



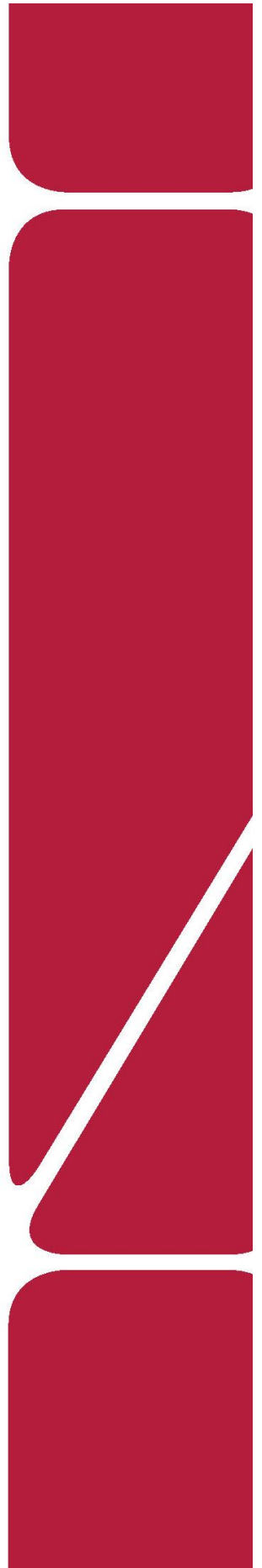
Traffic Impact Study Update

Colorado Early Colleges  
Aurora High School  
Aurora, Colorado

Prepared for:

Colorado Early Colleges

**Kimley»Horn**



# T R A F F I C   I M P A C T   S T U D Y   U P D A T E

## **Colorado Early Colleges Aurora High School**

Aurora, Colorado

**Prepared for**  
**Colorado Early Colleges**  
4405 N Chestnut Street  
Suite E  
Colorado Springs, Colorado 80907

**Prepared by**  
**Kimley-Horn and Associates, Inc.**  
Curtis D. Rowe, P.E., PTOE  
4582 South Ulster Street  
Suite 1500  
Denver, Colorado 80237  
(303) 228-2300



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## 1.0 EXECUTIVE SUMMARY

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The Colorado Early Colleges Aurora High School is proposed to be relocated from the existing location at 350 North Blackhawk Street to an existing building at 1400 South Abilene Street in Aurora, Colorado. The CEC Aurora High School was previously located on the southeast corner of the 4<sup>th</sup> Avenue and Blackhawk Street intersection where Abilene Street curves into 4<sup>th</sup> Avenue on the east side of I-225. The proposed school location is located along the east side of Abilene Street, between Mississippi Avenue and Florida Avenue, approximately two miles to the south of the existing school location. Herein, this project is named “CEC Aurora High School”. It is expected that the school will relocate to the new building for the 2020-2021 school year. Analysis was completed for the existing short term and 2040 long term horizons per the City of Aurora requirements.

The purpose of this study is to identify school traffic generation characteristics, to identify potential school traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts. This traffic study update has been prepared due to modifications with the proposed student drop-off and pick-up areas to encourage equal entry use of both site driveways and to reduce on-site vehicle queues. The following intersections were incorporated into this traffic study:

- Mississippi Avenue and Abilene Street
- Florida Avenue and Abilene Street
- Florida Avenue and Sable Boulevard
- Florida Avenue and Chambers Road

CEC Aurora High School is proposed to be located near the northeast corner of the Florida Avenue and Abilene Street intersection. Regional access to the school will be provided by Interstate 225 (I-225). Primary access will be provided by Sable Boulevard, Florida Avenue, Mississippi Avenue, and Abilene Street. Direct access to the school will be provided by two existing accesses along the east side of Abilene Street. The two existing project accesses are located approximately 985 feet and 575 feet north of the Florida Avenue and Abilene Street intersection (measured center to center).

Aurora High School is expected to generate approximately 736 weekday daily trips. Of these, 257 trips are expected to occur during the morning peak hour of generator, while 184 trips are expected during the afternoon peak hour of generator.

Distribution of school traffic on the street system was based on the area street system characteristics, existing traffic patterns and volumes, demographic information, and the proposed access system for the project. Assignment of project traffic was based upon the trip generation described previously and the distributions developed.

Based on the analysis presented in this report, Kimley-Horn believes the relocation of the CEC Aurora High School, proposed within the existing building at 1400 South Abilene Street in Aurora, Colorado will be successfully incorporated into the existing and future roadway network. The proposed project development resulted in the following recommendations and conclusions:

- The proposed CEC Aurora High School will utilize the two existing project accesses along Abilene Street located approximately 985 feet and 575 feet north of the Florida Avenue and Abilene Street intersection (measured center to center). A single approach lane, as exists today, is anticipated to be sufficient at the existing access approaches for exiting school traffic.
- To encourage equal use of both site driveways and to reduced on-site vehicle queues, it is recommended that a second student drop-off and pick-up area be implemented. This second drop-off and pick-up area to be accessed from the north driveway will be west of, and extend parallel to, the drive aisle that is immediately west of the school building. The south project driveway will be designated to provide access to the east student drop-off/pick-up area while the north project driveway will be designated to provide access to the west student drop-off/pick-up area. It is recommended that cross access from the west drop-off/pick-up area to the east drop-off/pick-up area be restricted; therefore, the southern access will be restricted from on-site parking during peak periods and be entrance only. The northern access being more convenient for the parking area will help evenly distribute the entry use of both site driveways. With this new plan, all exiting movements will utilize the north site driveway during the peak period. Vehicles will face north while dropping off and picking up students. This will allow for students to be dropped off and picked up with the

passenger side of the vehicle being adjacent to the school building. Vehicles will then exit the north project driveway after dropping off or picking up students.

- The west student drop-off/pick-up area provides approximately 750 feet of onsite vehicle queue length accessed from the northern driveway while there is approximately 550 feet of onsite queue length designated at the east student drop-off/pick-up area accessed from the southern driveway. Therefore, the proposed 1,300 feet of onsite vehicle stacking designated for student drop-off/pick-up should accommodate the calculated 775 feet of onsite queue demands for student pick-up.
- By 2040, the northbound and eastbound left turn storage lengths at the intersection of Mississippi Avenue and Abilene Street may not accommodate project traffic volume queues. The existing outside 325-foot eastbound left turn lane of the dual lefts could be extended to 450 feet. However, the existing northbound dual left turn lanes are designated to their full length due to the full movement driveway for the Abilene Street Market located along the west side of Abilene Street. Of note, the outside left turn of the dual left turn lanes is a continuous lane from the inside northbound through lane along Abilene Street, so the left turns will not block northbound through traffic.
- Also by 2040, the 100-foot eastbound left turn lane at the intersection of Florida Avenue and Chambers Road may need to be restriped to include 125 feet of length. If this need occurs, it is recommended that on street parking in this area be further restricted to allow for improved through and right turning movements on the eastbound approach.
- All on-site improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora, The Colorado Department of Transportation (CDOT), and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

## 2.0 INTRODUCTION

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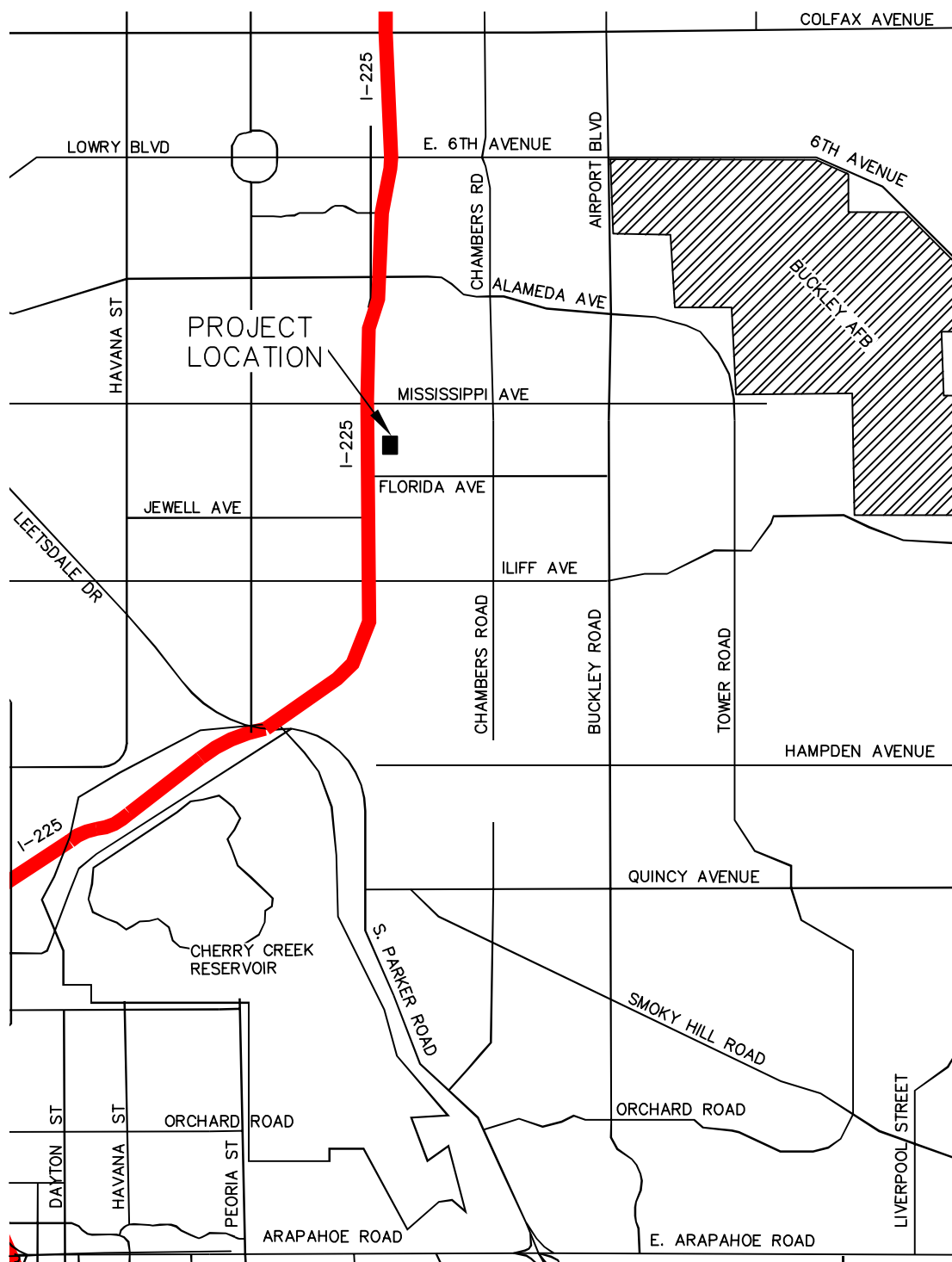
Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study of future traffic conditions associated with a new Colorado Early Colleges High School in Aurora, Colorado. Herein, this project is named “CEC Aurora High School”. The CEC Aurora High School is proposed to be relocated from the existing location at 350 North Blackhawk Street to an existing building at 1400 South Abilene Street in Aurora, Colorado. The CEC Aurora High School was previously located on the southeast corner of the 4<sup>th</sup> Avenue and Blackhawk Street intersection where Abilene Street curves into 4<sup>th</sup> Avenue on the east side of I-225. The proposed school location is located along the east side of Abilene Street, between Mississippi Avenue and Florida Avenue, approximately two miles to the south of the existing school location. A vicinity map illustrating the school location is shown in **Figure 1**.

It is proposed that this school will relocate to the proposed project site with classes beginning in the Fall 2020 term. The existing school faculty, staff, and student population will remain unchanged. An aerial identifying the site with the proposed school and access locations is provided in **Appendix F**. It is expected that the school will relocate to the new building for the 2020-2021 school year. Analysis was completed for the existing short term and 2040 long term horizons per the City of Aurora requirements.

The purpose of this study is to identify school traffic generation characteristics, to identify potential school traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts. The intersections of Mississippi Avenue/Abilene Street, Florida Avenue/Abilene Street, Florida Avenue/Sable Boulevard, and Florida Avenue/Chambers Road were incorporated into this traffic study.

CEC Aurora High School is proposed to be located near the northeast corner of the Florida Avenue and Abilene Street intersection. Regional access to the school will be provided by Interstate 225 (I-225). Primary access will be provided by Sable Boulevard, Florida Avenue, Mississippi Avenue, and Abilene Street. Direct access to the school will be provided by two existing accesses along the east side of Abilene Street. The two existing project accesses are located approximately 985 feet and 575 feet north of the Florida Avenue and Abilene Street intersection (measured center to center).





COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 VICINITY MAP

FIGURE 1

## 3.0 EXISTING AND FUTURE CONDITIONS

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### 3.1 Existing Study Area

The existing building proposed for the future CEC Aurora High School was previously an Ecotech Institute facility. An existing Spider Monkey Extreme Air Sports gymnasium shares the space within the southern portion of the same building. The CEC Aurora High School will replace the Ecotech Institute, while the Spider Monkey gymnasium will remain. Directly to the west of the project site is Interstate-225 and the Florida RTD light rail station. Directly to the east, residential homes exist. Further east is the existing Gateway High School and Village Green Park. Directly north and south of the project site commercial uses exist. Outside of this immediate area, single family homes and residential neighborhoods exists in all directions. The land uses and roadway network surrounding the site are shown in **Figure 2**.

### 3.2 Existing Roadway Network

Within the project study area, Mississippi Avenue to the north of the proposed school location, provides three through lanes of travel in the eastbound and westbound directions, with designated left and right turn lanes at major intersections. Additional eastbound and westbound through lanes exist along Mississippi Avenue at the intersection with Abilene Street created from right turn lanes at I-225. Mississippi Avenue has a 40 mile per hour posted speed limit within the study area. Florida Avenue to the south of the proposed school location provides one through lane of travel in the eastbound and westbound directions with a posted speed limit of 30 miles per hour within the study area. Currently, Florida Avenue has permitted on-street parking, there is adequate width to provide two through lanes of travel in each direction in the future, if needed. Abilene Street provides two through lanes of travel in the northbound and southbound directions to the north and two northbound lanes and one southbound lane of travel with designated left turn lanes in the southbound direction adjacent to the site. Abilene Street has a posted speed limit of 40 miles per hour within the study area. Sable Boulevard provides two lanes of travel in the northbound and southbound directions with a posted speed limit of 30 miles per hour within the study area. Chambers Road provides three lanes of travel in the northbound and southbound directions with designated left turn lanes at all major intersections. Chambers Road has a posted speed limit of 40 miles per hour within the study area.



COLORADO EARLY COLLEGES  
AURORA HIGH SCHOOL  
SURROUNDING SITE AREA

FIGURE 2

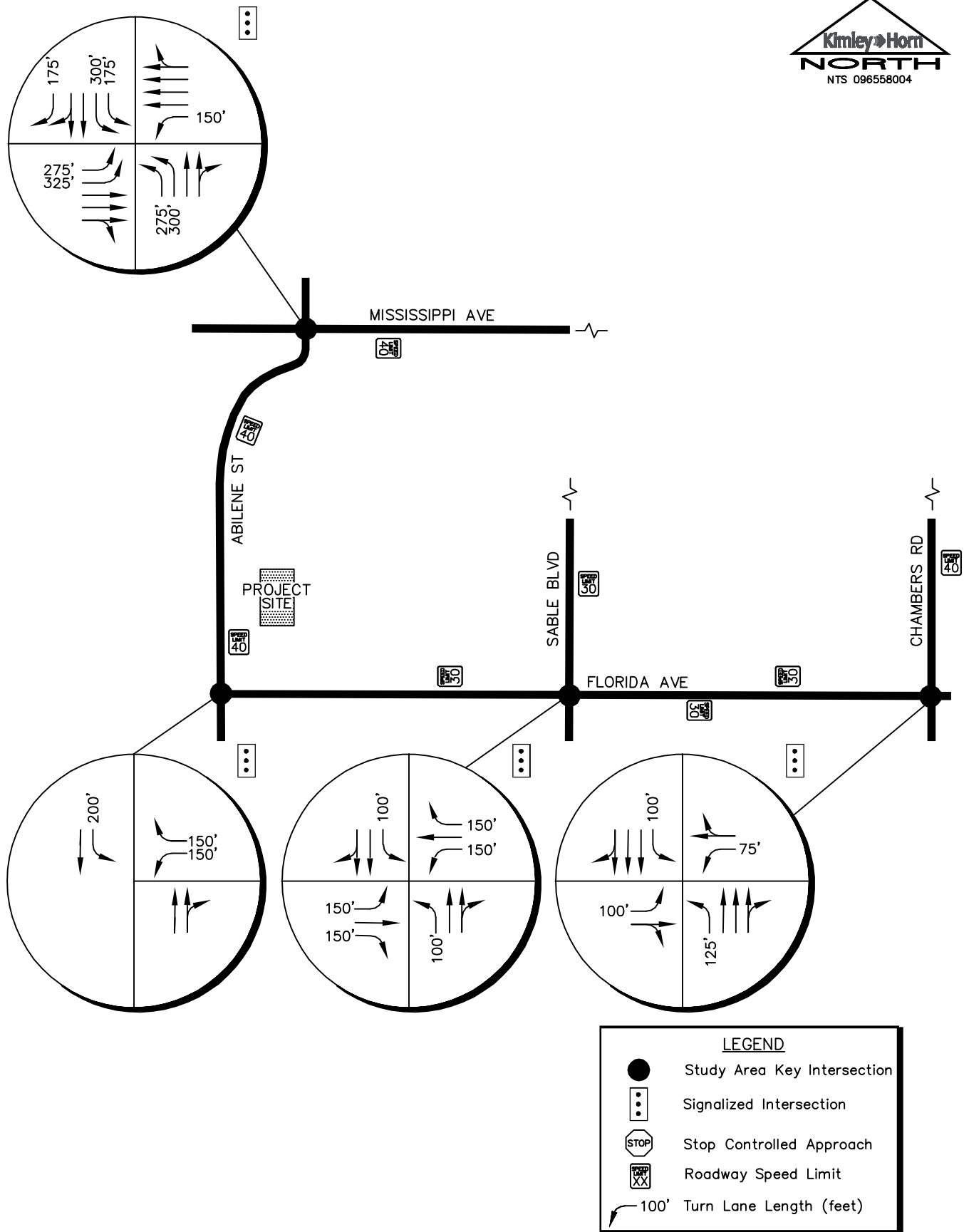
The existing intersection of Mississippi Avenue and Abilene Street is signalized and operates with protected-only left turn phasing on all four approaches. The eastbound approach provides dual left turn lanes and four through lanes with the outside lane being a shared through/right turn lane. The westbound approach provides a single left turn lane and four through lanes with the outside lane being a shared through/right turn lane. The northbound approach provides dual left turn lanes and two through lanes with the outside lane being a shared through/right turn lane. The southbound approach provides dual left turn lanes, two through lanes, and a right turn lane. The outside southbound through lane is also a shared through/right turn movement lane.

The existing T-intersection of Florida Avenue and Abilene Street is signalized and operates with permitted-only left turn phasing on the southbound approach. The westbound approach provides separate left and right turn lanes. The northbound approach provides two through lanes with the outside lane being a shared through/right turn lane. The southbound approach provides a left turn lane and one through lane.

The existing intersection of Florida Avenue and Sable Boulevard is signalized and operates with permitted-only left turn phasing on all four approaches. The eastbound and westbound approaches provide a left turn lane, one through lane, and a right turn lane. The northbound and southbound approaches provide a left turn lane and two through lanes with the outside lane being a shared through/right turn lane.

The existing intersection of Florida Avenue and Chambers Road is signalized and operates with permitted only left turn phasing on the eastbound, westbound, and southbound approaches and protected-permitted left turn phasing on the northbound approach. The eastbound and westbound approaches provide a left turn lane and a shared through/right turn lane. The northbound and southbound approaches provide a left turn lane and three through lanes with the outside lanes being shared through/right turn lanes.

The City of Aurora categorizes Mississippi Avenue and Chambers Road as major arterial roadways and Sable Boulevard and Abilene Street as minor arterial roadways as identified within the City of Aurora 2009 Comprehensive Plan. Florida Avenue is identified as a collector roadway within this document. The intersection lane configuration and control for the study area intersections are shown in **Figure 3**.



COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 EXISTING LANE CONFIGURATIONS

FIGURE 3

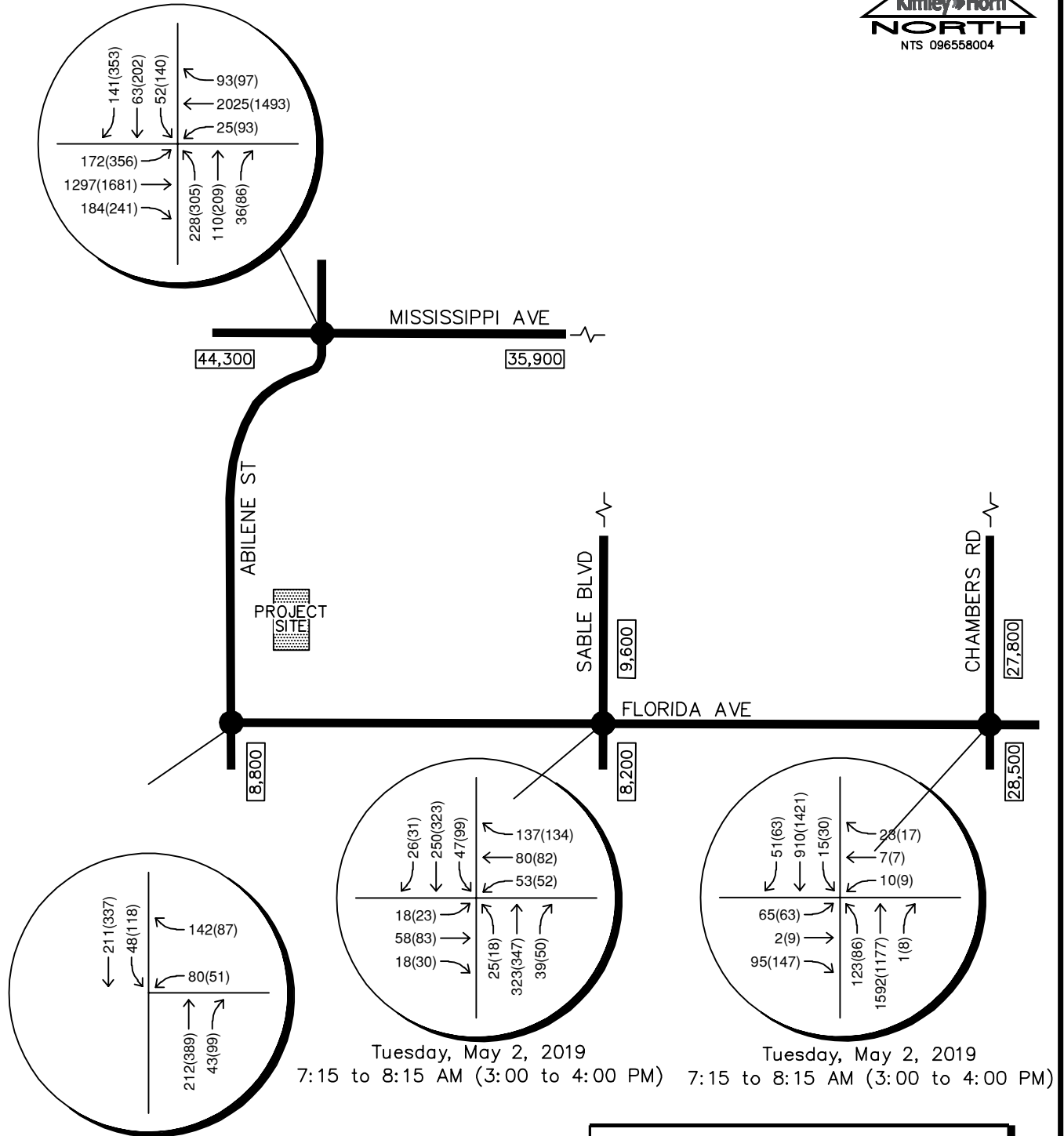
### 3.3 Existing Traffic Volumes

Existing peak hour turning movement counts were conducted at the key study intersections on Thursday, May 2, 2019. The counts were conducted during the morning and afternoon peak hours of generator of adjacent street traffic, or the highest volume hour of site traffic, in 15-minute intervals from 7:15 AM to 8:15 AM and 3:00 PM to 4:00 PM. These peak hours were identified based on bell times for the school assumed to be an 8:00 AM start and 3:25 PM end of the school day. The turning movement counts are shown in **Figure 4** with count sheets provided in **Appendix A**.

### 3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along Interstate 225 (I-225) adjacent to the project site is 1.33. This equates to an annual growth rate of approximately 1.44 percent. Interstate 225 traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix B**. To be consistent with the City of Aurora Traffic Impact Study Guidelines, a two percent annual growth rate was used to estimate future traffic volume conditions which is consistent with the findings from CDOT. This annual growth rate of two percent was used to estimated long term 2040 traffic volumes at the key intersections. Background traffic volumes for the 2040 horizon are shown in **Figure 5**.

Tuesday, May 2, 2019  
7:15 to 8:15 AM (3:00 to 4:00 PM)



Tuesday, May 2, 2019  
7:15 to 8:15 AM (3:00 to 4:00 PM)

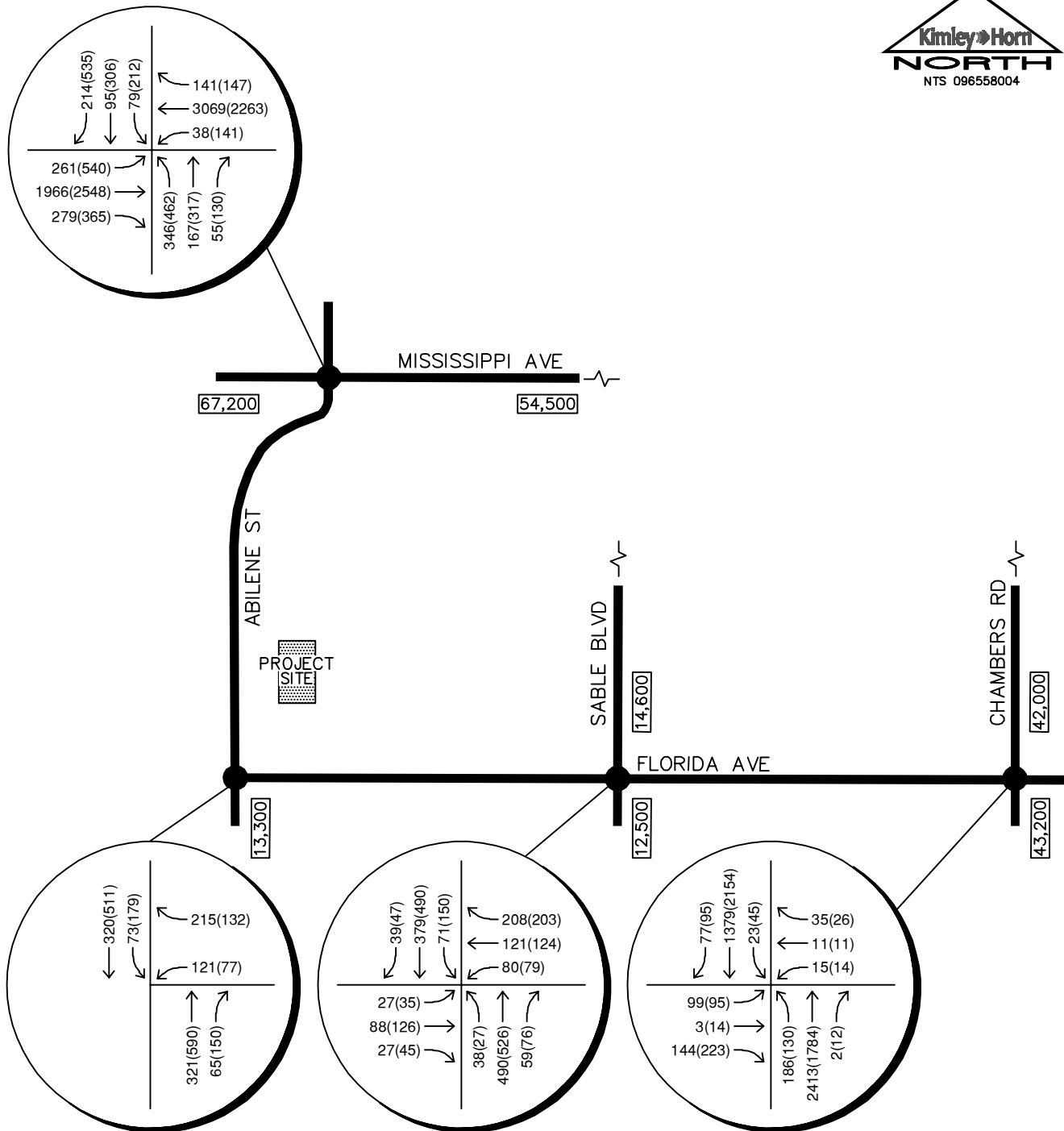
**LEGEND**

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

COLORADO EARLY COLLEGES  
AURORA HIGH SCHOOL  
EXISTING TRAFFIC VOLUMES

FIGURE 4





**LEGEND**

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM) Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

COLORADO EARLY COLLEGES  
AURORA HIGH SCHOOL  
2040 BACKGROUND TRAFFIC VOLUMES

FIGURE 5



## 4.0 PROJECT TRAFFIC CHARACTERISTICS

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### 4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. Project generated traffic volumes are identified on a weekday daily as well as on a morning peak hour and afternoon peak hour basis. The peak hour of the generator is the highest one-hour time period of school traffic both in the morning and afternoon.

