Peers share know-how to speed innovation

Strides forward in transportation technology and practice come from all corners of the nation. However, it is seldom a simple proposition to take an innovation from one agency and make it work at another. The U.S. Domestic Scan Program was founded on the proven effectiveness of face-to-face contact among peers as a means of spreading innovative technologies and practices in transportation.

Built for knowledge transfer

On a scan conducted as part of the U.S. Domestic Scan Program, a core group of scan participants—typically eight to 12 from different state DOTs and federal agencies—meets with several hosts who have been identified as early adopters or technical experts in the scan focus area. Scans may involve travel across the country when it is important to see technology firsthand, or scans can be conducted as workshops where the team and hosts convene at a single site.

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The U.S. Domestic Scan Program began in 2006 with a pair of pilot scans that addressed asset management and right-of-way issues. In the years since, AASHTO has sponsored three to five scans per year in virtually every DOT business area. (See the complete list of scan topics through fiscal year 2014 at left and full details at domesticscan.org.)

Andrew Lemer is the TRB senior program officer who has overseen the scan program since its inception, and he explained the program's successful formula. "The scan program was designed to take advantage of person-to-person contact to accelerate the transfer of good new ideas from one agency to the next," Lemer says.

Advancing state practice

Finding ways to trace the impact of the scans has been an ongoing interest for Lemer and the NCHRP panel overseeing the program. In an NCHRP survey of scan team members from nine completed scans, nearly 50 percent of survey respondents reported follow-up implementation of scan findings that was proposed, in progress, or completed at their home agencies.

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In-depth discussion of other states' practices helped New Hampshire DOT get the best value out of its work zone data.

> "It was helpful to see what states were and weren't doing and where the greatest needs are."

Specific examples abound on the wide range of scans' impacts on state practice.

Denise Markow, transportation systems management and operations administrator for New Hampshire DOT, served on a scan that investigated work zone best practices. "Based in part on what we saw of highly developed and organized systems on the scan tour, New Hampshire created our own traffic control committee to ensure that all projects are reviewed on a systematic and regular basis," Markow says. "Being able to point to other states' practices helped augment the final-rule process in our state."

Markow adds, "The scan helped address the question of how to get the best value out of work zone data. That has been a question that many states have struggled with, and it was helpful to see what states were and weren't doing and where the greatest needs are."

(continued)

Scan Topics Cover the Range of DOT Operations

Administration and Planning
- Developing a Cross-Trained Workforce
- Knowledge Management
- Rail and Intermodal Access and Parking
- Risk-Based Forecasts of Land Volatility
- Pollution Elimination and Water Quality
- Transportation Improvement Programs

Design and Construction
- Accelerated Construction
- Work Zone Assessment
- Quality Control/Assurance of Design Plans
- Roadway Tunnels
- Extreme Events and ABC
- Civil Integrated Management
- Reinforced Polymer Composites

Delivery and Asset Management
- Asset Management
- Right-of-Way Acquisition/Utilities Relocation
- Project Delivery
- Bridge Management
- Superload Permits
- Integrated Corridor Management
- Intermodal Corridor Management

Traffic and Safety
- Multiagency Traffic Signal Management
- Maximizing Traffic Flow
- Lane Departure Avoidance
- Motorcycle Safety
- Traffic Incident Management
- "Toward Zero Deaths"
- Organization-Wide Safety Culture

Maintenance and Preservation
- Winter Maintenance
- Performance Measuring of Maintenance and Preservation
- Maintenance Outsourcing and Privatization
- Maintenance and Preservation Funding

John Halikowski, director of Arizona DOT, served as chair of a scan on transportation agency knowledge management. Halikowski similarly took lessons learned from that scan to focus efforts at his agency.

"We were already doing a lot of things that fell under the umbrella of knowledge management," Halikowski says. "However, participating in the scan gave me new perspective on how to address knowledge management at an enterprise level."

