JANUARY 2006

ACTT

Accelerated Construction Technology Transfer

U.S.Department
of Transportation

Federal Highway Administration

Transition to Tomorrow

"A little discomfort, anxiety or anger is not such a bad thing. This whole exercise is about testing limits and challenging assumptions."

Tim Neuman, Vice President & Chief Highway Engineer, CH2MHill
September 15, 2005, at the closing of WisDOT's ACTT workshop

Dear Colleagues and Fellow Stakeholders:

When the Accelerated Construction Technology Transfer, or ACTT, process was begun with two pilot workshops in 2002, it was indeed met with a little discomfort – and perhaps even a little anxiety or frustration.

Now, however, we are hearing time and again how this process does aid in collaboration, innovation and acceleration to bring what one transportation official called "a breath of fresh air" to the planning and construction process nationwide.

The numbers bear this statement out. By the end of Fiscal Year 2005, a full 56% of the States had either engaged in a workshop or scheduled one within the next twelve months. Plus, an additional 10 host agencies have indicated that they are considering workshops during Fiscal Year 2006.

As more and more States utilize the ACTT process, implementation-oriented reports such as the 2004 ACTT Interim Report, ACTT II, ACTT Now and the current report, ACTT III – Transition to Tomorrow, serve to capture recurring ideas and themes, build momentum and showcase host agencies' ownership in this collaborative process. The October 3, 2005, FHWA ACTT Implementation Memorandum aptly describes our goal which is to set the stage for the adoption of ACTT as standard practice. We've done so by creating the "backdrop" and introducing the characters and the "conflict." Now, as States embrace this process, we're experiencing the dynamics of real people addressing real challenges in an atmosphere of collaboration and trust that has brought to center stage solutions heretofore believed impossible.

This truly is a revolution from within, and we are both delighted and humbled to celebrate your success.

Gary L Hoffman, P.E.
Chair, AASHTO Technology Implementation Group
Deputy Secretary for Highway Administration
Pennsylvania Department of Transportation

King W. Gee
Associate Administrator for Infrastructure
Federal Highway Administration

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ACTT NOW

"With the growing demand for faster solutions to transportation problems, the transfer of ideas among DOTs and the engineering community will be increasingly employed to meet this demand… Knowledge and experience must be spread much faster."

Jack Lettiere, Former AASHTO President and Commissioner, New Jersey DOT

The past year has been one of change and uncertainty for those involved in the transportation arena.

Undoubtedly, the biggest news this year was that President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) into law on August 10, 2005. SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety and transit for 2005-2009.

This year also saw the South ravaged by Hurricane Katrina and, to a lesser extent, Hurricanes Rita and Wilma. In light of the new transportation funding levels and the much-needed emergency relief allocations for rebuilding hurricane-damaged infrastructure, programs such as ACTT will play an even more prominent role in saving time and money and reducing motorist inconvenience nationwide.

This is evidenced by the fact that ACTT is being incorporated into the project development process from coast to coast: several States, including New Jersey, California, Illinois and Iowa, have held multiple ACTT sessions, and Ohio has three planned for the upcoming year. What's more, accelerated construction practices now reach deep into the transportation community nationwide, as highlighted in AASHTO's *Accelerating Project Delivery: It's About Time*, available online at https://bookstore.transportation.org/item_details.aspx?ID=313. Familiarity breeds demand – ACTT's time has come.

The ACTT concept was originated by the Transportation Research Board (TRB) in conjunction with FHWA and the Technology Implementation Group (TIG) of the American Association of State Highway and Transportation Officials (AASHTO). Following the completion of two pilot workshops, one in Indiana and one in Pennsylvania, the originating task force, A5T60, passed the concept off to FHWA and TIG to continue the effort. They have done so by coordinating a series of ACTT workshops around the country, with several more pending in 2006. The October 2005 FHWA ACTT Implementation Memorandum and accompanying 'How To' Guide offer step-by-step guidance for States adopting ACTT as standard practice.

