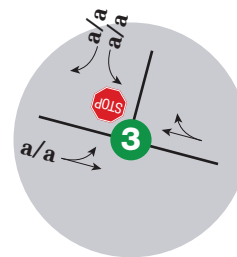
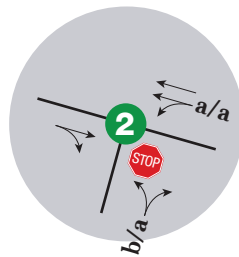
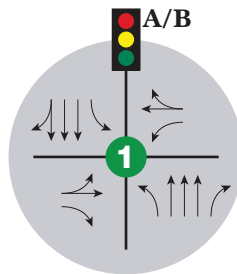
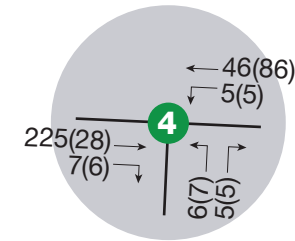
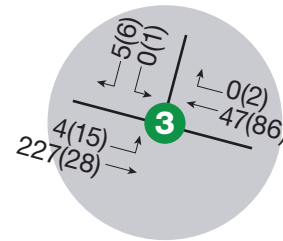
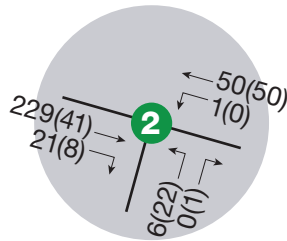
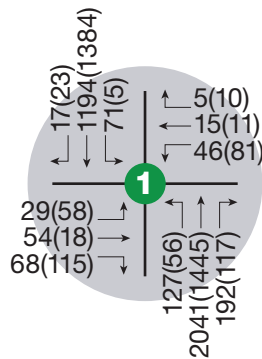
**X/X** = AM/PM Peak Hour Signalized Intersection Level of Service

**x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal

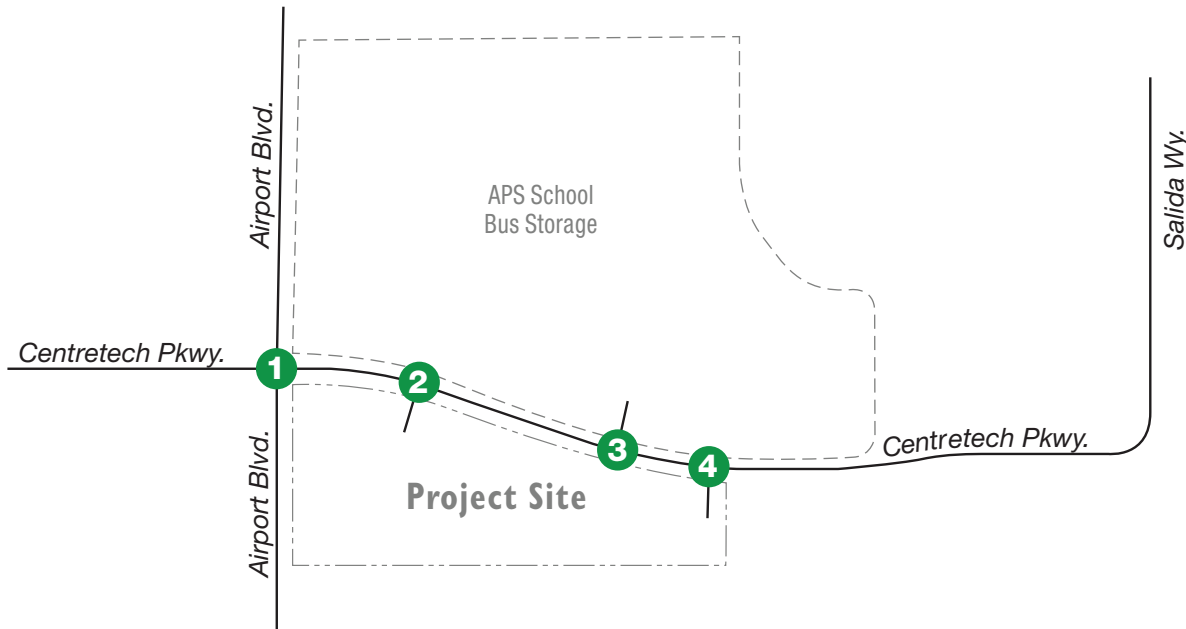
 = Study Intersection





**Table 3. Future (2050) Turn Lane Storage & 95th Percentile Queue Lengths**

Location	Critical Movements	Existing Turn Lane Storage Length (ft)	SHAC Recommended Storage Length	Recommended Storage Length	95% Queue Length (ft)
					AM Peak / PM Peak
Airport Boulevard & Centretech Parkway (1)	EB Through-Left	Continuous	100	Continuous	175 / 175
	EB Right-turn	350	175	75	75 / 75
	WB Left-turn	175	125	175	125 / 175
	WB Through-Right	Continuous	25	Continuous	75 / 50
	NB Left-turn	215	175	150	150 / 50
	NB Through	Continuous	2750	Continuous	550 / 325
	NB Right-turn	NA	275	50	50 / 25
	SB Left-turn	175	25	75	75 / 25
	SB Through	Continuous	1875	Continuous	425 / 450
West Site Access (2)	WB Left-turn	250	125	25	25 / 25
	NB Left/Right	-	25	25	25 / 25
School Bus Access (3)	EB Left-Turn <sup>+</sup>	Continuous	325	Continuous	25 / 25
	SB Left/Right	Continuous	25	Continuous	25 / 25
East Site Access (4)	WB Left-turn <sup>+</sup>	Continuous	125	Continuous	25 / 25
	NB Left/Right	75	25	25	25 / 25
<sup>+</sup> shared lane					



## LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

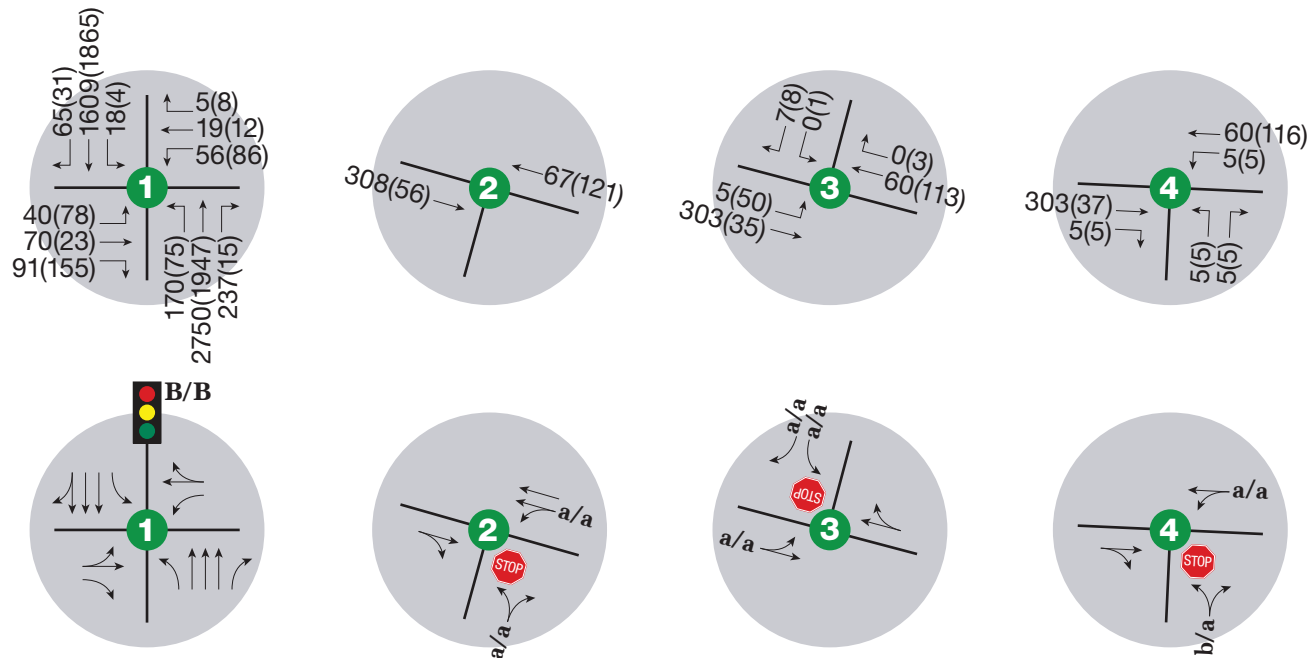
**X/X** = AM/PM Peak Hour Signalized Intersection Level of Service