As identified previously, the existing Colorado Early Colleges Aurora High School is located at 350 North Blackhawk Street, near the southeast corner of 4<sup>th</sup> Avenue and Blackhawk Street intersection in Aurora, Colorado. It is proposed that this school will relocate to a building located at 1400 South Abilene Street in Aurora, Colorado beginning in the Fall 2020 term. The existing school faculty, staff, and student population will remain unchanged. Currently, Colorado Early Colleges supplies two school buses to transport students to and from the proposed high school during the morning and afternoon hours. This existing school bus frequency will remain the same for the new school. Existing 12-hour daily traffic counts were performed from 6 am to 6 pm on Thursday, May 2, 2019 at the existing 350 North Blackhawk Street high school. Counts were also performed at the two existing school access driveways along Blackhawk Street. The existing high school traffic volume worksheet is included in **Appendix C**. These observed vehicle trips were used to estimate the trip generation for the currently proposed Colorado Early Colleges Aurora High School with this proposed relocation.

Both the existing and proposed Colorado Early Colleges Aurora High School are within close proximity to an RTD light rail station. The existing school site is located within 0.3 miles from the 2<sup>nd</sup> Avenue and Abilene Station and the proposed school site is located within 0.2 miles from the Florida Station. It is anticipated that the students who used the light rail as their main source of transportation to get to and from school will continue doing so at the new proposed location.

As shown, the morning peak hour of generator for existing school traffic occurs from 7:15 to 8:15 am and includes 257 vehicle trips. The afternoon peak hour of generator for existing school traffic occurs from 3:15 to 4:15 pm and includes 184 vehicle trips. It is assumed that 57 percent

of trips will arrive, and 43 percent of trips will depart during the morning peak hour of generator. During the afternoon peak hour, 39 percent of trips will arrive and 61 percent will depart. With the number of students, faculty, and staff remaining the same, the proposed Colorado Early Colleges Aurora High School is expected to generate the same trips at the proposed school location. Therefore, approximately 736 daily weekday trips are anticipated, with 257 of these trips occurring during the morning peak hour of generator (148 in and 109 out), and 184 trips occurring during the afternoon peak hour of generator (71 in and 113 out). **Table 1** summarizes the estimated trip generation for the proposed project.

**Table 1 – CEC Aurora High School Traffic Generation**

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
High School	736	148	109	257	71	113	184

## 4.2 Trip Distribution

Distribution of site traffic was based on the area street system characteristics, existing traffic patterns and volumes, demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of school-generated traffic that approaches the site from a given direction and departs the site back to the original source.

A second student drop-off and pick-up area has been developed to decrease on-site vehicle queues and to encourage an even distribution split of driveway entry use. This second drop-off and pick-up area will be accessed from the north driveway and be west of, and extend parallel to, the drive aisle that is immediately west of the school building. The south project driveway will be designated to provide access to the east student drop-off/pick-up area while the north project driveway will be designated to provide access to the west student drop-off/pick-up area. It is recommended that cross access from the west drop-off/pick-up area to the east drop-off/pick-up area be restricted. The northern access being more convenient for the parking area will help evenly distribute the entry use of both site driveways. With this new plan, all exiting movements will utilize the north site driveway during the peak period. Vehicles will face north while dropping off and picking up students. This will allow for students to be dropped off and picked up with the

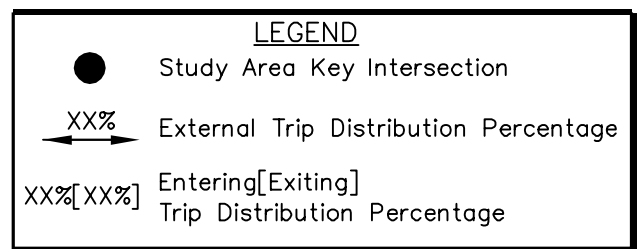
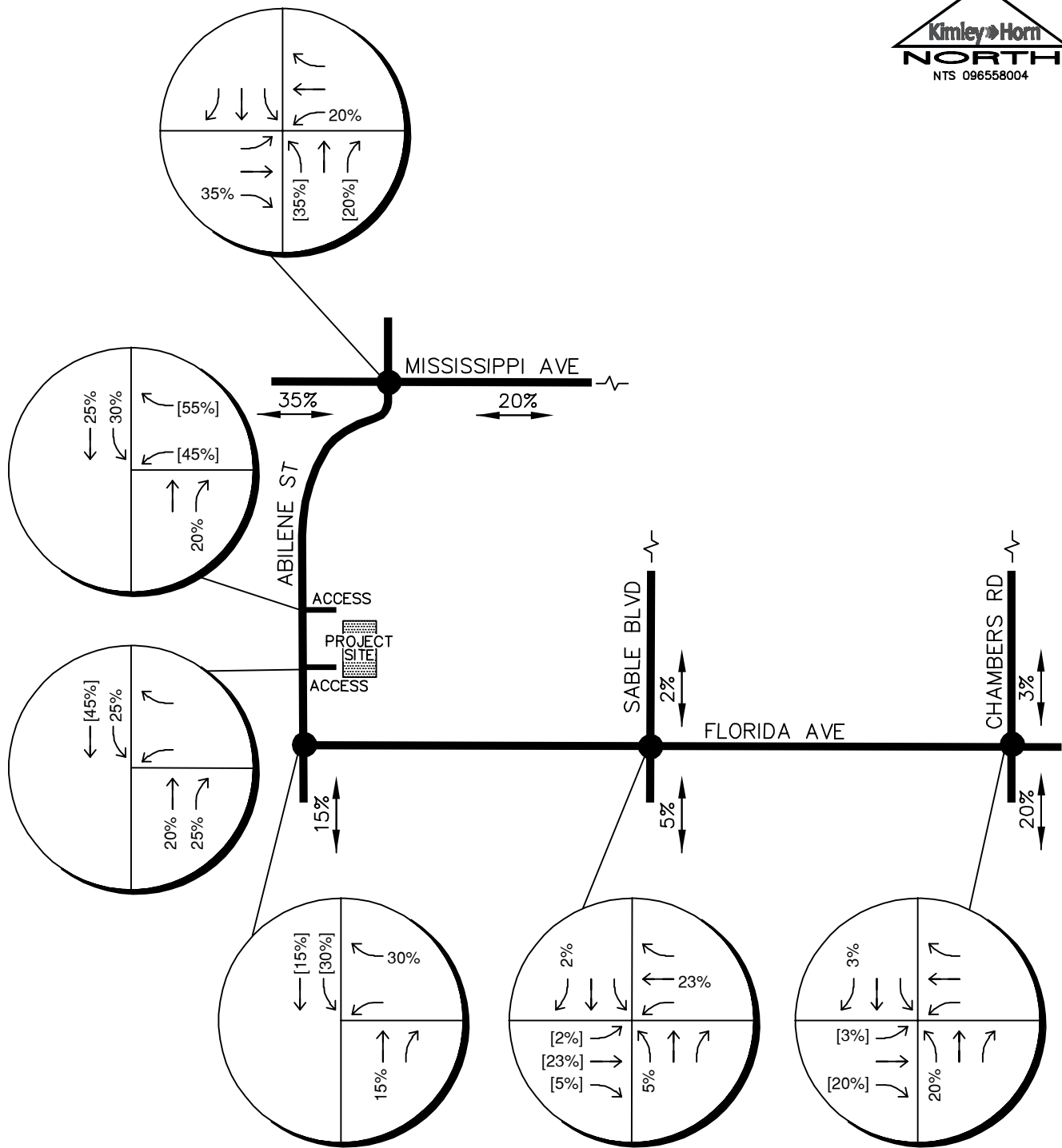
passenger side of the vehicle being adjacent to the school building. Vehicles will then exit the north project driveway after dropping off or picking up students. The project trip distribution is illustrated in **Figure 6**.

#### **4.3 Traffic Assignment**

Project traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Project traffic assignment for the Colorado Early Colleges Aurora High School is shown in **Figure 7**.

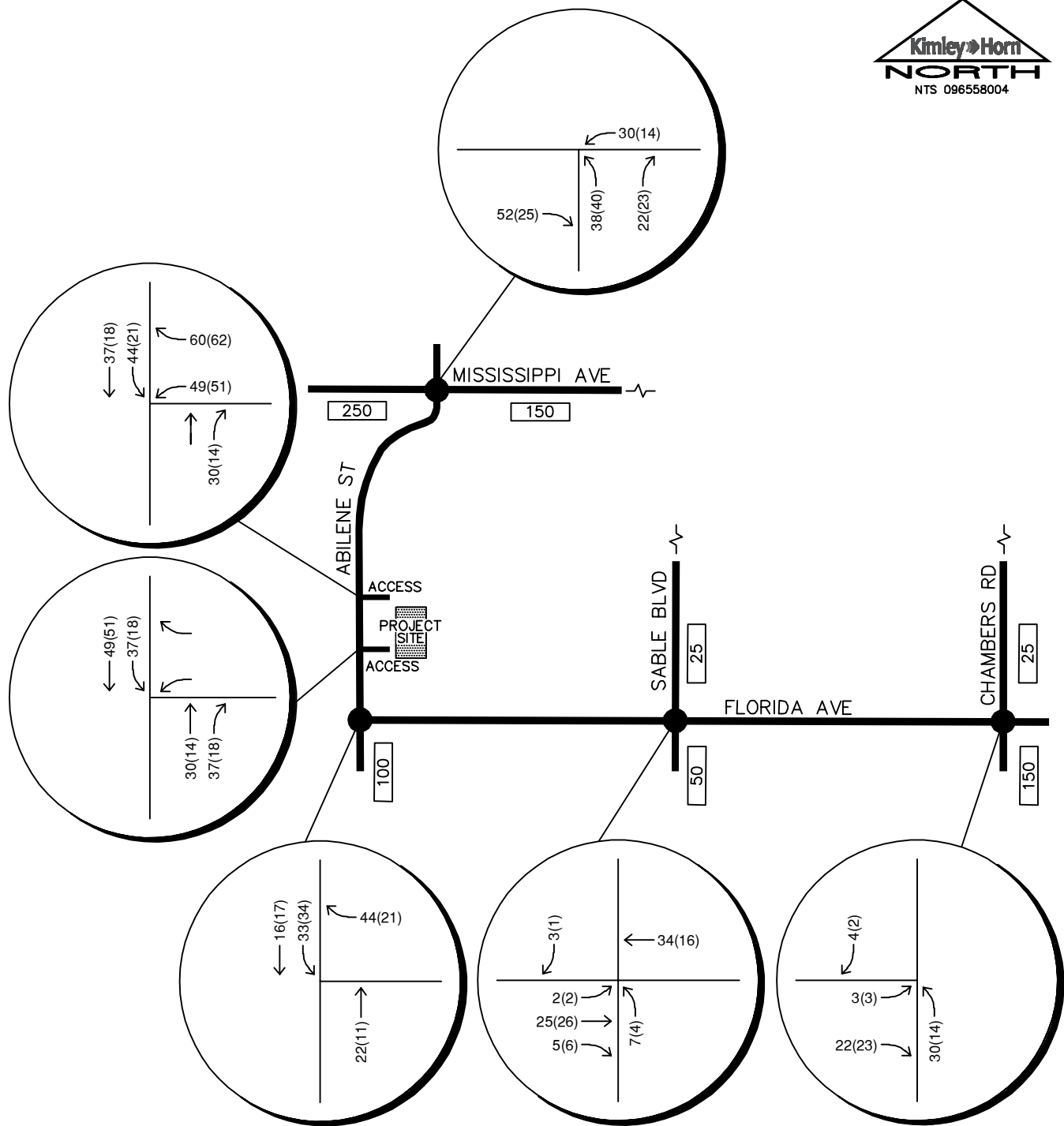
#### **4.4 Total (Background Plus Project) Traffic**

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the existing project buildout year and long term 2040 horizon. These total traffic volumes for the site are illustrated for the existing and 2040 long term horizon years as shown in **Figure 8** and **Figure 9**, respectively.



COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 PROJECT TRIP DISTRIBUTION

FIGURE 6

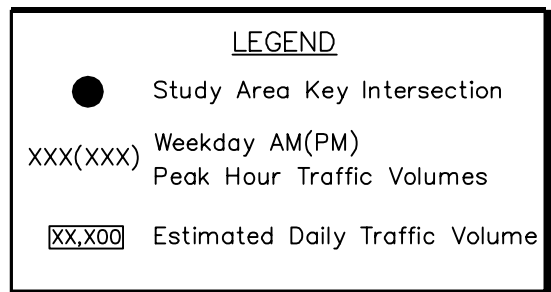
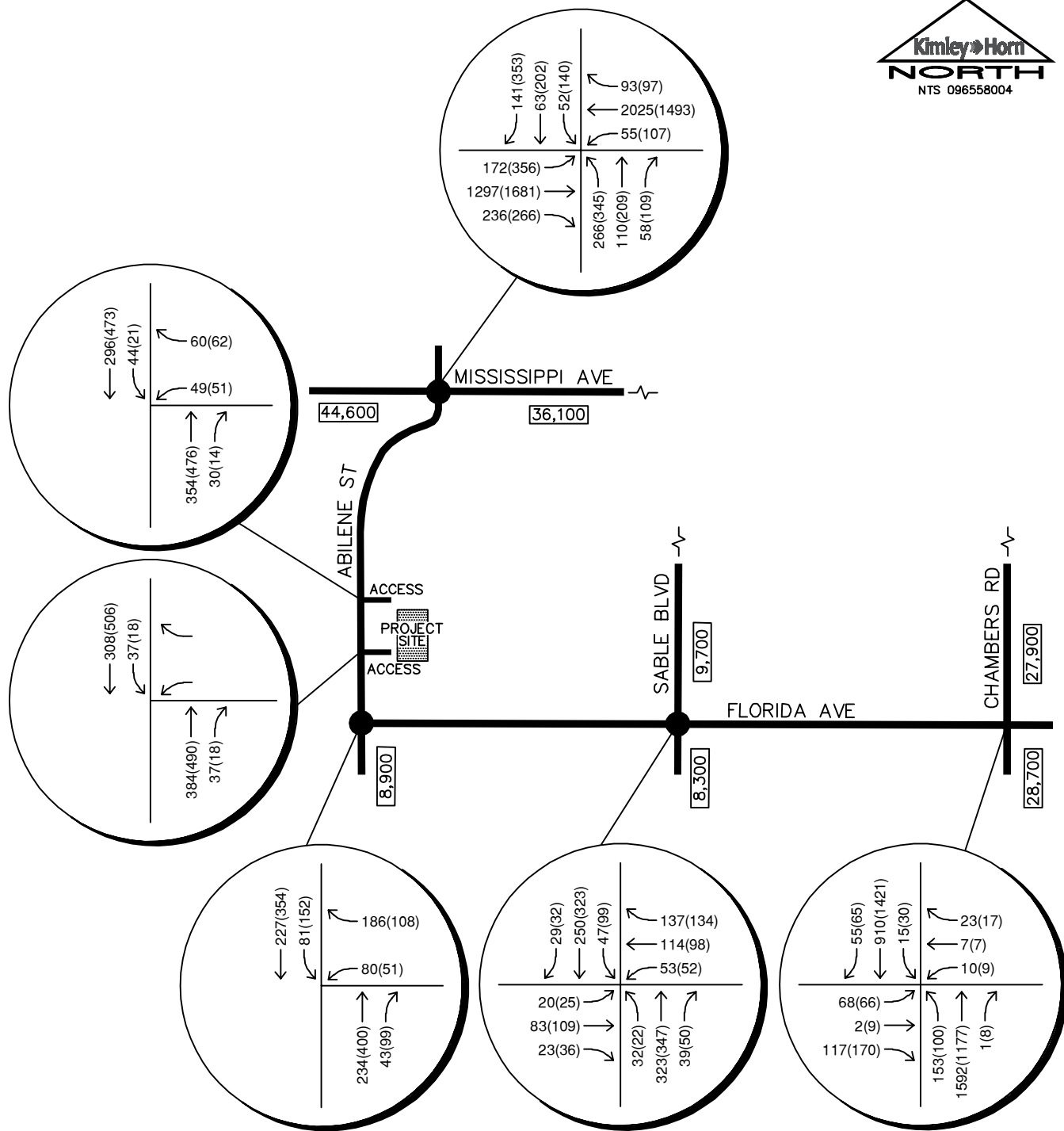


**LEGEND**

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

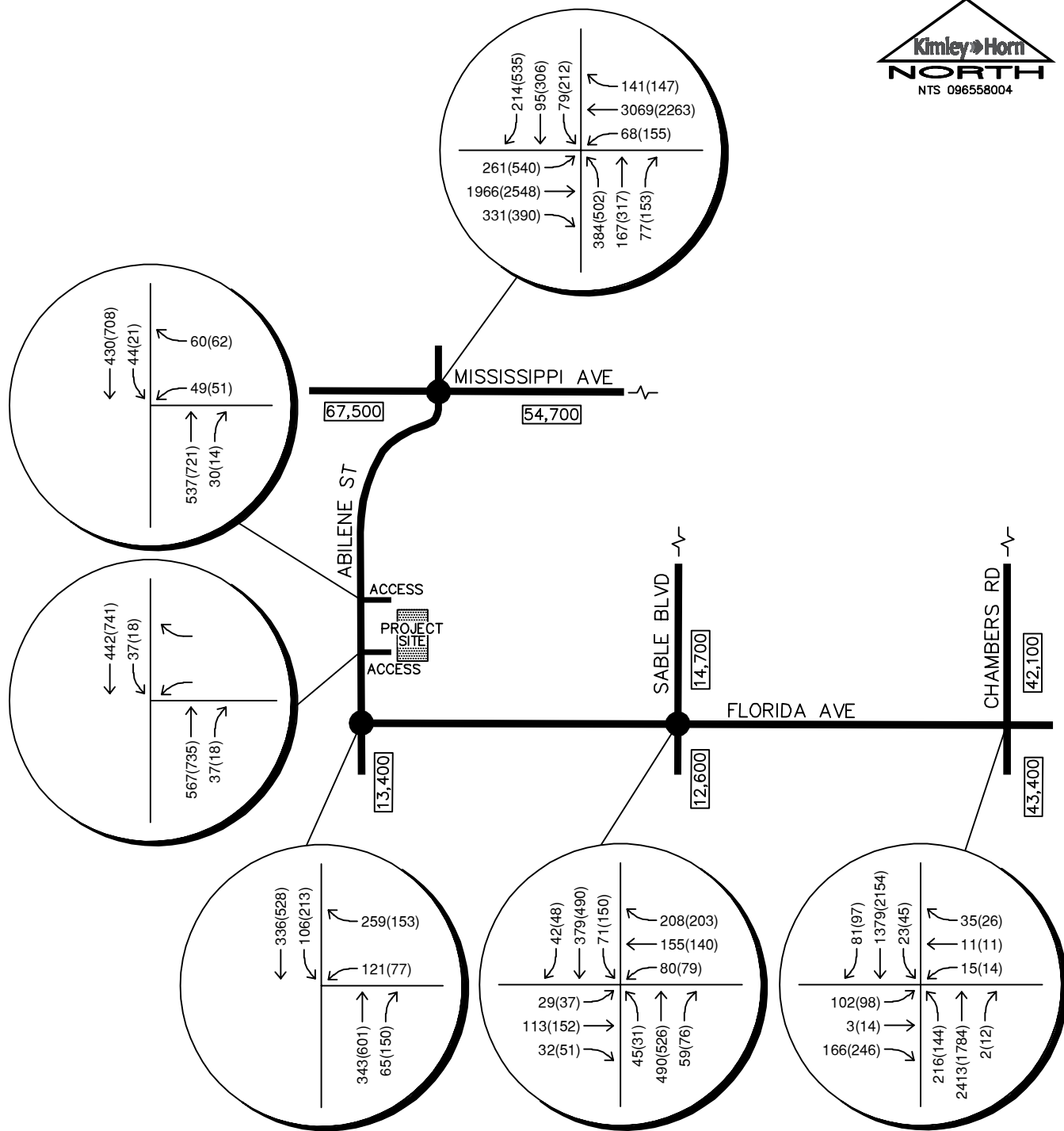
COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 PROJECT TRAFFIC ASSIGNMENT

FIGURE 7



COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 EXISTING PLUS  
 PROJECT TRAFFIC VOLUMES

FIGURE 8



**LEGEND**

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,xxx Estimated Daily Traffic Volume

COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 2040 BACKGROUND PLUS  
 PROJECT TRAFFIC VOLUMES

FIGURE 9

## 5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the existing and 2040 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*<sup>1</sup>.

### 5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice identifies overall LOS D for signalized intersections and LOS E for movements and approaches of unsignalized intersections as the minimum threshold for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

**Table 2 – Level of Service Definitions**

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service for a two-way stop-controlled intersection is not defined for the intersection as a whole. Level of service for a signalized and four-way stop controlled intersection is defined for each approach and for the intersection.

<sup>1</sup> Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.



## 5.2 Key Intersection Operational Analysis

Calculations for the level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 3**. The existing signalized intersection analyses utilize the observed cycle lengths with existing phasing and timing splits. Actual peak hour factors are also used in the analysis. The Synchro Highway Capacity Manual (HCM) methodology reports were used to analyze intersection delay and level of service.

### Abilene Street and Mississippi Avenue

The existing intersection of Mississippi Avenue and Abilene Street is signalized and operates with protected-only left turn phasing on all four approaches. With existing conditions, this intersection operates with a LOS C during the morning peak hour of generator and LOS D during the afternoon peak hour of generator.

With the existing lane configuration and control and the addition of project traffic, this intersection is anticipated to continue operating with LOS C during the morning peak hour of generator and LOS D during the afternoon peak hour of generator when the project is completed in the existing buildout year. During the 2040 long term horizon year, with or without the addition of school traffic, this intersection is anticipated to continue operating acceptably with a LOS D during peak hours of generator with the existing intersection configuration. **Table 3** provides the results of the level of service of this intersection.

**Table 3 – Abilene Street and Mississippi Avenue LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Existing	30.1	C	42.7	D
Existing Plus Project	30.5	C	44.8	D
2040 Background	40.1	D	51.3	D
2040 Background Plus Project	39.5	D	54.9	D

### Abilene Street and Florida Avenue

The existing T-intersection of Florida Avenue and Abilene Street is signalized and operates with permitted-only left turn phasing on the southbound approach. Under existing conditions, this intersection currently operates with LOS B or better during the morning and afternoon peak hours of generator. With the existing lane configuration and control and the addition of Aurora high school project traffic, this intersection is anticipated to continue operating acceptably with LOS B or better during the existing project buildout year as well as throughout the 2040 long term horizon. **Table 4** provides the results of the level of service at this intersection.

**Table 4 – Abilene Street and Florida Avenue LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Existing	16.1	B	8.8	A
Existing Plus Project	16.8	B	9.5	A
2040 Background	16.2	B	9.3	A
2040 Background Plus Project	16.9	B	10.9	B

### Sable Boulevard and Florida Avenue

The existing intersection of Florida Avenue and Sable Boulevard is signalized and operates with permitted-only left turn phasing on all four approaches. Under existing conditions, this intersection currently operates with LOS B during the peak hours of generator. With the existing lane configuration and control and the addition of Aurora high school project traffic, this intersection is anticipated to continue operating acceptably with LOS B during the existing project buildout year as well as throughout the 2040 long term horizon. **Table 5** provides the results of the level of service at this intersection.

**Table 5 – Sable Boulevard and Florida Avenue LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Existing	16.4	B	15.4	B
Existing Plus Project	16.6	B	15.7	B
2040 Background	16.5	B	16.0	B
2040 Background Plus Project	17.4	B	16.5	B

### Chambers Road and Florida Avenue

The existing intersection of Florida Avenue and Chambers Road is signalized and operates with permitted only left turn phasing on the eastbound, westbound, and southbound approaches and with protected-permitted left turn phasing on the northbound approach. Under existing conditions, this intersection currently operates with acceptable LOS A during the morning peak hour of generator and LOS B during the afternoon peak hour of generator.

With the addition of Aurora High School traffic, this intersection is anticipated to continue to operate acceptably during the existing project buildout year with LOS B or better, as well as throughout the 2040 long term horizon with LOS C or better. **Table 6** provides the results of the level of service at this intersection.

**Table 6 – Chambers Road and Florida Avenue LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Existing	7.8	A	11.3	B
Existing Plus Project	8.5	A	12.6	B
2040 Background	12.6	B	24.3	C
2040 Background Plus Project	14.0	B	27.9	C

### Abilene Street North Access

The northern full movement access T-intersection along Abilene Street is unsignalized and operates with stop control on the westbound access approach. This project access is located approximately 985 feet north of the Florida Avenue and Abilene Street intersection (measured center to center). A second student drop-off and pick-up area has been developed to decrease on-site vehicle queues and to encourage an equal distribution split of driveway entry use. The north project driveway will be designated to provide access to the west student drop-off/pick-up area. With this new plan, all exiting movements will utilize the north site driveway during the student drop-off and pick-up peak periods. With the existing configuration and control in the opening year as well as the long-term 2040 horizon, all movements at this access intersection are anticipated to operate with acceptable LOS during the peak hours of generator. One shared lane should be sufficient on the access approach for exiting school traffic. **Table 7** provides the results of the level of service at this intersection.

**Table 7 – Abilene Street North Access LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
<b>Existing Plus Project</b>				
Westbound Approach	11.4	B	12.9	B
Southbound Left	7.7	A	7.8	A
<b>2040 Background Plus Project</b>				
Westbound Approach	12.9	B	15.7	C
Southbound Left	8.0	A	8.1	A

### Abilene Street South Access

The southern full movement access T-intersection along Abilene Street is unsignalized and operates with stop control on the westbound access approach. This project access is located approximately 575 feet north of the Florida Avenue and Abilene Street intersection (measured center to center). With two designated student drop-off and pick-up areas, the south project driveway will be designated to provide access to the east student drop-off/pick-up area only. It is recommended that cross access from the west drop-off/pick-up area to the east drop-off/pick-up area be restricted; therefore, the southern access will be restricted from on-site parking during peak periods and be entrance only. With the existing configuration in the opening year as well as the long-term 2040 horizon, all movements at this access intersection are anticipated to operate with acceptable LOS during the peak hours of generator. One shared lane should be sufficient on the access approach for exiting school traffic. **Table 8** provides the results of the level of service at this intersection.

**Table 8 – Abilene Street South Access LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
<b>Existing Plus Project</b> Westbound Approach Southbound Left	- 7.8	- A	- 7.8	- A
<b>2040 Background Plus Project</b> Westbound Approach Southbound Left	- 8.0	- A	- 8.1	- A

### 5.3 Vehicle Queuing Analysis

Queuing analysis was conducted for the study area intersections per City of Aurora standards and requirements. Results were obtained from the 95<sup>th</sup> percentile queue lengths obtained from the Synchro analysis. Queue analysis worksheets at the signalized intersections are provided in **Appendix E**. Queue length calculations for unsignalized intersections are provided within the level of service operational sheets provided in **Appendix D**. Results of the queuing analysis and recommendations at the study area intersections are provided in **Table 9**. Of note, any queue lengths calculated at less than one vehicle were rounded up to 25 feet to account for one vehicle of storage needed.

**Table 9 – Turn Lane Queuing Analysis Results**

<b>Intersection Turn Lane</b>	<b>Existing Turn Lane Length (feet)</b>	<b>Existing Calculated Queue (feet)</b>	<b>Existing Recommended Length (feet)</b>	<b>2040 Calculated Queue (feet)</b>	<b>2040 Recommended Length (feet)</b>
<b>Mississippi Ave &amp; Abilene St</b>					
Eastbound Left	275'/325' DL	219'	275'/325' DL	365'	275'/450' DL
Westbound Left	150'	144'	150'	246'	150'
Northbound Left	300' DL	260'	300' DL	407'	300' DL
Southbound Left	175' DL	101'	175' DL	142'	175' DL
Southbound Right	175'	81'	175'	167'	175'
<b>Florida Ave &amp; Abilene St</b>					
Westbound Left	150'	90'	150'	134'	150'
Westbound Right	150'	48'	150'	70'	150'
Southbound Left	200'	43'	200'	90'	200'
<b>Florida Ave &amp; Sable Blvd</b>					
Eastbound Left	150'	30'	150'	47'	150'
Eastbound Right	150'	21'	150'	30'	150'
Westbound Left	150'	67'	150'	76'	150'
Westbound Right	150'	51'	150'	84'	150'
Northbound Left	100'	12'	100'	21'	100'
Southbound Left	100'	30'	100'	65'	100'
<b>Florida Ave &amp; Chambers Rd</b>					
Eastbound Left	100'	82'	100'	109'	125'
Westbound Left	75'	18'	75'	22'	75'
Northbound Left	250'	40'	250'	143'	250'
Southbound Left	100'	21'	100'	62'	100'
<b>Abilene St &amp; North Access</b>					
Southbound Left	75'	25'	75'	25'	75'
<b>Abilene St &amp; South Access</b>					
Southbound Left	150'	25'	150'	25'	150'

DL = Dual Left Turn Lanes

As shown in the table representing the queuing results, all anticipated queues are accommodated or managed within existing turn bay lengths with project traffic in the existing project build out year. All anticipated queues are accommodated or managed within the existing turn bay lengths with project traffic throughout the 2040 long term horizon with the exception of the northbound and eastbound left turn lanes at the intersection of Mississippi Avenue and Abilene Street and the eastbound left turn lane at the intersection of Florida Avenue and Chambers Road.

By 2040, the northbound and eastbound left turn storage lengths at the intersection of Mississippi Avenue and Abilene Street may not accommodate project traffic volume queues. The existing outside 325-foot eastbound left turn lane of the dual lefts could be extended to 450 feet. However, the existing northbound dual left turn lanes are designated to their full length due to the full movement driveway for the Abilene Street Market located along the west side of

Abilene Street. Of note, the outside left turn of the dual left turn lanes is a continuous lane from the inside northbound through lane along Abilene Street, so the left turns will not block northbound through traffic.

Also by 2040, the 100-foot eastbound left turn lane at the intersection of Florida Avenue and Chambers Road may need to be restriped to include 125 feet of length. If this need occurs, it is recommended that on street parking in this area be further restricted to allow for improved through and right turning movements on the eastbound approach.

#### **5.4 Student Drop-off and Pick-up Vehicle Queuing Analysis**

The student pick-up queues were calculated based on data collected from urban charter schools in highly populated urban areas of North Carolina. Based on the student drop-off/pick-up vehicle queuing analysis with an expected 71 vehicles arriving during the afternoon peak hour, approximately 775 feet of vehicle stacking should be provided in order to accommodate the anticipated vehicle demands. The urban charter school vehicle queuing calculation worksheet is provided in **Appendix E**.

