

CAMPUS TRANSPORTATION TECHNOLOGY INITIATIVE



About This Initiative

The future of transportation is being rewritten on the Texas A&M University campus. A top priority of that vision includes the alignment of mobility, safety, connectivity and efficiency to enhance campus transportation options and experiences. The goal is to transform the campus transportation experience and enhance the overall quality of life by integrating private-sector transportation innovations and improvements. The Campus Transportation Technology Initiative supports that transformation by exploring and demonstrating technologies that advance campus transportation and planning priorities now and into the future.

Organizations that have developed new technologies with the capability to improve any aspect of transportation on the Texas A&M campus have been invited to demonstrate their technologies on campus as part of the initiative. These technologies could range from smart device applications to fully automated vehicles — the goal of each is to best serve the mobility needs of the campus and to use the campus as a test bed for the technology. Texas A&M, Texas A&M Transportation Institute (TTI) and their partners will evaluate the technologies and determine how well they work independently or in combination with other technologies in a complementary fashion to solve transportation issues in the campus environment.

Through both operational deployments and classroom projects, the initiative has been applying and evaluating private-sector innovations for their role in the campus environment as well as examining the efficiencies of various campus transportation aspects, such as the transit system. These efforts are also laying the groundwork for embracing transformative technologies on campus, such as the use of autonomous vehicles.

Campus Test Bed Facts



5,200
acres



61,000+
students



10,000+
faculty and staff



\$892+ million
in research
expenditures
(largest research
university in the
southwest United States)



53,000
daily transit riders



36,000
parking spaces



120,000
people on football
game days
(4th largest
downtown in Texas)



Bisected
by railroad tracks



18,000+
engineering students
(Texas A&M College of
Engineering is one of the
largest in the country)

Project Approach

TTI has partnered with the Texas A&M Engineering Experiment Station to lead the engineering and scientific aspects of the project, while engaging faculty and students across the campus to evaluate the engineering, planning, social and policy aspects of the various technology deployments. Representative projects include:

- evaluation of the first U.S. application of solar luminescent bicycle pavement markings;
- viability planning for high-speed, high-density transport options on the Texas A&M campus;
- analysis and efficiency optimization of on-campus transit routes;
- use case development for integration of IBM Watson into autonomous shuttles; and
- use of WiFi analytics to create pedestrian flow maps.



Benefits

The Campus Transportation Technology Initiative creates a campus community test bed for organizations to test their technologies among thousands of people and multiple transportation modes. The experts testing the technology are nationally known and highly respected transportation researchers. The team will review and evaluate the technologies and identify new approaches for moving students, faculty and visitors using advanced technologies and new programs.

Evaluation and implementation of these technologies will improve safety and ease of mobility for students, faculty, staff and visitors, thereby enhancing the quality of life on campus.

The initiative also establishes The Texas A&M University System as a leader in providing a campus-based environment for identifying and implementing transportation solutions.



TTI, Texas A&M and the City of College Station are teaming up to develop a Smart Intersection Initiative to research, develop, and test automated and connected vehicle technologies.



Partnership Opportunities

The combination of students, faculty and staff on campus, paired with multimodal transportation options, creates the perfect test bed for new technologies. Testing and partnership opportunities are available in the areas of advanced transportation technologies; dynamic ridesharing; cybersecurity preparedness; and similar programs and technologies that improve safety, mobility and livability.



Transportation Technology Testing — A Current Partnership Example

A research project currently under way, which is sponsored by the Texas Department of Transportation (TxDOT) and conducted by TTI, is examining connected and automated vehicle applications to improve transit, bicyclist and pedestrian safety on the Texas A&M campus. Working in partnership with Texas A&M University Transportation Services, the Mobileye/Rosco's Shield+™ collision avoidance system was installed on one Texas A&M University bus that traverses the heart of campus, passing thousands of students daily.

The goal of this project is to reduce the number of crashes among transit vehicles, bicyclists and pedestrians. The system has four different cameras that are essentially aimed at the blind spots on the bus and where pedestrians and bicyclists are most likely to show up and be in harm's way. The technology can detect when an object is moving that appears to be a pedestrian or a cyclist.

The system, which the research team is currently assessing, provides two types of warnings to the bus driver. A yellow light goes off when a pedestrian or bicyclist is detected within range of the bus, alerting the driver to proceed with caution. A red light and a buzzer go off when a pedestrian or bicyclist is very close to the bus, alerting the driver to stop to avoid a possible collision.



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