



Accelerated Construction Technology Transfer (ACTT)

September 2003, Dallas, Texas



IMPROVED
CONSTRUCTION
AND
PRESERVATION
SYSTEM
TECHNOLOGIES
performance of highway systems

Accelerated Construction Technology Transfer (ACTT) is a strategic process that identifies innovative techniques and technologies to reduce construction time on major highway projects while enhancing safety and improving quality. In September 2003, the Texas Department of Transportation (TxDOT) hosted a two-day workshop that brought together almost 100 attendees from 19 states.

Its purpose was twofold. First, the workshop would draw on the expertise of participants to help generate specific, practical recommendations for the ongoing development of Project Pegasus, a major reconstruction of downtown Dallas traffic arteries now in the planning phase. Second, attendees would see how the ACTT process works in a real-life scenario so that they could apply ACTT in their own agencies.

The key element of the workshop was the brainstorming session, which brought together experts from across the country with their local counterparts to search for methods and measures that would help TxDOT achieve its chief project objectives, namely minimizing construction time and traffic delays.

With an estimated cost of \$760 million, Project Pegasus is a large and complex project presenting many challenges:

- Project Pegasus involves total reconstruction of the IH30/IH35E interchange (the "Mixmaster") as well as other portions of both highways
- The project covers 11 miles of roadway and over 99 entrance/exit ramps
- The roads to be rebuilt are crossed by busy rail lines, and are abutted by historic buildings, hospitals, public parks, and flood-control levees
- Neither IH30 nor IH35E has been substantially improved since original construction in the early 1960s, so dramatic changes will be necessary to comply with current design guidelines
- Hundreds of thousands of vehicles travel daily through the "Mixmaster"

All of these challenges are precisely the issues that ACTT was developed to confront, making Project Pegasus a natural choice as the topic for a national ACTT workshop.

Opening the workshop on September 9 were three officials representing TxDOT: the Texas Transportation Commissioner; the Dallas District Engineer; and the District's interim Director of Transportation Planning and Development. Following their remarks, the Chair of TRB A5T60 posed the question "Why ACTT? Why Now?" before bringing on several TxDOT representatives to give an overview of Project Pegasus.

Over the course of the following day and a half, participants broke into nine "Skill Set" teams to examine how ACTT methods could be implemented to accelerate various aspects of the project. Once the Skill Set teams had developed lists of ideas, workshop participants began intermingling so that members could consult with experts from other Skill Sets. As the workshop progressed, each team completed report forms summarizing their



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ideas and recommendations, and also narrowed the results of their brainstorming and consultation down to a list of five to seven “priority” recommendations. These lists were then presented by each Skill Set team to the entire conference.

The workshop Skill Sets selected by TxDOT prior to the start of the workshop were: Environment; Geotechnical/Materials/Accelerated Testing; Structures; Right-of-Way/Utilities/Railroad; Innovative Financing and Contracting; Roadway/Geometrics; Traffic Engineering/Safety/IITS/Worker Health; Construction; and Long-Life Pavements/Maintenance. Each Skill Set team focused on how the ACTT process applied to the specific concerns in their area of expertise, while collectively, the teams searched for methods and measures to help TxDOT achieve its goals – maintaining traffic with minimal disruption, accommodating regional/national/international events, providing access to emergency facilities, reducing construction time from 7 to 4 years, and maximizing work zone safety.

The teams presented numerous ideas and recommendations, many of which were deemed viable and will be pursued, according to TxDOT Dallas District management. Among these recommendations were:

- Construction of Trinity parkway first, to be used as detour during construction;
- Dedicating an incident management system that can quickly locate incidents during construction on a project site, which is otherwise difficult because of the sheer size and complexity of the interchange;
- Giving broader latitude and decision-making authority to Dallas District to accelerate the response process;
- Screening and selecting a number of large contractors to get involved throughout the design process, who can then bid on the job;
- Closing portions of the project to traffic during construction, which is expected to help reduce construction time beyond the 3-year reduction originally targeted;
- Allowing the contractor to build his plant onsite to minimize time and congestion; and
- Using onsite prefabrication of structural components, and installation methods such as rolling, launching, or lifting into final position

With the workshop now completed, it remains for TxDOT to sift through the various ideas put forth by the workshop and decide which recommendations should be implemented in future planning, design, and construction phases of Project Pegasus. Follow-up meetings with TxDOT will be conducted to evaluate the long-term benefits of this workshop.

To find out more about the project and the implementation of recommendations, contact:

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