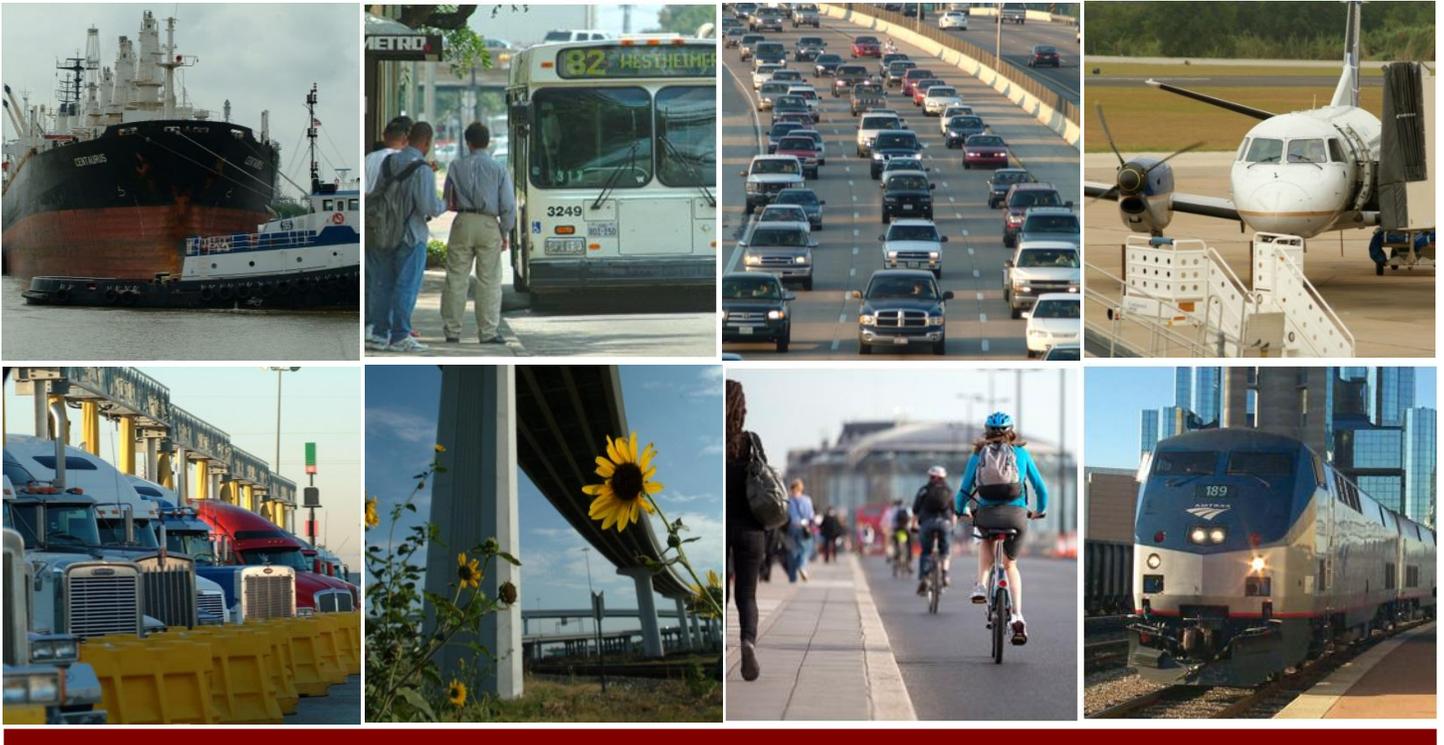


# Texas A&M Transportation Institute

## Strategic Plan

2016–2018



Updated October 2015

# Texas A&M Transportation Institute Strategic Plan 2016–2018

## Director's Message

The Texas A&M Transportation Institute (TTI) has more than 65 years of experience in identifying and solving transportation problems through research and innovation. The ever-changing landscape of transportation needs and new technologies, as well as funding issues and a rapidly growing population, creates competing transportation priorities and opportunities. The Institute's research results provide reliable, objective information for industry leaders and policy makers to help them make good decisions.