A second student drop-off and pick-up area has been developed to decrease on-site vehicle queues and to encourage an even distribution split of driveway entry use. This second drop-off and pick-up area will be west of, and extend parallel to, the drive aisle that is immediately west of the school building. The south project driveway will be designated to provide access to the east student drop-off/pick-up area while the north project driveway will be designated to provide access to the west student drop-off/pick-up area. It is recommended that cross access from the west drop-off/pick-up area to the east drop-off/pick-up area be restricted. The northern access being more convenient for the parking area will help evenly distribute the entry use of both site driveways. With this new plan, all exiting movements will utilize the north site driveway during the peak period. Vehicles will face north while dropping off and picking up students. This will allow for students to be dropped off and picked up with the passenger side of the vehicle being adjacent to the school building. Vehicles will then exit the north project driveway after dropping off or picking up students. A concept student drop-off/pick-up circulation sketch is provided in **Appendix F**.

The east student drop-off/pick-up area provides approximately 750 feet of onsite vehicle queue length while there is approximately 550 feet of onsite queue length designated at the west student drop-off/pick-up area. Therefore, the proposed 1,300 feet of onsite vehicle stacking designated for student drop-off/pick-up should accommodate the calculated 775 feet of onsite queue demands for student pick-up. Although not expected to occur, the school could stagger bell times if vehicles queues become longer than forecasted.

### **5.5 Pedestrian Connection Analysis**

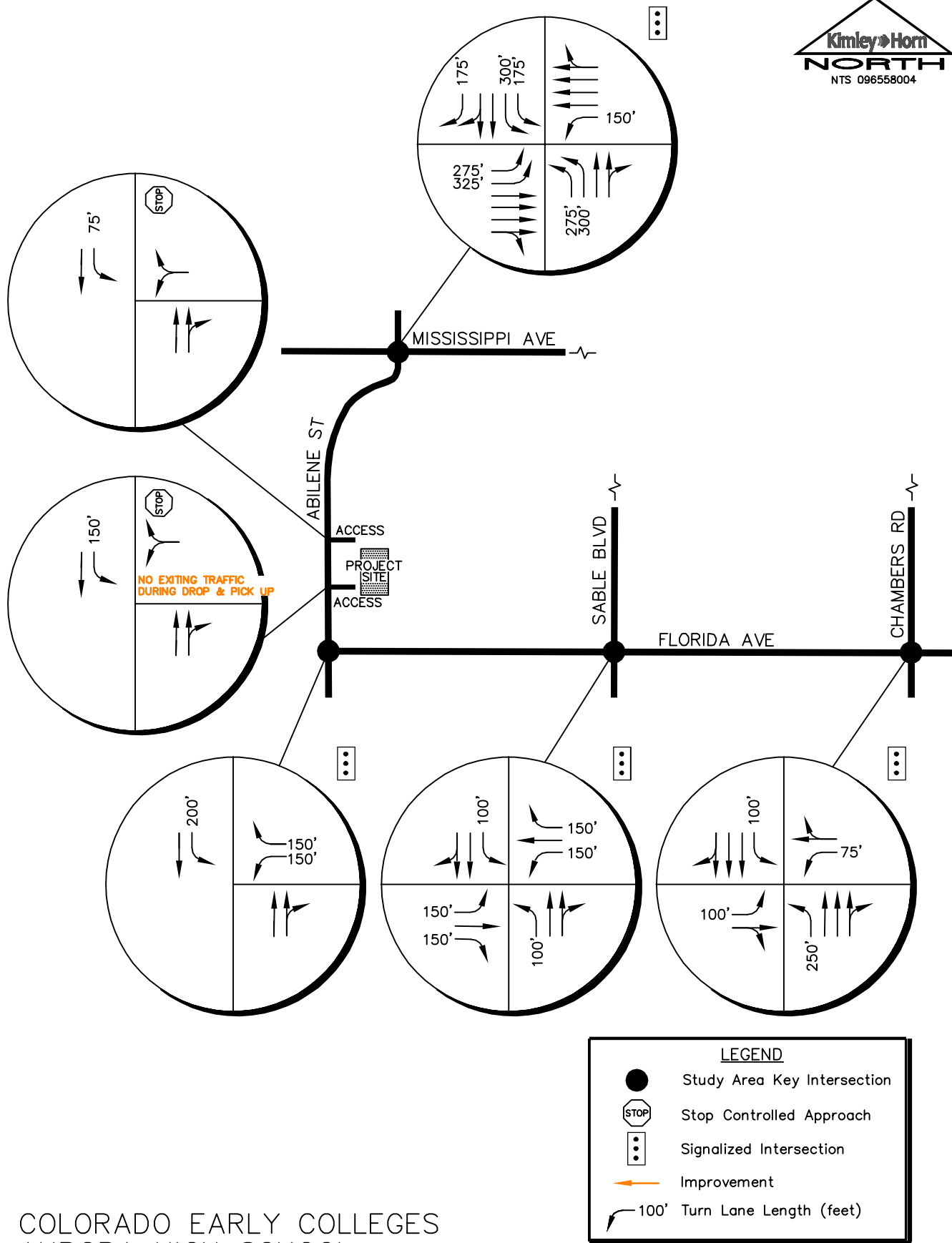
Existing sidewalk exists along both sides of Florida Avenue between Chambers Road and Abilene Street. This sidewalk connects from the proposed school site to the residential neighborhoods to the east. Likewise, there are designated, and signed crosswalks located at the Florida Avenue and Chambers Road Intersection. These sidewalks and crosswalks provide pedestrian access to the residential neighborhoods to the north, east, and south of the proposed school site.

A sidewalk currently exists along the east side of Abilene Street. This sidewalk provides access from the proposed school location to the nearby light rail station. The Florida RTD Station is within a 0.2-mile walk from the proposed high school site and can be accessed using the designated crosswalks located at the south and east legs of the Florida Avenue and Abilene Street intersection. Students will receive bus and light rail passes in order to go from the high school to community colleges located off campus. Students can also access the existing pedestrian bridge located at the Florida Station in order to safely cross I-225 and access residential neighborhoods located to the west. Therefore, it is believed that acceptable pedestrian connections are available for the proposed school.

### **5.6 Improvements Summary**

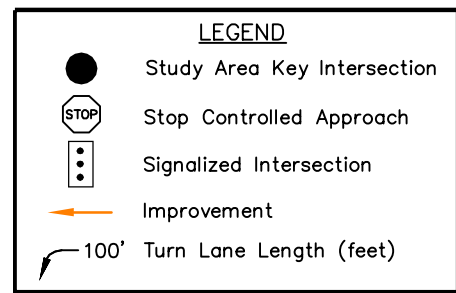
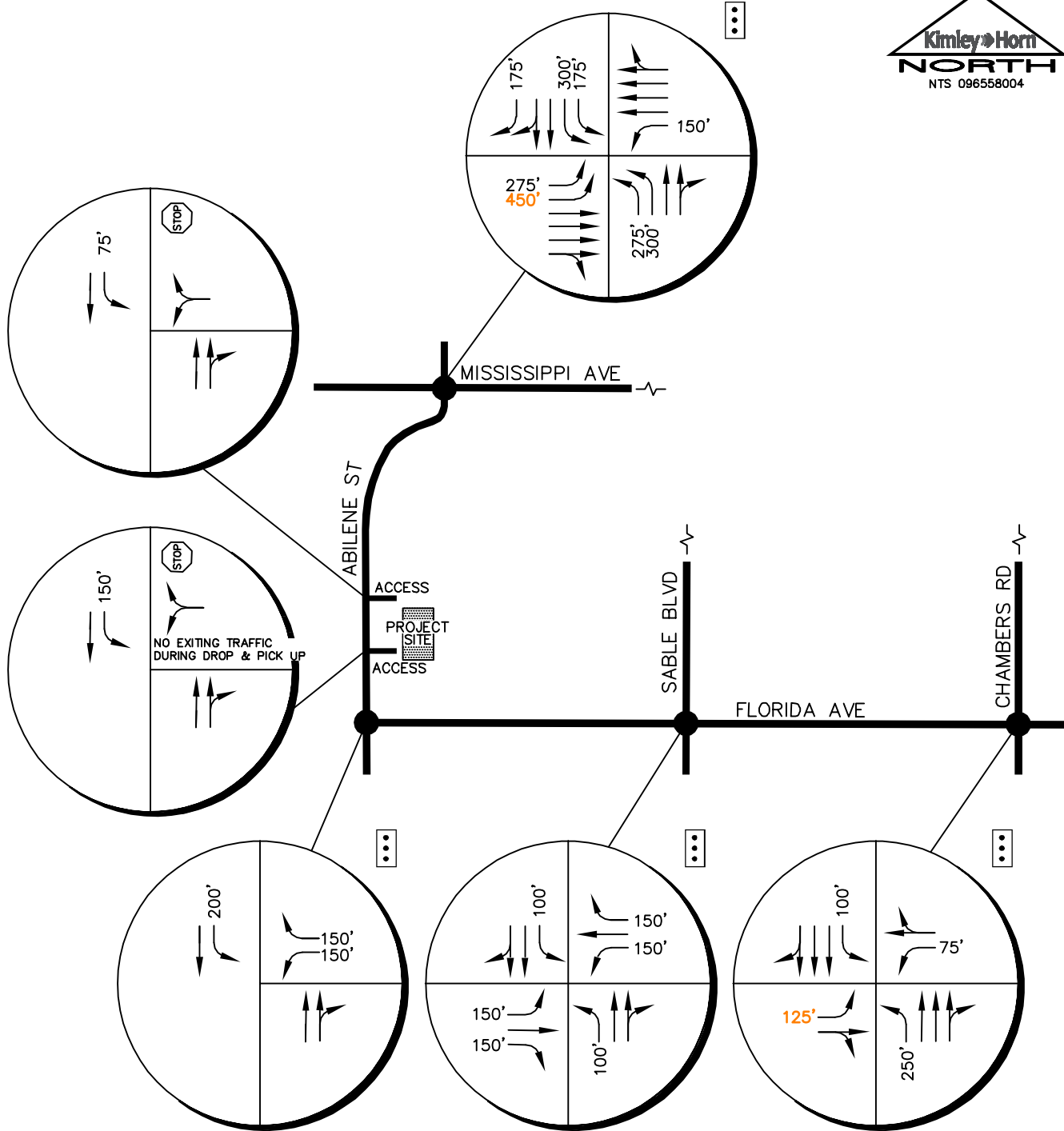
Based on the results of the intersection operational and queuing analysis, the key intersection recommended improvements and control are shown in **Figure 10** for the existing buildout year and **Figure 11** for the 2040 horizon.





COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 EXISTING RECOMMENDED  
 LANE CONFIGURATIONS AND CONTROL

FIGURE 10



COLORADO EARLY COLLEGES  
 AURORA HIGH SCHOOL  
 2040 RECOMMENDED  
 LANE CONFIGURATIONS AND CONTROL

FIGURE 11

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

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Based on the analysis presented in this report, Kimley-Horn believes the relocation of the CEC Aurora High School, proposed within the existing building at 1400 South Abilene Street in Aurora, Colorado will be successfully incorporated into the existing and future roadway network. The proposed project development resulted in the following recommendations and conclusions:

- The proposed CEC Aurora High School will utilize the two existing project accesses along Abilene Street located approximately 985 feet and 575 feet north of the Florida Avenue and Abilene Street intersection (measured center to center). A single approach lane, as exists today, is anticipated to be sufficient at the existing access approaches for exiting school traffic.
- To encourage equal use of both site driveways and to reduced on-site vehicle queues, it is recommended that a second student drop-off and pick-up area be implemented. This second drop-off and pick-up area to be accessed from the north driveway will be west of, and extend parallel to, the drive aisle that is immediately west of the school building. The south project driveway will be designated to provide access to the east student drop-off/pick-up area while the north project driveway will be designated to provide access to the west student drop-off/pick-up area. It is recommended that cross access from the west drop-off/pick-up area to the east drop-off/pick-up area be restricted; therefore, the southern access will be restricted from on-site parking during peak periods and be entrance only. The northern access being more convenient for the parking area will help evenly distribute the entry use of both site driveways. With this new plan, all exiting movements will utilize the north site driveway during the peak period. Vehicles will face north while dropping off and picking up students. This will allow for students to be dropped off and picked up with the passenger side of the vehicle being adjacent to the school building. Vehicles will then exit the north project driveway after dropping off or picking up students.
- The west student drop-off/pick-up area provides approximately 750 feet of onsite vehicle queue length accessed from the northern driveway while there is approximately 550 feet of onsite queue length designated at the east student drop-off/pick-up area accessed from the southern driveway. Therefore, the proposed 1,300 feet of onsite vehicle stacking designated

for student drop-off/pick-up should accommodate the calculated 775 feet of onsite queue demands for student pick-up.

- By 2040, the northbound and eastbound left turn storage lengths at the intersection of Mississippi Avenue and Abilene Street may not accommodate project traffic volume queues. The existing outside 325-foot eastbound left turn lane of the dual lefts could be extended to 450 feet. However, the existing northbound dual left turn lanes are designated to their full length due to the full movement driveway for the Abilene Street Market located along the west side of Abilene Street. Of note, the outside left turn of the dual left turn lanes is a continuous lane from the inside northbound through lane along Abilene Street, so the left turns will not block northbound through traffic.
- Also by 2040, the 100-foot eastbound left turn lane at the intersection of Florida Avenue and Chambers Road may need to be restriped to include 125 feet of length. If this need occurs, it is recommended that on street parking in this area be further restricted to allow for improved through and right turning movements on the eastbound approach.
- All on-site improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora, The Colorado Department of Transportation (CDOT), and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

# APPENDICES

# APPENDIX A

## Intersection Count Sheets



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Mississippi Ave and Abilene St

File Name : Mississippi and Abilene AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

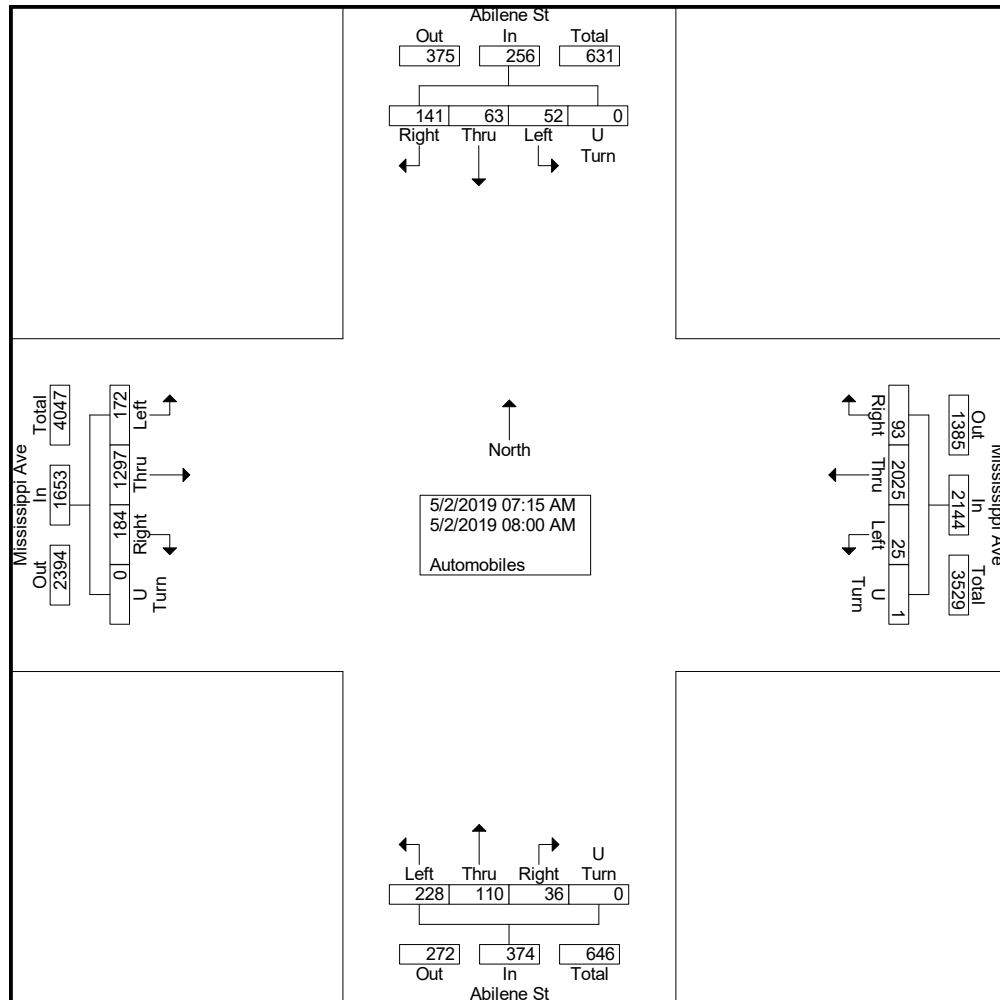
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07:15 AM	31	334	34	0	399	7	528	21	0	556	43	17	11	0	71	13	14	26	0	53	1079
07:30 AM	55	306	48	0	409	6	544	24	1	575	72	39	8	0	119	17	13	34	0	64	1167
07:45 AM	36	358	65	0	459	8	545	31	0	584	58	27	9	0	94	8	20	40	0	68	1205
Total	122	998	147	0	1267	21	1617	76	1	1715	173	83	28	0	284	38	47	100	0	185	3451
08:00 AM	50	299	37	0	386	4	408	17	0	429	55	27	8	0	90	14	16	41	0	71	976
Grand Total	172	1297	184	0	1653	25	2025	93	1	2144	228	110	36	0	374	52	63	141	0	256	4427
Apprch %	10.4	78.5	11.1	0		1.2	94.4	4.3	0		61	29.4	9.6	0		20.3	24.6	55.1	0		
Total %	3.9	29.3	4.2	0	37.3	0.6	45.7	2.1	0	48.4	5.2	2.5	0.8	0	8.4	1.2	1.4	3.2	0	5.8	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Mississippi Ave and Abilene St

File Name : Mississippi and Abilene AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2





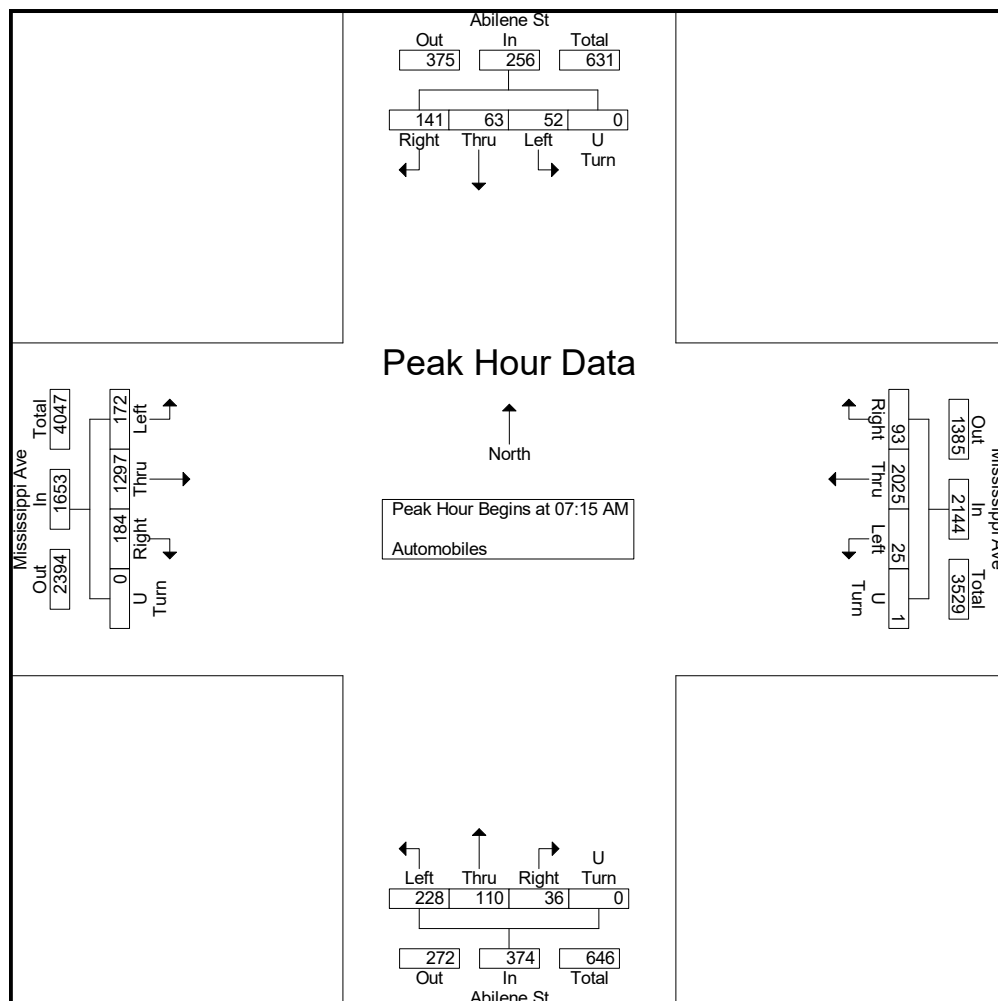


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Mississippi Ave and Abilene St

File Name : Mississippi and Abilene AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Mississippi Ave Eastbound					Mississippi Ave Westbound					Abilene St Northbound					Abilene St Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	31	334	34	0	399	7	528	21	0	556	43	17	11	0	71	13	14	26	0	53	1079
07:30 AM	55	306	48	0	409	6	544	24	1	575	72	39	8	0	119	17	13	34	0	64	1167
07:45 AM	36	358	65	0	459	8	545	31	0	584	58	27	9	0	94	8	20	40	0	68	1205
08:00 AM	50	299	37	0	386	4	408	17	0	429	55	27	8	0	90	14	16	41	0	71	976
Total Volume	172	1297	184	0	1653	25	2025	93	1	2144	228	110	36	0	374	52	63	141	0	256	4427
% App. Total	10.4	78.5	11.1	0		1.2	94.4	4.3	0		61	29.4	9.6	0		20.3	24.6	55.1	0		
PHF	.782	.906	.708	.000	.900	.781	.929	.750	.250	.918	.792	.705	.818	.000	.786	.765	.788	.860	.000	.901	.918





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Mississippi Ave and Abilene St

File Name : Mississippi and Abilene PM  
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Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

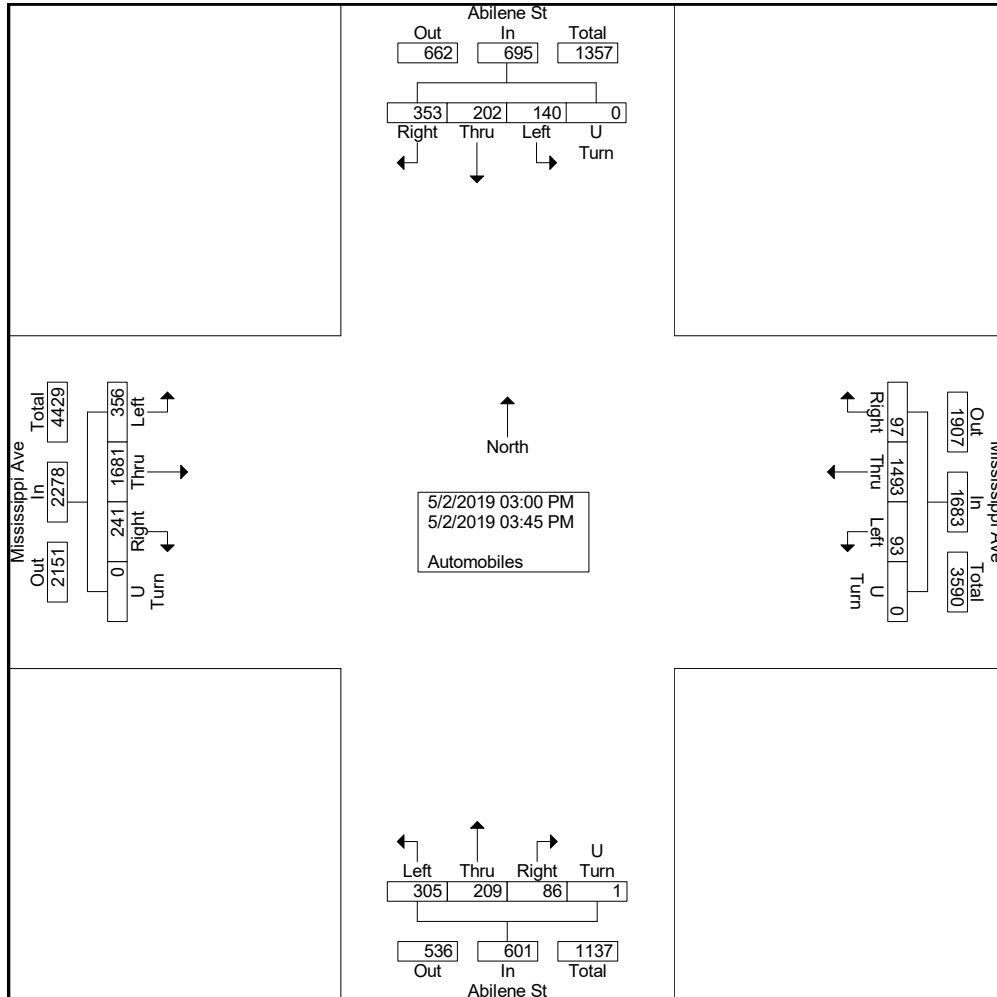
	Mississippi Ave Eastbound					Mississippi Ave Westbound					Abilene St Northbound					Abilene St Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
03:00 PM	87	404	59	0	550	20	310	22	0	352	78	56	15	1	150	28	43	93	0	164	1216
03:15 PM	100	467	66	0	633	18	360	19	0	397	94	57	22	0	173	39	37	87	0	163	1366
03:30 PM	72	409	52	0	533	35	427	31	0	493	61	46	30	0	137	26	70	84	0	180	1343
03:45 PM	97	401	64	0	562	20	396	25	0	441	72	50	19	0	141	47	52	89	0	188	1332
Total	356	1681	241	0	2278	93	1493	97	0	1683	305	209	86	1	601	140	202	353	0	695	5257
Grand Total	356	1681	241	0	2278	93	1493	97	0	1683	305	209	86	1	601	140	202	353	0	695	5257
Apprch %	15.6	73.8	10.6	0		5.5	88.7	5.8	0		50.7	34.8	14.3	0.2		20.1	29.1	50.8	0		
Total %	6.8	32	4.6	0	43.3	1.8	28.4	1.8	0	32	5.8	4	1.6	0	11.4	2.7	3.8	6.7	0	13.2	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Mississippi Ave and Abilene St

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Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



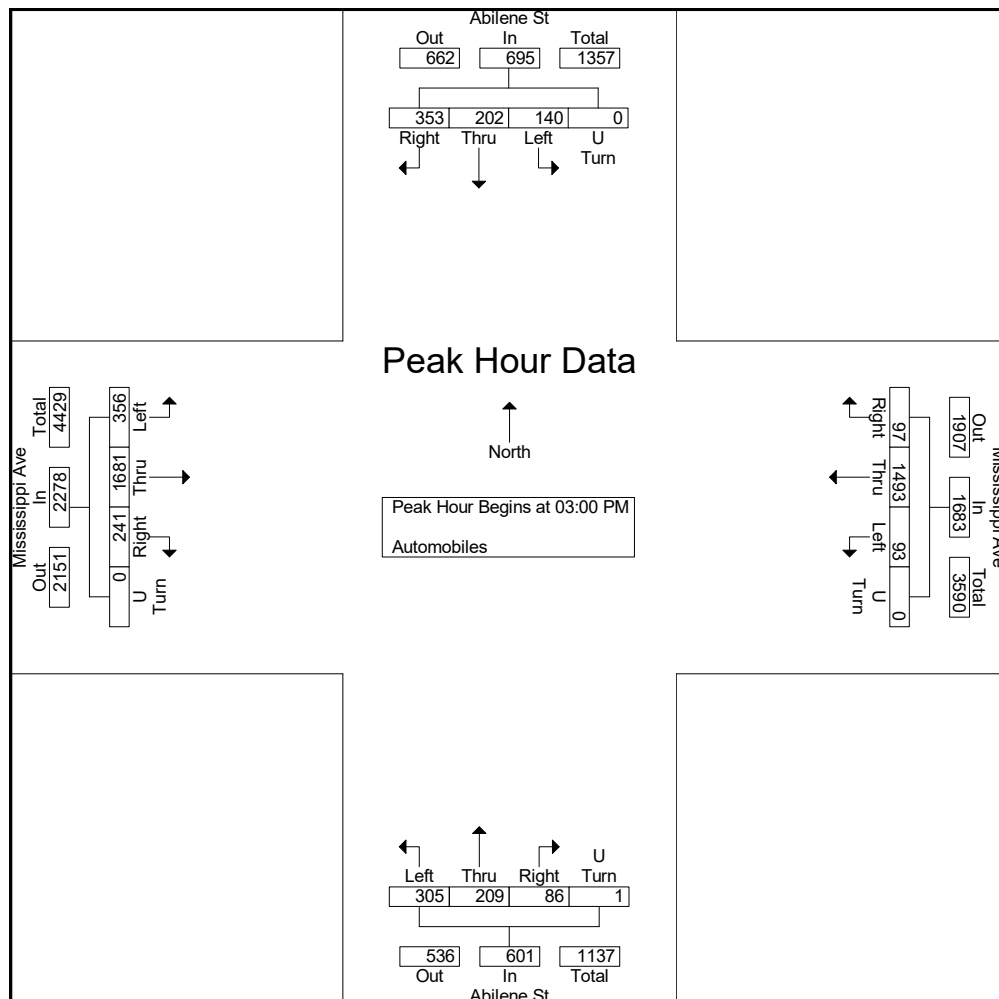


Ridgeview Data  
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Aurora, CO  
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Mississippi Ave and Abilene St