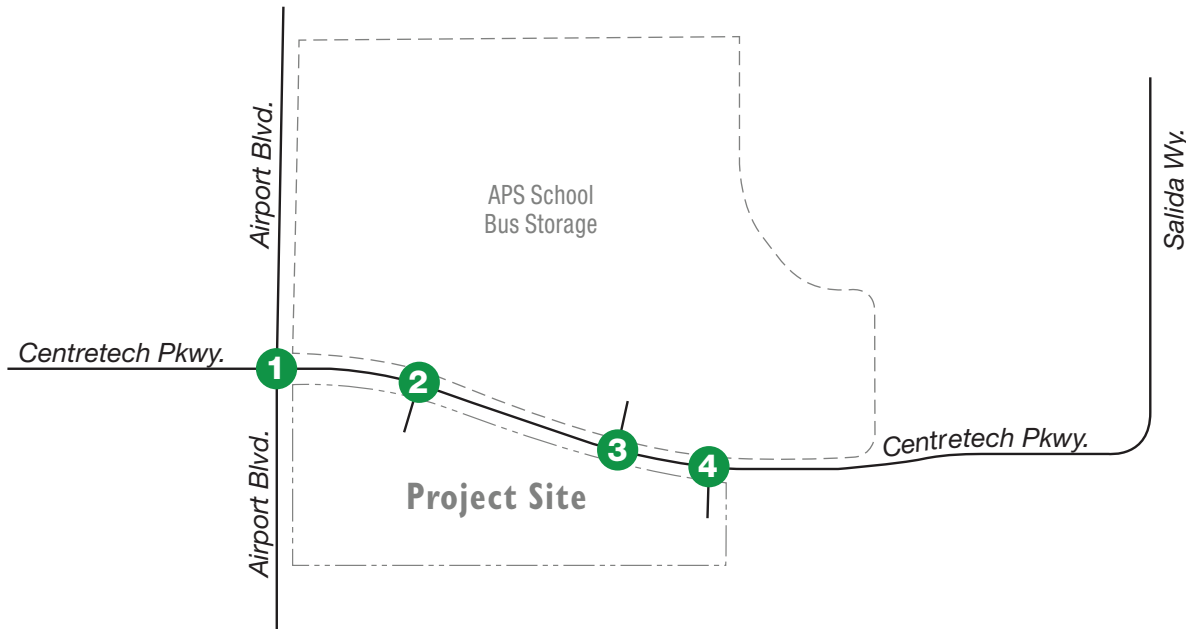
**x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service

= Stop Sign

= Traffic Signal

= Study Intersection






### LEGEND


XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

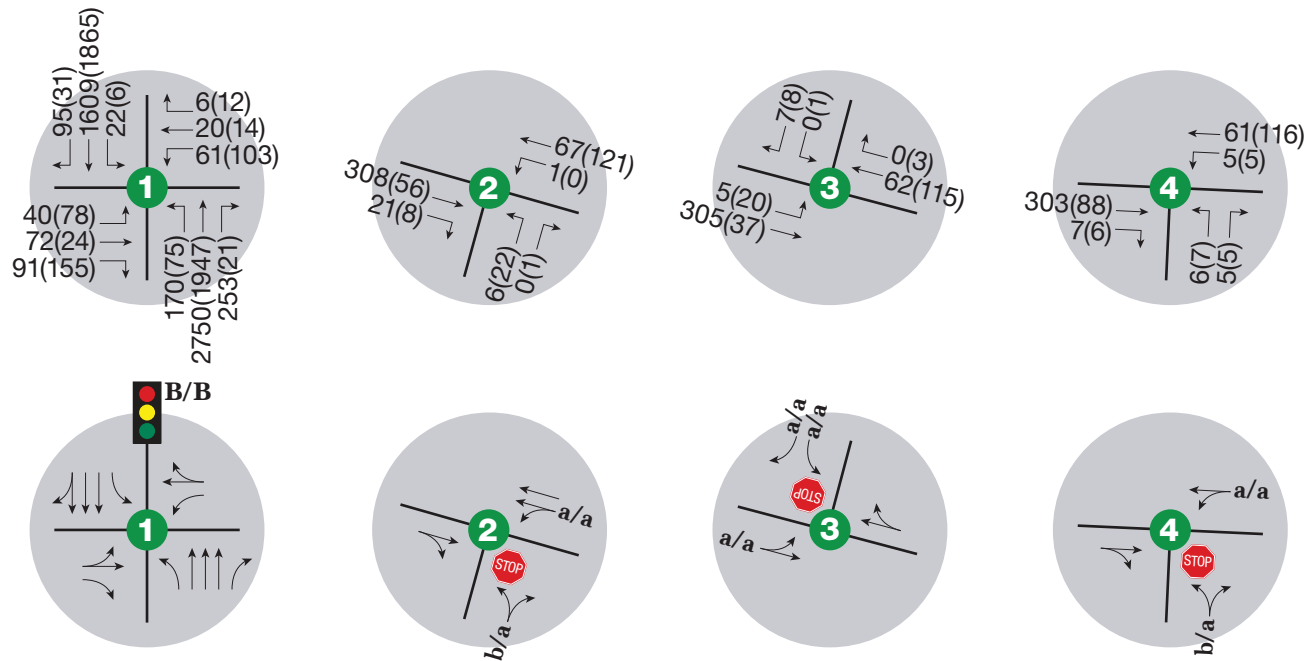
**X/X** = AM/PM Peak Hour Signalized Intersection Level of Service

**x/x** = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal

 = Study Intersection



## V. SUMMARY AND RECOMMENDATIONS

Aurora Public Schools are proposing to develop an approximately 4.5-acre Freezer Facility. The proposed multifamily residential development would consist of 312 dwelling units. Access to the site will be provided along the north side of the site via Centretech Parkway.

The freezer facility site is in the southeast quadrant of the intersection of Airport Boulevard and Centretech Parkway. The development is estimated to generate 125 trips per day, with 30 vehicle-trips during the AM peak period and 33 vehicle-trips during the PM peak period when built out.

The potential traffic impacts of the development were evaluated under short-term Buildout (2025) and long-term Future (2050) conditions. Based on the results of the analysis, the key findings and recommendations of this study are listed.

- Intersections analyzed in this report will continue to operate at LOS B or better in 2050 with expected background growth and the addition of traffic from the Freezer facility.
- An exclusive Northbound right-turn lane is recommended at the intersection of Airport Boulevard Centretech Parkway. Although exclusive right-turn lanes are not generally required for approaches with three through lanes, the existing northbound right-turn AM volume is 174 and long term future projections are over 250, which is far above the 50-vehicle threshold stated in the SHAC. Such a high turning volume has the potential to negatively impact operations and create adverse safety conditions when made from a shared lane.

## APPENDIX A. TRAFFIC COUNT DATA

(303) 216-2439

(303) 216-2439  
www.alltrafficdata.net

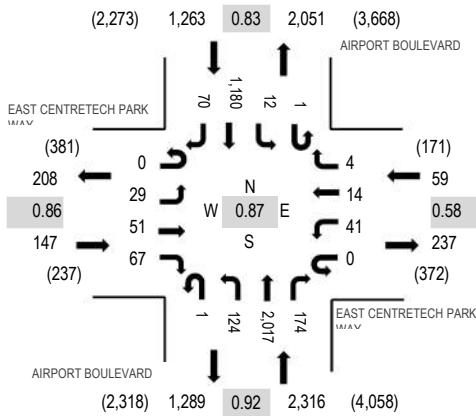
**Location:** 1 AIRPORT BOULEVARD & EAST CENTRETECH PARKWAY AM

**Date:** Tuesday, May 7, 2024

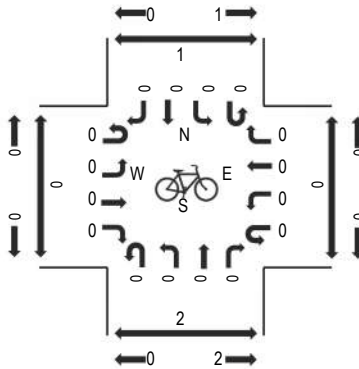
**Peak Hour:** 07:15 AM - 08:15 AM

**Peak 15-Minutes:** 07:30 AM - 07:45 AM

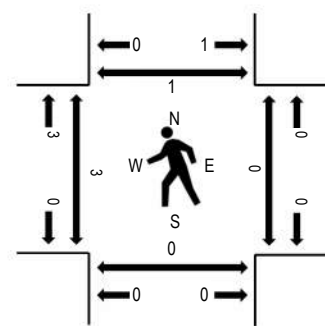
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

Interval Start Time	EAST CENTRETECH PARKWAY Eastbound				EAST CENTRETECH PARKWAY Westbound				AIRPORT BOULEVARD Northbound				AIRPORT BOULEVARD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:45 AM	0	4	2	7	0	10	2	4	0	14	472	9	0	1	170	15	710	3,434	0	0	0	0
7:00 AM	0	4	4	7	0	7	0	2	0	25	425	15	0	2	228	20	739	3,686	0	0	0	0
7:15 AM	0	6	9	13	0	8	3	0	0	29	522	60	0	2	236	10	898	3,785	0	0	0	0
7:30 AM	0	5	15	24	0	11	1	2	0	27	538	67	0	2	371	24	1,087	3,646	0	0	0	1
7:45 AM	0	12	6	15	0	8	5	1	0	39	517	26	1	2	316	14	962	3,305	2	0	0	0
8:00 AM	0	6	21	15	0	14	5	1	1	29	440	21	0	6	257	22	838		1	0	0	0
8:15 AM	0	5	19	9	0	25	6	4	0	21	329	44	1	5	269	22	759		0	0	0	0
8:30 AM	0	8	16	5	0	32	17	3	0	18	356	14	0	4	260	13	746		0	0	0	0
Count Total	0	50	92	95	0	115	39	17	1	202	3,599	256	2	24	2,107	140	6,739		3	0	0	1
Peak Hour	0	29	51	67	0	41	14	4	1	124	2,017	174	1	12	1,180	70	3,785		3	0	0	1



