

U.S. Domestic Scan Program

Scan 09-05—Roadway Tunnel Design, Construction and Maintenance

Conducted Aug. 31-Sept. 4 and Sept. 14-18, 2009



Closeout Webinar for

NCHRP Project 20-68B, Tracing Scan Impacts

March 9, 2012

Facilitators

- ❑ Pat Casey, Investigator
Principal, CTC & Associates
- ❑ Brian Hirt, Co-Investigator
Manager, CTC & Associates

Scan Participants

(Back row, L to R)

- ❑ Louis Ruzzi, Pennsylvania DOT
- ❑ Michael G. Salamon, Colorado DOT
- ❑ Jesus M. Rohena, FHWA,
Scan Co-Chair
- ❑ Mary Lou Ralls, Ralls Newman, SME
- ❑ Melissa Jiang, Arora and Associates,
Scan Coordinator
- ❑ Barry B. Brecto, FHWA
- ❑ Kevin Thompson, Caltrans, Scan Co-Chair
- ❑ Fulvio Tonon, University of Texas at Austin

(Front row, L to R)

- ❑ Alexander K. Bardow, Massachusetts Highway Department
- ❑ Bijan Khaleghi, Washington State DOT



NCHRP Domestic Scan Project Panel

- ❑ Harold R. Paul, Director LTRC (chair)
- ❑ Andrew Lemer, TRB
- ❑ Shane Brown, Washington State University
- ❑ David M. Burk, FHWA
- ❑ Nancy L. Chinlund, Caltrans
- ❑ Marsha Fiol, Virginia DOT
- ❑ Rick Kreider, Kansas DOT
- ❑ Jim McDonnell, AASHTO
- ❑ Mark R. Norman, TRB
- ❑ Keith M. Platte, AASHTO
- ❑ Glenn Roberts, New Hampshire DOT
- ❑ Amy Schutzbach, Illinois DOT
- ❑ Mark Van Port Fleet, Michigan DOT

Webinar outline

1. NCHRP project 20-68B (Tracing Scan Impacts) overview
2. Results of nonparticipant survey
3. Open discussion: Successes and challenges related to
 - Implementing scan technologies and practices
 - Sharing scan findings

Webinar goals

- ❑ Discuss scan outcomes with fellow team members and 20-68 panel members
- ❑ Highlight effective implementation and information sharing strategies
- ❑ Discuss opportunities to accelerate impacts of the scan

NCHRP Project 20-68B overview

- ❑ Accelerating Innovation—Tracing Domestic Scan Impacts
- ❑ Continuation of in-depth review completed for two pilot scans and first six scans
 - Reports are online at domesticscan.org
 - Document the effectiveness of the U.S. Domestic Scan Program in fostering the implementation of innovative technologies and practices
- ❑ Document technology transfer beyond core participants to secondary audiences (“nonparticipants”)

NCHRP Project 20-68B overview

□ Tasks

- Scan 09-05 participant interviews (6 of 8 participants interviewed to date)
- Nonparticipant surveys (24 responses to date)
- Today's closeout webinar
- Final report on tracing scan impacts for this scan (forthcoming)
- Update of 09-05 scan page on domesticscan.org

Results of nonparticipant survey

- Surveyed groups
 - Members of AASHTO's Subcommittee on Bridges and Structures (received final report via email)
 - March 2010 Tunnel Operations, Maintenance, Inspection and Evaluation (TOMIE) Workshop participants
 - Individuals identified by scan participants (Thompson, Ruzzi, Brecto) during one-on-one phone interviews
 - Two additional individuals identified in responses to survey question 6 ("Please provide names of colleagues or peers you spoke with about the scan tour results")
- 128 survey invitations total
- 24 responses to date (19 percent response rate)

Results of nonparticipant survey

Introductory text to online survey:

The National Cooperative Highway Research Program sponsors the [U.S. Domestic Scan Program](#) to facilitate technology transfer among state DOTs. As part of the program, CTC & Associates is conducting this survey on behalf of NCHRP to evaluate how the technologies and practices identified through the scans are being used by transportation practitioners beyond the scan participants.

You were identified as having received information about **Scan 09-05: Roadway Tunnel Design, Construction and Maintenance** (see the [project Web page](#) or [final scan report](#) [PDF]). Your feedback about how you learned about this scan—and how the scan findings are being used at your agency—will be of great value to NCHRP and the transportation community.

Thank you for taking the time to complete this short seven-question survey.