File Name : Mississippi and Abilene PM  
Site Code : IPO 433  
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	Mississippi Ave Eastbound					Mississippi Ave Westbound					Abilene St Northbound					Abilene St Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	87	404	59	0	550	20	310	22	0	352	78	56	15	1	150	28	43	93	0	164	1216
03:15 PM	100	467	66	0	633	18	360	19	0	397	94	57	22	0	173	39	37	87	0	163	1366
03:30 PM	72	409	52	0	533	35	427	31	0	493	61	46	30	0	137	26	70	84	0	180	1343
03:45 PM	97	401	64	0	562	20	396	25	0	441	72	50	19	0	141	47	52	89	0	188	1332
Total Volume	356	1681	241	0	2278	93	1493	97	0	1683	305	209	86	1	601	140	202	353	0	695	5257
% App. Total	15.6	73.8	10.6	0		5.5	88.7	5.8	0		50.7	34.8	14.3	0.2		20.1	29.1	50.8	0		
PHF	.890	.900	.913	.000	.900	.664	.874	.782	.000	.853	.811	.917	.717	.250	.868	.745	.721	.949	.000	.924	.962





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Abilene St

File Name : Florida and Abilene AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

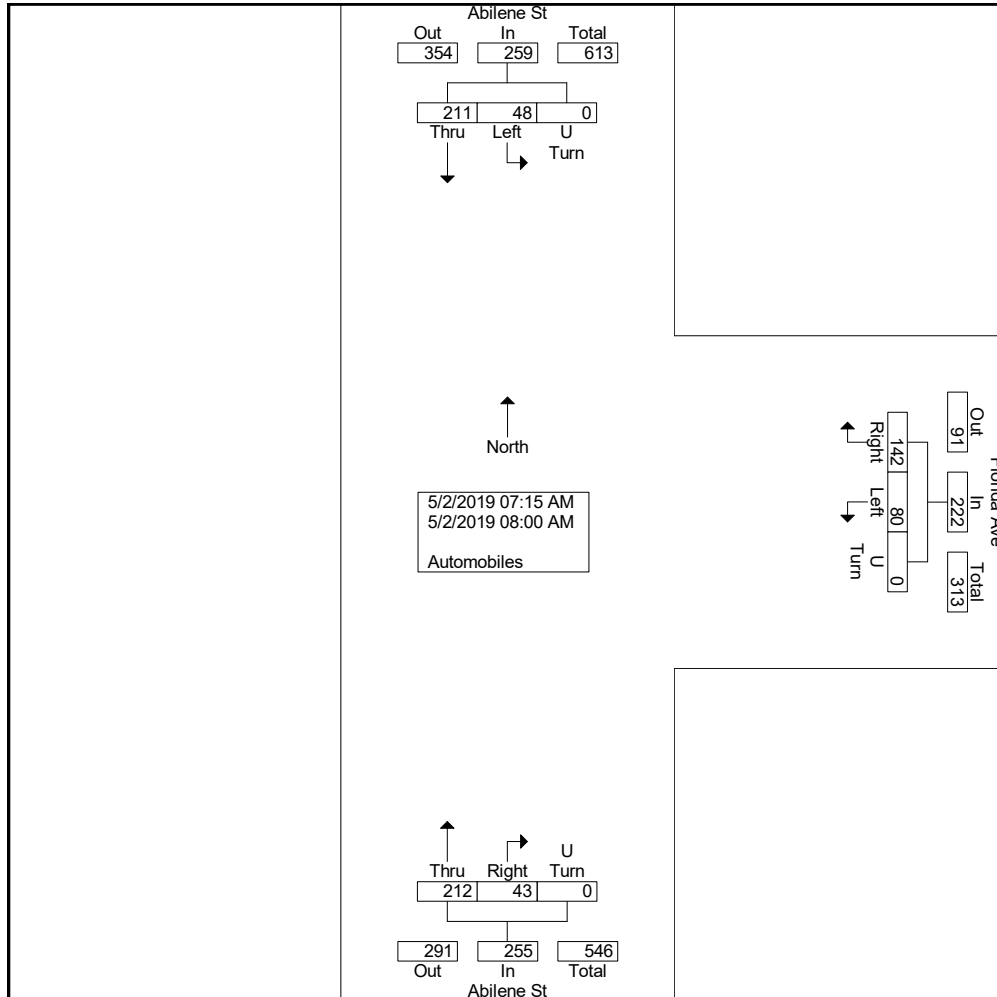
Start Time	Florida Ave Westbound				Abilene St Northbound				Abilene St Southbound				Int. Total
	Left	Right	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Thru	U Turn	App. Total	
07:15 AM	29	38	0	67	38	8	0	46	10	42	0	52	165
07:30 AM	20	48	0	68	59	13	0	72	11	52	0	63	203
07:45 AM	17	27	0	44	70	10	0	80	12	81	0	93	217
Total	66	113	0	179	167	31	0	198	33	175	0	208	585
08:00 AM	14	29	0	43	45	12	0	57	15	36	0	51	151
Grand Total	80	142	0	222	212	43	0	255	48	211	0	259	736
Apprch %	36	64	0		83.1	16.9	0		18.5	81.5	0		
Total %	10.9	19.3	0	30.2	28.8	5.8	0	34.6	6.5	28.7	0	35.2	



Ridgeview Data  
Collection

Aurora, CO  
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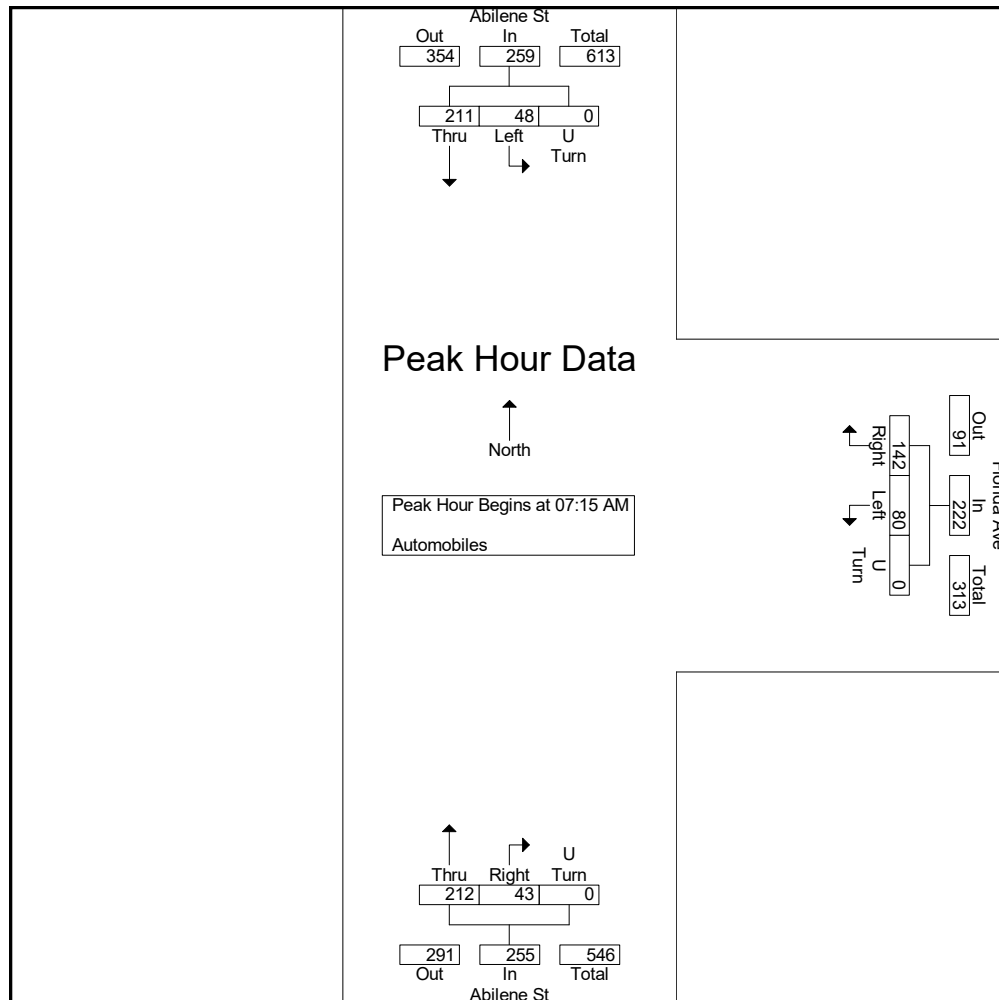


Ridgeview Data  
Collection

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CEC Aurora High School  
AM Peak  
Florida Ave and Abilene St

File Name : Florida and Abilene AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Westbound				Abilene St Northbound				Abilene St Southbound				
Start Time	Left	Right	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Thru	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	29	38	0	67	38	8	0	46	10	42	0	52	165
07:30 AM	20	48	0	68	59	13	0	72	11	52	0	63	203
07:45 AM	17	27	0	44	70	10	0	80	12	81	0	93	217
08:00 AM	14	29	0	43	45	12	0	57	15	36	0	51	151
Total Volume	80	142	0	222	212	43	0	255	48	211	0	259	736
% App. Total	36	64	0		83.1	16.9	0		18.5	81.5	0		
PHF	.690	.740	.000	.816	.757	.827	.000	.797	.800	.651	.000	.696	.848





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Abilene St

File Name : Florida and Abilene PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

Start Time	Florida Ave Westbound				Abilene St Northbound				Abilene St Southbound				Int. Total
	Left	Right	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Thru	U Turn	App. Total	
03:00 PM	17	22	0	39	99	20	0	119	27	82	0	109	267
03:15 PM	13	17	0	30	105	28	0	133	26	79	0	105	268
03:30 PM	9	23	0	32	97	19	0	116	34	89	0	123	271
03:45 PM	12	25	0	37	88	32	0	120	31	87	0	118	275
Total	51	87	0	138	389	99	0	488	118	337	0	455	1081
Grand Total	51	87	0	138	389	99	0	488	118	337	0	455	1081
Apprch %	37	63	0		79.7	20.3	0		25.9	74.1	0		
Total %	4.7	8	0	12.8	36	9.2	0	45.1	10.9	31.2	0	42.1	

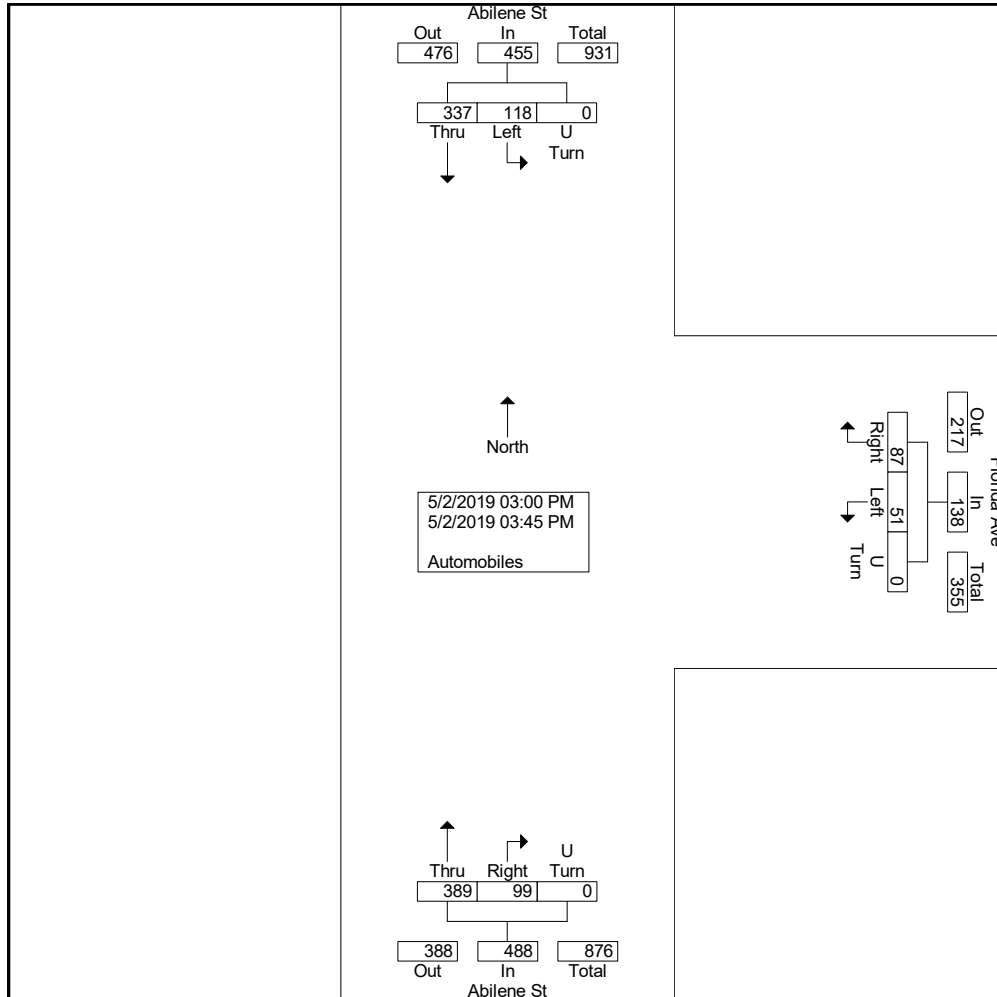




Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Abilene St

File Name : Florida and Abilene PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



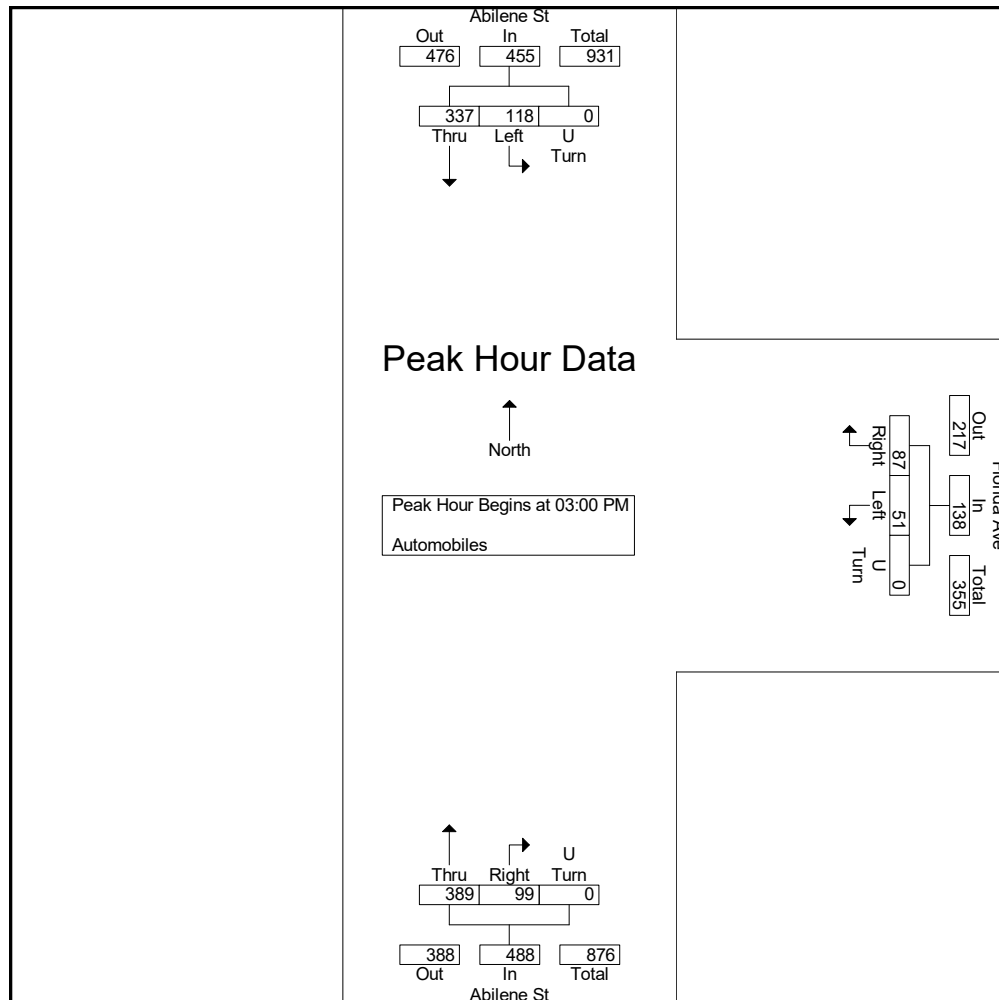


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Abilene St

File Name : Florida and Abilene PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Westbound				Abilene St Northbound				Abilene St Southbound				
Start Time	Left	Right	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Thru	U Turn	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	17	22	0	39	99	20	0	119	27	82	0	109	267
03:15 PM	13	17	0	30	105	28	0	133	26	79	0	105	268
03:30 PM	9	23	0	32	97	19	0	116	34	89	0	123	271
03:45 PM	12	25	0	37	88	32	0	120	31	87	0	118	275
Total Volume	51	87	0	138	389	99	0	488	118	337	0	455	1081
% App. Total	37	63	0		79.7	20.3	0		25.9	74.1	0		
PHF	.750	.870	.000	.885	.926	.773	.000	.917	.868	.947	.000	.925	.983





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

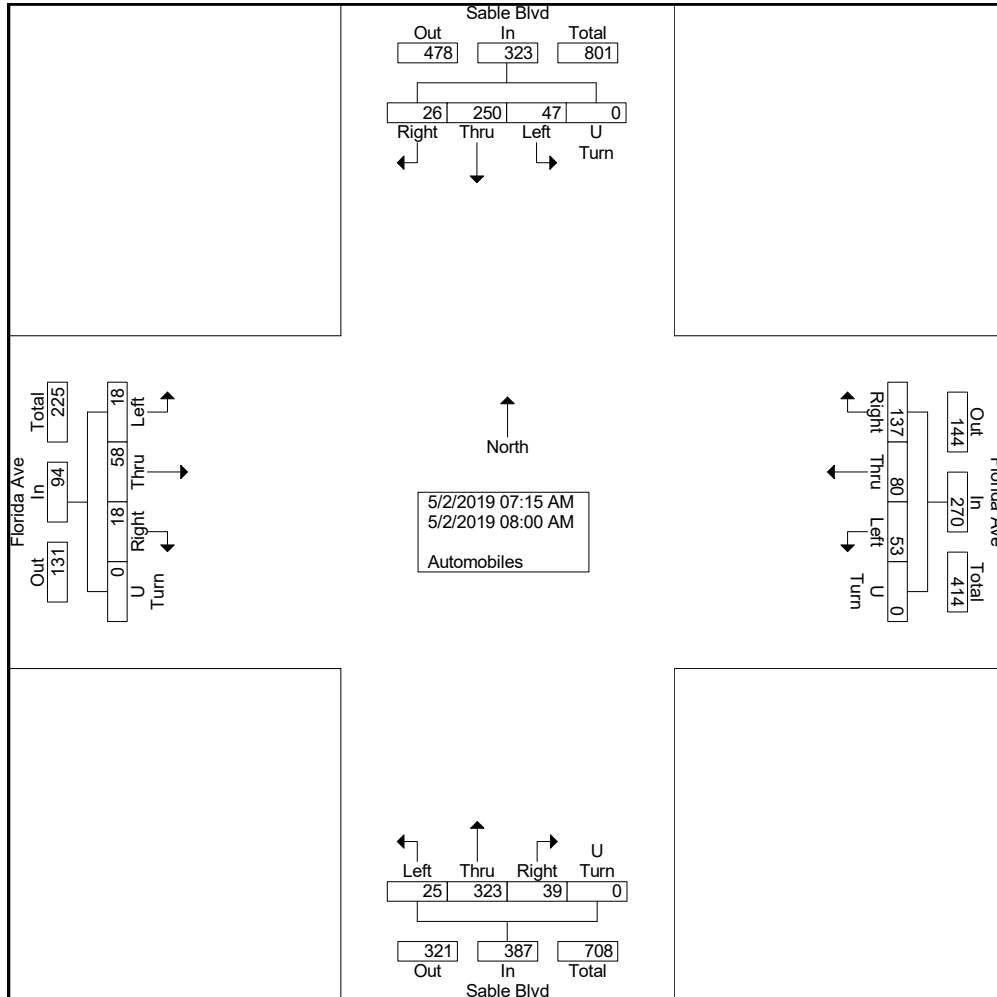
	Florida Ave Eastbound					Florida Ave Westbound					Sable Blvd Northbound					Sable Blvd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
07:15 AM	8	14	5	0	27	15	23	47	0	85	5	97	11	0	113	16	57	9	0	82	307
07:30 AM	3	17	4	0	24	11	20	36	0	67	11	78	9	0	98	11	79	4	0	94	283
07:45 AM	0	18	4	0	22	17	21	27	0	65	2	80	12	0	94	8	63	7	0	78	259
Total	11	49	13	0	73	43	64	110	0	217	18	255	32	0	305	35	199	20	0	254	849
08:00 AM	7	9	5	0	21	10	16	27	0	53	7	68	7	0	82	12	51	6	0	69	225
Grand Total	18	58	18	0	94	53	80	137	0	270	25	323	39	0	387	47	250	26	0	323	1074
Apprch %	19.1	61.7	19.1	0		19.6	29.6	50.7	0		6.5	83.5	10.1	0		14.6	77.4	8	0		
Total %	1.7	5.4	1.7	0	8.8	4.9	7.4	12.8	0	25.1	2.3	30.1	3.6	0	36	4.4	23.3	2.4	0	30.1	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



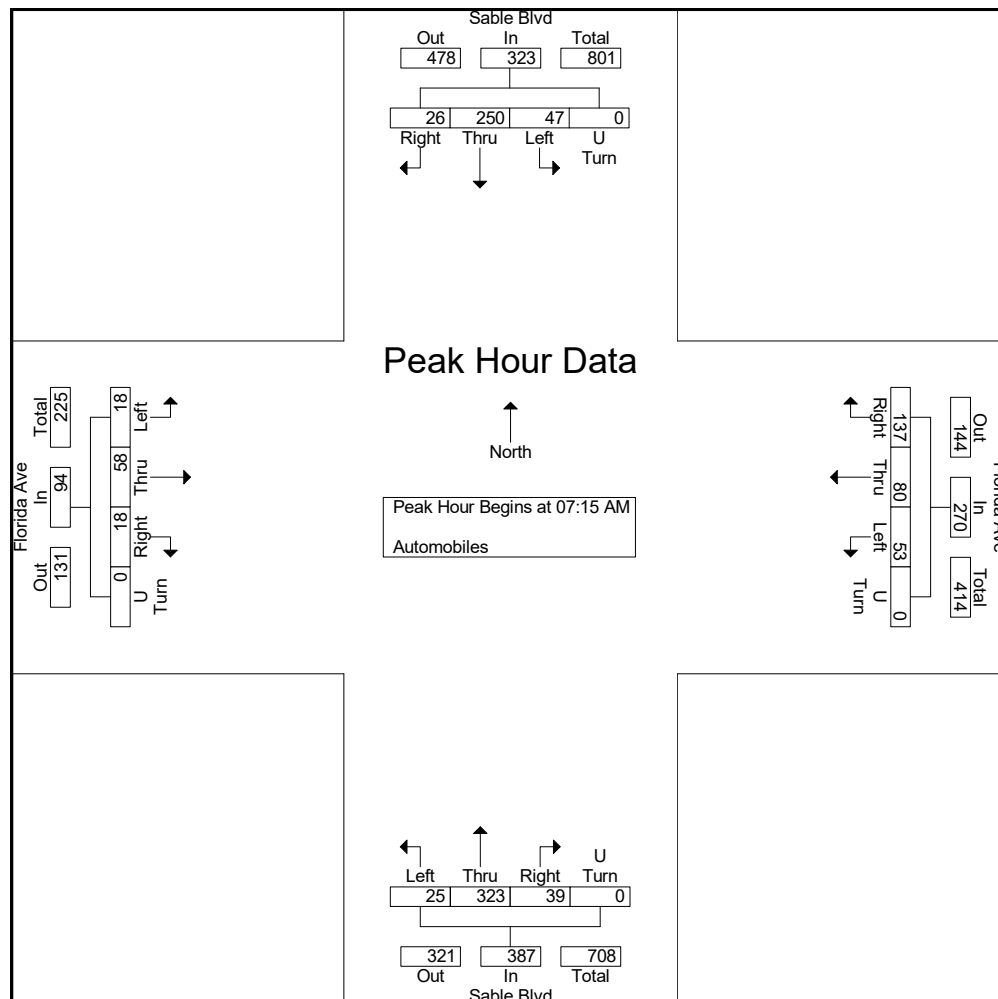


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Eastbound					Florida Ave Westbound					Sable Blvd Northbound					Sable Blvd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	8	14	5	0	27	15	23	47	0	85	5	97	11	0	113	16	57	9	0	82	307
07:30 AM	3	17	4	0	24	11	20	36	0	67	11	78	9	0	98	11	79	4	0	94	283
07:45 AM	0	18	4	0	22	17	21	27	0	65	2	80	12	0	94	8	63	7	0	78	259
08:00 AM	7	9	5	0	21	10	16	27	0	53	7	68	7	0	82	12	51	6	0	69	225
Total Volume	18	58	18	0	94	53	80	137	0	270	25	323	39	0	387	47	250	26	0	323	1074
% App. Total	19.1	61.7	19.1	0		19.6	29.6	50.7	0		6.5	83.5	10.1	0		14.6	77.4	8	0		
PHF	.563	.806	.900	.000	.870	.779	.870	.729	.000	.794	.568	.832	.813	.000	.856	.734	.791	.722	.000	.859	.875





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

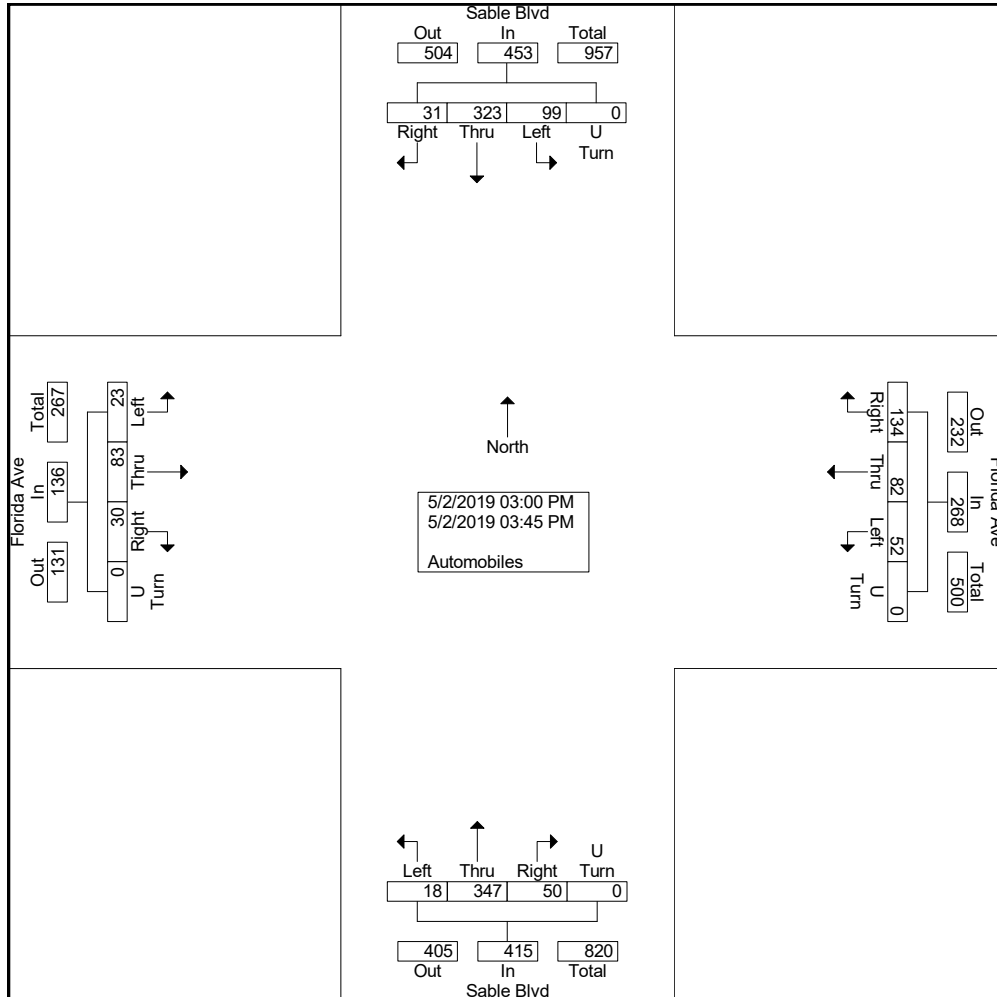
	Florida Ave Eastbound					Florida Ave Westbound					Sable Blvd Northbound					Sable Blvd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
03:00 PM	4	19	7	0	30	10	19	31	0	60	6	85	9	0	100	16	65	7	0	88	278
03:15 PM	2	24	7	0	33	18	19	41	0	78	5	89	16	0	110	23	82	9	0	114	335
03:30 PM	13	17	6	0	36	17	26	34	0	77	4	88	12	0	104	41	95	9	0	145	362
03:45 PM	4	23	10	0	37	7	18	28	0	53	3	85	13	0	101	19	81	6	0	106	297
Total	23	83	30	0	136	52	82	134	0	268	18	347	50	0	415	99	323	31	0	453	1272
Grand Total	23	83	30	0	136	52	82	134	0	268	18	347	50	0	415	99	323	31	0	453	1272
Apprch %	16.9	61	22.1	0		19.4	30.6	50	0		4.3	83.6	12	0		21.9	71.3	6.8	0		
Total %	1.8	6.5	2.4	0	10.7	4.1	6.4	10.5	0	21.1	1.4	27.3	3.9	0	32.6	7.8	25.4	2.4	0	35.6	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