The ACTT process is successful because no one person or organization serves as the driving force: Accelerated Construction Technology Transfer is a collaborative effort in the truest sense of the word. It works because it brings together public- and private-sector experts from across the country in a setting that encourages flexibility and innovation. As the chart on page five shows, the program is applicable to projects of all sizes and timeframes.

Workshops At A Glance

State	Project Cost	Project Construction Timeframe
Georgia	$90 Million	6 Years
Rhode Island	$30-$40 Million	5-6 Years
Utah	$235 Million	3 Years
Nevada	$550 Million	To Begin 2008
Oregon	$35-$45 Million	To Begin 2010
New York State Thruway Authority	$155 Million	7 Years
Iowa* [I-80 / I-29 / I-480]	N/A	10 Years
Wisconsin	Report in Progress	7 Years
Iowa / Illinois	Report in Progress	To Be Determined

*The Iowa DOT also hosted an abbreviated workshop in Boone and Madison Counties in February 2005. No report was issued for that workshop.

For more information, please visit http://www.fhwa.dot.gov/construction/accelerated/index.htm.

Inside A Workshop

With an increasing number of highway construction projects underway nationwide, State departments of transportation are looking for innovative ways to reduce construction time and traffic congestion and to "Get In, Stay In (and get it done right), Get Out and Stay Out." The ACTT program helps owner agencies achieve these goals by bringing national transportation experts to the planning table.

A structured workshop is the centerpiece of the ACTT process. Once a State indicates that it wishes to host a workshop for a specific project, it must identify the project timeline, goals and sets of skills required to meet particular challenges. Using this information, the State invites national experts to their workshop for two days of intense brainstorming and discussion. At the end of those two days, each skill set provides counsel on innovative ways to accelerate construction, reduce project costs and minimize impacts to the community.

For more information and for reports detailing the recommendations of completed ACTT workshops, visit http://www.fhwa.dot.gov/construction/accelerated/index.htm.

Skill Sets Represented At ACTT Workshops

The Skill Sets
The Recurring Recommendations
The Contacts

- **Innovative Contracting/Financing**
- **ROW/Utilities/Railroad Coordination**
- **Geotechnical/Materials/Accelerated Testing**
- **Traffic Engineering/Safety/ITS**
- **Structures**
- **Roadway/Geometric Design**
- **Long Life Pavements/Maintenance**
- **Construction**
- **Environment**
- **Public Relations**

As State DOTs assume ownership of the ACTT process and incorporate it into routine project development activities, the number of recommendations that will be applicable to other State and national projects will multiply, accelerating the adoption of innovative solutions nationwide. This section displays the skill sets utilized at the 10 workshops from November 2004 through October 2005 and presents recurring recommendations from eight of the skill sets. It offers primary areas of focus for Environment and Roadway/Geometric Design, where the recommendations focused on the unique needs of the owner agency. This section also supplies contact information for the skill set team leaders.

Workshop State DOT	Innovative Contracting/ Financing	ROW/Utilities/ Railroad Coordination	Geotechnical/ Materials/ Accelerated Testing	Traffic Engineering/ Safety / ITS	Structures	Roadway / Geometric Design	Long Life Pavements / Maintenance	Construction	Environment	Public Relations
Georgia	●			●	●	●		●		●
Rhode Island			●	●	●	●		●	●	
Utah	●	●	●	●	●	●		●		●
Iowa: Abbreviated Workshop					●			●		
Nevada	●	●		●	●	●		●	●	●
Oregon	●	●	●	●	●		●	●	●	●
New York State Thruway Authority	●			●	●			●		●
Iowa (I-80/I-29/I-480)	●	●	●	●	●	●	●	●		●
Wisconsin	●	●	●	●	●	●		●	●	●
Iowa / Illinois	●	●	●	●	●		●	●		●

INNOVATIVE CONTRACTING/FINANCING

The innovative contracting group explores state-of-the art contracting practices and strives to match them with the specific needs of the project. The innovative financing team's primary goals are to align potential financing options with project goals; match anticipated cash flow with project management; and provide options for managing competing priorities for existing resources.

