TFHRC Facility Brochure (FHWA-HRT-01-126)

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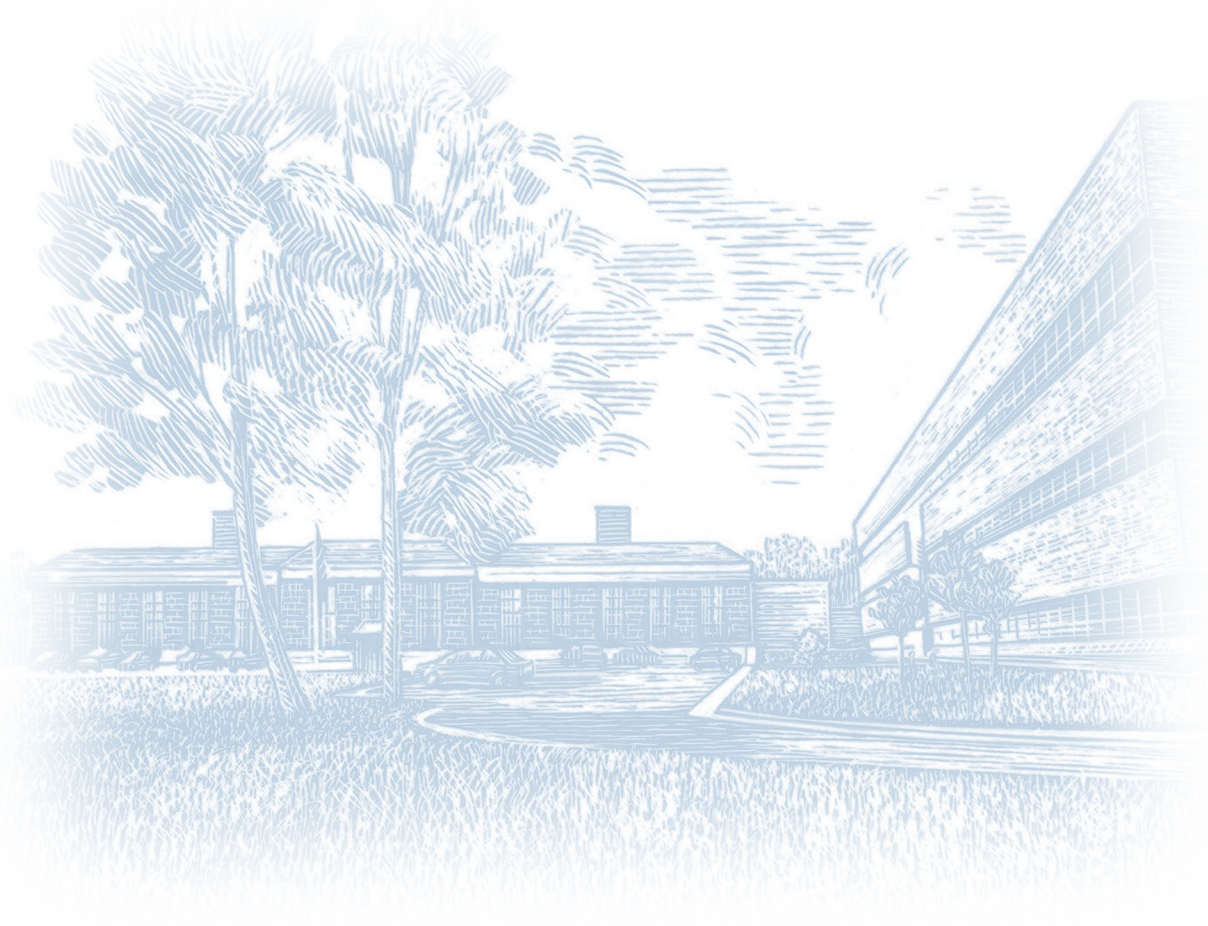

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
Turner-Fairbank Highway Research Center
6300 Georgetown Pike, McLean, VA 22101

Essential, Indispensable, and Connected to Our Customers

Welcome to the Turner-Fairbank Highway Research Center (TFHRC) the Nation's leading highway research facility. As the research center for the Federal Highway Administration (FHWA), TFHRC coordinates an ambitious program of innovative research, development, and technology that addresses the safety, efficiency, and operational needs of the National Highway System.

