



International Technology Scanning Program

Bringing Global Innovations to U.S. Highways

Introduction

Through its International Technology Scanning Program (ITSP), the Federal Highway Administration (FHWA) evaluates innovative technologies and practices in other countries that could significantly improve highway transportation in the United States. This program enables innovations to be adapted and put into practice much more efficiently without spending scarce research funds to re-create advances already developed by other countries.

More than 80 international scans have been completed since the program's inception in 1991. The returns have been substantive and have helped save costs, time, and lives. Many of the most significant improvements in U.S. highway practices in recent years have come from, or benefited from, the ITSP.

Early Scan Benefits

Included among – but not limited to – the early program benefits are:

- **Longer-Lasting Pavements:** State highway departments across the country pave with Stone Matrix Asphalt, a premium, heavy duty asphalt mix that resists rutting even on the most congested roadways.
- **Innovative Contracting Techniques:** Alternative contracting options – such as design-build, A+B contracting, lane rental, and warranties – save money, improve quality, and expedite project completion.
- **Safer Road Design:** States and localities have adopted innovative ideas and concepts that have resulted in increased safety and better traffic flow.
- **Geotechnical Advances:** New techniques to reinforce earth walls – known as soil nailing – have saved significant time and money on highway construction projects.
- **Improved Winter Road Maintenance:** Advances in controlling the effects of winter weather on driving conditions have resulted in safer roads and a better level of service.

“The use of SPMTs opens the door to bridge replacements at speeds never before seen.”

Mary Lou Ralls, Bridge Engineer



Recent Scan Benefits

The ITSP continues to help save costs, time, and lives. Some examples of recent benefits derived from the program include the following:

- **Accelerated Bridge Construction:** On projects around the country self-propelled modular transporters (SPMTs) are being used to lift and drive prefabricated bridge components to their final location in minutes, minimizing traffic disruption, improving work zone safety and enhancing the quality of the completed bridges. SPMTs are computer-controlled platform vehicles that can move massive objects with precision to within a fraction of an inch. According to Mary Lou Ralls, former state bridge engineer with TXDOT and a current principal at Ralls Newmann LLC, “The use of SPMTs opens the door to bridge replacements at speeds never before seen.”
- **Congestion Mitigation:** Washington and Minnesota competed for and received more than \$100 million in federal funds to implement active traffic management (ATM) and congestion pricing strategies identified through the scan program. The strategies – which include speed harmonization, real-time en-route travel condition and traveler information, and dynamically priced and operated shoulder lanes – will be operational in 2010 and are expected to improve safety and travel time reliability. Several other metropolitan areas are looking into applying similar ATM strategies to manage congestion along busy freeway corridors.
- **Warm Mix Asphalt:** The ITSP has been key to accelerating U.S. implementation of Warm-Mix Asphalt (WMA) technologies which allow a reduction in the temperature at which asphalt mixes are produced and placed.



U.S. Department of Transportation
Federal Highway Administration

Continued on other side...

These technologies promise to reduce greenhouse gas emissions, conserve fuel, extend the paving season, and improve a number of aspects of the construction process. John D'Angelo with the FHWA's Office of Pavement Technology notes, "The use of WMA may soon become the norm for asphalt paving in an effort by the industry to improve environmental sustainability and improve the pavement's performance."

- **Improved Bridge Safety:** Several activities have been initiated to improve the quality of U.S. bridge inspection practices as an outgrowth of the ITSP. These include the development of "Guidelines for Implementing Quality Control and Quality Assurance for Bridge Inspection" and the exploration of rationally-based bridge inspection policies to ensure safety, serviceability, and effective use of resources.
- **Public-Private Partnerships (PPP):** The use of PPPs as a funding and service mechanism for delivering highway projects in the U.S. has been further solidified as a result of the ITSP. In addition to the formation of an FHWA and American Association of State Highway and Transportation Officials (AASHTO) expert task group to promote and guide PPP initiatives, workshops, publications and training programs are being developed that will provide guidance to States and local highway agencies.

About the Program & Process

The ITSP was formally established within the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*, which authorizes FHWA to initiate an international highway transportation outreach program "to inform the United States highway community of technological innovations in foreign countries that could significantly improve highway transportation in the U.S. . . ."

The program itself is a partnership venture, carried out by FHWA in cooperation with AASHTO and the Transportation Research Board's National Cooperative Highway Research Program (NCHRP). Each scan focuses on a topic of high interest to the domestic transportation community and is led by FHWA and AASHTO Co-Chairs. Scan team members typically represent FHWA, State Departments of Transportation, local governments, transportation trade and research groups, the private sector, and academia. Scans are seen as a long-term exercise and investment. As such, participation in a scan requires a substantial commitment of time and effort – up to three years from the scan's inception and initial planning stage.

Extensive pre-scan work includes a desk study to identify target countries to visit (i.e, countries where there are advances in transportation relevant to the subject of the scan). Once those countries have been identified, the scan team travels abroad over a 2-week period (typically to four to five countries) and consults with foreign counterparts. Key to the scan process are personal domestic and international networking, team dynamics, and the creation of domestic champions for promising global ideas. After a scan is completed, the team evaluates findings and develops a comprehensive report, which is circulated throughout the U.S. highway transportation community.

The most important element of the ITSP is its focus on implementation. This is incorporated into each step of the scan process and includes the development of an implementation plan by each scan team. Plans emphasize evaluating promising technologies or practices identified abroad and sharing them with relevant organizations. The program supports scan teams when they return to the United States with both implementation expertise and funding.

Looking Ahead . . .

The ITSP will continue to lead the way in reaching beyond our borders to advance transportation knowledge and practice in the U.S. and deliver benefits to the domestic highway community and the traveling public. The following topics will be the focus of the ITSP in FY2010:

- Flexible Geometric Design Practices to Improve the Performance of Freeway Facilities.
- Understanding the Policy and Program Structure of National and International Freight Corridor Programs.
- Successful Infrastructure Countermeasures to Mitigate Motorcycle Fatalities.
- Outdoor Advertising Control – Best Practices Policy and Implementation.
- Pavement Management – Whole-Life Management.

For More Information . . .

Web site: www.international.fhwa.dot.gov

FHWA
Office of International Programs
1200 New Jersey Ave, S.E.
8th Floor, East Building
Washington, D.C. 20590
Tel: 202-366-0111
Fax: 202-366-3590

Publication No. FHWA-PL-09-012



U.S. Department of Transportation
Federal Highway Administration

