

RECRUITMENT

T-REX—Learning Transportation

Denver, Colorado, like most metropolitan areas, has major transportation problems. The main north-south freeway, I-25, exceeds its estimated daily capacity by 180,000 vehicles. The I-25/I-225 interchange is the 14th most congested in the U.S. Denver planning officials realized that highway expansion alone wouldn't solve the congestion problems and they pursued a multimodal alternative. The result is T-REX, short for the Transportation Expansion Project, a landmark design-build collaborative effort involving the Colorado Department of Transportation (CDOT), the Denver Regional Transportation District, the Federal Highway Administration, and the Federal Transit Administration. CDOT officials also saw T-REX as a unique opportunity for internships to expose students to the full range of transportation disciplines, including engineering, planning, public affairs, and human resources.

Denver's Transportation Expansion Project (T-REX) has been in the planning stage for more than 10 years. Development between Denver's commercial center and major business districts to the southeast has long outpaced the highway capacity to support it.

The Denver Regional Council of Governments (DRCOG) is metropolitan Denver's planning organization. In 1992, it commissioned a study that indicated that the area had already surpassed anticipated growth along the southeast corridor and traffic volumes were increasing faster than population and employment growth. The study also recommended that any highway expansion include some type of mass transit element.

Major transportation projects are complex, as Denver's situation demonstrates. The I-25/I-225 interchange required complete reconstruction and building additional interchanges. Improvements must also address drainage on the highway, a problem for decades. And, more than 20 bridges would have to be replaced, expanded, or repaired.

Compounding the task, rehabilitating a heavily congested roadway required the cooperation of diverse agencies. For example, the Colorado Department of Transportation (CDOT) oversees highway transportation, state, and interstate roadways. The Regional Transportation District (RTD) studies rail, bus, and other transit methods and routes. Additionally, any corridor improvement would pass through heavily developed urban areas.

CDOT and RTD cooperated to study the corridor and identify long-term solutions. They recommended, and in 1998, the DRCOG approved a Major Investment Study that included 17 miles of major highway improvements and 19.7 miles of new light rail. The plan incorporated various kinds of mass transit and pedestrian/bicycle transportation options, highway improvements, and transportation management programs such as expanded traffic signal coordination on arterial streets and upgraded ramp-metering equipment.

A year later, metro Denver voters approved two bond issues to fund the project. The result is T-REX, a five-year, \$1.67 billion project that is the first major reconstruction on I-25. Construction is scheduled for 2001 to 2006.



The Benefit of Internships

My career with CDOT actually began while I was attending the Colorado School of Mines. I was accepted for a summer internship in the area of construction administration services. I learned construction oversight. That hands-on experience also helped me decide on the area of engineering I wanted to pursue. That experience changed my life.

Because of that summer, I changed my academic major to civil engineering. I realized that this was something that I wanted to do professionally. I completed my degree while working full time with CDOT.

I think that firsthand experience with a professional is important for young people. They learn things that aren't in textbooks. I've worked with high school students through the TRAC program, raising their general awareness by showing them different applications of the engineering profession. These young people are important because they are the future of our profession.

Another reason that I'm so involved with young people is that, as a Black man, I scan professional meetings or university classrooms, and I don't see a lot of black engineering students. Engineering doesn't seem to be on their career radar. I want to change that.

T-REX is a great project for interns from all areas. Transportation is so much more than just engineering, and we engineers need to be more well rounded.

Del Walker

Department Construction Oversight Manager
Colorado Department of Transportation, T-REX

Planning for Student Involvement

CDOT has long partnered with university engineering schools and departments to place summer interns and work-study students on highway projects. The fieldwork is an opportunity for students to apply classroom principles to practical engineering experience. As a multimodal project, T-REX is an ideal platform for involving not only engineering undergraduate and graduate students, but also students from other disciplines that play increasingly important roles in managing and monitoring transportation projects. These disciplines include planning, monitoring, and communicating

about the business of transportation.

Micki Perez-Thompson joined the T-REX project as the Civil Rights/Contract Compliance Administrator in May 2001, just as the T-REX was moving into phase III of the project. Phase III started with awarding the contract to Southeast Corridor Constructors for the design-build. Shortly after Micki arrived on the project, Del Walker, the Construction Deputy Manager for the T-REX oversight team, presented a proposal to involve student interns on T-REX. Both Micki and Del had experience with the CDOT student program. Del understood the significance of

hands-on fieldwork in helping students make informed career choices. His perspective came from his own college experience—Del Walker changed his major after a summer internship introduced him to construction oversight (see sidebar).

Others involved in T-REX shared Del Walker's vision to develop an internship program. Larry Warner, T-REX Project Director, began his career with CDOT as a college student working summers as a temporary inspector and tester on the Vail Pass project. He fully endorsed an internship program.

Chick Dolby, the Federal Transit Administration's (FTA's) Deputy Administrator for Region 8, was another strong supporter of the program. Chick became involved in the transit industry through a coop experience during his junior and senior years. At graduation, the coop translated into two years of professional work experience.