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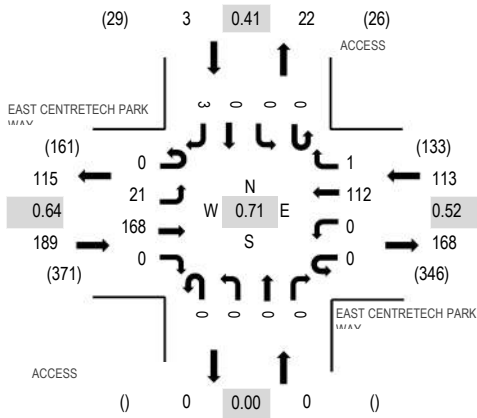
Location: 2 ACCESS & EAST CENTRETECH PARKWAY AM

Date: Tuesday, May 7, 2024

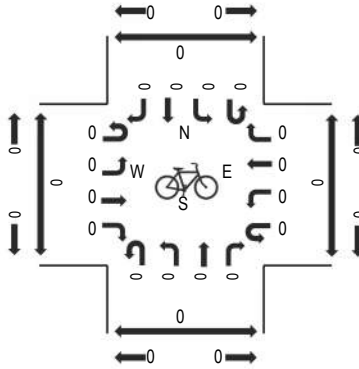
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

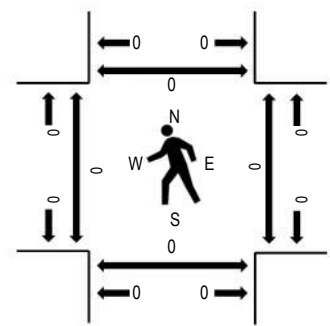
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	EAST CENTRETECH PARKWAY Eastbound				EAST CENTRETECH PARKWAY Westbound				ACCESS Northbound				ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
6:45 AM	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	16	23	228	0	0	0	0
7:00 AM	0	0	15	0	0	0	4	0	0	0	0	0	0	0	0	0	6	25	239	0	0	0	0
7:15 AM	0	2	70	0	0	0	3	0	0	0	0	0	0	0	0	0	2	77	275	0	0	0	0
7:30 AM	0	1	87	0	0	0	13	0	0	0	0	0	0	0	0	0	2	103	301	0	0	0	0
7:45 AM	0	0	23	0	0	0	10	0	0	0	0	0	0	0	0	0	1	34	305	0	0	0	0
8:00 AM	0	1	42	0	0	0	18	0	0	0	0	0	0	0	0	0	0	61		0	0	0	0
8:15 AM	0	5	66	0	0	0	31	0	0	0	0	0	0	0	0	0	1	103		0	0	0	0
8:30 AM	0	15	37	0	0	0	53	1	0	0	0	0	0	0	0	0	1	107		0	0	0	0
Count Total	0	25	346	0	0	0	132	1	0	0	0	0	0	0	0	0	29	533		0	0	0	0
Peak Hour	0	21	168	0	0	0	112	1	0	0	0	0	0	0	0	0	3	305		0	0	0	0



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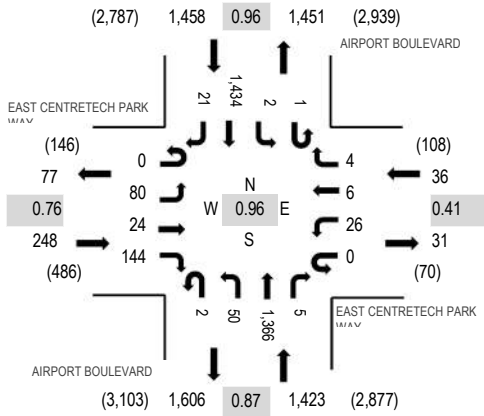
**Location:** 1 AIRPORT BOULEVARD & EAST CENTRETECH PARKWAY PM

**Date:** Tuesday, May 7, 2024

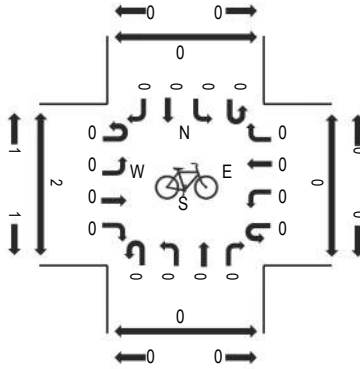
**Peak Hour:** 03:45 PM - 04:45 PM

**Peak 15-Minutes:** 04:30 PM - 04:45 PM

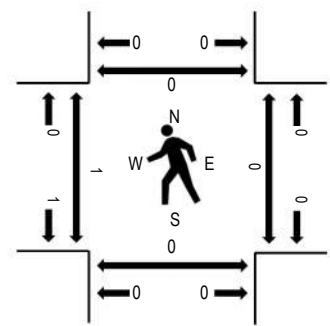
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	EAST CENTRETECH PARKWAY Eastbound				EAST CENTRETECH PARKWAY Westbound				AIRPORT BOULEVARD Northbound				AIRPORT BOULEVARD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
3:30 PM	0	10	4	24	0	40	5	3	0	17	403	7	0	0	292	4	809	3,154	0	0	0	0
3:45 PM	0	14	1	27	0	14	2	0	0	16	383	1	0	0	345	5	808	3,165	0	0	0	0
4:00 PM	0	17	5	33	0	5	1	2	1	11	313	1	0	1	368	10	768	3,122	0	0	0	0
4:15 PM	0	16	7	30	0	4	1	1	1	9	329	2	1	1	363	4	769	3,099	1	0	0	0
4:30 PM	0	33	11	54	0	3	2	1	0	14	341	1	0	0	358	2	820	3,104	0	0	0	0
4:45 PM	0	33	8	38	0	2	3	0	0	5	321	5	0	0	347	3	765		0	0	0	0
5:00 PM	0	34	3	31	0	10	3	0	0	9	317	4	0	0	331	3	745		0	0	0	0
5:15 PM	1	16	4	32	0	5	1	0	0	11	351	4	0	0	345	4	774		0	0	0	0
Count Total	1	173	43	269	0	83	18	7	2	92	2,758	25	1	2	2,749	35	6,258		1	0	0	0
Peak Hour	0	80	24	144	0	26	6	4	2	50	1,366	5	1	2	1,434	21	3,165		1	0	0	0





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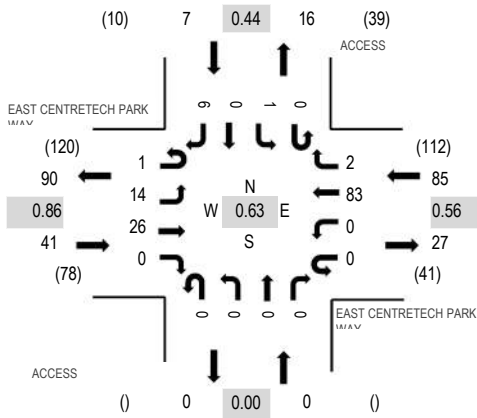
Location: 2 ACCESS & EAST CENTRETECH PARKWAY PM

Date: Tuesday, May 7, 2024

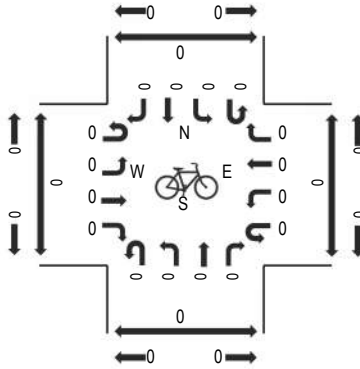
Peak Hour: 03:30 PM - 04:30 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

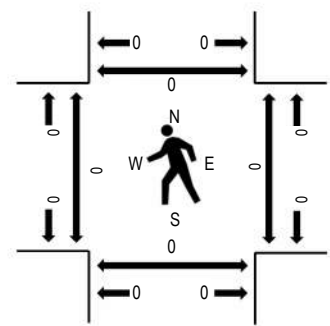
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	EAST CENTRETECH PARKWAY Eastbound				EAST CENTRETECH PARKWAY Westbound				ACCESS Northbound				ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
3:30 PM	1	1	9	0	0	0	38	0	0	0	0	0	0	0	0	4	53	133	0	0	0	0
3:45 PM	0	1	4	0	0	0	26	0	0	0	0	0	0	0	0	1	32	106	0	0	0	0
4:00 PM	0	7	7	0	0	0	12	0	0	0	0	0	0	0	0	1	27	85	0	0	0	0
4:15 PM	0	5	6	0	0	0	7	2	0	0	0	0	0	1	0	0	21	72	0	0	0	0
4:30 PM	0	10	3	0	0	0	12	0	0	0	0	0	0	0	0	1	26	67	0	0	0	0
4:45 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	1	11		0	0	0	0
5:00 PM	0	0	5	0	0	0	8	1	0	0	0	0	0	0	0	0	14		0	0	0	0
5:15 PM	1	4	4	0	0	0	6	0	0	0	0	0	0	0	0	1	16		0	0	0	0
Count Total	2	36	40	0	0	0	109	3	0	0	0	0	0	1	0	9	200		0	0	0	0
Peak Hour	1	14	26	0	0	0	83	2	0	0	0	0	0	1	0	6	133		0	0	0	0