The need for results-oriented transportation research has never been greater. Transportation connects all aspects of our lives: home, work, education, commerce and recreation. At TTI, we study all areas of transportation, such as: mobility, safety, economics, freight, human factors, infrastructure, security, the environment and workforce development.

Through our strategic planning efforts, we have identified three imperatives that will receive primary focus during the duration of this Strategic Plan:

1. Strengthen the research program.
2. Attract and retain exceptional staff.
3. Develop and maintain key relationships.

The goals, strategies and performance measures identified for these three key imperatives are guiding the Institute in our pursuit of better ways to develop and maintain a safe and efficient transportation system — saving lives, time and resources.

## Introduction

TTI was established in 1950 as an agency of the State of Texas and is a member of The Texas A&M University System. The Institute seeks solutions to the problems and challenges facing all modes of transportation. TTI researchers conduct more than 600 research projects annually with over 200 sponsors at all levels of government and the private sector.

At any one time, TTI has research sponsors in about 30 states and has conducted research for sponsors in all 50 states and 20 foreign countries. In the laboratory and the classroom, TTI researchers help prepare students for transportation careers.



Dennis L. Christiansen, P.E.  
Agency Director

Through strategies and products developed through its research program, TTI has saved the state and nation billions of dollars. The Institute has made significant advancements in transportation safety, mobility, planning, systems, infrastructure, the environment and other areas vital to good quality of life.

### **Our Locations**

With headquarters and laboratories on the Texas A&M University campus in College Station, TTI also maintains several facilities in Bryan, including roadside safety, visibility, pavements, and environmental and emissions testing facilities at the university's Riverside Campus.

TTI has eight urban offices in Texas: Arlington, Austin, Dallas, El Paso, Galveston, Houston, San Antonio and Waco. The Institute also has an office at the Texas A&M University System Washington, D.C., facility. Internationally, TTI has an office in Mexico City, Mexico, at the Texas A&M University Mexico City Office, and a presence in Doha, Qatar, on the campus of Texas A&M University at Qatar.

### **Our Vision**

TTI's vision is to be a premier higher-education-affiliated transportation research institute that is sought out and engaged by organizations from all over the world to solve transportation problems that save lives, time and resources.

### **Our Mission**

Consistent with the Texas A&M University land grant mission of teaching, research and service and the TTI vision, TTI's mission is to:

- identify and solve transportation problems through research;
- transfer technology and knowledge;
- develop diverse human resources to meet the transportation challenges of tomorrow; and
- have a meaningful research program in all key, topical areas.

### **Our Philosophy and Values**

TTI's main functions are to:

- identify, analyze and solve current and future transportation problems;
- conduct basic and applied research into all modes of transportation;
- enhance education by providing research facilities and funded research opportunities for students and faculty within The Texas A&M University System and other universities in Texas;
- support the enhancement, development and diversification of the transportation workforce in Texas;

- assist and speed implementation of research results and intellectual property into practice by the transportation industry and the private sector; and
- disseminate research information to policy makers, transportation professionals and the general public.

TTI is guided by a fundamental philosophy that values integrity, objectivity, excellence and service to our sponsors; innovation in our research endeavors; responsible stewardship of public resources; and a strong respect for the rights and values of individuals.

### **Our Environment**

The quality of life provided to our citizens, as well as the economic competitiveness of the state and nation, depends on how well transportation issues and needs are addressed. Surveys statewide and nationally illustrate that the problems associated with transportation infrastructure, mobility and congestion are among their top concerns. Attention by the Texas Legislature to transportation matters over the past several sessions further indicates the importance of this issue to the state.

While the Institute's research agenda primarily responds to specific sponsor requirements, transportation consumers throughout Texas and the nation are the ultimate beneficiaries of the work conducted by TTI. As recognized leaders, TTI researchers are active in developing the national transportation research agenda.

The Institute focuses on developing research-based solutions in major areas, such as: safety, mobility, environment, infrastructure, economics, policy, human and behavioral studies, connected transportation, planning and operations, freight movement, security, and workforce development.

