Since its inception in 1983 as a technical assistance program for Iowa’s rural transportation agencies, CTRE (say “see tree”) has evolved into a $10-million-dollar-a-year hub of local, regional, and national transportation-related research, education, and technology transfer. The center is funded through research contracts, leveraging Iowa-based funding at a 2-to-1 ratio.

The Center for Transportation Research and Education administers 11 programs, several distinct yet affinitive research specialties, and a variety of technology transfer and professional education initiatives. The center employs 41 full-time staff and approximately 75–90 student research assistants and works closely with 30 faculty in three colleges at Iowa State.

Staff and faculty at CTRE have expertise in many areas. The major areas are listed here, with the highest levels of activity listed first:

- Traffic safety and operations
- Pavements (asphalt and concrete)
- Bridges and structures
- Roadway management systems (pavements, bridges, markings, etc.)
- Policy and planning
- Outreach and training
- Technologies (geographic information systems, global positioning systems, remote sensing, laser scanning, nondestructive evaluation, intelligent transportation systems, etc.)
- Weather and environment
- Designs, specifications
- Access management
- Public transportation
- Commercial vehicle operations
- Communications and publications

Synergy among CTRE’s activities is fostered by sharing resources like the following:

- Physical space (20,000 square feet of offices, computer labs, and meeting rooms)
- Iowa State’s world-class faculty in civil, construction, and environmental engineering; logistics; planning; statistics; human factors; sociology, and other disciplines
- Seven Iowa State research laboratories (CTRE sponsors funded three of Iowa State’s state-of-the-art labs: portland cement concrete (on campus), concrete testing (mobile), and geotech (mobile))
- Partnership agreement with the Iowa Department of Transportation (DOT)
- Coordination of transportation library services at CTRE, Iowa State, and the Iowa DOT
- Communications/publications services
- Close proximity to the Iowa DOT and the Federal Highway Administration, Iowa Division
- Partnerships with dozens of universities, state DOTs, cities, counties, regional planning organizations, industry associations, equipment manufacturers, materials suppliers, and consulting groups

CTRE’s mission: To develop and implement innovative methods, materials, and technologies for improving transportation efficiency, safety, and reliability while improving the learning environment of students, faculty, and staff in transportation-related fields.

Students

Helping to educate tomorrow’s transportation professionals is a key part of CTRE’s mission. The center sponsors

- Transportation Scholars Program, which offers special curricula, student research opportunities, and professional exchanges
- Multidisciplinary master of science degree in transportation
- Annual Transportation Career Fair for high school students
- Graduate research assistanships

Services

Primarily for Iowa’s cities and counties

- Statewide urban designs and specifications
- Local Technical Assistance Program (transportation library, bimonthly newsletter, technical advice and referral, training)
- On-site safety training by Iowa’s Safety Circuit Rider
- Safety / law enforcement liaison
- Iowa Traffic Safety Data Service
- Conferences and workshops

For Iowa DOT

- Technical support for traffic safety initiatives (e.g., GIS application design, data integration, coordination, implementation, and training services)
- Pavement management system
- Bridge management system
- Focus groups to determine research needs through three-university collaborative agreement
- Three shared (Iowa State-Iowa DOT) faculty (concrete, asphalt, bridges)
- Research as requested through an umbrella contract

For local, regional, and national clients, public and private

- Biennial research symposium
- Regional conferences
- Print and online publications
- Website developing and hosting
Complementary programs
The center manages 11 programs that, individually, focus on specific aspects of transportation and, collectively, represent an integrated approach to roadway research. In general, each of these programs has specific constituencies and long-term funding. Several programs represent agency-industry-university partnerships to meet specific needs.

**Programs with state, regional, and national partners and audiences**

- Traffic Safety and Operations (data analysis and visualization tools for enhancing traffic safety, law enforcement, and planning and design)
- Bridge Engineering Center (improvement and maintenance of bridge infrastructure, focusing on nondestructive technology)
- National Concrete Pavement Technology Center (advancements in concrete pavement technology; endorsed by the American Concrete Pavement Association and state and regional organizations)
- Partnership for Geotechnical Advancement (engineering improvements in soil mechanics, earth structures, foundations, and retaining structures)
- Construction Management & Technology (innovative roadway construction processes and technologies like laser scanning)
- Roadway Infrastructure Management & Operations Systems (pavement and bridge management, traffic control devices and markings management, and traffic engineering)
- Weather Impacts on Mobility and Safety (managing and minimizing weather’s impact on surface transportation safety and mobility)
- Midwest Transportation Consortium (U.S. DOT’s university transportation center for region 7, focusing on sustainable transportation system management and operations)

**Programs with Iowa-focused missions**

- Iowa Statewide Urban Design and Specifications (uniform designs and specifications for Iowa’s urban jurisdictions)
- Iowa Traffic Safety Data Service (crash data analysis for Iowa’s local agencies)
- Local Technical Assistance Program (technology transfer for Iowa’s cities and counties)