Site Code: 3  
 Station ID: 3  
 AIRPORT BLVD N.O. CENTERTECH PKWY

Start Time	07-May-24 Tue	NB	SB							Total
12:00 AM		117	171							288
01:00		102	103							205
02:00		183	78							261
03:00		274	119							393
04:00		564	167							731
05:00		992	321							1313
06:00		1648	566							2214
07:00		<b>2035</b>	<b>1228</b>							<b>3263</b>
08:00		1463	1131							2594
09:00		980	739							1719
10:00		810	679							1489
11:00		893	753							1646
12:00 PM		1010	778							1788
01:00		1025	846							1871
02:00		1235	1184							2419
03:00		<b>1455</b>	1375							2830
04:00		1408	<b>1458</b>							<b>2866</b>
05:00		1387	1380							2767
06:00		1242	1079							2321
07:00		922	787							1709
08:00		740	633							1373
09:00		564	482							1046
10:00		371	396							767
11:00		225	254							479
Total		21645	16707							38352
Percent		56.4%	43.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	2035	1228	-	-	-	-	-	-	3263
PM Peak	-	15:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	1455	1458	-	-	-	-	-	-	2866
Grand Total		21645	16707							38352
Percent		56.4%	43.6%							
ADT		ADT 38,352	AADT 38,352							

## APPENDIX B.      EXISTING (2024) TRAFFIC LOS WORKSHEETS

Queues  
1: Airport Blvd & Centretech Pkwy

Existing 2024 Condition  
AM Peak






















								
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	73	45	19	136	2381	14	1359
v/c Ratio	0.59	0.35	0.43	0.11	0.41	0.56	0.17	0.35
Control Delay	76.9	16.6	71.7	48.9	5.8	4.5	11.2	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	16.6	71.7	48.9	5.8	4.5	11.2	6.0
Queue Length 50th (ft)	78	0	40	13	16	198	3	127
Queue Length 95th (ft)	133	48	80	38	34	282	16	184
Internal Link Dist (ft)	500			265		639		470
Turn Bay Length (ft)		125			200		175	
Base Capacity (vph)	362	410	257	406	595	4223	84	3878
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.18	0.18	0.05	0.23	0.56	0.17	0.35
Intersection Summary								

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy


Existing 2024 Condition

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	51	67	41	14	4	125	2017	174	13	1180	70
Future Volume (veh/h)	29	51	67	41	14	4	125	2017	174	13	1180	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	32	55	73	45	15	4	136	2192	189	14	1283	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	82	119	155	115	139	37	382	3982	340	152	3804	225
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.82	0.82	0.77	0.77	0.77
Sat Flow, veh/h	487	1231	1598	1272	1434	382	1795	4830	412	149	4969	294
Grp Volume(v), veh/h	87	0	73	45	0	19	136	1550	831	14	886	473
Grp Sat Flow(s),veh/h/ln	1718	0	1598	1272	0	1816	1795	1716	1811	149	1716	1832
Q Serve(g_s), s	3.7	0.0	6.1	4.9	0.0	1.3	2.2	20.3	20.8	4.7	11.4	11.4
Cycle Q Clear(g_c), s	6.6	0.0	6.1	11.4	0.0	1.3	2.2	20.3	20.8	17.3	11.4	11.4
Prop In Lane	0.37		1.00	1.00		0.21	1.00		0.23	1.00		0.16
Lane Grp Cap(c), veh/h	202	0	155	115	0	176	382	2829	1493	152	2626	1403
V/C Ratio(X)	0.43	0.00	0.47	0.39	0.00	0.11	0.36	0.55	0.56	0.09	0.34	0.34
Avail Cap(c_a), veh/h	410	0	354	274	0	402	725	2829	1493	152	2626	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	0.0	59.8	65.5	0.0	57.7	3.7	3.9	4.0	8.1	5.2	5.2
Incr Delay (d2), s/veh	1.5	0.0	2.2	2.1	0.0	0.3	0.2	0.8	1.5	1.2	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	2.6	1.7	0.0	0.6	0.6	5.2	6.0	0.2	3.6	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	0.0	62.0	67.6	0.0	57.9	3.9	4.7	5.5	9.3	5.5	5.8
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		160			64			2517			1373	
Approach Delay, s/veh		61.7			64.7			4.9			5.7	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		121.4		18.6	8.3	113.2		18.6				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		22.8		8.6	4.2	19.3		13.4				
Green Ext Time (p_c), s		38.2		0.6	0.1	12.9		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Existing 2024 Condition  
AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	226	0	0	49	0	0
Future Vol, veh/h	226	0	0	49	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	246	0	0	53	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	273	246
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1319	-	705	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	992	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	705	792
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1319	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Existing 2024 Condition  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	222	44	0	0	5
Future Vol, veh/h	4	222	44	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	241	48	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	48	0	-	0	297	-
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1566	-	-	-	696	0
Stage 1	-	-	-	-	977	0
Stage 2	-	-	-	-	795	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1566	-	-	-	694	-
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	795	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1566	-	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy









Existing 2024 Condition  
AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	222	0	0	44	0	0
Future Vol, veh/h	222	0	0	44	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	0	0	48	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	241	0	289	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1326	-	702	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1326	-	702	798
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	974	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1326	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	



Queues  
1: Airport Blvd & Centretech Pkwy

Existing 2024 Condition  
PM Peak

























								
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	124	68	17	60	1564	3	1512
v/c Ratio	0.60	0.48	0.60	0.10	0.22	0.37	0.01	0.38
Control Delay	78.8	15.3	80.9	40.7	4.0	3.4	5.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	15.3	80.9	40.7	4.0	3.4	5.3	5.8
Queue Length 50th (ft)	71	0	61	8	7	103	1	145
Queue Length 95th (ft)	125	60	110	32	18	152	4	206
Internal Link Dist (ft)	500			265		639		470
Turn Bay Length (ft)		125			200		175	
Base Capacity (vph)	317	450	273	396	562	4251	220	3983
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.28	0.25	0.04	0.11	0.37	0.01	0.38
Intersection Summary								

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy




Existing 2024 Condition

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	57	17	114	63	9	6	55	1428	11	3	1368	23
Future Volume (veh/h)	57	17	114	63	9	6	55	1428	11	3	1368	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1870
Adj Flow Rate, veh/h	62	18	124	68	10	7	60	1552	12	3	1487	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	2
Cap, veh/h	177	46	195	138	126	88	314	4212	33	289	3915	66
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.02	0.80	0.80	0.75	0.75	0.75
Sat Flow, veh/h	1076	376	1598	1256	1032	723	1795	5268	41	332	5213	88
Grp Volume(v), veh/h	80	0	124	68	0	17	60	1011	553	3	979	533
Grp Sat Flow(s),veh/h/ln	1452	0	1598	1256	0	1755	1795	1716	1878	332	1716	1869
Q Serve(g_s), s	6.3	0.0	10.3	7.5	0.0	1.2	1.0	11.7	11.7	0.4	13.9	13.9
Cycle Q Clear(g_c), s	7.4	0.0	10.3	14.9	0.0	1.2	1.0	11.7	11.7	5.3	13.9	13.9
Prop In Lane	0.77		1.00	1.00		0.41	1.00		0.02	1.00		0.05
Lane Grp Cap(c), veh/h	223	0	195	138	0	214	314	2743	1501	289	2577	1404
V/C Ratio(X)	0.36	0.00	0.64	0.49	0.00	0.08	0.19	0.37	0.37	0.01	0.38	0.38
Avail Cap(c_a), veh/h	371	0	354	263	0	389	676	2743	1501	289	2577	1404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	0.0	58.5	64.2	0.0	54.5	4.4	4.0	4.0	5.7	6.1	6.1
Incr Delay (d2), s/veh	1.0	0.0	3.4	2.7	0.0	0.2	0.1	0.4	0.7	0.1	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	4.4	2.5	0.0	0.6	0.3	3.3	3.8	0.0	4.5	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	0.0	61.9	66.9	0.0	54.6	4.5	4.4	4.7	5.8	6.5	6.9
LnGrp LOS	E	A	E	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h		204			85			1624			1515	
Approach Delay, s/veh		60.5			64.4			4.5			6.6	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		117.9		22.1	6.8	111.1		22.1				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		13.7		12.3	3.0	15.9		16.9				
Green Ext Time (p_c), s		16.0		0.7	0.0	14.1		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.3								
HCM 6th LOS				B								