We are proud of our state-of-the-art research because it improves our national quality of life. Our research results in better highway design and traffic flow, improved roadway lighting, and sign retroreflectivity. Work at this facility improves design of roadside objects, such as guardrails and signposts, and investigates high-performance construction materials and pavements that are smoother and more durable. We work on pedestrian and bicycle safety, intelligent transportation systems, bridge design, and nondestructive evaluation of structural integrity. In addition to the obvious benefits such as safer travel and increased mobility for the motoring public, these improvements affect Americans in a myriad of other ways. For example, our efforts contribute to the national economy by enabling goods to arrive at the marketplace "just in time,"expediting delivery and eliminating the need for in-transit storage, and they support national defense by enabling the rapid movement of troops and military equipment.

Also, people at TFHRC coordinate the national highway research and technology agenda with partners in the transportation community and disseminate research results to improve practices and materials. TFHRC collaborates its research efforts with other national laboratories, State and local governments, academia, military, industry, and the international highway community.

The research function of the Center is managed by the offices of Infrastructure Research and Development (R&D), Safety R&D, and Operations R&D.

Infrastructure

Infrastructure R&D at TFHRC focuses on research that will strengthen the Nation's bridges and pavements.

Structures research at TFHRC includes the development of high-performance concretes, steels, and fiber-reinforced plastics that are much stronger and more durable than traditional construction materials. TFHRC is also developing improved methods for protecting our infrastructure from the disastrous effects of corrosion, floods, high winds, landslides, and earthquakes.

Researchers are also investigating innovative applications of technology, such as horizontally curved steel bridges, and they provide expert technical advice and support to the highway community, including forensic analyses of bridge failures.

Pavements research at TFHRC covers the areas of asphalt pavements, concrete pavements, and the Long Term Pavement Performance Program (LTPP). TFHRC researchers have been leading the analysis of LTPP data from 2,500 pavement test sections located across North America. This resulted in the development of a superior asphalt cement selection method and a concrete pavement design procedure used by highway engineers to design better performing and more cost-effective pavements. In one year, State highway agencies using the asphalt cement selection procedure saved $50 million in construction funds.

Safety

Many products have been developed at TFHRC to enhance highway safety in the research areas of run-off-road crashes, speed management, pedestrian and bicycle safety, intersections and interchanges, and safety management and human-centered systems.

The Interactive Highway Safety Design Model (IHSDM) software helps highway planners and designers assess the safety effects of specific geometric design decisions and alternative improvements for two-lane roads, on which two-thirds of single-vehicle run-off-road crashes occur.

Variable speed limit systems investigated at TFHRC determine the safe driver speed for current weather and traffic conditions.

The Pedestrian and Bicycle Crash Analysis Tool (PBCAT) allows States and local agencies to create a database of pedestrian and bicycle crashes, conduct computerized analyses, and develop countermeasures for these crashes. Roundabouts: An Informational Guide is a published resource to assist communities in improving safety and mobility by using roundabouts instead of intersections with traffic signals.

Operations

Operations R&D conducts research on the application of Intelligent Transportation Systems (ITS) and other cutting-edge technologies to move people and goods better, more quickly, and more safely. Research focuses on two key areas: enabling technologies and travel management.

Enabling technologies are fundamental technologies that enable other applications to work. For example, advanced sensors measure traffic flow so that adaptive control systems can adjust to changing traffic patterns. Global positioning systems provide information that is needed for automatic collision-notification systems.

Travel management research uses advanced technologies and techniques to estimate and predict the flow of traffic and to adjust signal timing to prevent congestion before it occurs. Strategic Work Zone Analysis Tools (SWAT) provide a suite of user-friendly computer software to analyze and predict the influences of work zones on safety and traffic delay and to evaluate strategies to mitigate these influences.

Come see us

Each year, hundreds of people in scheduled groups visit the Center and participate in tours of our laboratories. If you would like to know more about the research and other activities of TFHRC, visit our Web site at www.tfhrc.gov. Whether you visit us in person or via the Internet, you will see FHWA's commitment to an exciting, vital research and service program that is essential, indispensable, and connected to America's growing transportation needs.

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