### **Our Strategic Plan**

The TTI Strategic Plan is designed to provide clear guidance for Institute priorities and decisions. It includes strategies and actions and establishes performance metrics that will be used to assess accomplishment of strategic objectives. The plan provides focus and clarity for the effective allocation of resources to support the Institute's top priorities.

The TTI Strategic Plan acknowledges that the Institute has limited resources, and those resources must be applied to the areas that will generate the greatest benefit during the time frame of the plan. It does not suggest that other imperatives are not important, but selects the imperatives that are most likely to have the greatest impact on the strategic direction of the Institute for the duration of this plan. The imperatives are broad statements of our intent. Their implementation is closely coordinated with the TTI Enterprise Risk Management Plan and requires a coordinated effort across the organization.

### ***Imperative 1: Strengthen the Research Program.***

**Rationale:** Since its inception, TTI has experienced great success in building and growing a comprehensive research program. As we position the Institute for the next generation of opportunities and challenges, we must be deliberate in making strategic choices to build a strong and viable research program for the future.

Our ultimate goal must be to build our research program in a manner that produces long-term stability, diversifies our research portfolio to no more than 40 percent of contract expenditures from any one sponsor, and achieves a targeted annual growth rate of 4–5 percent.

#### **Goal 1.1 Diversify research expenditures and sustain 4–5 percent annual growth.**

**Rationale:** Future TxDOT research funding levels are uncertain. To secure the research program and reduce risk for the long term, minimize risk, and continue to grow the agency, TTI must be deliberate in diversifying its research program by seeking more contracts on a sustained basis from a broader base of research sponsors. The TTI Executive Team is taking significant steps to promote and support research diversification throughout the Institute. As a result, non-TxDOT research expenditures have grown by almost 6 percent per year in the last five years and will continue to be a primary focus.

Total TTI research contract expenditures have continued to increase by an average of 4 percent annually over the last 5 years. This level of growth allows TTI to sustain existing staff, attract and retain new staff as needed, grow the Institute and maintain quality research products.

#### **Performance Measures:**

- 4–5 percent of annual growth in research expenditures (annually).
- No more than 40 percent of annual research expenditures from a single sponsor. (by the end of FY 2018).
- At least 5 percent annual growth in research expenditures from non-traditional sponsors (annually).

**Strategy 1.1.1** Develop, implement and sustain an Institute-wide research diversification program. The diversification program will include but not be limited to bonus awards, marketing tools/strategies, training, strategic hires, and programmatic additions and changes as needed.

**Strategy 1.1.2** Provide support for cross-program and center collaborations among TTI researchers in multiple programs and office locations.

**Strategy 1.1.3** Identify and pursue new and expanded research opportunities with existing and new sponsors. These efforts may include actively pursuing teaming opportunities with other university-affiliated research groups, private or non-profit organizations, consulting firms and industry. Special emphasis will be placed on

maximizing task order contracts granted to the Institute and pursuing work in new and emerging transportation research areas.

**Strategy 1.1.4** Explore new, non-traditional private- and public-sector research partnerships by strategically inviting key individuals from select organizations to TTI to meet with key leadership and researchers and introduce them to TTI's capabilities.

**Goal 1.2 Continue TTI's priority commitment to TxDOT as our primary sponsor of research.**

**Rationale:** TTI is committed to TxDOT and recognizes that this relationship is critically important to our overall research program and mission. The diversification of the TTI funding base is intended to strengthen our expertise and service to TxDOT, while reducing the risk of dependence on a single sponsor.

**Performance Measures:**

- 100 percent on-time submission of TxDOT research deliverables (ongoing).
- Meetings with top TxDOT leadership (at least monthly).
- TTI selected to serve as a key resource for 60 percent of high-profile TxDOT initiatives (ongoing).
- Continued success in the TxDOT research program by being selected for 40 percent or more of TxDOT research awards (annually).

**Strategy 1.2.1** Develop a process to ensure TxDOT district engineers, division directors and administration are contacted by TTI on a regular basis to assess their research needs and their assessment of TTI's performance and value.

**Strategy 1.2.2** Assign a Leadership Team member with the oversight responsibility for each TxDOT-sponsored project.

**Strategy 1.2.3** Actively promote TxDOT research on the TTI website and in each issue of the *Texas Transportation Researcher* magazine and work with TxDOT Communications to jointly promote research results.

