COLORADO SUMMER TRANSPORTATION INSTITUTE
REPORT FOR THE 2008 PROGRAM

1. Introduction
The Civil Engineering Technology (CET) program at Colorado State University – Pueblo (CSU-Pueblo) conducted a two-week non-residential session of the Colorado Summer Transportation Institute (COSTI) from June 09 to June 20, 2008. The 2008 program was the second offering of the Summer Transportation Institute (STI) in the state of Colorado.

The STI program was sponsored by the Colorado Department of Transportation (CDOT) and financed by both the Colorado DOT and the Federal Highway Administration (FHWA). The objective of the summer program was to provide awareness and stimulate interest in secondary school students to take advantage of opportunities that exist in the transportation industry. Fourteen (14) students attended and completed the 2008 summer program.

During the two-week period, student participants were introduced to various modes of the transportation system and to the technical specialties and functional areas of transportation professionals. Students learned about career opportunities in transportation and the relevant educational and skills requirements. In addition, students had the opportunity to meet some of the people who work in the areas of construction and operations of transportation systems in the state of Colorado. Further, students had the opportunity to work on class projects and enhancement activities that were meant to broaden academic and technology skills.

This report provides a summary of the 2008 program activities and accomplishments, including the following key items:
   a. Program Staff
   b. The STI Advisory Board
   c. Student Participants
   d. Program Schedule and Activities
   e. Student Transportation and Meals
   f. Program Cost
   g. Program Assessment by participants
   h. Program Assessment by staff
   i. Acknowledgement

2. Program Staff
The principal STI personnel who conducted the CSU-Pueblo 2008 program are listed below. They include three faculty members of the Civil Engineering Technology (CET) program. The three faculty members, depicted in Figures 1, were supported by a U.S.DOT/CDOT summer intern (Mr. Patrick Bryant), the engineering and engineering technology laboratory
manager, and an administrative assistant from the Departments of Engineering and Engineering Technology. The STI program staff members are listed below.

- Sylvester A. Kalevela – STI Director (Associate Professor & Coordinator of CET)
- Wade H. Bailey – STI instructor (Professor of CET)
- Michael A. Mincic - STI instructor (Assistant Professor of CET)
- Paul Wallace – STI Support (Laboratory manager)
- Loretta Cisneros – STI Support (Administrative Assistant)

![Figure 1: Summer Transportation Institute Instructors](image)
3. The STI Advisory Board
The Advisory Board was established by the STI Director to provide guidance and oversight for the STI program. The 2008 STI Advisory Board members included the following individuals:

   a. Debra Gallegos - Colorado Department of Transportation
   b. Adrianne Raiche - Colorado Department of Transportation
   c. Joseph P. Duran - Federal Highway Administration Colorado Division
   d. Hector Carrasco - Colorado State University-Pueblo:
   e. Mary Dugan - Colorado Department of Transportation

4. Student Participants
The 2008 STI was planned for rising 9th, 10th, 11th and 12th graders (that is, students who were in grades 8, 9, 10 and 11 during the 2007/2008 school year). The program sought and encouraged the participation of competent students from underrepresented groups including Native American, Hispanic, African American, and female students.

The 2008 STI started with a field of 24 applicants. However, only 16 participants showed up on the first day. On the second day, one student became ill and could not return. At the beginning of the second week, another student did not return and gave no reason. The remaining fourteen (14) participants completed the 2008 COSTI. The student distribution is given below and the class roster is included in Appendix A.

   a. By gender: Thirteen (12) boys and two (2) girls,
b. All participants were from Pueblo area high schools and alternative programs at the Pueblo Community College.
c. Of the total enrollment, 4 students (or 28.6%) of the participants reported themselves as Hispanic.
d. Five students (or 37.7% of all participants) considered themselves as underrepresented.
e. One student (7.1%) was an African-American.

5. Program Schedule and Activities
Following below is a brief report summarizing the overall program operation of the Colorado Summer Transportation Institute held from Monday, June 09 to Friday, June 20, 2008. The summary includes the opening session, a two-week activity list, and the closing session.

5.1 Program Opening Session
The agenda for the program opening session is included in Appendix B. Following are the highlights of the session:
- The president of Colorado State University – Pueblo, Mr. Joseph A. Garcia, attended the opening session and gave the welcome remarks.
- All members of the COSTI Advisory Board attended the opening session.
- Mr. Tim Harris, the CDOT Region 2 Director, delivered the keynote address.

