



Traffic Impact Study

Comments 12.31.19:

- 1) Sec 1.0: Please correct references on short-term analysis year for school opening from 2019-2020 to 2020-2021.
- 2) Provide more information on assumed distribution of student body that will be attending the school.
- 3) Project trip generation/distribution/assignment was adjusted to reflect the modified student drop-off circulation plan for the school. However, it is not apparent that the new circulation plan will drastically alter distribution and driveway usage.
- 4) There is no analysis of school drop-off/pickup queuing included. Please provide queuing analysis as well as a circulation plan for the site.
- 5) Provide a diagram to illustrate queue storage and drop-off/pickup drive aisles for circulation.
- 5) See comments throughout.

Colorado Early Colleges
Aurora High School
Aurora, CO

- 1) The opening year for the school has been changed in the revised study.
- 2 and 3) There is expected to be a relatively equal split of use between the east and west drop-off and pick-up areas. The northern access (entry for the west pick-up/drop-off area) being more convenient for the parking area will help distribute the entry use of both site driveway. Vehicles will naturally utilize the entry with less vehicle queues to ultimately help balance the pick-up/drop-off areas.
- 4) A vehicle drop-off and pick-up queuing analysis has been provided in the revised study.
- 5) A concept student drop-off/pick-up circulation sketch has been provided in the Appendix of the revised study.
- 6) Individual responses have been provided throughout this document.

Prepared for:

Colorado Early

Kimley»»Horn

1.0 EXECUTIVE SUMMARY

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 4th Avenue and Blackhawk Street intersection where Abilene Street curves into 4th 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 2019-2020 school year. Analysis was therefore completed for the 2019 short term and 2040 long term horizons per the City of Aurora requirements.

Change from 2019-2020 school year to 2020-2021 school year.

The purpose of this study is to identify school traffic generation characteristics, to identify potential school traffic related impacts on the local street system, a Revised. ion 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 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

A concept student drop-off/pick-up circulation sketch has been provided in the Appendix of the revised study

Provide a diagram showing proposed on-site drive aisles which will accommodate these proposed movements.

2.0 INTRODUCTION

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 4th Avenue and Blackhawk Street intersection where Abilene Street curves into 4th 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 2019 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 2019-2020 school year. Analysis was therefore completed for the 2019 short term and 2040 long term horizons per the City of Aurora requirements.

School will open for the 2020-2021 year with short term analysis needed for 2020 short term.

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

Revised.

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).

4.0 PROJECT TRAFFIC CHARACTERISTICS

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 4th 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 2019 term. The existing school faculty, staff, and student population will remain unchanged. Current **Change to Fall 2020 term.** 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 **Revised.** 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 2nd 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