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Existing 2024 Condition  
PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	0	0	89	0	0
Future Vol, veh/h	41	0	0	89	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	0	0	97	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	94	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1562	-	901	1024
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1562	-	901	1024
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	968	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1562	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Existing 2024 Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	26	83	2	1	6
Future Vol, veh/h	15	26	83	2	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	16	28	90	2	1	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	92	0	-	0	151	-
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1509	-	-	-	843	0
Stage 1	-	-	-	-	935	0
Stage 2	-	-	-	-	965	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1509	-	-	-	834	-
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	965	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.7	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1509	-	-	-	834	-
HCM Lane V/C Ratio	0.011	-	-	-	0.001	-
HCM Control Delay (s)	7.4	0	-	-	9.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Existing 2024 Condition  
PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	0	0	85	0	0
Future Vol, veh/h	27	0	0	85	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	0	0	92	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	29	0	121	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1584	-	874	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	874	1046
Mov Cap-2 Maneuver	-	-	-	-	874	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	932	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1584	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	










## APPENDIX C. BACKGROUND (2025) TRAFFIC LOS WORKSHEETS

## Queues

## Buildout 2025 Background Condition

## 1: Airport Blvd &amp; Centretech Pkwy

AM Peak























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	89	74	45	19	138	2218	191	14	1375
v/c Ratio	0.60	0.35	0.43	0.11	0.42	0.52	0.14	0.14	0.36
Control Delay	76.9	16.4	71.7	48.8	6.1	4.3	0.6	9.4	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	16.4	71.7	48.8	6.1	4.3	0.6	9.4	6.2
Queue Length 50th (ft)	79	0	39	13	16	176	0	3	131
Queue Length 95th (ft)	134	48	80	38	35	250	14	14	190
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	363	411	254	406	590	4265	1360	102	3867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.18	0.18	0.05	0.23	0.52	0.14	0.14	0.36
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy

Buildout 2025 Background Condition




AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	52	68	41	14	4	127	2041	176	13	1194	71
Future Volume (veh/h)	29	52	68	41	14	4	127	2041	176	13	1194	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	32	57	74	45	15	4	138	2218	191	14	1298	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	82	122	157	115	141	38	377	4237	1315	151	3796	225
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.82	0.82	0.76	0.76	0.76
Sat Flow, veh/h	476	1246	1598	1269	1434	382	1795	5147	1598	145	4968	295
Grp Volume(v), veh/h	89	0	74	45	0	19	138	2218	191	14	896	479
Grp Sat Flow(s),veh/h/ln	1722	0	1598	1269	0	1816	1795	1716	1598	145	1716	1832
Q Serve(g_s), s	3.8	0.0	6.1	4.9	0.0	1.3	2.2	18.7	3.4	4.7	11.7	11.7
Cycle Q Clear(g_c), s	6.7	0.0	6.1	11.6	0.0	1.3	2.2	18.7	3.4	15.1	11.7	11.7
Prop In Lane	0.36		1.00	1.00		0.21	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	204	0	157	115	0	178	377	4237	1315	151	2621	1400
V/C Ratio(X)	0.44	0.00	0.47	0.39	0.00	0.11	0.37	0.52	0.15	0.09	0.34	0.34
Avail Cap(c_a), veh/h	411	0	354	272	0	402	720	4237	1315	151	2621	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	0.0	59.7	65.5	0.0	57.5	3.8	3.8	2.5	7.5	5.3	5.3
Incr Delay (d2), s/veh	1.5	0.0	2.2	2.1	0.0	0.3	0.2	0.5	0.2	1.2	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.6	1.7	0.0	0.6	0.6	4.8	0.9	0.2	3.7	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	0.0	61.9	67.6	0.0	57.8	4.0	4.3	2.7	8.7	5.6	5.9
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		163			64			2547			1389	
Approach Delay, s/veh		61.6			64.7			4.2			5.8	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		121.3		18.7	8.3	113.0		18.7				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		20.7		8.7	4.2	17.1		13.6				
Green Ext Time (p_c), s		38.5		0.6	0.1	13.3		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			7.9									
HCM 6th LOS			A									







HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Buildout 2025 Background Condition  
AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	0	0	50	0	0
Future Vol, veh/h	229	0	0	50	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	0	0	54	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	249	0	276	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1315	-	702	789
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	992	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1315	-	702	789
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1315	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Buildout 2025 Background Condition  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	225	45	0	0	5
Future Vol, veh/h	4	225	45	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	245	49	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	49	0	-	0	302	-
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1564	-	-	-	692	0
Stage 1	-	-	-	-	976	0
Stage 2	-	-	-	-	791	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	690	-
Mov Cap-2 Maneuver	-	-	-	-	690	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	791	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1564	-	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Buildout 2025 Background Condition  
AM Peak










Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	225	5	5	45	5	5
Future Vol, veh/h	225	5	5	45	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	5	5	49	5	5
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	250	0	307	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1316	-	685	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1316	-	682	791
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	960	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	732	-	-	1316	-	
HCM Lane V/C Ratio	0.015	-	-	0.004	-	
HCM Control Delay (s)	10	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

## Queues

## Buildout 2025 Background Condition

## 1: Airport Blvd &amp; Centretech Pkwy

PM Peak



























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	81	125	70	17	61	1571	12	3	1529
v/c Ratio	0.60	0.48	0.61	0.10	0.22	0.37	0.01	0.01	0.38
Control Delay	78.8	15.3	82.3	40.6	4.1	3.5	1.0	5.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	15.3	82.3	40.6	4.1	3.5	1.0	5.3	5.9
Queue Length 50th (ft)	72	0	62	8	7	104	0	1	148
Queue Length 95th (ft)	124	59	112	32	18	154	4	4	210
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	317	451	271	396	558	4251	1326	218	3979
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.28	0.26	0.04	0.11	0.37	0.01	0.01	0.38
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy

Buildout 2025 Background Condition




PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	58	17	115	64	9	6	56	1445	11	3	1384	23
Future Volume (veh/h)	58	17	115	64	9	6	56	1445	11	3	1384	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1870
Adj Flow Rate, veh/h	63	18	125	70	10	7	61	1571	12	3	1504	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	2
Cap, veh/h	180	46	199	140	128	90	309	4103	1274	282	3903	65
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.02	0.80	0.80	0.75	0.75	0.75
Sat Flow, veh/h	1081	371	1598	1255	1032	723	1795	5147	1598	326	5214	87
Grp Volume(v), veh/h	81	0	125	70	0	17	61	1571	12	3	990	539
Grp Sat Flow(s),veh/h/ln	1451	0	1598	1255	0	1755	1795	1716	1598	326	1716	1870
Q Serve(g_s), s	6.3	0.0	10.4	7.7	0.0	1.2	1.1	12.5	0.2	0.4	14.3	14.3
Cycle Q Clear(g_c), s	7.5	0.0	10.4	15.2	0.0	1.2	1.1	12.5	0.2	6.1	14.3	14.3
Prop In Lane	0.78		1.00	1.00		0.41	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	226	0	199	140	0	218	309	4103	1274	282	2568	1399
V/C Ratio(X)	0.36	0.00	0.63	0.50	0.00	0.08	0.20	0.38	0.01	0.01	0.39	0.39
Avail Cap(c_a), veh/h	371	0	354	262	0	389	671	4103	1274	282	2568	1399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	0.0	58.2	64.0	0.0	54.2	4.6	4.1	2.9	6.0	6.2	6.2
Incr Delay (d2), s/veh	1.0	0.0	3.3	2.7	0.0	0.2	0.1	0.3	0.0	0.1	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	4.4	2.6	0.0	0.5	0.3	3.5	0.1	0.0	4.7	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.1	0.0	61.5	66.8	0.0	54.4	4.7	4.4	2.9	6.1	6.7	7.0
LnGrp LOS	E	A	E	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h		206			87			1644			1532	
Approach Delay, s/veh		60.2			64.4			4.4			6.8	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		117.6		22.4	6.8	110.8		22.4				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		14.5		12.4	3.1	16.3		17.2				
Green Ext Time (p_c), s		17.9		0.7	0.0	14.3		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.3								
HCM 6th LOS				B								

HCM 6th TWSC  
2: W Site Access & Centretech Pkwy





Buildout 2025 Background Condition

PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	0	0	90	0	0
Future Vol, veh/h	41	0	0	90	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	0	0	98	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	94	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1562	-	901	1024
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1562	-	901	1024
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	968	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1562	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Buildout 2025 Background Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	26	84	2	1	6
Future Vol, veh/h	15	26	84	2	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	16	28	91	2	1	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	93	0	-	0	152	-
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1508	-	-	-	842	0
Stage 1	-	-	-	-	934	0
Stage 2	-	-	-	-	965	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1508	-	-	-	833	-
Mov Cap-2 Maneuver	-	-	-	-	833	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	965	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.7	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1508	-	-	-	833	-
HCM Lane V/C Ratio	0.011	-	-	-	0.001	-
HCM Control Delay (s)	7.4	0	-	-	9.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Buildout 2025 Background Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	5	5	86	5	5
Future Vol, veh/h	27	5	5	86	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	5	5	93	5	5
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	34	0	135	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1578	-	859	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1578	-	856	1042
Mov Cap-2 Maneuver	-	-	-	-	856	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	918	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		8.9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	940	-	-	1578	-	
HCM Lane V/C Ratio	0.012	-	-	0.003	-	
HCM Control Delay (s)	8.9	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	