5.2 Categories of Program Activities
The two-week program included the key activities summarized in Table 1. Students started classes/activities at 9:00 am and ended the school day at 4:00 pm every day. A complete two-week schedule of the program is included as Appendix C. During the two-week period, students were introduced to several modes of the transportation system and to the technical specialties and functional areas of transportation careers. In addition, students participated in various activities as discussed below, including:
- Classroom presentations and demonstrations,
- Field Trips,
- Projects or hands-on activities, and
- Enhancement Activities.

5.3 Classroom Presentations and Demonstrations
Two CDOT professionals participated in making class presentations to the STI students. Most of the class presentations during the two-week program were prepared and delivered by the STI instructional staff. The two CDOT individuals who made classroom presentations are (a) Mr. Travis Vallin, Director of the CDOT Division of Aeronautics, and (b) Ms. Ajin Hu, Traffic engineer at the CDOT Region 2.
5.4 Field trips
Field trips included visits to (i) The Pueblo Transit Center, (ii) The Eisenhower Tunnel on I-70, and (iii) The Colorado Springs International Airport.

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, 09</td>
<td>Opening session, introduction to the transportation industry and the Summer Transportation Institute</td>
</tr>
<tr>
<td>Tuesday, 10</td>
<td>(i) Visited Pueblo City Transit, (ii) Computer laboratory and math preparation</td>
</tr>
<tr>
<td>Wednesday, 11</td>
<td>Introduction to Concrete mixes</td>
</tr>
<tr>
<td>Thursday, 12</td>
<td>Visit of the Eisenhower Tunnel on I-70</td>
</tr>
<tr>
<td>Friday, 13</td>
<td>Prepare concrete mixes and cylinders</td>
</tr>
<tr>
<td>Monday, 16</td>
<td>Traffic Engineering, Air transportation in Colorado</td>
</tr>
<tr>
<td>Tuesday, 17</td>
<td>Surveying Project</td>
</tr>
<tr>
<td>Wednesday, 18</td>
<td>Bridge day: (i) Introduction to bridges. (ii) Bridge design project</td>
</tr>
<tr>
<td>Thursday, 19</td>
<td>(i) Visit Colorado Springs Airport (ii) Complete projects</td>
</tr>
<tr>
<td>Friday, 20</td>
<td>(i) Test projects (ii) Evaluate program. (iii) Closing ceremony</td>
</tr>
</tbody>
</table>
Figure 3: Classroom Presentations
Figure 4: Visit at the Pueblo Transit Facility

Students boarding the bus at the University bus stop

The Pueblo Transit Welcome Team

Left: Ms. Pat Manzanares, Operations supervisor

Right: Mr. William York, Bus Driver

At the Pueblo Transit Facility
Figure 5: Tour of the Eisenhower Tunnel

Tunnel Entrance Views

Tunnel Observation Deck

Panel of electrical switches at the control deck

Heading out after the tour
Figure 6: Tour of the Colorado Springs International Airport
5.5 Hands-On and Enhancement Activities

Students participated in hands-on projects designed by the STI staff. The hands-on activities included (i) popsicle-stick bridge building and testing, (ii) assembly and launching of rockets, (iii) preparing concrete mix and casting of concrete cylinders, (iv) surveying activities with GPS equipment, and a computer-simulated cost analysis for a bridge using WestPoint bridge design program. Students were also taught the basics of Microsoft Excel and Microsoft PowerPoint. Student prepared and made a PowerPoint presentation. Samples of the student activities are depicted in Figures 7 through 9.

Figure 7: Preparing Rockets
Preparing concrete cylinders (June 13, 08)

Students celebrating the results of a concrete cylinder test (June 20, 08)

Figure 8: Preparing and testing concrete cylinders
Construction of popsicle-stick bridge

Testing of popsicle-stick Bridge

Rocket Launching

Figure 9: Bridge Testing and Rocket Launching
5.6 Program Closing Ceremony

The agenda for the program opening session is included in Appendix D. Following are the highlights of the closing session:

- Mr. Robert Leverington, one of the COSTI Advisory Board members, gave the keynote address.
- Four members of the COSTI Advisory Board attended the closing ceremony. They included:
  - Mr. Joseph Duran of FHWA Colorado Division
  - Ms. Debra Gallegos of Colorado DOT
  - Mr. Robert Leverington of Leverington & Associates, Inc., and
  - Dr. Hector Carrasco of the College of Education Engineering & Professional Studies, CSU-Pueblo.
- In addition, many parents of the STI students attended the closing ceremony.
- Each STI student was awarded a certificate of program participation and completion.

Figure 10: Closing Ceremony