Micki Perez-Thompson saw T-REX internships as an opportunity to attract a diverse workforce by increasing awareness of transportation as a career option for individuals from many different fields of study and backgrounds.

With Larry's encouragement, Del, Micki, Chick, and other T-REX team members formed a task force to develop the program. The task force brainstormed about connecting with the community, maximizing the opportunities for students, and transferring the technology to the future workforce. The

result is the T-REX Student Internship Program.

“CDOT has long worked with universities and colleges to recruit undergraduate and graduate engineering students,” she says. “We felt that with the multimodal aspect and the uniqueness of a design-build project, this is the technology of the future. Students need to learn this so they know what to expect when they enter the workforce.”

Publicity Works

Chick Dolby concurs. “The value of internships is that students begin to see transportation as a career, not just an academic major or a job. It’s a great marketing tool.”

As it happened, marketing was unnecessary. Students found T-REX, not through the universities, but through the media. The CDOT public information team outreach program includes providing T-REX story ideas to a local TV station. Based on the outreach information, the station does a weekly story on one aspect of T-REX. The reporter liked the idea of the internship program and developed a story around it.

“Talk about the power of the media,” says Micki Perez-Thompson, “that story spread the word and generated the interest that jump-started the program.” Her office received more than 30 calls before the newscast ended.

As if to underscore the interdisciplinary nature of the T-REX project, the TV story focused on the public affairs aspect of the project—media relations and communication

with communities and constituents. Accordingly, the majority of inquiries about the internship came from public relations and communication students, not engineering students.

T-REX’s Del Walker welcomes the multidisciplinary response. “T-REX represents 10 different discipline areas (see chart, page 4),” he says. “Engineering students are our logical audience for internships, but that’s not the only expertise necessary to build a road. It takes different disciplines to make this megaproject a success. T-REX has a significant outreach program, so many disciplines are needed to respond to those areas. Everyone has to be able to deal with the public in a variety of ways, including public meetings, reports, and presentations to community officials. Face it, we need to be more well rounded.”

Creative Funding

One unique aspect of the T-REX Internship program is the funding. T-REX project funding was set by the time the internship program was formed. Consequently, there was no budget to administer the program or pay students for their time. The task force again held a brainstorming session, during which they focused on the business community as a likely partner. The business community is a strong ally of T-REX, and task force members believed that businesses would respond to a program that used the T-REX project as a learning opportunity. “We felt that

involving the business community and supporting students offered another opportunity to demonstrate their commitment to the project,” says Micki Perez-Thompson.

“We then identified several options for local businesses to sponsor a student,” she says. “For example, a business can give a grant to the student, or use scholarship funds for payment directly to a school on behalf of a student. Companies can also hire a student on a temporary basis, although the student will work directly on T-REX. Project staff supervises and provides responsibilities to each student. At the end of the internship period, the company receives a trained employee.” Program administration is now incorporated into the project.

In addition to involving local businesses and community organizations, T-REX is also working with local educational institutions. Professors in several college programs are disseminating information about the program to their students and identifying potential sponsors.

Based on experience level, students would be paid between \$10 and \$12 an hour. The task force sees community sponsorship of interns as a good investment.

Building for the Future

T-REX has identified 10 internships for summer 2002, although Micki Perez-Thompson says that they “hope to accept more students if we can identify more sponsors.”

T-REX Internship Program Discipline Interest Page

DISCIPLINE	POSSIBLE MAJOR OR RELEVANT COURSE WORK
Project Direction	Construction management, business administration, political science, engineering
Quality Assurance	Construction Management, Auditing coursework
Public Information	Marketing, journalism, political science, public speaking, technical writing, media courses
Light Rail Transit (LRT) Engineering	Civil or electrical or mechanical engineering, transportation planning, urban design, architecture, computer database software courses.
Technical Support Services	Civil or traffic engineering, property management/law, surveying, real estate, CADD utility design, public administration, environmental sciences or natural resources, waste management, etc.
Design	Civil or transportation engineering landscape architecture, structures, hydrology, concrete or steel design.
Project Controls	Construction management, business administration, estimating, project scheduling, database computer software training.
Construction	Civil engineering, structures, hydraulics, transportation engineering, soil mechanics, concrete, and materials engineering.
LRT Systems	Electrical or mechanical engineering, ITS, transportation planning courses.
Business Services	Business, information technology, computer science, network administration or database administration, contracts, political science, employment law, business insurance.

With more than 75 applications already requested, the task force is optimistic that the numbers will increase.

T-REX views the Training Internship Program as a unique opportunity for teaching the future workforce about transportation. Micki Perez-Thompson is optimistic that the interns' exposure to the industry will lead to long-term careers in transportation, whether with the agencies involved or with private industry contractors. "Regardless of where students find their professional homes, we are building for the future with the T-REX project."

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Internship Program and an online
application, follow the link for
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