Results of nonparticipant survey

2. HOW YOU LEARNED ABOUT THIS SCAN. The scan findings were disseminated and presented through a number of channels. How did you learn about the scan results? (Check all that apply.)

| | | |
|---|----|-----|
| Conversation or email with a colleague at my organization | 5 | 21% |
| Conversation or email with a scan participant or host state member | 3 | 13% |
| Received final scan report from an AASHTO distribution | 10 | 42% |
| TRB Annual Meeting | 1 | 4% |
| National Highway Institute webinars (March and June 2010) | 1 | 4% |
| Another national or regional conference (please describe in the "Other" box below) | 3 | 13% |
| Journal paper or trade publication article | 0 | 0% |
| I don't remember learning about this scan tour prior to this survey | 5 | 25% |
| Other <ul style="list-style-type: none">• E-mail from AASHTO• AASHTO SCOBS Meeting Western Bridge Engineers' Seminar in Phoenix• AASHTO Subcommittee on Bridges and Structures• As an assistant to the T-20 Chair and a host state, I help the scan team with information on California tunnels | 4 | 17% |

Results of nonparticipant survey

3. SOUGHT MORE INFORMATION. If you sought more information about the findings of the scan tour, please indicate how. (Check all that apply.)

| | | |
|--|---|-----|
| Obtained or read the scan report | 8 | 33% |
| Visited the website domesticscan.org | 1 | 4% |
| Contacted a scan participant | 2 | 8% |
| Contacted someone from one of the states visited in the scan | 0 | 0% |
| Other <ul style="list-style-type: none">• FDOT only has one tunnel and one under construction, so not a top priority• Did not need any further information• N/A (<i>two respondents</i>) | 4 | 17% |
| Specific technologies or practices discussed <ul style="list-style-type: none">• Tunnel lighting, various coatings or liner systems and radio reception systems• None | | |

Results of nonparticipant survey

4. SHARED INFORMATION WITH OTHERS. If you shared information about one or more of the technologies or practices identified through the scan, please describe how. (Check all that apply.)

| | | |
|--|---|-----|
| Shared information with a colleague at my organization | 8 | 33% |
| Shared information with other stakeholders in my state | 1 | 4% |
| Recommended a change in practice at my organization | 1 | 4% |
| Other • N/A (<i>two respondents</i>) | 2 | 8% |
| Specific technologies or practices discussed • Tunnel lighting, various coatings or liner systems and radio reception systems • Emergency exit procedures | | |

Results of nonparticipant survey

5. IMPLEMENTED SCAN FINDINGS. If you used information from the scan tour to make or recommend a change to your agency's practices, please indicate how.

| | | |
|---|---|----|
| Proposed implementation | 1 | 4% |
| Planned implementation | 1 | 4% |
| In-progress implementation | 1 | 4% |
| Completed implementation | 1 | 4% |
| <p>Please provide details on the implementation</p> <ul style="list-style-type: none"> • Our agency does not have tunnels it maintains so the information was not needed • No planned implementation at this time • Not yet implemented (<i>response: proposed implementation</i>) • (1) Emergency response plan; (2) Develop and share inspection practices; (3) Develop seismic design criteria; (4) Develop standards and guidance for tunnels (<i>response: proposed, planned and in-progress implementation</i>) • MoDOT is currently reviewing our tunnel inspection/maintenance guidelines and may incorporate some of the best practices identified (<i>response: proposed implementation</i>) • Soil loadings better understood and applied (<i>response: completed implementation</i>) • N/A • Still reviewing findings • Fire and safety exits | | |

Results of nonparticipant survey

7. OTHER COMMENTS. Please use this space to provide any additional comments about your use of the findings of the scan tour.

| | | |
|---|---|-----|
| Open-ended response | 8 | 33% |
| <ul style="list-style-type: none">• Delaware has no tunnels• Our State does not have tunnels.• Michigan DOT is not currently proposing any tunnel applications or projects.• Very helpful source of information for tunnel systems.• NH does not have any tunnels, so, although I may have seen this information, I would not have paid any attention to it.• We have a tunnel project coming up in the future. This was an information gathering attempt.• Illinois does not have any tunnels as defined in the definition, therefore this report and information is not necessary at this time.• Upcoming Rehab at Squirrel Hill Tunnel will implement standard emergency exits. | | |

Results of nonparticipant survey

- ❑ Questions, comments about nonparticipant survey?
- ❑ Do you have names of others to survey (colleagues or peers you spoke with about the scan tour results)?

Open discussion: Successes and challenges

- ❑ Implementing scan technologies and practices
(see list of examples at www.domesticscan.org/implementation)
 - Sharing scan findings
 - Putting findings into practice

Which approaches were particularly effective?

What were the challenges?

What could be done differently?

Other thoughts or comments?

- ❑ Thank you for your time today!