



U.S. Department of Transportation
Federal Highway Administration



Accelerated Construction Technology Transfer (ACTT)

November 2004, Cherry Hill, New Jersey

IMPROVED
CONSTRUCTION
SYSTEM
AND
PRESERVATION
TECHNOLOGIES
new strategies to enhance the quality
performance of highway systems

Accelerated Construction Technology Transfer (ACTT) is a strategic process that uses innovative techniques and technologies to reduce construction time on major highway projects while enhancing safety and improving quality. The process is implemented by conducting 2-day workshops for State Departments of Transportation (DOT). The American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) jointly fund ACTT workshops.

In November 2004, the New Jersey Department of Transportation (NJDOT) hosted its second ACTT workshop, bringing together transportation professionals from around the Nation.

The primary objective of the workshop was to draw on the expertise of participants to help NJDOT achieve its primary goal of minimizing construction time for its I-295/I-76/SR-42 interchange project while minimizing use of secondary roads during construction and maintaining existing number of lanes from 5:00 a.m. to 11:00 p.m. The \$300 million project is to totally reconstruct the severely substandard interchange located southeast of Philadelphia. With over 250,000 vehicles going through this interchange daily, capacity is a principle reason for this undertaking. The absence of a direct connection forces through-traffic from I-295 onto a series of ramps, where it mixes with traffic from other highway systems. As a result, the interchange ramp system experiences operational failures in many locations and has accident rates significantly in excess of the statewide average. The project is arguably among the nation's most challenging, ranks among the most congested, and according to the Commissioner, is the most important for the region. The project is currently undergoing the NEPA process, which is to be completed in 2006. Construction is to begin in 2009.

At the opening session on November 16, Jack Letteire, NJDOT's Transportation Commissioner, kicked off the workshop by welcoming the participants and challenging them to get creative and identify methods and measures that could help achieve project goals as he posed the question, "Do we have to take 3 to 5 years to complete the project or can we do it in 2 years?" Neil Hawks, Director of TRB's Special Programs, delivered the "Why ACTT? Why Now?" session very effectively as he conveyed the importance of accelerating the transfer of technology as well as accelerating construction. The opening day concluded with a project overview by the project management team and a bus tour of the project site.

The Skill Sets selected by NJDOT prior to the start of the workshop were: Structures, Geotechnical, Innovative Contracting/Financing, Traffic/ITS/Safety, Public Relations, Environmental, Construction/Materials, and Roadway Design/Geometrics. Workshop participants took the Commissioner's challenge to heart and produced a highly successful workshop. Each skill set team focused on how the ACTT process applied to the specific concerns of their area of expertise while collectively, the teams searched for methods/measures to help NJDOT achieve its project goals. The skill sets presented numerous recommendations, many of which were deemed viable solutions and will be pursued, according to NJDOT. Among

the many recommendations presented were:

- Advance purchase/fabrication of the structural components including sub/super structures and railroad structures.
- Consider the use of high-performance materials like HPC/HPS and technologies like self-propelled modular transporters (SPMT), girder launching/skidding, roll-in, and vertical lifting.
- Keep the embankment height low and use lightweight fill material like Geofoam, Foamed Concrete, Wood Fiber, Shredded Tire, etc.
- Use high-capacity piles to reduce the number and cap size. Use augered piles where vibration is a major issue. Test piles during the design phase.
- Consider a right-of-way (ROW) lease-purchase (annuity) option for long-term financing.
- Meet with Bellmawr Park Community residents to discuss impact mitigation options like the use of undeveloped land adjacent to the park for relocation, use of open space within the park, and/or the construction of higher density units along the alignment within the park.
- Deploy a communication plan, which includes:
 - Establishing a visible friendly presence in the community via a mobile information center.
 - Developing a newsletter for community residents, elected officials, and community leaders with projected details and milestones.
 - Employing a full-time communication professional.
 - Establishing a mobility strategy group to provide and promote alternate transportation choices.
 - Providing frequent updates to elected officials to include project tours.
- Modify the design by raising Browning Road to:
 - Reduce height of I-295 mainline structures.
 - Enhance mainline geometrics.
 - Reduce noise and visual impacts.
 - Reduce cost by \$50-\$100 million.

With the workshop now completed, it remains for NJDOT to sift through the various workshop ideas/recommendations and decide which ideas should be implemented in future planning, design, and construction phases of the interchange.

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

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