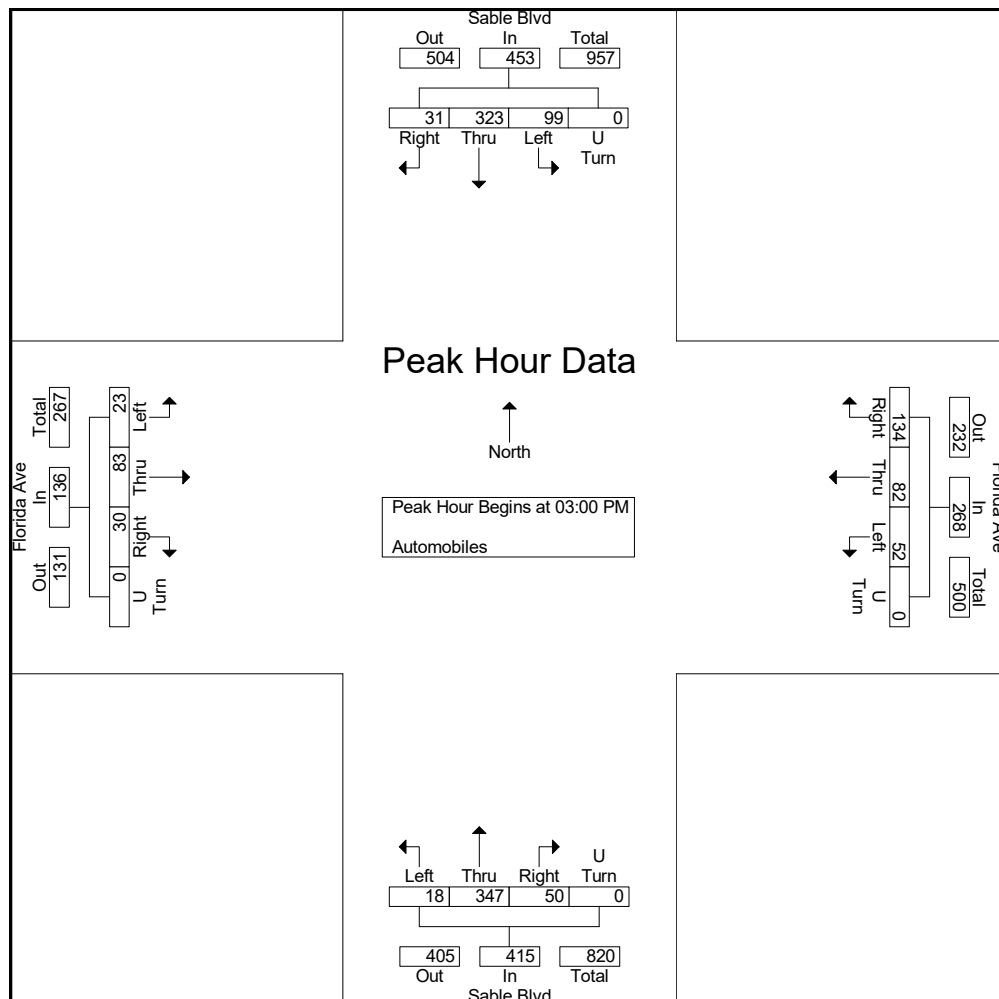


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Sable Blvd

File Name : Florida and Sable PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Eastbound					Florida Ave Westbound					Sable Blvd Northbound					Sable Blvd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	4	19	7	0	30	10	19	31	0	60	6	85	9	0	100	16	65	7	0	88	278
03:15 PM	2	24	7	0	33	18	19	41	0	78	5	89	16	0	110	23	82	9	0	114	335
03:30 PM	13	17	6	0	36	17	26	34	0	77	4	88	12	0	104	41	95	9	0	145	362
03:45 PM	4	23	10	0	37	7	18	28	0	53	3	85	13	0	101	19	81	6	0	106	297
Total Volume	23	83	30	0	136	52	82	134	0	268	18	347	50	0	415	99	323	31	0	453	1272
% App. Total	16.9	61	22.1	0		19.4	30.6	50	0		4.3	83.6	12	0		21.9	71.3	6.8	0		
PHF	.442	.865	.750	.000	.919	.722	.788	.817	.000	.859	.750	.975	.781	.000	.943	.604	.850	.861	.000	.781	.878







Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

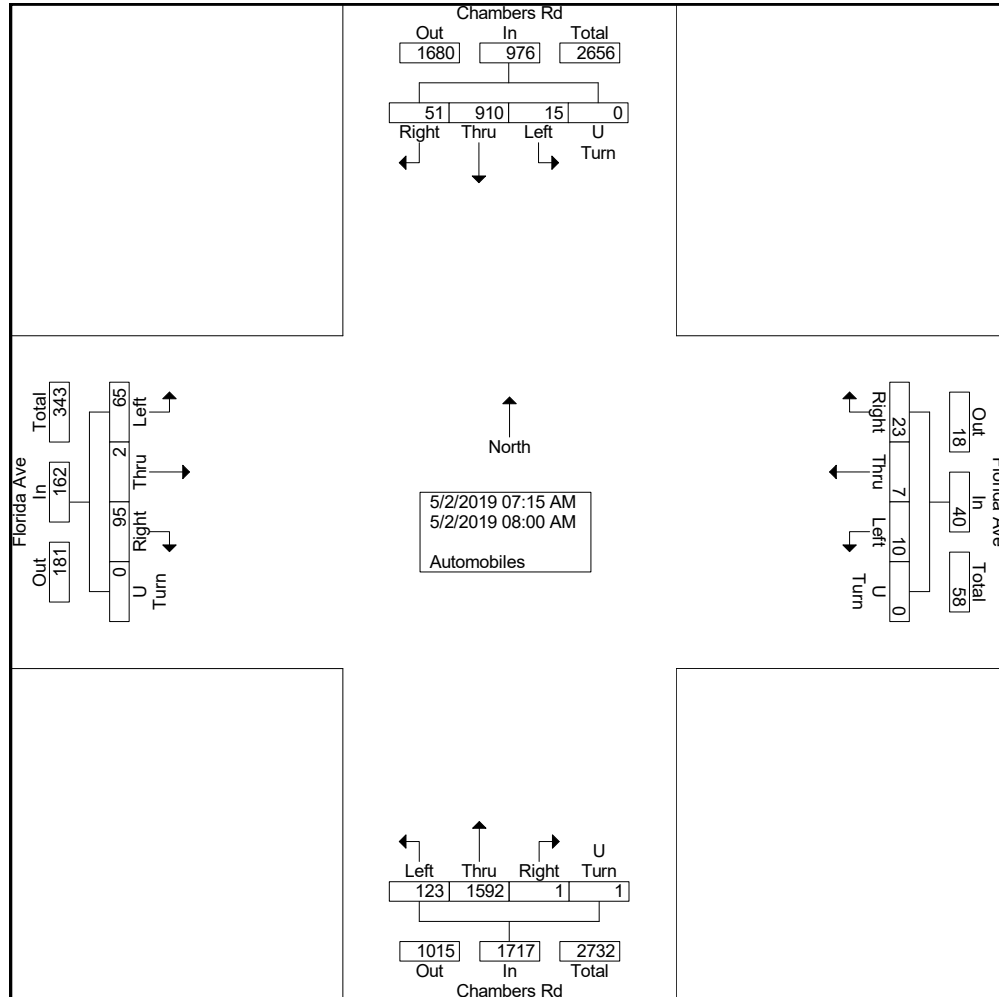
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Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
07:15 AM	20	0	21	0	41	2	5	8	0	15	46	415	0	0	461	3	211	18	0	232	749
07:30 AM	21	0	29	0	50	2	0	6	0	8	25	428	1	0	454	2	251	15	0	268	780
07:45 AM	12	0	26	0	38	2	0	5	0	7	25	392	0	0	417	6	230	10	0	246	708
Total	53	0	76	0	129	6	5	19	0	30	96	1235	1	0	1332	11	692	43	0	746	2237
08:00 AM	12	2	19	0	33	4	2	4	0	10	27	357	0	1	385	4	218	8	0	230	658
Grand Total	65	2	95	0	162	10	7	23	0	40	123	1592	1	1	1717	15	910	51	0	976	2895
Apprch %	40.1	1.2	58.6	0		25	17.5	57.5	0		7.2	92.7	0.1	0.1		1.5	93.2	5.2	0		
Total %	2.2	0.1	3.3	0	5.6	0.3	0.2	0.8	0	1.4	4.2	55	0	0	59.3	0.5	31.4	1.8	0	33.7	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



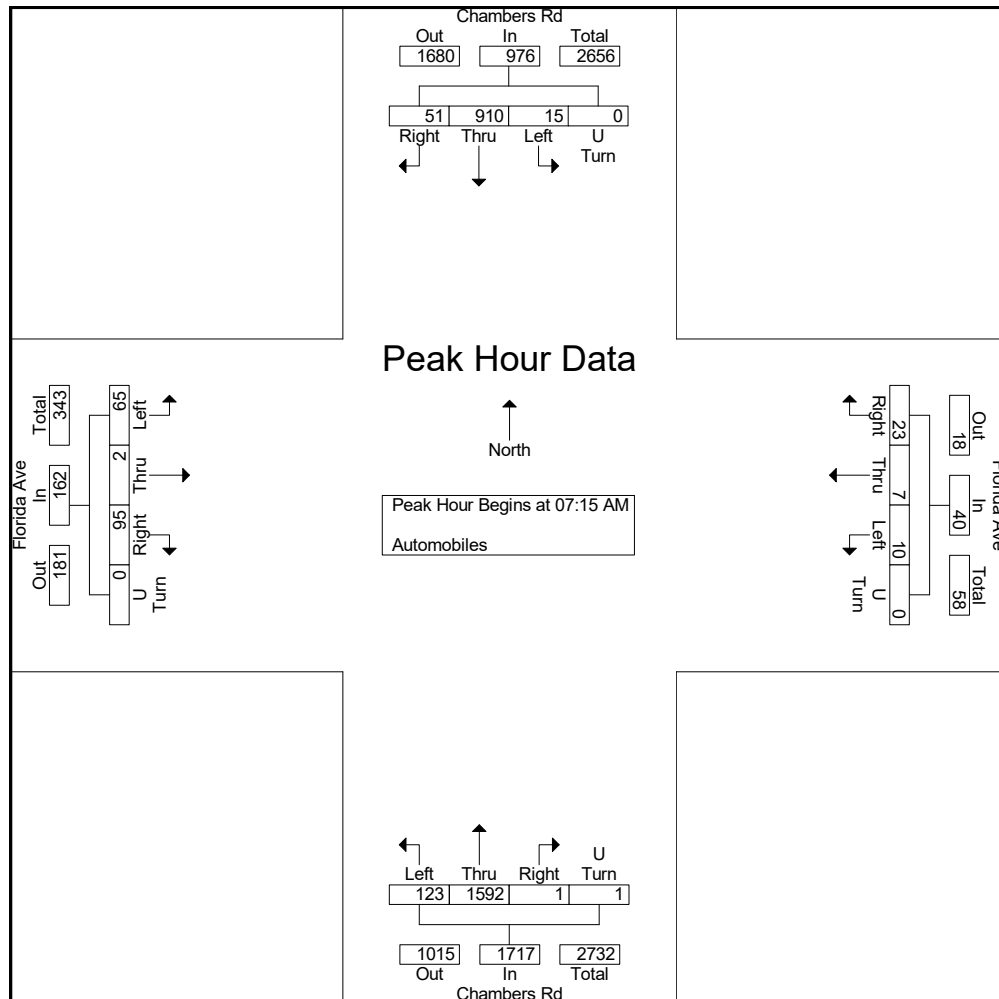


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
AM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers AM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Eastbound					Florida Ave Westbound					Chambers Rd Northbound					Chambers Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	20	0	21	0	41	2	5	8	0	15	46	415	0	0	461	3	211	18	0	232	749
07:30 AM	21	0	29	0	50	2	0	6	0	8	25	428	1	0	454	2	251	15	0	268	780
07:45 AM	12	0	26	0	38	2	0	5	0	7	25	392	0	0	417	6	230	10	0	246	708
08:00 AM	12	2	19	0	33	4	2	4	0	10	27	357	0	1	385	4	218	8	0	230	658
Total Volume	65	2	95	0	162	10	7	23	0	40	123	1592	1	1	1717	15	910	51	0	976	2895
% App. Total	40.1	1.2	58.6	0		25	17.5	57.5	0		7.2	92.7	0.1	0.1		1.5	93.2	5.2	0		
PHF	.774	.250	.819	.000	.810	.625	.350	.719	.000	.667	.668	.930	.250	.250	.931	.625	.906	.708	.000	.910	.928





Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 1

Groups Printed- Automobiles

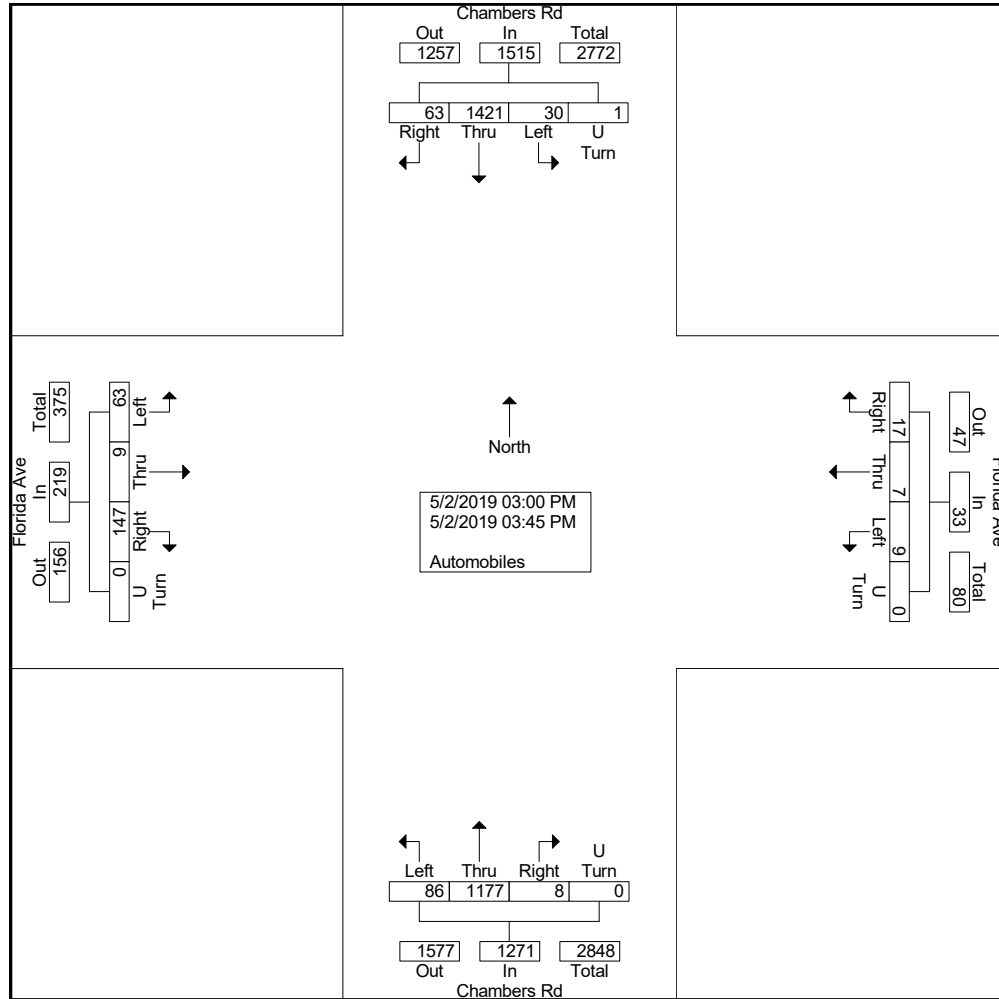
	Florida Ave Eastbound					Florida Ave Westbound					Chambers Rd Northbound					Chambers Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
03:00 PM	17	1	25	0	43	1	1	6	0	8	22	278	1	0	301	1	282	10	0	293	645
03:15 PM	13	4	40	0	57	1	1	3	0	5	30	286	1	0	317	8	326	20	0	354	733
03:30 PM	18	2	50	0	70	4	1	4	0	9	12	297	5	0	314	6	416	18	0	440	833
03:45 PM	15	2	32	0	49	3	4	4	0	11	22	316	1	0	339	15	397	15	1	428	827
Total	63	9	147	0	219	9	7	17	0	33	86	1177	8	0	1271	30	1421	63	1	1515	3038
Grand Total	63	9	147	0	219	9	7	17	0	33	86	1177	8	0	1271	30	1421	63	1	1515	3038
Apprch %	28.8	4.1	67.1	0		27.3	21.2	51.5	0		6.8	92.6	0.6	0		2	93.8	4.2	0.1		
Total %	2.1	0.3	4.8	0	7.2	0.3	0.2	0.6	0	1.1	2.8	38.7	0.3	0	41.8	1	46.8	2.1	0	49.9	



Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 2



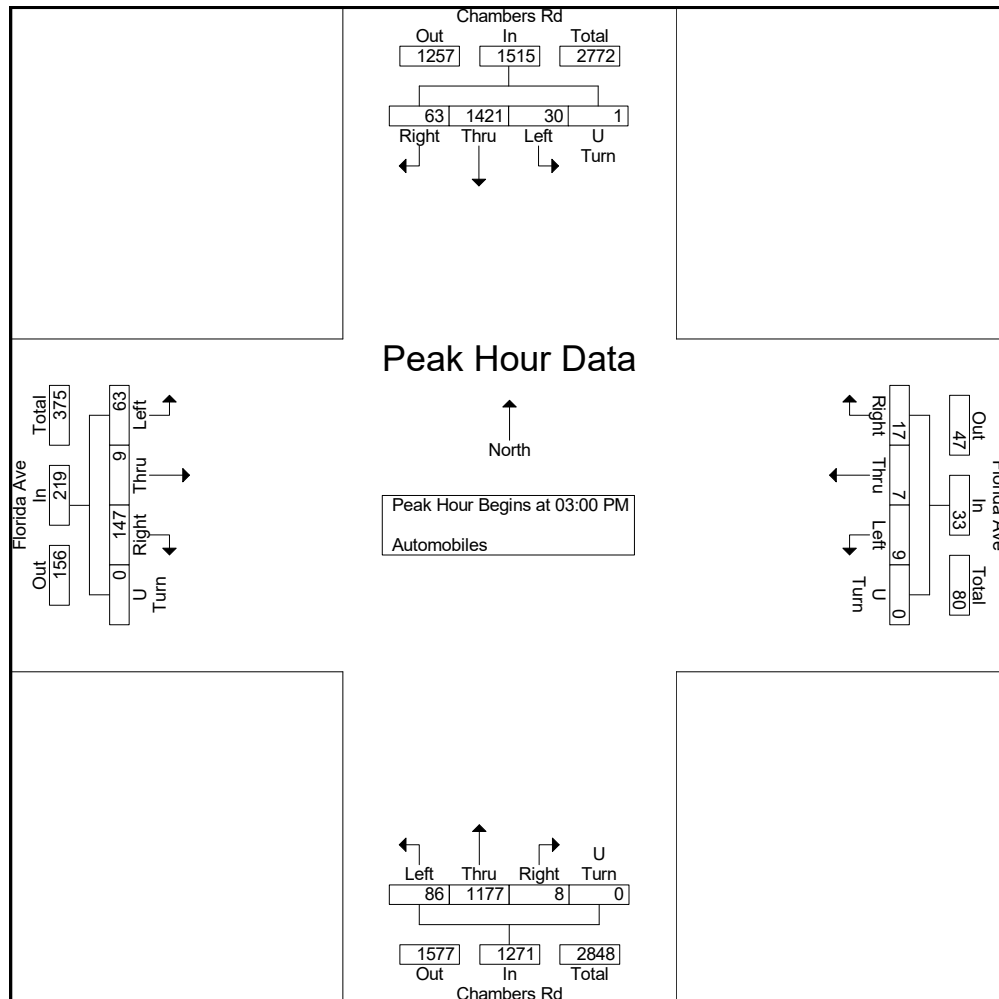


Ridgeview Data  
Collection

Aurora, CO  
CEC Aurora High School  
PM Peak  
Florida Ave and Chambers Rd

File Name : Florida and Chambers PM  
Site Code : IPO 433  
Start Date : 5/2/2019  
Page No : 3

	Florida Ave Eastbound					Florida Ave Westbound					Chambers Rd Northbound					Chambers Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	17	1	25	0	43	1	1	6	0	8	22	278	1	0	301	1	282	10	0	293	645
03:15 PM	13	4	40	0	57	1	1	3	0	5	30	286	1	0	317	8	326	20	0	354	733
03:30 PM	18	2	50	0	70	4	1	4	0	9	12	297	5	0	314	6	416	18	0	440	833
03:45 PM	15	2	32	0	49	3	4	4	0	11	22	316	1	0	339	15	397	15	1	428	827
Total Volume	63	9	147	0	219	9	7	17	0	33	86	1177	8	0	1271	30	1421	63	1	1515	3038
% App. Total	28.8	4.1	67.1	0		27.3	21.2	51.5	0		6.8	92.6	0.6	0		2	93.8	4.2	0.1		
PHF	.875	.563	.735	.000	.782	.563	.438	.708	.000	.750	.717	.931	.400	.000	.937	.500	.854	.788	.250	.861	.912



# APPENDIX B

## CDOT Annual Traffic Data

Colorado Early Colleges Aurora High School Traffic Projections:

ROUTE	REFPT	ENDREFPT	UPDATEYR	AADT	AADTCOMB	PKTRK	OFFPKTRK	YR20FACTOR	DHV	PCTPKSU	AADTRUCKS	DVMT	VMT	LOCATION
225A	5.373	6.886	2018	137000	4900	0.6	7.1	1.32	7.5	0.3	9700	200979	200979	ON I-225 N/O ILIFF AVE AURORA
225A	6.886	7.921	2018	145000	5200	0.5	6.8	1.33	7.5	0.2	9800	152250	152250	ON I-225 N/O MISSISSIPPI AVE AURORA



# APPENDIX C

## Trip Generation Worksheet

Colorado Early Colleges Aurora High School

May 2, 2019

North Parking Access

		IN	OUT	Total
6:00	AM	6	0	6
7:00	AM	5	3	8
7:15	AM	4	11	15
7:30	AM	5	33	38
7:45	AM	2	44	46
8:00	AM	3	19	22
8:15	AM	0	4	4
8:30	AM	2	2	4
8:45	AM	1	7	8
9:00	AM	5	13	18
10:00	AM	3	6	9
11:00	AM	9	11	20
12:00	PM	5	15	20
1:00	PM	4	4	8
2:00	PM	2	24	26
3:00	PM	0	1	1
3:15	PM	2	28	30
3:30	PM	1	37	38
3:45	PM	2	8	10
4:00	PM	5	21	26
5:00	PM	3	11	14
	Total	69	302	371

South Parking Access

		IN	OUT	Total
6:00	AM	2	3	5
7:00	AM	3	1	4
7:15	AM	20	0	20
7:30	AM	38	0	38
7:45	AM	63	1	64
8:00	AM	13	1	14
8:15	AM	4	1	5
8:30	AM	2	1	3
8:45	AM	7	0	7
9:00	AM	18	3	21
10:00	AM	9	5	14
11:00	AM	8	9	17
12:00	PM	14	2	16
1:00	PM	10	2	12
2:00	PM	20	6	26
3:00	PM	8	0	8
3:15	PM	27	3	30
3:30	PM	18	3	21
3:45	PM	5	3	8
4:00	PM	11	10	21
5:00	PM	10	1	11
	Total	310	55	365

Total

		IN	OUT	Total	Hourly Total
6:00	AM	8	3	11	Hourly Total
7:00	AM	8	4	12	
7:15	AM	24	11	35	
7:30	AM	43	33	76	
7:45	AM	65	45	110	233
8:00	AM	16	20	36	257
8:15	AM	4	5	9	231
8:30	AM	4	3	7	162
8:45	AM	8	7	15	67
9:00	AM	23	16	39	Hourly Total
10:00	AM	12	11	23	Hourly Total
11:00	AM	17	20	37	Hourly Total
12:00	PM	19	17	36	Hourly Total
1:00	PM	14	6	20	Hourly Total
2:00	PM	22	30	52	Hourly Total
3:00	PM	8	1	9	
3:15	PM	29	31	60	
3:30	PM	19	40	59	
3:45	PM	7	11	18	146
4:00	PM	16	31	47	184
5:00	PM	13	12	25	Hourly Total
	Total	379	357	736	

\* Morning Peak Hourly Volume

\* Afternoon Peak Hourly Volume






















# APPENDIX D

## Intersection Analysis Worksheets

# HCM 6th Signalized Intersection Summary

## 1: Abilene Street & Mississippi Avenue






















2019 Existing AM.syn  
05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	1297	184	25	2025	93	228	110	36	52	63	141
Future Volume (veh/h)	172	1297	184	25	2025	93	228	110	36	52	63	141
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	1425	259	32	2177	124	289	157	44	68	80	164
Peak Hour Factor	0.78	0.91	0.71	0.78	0.93	0.75	0.79	0.70	0.82	0.77	0.79	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	3170	575	46	3267	186	349	640	174	122	309	523
Arrive On Green	0.08	0.57	0.57	0.03	0.52	0.52	0.10	0.23	0.23	0.03	0.17	0.17
Sat Flow, veh/h	3456	5515	1001	1781	6275	357	3456	2761	751	3563	1870	3170
Grp Volume(v), veh/h	221	1247	437	32	1674	627	289	99	102	68	80	164
Grp Sat Flow(s),veh/h/ln	1728	1609	1690	1781	1609	1806	1728	1777	1735	1781	1870	1585
Q Serve(g_s), s	8.5	20.0	20.0	2.4	34.4	34.4	11.1	6.1	6.5	2.5	5.0	6.1
Cycle Q Clear(g_c), s	8.5	20.0	20.0	2.4	34.4	34.4	11.1	6.1	6.5	2.5	5.0	6.1
Prop In Lane	1.00		0.59	1.00		0.20	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	276	2774	972	46	2513	940	349	412	402	122	309	523
V/C Ratio(X)	0.80	0.45	0.45	0.69	0.67	0.67	0.83	0.24	0.25	0.56	0.26	0.31
Avail Cap(c_a), veh/h	397	2774	972	99	2513	940	499	412	402	177	309	523
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	16.5	16.5	65.2	23.7	23.8	59.5	42.2	42.3	64.2	49.2	49.6
Incr Delay (d2), s/veh	7.3	0.5	1.5	17.0	1.4	3.7	7.7	1.4	1.5	4.0	2.0	1.6
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	7.5	8.1	1.3	13.2	15.5	5.2	2.9	3.0	1.2	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	17.0	18.0	82.3	25.2	27.5	67.3	43.6	43.8	68.2	51.2	51.2
LnGrp LOS	E	B	B	F	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1905			2333			490			312	
Approach Delay, s/veh		23.2			26.6			57.6			54.9	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	35.8	8.0	82.1	18.1	26.8	15.3	74.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.7	31.3	7.5	71.5	19.5	18.5	15.5	63.5				
Max Q Clear Time (g_c+l1), s	4.5	8.5	4.4	22.0	13.1	8.1	10.5	36.4				
Green Ext Time (p_c), s	0.0	1.1	0.0	18.9	0.5	0.7	0.3	20.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			30.1									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

## 1: Abilene Street & Mississippi Avenue

2019 Existing PM.syn  
05/22/2019






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	1681	241	93	1493	97	305	209	86	140	202	353
Future Volume (veh/h)	356	1681	241	93	1493	97	305	209	86	140	202	353
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1868	206	141	1716	124	377	227	119	189	257	331
Peak Hour Factor	0.89	0.90	0.91	0.66	0.87	0.78	0.81	0.92	0.72	0.74	0.72	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	2906	320	169	2815	203	422	487	246	243	298	505
Arrive On Green	0.13	0.49	0.49	0.09	0.46	0.46	0.12	0.21	0.21	0.07	0.16	0.16
Sat Flow, veh/h	3456	5925	653	1781	6170	446	3456	2285	1155	3563	1870	3170
Grp Volume(v), veh/h	400	1521	553	141	1342	498	377	175	171	189	257	331
Grp Sat Flow(s),veh/h/ln	1728	1609	1753	1781	1609	1790	1728	1777	1663	1781	1870	1585
Q Serve(g_s), s	15.4	31.7	31.7	10.5	28.3	28.3	14.5	11.6	12.2	7.0	18.1	13.2
Cycle Q Clear(g_c), s	15.4	31.7	31.7	10.5	28.3	28.3	14.5	11.6	12.2	7.0	18.1	13.2
Prop In Lane	1.00		0.37	1.00		0.25	1.00		0.69	1.00		1.00
Lane Grp Cap(c), veh/h	446	2367	860	169	2201	817	422	379	354	243	298	505
V/C Ratio(X)	0.90	0.64	0.64	0.84	0.61	0.61	0.89	0.46	0.48	0.78	0.86	0.66
Avail Cap(c_a), veh/h	448	2367	860	429	2201	817	422	379	354	330	298	505
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	25.6	25.6	60.1	27.7	27.7	58.4	46.3	46.6	61.9	55.3	53.3
Incr Delay (d2), s/veh	20.4	1.4	3.7	10.3	1.3	3.4	20.6	4.0	4.7	7.9	26.6	6.5
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	8.0	12.3	14.0	5.2	11.1	12.9	7.6	5.6	5.5	3.5	10.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	26.9	29.3	70.4	28.9	31.0	79.0	50.4	51.3	69.7	81.9	59.8
LnGrp LOS	E	C	C	E	C	C	E	D	D	E	F	E
Approach Vol, veh/h		2474			1981			723			777	
Approach Delay, s/veh		35.8			32.4			65.5			69.5	
Approach LOS		D			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	33.3	17.3	70.7	21.0	26.0	21.9	66.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	25.5	32.5	46.5	16.5	21.5	17.5	61.5				
Max Q Clear Time (g_c+I1), s	9.0	14.2	12.5	33.7	16.5	20.1	17.4	30.3				
Green Ext Time (p_c), s	0.2	1.5	0.3	10.2	0.0	0.5	0.0	17.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.7									
HCM 6th LOS			D									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