**Goal 1.3 Provide high-quality and efficient internal support services and systems.**

**Rationale:** TTI provides a diverse range of support services to help achieve TTI's mission. In our competitive environment, these need to be both high quality and efficient. Our business processes and systems must support TTI's efforts to produce quality work in a timely manner for our research sponsors.

**Performance Measures:**

- Achievement of excellent or good ratings on the biennial Internal Support Services Survey for a combined score of at least 85 percent or higher for each TTI support group (biennially in even-numbered years).
- Absolute scores and percentage of improvement in scores on the biennial Internal Support Services Survey, which is benchmarked against results of previous surveys (biennially in even-numbered years).

- Implementation of opportunities to enhance productivity and cost-effectiveness through reduction of paper-based and manual processes (at least one opportunity annually).
- Comprehensive information about TTI support services on MyTTI, in TTI-wide announcements, at new employee orientation sessions and during other Institute-wide meetings (ongoing).
- TTI staff participates in at least one voluntary training or professional development activity (annually).

**Strategy 1.3.1** Implement an enhanced research management software system to support project management for TTI programs and divisions.

**Strategy 1.3.2** Offer proposal development assistance to researchers through the Research Development Office and TTI Communications.

**Strategy 1.3.3** Modify TTI rules, procedures and guidelines as necessary to be consistent with A&M System policies and regulations and state laws.

**Strategy 1.3.4** Continue implementation of the recommendations of the 2014 Internal Support Services Survey, which is benchmarked against the Internal Support Services Survey conducted in 2012.

**Strategy 1.3.5** Continue the Institute’s commitment to providing top-quality support services in the following areas to support and enhance TTI’s research program: business services; communications; compliance; facilities, safety and support services; human resources; information technology; and research development.

**Strategy 1.3.6** Encourage and increase staff and managerial participation of TTI professional and leadership programs, including administrative staff seminars, CORE and CONNECT leadership programs, professional development online courses, Professional Enhancement Training Series and Management Essentials Training Series.

**Goal 1.4 Provide high-quality research facilities and equipment.**

**Rationale:** TTI conducts a diverse range of research projects to help achieve TTI’s mission and meet research sponsor expectations. In our competitive environment, the Institute must maintain state-of-the-art research facilities and equipment to continue to ensure 4–5 percent growth in research expenditures annually, to attract and retain top talent and to maintain its international reputation as an innovative research institute.

**Performance Measures:**

- 4–5 percent growth in number of research projects and sponsors using TTI research facilities and laboratories (by the end of FY 2018).
- Completion of the TEES Center for Infrastructure Renewal (by January 2018).
- Sustain or grow TTI’s investment in research-related capital equipment (annually).

**Strategy 1.4.1** Maintain and implement a five-year capital equipment plan to guide Institute equipment and facilities investments.

**Strategy 1.4.2** Participate in the planning, design and development of the new TEES Center for Infrastructure Renewal, which will house TTI researchers and staff.

**Strategy 1.4.3** Participate in the planning and evaluation of the The Texas A&M University System Master Plan.

**Goal 1.4 Communicate TTI’s capabilities and successes using a diverse range of outreach channels and a coordinated message strategy.**

**Rationale:** TTI’s reputation is the result of the breadth and quality of the agency’s research, but our growth depends heavily on ensuring that public officials, taxpayers and potential sponsors are aware of our capabilities and successes. The rapid growth of research activities with a high degree of public interest — particularly in the areas of infrastructure, mobility, policy and safety — underscores the need for a proactive communications and marketing strategy.

**Performance Measures:**

- 5 percent increase in media coverage for TTI research projects annually, based on number of media mentions, media value in dollars and number of media impressions (annually).
- Expansion of TTI media coverage into at least 10 new media markets (by the end of FY 2017).
- Increase social media traffic and followers by 40 percent (by the end of FY 2017).
- Five more TTI researchers annually are willing to promote their research results to media through media interviews (annually).

**Strategy 1.4.1** Update the communications and strategic marketing plan, identifying activities that support the agency’s overall goals.