## APPENDIX D. BUILDOUT (2025) TRAFFIC LOS WORKSHEET

## Queues

## Buildout 2025 Total Condition

## 1: Airport Blvd &amp; Centretech Pkwy

AM Peak























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	74	50	21	138	2218	209	18	1375
v/c Ratio	0.60	0.35	0.48	0.12	0.42	0.52	0.15	0.18	0.36
Control Delay	76.9	16.3	74.5	47.7	6.1	4.3	0.6	10.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	16.3	74.5	47.7	6.1	4.3	0.6	10.8	6.3
Queue Length 50th (ft)	81	0	44	14	17	178	0	4	131
Queue Length 95th (ft)	137	48	86	40	35	253	15	18	193
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	364	411	250	405	589	4260	1361	102	3861
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.18	0.20	0.05	0.23	0.52	0.15	0.18	0.36
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy




Buildout 2025 Total Condition

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	54	68	46	15	5	127	2041	192	17	1194	71
Future Volume (veh/h)	29	54	68	46	15	5	127	2041	192	17	1194	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	32	59	74	50	16	5	138	2218	209	18	1298	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	82	130	164	120	142	44	375	4213	1308	148	3770	224
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.82	0.82	0.76	0.76	0.76
Sat Flow, veh/h	463	1263	1598	1267	1377	430	1795	5147	1598	142	4968	295
Grp Volume(v), veh/h	91	0	74	50	0	21	138	2218	209	18	896	479
Grp Sat Flow(s),veh/h/ln	1726	0	1598	1267	0	1808	1795	1716	1598	142	1716	1832
Q Serve(g_s), s	3.7	0.0	6.1	5.4	0.0	1.5	2.3	19.2	3.8	6.5	11.9	11.9
Cycle Q Clear(g_c), s	6.8	0.0	6.1	12.2	0.0	1.5	2.3	19.2	3.8	17.3	11.9	11.9
Prop In Lane	0.35		1.00	1.00		0.24	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	212	0	164	120	0	186	375	4213	1308	148	2604	1390
V/C Ratio(X)	0.43	0.00	0.45	0.42	0.00	0.11	0.37	0.53	0.16	0.12	0.34	0.34
Avail Cap(c_a), veh/h	412	0	354	271	0	400	717	4213	1308	148	2604	1390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	59.1	65.2	0.0	57.0	4.0	4.0	2.7	8.1	5.5	5.5
Incr Delay (d2), s/veh	1.4	0.0	1.9	2.3	0.0	0.3	0.2	0.5	0.3	1.7	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.6	1.9	0.0	0.7	0.7	5.0	1.0	0.3	3.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	0.0	61.0	67.4	0.0	57.3	4.2	4.5	2.9	9.8	5.9	6.2
LnGrp LOS	E	A	E	E	A	E	A	A	A	A	A	A
Approach Vol, veh/h		165			71			2565			1393	
Approach Delay, s/veh		60.8			64.4			4.4			6.0	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		120.6		19.4	8.4	112.2		19.4				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+l1), s		21.2		8.8	4.3	19.3		14.2				
Green Ext Time (p_c), s		38.6		0.6	0.1	13.6		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.2									
HCM 6th LOS			A									





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Buildout 2025 Total Condition  
AM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	21	1	50	6	0
Future Vol, veh/h	229	21	1	50	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	23	1	54	7	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	272	0	290	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1290	-	689	777
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	990	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	688	777
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	989	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	688	-	-	1290	-	
HCM Lane V/C Ratio	0.009	-	-	0.001	-	
HCM Control Delay (s)	10.3	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Buildout 2025 Total Condition  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	227	47	0	0	5
Future Vol, veh/h	4	227	47	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	247	51	0	0	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	306	-
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1562	-	-	-	688	0
Stage 1	-	-	-	-	974	0
Stage 2	-	-	-	-	790	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	686	-
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	790	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1562	-	-	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Buildout 2025 Total Condition  
AM Peak










Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	225	7	5	46	6	5
Future Vol, veh/h	225	7	5	46	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	8	5	50	7	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	309	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1312	-	683	790
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1312	-	680	790
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	959	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	726	-	-	1312	-	
HCM Lane V/C Ratio	0.016	-	-	0.004	-	
HCM Control Delay (s)	10	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

## Queues

## Buildout 2025 Total Condition

## 1: Airport Blvd &amp; Centretech Pkwy

PM Peak



























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	83	125	88	23	61	1571	18	5	1529
v/c Ratio	0.55	0.45	0.68	0.12	0.23	0.37	0.01	0.02	0.39
Control Delay	72.0	13.9	85.1	35.9	4.6	4.0	1.4	6.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	13.9	85.1	35.9	4.6	4.0	1.4	6.2	6.6
Queue Length 50th (ft)	73	0	79	10	8	113	0	1	157
Queue Length 95th (ft)	124	58	133	37	20	171	6	6	227
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	317	451	271	395	554	4191	1308	215	3916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.28	0.32	0.06	0.11	0.37	0.01	0.02	0.39
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy

Buildout 2025 Total Condition




PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	58	18	115	81	11	10	56	1445	17	5	1384	23
Future Volume (veh/h)	58	18	115	81	11	10	56	1445	17	5	1384	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1870
Adj Flow Rate, veh/h	63	20	125	88	12	11	61	1571	18	5	1504	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	2
Cap, veh/h	193	55	226	158	128	118	302	4014	1246	273	3809	63
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.02	0.78	0.78	0.73	0.73	0.73
Sat Flow, veh/h	1041	391	1598	1253	906	830	1795	5147	1598	324	5214	87
Grp Volume(v), veh/h	83	0	125	88	0	23	61	1571	18	5	990	539
Grp Sat Flow(s),veh/h/ln	1432	0	1598	1253	0	1736	1795	1716	1598	324	1716	1870
Q Serve(g_s), s	6.3	0.0	10.2	9.7	0.0	1.6	1.2	13.5	0.4	0.7	15.3	15.3
Cycle Q Clear(g_c), s	7.9	0.0	10.2	17.6	0.0	1.6	1.2	13.5	0.4	7.4	15.3	15.3
Prop In Lane	0.76		1.00	1.00		0.48	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	248	0	226	158	0	246	302	4014	1246	273	2507	1366
V/C Ratio(X)	0.33	0.00	0.55	0.56	0.00	0.09	0.20	0.39	0.01	0.02	0.39	0.39
Avail Cap(c_a), veh/h	367	0	354	258	0	384	662	4014	1246	273	2507	1366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	56.0	63.0	0.0	52.3	5.3	4.9	3.4	7.1	7.1	7.1
Incr Delay (d2), s/veh	0.8	0.0	2.1	3.0	0.0	0.2	0.1	0.3	0.0	0.1	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	4.3	3.2	0.0	0.7	0.4	4.0	0.1	0.1	5.1	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	0.0	58.1	66.1	0.0	52.4	5.4	5.2	3.5	7.3	7.6	8.0
LnGrp LOS	E	A	E	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h		208			111			1650			1534	
Approach Delay, s/veh		57.3			63.2			5.2			7.7	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		115.2		24.8	6.9	108.3		24.8				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		15.5		12.2	3.2	17.3		19.6				
Green Ext Time (p_c), s		17.9		0.7	0.0	14.4		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									







HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Buildout 2025 Total Condition  
PM Peak

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	8	0	90	22	1
Future Vol, veh/h	41	8	0	90	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	9	0	98	24	1
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	54	0	99	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1550	-	894	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	894	1018
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	968	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.1	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	899	-	-	1550	-	
HCM Lane V/C Ratio	0.028	-	-	-	-	
HCM Control Delay (s)	9.1	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Buildout 2025 Total Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	28	86	2	1	6
Future Vol, veh/h	15	28	86	2	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	16	30	93	2	1	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	95	0	-	0	156	-
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1505	-	-	-	838	0
Stage 1	-	-	-	-	932	0
Stage 2	-	-	-	-	963	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1505	-	-	-	829	-
Mov Cap-2 Maneuver	-	-	-	-	829	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	963	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1505	-	-	-	829	-
HCM Lane V/C Ratio	0.011	-	-	-	0.001	-
HCM Control Delay (s)	7.4	0	-	-	9.3	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Buildout 2025 Total Condition  
PM Peak










Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	6	5	86	7	5
Future Vol, veh/h	28	6	5	86	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	7	5	93	8	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	37	0	137	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1574	-	856	1039
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1574	-	853	1039
Mov Cap-2 Maneuver	-	-	-	-	853	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	918	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	922	-	-	1574	-	
HCM Lane V/C Ratio	0.014	-	-	0.003	-	
HCM Control Delay (s)	9	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