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

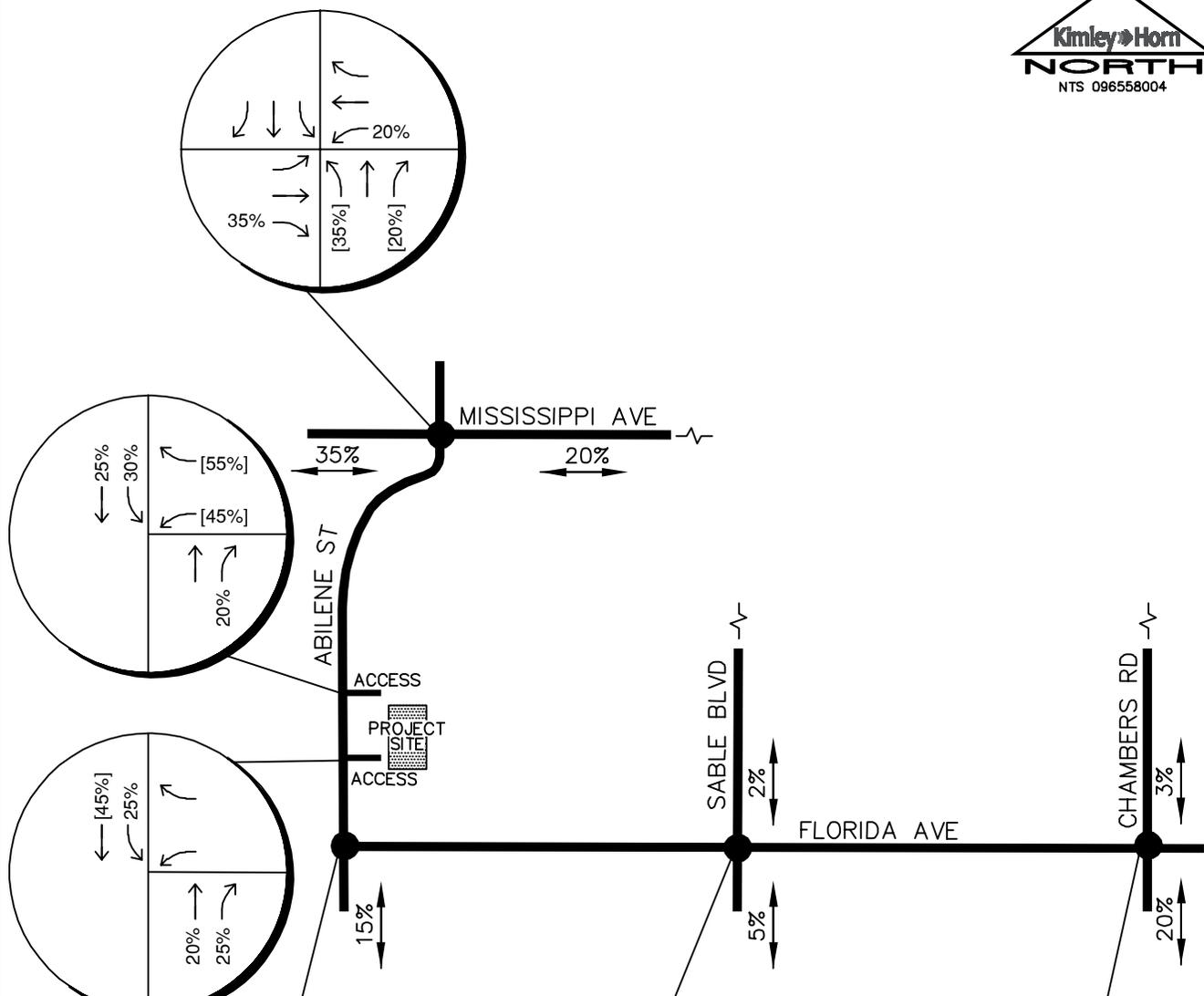
Project traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Project traffic assignment for the Colorado Early Colleges Aurora High School is shown in **Figure**

Provide diagram demonstrating the proposed queueing lanes and on-site circulation patterns

Repeat comment, please see previous response.

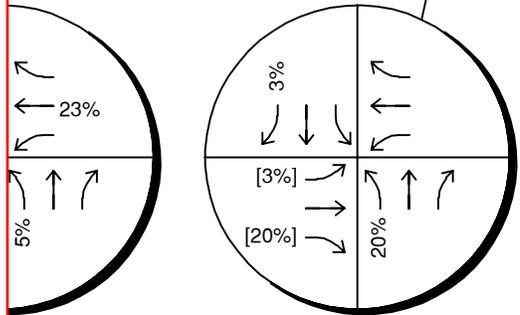
4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the 2019 project buildout year and long term 2040 horizon. These total traffic volumes for the site are illustrated for 2019 and the 2040 long term horizon year is shown in **Figure 8 and Figure 9**, respectively.



Further information will be needed to justify the reduction of the NBR distribution by 10% from the previous submission. Justification could include existing directional traffic patterns on Abilene or information on the locations of homes for the student population. It is unlikely the changes in site circulation on drop-off will encourage enough parents to use the northern driveway in order to reduce the trip distribution as compared with the previous submittal.