Recurring Findings and Recommendations

- Consider public-private partnerships (PPP) – private equity or debt.
- Use cost-plus-time (A-plus-B) bidding, cost-plus-time-plus-quality (A-plus-B-plus-Q, A-plus-B-plus-C) to shorten the construction schedule.
- Use incentives/disincentives for construction time.
- Implement traffic management incentives and disincentives, i.e., lane rentals, travel time, etc.
- Include quality assurance/quality control (QA/QC) specifications and quality-based incentives.
- Include performance specifications.
- Require a pavement warranty.
- Host a mandatory pre-bid meeting/orientation conference.
- Hold pre-construction workshops with a third-party coordinator.
- Set up an advisory team/dispute review board to facilitate resolution of issues.
- Shortlist qualified contractors; use qualifications-based selection process.
- Consider an owner-controlled insurance program, or OCIP.
- Consider construction manager (CM) at risk.
- Consider advance contracts for items such as utilities, right-of-way, ramps/overpasses, etc.
- Provide a no-excuse bonus.
- Have a dedicated single project manager.

Contact:

Gerald Yakowenko, P.E.
Skill Set Team Leader
(202) 366-1562
gerald.yakowenko@fhwa.dot.gov

ROW/UTILITIES/RAILROAD COORDINATION

The group's primary role is to ensure that ROW, utilities and railroad work comply with State laws and procedures. The team must also consider the numbers and types of businesses and residences impacted by a project and evaluate the ready availability of additional right-of-way.

Recurring Findings and Recommendations

- Provide early identification and location of utilities. Advance ROW and utility work as much as possible.
- Avoid conflicts and relocations wherever possible.
- Conduct a consultant utility review as part of roadway design to ensure there are no known utility conflicts. Use a consultant to develop a work plan and ensure that the work gets done.
- Have major utilities at the design table/planning phase.
- Build common ducts/DOT-owned conduit crossings.
- Consider level A Subsurface Utility Engineering (SUE) where appropriate.
- Coordinate regularly (daily, if needed) with the railroad.
- Identify and acquire special properties. Have a relocation plan in place early.

Contact:
Kathy Facer
Skill Set Team Leader
(785) 267-7299 ext. 05
kathleen.facer@fhwa.dot.gov

GEOTECHNICAL/MATERIALS/ACCELERATED TESTING

The geotechnical team explores subsurface conditions to determine their impact on the project; pursues options for expediting materials acceptance and contractor payment; and evaluates the use of innovative materials in accordance with project performance goals and objectives.

Recurring Findings and Recommendations

- Consider subsurface explorations, seismic issues and lab testing.
- Use mechanically stabilized earth (MSE) walls: two-stage, modular block, etc.
- Rubblize existing pavement.
- Recycle existing material.
- Reuse foundations and/or piers.
- Stabilize sub grade with fly ash, lime, cement or other available additives.
- Consider flowable fill, foamed concrete and geofoam.
- Implement a geotech database.
- Implement a quality assurance/quality control (QA/QC) program.
- Utilize intelligent compaction equipment.

Contact:
Barry Siel
Skill Set Team Leader
(720) 963-3208
barry.siel@fhwa.dot

The traffic engineering team strives to enhance safety; improve traffic management; and explore technologies, including ITS systems, that will communicate real-time construction information to the public.

Recurring Findings and Recommendations

- Conduct an origin-destination study.
- Prepare traffic impact statement/concept of operations.
- Prepare for closures, the use of alternate routes and the use of alternate modes of transportation, i.e., transit services, employer-based programs, etc.
- Upgrade alternate routes. Provide for turn-lane improvements and ramp enhancements.
- Use barrier or buffer lane separation.
- Implement enforcement/crash investigation sites. Build emergency pullouts.
- Coordinate with local jurisdictions and emergency responders.
- Have a stronger police presence.
- Have a pre-defined incident response plan, and use an incident detection system.
- Utilize an on-call wrecker service/DOT highway helpers, i.e., HERO.
- Develop a worker safety plan/provide agency and contractor work zone training.
- Provide real-time travel information.
- Install and use ramp meters.
- Utilize smart work zones.
- Use late lane merge.
- Use dynamic message signs (DMS), closed circuit TV (CCTV) and detectors to support lane operations.
- Provide better traffic signal coordination.
- Utilize off-peak rolling road closures, weekend closures, directional closures, etc.
- Provide contractor incentives/disincentives, i.e., lane rentals.
- Utilize highway advisory radio, or HAR.
- Coordinate with 511.
- Monitor work zone safety.
- Require the contractor to create an incident management plan.