## APPENDIX E. BACKGROUND (2050) TRAFFIC LOS WORKSHEET

Queues  
1: Airport Blvd & Centretech Pkwy

Future 2050 Background Condition

AM Peak

									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	119	99	61	26	185	2989	258	20	1852
v/c Ratio	0.67	0.38	0.59	0.13	0.68	0.72	0.19	0.38	0.52
Control Delay	77.2	13.9	80.1	50.5	27.5	7.6	1.0	38.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	13.9	80.1	50.5	27.5	7.6	1.0	38.3	11.7
Queue Length 50th (ft)	106	0	54	19	45	369	5	7	264
Queue Length 95th (ft)	167	53	100	48	131	522	26	#53	410
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	362	431	212	406	493	4171	1340	53	3563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.23	0.29	0.06	0.38	0.72	0.19	0.38	0.52

Intersection Summary























# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy




Future 2050 Background Condition

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	91	56	19	5	170	2750	237	18	1609	95
Future Volume (veh/h)	40	70	91	56	19	5	170	2750	237	18	1609	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	43	76	99	61	21	5	185	2989	258	20	1749	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	100	155	206	131	189	45	268	4080	1266	83	3596	211
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.04	0.79	0.79	0.72	0.72	0.72
Sat Flow, veh/h	503	1206	1598	1219	1472	350	1795	5147	1598	62	4971	292
Grp Volume(v), veh/h	119	0	99	61	0	26	185	2989	258	20	1206	646
Grp Sat Flow(s),veh/h/ln	1709	0	1598	1219	0	1822	1795	1716	1598	62	1716	1833
Q Serve(g_s), s	5.9	0.0	8.1	6.9	0.0	1.8	3.6	40.2	5.6	32.8	21.0	21.1
Cycle Q Clear(g_c), s	8.9	0.0	8.1	15.8	0.0	1.8	3.6	40.2	5.6	63.4	21.0	21.1
Prop In Lane	0.36		1.00	1.00		0.19	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	255	0	206	131	0	235	268	4080	1266	83	2482	1326
V/C Ratio(X)	0.47	0.00	0.48	0.47	0.00	0.11	0.69	0.73	0.20	0.24	0.49	0.49
Avail Cap(c_a), veh/h	410	0	354	244	0	403	593	4080	1266	83	2482	1326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	0.0	56.6	64.4	0.0	53.9	11.1	7.2	3.6	25.2	8.3	8.3
Incr Delay (d2), s/veh	1.3	0.0	1.7	2.6	0.0	0.2	1.2	1.2	0.4	6.8	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	3.4	2.3	0.0	0.8	2.3	11.7	1.6	0.6	7.1	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.2	0.0	58.4	67.0	0.0	54.1	12.3	8.4	4.0	32.0	8.9	9.5
LnGrp LOS	E	A	E	E	A	D	B	A	A	C	A	A
Approach Vol, veh/h		218			87			3432			1872	
Approach Delay, s/veh		58.3			63.1			8.3			9.4	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		117.0		23.0	9.7	107.3		23.0				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		42.2		10.9	5.6	65.4		17.8				
Green Ext Time (p_c), s		48.1		0.9	0.1	0.0		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				11.4								
HCM 6th LOS				B								





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Future 2050 Background Condition  
AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	0	0	67	0	0
Future Vol, veh/h	308	0	0	67	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	335	0	0	73	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	335	0	372	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1223	-	615	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1223	-	615	706
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	981	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1223	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 6th TWSC  
3: Centretech Pkwy & Bus Access




Future 2050 Background Condition  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	303	60	0	0	7
Future Vol, veh/h	5	303	60	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	5	329	65	0	0	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	65	0	-	0	404	-
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1544	-	-	-	605	0
Stage 1	-	-	-	-	960	0
Stage 2	-	-	-	-	724	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	603	-
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	724	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1544	-	-	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-



HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Future 2050 Background Condition  
AM Peak










Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	303	5	5	60	5	5
Future Vol, veh/h	303	5	5	60	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	329	5	5	65	5	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	334	0	407	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1225	-	600	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1225	-	598	710
Mov Cap-2 Maneuver	-	-	-	-	598	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	944	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.6		10.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	649	-	-	1225	-	
HCM Lane V/C Ratio	0.017	-	-	0.004	-	
HCM Control Delay (s)	10.6	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

## Queues

## Future 2050 Background Condition

## 1: Airport Blvd &amp; Centretech Pkwy

PM Peak























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	110	168	93	22	82	2116	16	4	2061
v/c Ratio	0.66	0.50	0.76	0.10	0.48	0.51	0.01	0.04	0.55
Control Delay	77.0	12.7	94.8	36.9	14.1	5.4	1.7	8.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.0	12.7	94.8	36.9	14.1	5.4	1.7	8.0	9.5
Queue Length 50th (ft)	98	0	84	11	11	193	0	1	265
Queue Length 95th (ft)	155	65	141	36	39	289	6	6	400
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	316	484	232	398	472	4134	1290	109	3772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.35	0.40	0.06	0.17	0.51	0.01	0.04	0.55
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy

Future 2050 Background Condition




PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	23	155	86	12	8	75	1947	15	4	1865	31
Future Volume (veh/h)	78	23	155	86	12	8	75	1947	15	4	1865	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1870
Adj Flow Rate, veh/h	85	25	168	93	13	9	82	2116	16	4	2027	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	2
Cap, veh/h	222	60	262	162	170	118	203	3897	1210	163	3663	61
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.03	0.76	0.76	0.70	0.70	0.70
Sat Flow, veh/h	1076	365	1598	1199	1038	718	1795	5147	1598	191	5213	87
Grp Volume(v), veh/h	110	0	168	93	0	22	82	2116	16	4	1333	728
Grp Sat Flow(s),veh/h/ln	1440	0	1598	1199	0	1756	1795	1716	1598	191	1716	1869
Q Serve(g_s), s	8.7	0.0	13.7	10.7	0.0	1.5	1.7	23.7	0.3	1.2	26.5	26.5
Cycle Q Clear(g_c), s	10.1	0.0	13.7	20.8	0.0	1.5	1.7	23.7	0.3	17.4	26.5	26.5
Prop In Lane	0.77		1.00	1.00		0.41	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	282	0	262	162	0	288	203	3897	1210	163	2411	1314
V/C Ratio(X)	0.39	0.00	0.64	0.57	0.00	0.08	0.40	0.54	0.01	0.02	0.55	0.55
Avail Cap(c_a), veh/h	367	0	354	230	0	389	554	3897	1210	163	2411	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	54.6	62.6	0.0	49.5	9.7	7.0	4.2	12.2	10.1	10.1
Incr Delay (d2), s/veh	0.9	0.0	2.6	3.2	0.0	0.1	0.5	0.5	0.0	0.3	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	5.8	3.4	0.0	0.7	0.7	7.5	0.1	0.1	9.3	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	0.0	57.2	65.8	0.0	49.6	10.2	7.6	4.2	12.4	11.0	11.8
LnGrp LOS	D	A	E	E	A	D	B	A	A	B	B	B
Approach Vol, veh/h		278			115			2214			2065	
Approach Delay, s/veh		56.1			62.7			7.6			11.3	
Approach LOS		E			E			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		112.0		28.0	7.6	104.4		28.0				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		25.7		15.7	3.7	28.5		22.8				
Green Ext Time (p_c), s		31.9		1.0	0.1	20.2		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.5								
HCM 6th LOS				B								

HCM 6th TWSC  
2: W Site Access & Centretech Pkwy





Future 2050 Background Condition

PM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	0	0	121	0	0
Future Vol, veh/h	56	0	0	121	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	0	0	132	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	127	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1541	-	861	1004
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1541	-	861	1004
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	949	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1541	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Future 2050 Background Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	35	113	3	1	8
Future Vol, veh/h	20	35	113	3	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	22	38	123	3	1	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	126	0	-	0	207	-
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	82	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1467	-	-	-	784	0
Stage 1	-	-	-	-	903	0
Stage 2	-	-	-	-	944	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1467	-	-	-	772	-
Mov Cap-2 Maneuver	-	-	-	-	772	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	944	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.7	0		9.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1467	-	-	-	772	-
HCM Lane V/C Ratio	0.015	-	-	-	0.001	-
HCM Control Delay (s)	7.5	0	-	-	9.7	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Future 2050 Background Condition  
PM Peak

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	37	5	5	116	5	5
Future Vol, veh/h	37	5	5	116	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	5	5	126	5	5
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	45	0	179	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1563	-	811	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1563	-	809	1027
Mov Cap-2 Maneuver	-	-	-	-	809	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	887	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	905	-	-	1563	-	
HCM Lane V/C Ratio	0.012	-	-	0.003	-	
HCM Control Delay (s)	9	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

## APPENDIX F. FUTURE (2050) TRAFFIC LOS WORKSHEET

## Queues

## Future 2050 Total Conditions

## 1: Airport Blvd &amp; Centretech Pkwy

AM Peak

	→	↘	↙	←	↖	↑	↗	↘	↓
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	121	99	66	29	185	2989	275	24	1852
v/c Ratio	0.67	0.38	0.63	0.14	0.69	0.72	0.21	0.45	0.52
Control Delay	77.0	13.8	84.2	51.1	28.3	7.7	1.1	46.8	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.0	13.8	84.2	51.1	28.3	7.7	1.1	46.8	11.8
Queue Length 50th (ft)	108	0	58	22	47	373	6	9	265
Queue Length 95th (ft)	170	53	108	52	133	526	27	#68	412
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	362	431	210	403	492	4164	1341	53	3557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.23	0.31	0.07	0.38	0.72	0.21	0.45	0.52