2019 Total AM.syn

05/22/2019

## 1: Abilene Street & Mississippi Avenue






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	1297	236	55	2025	93	266	110	58	52	63	141
Future Volume (veh/h)	172	1297	236	55	2025	93	266	110	58	52	63	141
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	1425	332	71	2177	124	337	157	71	68	80	164
Peak Hour Factor	0.78	0.91	0.71	0.78	0.93	0.75	0.79	0.70	0.82	0.77	0.79	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	3014	702	91	3411	194	388	502	217	122	242	411
Arrive On Green	0.08	0.57	0.57	0.05	0.54	0.54	0.11	0.21	0.21	0.03	0.13	0.13
Sat Flow, veh/h	3456	5253	1223	1781	6275	357	3456	2415	1045	3563	1870	3170
Grp Volume(v), veh/h	221	1309	448	71	1674	627	337	114	114	68	80	164
Grp Sat Flow(s),veh/h/ln	1728	1609	1650	1781	1609	1806	1728	1777	1682	1781	1870	1585
Q Serve(g_s), s	8.5	21.4	21.4	5.3	32.7	32.8	12.9	7.3	7.8	2.5	5.3	6.4
Cycle Q Clear(g_c), s	8.5	21.4	21.4	5.3	32.7	32.8	12.9	7.3	7.8	2.5	5.3	6.4
Prop In Lane	1.00		0.74	1.00		0.20	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	280	2769	947	91	2623	982	388	369	350	122	242	411
V/C Ratio(X)	0.79	0.47	0.47	0.78	0.64	0.64	0.87	0.31	0.33	0.56	0.33	0.40
Avail Cap(c_a), veh/h	499	2769	947	218	2623	982	422	369	350	330	242	411
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	16.8	16.8	63.3	21.5	21.5	58.9	45.3	45.5	64.2	53.4	53.9
Incr Delay (d2), s/veh	4.9	0.6	1.7	13.5	1.2	3.2	16.4	2.2	2.5	4.0	3.6	2.9
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	3.9	8.0	8.5	2.8	12.5	14.5	6.6	3.5	3.5	1.2	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	17.4	18.5	76.8	22.7	24.7	75.3	47.4	47.9	68.2	57.0	56.8
LnGrp LOS	E	B	B	E	C	C	E	D	D	E	E	E
Approach Vol, veh/h		1978			2372			565			312	
Approach Delay, s/veh		23.1			24.9			64.2			59.3	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	32.5	11.4	82.0	19.7	22.0	15.4	77.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	21.5	16.5	66.5	16.5	17.5	19.5	63.5				
Max Q Clear Time (g_c+l1), s	4.5	9.8	7.3	23.4	14.9	8.4	10.5	34.8				
Green Ext Time (p_c), s	0.1	0.9	0.1	19.3	0.2	0.7	0.5	20.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			30.5									
HCM 6th LOS			C									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

2019 Total PM.syn

05/22/2019

## 1: Abilene Street & Mississippi Avenue






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	1681	266	107	1493	97	345	209	109	140	202	353
Future Volume (veh/h)	356	1681	266	107	1493	97	345	209	109	140	202	353
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1868	233	162	1716	124	426	227	151	189	257	331
Peak Hour Factor	0.89	0.90	0.91	0.66	0.87	0.78	0.81	0.92	0.72	0.74	0.72	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	475	2879	359	190	2854	206	422	413	263	243	270	458
Arrive On Green	0.14	0.49	0.49	0.11	0.46	0.46	0.12	0.20	0.20	0.07	0.14	0.14
Sat Flow, veh/h	3456	5837	728	1781	6170	446	3456	2081	1328	3563	1870	3170
Grp Volume(v), veh/h	400	1544	557	162	1342	498	426	192	186	189	257	331
Grp Sat Flow(s),veh/h/ln	1728	1609	1739	1781	1609	1790	1728	1777	1631	1781	1870	1585
Q Serve(g_s), s	15.2	32.2	32.2	12.1	27.9	28.0	16.5	13.1	13.9	7.0	18.4	13.5
Cycle Q Clear(g_c), s	15.2	32.2	32.2	12.1	27.9	28.0	16.5	13.1	13.9	7.0	18.4	13.5
Prop In Lane	1.00		0.42	1.00		0.25	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	475	2380	858	190	2232	828	422	352	324	243	270	458
V/C Ratio(X)	0.84	0.65	0.65	0.85	0.60	0.60	1.01	0.55	0.57	0.78	0.95	0.72
Avail Cap(c_a), veh/h	858	2380	858	429	2232	828	422	352	324	330	270	458
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	25.5	25.5	59.2	27.0	27.0	59.3	48.6	48.9	61.9	57.3	55.2
Incr Delay (d2), s/veh	4.1	1.4	3.8	10.2	1.2	3.2	46.0	6.0	7.2	7.9	43.6	9.5
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	6.9	12.5	14.1	6.0	10.9	12.6	9.9	6.4	6.3	3.5	12.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	26.9	29.3	69.4	28.2	30.2	105.2	54.6	56.2	69.7	100.8	64.7
LnGrp LOS	E	C	C	E	C	C	F	D	E	E	F	E
Approach Vol, veh/h		2501			2002			804			777	
Approach Delay, s/veh		32.9			32.0			81.8			77.9	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	31.3	18.9	71.1	21.0	24.0	23.0	67.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	12.5	23.5	32.5	48.5	16.5	19.5	33.5	47.5				
Max Q Clear Time (g_c+I1), s	9.0	15.9	14.1	34.2	18.5	20.4	17.2	30.0				
Green Ext Time (p_c), s	0.2	1.3	0.4	11.3	0.0	0.0	1.3	11.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			44.8									
HCM 6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

2040 BG AM.syn

05/22/2019

## 1: Abilene Street & Mississippi Avenue

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	1966	279	38	3069	141	346	167	55	79	95	214
Future Volume (veh/h)	261	1966	279	38	3069	141	346	167	55	79	95	214
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	2137	303	41	3336	153	376	182	60	86	103	233
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	3505	495	53	3435	155	432	500	160	133	189	321
Arrive On Green	0.10	0.61	0.61	0.03	0.54	0.54	0.12	0.19	0.19	0.04	0.10	0.10
Sat Flow, veh/h	3456	5740	810	1781	6356	288	3456	2649	846	3563	1870	3170
Grp Volume(v), veh/h	284	1795	645	41	2522	967	376	120	122	86	103	233
Grp Sat Flow(s),veh/h/ln	1728	1609	1724	1781	1609	1819	1728	1777	1718	1781	1870	1585
Q Serve(g_s), s	10.9	31.1	31.4	3.1	67.9	70.5	14.4	7.9	8.4	3.2	7.1	9.6
Cycle Q Clear(g_c), s	10.9	31.1	31.4	3.1	67.9	70.5	14.4	7.9	8.4	3.2	7.1	9.6
Prop In Lane	1.00		0.47	1.00		0.16	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	346	2947	1053	53	2608	983	432	336	325	133	189	321
V/C Ratio(X)	0.82	0.61	0.61	0.77	0.97	0.98	0.87	0.36	0.38	0.65	0.54	0.73
Avail Cap(c_a), veh/h	545	2947	1053	175	2608	983	499	336	325	177	189	321
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	16.3	16.3	65.0	29.9	30.5	58.0	47.6	47.8	64.1	57.7	58.8
Incr Delay (d2), s/veh	5.6	0.9	2.7	20.8	11.4	25.1	14.0	3.0	3.3	5.2	10.8	13.4
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	5.0	11.4	12.8	1.7	28.0	36.5	7.1	3.8	3.9	1.6	3.9	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	17.2	19.0	85.8	41.3	55.6	72.0	50.6	51.1	69.3	68.5	72.2
LnGrp LOS	E	B	B	F	D	E	E	D	D	E	E	E
Approach Vol, veh/h	2724			3530			618			422		
Approach Delay, s/veh	22.6			45.7			63.7			70.7		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	30.0	8.5	86.9	21.4	18.2	18.0	77.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.7	25.5	13.3	71.5	19.5	12.7	21.3	63.5				
Max Q Clear Time (g_c+l1), s	5.2	10.4	5.1	33.4	16.4	11.6	12.9	72.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	27.5	0.4	0.2	0.6	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	40.1											
HCM 6th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												
























# HCM 6th Signalized Intersection Summary

2040 BG PM.syn

05/22/2019

## 1: Abilene Street & Mississippi Avenue






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	2548	365	141	2263	147	462	317	130	212	306	535
Future Volume (veh/h)	540	2548	365	141	2263	147	462	317	130	212	306	535
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	587	2770	71	153	2460	51	502	345	59	230	333	147
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	635	3298	84	178	2769	57	474	541	92	290	457	194
Arrive On Green	0.18	0.51	0.51	0.10	0.42	0.42	0.14	0.18	0.18	0.08	0.12	0.12
Sat Flow, veh/h	3456	6500	166	1781	6536	135	3456	3040	515	3563	3741	1585
Grp Volume(v), veh/h	587	2055	786	153	1816	695	502	200	204	230	333	147
Grp Sat Flow(s),veh/h/ln	1728	1609	1840	1781	1609	1846	1728	1777	1778	1781	1870	1585
Q Serve(g_s), s	22.5	49.3	49.6	11.4	46.9	47.0	18.5	14.1	14.4	8.6	11.6	12.1
Cycle Q Clear(g_c), s	22.5	49.3	49.6	11.4	46.9	47.0	18.5	14.1	14.4	8.6	11.6	12.1
Prop In Lane	1.00		0.09	1.00		0.07	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	635	2448	934	178	2044	782	474	316	316	290	457	194
V/C Ratio(X)	0.92	0.84	0.84	0.86	0.89	0.89	1.06	0.63	0.64	0.79	0.73	0.76
Avail Cap(c_a), veh/h	653	2448	934	231	2044	782	474	316	316	462	457	194
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	28.5	28.6	59.8	36.0	36.0	58.2	51.4	51.5	60.9	57.1	57.3
Incr Delay (d2), s/veh	18.8	3.7	9.1	21.5	6.2	14.3	58.2	9.3	9.7	4.9	9.8	23.9
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	11.5	19.4	23.8	6.2	19.4	24.0	11.9	7.1	7.3	4.1	6.1	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	32.2	37.7	81.4	42.2	50.3	116.4	60.7	61.2	65.8	66.9	81.3
LnGrp LOS	E	C	D	F	D	D	F	E	E	E	E	F
Approach Vol, veh/h		3428			2664			906			710	
Approach Delay, s/veh		40.4			46.6			91.7			69.5	
Approach LOS		D			D			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	28.5	18.0	73.0	23.0	21.0	29.3	61.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	17.5	17.5	17.5	64.5	18.5	16.5	25.5	56.5				
Max Q Clear Time (g_c+l1), s	10.6	16.4	13.4	51.6	20.5	14.1	24.5	49.0				
Green Ext Time (p_c), s	0.4	0.3	0.1	11.9	0.0	0.6	0.3	6.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			51.3									
HCM 6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

2040 Total AM.syn

05/22/2019

## 1: Abilene Street & Mississippi Avenue






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	1966	331	68	3069	141	384	167	77	79	95	214
Future Volume (veh/h)	261	1966	331	68	3069	141	384	167	77	79	95	214
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	2137	360	74	3336	153	417	182	84	86	103	233
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	3390	568	94	3548	161	448	407	181	133	145	247
Arrive On Green	0.10	0.61	0.61	0.05	0.56	0.56	0.13	0.17	0.17	0.04	0.08	0.08
Sat Flow, veh/h	3456	5591	936	1781	6356	288	3456	2395	1061	3563	1870	3170
Grp Volume(v), veh/h	284	1842	655	74	2522	967	417	133	133	86	103	233
Grp Sat Flow(s),veh/h/ln	1728	1609	1702	1781	1609	1819	1728	1777	1679	1781	1870	1585
Q Serve(g_s), s	10.9	32.8	33.2	5.5	65.3	67.8	16.1	9.1	9.6	3.2	7.3	9.9
Cycle Q Clear(g_c), s	10.9	32.8	33.2	5.5	65.3	67.8	16.1	9.1	9.6	3.2	7.3	9.9
Prop In Lane	1.00		0.55	1.00		0.16	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	349	2926	1032	94	2693	1015	448	302	286	133	145	247
V/C Ratio(X)	0.81	0.63	0.63	0.78	0.94	0.95	0.93	0.44	0.47	0.65	0.71	0.94
Avail Cap(c_a), veh/h	653	2926	1032	205	2693	1015	448	302	286	177	145	247
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.4	16.9	17.0	63.2	27.6	28.1	58.2	50.2	50.5	64.1	60.8	62.0
Incr Delay (d2), s/veh	4.6	1.0	3.0	13.2	7.7	18.9	26.2	4.6	5.4	5.2	25.2	44.7
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	5.0	12.1	13.5	2.9	26.0	33.6	8.7	4.4	4.5	1.6	4.5	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.0	18.0	20.0	76.4	35.3	47.1	84.3	54.8	55.8	69.3	85.9	106.7
LnGrp LOS	E	B	B	E	D	D	F	D	E	E	F	F
Approach Vol, veh/h		2781			3563			683			422	
Approach Delay, s/veh		23.1			39.4			73.1			94.0	
Approach LOS		C			D			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	27.5	11.6	86.4	22.0	15.0	18.1	79.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.7	21.3	15.5	73.5	17.5	10.5	25.5	63.5				
Max Q Clear Time (g_c+I1), s	5.2	11.6	7.5	35.2	18.1	11.9	12.9	69.8				
Green Ext Time (p_c), s	0.0	1.0	0.1	28.3	0.0	0.0	0.8	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			39.5									
HCM 6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

2040 Total PM.syn

## 1: Abilene Street & Mississippi Avenue












05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	2548	390	155	2263	147	502	317	153	212	306	535
Future Volume (veh/h)	540	2548	390	155	2263	147	502	317	153	212	306	535
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	587	2770	98	168	2460	51	546	345	84	230	333	147
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	635	3208	113	193	2769	57	474	506	122	290	457	194
Arrive On Green	0.18	0.50	0.50	0.11	0.42	0.42	0.14	0.18	0.18	0.08	0.12	0.12
Sat Flow, veh/h	3456	6429	227	1781	6536	135	3456	2841	683	3563	3741	1585
Grp Volume(v), veh/h	587	2077	791	168	1816	695	546	214	215	230	333	147
Grp Sat Flow(s),veh/h/ln	1728	1609	1830	1781	1609	1846	1728	1777	1747	1781	1870	1585
Q Serve(g_s), s	22.5	51.1	51.5	12.5	46.9	47.0	18.5	15.2	15.6	8.6	11.6	12.1
Cycle Q Clear(g_c), s	22.5	51.1	51.5	12.5	46.9	47.0	18.5	15.2	15.6	8.6	11.6	12.1
Prop In Lane	1.00		0.12	1.00		0.07	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	635	2408	913	193	2044	782	474	316	311	290	457	194
V/C Ratio(X)	0.92	0.86	0.87	0.87	0.89	0.89	1.15	0.68	0.69	0.79	0.73	0.76
Avail Cap(c_a), veh/h	653	2408	913	231	2044	782	474	316	311	462	457	194
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	29.7	29.8	59.3	36.0	36.0	58.2	51.9	52.0	60.9	57.1	57.3
Incr Delay (d2), s/veh	18.8	4.4	10.8	25.1	6.2	14.3	90.6	11.1	11.9	4.9	9.8	23.9
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	11.5	20.3	24.9	7.0	19.4	24.0	14.0	7.8	7.9	4.1	6.1	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	34.1	40.7	84.3	42.2	50.3	148.9	63.0	64.0	65.8	66.9	81.3
LnGrp LOS	E	C	D	F	D	D	F	E	E	E	E	F
Approach Vol, veh/h	3455			2679			975			710		
Approach Delay, s/veh	42.2			46.9			111.3			69.5		
Approach LOS	D			D			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	28.5	19.1	71.9	23.0	21.0	29.3	61.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	17.5	17.5	17.5	64.5	18.5	16.5	25.5	56.5				
Max Q Clear Time (g_c+I1), s	10.6	17.6	14.5	53.5	20.5	14.1	24.5	49.0				
Green Ext Time (p_c), s	0.4	0.0	0.1	10.3	0.0	0.6	0.3	6.8				
Intersection Summary												
HCM 6th Ctrl Delay	54.9											
HCM 6th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue












2019 Existing AM.syn  
05/22/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	80	142	212	43	48	211
Future Volume (veh/h)	80	142	212	43	48	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	192	279	52	60	325
Peak Hour Factor	0.69	0.74	0.76	0.83	0.80	0.65
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	262	233	2287	420	847	1427
Arrive On Green	0.15	0.15	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1781	1585	3091	551	1049	1870
Grp Volume(v), veh/h	116	192	164	167	60	325
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1771	1049	1870
Q Serve(g_s), s	5.9	11.8	2.4	2.5	1.6	5.0
Cycle Q Clear(g_c), s	5.9	11.8	2.4	2.5	4.1	5.0
Prop In Lane	1.00	1.00		0.31	1.00	
Lane Grp Cap(c), veh/h	262	233	1356	1352	847	1427
V/C Ratio(X)	0.44	0.82	0.12	0.12	0.07	0.23
Avail Cap(c_a), veh/h	632	563	1356	1352	847	1427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	41.4	3.1	3.1	3.6	3.4
Incr Delay (d2), s/veh	1.1	6.9	0.2	0.2	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	5.0	0.7	0.7	0.3	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.1	48.3	3.3	3.3	3.8	3.8
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	308		331			385
Approach Delay, s/veh	45.2		3.3			3.8
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	80.8		80.8		19.2	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	4.5		7.0		13.8	
Green Ext Time (p_c), s	2.1		2.5		0.9	
Intersection Summary						
HCM 6th Ctrl Delay			16.1			
HCM 6th LOS			B			

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2019 Existing PM.syn  
05/22/2019












						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	87	389	99	118	337
Future Volume (veh/h)	51	87	389	99	118	337
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	100	418	129	136	355
Peak Hour Factor	0.75	0.87	0.93	0.77	0.87	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	153	136	2210	675	753	1542
Arrive On Green	0.09	0.09	0.82	0.82	0.82	0.82
Sat Flow, veh/h	1781	1585	2774	819	860	1870
Grp Volume(v), veh/h	68	100	276	271	136	355
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1723	860	1870
Q Serve(g_s), s	3.6	6.2	3.2	3.3	3.9	4.1
Cycle Q Clear(g_c), s	3.6	6.2	3.2	3.3	7.2	4.1
Prop In Lane	1.00	1.00		0.48	1.00	
Lane Grp Cap(c), veh/h	153	136	1465	1420	753	1542
V/C Ratio(X)	0.45	0.74	0.19	0.19	0.18	0.23
Avail Cap(c_a), veh/h	632	563	1465	1420	753	1542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	44.6	1.8	1.8	2.6	1.9
Incr Delay (d2), s/veh	1.9	7.0	0.3	0.3	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.7	0.8	0.8	0.6	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.3	51.6	2.1	2.1	3.1	2.3
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	168		547			491
Approach Delay, s/veh	49.1		2.1			2.5
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	86.9		86.9		13.1	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	5.3		9.2		8.2	
Green Ext Time (p_c), s	3.8		3.4		0.5	
Intersection Summary						
HCM 6th Ctrl Delay			8.8			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2019 Total AM.syn












05/22/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	80	186	234	43	81	227
Future Volume (veh/h)	80	186	234	43	81	227
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	251	308	52	101	349
Peak Hour Factor	0.69	0.74	0.76	0.83	0.80	0.65
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	329	293	2210	369	781	1357
Arrive On Green	0.18	0.18	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1781	1585	3141	509	1022	1870
Grp Volume(v), veh/h	116	251	178	182	101	349
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1779	1022	1870
Q Serve(g_s), s	5.7	15.3	3.1	3.1	3.4	6.3
Cycle Q Clear(g_c), s	5.7	15.3	3.1	3.1	6.5	6.3
Prop In Lane	1.00	1.00		0.29	1.00	
Lane Grp Cap(c), veh/h	329	293	1289	1290	781	1357
V/C Ratio(X)	0.35	0.86	0.14	0.14	0.13	0.26
Avail Cap(c_a), veh/h	632	563	1289	1290	781	1357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	39.5	4.2	4.2	5.2	4.6
Incr Delay (d2), s/veh	0.6	6.8	0.2	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	6.4	1.0	1.0	0.7	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.2	46.3	4.4	4.4	5.5	5.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	367		360			450
Approach Delay, s/veh	43.1		4.4			5.2
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	77.0		77.0		23.0	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	5.1		8.5		17.3	
Green Ext Time (p_c), s	2.3		2.9		1.1	
Intersection Summary						
HCM 6th Ctrl Delay			16.8			
HCM 6th LOS			B			

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2019 Total PM.syn  
05/22/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	108	400	99	152	354
Future Volume (veh/h)	51	108	400	99	152	354
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	124	430	129	175	373
Peak Hour Factor	0.75	0.87	0.93	0.77	0.87	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	181	161	2183	649	728	1512
Arrive On Green	0.10	0.10	0.81	0.81	0.81	0.81
Sat Flow, veh/h	1781	1585	2794	803	850	1870
Grp Volume(v), veh/h	68	124	282	277	175	373
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1726	850	1870
Q Serve(g_s), s	3.6	7.6	3.6	3.7	5.9	4.8
Cycle Q Clear(g_c), s	3.6	7.6	3.6	3.7	9.6	4.8
Prop In Lane	1.00	1.00		0.47	1.00	
Lane Grp Cap(c), veh/h	181	161	1437	1395	728	1512
V/C Ratio(X)	0.38	0.77	0.20	0.20	0.24	0.25
Avail Cap(c_a), veh/h	632	563	1437	1395	728	1512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.91	0.91	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	43.8	2.2	2.2	3.3	2.3
Incr Delay (d2), s/veh	1.2	6.9	0.3	0.3	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.3	0.9	0.9	0.9	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.1	50.7	2.5	2.5	4.1	2.7
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	192		559			548
Approach Delay, s/veh	48.0		2.5			3.1
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	85.4		85.4		14.6	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	5.7		11.6		9.6	
Green Ext Time (p_c), s	3.9		3.8		0.6	
Intersection Summary						
HCM 6th Ctrl Delay			9.5			
HCM 6th LOS			A			














# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2040 BG AM.syn

05/22/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	121	215	321	65	73	320
Future Volume (veh/h)	121	215	321	65	73	320
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	234	349	71	79	348
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	310	276	2169	436	749	1376
Arrive On Green	0.17	0.17	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1781	1585	3041	593	967	1870
Grp Volume(v), veh/h	132	234	209	211	79	348
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1764	967	1870
Q Serve(g_s), s	6.6	14.3	3.5	3.6	2.7	6.0
Cycle Q Clear(g_c), s	6.6	14.3	3.5	3.6	6.3	6.0
Prop In Lane	1.00	1.00		0.34	1.00	
Lane Grp Cap(c), veh/h	310	276	1307	1298	749	1376
V/C Ratio(X)	0.43	0.85	0.16	0.16	0.11	0.25
Avail Cap(c_a), veh/h	632	563	1307	1298	749	1376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.92	0.92	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	40.0	4.0	4.0	4.9	4.3
Incr Delay (d2), s/veh	0.9	6.6	0.3	0.3	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.0	1.2	1.2	0.5	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	46.6	4.2	4.2	5.2	4.7
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	366		420			427
Approach Delay, s/veh	43.4		4.2			4.8
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	78.1		78.1		21.9	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	5.6		8.3		16.3	
Green Ext Time (p_c), s	2.8		2.8		1.1	
Intersection Summary						
HCM 6th Ctrl Delay			16.2			
HCM 6th LOS			B			














# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2040 BG PM.syn

05/22/2019












						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	77	132	590	150	179	511
Future Volume (veh/h)	77	132	590	150	179	511
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	143	641	163	195	555
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	204	181	2233	567	570	1488
Arrive On Green	0.11	0.11	0.80	0.80	0.80	0.80
Sat Flow, veh/h	1781	1585	2900	713	677	1870
Grp Volume(v), veh/h	84	143	406	398	195	555
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1742	677	1870
Q Serve(g_s), s	4.4	8.8	6.0	6.1	10.7	8.6
Cycle Q Clear(g_c), s	4.4	8.8	6.0	6.1	16.8	8.6
Prop In Lane	1.00	1.00		0.41	1.00	
Lane Grp Cap(c), veh/h	204	181	1414	1386	570	1488
V/C Ratio(X)	0.41	0.79	0.29	0.29	0.34	0.37
Avail Cap(c_a), veh/h	632	563	1414	1386	570	1488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.90	0.90	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	43.1	2.7	2.7	4.9	3.0
Incr Delay (d2), s/veh	1.2	6.7	0.5	0.5	1.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.8	1.7	1.6	1.5	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.4	49.8	3.2	3.2	6.6	3.7
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	227		804			750
Approach Delay, s/veh	47.1		3.2			4.4
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	84.1		84.1		15.9	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	8.1		18.8		10.8	
Green Ext Time (p_c), s	6.2		6.4		0.7	
Intersection Summary						
HCM 6th Ctrl Delay			9.3			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2040 Total AM.syn

05/22/2019












						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	121	259	343	65	106	336
Future Volume (veh/h)	121	259	343	65	106	336
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	282	373	71	115	365
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	364	324	2105	397	699	1319
Arrive On Green	0.20	0.20	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1781	1585	3077	562	946	1870
Grp Volume(v), veh/h	132	282	221	223	115	365
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1769	946	1870
Q Serve(g_s), s	6.4	17.2	4.2	4.3	4.7	7.1
Cycle Q Clear(g_c), s	6.4	17.2	4.2	4.3	8.9	7.1
Prop In Lane	1.00	1.00		0.32	1.00	
Lane Grp Cap(c), veh/h	364	324	1253	1248	699	1319
V/C Ratio(X)	0.36	0.87	0.18	0.18	0.16	0.28
Avail Cap(c_a), veh/h	632	563	1253	1248	699	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	38.5	5.0	5.0	6.5	5.4
Incr Delay (d2), s/veh	0.5	6.5	0.3	0.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.2	1.4	1.5	0.9	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	45.0	5.3	5.3	7.0	5.9
LnGrp LOS	C	D	A	A	A	A
Approach Vol, veh/h	414		444			480
Approach Delay, s/veh	41.7		5.3			6.2
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	75.0		75.0		25.0	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	6.3		10.9		19.2	
Green Ext Time (p_c), s	3.0		3.2		1.2	
Intersection Summary						
HCM 6th Ctrl Delay			16.9			
HCM 6th LOS			B			

# HCM 6th Signalized Intersection Summary

## 2: Abilene Street & Florida Avenue

2040 Total PM.syn

05/22/2019























						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	77	153	601	150	213	528
Future Volume (veh/h)	77	153	601	150	213	528
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	176	646	195	245	556
Peak Hour Factor	0.75	0.87	0.93	0.77	0.87	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	243	216	2081	628	531	1447
Arrive On Green	0.14	0.14	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1781	1585	2783	811	654	1870
Grp Volume(v), veh/h	103	176	427	414	245	556
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1724	654	1870
Q Serve(g_s), s	5.3	10.8	7.1	7.2	17.8	9.6
Cycle Q Clear(g_c), s	5.3	10.8	7.1	7.2	25.0	9.6
Prop In Lane	1.00	1.00		0.47	1.00	
Lane Grp Cap(c), veh/h	243	216	1375	1334	531	1447
V/C Ratio(X)	0.42	0.81	0.31	0.31	0.46	0.38
Avail Cap(c_a), veh/h	632	563	1375	1334	531	1447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	42.0	3.4	3.4	7.1	3.6
Incr Delay (d2), s/veh	1.0	6.5	0.6	0.6	2.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.6	2.1	2.1	2.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.6	48.4	4.0	4.0	10.0	4.4
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	279		841			801
Approach Delay, s/veh	45.5		4.0			6.1
Approach LOS	D		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	81.9		81.9		18.1	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	55.5		55.5		35.5	
Max Q Clear Time (g_c+l1), s	9.2		27.0		12.8	
Green Ext Time (p_c), s	6.6		6.8		0.8	
Intersection Summary						
HCM 6th Ctrl Delay			10.9			
HCM 6th LOS			B			

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2019 Existing AM.syn























05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	58	18	53	80	137	25	323	39	47	250	26
Future Volume (veh/h)	18	58	18	53	80	137	25	323	39	47	250	26
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	72	20	66	92	188	44	389	48	64	316	36
Peak Hour Factor	0.56	0.81	0.90	0.80	0.87	0.73	0.57	0.83	0.81	0.73	0.79	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	289	245	237	289	245	819	2376	291	756	2400	271
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1099	1870	1585	1304	1870	1585	1029	3186	391	952	3218	364
Grp Volume(v), veh/h	32	72	20	66	92	188	44	216	221	64	173	179
Grp Sat Flow(s),veh/h/ln	1099	1870	1585	1304	1870	1585	1029	1777	1800	952	1777	1805
Q Serve(g_s), s	2.4	3.0	1.0	4.4	4.3	10.5	1.1	3.2	3.2	1.9	2.5	2.5
Cycle Q Clear(g_c), s	6.7	3.0	1.0	7.5	4.3	10.5	3.6	3.2	3.2	5.1	2.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.20
Lane Grp Cap(c), veh/h	197	289	245	237	289	245	819	1325	1342	756	1325	1346
V/C Ratio(X)	0.16	0.25	0.08	0.28	0.32	0.77	0.05	0.16	0.16	0.08	0.13	0.13
Avail Cap(c_a), veh/h	498	800	678	594	800	678	819	1325	1342	756	1325	1346
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	33.5	32.6	41.2	38.1	41.1	3.7	3.3	3.3	4.1	3.2	3.2
Incr Delay (d2), s/veh	0.4	0.4	0.1	0.6	0.6	4.7	0.1	0.3	0.3	0.2	0.2	0.2
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	0.7	1.4	0.4	1.5	2.0	4.8	0.2	0.9	1.0	0.3	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	33.9	32.7	41.7	38.7	45.8	3.9	3.6	3.6	4.3	3.4	3.4
LnGrp LOS	D	C	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	124			346			481			416		
Approach Delay, s/veh	34.6			43.2			3.6			3.6		
Approach LOS	C			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	71.6			18.4			71.6			18.4		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	42.5			38.5			42.5			38.5		
Max Q Clear Time (g_c+l1), s	5.6			8.7			7.1			12.5		
Green Ext Time (p_c), s	3.1			0.6			2.6			1.3		
Intersection Summary												
HCM 6th Ctrl Delay	16.4											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2019 Existing PM.syn  
05/22/2019