Contact:
Chung Eng
Skill Set Team Leader
(202) 366-8043
chung.eng@fhwa.dot.gov

STRUCTURES

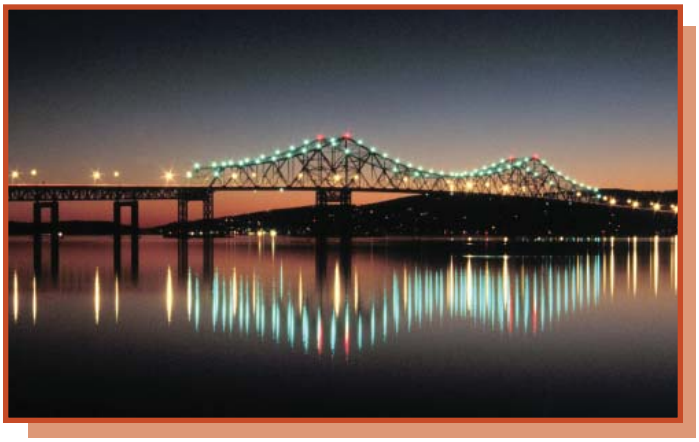
The structures skill set focuses on accelerating the construction of structures. Their task is to identify the most accommodating types of structures and materials that will meet design requirements and minimize adverse project impacts.

Recurring Findings and Recommendations

- Provide contractor incentives/disincentives.
- Utilize precast/prefabricated components such as full depth decks, partial depth decks, decks with girders, substructures and barriers.
- Re-use existing piers/substructures.
- Use MSE walls.
- Utilize high performance steel (HPS).
- Utilize high performance concrete (HPC), i.e., lightweight concrete, self consolidating concrete, etc.
- Use integral abutments.
- Utilize integral overlays.
- Utilize horizontal skidding or longitudinal launching.
- Consider using barges.
- Utilize self propelled modular transporters (SPMTs).
- Use temporary bridge structures.
- Standardize design.
- Apply corridor-wide visual guidelines.
- Aim for a 75- to 100-year design life.

Contact:

Vasant Mistry
Skill Set Team Leader
(202) 366-4599
vasant.mistry@fhwa.dot.gov



The roadway team evaluates proposed geometrics and identifies the most accommodating product with the minimum number of adverse impacts.

Recurring Findings and Recommendations

The roadway/geometric design teams' recommendations were so project-specific that, at one workshop (Project Neon in Nevada), the group recommended a collector-distributor (C-D) road over the current hybrid configuration; whereas at another ACTT gathering (Pawtucket Bridge No. 550 in Rhode Island), the geometric design skill set recommended a series of reconfigurations over the proposed C-D road.

The group's notes on the Pawtucket Bridge No. 550 Project provide an excellent illustration of the project-specific approach.

The team identified the following issues with the proposed C-D road:

- The close spacing between the George Street and Vernon Street on-ramps.
- The merging of the George Street on-ramp on a curve.
- The widening needed on the George Street overpass to accommodate the proposed C-D road.
- The lack of improvement to the conditions at the George Street/I-95 northbound on-ramp.
- The unnecessary weave on the proposed C-D road.

Alternative to C-D Road

- Eliminate George Street northbound on-ramp.
- Make Division Street a one-way traveling east.
- Have westbound traffic use Main Street in the downtown area.
- Improve the School Street area.
- Build a roundabout connecting Division Street, Prospect Street and School Street.
- Straighten the alignment of School Street.
- Reconfigure George Street and local service roads such as Grace Street eastbound and Marrin Street west bound, and connect Marrin Street to Pleasant Street.