The relationships built among peers during the scans continue to provide benefits long after the scans conclude. Greg Duncan, formerly Tennessee DOT's assistant chief engineer of operations, chaired a scan on privatization of maintenance functions. "Information provided by Missouri DOT prompted interest at my agency in job order contracting," Duncan says. "As we entered into our first contract of this type for guardrail repair, Missouri provided ongoing help in specifications development and determining how to bid and administer the contract."

> "Participating in the scan gave me new perspective on how to address knowledge management at an enterprise level."

Many scan participants share Duncan's perspective on the value of building peer relationships. In surveys of scan team members spanning several years, the aspect of the program consistently rated as most valuable is the identification of individuals at the host states or on the scan team to call on as future resources.

Traveling scans not only allow for information sharing among peers, but they give participants the opportunity to see innovative solutions at work in the field.

Making an impact nationally

Even as scan outcomes help individual states put innovations to work, scans commonly make an impact at the national level as well. This includes input to policy, guidance, and research that can ultimately reach all practitioners.

Alexander Bardow, state bridge engineer for Massachusetts DOT, served on a scan that examined accelerated bridge construction (ABC) connections in bridges that are subject to multihazard and extreme events. Bardow outlined a number of ways that the scan impacted national practice. "The scan contributed to the establishment of a national center on ABC," says Bardow.

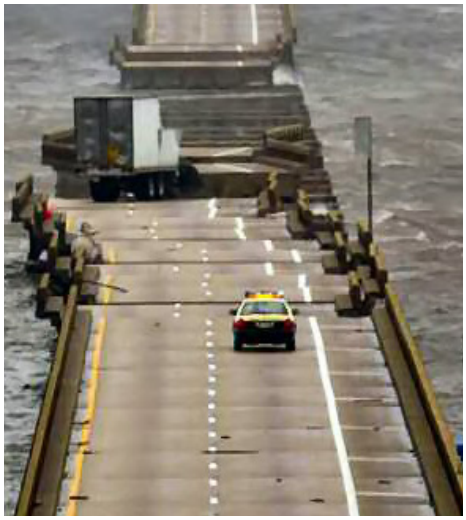
"In addition, the scan helped drive national efforts to develop AASHTO code provisions for applying ABC in high seismic areas," he says. "It also supported priority NCHRP research in this area."

Jesus Rohena, former senior bridge engineer at FHWA, explains that his participation in a tunnels scan that he co-chaired helped FHWA see firsthand how tunnel owners are inspecting, maintaining, and operating their facilities. "We took these findings into consideration as we updated FHWA's *Tunnel Operations, Maintenance, Inspection and Evaluation Manual*," Rohena says.

Eddie Curtis, traffic management specialist with FHWA, served on a scan that addressed regional, multiagency traffic signal management. "The scan led to incorporation of case studies on regional traffic signal programs in a National Highway Institute training course on performance measures," Curtis says.

Lasting success

"The scan process is very application oriented," says Michigan DOT Passenger Transportation Administrator Sharon Edgar, who co-chaired a scan on transit oriented development (TOD) with a focus on access and parking. "Even as you're learning new information during the scan, you're always thinking about how you're going to use it. You immediately start asking: What are the next steps? Who is involved? It's an exciting dynamic. In our case, the scan led to a peer exchange on stakeholder roles in TOD, which was a different focus from the original scan."



A scan on bridge hazards and accelerated construction contributed to national research and code development.

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The unique nature of the program can also present challenges when it comes to measuring its impact. "It's not always easy to gauge the ultimate outcome of scans," TRB's Andrew Lemer says. "We can't always know for certain that the program itself is responsible for a topic gaining traction nationally."

However, Lemer points to the strong annual support of the program by AASHTO's Standing Committee on Research (SCOR) as a sure sign that it is delivering value. "Moreover," Lemer says, "we get more recommendations for scans every year than we could ever fund. There's a real desire among DOTs to have their questions answered through the U.S. Domestic Scan Program."

Halikowski chairs SCOR and is a vocal supporter of the program at the individual level as well. "I have actively supported the scan program among my peers and encouraged them to participate in the program," Halikowski says. "Serving on a scan team can expand your horizons and change the way you think about doing business in ways you wouldn't ever expect."

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