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	83	30	52	82	134	18	347	50	99	323	31
Future Volume (veh/h)	23	83	30	52	82	134	18	347	50	99	323	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	97	40	72	104	133	24	358	64	165	380	36
Peak Hour Factor	0.44	0.86	0.75	0.72	0.79	0.82	0.75	0.97	0.78	0.60	0.85	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	262	222	197	262	222	786	2292	406	782	2493	235
Arrive On Green	0.14	0.14	0.14	0.05	0.05	0.05	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1143	1870	1585	1252	1870	1585	970	3017	534	965	3282	309
Grp Volume(v), veh/h	52	97	40	72	104	133	24	209	213	165	205	211
Grp Sat Flow(s),veh/h/ln	1143	1870	1585	1252	1870	1585	970	1777	1774	965	1777	1815
Q Serve(g_s), s	3.9	4.2	2.0	5.1	4.9	7.4	0.6	2.9	2.9	5.1	2.8	2.8
Cycle Q Clear(g_c), s	8.8	4.2	2.0	9.3	4.9	7.4	3.5	2.9	2.9	8.0	2.8	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.17
Lane Grp Cap(c), veh/h	179	262	222	197	262	222	786	1350	1348	782	1350	1379
V/C Ratio(X)	0.29	0.37	0.18	0.37	0.40	0.60	0.03	0.16	0.16	0.21	0.15	0.15
Avail Cap(c_a), veh/h	558	883	748	612	883	748	786	1350	1348	782	1350	1379
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	35.1	34.1	43.4	39.2	40.4	3.4	2.9	3.0	4.0	2.9	2.9
Incr Delay (d2), s/veh	0.9	0.9	0.4	1.1	0.9	2.4	0.1	0.2	0.2	0.6	0.2	0.2
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	1.1	2.0	0.8	1.7	2.4	3.2	0.1	0.8	0.8	0.9	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	35.9	34.5	44.5	40.1	42.8	3.5	3.2	3.2	4.7	3.2	3.2
LnGrp LOS	D	D	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	189				309				446			
Approach Delay, s/veh	36.8				42.3				3.2			
Approach LOS	D				D				A			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	72.9			17.1			72.9			17.1		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	38.5			42.5			38.5			42.5		
Max Q Clear Time (g_c+l1), s	5.5			10.8			10.0			11.3		
Green Ext Time (p_c), s	2.8			0.9			3.6			1.3		
Intersection Summary												
HCM 6th Ctrl Delay	15.4											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2019 Total AM.syn

05/22/2019
























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	83	23	53	114	137	32	323	39	47	250	29
Future Volume (veh/h)	20	83	23	53	114	137	32	323	39	47	250	29
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	102	26	66	131	188	56	389	48	64	316	40
Peak Hour Factor	0.56	0.81	0.90	0.80	0.87	0.73	0.57	0.83	0.81	0.73	0.79	0.72
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	280	237	207	280	237	821	2391	293	761	2384	299
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1061	1870	1585	1262	1870	1585	1025	3186	391	952	3177	399
Grp Volume(v), veh/h	36	102	26	66	131	188	56	216	221	64	176	180
Grp Sat Flow(s),veh/h/ln	1061	1870	1585	1262	1870	1585	1025	1777	1800	952	1777	1799
Q Serve(g_s), s	2.9	4.4	1.3	4.5	5.8	10.3	1.4	3.1	3.1	1.8	2.5	2.5
Cycle Q Clear(g_c), s	8.7	4.4	1.3	8.9	5.8	10.3	3.9	3.1	3.1	5.0	2.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.22
Lane Grp Cap(c), veh/h	171	280	237	207	280	237	821	1333	1351	761	1333	1350
V/C Ratio(X)	0.21	0.36	0.11	0.32	0.47	0.79	0.07	0.16	0.16	0.08	0.13	0.13
Avail Cap(c_a), veh/h	277	468	396	334	468	396	821	1333	1351	761	1333	1350
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	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	34.4	33.1	38.4	35.0	36.9	3.7	3.2	3.2	3.9	3.1	3.1
Incr Delay (d2), s/veh	0.6	0.8	0.2	0.8	1.1	5.3	0.2	0.3	0.3	0.2	0.2	0.2
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	0.8	2.0	0.5	1.4	2.7	4.3	0.3	0.9	0.9	0.3	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	35.2	33.3	39.2	36.1	42.2	3.8	3.5	3.5	4.1	3.3	3.3
LnGrp LOS	D	D	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	164			385			493			420		
Approach Delay, s/veh	35.9			39.6			3.5			3.4		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	72.0			18.0			72.0			18.0		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	58.5			22.5			58.5			22.5		
Max Q Clear Time (g_c+l1), s	5.9			10.7			7.0			12.3		
Green Ext Time (p_c), s	3.2			0.5			2.7			1.2		
Intersection Summary												
HCM 6th Ctrl Delay	16.6											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2019 Total PM.syn

05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	109	36	52	98	134	22	347	50	99	323	32
Future Volume (veh/h)	25	109	36	52	98	134	22	347	50	99	323	32
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	127	48	72	124	102	29	358	64	165	380	37
Peak Hour Factor	0.44	0.86	0.75	0.72	0.79	0.82	0.75	0.97	0.78	0.60	0.85	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	293	249	195	293	249	767	2242	397	763	2432	236
Arrive On Green	0.16	0.16	0.16	0.05	0.05	0.05	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1155	1870	1585	1210	1870	1585	969	3017	534	965	3273	317
Grp Volume(v), veh/h	57	127	48	72	124	102	29	209	213	165	205	212
Grp Sat Flow(s),veh/h/ln	1155	1870	1585	1210	1870	1585	969	1777	1774	965	1777	1813
Q Serve(g_s), s	4.2	5.5	2.4	5.3	5.8	5.6	0.8	3.1	3.1	5.4	3.0	3.1
Cycle Q Clear(g_c), s	10.0	5.5	2.4	10.8	5.8	5.6	3.9	3.1	3.1	8.6	3.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.17
Lane Grp Cap(c), veh/h	187	293	249	195	293	249	767	1320	1318	763	1320	1347
V/C Ratio(X)	0.30	0.43	0.19	0.37	0.42	0.41	0.04	0.16	0.16	0.22	0.16	0.16
Avail Cap(c_a), veh/h	551	883	748	577	883	748	767	1320	1318	763	1320	1347
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	34.3	33.0	43.8	38.7	38.6	3.9	3.4	3.4	4.6	3.4	3.4
Incr Delay (d2), s/veh	0.9	1.0	0.4	1.0	0.9	1.0	0.1	0.3	0.3	0.6	0.3	0.2
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	1.2	2.6	0.9	1.8	2.8	2.3	0.2	0.9	1.0	1.0	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	35.3	33.4	44.9	39.6	39.6	4.0	3.6	3.6	5.3	3.6	3.6
LnGrp LOS	D	D	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		232			298			451			582	
Approach Delay, s/veh		36.0			40.9			3.7			4.1	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.4		18.6		71.4		18.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		38.5		42.5		38.5		42.5				
Max Q Clear Time (g_c+l1), s		5.9		12.0		10.6		12.8				
Green Ext Time (p_c), s		2.9		1.1		3.6		1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				15.7								
HCM 6th LOS				B								



























# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2040 BG AM.syn

05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	88	27	80	121	208	38	490	59	71	379	39
Future Volume (veh/h)	27	88	27	80	121	208	38	490	59	71	379	39
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	96	29	87	132	226	41	533	64	77	412	42
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	342	290	255	342	290	713	2292	274	622	2336	237
Arrive On Green	0.18	0.18	0.18	0.06	0.06	0.06	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1023	1870	1585	1266	1870	1585	937	3196	383	821	3257	330
Grp Volume(v), veh/h	29	96	29	87	132	226	41	296	301	77	224	230
Grp Sat Flow(s),veh/h/ln	1023	1870	1585	1266	1870	1585	937	1777	1801	821	1777	1811
Q Serve(g_s), s	2.3	4.0	1.4	6.0	6.1	12.7	1.3	5.1	5.1	3.2	3.7	3.7
Cycle Q Clear(g_c), s	8.4	4.0	1.4	10.0	6.1	12.7	5.0	5.1	5.1	8.3	3.7	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.18
Lane Grp Cap(c), veh/h	198	342	290	255	342	290	713	1274	1292	622	1274	1299
V/C Ratio(X)	0.15	0.28	0.10	0.34	0.39	0.78	0.06	0.23	0.23	0.12	0.18	0.18
Avail Cap(c_a), veh/h	448	800	678	566	800	678	713	1274	1292	622	1274	1299
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	31.7	30.6	41.2	37.4	40.5	4.9	4.3	4.3	5.7	4.1	4.1
Incr Delay (d2), s/veh	0.3	0.4	0.1	0.7	0.6	3.8	0.2	0.4	0.4	0.4	0.3	0.3
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	0.6	1.8	0.5	2.1	3.0	5.7	0.3	1.6	1.7	0.5	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	32.1	30.8	41.9	38.0	44.3	5.1	4.7	4.7	6.1	4.4	4.4
LnGrp LOS	D	C	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		154			445			638			531	
Approach Delay, s/veh		32.7			42.0			4.8			4.7	
Approach LOS		C			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		69.0		21.0		69.0		21.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		42.5		38.5		42.5		38.5				
Max Q Clear Time (g_c+l1), s		7.1		10.4		10.3		14.7				
Green Ext Time (p_c), s		4.3		0.7		3.5		1.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.5								
HCM 6th LOS				B								



























# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2040 BG PM.syn

05/22/2019























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	126	45	79	124	203	27	526	76	150	490	47
Future Volume (veh/h)	35	126	45	79	124	203	27	526	76	150	490	47
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	137	49	86	135	221	29	572	83	163	533	51
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	337	285	218	337	285	633	2243	325	591	2360	225
Arrive On Green	0.18	0.18	0.18	0.06	0.06	0.06	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1025	1870	1585	1198	1870	1585	831	3115	451	778	3278	313
Grp Volume(v), veh/h	38	137	49	86	135	221	29	326	329	163	288	296
Grp Sat Flow(s),veh/h/ln	1025	1870	1585	1198	1870	1585	831	1777	1789	778	1777	1814
Q Serve(g_s), s	3.1	5.8	2.4	6.4	6.3	12.4	1.1	5.7	5.7	8.2	4.9	4.9
Cycle Q Clear(g_c), s	9.3	5.8	2.4	12.2	6.3	12.4	6.0	5.7	5.7	13.9	4.9	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.17
Lane Grp Cap(c), veh/h	193	337	285	218	337	285	633	1279	1288	591	1279	1306
V/C Ratio(X)	0.20	0.41	0.17	0.39	0.40	0.77	0.05	0.25	0.26	0.28	0.23	0.23
Avail Cap(c_a), veh/h	447	800	678	515	800	678	633	1279	1288	591	1279	1306
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	32.6	31.2	43.3	37.7	40.5	5.2	4.3	4.3	6.7	4.2	4.2
Incr Delay (d2), s/veh	0.5	0.7	0.3	1.0	0.7	3.9	0.1	0.5	0.5	1.2	0.4	0.4
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	0.8	2.7	0.9	2.1	3.0	5.5	0.2	1.8	1.8	1.4	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	33.4	31.5	44.3	38.3	44.4	5.4	4.8	4.8	7.9	4.6	4.6
LnGrp LOS	D	C	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		224			442			684			747	
Approach Delay, s/veh		33.7			42.6			4.8			5.3	
Approach LOS		C			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		69.3		20.7		69.3		20.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		42.5		38.5		42.5		38.5				
Max Q Clear Time (g_c+l1), s		8.0		11.3		15.9		14.4				
Green Ext Time (p_c), s		4.8		1.1		5.2		1.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2040 Total AM.syn

05/22/2019

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	113	32	80	155	208	45	490	59	71	379	42
Future Volume (veh/h)	29	113	32	80	155	208	45	490	59	71	379	42
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	123	35	87	168	226	49	533	64	77	412	46
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	347	294	237	347	294	708	2284	273	620	2304	256
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	990	1870	1585	1228	1870	1585	934	3196	383	821	3225	358
Grp Volume(v), veh/h	32	123	35	87	168	226	49	296	301	77	226	232
Grp Sat Flow(s),veh/h/ln	990	1870	1585	1228	1870	1585	934	1777	1801	821	1777	1806
Q Serve(g_s), s	2.7	5.2	1.7	6.3	7.8	12.6	1.6	5.1	5.2	3.2	3.7	3.8
Cycle Q Clear(g_c), s	10.5	5.2	1.7	11.4	7.8	12.6	5.4	5.1	5.2	8.4	3.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.20
Lane Grp Cap(c), veh/h	178	347	294	237	347	294	708	1270	1287	620	1270	1291
V/C Ratio(X)	0.18	0.35	0.12	0.37	0.48	0.77	0.07	0.23	0.23	0.12	0.18	0.18
Avail Cap(c_a), veh/h	418	800	678	535	800	678	708	1270	1287	620	1270	1291
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	32.0	30.5	42.3	38.1	40.3	5.1	4.4	4.4	5.8	4.2	4.2
Incr Delay (d2), s/veh	0.5	0.6	0.2	0.7	0.8	3.3	0.2	0.4	0.4	0.4	0.3	0.3
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	0.7	2.4	0.6	2.1	3.9	5.6	0.3	1.7	1.7	0.6	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	32.6	30.7	43.0	38.9	43.6	5.3	4.8	4.8	6.2	4.5	4.5
LnGrp LOS	D	C	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	190			481			646			535		
Approach Delay, s/veh	33.2			41.9			4.9			4.8		
Approach LOS	C			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	68.8			21.2			68.8			21.2		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	42.5			38.5			42.5			38.5		
Max Q Clear Time (g_c+l1), s	7.4			12.5			10.4			14.6		
Green Ext Time (p_c), s	4.4			0.9			3.5			2.0		
Intersection Summary												
HCM 6th Ctrl Delay	17.4											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary

## 3: Sable Boulevard & Florida Avenue

2040 Total PM.syn






















05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	152	51	79	140	203	31	526	76	150	490	48
Future Volume (veh/h)	37	152	51	79	140	203	31	526	76	150	490	48
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	165	55	86	152	221	34	572	83	163	533	52
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	364	308	215	364	308	618	2197	318	577	2308	225
Arrive On Green	0.19	0.19	0.19	0.06	0.06	0.06	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1009	1870	1585	1161	1870	1585	830	3115	451	778	3272	318
Grp Volume(v), veh/h	40	165	55	86	152	221	34	326	329	163	289	296
Grp Sat Flow(s),veh/h/ln	1009	1870	1585	1161	1870	1585	830	1777	1789	778	1777	1813
Q Serve(g_s), s	3.3	7.0	2.6	6.6	7.0	12.3	1.4	5.9	6.0	8.6	5.1	5.2
Cycle Q Clear(g_c), s	10.3	7.0	2.6	13.6	7.0	12.3	6.5	5.9	6.0	14.6	5.1	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.18
Lane Grp Cap(c), veh/h	198	364	308	215	364	308	618	1253	1262	577	1253	1279
V/C Ratio(X)	0.20	0.45	0.18	0.40	0.42	0.72	0.06	0.26	0.26	0.28	0.23	0.23
Avail Cap(c_a), veh/h	433	800	678	486	800	678	618	1253	1262	577	1253	1279
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	32.0	30.2	43.7	37.2	39.7	5.8	4.8	4.8	7.4	4.7	4.7
Incr Delay (d2), s/veh	0.4	0.8	0.2	1.0	0.6	2.6	0.2	0.5	0.5	1.2	0.4	0.4
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	0.8	3.2	1.0	2.1	3.4	5.4	0.2	2.0	2.0	1.5	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	32.8	30.5	44.7	37.8	42.3	6.0	5.3	5.3	8.6	5.1	5.1
LnGrp LOS	D	C	C	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		260			459			689			748	
Approach Delay, s/veh		33.0			41.3			5.3			5.9	
Approach LOS		C			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		22.0		68.0		22.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		42.5		38.5		42.5		38.5				
Max Q Clear Time (g_c+I1), s		8.5		12.3		16.6		15.6				
Green Ext Time (p_c), s		4.8		1.3		5.1		1.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.5								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue






















2019 Existing AM.syn  
05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	2	95	10	7	23	123	1592	1	15	910	51
Future Volume (veh/h)	65	2	95	10	7	23	123	1592	1	15	910	51
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	8	116	16	20	32	184	1712	4	24	1000	72
Peak Hour Factor	0.77	0.25	0.82	0.62	0.35	0.72	0.67	0.93	0.25	0.62	0.91	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	12	176	135	76	122	490	4114	10	272	3292	237
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.05	0.78	0.78	0.68	0.68	0.68
Sat Flow, veh/h	1352	103	1498	1267	648	1036	1781	5260	12	284	4862	349
Grp Volume(v), veh/h	84	0	124	16	0	52	184	1108	608	24	700	372
Grp Sat Flow(s),veh/h/ln	1352	0	1601	1267	0	1684	1781	1702	1868	284	1702	1807
Q Serve(g_s), s	5.4	0.0	6.7	1.1	0.0	2.5	2.5	9.5	9.5	2.7	7.5	7.5
Cycle Q Clear(g_c), s	8.0	0.0	6.7	7.8	0.0	2.5	2.5	9.5	9.5	2.7	7.5	7.5
Prop In Lane	1.00		0.94	1.00		0.62	1.00		0.01	1.00		0.19
Lane Grp Cap(c), veh/h	201	0	189	135	0	198	490	2663	1461	272	2305	1224
V/C Ratio(X)	0.42	0.00	0.66	0.12	0.00	0.26	0.38	0.42	0.42	0.09	0.30	0.30
Avail Cap(c_a), veh/h	350	0	365	275	0	384	679	2663	1461	272	2305	1224
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)	0.98	0.00	0.98	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	0.0	38.0	41.7	0.0	36.1	3.8	3.2	3.2	5.1	5.9	5.9
Incr Delay (d2), s/veh	1.3	0.0	3.8	0.4	0.0	0.7	0.5	0.5	0.9	0.6	0.3	0.6
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	1.9	0.0	2.8	0.4	0.0	1.1	0.7	2.3	2.7	0.2	2.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	41.7	42.1	0.0	36.8	4.3	3.6	4.0	5.8	6.2	6.5
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	208		68			1900			1096			
Approach Delay, s/veh	41.5		38.1			3.8			6.3			
Approach LOS	D		D			A			A			
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	74.9		15.1		9.4	65.4	15.1					
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	60.5		20.5		14.5	41.5	20.5					
Max Q Clear Time (g_c+l1), s	11.5		10.0		4.5	9.5	9.8					
Green Ext Time (p_c), s	19.5		0.7		0.3	9.5	0.2					
Intersection Summary												
HCM 6th Ctrl Delay			7.8									
HCM 6th LOS			A									

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2019 Existing PM.syn  
05/22/2019























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	9	147	9	7	17	86	1177	8	30	1421	63
Future Volume (veh/h)	63	9	147	9	7	17	86	1177	8	30	1421	63
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	16	201	16	16	24	119	1266	20	60	1672	80
Peak Hour Factor	0.88	0.56	0.73	0.56	0.44	0.71	0.72	0.93	0.40	0.50	0.85	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	20	248	122	113	169	296	3796	60	351	3148	151
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.73	0.73	0.63	0.63	0.63
Sat Flow, veh/h	1367	118	1485	1164	675	1013	1781	5178	82	430	4993	239
Grp Volume(v), veh/h	72	0	217	16	0	40	119	832	454	60	1140	612
Grp Sat Flow(s),veh/h/ln	1367	0	1603	1164	0	1688	1781	1702	1856	430	1702	1827
Q Serve(g_s), s	4.3	0.0	11.7	1.2	0.0	1.8	1.9	7.8	7.8	5.4	16.7	16.8
Cycle Q Clear(g_c), s	6.1	0.0	11.7	12.9	0.0	1.8	1.9	7.8	7.8	5.4	16.7	16.8
Prop In Lane	1.00		0.93	1.00		0.60	1.00		0.04	1.00		0.13
Lane Grp Cap(c), veh/h	280	0	267	122	0	282	296	2496	1361	351	2146	1152
V/C Ratio(X)	0.26	0.00	0.81	0.13	0.00	0.14	0.40	0.33	0.33	0.17	0.53	0.53
Avail Cap(c_a), veh/h	364	0	365	193	0	385	489	2496	1361	351	2146	1152
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)	0.96	0.00	0.96	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	36.1	42.4	0.0	32.0	7.6	4.2	4.2	7.1	9.2	9.2
Incr Delay (d2), s/veh	0.5	0.0	9.1	0.5	0.0	0.2	0.9	0.4	0.7	1.1	0.9	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	1.4	0.0	5.2	0.4	0.0	0.8	0.6	2.2	2.5	0.5	5.7	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	45.3	42.8	0.0	32.2	8.5	4.6	4.9	8.2	10.2	11.0
LnGrp LOS	D	A	D	D	A	C	A	A	A	A	B	B
Approach Vol, veh/h	289			56			1405			1812		
Approach Delay, s/veh	42.7			35.3			5.0			10.4		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	70.5			19.5		9.2	61.2		19.5			
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5		4.5			
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5		20.5			
Max Q Clear Time (g_c+l1), s	9.8			13.7		3.9	18.8		14.9			
Green Ext Time (p_c), s	12.2			0.8		0.2	14.6		0.1			
Intersection Summary												
HCM 6th Ctrl Delay	11.3											
HCM 6th LOS	B											

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2019 Total AM.syn

05/22/2019























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	2	117	10	7	23	153	1592	1	15	910	55
Future Volume (veh/h)	68	2	117	10	7	23	153	1592	1	15	910	55
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	8	143	16	20	32	228	1712	4	24	1000	77
Peak Hour Factor	0.77	0.25	0.82	0.62	0.35	0.72	0.67	0.93	0.25	0.62	0.91	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	11	193	125	83	132	493	4064	9	267	3184	245
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.06	0.77	0.77	0.66	0.66	0.66
Sat Flow, veh/h	1352	85	1513	1236	648	1036	1781	5260	12	284	4836	372
Grp Volume(v), veh/h	88	0	151	16	0	52	228	1108	608	24	703	374
Grp Sat Flow(s),veh/h/ln	1352	0	1598	1236	0	1684	1781	1702	1868	284	1702	1803
Q Serve(g_s), s	5.6	0.0	8.2	1.1	0.0	2.5	3.4	9.9	9.9	2.8	8.0	8.0
Cycle Q Clear(g_c), s	8.1	0.0	8.2	9.3	0.0	2.5	3.4	9.9	9.9	2.8	8.0	8.0
Prop In Lane	1.00		0.95	1.00		0.62	1.00		0.01	1.00		0.21
Lane Grp Cap(c), veh/h	215	0	204	125	0	215	493	2630	1443	267	2241	1187
V/C Ratio(X)	0.41	0.00	0.74	0.13	0.00	0.24	0.46	0.42	0.42	0.09	0.31	0.31
Avail Cap(c_a), veh/h	350	0	364	249	0	384	665	2630	1443	267	2241	1187
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)	0.97	0.00	0.97	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	37.8	42.3	0.0	35.4	4.4	3.4	3.4	5.7	6.6	6.6
Incr Delay (d2), s/veh	1.2	0.0	5.1	0.5	0.0	0.6	0.7	0.5	0.9	0.7	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	1.9	0.0	3.4	0.4	0.0	1.0	1.0	2.5	2.9	0.2	2.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	42.9	42.8	0.0	35.9	5.0	3.9	4.4	6.4	7.0	7.3
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h	239			68			1944			1101		
Approach Delay, s/veh	41.9			37.5			4.2			7.1		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	74.0			16.0		10.3	63.8		16.0			
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5		4.5			
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5		20.5			
Max Q Clear Time (g_c+l1), s	11.9			10.2		5.4	10.0		11.3			
Green Ext Time (p_c), s	19.4			0.8		0.4	9.5		0.1			
Intersection Summary												
HCM 6th Ctrl Delay				8.5								
HCM 6th LOS				A								

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2019 Total PM.syn

05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	9	170	9	7	17	100	1177	8	30	1421	65
Future Volume (veh/h)	66	9	170	9	7	17	100	1177	8	30	1421	65
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	16	233	16	16	24	139	1266	20	60	1672	82
Peak Hour Factor	0.88	0.56	0.73	0.56	0.44	0.71	0.72	0.93	0.40	0.50	0.85	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	19	279	121	126	189	289	3695	58	342	3040	149
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.71	0.71	0.61	0.61	0.61
Sat Flow, veh/h	1367	103	1498	1131	675	1013	1781	5178	82	430	4986	244
Grp Volume(v), veh/h	75	0	249	16	0	40	139	832	454	60	1141	613
Grp Sat Flow(s),veh/h/ln	1367	0	1601	1131	0	1688	1781	1702	1856	430	1702	1826
Q Serve(g_s), s	4.4	0.0	13.5	1.2	0.0	1.8	2.4	8.3	8.3	5.7	17.7	17.7
Cycle Q Clear(g_c), s	6.1	0.0	13.5	14.7	0.0	1.8	2.4	8.3	8.3	5.7	17.7	17.7
Prop In Lane	1.00		0.94	1.00		0.60	1.00		0.04	1.00		0.13
Lane Grp Cap(c), veh/h	308	0	298	121	0	315	289	2429	1324	342	2076	1114
V/C Ratio(X)	0.24	0.00	0.83	0.13	0.00	0.13	0.48	0.34	0.34	0.18	0.55	0.55
Avail Cap(c_a), veh/h	364	0	365	168	0	385	480	2429	1324	342	2076	1114
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)	0.94	0.00	0.94	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	35.3	42.4	0.0	30.5	9.2	4.9	4.9	8.0	10.3	10.3
Incr Delay (d2), s/veh	0.4	0.0	12.3	0.5	0.0	0.2	1.2	0.4	0.7	1.1	1.1	2.0
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	1.5	0.0	6.2	0.4	0.0	0.7	0.8	2.5	2.8	0.6	6.2	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	0.0	47.6	42.9	0.0	30.7	10.5	5.3	5.6	9.1	11.4	12.3
LnGrp LOS	C	A	D	D	A	C	B	A	A	A	B	B
Approach Vol, veh/h	324			56			1425			1814		
Approach Delay, s/veh	44.3			34.2			5.9			11.6		
Approach LOS	D			C			A			B		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	68.7			21.3		9.3	59.4	21.3				
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5	20.5				
Max Q Clear Time (g_c+l1), s	10.3			15.5		4.4	19.7	16.7				
Green Ext Time (p_c), s	12.2			0.8		0.2	14.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	12.6											
HCM 6th LOS	B											

























# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2040 BG AM.syn

05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	3	144	15	11	35	186	2413	2	23	1379	77
Future Volume (veh/h)	99	3	144	15	11	35	186	2413	2	23	1379	77
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	12	176	24	31	49	278	2595	8	37	1515	108
Peak Hour Factor	0.77	0.25	0.82	0.62	0.35	0.72	0.67	0.93	0.25	0.62	0.91	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	17	251	148	109	173	357	3850	12	136	2920	208
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.08	0.73	0.73	0.60	0.60	0.60
Sat Flow, veh/h	1319	102	1498	1195	653	1032	1781	5255	16	118	4865	347
Grp Volume(v), veh/h	129	0	188	24	0	80	278	1680	923	37	1060	563
Grp Sat Flow(s),veh/h/ln	1319	0	1601	1195	0	1685	1781	1702	1867	118	1702	1808
Q Serve(g_s), s	8.5	0.0	10.0	1.7	0.0	3.7	4.9	23.5	23.5	21.6	16.3	16.3
Cycle Q Clear(g_c), s	12.3	0.0	10.0	11.7	0.0	3.7	4.9	23.5	23.5	33.2	16.3	16.3
Prop In Lane	1.00		0.94	1.00		0.61	1.00		0.01	1.00		0.19
Lane Grp Cap(c), veh/h	246	0	268	148	0	282	357	2494	1368	136	2043	1085
V/C Ratio(X)	0.52	0.00	0.70	0.16	0.00	0.28	0.78	0.67	0.67	0.27	0.52	0.52
Avail Cap(c_a), veh/h	326	0	365	220	0	384	497	2494	1368	136	2043	1085
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)	0.97	0.00	0.97	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	0.0	35.3	40.9	0.0	32.7	13.2	6.4	6.4	18.3	10.4	10.4
Incr Delay (d2), s/veh	1.7	0.0	3.6	0.5	0.0	0.5	5.2	1.5	2.7	4.9	0.9	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	2.8	0.0	4.1	0.5	0.0	1.5	4.0	6.8	7.9	0.7	5.7	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	38.9	41.4	0.0	33.3	18.4	7.8	9.0	23.2	11.4	12.2
LnGrp LOS	D	A	D	D	A	C	B	A	A	C	B	B
Approach Vol, veh/h	317			104			2881			1660		
Approach Delay, s/veh	39.3			35.2			9.2			11.9		
Approach LOS	D			D			A			B		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	70.4			19.6		11.9	58.5	19.6				
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5	20.5				
Max Q Clear Time (g_c+l1), s	25.5			14.3		6.9	35.2	13.7				
Green Ext Time (p_c), s	28.2			0.8		0.5	5.2	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	12.6											
HCM 6th LOS	B											

























# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2040 BG PM.syn

05/22/2019























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	14	223	14	11	26	130	1784	12	45	2154	95
Future Volume (veh/h)	95	14	223	14	11	26	130	1784	12	45	2154	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	25	305	25	25	37	181	1918	30	90	2534	120
Peak Hour Factor	0.99	0.56	0.73	0.56	0.44	0.71	0.72	0.93	0.40	0.50	0.85	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	28	338	109	155	230	220	3481	54	189	2739	128
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.07	0.67	0.67	0.55	0.55	0.55
Sat Flow, veh/h	1340	121	1482	1050	681	1008	1781	5179	81	227	4998	234
Grp Volume(v), veh/h	96	0	330	25	0	62	181	1260	688	90	1717	937
Grp Sat Flow(s),veh/h/ln	1340	0	1604	1050	0	1689	1781	1702	1856	227	1702	1828
Q Serve(g_s), s	5.6	0.0	18.0	2.1	0.0	2.6	4.5	17.3	17.4	30.9	41.4	42.7
Cycle Q Clear(g_c), s	8.2	0.0	18.0	20.1	0.0	2.6	4.5	17.3	17.4	37.1	41.4	42.7
Prop In Lane	1.00		0.92	1.00		0.60	1.00		0.04	1.00		0.13
Lane Grp Cap(c), veh/h	346	0	365	109	0	385	220	2288	1248	189	1866	1002
V/C Ratio(X)	0.28	0.00	0.90	0.23	0.00	0.16	0.82	0.55	0.55	0.48	0.92	0.93
Avail Cap(c_a), veh/h	346	0	365	109	0	385	375	2288	1248	189	1866	1002
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)	0.92	0.00	0.92	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	33.8	43.6	0.0	27.9	23.8	7.7	7.7	20.2	18.6	18.8
Incr Delay (d2), s/veh	0.4	0.0	23.4	1.1	0.0	0.2	7.4	1.0	1.8	8.4	9.0	16.5
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	1.8	0.0	9.2	0.6	0.0	1.1	2.5	5.6	6.4	2.0	16.9	20.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	0.0	57.2	44.6	0.0	28.1	31.2	8.6	9.4	28.7	27.5	35.3
LnGrp LOS	C	A	E	D	A	C	C	A	A	C	C	D
Approach Vol, veh/h	426			87			2129			2744		
Approach Delay, s/veh	51.4			32.8			10.8			30.2		
Approach LOS	D			C			B			C		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	65.0			25.0		11.2	53.8		25.0			
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5		4.5			
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5		20.5			
Max Q Clear Time (g_c+l1), s	19.4			20.0		6.5	44.7		22.1			
Green Ext Time (p_c), s	22.1			0.1		0.3	0.0		0.0			
Intersection Summary												
HCM 6th Ctrl Delay				24.3								
HCM 6th LOS				C								

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue

2040 Total AM.syn

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	3	166	15	11	35	216	2413	2	23	1379	81
Future Volume (veh/h)	102	3	166	15	11	35	216	2413	2	23	1379	81
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	12	202	24	31	49	322	2595	8	37	1515	114
Peak Hour Factor	0.77	0.25	0.82	0.62	0.35	0.72	0.67	0.93	0.25	0.62	0.91	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	15	260	132	112	178	370	3825	12	135	2826	213
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.73	0.73	0.58	0.58	0.58
Sat Flow, veh/h	1319	90	1509	1167	653	1032	1781	5255	16	118	4844	364
Grp Volume(v), veh/h	132	0	214	24	0	80	322	1680	923	37	1064	565
Grp Sat Flow(s),veh/h/ln	1319	0	1599	1167	0	1685	1781	1702	1867	118	1702	1805
Q Serve(g_s), s	8.7	0.0	11.5	1.8	0.0	3.7	6.0	23.9	23.9	22.0	17.1	17.1
Cycle Q Clear(g_c), s	12.4	0.0	11.5	13.3	0.0	3.7	6.0	23.9	23.9	32.9	17.1	17.1
Prop In Lane	1.00		0.94	1.00		0.61	1.00		0.01	1.00		0.20
Lane Grp Cap(c), veh/h	252	0	275	132	0	290	370	2478	1359	135	1986	1053
V/C Ratio(X)	0.52	0.00	0.78	0.18	0.00	0.28	0.87	0.68	0.68	0.27	0.54	0.54
Avail Cap(c_a), veh/h	326	0	364	197	0	384	489	2478	1359	135	1986	1053
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)	0.96	0.00	0.96	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	0.0	35.6	42.0	0.0	32.4	14.7	6.6	6.6	18.9	11.4	11.4
Incr Delay (d2), s/veh	1.6	0.0	7.3	0.7	0.0	0.5	12.5	1.5	2.7	5.0	1.0	2.0
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	2.9	0.0	5.0	0.5	0.0	1.5	5.2	7.0	8.2	0.8	6.1	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	0.0	42.9	42.6	0.0	32.9	27.2	8.1	9.3	23.9	12.4	13.3
LnGrp LOS	D	A	D	D	A	C	C	A	A	C	B	B
Approach Vol, veh/h	346			104			2925			1666		
Approach Delay, s/veh	41.5			35.1			10.6			13.0		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	70.0			20.0		13.0	57.0	20.0				
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	60.5			20.5		14.5	41.5	20.5				
Max Q Clear Time (g_c+l1), s	25.9			14.4		8.0	34.9	15.3				
Green Ext Time (p_c), s	27.9			0.9		0.6	5.4	0.2				
Intersection Summary												
HCM 6th Ctrl Delay				14.0								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 4: Chambers Road & Florida Avenue





2040 Total PM.syn

05/22/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (veh/h)	98	14	246	14	11	26	144	1784	12	45	2154	97
Future Volume (veh/h)	98	14	246	14	11	26	144	1784	12	45	2154	97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	25	337	25	25	37	200	1918	30	90	2534	123
Peak Hour Factor	0.88	0.56	0.73	0.56	0.44	0.71	0.72	0.93	0.40	0.50	0.85	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	25	340	82	155	230	240	3481	54	189	2673	128
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.09	0.67	0.67	0.54	0.54	0.54
Sat Flow, veh/h	1340	111	1491	1020	681	1008	1781	5179	81	227	4992	240
Grp Volume(v), veh/h	111	0	362	25	0	62	200	1260	688	90	1719	938
Grp Sat Flow(s),veh/h/ln	1340	0	1602	1020	0	1689	1781	1702	1856	227	1702	1827
Q Serve(g_s), s	6.5	0.0	20.3	0.2	0.0	2.6	5.5	17.3	17.4	30.9	42.7	44.0
Cycle Q Clear(g_c), s	9.2	0.0	20.3	20.5	0.0	2.6	5.5	17.3	17.4	36.0	42.7	44.0
Prop In Lane	1.00		0.93	1.00		0.60	1.00		0.04	1.00		0.13
Lane Grp Cap(c), veh/h	346	0	365	82	0	385	240	2288	1248	189	1823	979
V/C Ratio(X)	0.32	0.00	0.99	0.30	0.00	0.16	0.84	0.55	0.55	0.48	0.94	0.96
Avail Cap(c_a), veh/h	346	0	365	82	0	385	372	2288	1248	189	1823	979
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)	0.90	0.00	0.90	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	34.7	45.0	0.0	27.9	25.2	7.7	7.7	20.2	19.6	19.9
Incr Delay (d2), s/veh	0.5	0.0	42.5	2.0	0.0	0.2	9.3	1.0	1.8	8.4	11.3	20.3
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	2.1	0.0	12.0	0.6	0.0	1.1	4.8	5.6	6.4	2.0	18.0	22.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	77.2	47.0	0.0	28.1	34.5	8.6	9.4	28.7	31.0	40.2
LnGrp LOS	C	A	E	D	A	C	C	A	A	C	C	D
Approach Vol, veh/h	473			87			2148			2747		
Approach Delay, s/veh	66.6			33.5			11.3			34.0		
Approach LOS	E			C			B			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	65.0			25.0			12.3			52.7		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	60.5			20.5			14.5			41.5		
Max Q Clear Time (g_c+l1), s	19.4			22.3			7.5			46.0		
Green Ext Time (p_c), s	22.1			0.0			0.3			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	27.9											
HCM 6th LOS	C											





HCM 6th TWSC  
5: Abilene Street & North Access

2019 Total AM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	60	354	30	44	296
Future Vol, veh/h	49	60	354	30	44	296
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	1	-	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	53	65	385	33	48	322
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	820	209	0	0	418	0
Stage 1	402	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	443	*949	-	-	1359	-
Stage 1	861	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	428	*949	-	-	1359	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.4	0		1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	682	1359	-	
HCM Lane V/C Ratio	-	-	0.174	0.035	-	
HCM Control Delay (s)	-	-	11.4	7.7	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon





HCM 6th TWSC  
5: Abilene Street & North Access

2019 Total PM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	62	476	14	21	473
Future Vol, veh/h	51	62	476	14	21	473
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	67	517	28	42	514
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1129	273	0	0	545	0
Stage 1	531	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	*313	*886	-	-	1328	-
Stage 1	*836	-	-	-	-	-
Stage 2	*548	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*303	*886	-	-	1328	-
Mov Cap-2 Maneuver	*409	-	-	-	-	-
Stage 1	*810	-	-	-	-	-
Stage 2	*548	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.9	0		0.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	580	1328	-	
HCM Lane V/C Ratio	-	-	0.212	0.032	-	
HCM Control Delay (s)	-	-	12.9	7.8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon





HCM 6th TWSC  
5: Abilene Street & North Access

2040 Total AM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	60	537	30	44	430
Future Vol, veh/h	49	60	537	30	44	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	1	-	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	53	65	584	33	48	467
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1164	309	0	0	617	0
Stage 1	601	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	294	*886	-	-	1233	-
Stage 1	774	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	282	*886	-	-	1233	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.9	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	574	1233	-	
HCM Lane V/C Ratio	-	-	0.206	0.039	-	
HCM Control Delay (s)	-	-	12.9	8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC  
5: Abilene Street & North Access

2040 Total PM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	62	721	14	21	708
Future Vol, veh/h	51	62	721	14	21	708
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	1	-	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	55	67	784	15	23	770

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1608	400	0
Stage 1	792	-	-
Stage 2	816	-	-
Critical Hdwy	6.63	6.93	-
Critical Hdwy Stg 1	5.83	-	-
Critical Hdwy Stg 2	5.43	-	-
Follow-up Hdwy	3.519	3.319	-
Pot Cap-1 Maneuver	*162	*793	-
Stage 1	*748	-	-
Stage 2	*434	-	-
Platoon blocked, %	1	1	-
Mov Cap-1 Maneuver	*159	*793	-
Mov Cap-2 Maneuver	*305	-	-
Stage 1	*734	-	-
Stage 2	*434	-	-





Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	460	* 1186
HCM Lane V/C Ratio	-	-	0.267	0.019
HCM Control Delay (s)	-	-	15.7	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1

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

HCM 6th TWSC  
6: Abilene Street & South Access

2019 Total AM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	384	37	37	308
Future Vol, veh/h	0	0	384	37	37	308
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
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	0	0	417	40	40	335

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	852	229	0
Stage 1	437	-	-
Stage 2	415	-	-
Critical Hdwy	6.63	6.93	4.13
Critical Hdwy Stg 1	5.83	-	-
Critical Hdwy Stg 2	5.43	-	-
Follow-up Hdwy	3.519	3.319	2.219
Pot Cap-1 Maneuver	421	*949	1309
Stage 1	824	-	-
Stage 2	665	-	-
Platoon blocked, %	1	1	1
Mov Cap-1 Maneuver	408	*949	1309
Mov Cap-2 Maneuver	408	-	-
Stage 1	798	-	-
Stage 2	665	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.8
HCM LOS	A		





Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1309	-
HCM Lane V/C Ratio	-	-	0.031	-
HCM Control Delay (s)	-	-	0	7.8
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	-

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







HCM 6th TWSC  
6: Abilene Street & South Access

2019 Total PM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	490	18	18	506
Future Vol, veh/h	0	0	490	18	18	506
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
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	0	0	533	20	20	550
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1133	277	0	0	553	0
Stage 1	543	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	*310	*886	-	-	1316	-
Stage 1	*836	-	-	-	-	-
Stage 2	*553	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*306	*886	-	-	1316	-
Mov Cap-2 Maneuver	*306	-	-	-	-	-
Stage 1	*824	-	-	-	-	-
Stage 2	*553	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	-	1316	-	
HCM Lane V/C Ratio	-	-	-	0.015	-	
HCM Control Delay (s)	-	-	0	7.8	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC  
6: Abilene Street & South Access

2040 Total AM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	567	37	37	442
Future Vol, veh/h	0	0	567	37	37	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
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	0	0	616	40	40	480

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1196	328	0	0	656
Stage 1	636	-	-	-	-
Stage 2	560	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13
Critical Hdwy Stg 1	5.83	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219
Pot Cap-1 Maneuver	301	*855	-	-	1248
Stage 1	802	-	-	-	-
Stage 2	571	-	-	-	-
Platoon blocked, %	1	1	-	-	1
Mov Cap-1 Maneuver	291	*855	-	-	1248
Mov Cap-2 Maneuver	291	-	-	-	-
Stage 1	777	-	-	-	-
Stage 2	571	-	-	-	-





Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1248
HCM Lane V/C Ratio	-	-	-	0.032
HCM Control Delay (s)	-	-	0	8
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

HCM 6th TWSC  
6: Abilene Street & South Access

2040 Total PM.syn  
10/17/2019

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	735	18	18	741
Future Vol, veh/h	0	0	735	18	18	741
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	75	-
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	0	0	799	20	20	805
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1654	410	0	0	819	0
Stage 1	809	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.13	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	148	*793	-	-	1167	-
Stage 1	744	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	145	*793	-	-	1167	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1167	-	
HCM Lane V/C Ratio	-	-	-	0.017	-	
HCM Control Delay (s)	-	-	0	8.1	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

# APPENDIX E

Queueing Analysis Worksheets

Student Pick-up Queueing Worksheet

## Queues

2019 Total AM.syn

05/22/2019

## 1: Abilene Street &amp; Mississippi Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	221	1757	71	2301	337	228	68	162	82
v/c Ratio	0.62	0.51	0.50	0.71	0.83	0.31	0.33	0.33	0.31
Control Delay	65.6	19.5	71.1	26.9	75.6	38.4	64.8	28.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	19.5	71.1	26.9	75.6	38.4	64.8	28.4	13.2
Queue Length 50th (ft)	97	270	61	434	150	72	29	35	0
Queue Length 95th (ft)	117	324	95	505	176	83	46	58	46
Internal Link Dist (ft)		686		832		144		291	
Turn Bay Length (ft)	275		150		275		175		
Base Capacity (vph)	495	3462	216	3256	419	736	317	488	265
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	0.45	0.51	0.33	0.71	0.80	0.31	0.21	0.33	0.31
Intersection Summary									

## 1: Abilene Street &amp; Mississippi Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	400	2160	162	1840	426	378	189	448	205
v/c Ratio	0.75	0.73	0.70	0.65	1.02	0.55	0.64	0.86	0.54
Control Delay	63.2	30.8	71.6	31.0	106.1	40.0	70.0	65.5	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	30.8	71.6	31.0	106.1	40.0	70.0	65.5	12.2
Queue Length 50th (ft)	174	429	138	359	~199	117	83	184	0
Queue Length 95th (ft)	219	519	144	408	#260	172	101	186	81
Internal Link Dist (ft)		686		832		144		291	
Turn Bay Length (ft)	275		150		275		175		
Base Capacity (vph)	851	2964	426	2823	419	685	317	518	383
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	0.47	0.73	0.38	0.65	1.02	0.55	0.60	0.86	0.54

## Intersection Summary

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

## 1: Abilene Street &amp; Mississippi Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	284	2497	74	3489	417	266	86	220	116
v/c Ratio	0.68	0.67	0.52	1.02	0.94	0.46	0.51	0.63	0.45
Control Delay	65.0	19.9	71.3	51.5	87.5	45.2	73.6	36.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	19.9	71.3	51.5	87.5	45.2	73.6	36.5	8.6
Queue Length 50th (ft)	124	418	63	~938	189	92	38	48	0
Queue Length 95th (ft)	167	494	113	#1050	#289	139	68	94	26
Internal Link Dist (ft)		686		832		144		291	
Turn Bay Length (ft)	275		150		275		175		
Base Capacity (vph)	648	3745	203	3424	445	573	170	350	257
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	0.44	0.67	0.36	1.02	0.94	0.46	0.51	0.63	0.45

## Intersection Summary

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

## 1: Abilene Street &amp; Mississippi Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	587	3194	168	2620	546	511	230	624	291
v/c Ratio	0.92	1.04	0.80	0.98	1.16	0.91	0.64	1.24	0.75
Control Delay	74.9	60.0	83.9	50.8	144.2	72.4	66.0	162.8	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.9	60.0	83.9	50.8	144.2	72.4	66.0	162.8	24.7
Queue Length 50th (ft)	262	~886	144	649	~291	214	101	~313	43
Queue Length 95th (ft)	#365	#947	#246	#748	#407	#357	142	#443	#167
Internal Link Dist (ft)		686		832		144		291	
Turn Bay Length (ft)	275		150		275		175		
Base Capacity (vph)	648	3085	229	2685	470	560	445	502	388
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	0.91	1.04	0.73	0.98	1.16	0.91	0.52	1.24	0.75






## Intersection Summary

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








Queues  
2: Abilene Street & Florida Avenue

2019 Total AM.syn  
05/22/2019

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	116	251	360	101	349
v/c Ratio	0.55	0.61	0.13	0.13	0.24
Control Delay	50.5	11.9	2.6	3.4	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	11.9	2.6	3.4	3.5
Queue Length 50th (ft)	71	0	20	12	45
Queue Length 95th (ft)	90	28	31	26	58
Internal Link Dist (ft)	1137		747		196
Turn Bay Length (ft)				75	
Base Capacity (vph)	628	723	2742	790	1472
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.13	0.13	0.24
Intersection Summary					

Queues  
2: Abilene Street & Florida Avenue

2019 Total PM.syn  
05/22/2019

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	68	124	559	175	373
v/c Ratio	0.42	0.48	0.20	0.26	0.24
Control Delay	49.7	14.2	2.1	3.5	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	14.2	2.1	3.5	2.7
Queue Length 50th (ft)	42	0	25	19	40
Queue Length 95th (ft)	67	48	46	43	77
Internal Link Dist (ft)	1137		747		196
Turn Bay Length (ft)				75	
Base Capacity (vph)	628	641	2803	672	1523
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.19	0.20	0.26	0.24
Intersection Summary					

Queues  
2: Abilene Street & Florida Avenue






2040 Total AM.syn  
05/22/2019



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	132	282	444	115	365
v/c Ratio	0.58	0.63	0.16	0.16	0.25
Control Delay	50.7	11.4	3.0	3.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	11.4	3.0	3.9	3.8
Queue Length 50th (ft)	80	0	26	15	50
Queue Length 95th (ft)	134	70	50	37	99
Internal Link Dist (ft)	1137		747		196
Turn Bay Length (ft)				75	
Base Capacity (vph)	628	743	2706	720	1455
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.38	0.16	0.16	0.25
Intersection Summary					

Queues  
2: Abilene Street & Florida Avenue

2040 Total PM.syn  
05/22/2019

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	84	166	816	232	574
v/c Ratio	0.47	0.54	0.29	0.46	0.38
Control Delay	50.2	13.2	2.7	6.7	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	13.2	2.7	6.7	3.8
Queue Length 50th (ft)	51	0	47	34	76
Queue Length 95th (ft)	96	58	81	90	143
Internal Link Dist (ft)	1137		747		196
Turn Bay Length (ft)				75	
Base Capacity (vph)	628	669	2785	509	1506
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.25	0.29	0.46	0.38
Intersection Summary					

Queues  
3: Sable Boulevard & Florida Avenue

2019 Total AM.syn  
05/22/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	102	26	66	131	188	56	437	64	356
v/c Ratio	0.25	0.41	0.11	0.39	0.52	0.50	0.07	0.16	0.09	0.13
Control Delay	37.1	39.2	13.1	41.5	43.2	16.2	3.7	3.2	3.8	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	39.2	13.1	41.5	43.2	16.2	3.7	3.2	3.8	3.0
Queue Length 50th (ft)	19	54	0	36	74	8	6	24	7	18
Queue Length 95th (ft)	27	85	21	67	124	51	12	45	17	34
Internal Link Dist (ft)	1137			1191			757			1215
Turn Bay Length (ft)	150		150	150		150	100		100	
Base Capacity (vph)	271	465	415	317	465	536	768	2671	709	2669
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.22	0.06	0.21	0.28	0.35	0.07	0.16	0.09	0.13
Intersection Summary										

## Queues

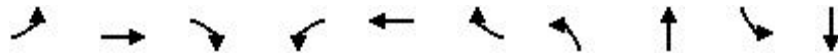
2019 Total PM.syn

## 3: Sable Boulevard &amp; Florida Avenue

05/22/2019



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	127	48	72	124	163	29	422	165	417
v/c Ratio	0.39	0.52	0.19	0.50	0.51	0.47	0.04	0.16	0.23	0.15
Control Delay	42.4	43.6	11.8	44.9	40.5	10.3	3.4	3.0	4.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	43.6	11.8	44.9	40.5	10.3	3.4	3.0	4.3	3.1
Queue Length 50th (ft)	30	69	0	38	67	9	3	23	20	24
Queue Length 95th (ft)	30	111	20	60	100	42	9	46	30	44
Internal Link Dist (ft)	1137			1191			757			1215
Turn Bay Length (ft)	150		150	150		150	100		100	
Base Capacity (vph)	530	879	772	520	879	833	728	2668	726	2692
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.14	0.06	0.14	0.14	0.20	0.04	0.16	0.23	0.15
Intersection Summary										



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	123	35	87	168	226	49	597	77	458
v/c Ratio	0.21	0.41	0.12	0.47	0.56	0.51	0.07	0.23	0.13	0.18
Control Delay	34.0	36.8	11.0	36.5	37.2	14.8	4.6	4.3	5.0	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	36.8	11.0	36.5	37.2	14.8	4.6	4.3	5.0	4.1
Queue Length 50th (ft)	16	64	0	49	96	35	6	44	10	32
Queue Length 95th (ft)	39	105	23	m64	m124	m84	21	84	32	63
Internal Link Dist (ft)	1137				1191		757		1215	
Turn Bay Length (ft)	150	150		150	150		100	100		
Base Capacity (vph)	400	796	697	501	796	806	672	2581	582	2583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.15	0.05	0.17	0.21	0.28	0.07	0.23	0.13	0.18

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	165	55	86	152	221	34	655	163	585
v/c Ratio	0.26	0.59	0.19	0.61	0.54	0.52	0.06	0.25	0.29	0.22
Control Delay	36.4	43.4	10.5	48.6	38.1	11.4	4.2	4.0	6.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	43.4	10.5	48.6	38.1	11.4	4.2	4.0	6.1	4.0
Queue Length 50th (ft)	20	89	0	47	81	20	4	46	24	40
Queue Length 95th (ft)	47	141	30	m76	m118	m61	15	86	65	76
Internal Link Dist (ft)	1137			1191			757			1215
Turn Bay Length (ft)	150		150	150		150	100		100	
Base Capacity (vph)	427	796	708	397	796	803	599	2605	554	2618
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.21	0.08	0.22	0.19	0.28	0.06	0.25	0.29	0.22

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Queues  
4: Chambers Road & Florida Avenue

2019 Total AM.syn  
05/22/2019



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	88	151	16	52	228	1716	24	1077
v/c Ratio	0.53	0.47	0.14	0.22	0.51	0.44	0.16	0.34
Control Delay	49.6	19.1	35.7	19.6	7.3	4.1	12.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	19.1	35.7	19.6	7.3	4.1	12.6	8.9
Queue Length 50th (ft)	51	0	8	10	26	93	5	92
Queue Length 95th (ft)	82	3	18	6	40	151	15	153
Internal Link Dist (ft)		1191		114		725		1214
Turn Bay Length (ft)	100		75		125		100	
Base Capacity (vph)	306	474	212	409	530	3944	150	3162
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	0.29	0.32	0.08	0.13	0.43	0.44	0.16	0.34
Intersection Summary								

Queues  
4: Chambers Road & Florida Avenue

2019 Total PM.syn  
05/22/2019



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	75	249	16	40	139	1286	60	1754
v/c Ratio	0.47	0.64	0.20	0.18	0.51	0.32	0.25	0.54
Control Delay	53.6	24.2	39.4	20.7	13.8	3.3	12.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	24.2	39.4	20.7	13.8	3.3	12.2	10.2
Queue Length 50th (ft)	43	0	8	8	14	58	12	168
Queue Length 95th (ft)	82	34	16	11	38	100	21	261
Internal Link Dist (ft)		1191		114		725		1214
Turn Bay Length (ft)	100		75		125		100	
Base Capacity (vph)	310	544	161	404	387	3977	243	3261
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	0.46	0.10	0.10	0.36	0.32	0.25	0.54
Intersection Summary								

Queues  
4: Chambers Road & Florida Avenue

2040 Total AM.syn  
05/22/2019



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	214	24	80	322	2603	37	1629
v/c Ratio	0.63	0.51	0.22	0.29	0.83	0.69	0.45	0.62
Control Delay	56.4	19.5	35.5	32.3	40.0	8.1	39.7	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	19.5	35.5	32.3	40.0	8.1	39.7	17.4
Queue Length 50th (ft)	76	0	12	38	116	234	14	244
Queue Length 95th (ft)	109	2	22	26	143	379	30	310
Internal Link Dist (ft)		1191		114		725		1214
Turn Bay Length (ft)	100		75		125		100	
Base Capacity (vph)	299	519	159	389	405	3770	82	2633
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	0.44	0.41	0.15	0.21	0.80	0.69	0.45	0.62
Intersection Summary								



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	362	25	62	200	1948	90	2657
v/c Ratio	0.56	0.75	0.30	0.23	0.71	0.51	0.83	0.89
Control Delay	51.3	28.2	41.4	23.6	31.3	5.7	75.8	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	28.2	41.4	23.6	31.3	5.7	75.8	23.5
Queue Length 50th (ft)	63	79	13	19	58	134	38	440
Queue Length 95th (ft)	108	51	21	18	92	225	#62	#679
Internal Link Dist (ft)		1191		114		725		1214
Turn Bay Length (ft)	100		75		125		100	
Base Capacity (vph)	304	583	125	403	361	3806	109	2971
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	0.37	0.62	0.20	0.15	0.55	0.51	0.83	0.89

#### Intersection Summary

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

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

**(These numbers do not reflect peak hour traffic volumes)**

[illegible]

# APPENDIX F

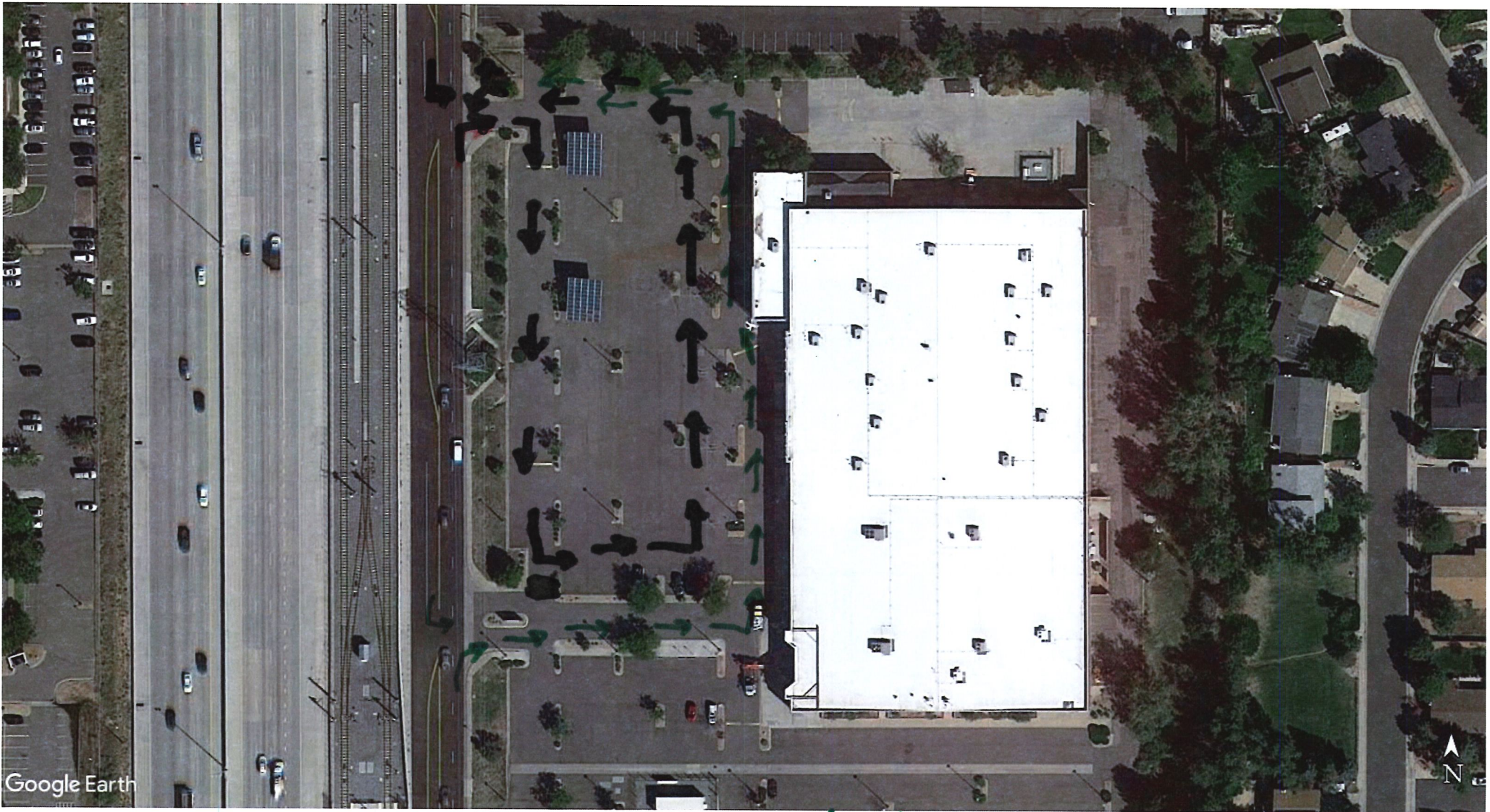
## Site Aerial / Concept Circulation Plan



COLORADO EARLY COLLEGES  
AURORA HIGH SCHOOL  
SITE PLAN



# Drop-off/Pick-up Concept Plan



→ = East Drop-off/Pick-up

→ = West Drop-off/Pick-up