The group cited the following advantages to this configuration:

- It eliminates on-ramp weaves.
- It allows for advance roadwork.
- The George Street Bridge is not modified.
- There are fewer traffic control impacts on I-95 (no on-ramp traffic).
- There is no additional width needed on Bridge No. 550 for weaving.
- It provides improved access to Pawtucket Memorial Hospital and along Division Street

Contact:
Jon Obenberger
Skill Set Team Leader
(202) 366-2221
jon.obenberger@fhwa.dot.gov

LONG LIFE PAVEMENTS/MAINTENANCE

The long life pavements/maintenance skill set identifies pavement performance goals and objectives and explores future maintenance issues for the project corridor, including winter service, traffic operations and preventative maintenance.

Recurring Findings and Recommendations

While only three of the host agencies incorporated the long life pavements/maintenance skill set into their workshops this past year, the groups did make similar recommendations, from which the following key ideas emerged:

- Base design on best practices and life-cycle costs. Aim for minimal maintenance: no daytime lane closures for 50 years.
- Use performance indicators as either initial construction standards or in a warranty contract for pavement rehabilitation.
- Communicate with maintenance personnel during design and construction.
- Consider the following pavement options:
    - Stone matrix asphalt, or SMA.
    - Continuously reinforced concrete pavement, or CRCP.
    - Polymer asphalt.
    - Composite pavement.
    - Sub grade treatments/stabilization.
- Consider an automated brining system or other innovative technologies for the bridges.

Contact:

John D'Angelo
Skill Set Team Leader
(202) 366-0121
john.dangelo@fhwa.dot.gov

The construction crew explores techniques that will encourage the contractor to deliver a quality product within a specific timeframe while maintaining traffic.

Recurring Findings and Recommendations

Closures

- Close one direction at a time (total directional closure) and use alternate routes.
- Include specified minimum closure times and appropriate incentives/disincentives.
- Consider partial closures if total closure isn't feasible.

Preliminary Work/Staging

- Perform any preliminary work ahead of mainline work, i.e., local roadway improvements, advanced substructure work, etc.
- Consider staging other work:
  - Overpass structures.
  - Drainage, grading and fencing.
  - Retaining walls and sound walls. (Consider precast, prefabricated and standardized walls.)
  - Substructure work.

Public Involvement/Public Relations

- Involve major stakeholders early, and keep them informed.

Innovative Contracting

- Use incentives/disincentives, A-plus-B contracting and interim completion dates.
- Consider CM at risk.
- Consider design-build, or D-B.
- Utilize Value Engineering (VE).
- Use performance-based traffic controls.
- Require regular constructability review meetings beginning early in the design process.

Project Administration Streamlining

- Consider DOT construction management (a single point of contact) for the whole corridor.
- Have higher approval authority/a streamlined process for contract change orders.
- Utilize a dispute review board.

Construction

- Use one contract to facilitate coordination and expedite the construction process.
- Recycle existing materials such as concrete, asphalt and base.
- Consider innovative construction materials such as precast panels, high early strength concrete, thin white topping, etc.
- Add temporary/permanent lighting for 24-hour construction.

Contact:
Rob Elliott
Skill Set Team Leader
(404) 562-3941
rob.elliott@fhwa.dot.gov

ENVIRONMENT

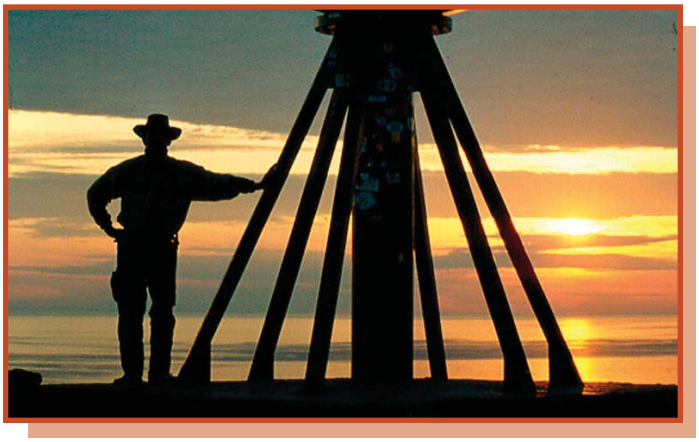
The environment team ensures that the scope of work and construction activities reflect local environmental concerns. Their goal is to provide the most accommodating and cost effective product while minimizing natural and socio-economic impacts.