**Strategy 1.4.2** Ensure adequate resources to support effective communications and marketing efforts.

**Strategy 1.4.3** Involve senior leadership and appropriate division heads in planning major media announcements and marketing initiatives.

**Strategy 1.4.4** Work with program managers and researchers to ensure appropriate promotion of projects and benefits that enhance TTI’s brand and reputation.

***Imperative 2: Attract and Retain Exceptional Staff.***

**Rationale:** To continue its national and international status as a premier transportation research institution, TTI must attract the best and brightest employees. To do so, TTI must offer competitive compensation and benefits. Experience has shown that staff with exceptional knowledge, skills and expertise are the most successful in securing new

research sponsorships. Therefore, TTI must ensure that our employees have needed opportunities to grow professionally, while also enhancing the recognition we give to our high-performing employees.

**Goal 2.1 Retain TTI’s exceptional staff by offering ongoing training opportunities and employee recognition.**

**Rationale:** TTI seeks to retain exceptional employees through effective recognition of accomplishments and by offering professional development opportunities and career paths for employees to advance in their careers at TTI.

**Performance Measures:**

- TTI’s employee retention rate is better than 80 percent of the A&M System members (annually).
- Secure at least 50 nominations for the TTI Employee Awards Program (annually).
- TTI staff participates in at least one voluntary training or professional development activity (annually).
- 40 percent of TTI employees participate in the TTI CORE and CONNECT leadership development programs (by the end of FY 2018).

**Strategy 2.1.1** Continue to develop new content and promote the TTI Professional Enhancement Training Series and Management Essentials Training Series.

**Strategy 2.1.2** Conduct at least one CORE and one CONNECT leadership development program annually.

**Strategy 2.1.3** Propose the design and development of TTI’s CHAMPION leadership development program in FY 2017.

**Strategy 2.1.4** Promote TTI’s online professional development portal quarterly.

**Strategy 2.1.5** Emphasize training and professional development in annual performance evaluations.

**Goal 2.2 Attract and retain TTI’s exceptional staff by offering competitive compensation, excellent workplace environment and outstanding professional opportunities.**

**Rationale:** To sustain our reputation as a premier transportation research institute, TTI must continually seek to identify and attract the best minds and skills to support the Institute’s mission. TTI must also be mindful of changing and emerging transportation fields and proactively attract individuals who are in the forefront of these growing segments of the transportation industry. TTI must offer competitive salaries to attract top talent. TTI staff involvement in professional organizations provides the opportunity to identify potential new talent, including recent graduates of graduate transportation programs, and increase the visibility of our talented staff in critical transportation research venues.

**Performance Measures:**

- Salaries are aligned with and competitive in comparison to the market and to the A&M System pay plan (by the end of FY 2016).
- 100 percent of departing employees are encouraged to participate in voluntary exit interviews (ongoing).
- 30 percent of new TTI staff participate in the TTI Mentoring Program within the first three years of their hire date (ongoing).
- Actively recruit for key positions, including interview teams and search committees when needed (ongoing).
- Continue to actively recruit research positions to ensure the stability and growth of the organization (ongoing).
- Identify mission-critical administrative staff positions and work with the necessary authorities to ensure that necessary staffing levels and service quality are maintained (ongoing).

**Strategy 2.2.1** Within available resources, maximize TTI staff involvement and exposure through participation in professional organizations.

**Strategy 2.2.2** Continue to strengthen TTI’s research program through strategic hires.

**Strategy 2.2.3** Implement measures to recruit and retain high quality staff for non-research positions.

**Strategy 2.2.4** Utilize information from the internal support services survey, salary surveys and exit interview data to strengthen employee retention efforts.

**Strategy 2.2.5** Continue to promote and support the TTI Mentoring Program.

**Goal 2.3 Improve staff diversity by developing and incorporating measures to diversify the TTI workforce to be more reflective of the Texas population.**

**Rationale:** As a national leader in transportation research, TTI must be diverse. Diversifying our workforce to be more reflective of the population of Texas will enhance our ability to expand our research portfolio and enhance the quality of that portfolio to meet the needs of our citizens, sponsors, decision makers and employees.