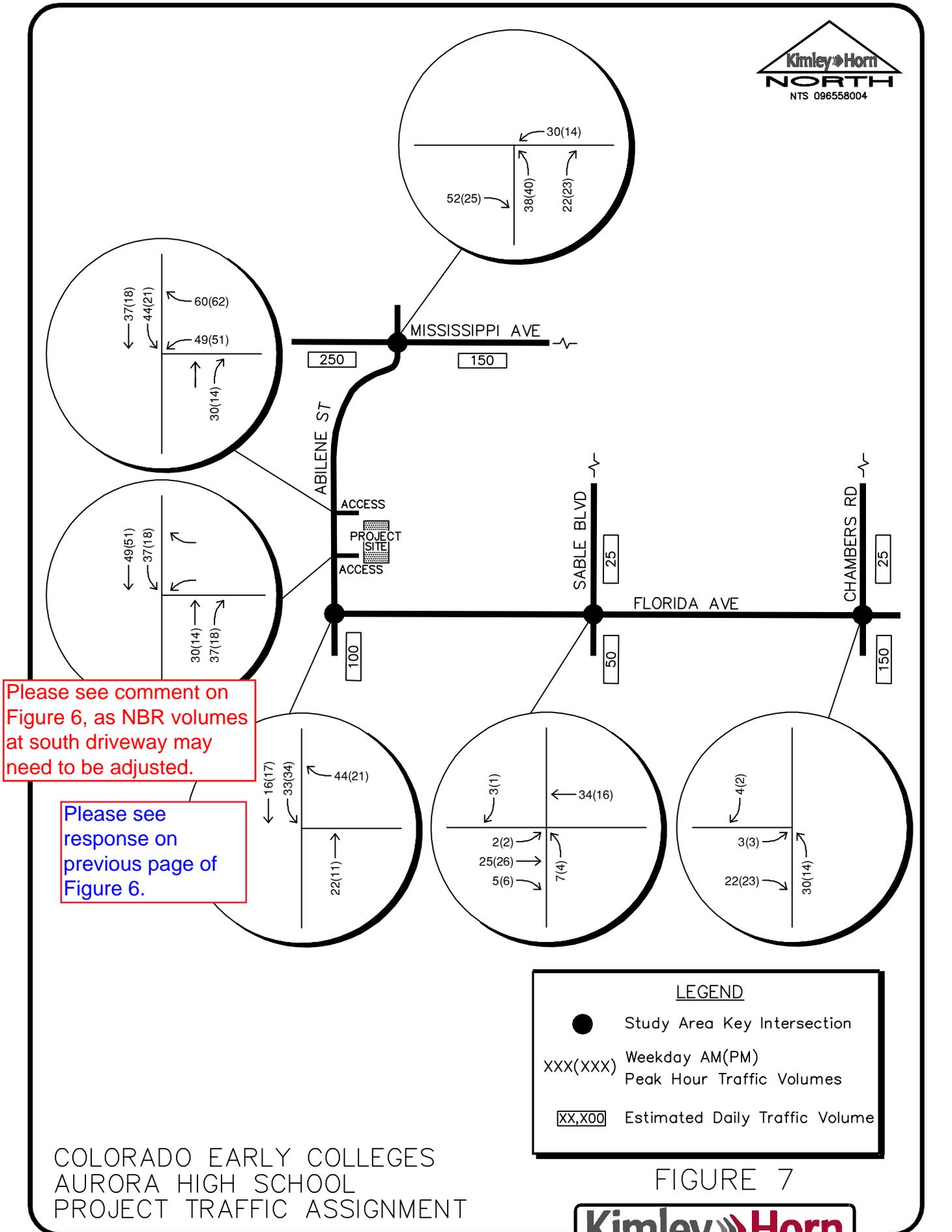
There is expected to be a relatively equal split of use between the east and west drop-off and pick-up areas accessed from the separate driveways. The northern driveway (entry for the west pick-up/drop-off area) will provide access for the parking area, which will help distribute the entry use of both site driveway. Likewise, it is anticipated that vehicles will naturally utilize the entry with less vehicle queues to ultimately balance the pick-up/drop-off areas.



LEGEND

- Study Area Key Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 6



Please see comment on Figure 6, as NBR volumes at south driveway may need to be adjusted.

Please see response on previous page of Figure 6.

COLORADO EARLY COLLEGES
 AURORA HIGH SCHOOL
 PROJECT TRAFFIC ASSIGNMENT

FIGURE 7