Recurring Findings and Recommendations

While the environment teams focused on the unique needs of each project, several key themes emerged:

- Establish a project development process or master plan that integrates engineering, environmental analysis, agency coordination and public involvement into a collaborative decision making process.
- Focus on context sensitive solutions.
- Conduct a comprehensive scoping process.
    - Define purpose and need.
    - Obtain agency and public input.
    - Establish performance measures that will support environmental streamlining and stewardship.
- Review safety and accident data.
- Document the project development process through comprehensive project files.
- Address storm water management permitting issues during project development process.
- Address all environmental justice issues.

Contact:
Katiann Wong-Murillo
Skill Set Team Leader
(415) 744-2612
katiann.wong-murillo@fhwa.dot.gov



PUBLIC RELATIONS

The public relations skill set discusses ways to partner with local entities and effectively inform both local communities and the traveling public about the project before, during and after construction. Their role is to put a positive spin on the project.

Recurring Findings and Recommendations

- Establish a project team with representation from all areas.
- Begin coordination during the planning process and include it in every stage forward.
- Ensure that the communications office is the central point of contact/oversight for all communications efforts.
- Make sure that public outreach is a standing component in the construction budget. The teams recommended allocating up to 4-6% of the total project cost to public outreach.
- Dedicate a full-time communications specialist to the project.
- Brand the project.
- Identify project stakeholders.
- Identify the cultures and communities that will be affected.
- Target your message/develop a communications plan. Make sure to include businesses, community, government, media, residents, the tourism industry, special interest groups and the internal audience. Define campaign specifics.
- Consider public focus groups and other public outreach strategies.
- Share changes and success stories.
- Celebrate milestones.
- Consider third party endorsements.
- Collaborate with the media and traffic teams.
- Do follow-up surveys to determine effectiveness of measures used and to adjust tactics as needed.

Contact:
Laura Lawndy
Skill Set Team Leader
(202) 366-3975
laura.lawndy@fhwa.dot.gov

ACTT III

Projects, Backgrounds and Top Recommendations by State

Status of ACTT Projects

State Contacts

Georgia

NOVEMBER 2004

Project:

The $90 million I-75 from SR 54 North to Aviation Boulevard – for HOV Lanes Project consists of adding northbound and southbound HOV lanes; reconstructing five interchanges, including one system-to-system interchange (I-285/I-75); and adding noise barriers along the 6.4-mile corridor.

Background

Several factors make this a priority project:

- The segment is one of the major routes for daily commuters in the metropolitan area as well as for travelers driving through the State.
- This 6.4-mile stretch has major traffic generators nearby, including the Hartsfield-Jackson International Airport and the State Farmers Market.
- The current daily traffic volume of almost 200,000 vehicles and the lack of realistic detour routes will create grid lock in the metropolitan area during construction.

Top Recommendations from Workshop

- Clearly define "success" by prioritizing goals.
- Advance the purchase of right-of-way, and build two barrier-separated HOV lanes in the median for safety, operation and enforcement.
- Perform an operational analysis to evaluate the potential for use of I-20 to I-285 to I-675 as the primary alternate: this would provide for total directional closure and super-accelerated construction. If total directional closure is not deemed feasible, widen the southbound first to provide four lanes for two-way traffic, and close the northbound to traffic; reverse the process once the northbound is constructed.
- Provide wishbone access from the I-75 HOV lanes to the C-D roads to I-285, as connection between the I-75 HOV lanes and I-285 is imperative.
- Accelerate the Forest Parkway and US 41 portions of the project. Consider using pre-fabrication, pre-assembly and D-B.
- Realign Forest Parkway to facilitate traffic flow during construction.
- Eliminate the slip ramps at JC Penney and Lynwood Drive to eliminate weaving and improve safety.
- Consider using a half-diamond interchange at Bob White Trail on the north side. This option would require im proving local roads first.
- Improve secondary roads and the connections to the HOV lanes to provide easier access.
- Conduct market surveys to identify the stakeholders, communities and cultures affected by the project and to determine how best to share information or updates.
- Utilize market survey results to develop community outreach initiatives during the environmental phase of the project and to further design strategies, measures and themes with the intent to preserve the fabric of the community.
- Coordinate with local jurisdictions to develop a concept of operations.
- Consider tactics like "countdown to completion," professional endorsements and third-party endorsements.