**Performance Measures:**

- Update the TTI Workforce Diversity Plan (by the end of FY 2016).
- Host tours and presentations for at least two summer camps per year that include ethnically diverse students (annually).
- Identify at least four opportunities per year to advertise TTI’s job openings to diverse audiences (annually).

**Strategy 2.3.1** Review and update the TTI Workforce Diversity Plan.

**Strategy 2.3.2** Host science, technology, engineering and mathematics (STEM) and other summer camps for tours and presentations about transportation careers.

**Strategy 2.3.3** Seek opportunities to advertise TTI's job openings to diverse audiences.

#### **Goal 2.4 Sustain TTI staff's national leadership role in transportation research.**

**Rationale:** Our expert staff has continuously earned credibility for TTI and themselves by being active in state, national and international transportation activities and professional organizations. Because our staff is the face of TTI research, involvement in professional transportation leadership roles is extremely important to the quality and credibility of the Institute, as well as the ongoing development of our research program.

#### **Performance Measures:**

- At least 75 TTI personnel are serving in leadership positions in prominent state and national professional organizations (ongoing).
- At least 125 TTI personnel are invited to give papers or invited remarks at major national conferences or symposia (annually).
- TTI personnel receive at least 20 local, state or national individual or project awards (annually).

**Strategy 2.4.1** Recognizing realistic resource constraints encourage and support the TTI staff's continued involvement in state and national transportation activities. As funding becomes available, provide increased support, funding and information to encourage TTI staff involvement in leadership activities.

**Strategy 2.4.2** Participate as a public sector sponsor for conferences and symposia on topics that the TTI Executive Team deems strategically important to TTI's research program.

**Strategy 2.4.3** Recognize TTI staff statewide and national leadership positions and awards on the TTI website and in the *Texas Transportation Researcher* magazine.

#### ***Imperative 3: Develop and maintain key relationships.***

**Rationale:** TTI has a number of key relationships it must maintain on a consistent basis. Our ability to engage our key constituents is vital to our long-term success. We will be diligent in enhancing and maintaining key relationships with:

- our many private, state, federal, national and international research sponsors;
- The Texas A&M University System and its member universities and agencies;
- academic colleges and departments within Texas A&M;
- the Texas Legislature and Congressional Delegation;
- members of the TTI Advisory Council;

- key transportation business (industry) leaders; and
- other key constituents.

### **Goal 3.1 Enhance TTI’s reputation with A&M System leadership.**

**Rationale:** As a member of The Texas A&M University System, it is important for TTI to be an active participant in A&M System initiatives and develop positive relationships with A&M System leadership and staff.

#### **Performance Measures:**

- Demonstrated support for TTI by System leadership by requesting TTI research and support services (ongoing).
- Host key System leadership at TTI events (at least twice annually).
- 100 percent TTI participation in System-wide committees and initiatives (ongoing).
- 100 percent accomplishment of performance goals set by System leadership (ongoing).
- 100 percent timely and satisfactory responses to System requests (ongoing).

**Strategy 3.1.1** Meet or exceed the A&M System’s expectations by fostering positive relationships with the Board of Regents, chancellor, vice chancellor for engineering, A&M System Executive Committee and A&M System staff by meeting their performance goals and responding to their requests in a timely manner.

**Strategy 3.1.2** Meet or exceed the A&M System’s expectations for the implementation of System-required programs and plans, such as Compliance, Emergency Management, and Enterprise Risk Management, among others.

**Strategy 3.1.3** Continue to have an active role in representing TTI in implementation of A&M System initiatives and service on A&M System committees and working groups.

### **Goal 3.2 Enhance TTI’s relationships with the academic community and expand research partnerships with academia.**

**Rationale:** TTI, like most university-affiliated transportation research organizations, has a rich tradition of reliance on academic researchers to address the needs of its sponsors. Academic researchers are an invaluable cornerstone for university-based organizations involved in transportation research. Among the most important missions TTI undertakes is the training of students. The need to train the next generation of transportation professionals is recognized as a significant challenge facing the profession. TTI is in a unique position to provide substantial support and experience to students considering transportation as an area of emphasis. Academic ties improve TTI’s ability to respond to a broader range of sponsors with more diverse research needs, thereby increasing the diversity and richness of the Institute’s intellectual base.