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

























# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy




Future 2050 Total Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	72	91	61	20	6	170	2750	253	22	1609	95
Future Volume (veh/h)	40	72	91	61	20	6	170	2750	253	22	1609	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	43	78	99	66	22	7	185	2989	275	24	1749	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	101	163	213	136	183	58	267	4054	1259	82	3569	210
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.04	0.79	0.79	0.72	0.72	0.72
Sat Flow, veh/h	492	1218	1598	1217	1371	436	1795	5147	1598	61	4971	292
Grp Volume(v), veh/h	121	0	99	66	0	29	185	2989	275	24	1206	646
Grp Sat Flow(s),veh/h/ln	1711	0	1598	1217	0	1807	1795	1716	1598	61	1716	1833
Q Serve(g_s), s	5.8	0.0	8.0	7.5	0.0	2.0	3.6	41.2	6.2	45.9	21.4	21.5
Cycle Q Clear(g_c), s	9.0	0.0	8.0	16.5	0.0	2.0	3.6	41.2	6.2	77.2	21.4	21.5
Prop In Lane	0.36		1.00	1.00		0.24	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	263	0	213	136	0	241	267	4054	1259	82	2463	1316
V/C Ratio(X)	0.46	0.00	0.46	0.49	0.00	0.12	0.69	0.74	0.22	0.29	0.49	0.49
Avail Cap(c_a), veh/h	410	0	354	243	0	400	591	4054	1259	82	2463	1316
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	0.0	56.0	64.1	0.0	53.4	11.5	7.5	3.8	29.5	8.6	8.6
Incr Delay (d2), s/veh	1.2	0.0	1.6	2.7	0.0	0.2	1.2	1.2	0.4	8.9	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	3.4	2.4	0.0	0.9	2.3	12.2	1.8	0.8	7.3	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.6	0.0	57.6	66.8	0.0	53.6	12.7	8.8	4.2	38.5	9.3	9.9
LnGrp LOS	E	A	E	E	A	D	B	A	A	D	A	A
Approach Vol, veh/h		220			95			3449			1876	
Approach Delay, s/veh		57.6			62.8			8.6			9.9	
Approach LOS		E			E			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		116.3		23.7	9.8	106.5		23.7				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		43.2		11.0	5.6	79.2		18.5				
Green Ext Time (p_c), s		47.4		0.9	0.1	0.0		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				11.8								
HCM 6th LOS				B								





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Future 2050 Total Conditions  
AM Peak

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	21	1	67	6	0
Future Vol, veh/h	308	21	1	67	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	335	23	1	73	7	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	358	0	386	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1199	-	603	695
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1199	-	602	695
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	978	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		11	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	602	-	-	1199	-	
HCM Lane V/C Ratio	0.011	-	-	0.001	-	
HCM Control Delay (s)	11	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	




HCM 6th TWSC  
3: Centretech Pkwy & Bus Access

Future 2050 Total Conditions  
AM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	305	62	0	0	7
Future Vol, veh/h	5	305	62	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	5	332	67	0	0	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	67	0	-	0	409	-
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	342	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1541	-	-	-	601	0
Stage 1	-	-	-	-	958	0
Stage 2	-	-	-	-	722	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	599	-
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	722	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1541	-	-	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-	-
HCM Control Delay (s)	7.3	0	-	-	0	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Future 2050 Total Conditions  
AM Peak










Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	303	7	5	61	6	5
Future Vol, veh/h	303	7	5	61	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	329	8	5	66	7	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	337	0	409	333
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	599	709
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	597	709
Mov Cap-2 Maneuver	-	-	-	-	597	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	943	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.6		10.7	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	643	-	-	1222	-	
HCM Lane V/C Ratio	0.019	-	-	0.004	-	
HCM Control Delay (s)	10.7	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

## Queues

## Future 2050 Total Conditions

## 1: Airport Blvd &amp; Centretech Pkwy

AM Peak























									
Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	111	168	112	28	82	2116	23	7	2061
v/c Ratio	0.60	0.47	0.79	0.12	0.49	0.52	0.02	0.07	0.56
Control Delay	69.2	11.5	93.5	32.9	15.8	6.3	1.7	10.0	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	11.5	93.5	32.9	15.8	6.3	1.7	10.0	10.7
Queue Length 50th (ft)	97	0	100	12	13	213	0	2	286
Queue Length 95th (ft)	153	63	162	40	44	319	8	10	430
Internal Link Dist (ft)	500			265		639			470
Turn Bay Length (ft)		125			200			175	
Base Capacity (vph)	315	484	239	397	467	4058	1268	105	3692
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.35	0.47	0.07	0.18	0.52	0.02	0.07	0.56
Intersection Summary									

# HCM 6th Signalized Intersection Summary

## 1: Airport Blvd & Centretech Pkwy


Future 2050 Total Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	24	155	103	14	12	75	1947	21	6	1865	31
Future Volume (veh/h)	78	24	155	103	14	12	75	1947	21	6	1865	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1870
Adj Flow Rate, veh/h	85	26	168	112	15	13	82	2116	23	7	2027	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	2
Cap, veh/h	237	67	291	180	170	147	198	3805	1181	157	3566	60
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.03	0.74	0.74	0.68	0.68	0.68
Sat Flow, veh/h	1053	367	1598	1198	932	808	1795	5147	1598	189	5213	87
Grp Volume(v), veh/h	111	0	168	112	0	28	82	2116	23	7	1333	728
Grp Sat Flow(s),veh/h/ln	1420	0	1598	1198	0	1740	1795	1716	1598	189	1716	1869
Q Serve(g_s), s	8.6	0.0	13.5	12.9	0.0	1.9	1.8	25.5	0.5	2.4	28.1	28.2
Cycle Q Clear(g_c), s	10.4	0.0	13.5	23.3	0.0	1.9	1.8	25.5	0.5	20.1	28.1	28.2
Prop In Lane	0.77		1.00	1.00		0.46	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	304	0	291	180	0	317	198	3805	1181	157	2347	1279
V/C Ratio(X)	0.37	0.00	0.58	0.62	0.00	0.09	0.41	0.56	0.02	0.04	0.57	0.57
Avail Cap(c_a), veh/h	362	0	354	228	0	385	548	3805	1181	157	2347	1279
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	52.3	61.5	0.0	47.6	11.0	8.1	4.8	14.3	11.4	11.4
Incr Delay (d2), s/veh	0.7	0.0	1.8	3.5	0.0	0.1	0.5	0.6	0.0	0.5	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	5.6	4.1	0.0	0.8	0.7	8.3	0.2	0.1	10.1	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	54.1	64.9	0.0	47.7	11.5	8.7	4.9	14.8	12.4	13.3
LnGrp LOS	D	A	D	E	A	D	B	A	A	B	B	B
Approach Vol, veh/h		279			140			2221			2068	
Approach Delay, s/veh		53.4			61.5			8.7			12.7	
Approach LOS		D			E			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		109.5		30.5	7.7	101.8		30.5				
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s		98.0		31.0	31.0	63.0		31.0				
Max Q Clear Time (g_c+I1), s		27.5		15.5	3.8	30.2		25.3				
Green Ext Time (p_c), s		31.7		1.0	0.1	19.8		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				14.7								
HCM 6th LOS				B								





HCM 6th TWSC  
2: W Site Access & Centretech Pkwy

Future 2050 Total Conditions  
AM Peak

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	8	0	121	22	1
Future Vol, veh/h	56	8	0	121	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	9	0	132	24	1
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	70	0	132	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.13	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1530	-	855	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1530	-	855	997
Mov Cap-2 Maneuver	-	-	-	-	855	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	949	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		9.3	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	860	-	-	1530	-	
HCM Lane V/C Ratio	0.029	-	-	-	-	
HCM Control Delay (s)	9.3	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
3: Centretech Pkwy & Bus Access




Future 2050 Total Conditions  
AM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	37	115	3	1	8
Future Vol, veh/h	20	37	115	3	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	22	40	125	3	1	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	128	0	-	0	211	-
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	84	-
Critical Hdwy	4.11	-	-	-	6.41	-
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	-	3.509	-
Pot Cap-1 Maneuver	1464	-	-	-	780	0
Stage 1	-	-	-	-	901	0
Stage 2	-	-	-	-	942	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1464	-	-	-	768	-
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	942	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		9.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1464	-	-	-	768	-
HCM Lane V/C Ratio	0.015	-	-	-	0.001	-
HCM Control Delay (s)	7.5	0	-	-	9.7	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-



HCM 6th TWSC  
4: E Site Access & Centretech Pkwy

Future 2050 Total Conditions  
AM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	6	5	116	7	5
Future Vol, veh/h	38	6	5	116	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	7	5	126	8	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	181	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1559	-	808	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1559	-	806	1025
Mov Cap-2 Maneuver	-	-	-	-	806	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	887	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		9.1	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	885	-	-	1559	-	
HCM Lane V/C Ratio	0.015	-	-	0.003	-	
HCM Control Delay (s)	9.1	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	