Contact:
Jan Hilliard
(404) 656-5441
jan.hilliard@dot.state.ga.us

Project:

The scope of the Pawtucket Bridge No. 550 Project is to 1) either rehabilitate or replace the 50-year-old bridge, and 2) make interchange improvements to alleviate chronic traffic congestion.

Background

Rehabilitating or replacing Pawtucket Bridge No. 550 will be a daunting task: it is a five-span, two-girder, pin and hanger (suspended cantilever) steel bridge. The fixed end spans are situated on reinforced concrete cantilever abutments, with the three interior spans supported on four reinforced concrete column piers. The bridge consists of two separate structures (one northbound and one southbound) spanning west to east, with a one-inch-wide open joint between the median barriers along the bridge centerline. The overall span of the bridge is 694 feet five inches between bearings, as measured along the I-95 centerline.

Top Recommendations from Workshop

- Aim for complete replacement of Pawtucket Bridge No. 550.
- Revisit project goals to consider partial closure of the mainline, lane reduction, lane rentals and innovative contracting methods.
- Utilize horizontal skidding as part of the superstructure replacement method.
- Consider permanent closure of the George Street/I-95 northbound on-ramp.
- Consider restructuring of local traffic patterns to eliminate the need for a C-D road alongside I-95 northbound.
- Utilize traffic improvements to local roadways, ITS technologies and other detour methods to reduce construction time and lane closures.
- Use micropiles to repair existing footings.
- Use MSE walls with geofoam for embankment.
- Realign Pleasant Street to eliminate skewed abutment.
- Construct a multi-span jointless girder bridge.

Contact:
Eric Seabury
(401) 222-2053 ext. 4075
eseabury@dot.state.ri.us

UTAH

FEBRUARY 2005

Project:

The $235 million I-15, 31st Street to 2700 North, Weber County, Utah, Project encompasses 9.3 miles of interstate and 28 bridges, including eight that run over railroad facilities and three that carry the rail over I-15.

Background

The projected level of service for the project corridor through 2030 is "E" from 450 North to 2700 North and "F" for 450 North to the I-84/I-15 interchange, denoting service levels below an acceptable rating of "C." UDOT has completed the EIS process and has identified a preferred alternative that is a composite of several mainline and interchange options.

Top Recommendations from Workshop

- Address funding issues for the project as soon as possible.
- Make a decision on the designs for the different interchanges. This will minimize redundant work.
- Do the maximum amount of prep work possible prior to the start of construction.
- Consider subsurface exploration and seismic issues.
- Give special consideration to the landfill area.
- Use innovative construction techniques, such as:
    - Incremental launching.
    - Lateral slide.
    - Heavy lifts.
    - SPMTs for transport and erection.
- Do as much advanced right-of-way purchasing and utility coordination as possible.
- Conduct pre-meetings with industry and third parties to discuss risks and consider a shared contingency pool, if high risk is apparent.
- Deploy an incident management system including cameras, designated alternate routes, designated wrecking service on project site, and monitoring of the work areas by a dedicated operator at Region I TCC.
- Do not impact Hill Field industrial lead (rail structure over I-15).
- Increase span length to avoid transverse utility relocations in the 12th Street corridor. Additionally, totally avoid the Questar high pressure gas line and Chevron petroleum pipeline.

