

Reaping the Benefits of Attending the TRB Annual Meeting

Utah Department of Transportation's Practical, Systematic Model

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Networking with other transportation professionals, contributing to the work of technical standing committees, and gaining insights from an array of program sessions at the Transportation Research Board (TRB) Annual Meetings have greatly benefited representatives of the Utah Department of Transportation (DOT). But beyond that, those who attend have been instrumental in implementing within Utah DOT cost-saving ideas brought back from the TRB Annual Meetings. Utah DOT has developed a formal process to document the benefits of sending its personnel to the TRB Annual Meeting, by tracking the implementation of innovative ideas within the department.

Utah DOT's Process

1. *Selecting Attendees*

The Utah DOT process begins with the Research Division and the director of project development, who submits a list of recommended attendees to executive leaders. The recommendations are based on the employees' leadership roles in administration, operations, program development, project development, and the department's four regions; approved status as a presenter of a paper in a lectern or poster session; membership on a TRB committee; and past performance in implementing initiatives and availability to participate.

The executives review the recommendations and budget, prepare a final list of approved attendees, and return the list to the Research Division. The Research Division then notifies attendees of the executive approval and shares information to assist in registering and preparing for the TRB Annual Meeting.

2. *Preparing for the Meeting*

As part of the preparation, the approved attendees meet with the director of research and the director of project development to discuss the Annual Meeting and to receive instructions on Utah DOT's expectations—that each attendee return with at least two ideas to implement in their areas of practice. Each attendee receives copies of a form, TRB Project Implementation and Note Taking, to use during and after the Annual Meeting.

3. *Focusing Onsite*

After arriving in Washington, D.C., the Utah DOT attendees gather for an informal meeting to share ideas and coordinate efforts to make the most of sessions that have the potential for a high return value to Utah DOT. They take notes at sessions and committee meetings and select ideas to implement.

4. *Presenting Ideas*

Soon after returning from the Annual Meeting, each attendee compiles a list of ideas and projects to implement, using the TRB Projects Tracking-Status Sheet, and submits a copy to the Research Division for tracking. Attendees then meet with the Utah DOT executive leadership and present at least two initiatives that they plan to implement from the Annual Meeting; the leaders provide helpful feedback and perspectives. The presentations must include a clear outline of the logistics for the implementation of their ideas, the relationship to ongoing projects in Utah DOT, and the benefits and cost savings expected.

5. *Implementing Ideas*

The implementation of the ideas gathered by Annual Meeting attendees may take 1 year or several years.

During the implementation period, the attendees must provide quarterly reports of progress, including actual cost savings and other accrued benefits. Attendees who move to other positions in Utah DOT during the implementation must help to continue the process by coordinating with their successors and reporting on the status of the implementation. The Research Division tracks the implementation of ideas, the cost savings, and other benefits in a master spreadsheet and reports periodically to the director of project development.

Not all ideas brought back from the TRB Annual Meeting have gained implementation at Utah DOT. Nevertheless, the formal implementation-tracking process has focused the department on collecting new ideas and realizing the benefits of the TRB Annual Meeting.

Benefits of Implementation

Between 2003 and 2009, Utah DOT has sent 49 individuals—5 to 20 each year—to the TRB Annual Meeting. These attendees have introduced a total of 269 initiatives stemming from ideas gained at the Annual Meeting, and Utah DOT has implemented 136 of these as of October 2009.

The benefits of implementing cost-saving ideas from the TRB Annual Meeting have far surpassed the cost to Utah DOT of sending a relatively small group of people to the event. Since the tracking process began in 2003, Utah DOT has realized a cost savings of more than \$189 million by implementing initiatives in contracting methods, safety improvements, accelerated bridge construction, and other areas.

Some attendees have reported difficult-to-quantify, intangible benefits from the Annual Meeting, such as information transfer, networking, and the ability to develop and maintain technical competency by attending lectern and poster presentations at technical sessions. Two key examples of beneficial projects based on Annual Meeting initiatives are cable median barriers and accelerated bridge construction with self-propelled modular transporters (SPMTs).



Cable median barrier on I-15 in Utah, prevents a tractor semitrailer from crossing over into the oncoming traffic.

Reduced Crossover Crashes

Applying the information gathered at a 2003 TRB Annual Meeting session on road safety features, Tracy Conti, Director of Operations for Utah DOT, promoted the installation of cable median barriers along Utah highway corridors that had a significant history of crossover crashes. Utah DOT has installed cable median barriers at several locations along I-15 and I-215 to decrease the number of injuries and fatalities from crossover crashes. Moreover, by using cable barriers instead of concrete barriers, Utah DOT was able to stretch its safety funds as far as possible—the cable barriers can be installed for approximately one-third the cost of concrete barriers.

In 2004, Utah DOT installed its first cable median barrier system on two sections of I-15 in Utah County, totaling approximately 18 miles and \$3.08 million in project costs. Between 2002 and 2004, before installation of the barriers, a total of 35 crossover crashes with fatal or serious injuries occurred in these freeway sections; the total dropped to 4 between 2005 and 2007 after barrier installation.

The estimated benefit–cost ratios for these projects range from 23:1 to 35:1. Cable median barriers have been successful in Utah in preventing crossover crashes and serious injuries and even deaths.

Accelerated Bridge Construction

Utah DOT has used several contracting methods and construction technologies to accelerate project delivery and to minimize the impacts of construction. In a collaborative effort, Jim McMinimee, Director of Project Development, and Rukhsana Lindsey, Director of Research and Bridge Operations, introduced

A bridge span built off-site is moved into place using SPMTs in Salt Lake City, Utah.



accelerated bridge construction methods to Utah DOT, applying information collected at the 2007 and 2008 TRB Annual Meetings. In particular, the Annual Meeting sessions on the accelerated construction of bridges made Utah DOT aware of the benefits of a key technology, the self-propelled modular transporter (SPMT).

Utah DOT has used SPMTs on bridge replacement projects, to remove bridges without the need for in-place demolition, and then to move entire pre-fabricated spans from the staging area to the bridge site. This process limits the interruption of service during a bridge replacement to days or hours, by eliminating the need for onsite, months-long construction. Replacing bridges with SPMTs also has increased worker and traffic safety and has improved construction and durability. Drawing from the successes and lessons learned from the projects, Utah DOT has developed an SPMT manual with guidelines for designers and contractors involved in moving bridge spans.

Since 2007, Utah DOT has used SPMTs on six projects to replace a total of 21 bridges. With off-site fabrication and SPMTs, bridge spans often can be replaced in a weekend. For example, construction

time on the 4500 South crossing of I-215 in Salt Lake City was reduced by 120 days, saving drivers approximately \$4 million in user costs.

The total value added from the deployment of SPMTs on the six Utah DOT projects was approximately \$55.16 million, including user cost savings. The total cost of the SPMT moves and the associated staging was approximately \$10.59 million. This technology, combined with other accelerated bridge construction methods—such as sliding and deck panels—has benefited Utah DOT and the traveling public.

Looking Ahead

Utah DOT may be one of the first agencies to develop and use a formal process for tracking the implementation of innovative ideas brought back from the TRB Annual Meeting, as well as the associated benefits. Utah DOT looks forward to improving the process and to achieving greater efficiency and cost savings through continued Annual Meeting attendance and implementation of initiatives gathered there. Reader comments are welcome.

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