**Performance Measures:**

- At least 200 students are employed by TTI (annually).
- At least 40 faculty members are involved in TTI research projects (annually).
- Development of joint laboratories and research facilities for the Center for Infrastructure Renewal among TTI, TEES and the Dwight Look College of Engineering to meet the building's target completion date (by January 2018).
- Joint promotion of at least two research programs or topics annually between TTI and the Zachary Department of Civil Engineering at conferences, workshops or through joint marketing initiatives (annually).

**Strategy 3.2.1** Continue to implement the April 2014 recommendations of CE/TTI Collaboration Team to enhance research, education, marketing and other collaboration opportunities between TTI and the Zachry Department of Civil Engineering.

**Strategy 3.2.2** Work cooperatively with the Dwight Look College of Engineering and TEES to design the joint laboratory and office space in the Center for Infrastructure Renewal.

**Strategy 3.2.3** Develop sustainable initiatives with academic units that significantly enhance transportation education.

**Strategy 3.2.4** Provide graduate assistantships and employment to undergraduate students annually.

**Strategy 3.2.5** Pursue educational and exchange opportunities with universities throughout the world, including those with which TTI has memoranda of understanding or other cooperative agreements.

**Goal 3.3 Maintain and enhance TTI's relationship with elected officials.**

**Rationale:** As a state agency, it is important for TTI to develop successful relationships with state and congressional leaders and to assist them in addressing transportation challenges and solving transportation problems. TTI's Transportation Policy Research Center, which was launched under the direction and support of the Texas Legislature, regularly performs research studies for and interacts with members of the Texas Legislature and their staff. TTI maintains and continually updates an internal strategy document that tracks legislative interests and concerns, and targets opportunities to provide legislators with meaningful and timely information.

**Performance Measures:**

- Sustain or grow directed policy research through TTI's Transportation Policy Research Center (ongoing).
- Conduct meetings/briefings for legislative transportation leadership and legislative offices (at least quarterly).
- Invite state transportation leadership and staff to TTI (at least annually).

- Provide 100 percent timely and complete responses to legislative requests for information (ongoing).
- Provide TTI expert testimony before at least five legislative committee hearings on transportation issues during each legislative session/interim (biennially).

**Strategy 3.3.1** Conduct specific research studies of state interest through TTI’s Transportation Policy Research Center.

**Strategy 3.3.2** Respond in a timely manner to requests for information to assist state and congressional decision makers with transportation policy issues and transportation initiatives.

**Strategy 3.3.3** By visiting regularly and providing information of interest to legislators, enhance TTI’s relationship with key transportation legislative committees at both the state and federal levels.

**Strategy 3.3.4** Include legislators in TTI site visits and events as appropriate.

**Goal 3.4 Enhance relationships with TTI Advisory Council members.**

**Rationale:** This small group of high-level transportation professionals provides a tremendous service to the Institute by providing advice on transportation issues and supporting TTI’s research programs and initiatives. TTI must continually nurture and grow its relationship with the Advisory Council.

**Performance Measures:**

- At least 75 percent of TTI Advisory Council members participate in the annual Council meeting (annually).
- At least 50 percent of TTI Advisory Council members are actively engaged in TTI initiatives and/or legislative activities (ongoing).
- Invite the TTI Advisory Council to TTI events (at least two events annually).

**Strategy 3.4.1** Hold an annual TTI Advisory Council meeting to update the council on TTI’s activities, learn about members’ perspectives on transportation issues and solicit guidance.

**Strategy 3.4.2** Identify ways in which the TTI Advisory Council can be involved in increasing research program scope, size and diversity and in seeking contacts in desired new areas of research.

**Strategy 3.4.3** Continue to actively engage the TTI Advisory Council in Institute activities and rotate membership as needed.

**Strategy 3.4.4** Engage TTI Advisory Council members in TTI legislative activities and TTI-sponsored events as appropriate.

**Strategy 3.4.5** Provide the Advisory Council with the quarterly *Texas Transportation Researcher* magazine.