Contact:
Brent DeYoung
(801) 620-1680
brentdeyoung@utah.gov

Project:

The goal of PROJECT NEON is to examine a section of I-15 beginning at the US 95/I-15 interchange (the "Spaghetti Bowl") and extending approximately 2.5 miles south. This section of the I-15 corridor serves as a primary transportation link through central Las Vegas, serving over 250,000 vehicles per day.

Background

In recent years, Las Vegas has been the fastest-growing metropolitan area in the United States. That trend is projected to continue through 2030, with an anticipated 60 percent increase in population during that time. Providing transportation solutions that will accommodate this growth is a major challenge facing the Nevada Department of Transportation (NDOT), the Regional Transportation Commission of Southern Nevada (RTC) and other local agencies. The primary goals for PROJECT NEON are as follows: 1) meet the short- and long-term transportation needs of the project area; 2) provide improved transportation in response to regional growth; 3) decrease congestion; and 4) enhance mobility.

Top Recommendations from Workshop

- Utilize a single large contract to minimize construction time. If this is not feasible, consider advancing certain contracts such as demolition, utilities and drainage.
- Study two new alternatives, double decking and true C-D roads.
- Sequence construction to complete MLK and the C-D roads prior to the mainline, to minimize traffic within the work area and to maximize the work area.
- Straighten the alignment to Oakey/Wyoming, and minimize the skew on four bridges (on I-15 and the C-Ds).
- Eliminate the I-15 northbound to MLK movement to solve capacity problem on the I-15 northbound to US 95 northbound flyover ramp. This ramp is a segmental bridge and cannot be widened.
- Use the existing US 95 southbound to I-15 southbound ramp to connect to the southbound C-D.
- Use heavy lift equipment to erect new pre-fabricated bridge components as well as raise or laterally move existing structures, which are relatively new.
- Partner with regional transit commission to increase transit during construction.
- Reach out and educate an audience matrix that includes commuters; residents; businesses (during planning and construction); the travel and tourism industry; employers; interstate and local trucking companies; Federal/State/local government offices; special interest groups such as pedestrians, the homeless, and cyclists; and media professionals.
- To accelerate ROW acquisition, consider offering acquisition incentives (bonuses to tenants for relocating by a certain date) and buying houses or rental properties in the neighborhood as they become available.
- To avoid utility-related delays, consider measures such as getting advance corridor for NV Power Transmission Line relocation, consolidating utility relocations, keeping drainage away from UPRR right of way, and making Charleston under UPRR a separate project.

Contact:
Dan McMartin
(775) 888-7597
dmcmartin@dot.state.nv.us

OREGON

APRIL 2005

Project:

The I-405 Pavement Preservation Project involves reconstruction of 4.1 miles of I-405 (Stadium Freeway) from Front Avenue north to the I-405/ US 30 interchange through downtown Portland. Region scoping teams have estimated project cost at anywhere from $35 to $45 million.

Background

The existing continuously reinforced concrete pavement (CRCP) throughout the corridor is 34 to 37 years old and, according to computer-based modeling, should have begun failing long ago. This suggests the potential for structural failure at any time. In addition, the project is not in compliance with current design standards and experiences congestion beyond normal rush-hour traffic.

Top Recommendations from Workshop

- Consider lowering the grade instead of raising overpass structures to meet clearance requirement. This would minimize utility relocations and avoid the potential for steep grades on crossroads. It could also reduce construction time and cost.
- If overpass structures are raised, consider the horizontal jacking or skidding method to reduce construction time.
- Consider trenchless technology for utility relocations to reduce construction time.
- Revise ODOT scheduling specifications to require more frequent updates.
- Increase survey limits to capture side-street/downstream impacts.
- Consider coordinating the schedule with adjacent projects to move utilities all at once.
- Consider an access management plan that includes permanent ramp closures and coordination with the city to enhance local infrastructure. Ramp closures could result in removal of some of the "vertically challenged" structures. Such a plan would affect the following ramps:
    - 5th Avenue/Broadway southbound on-ramps: close one.
    - Montgomery Drive on-ramp: close and convert to surface street.
    - 4th Avenue northbound off-ramp: close.
    - Couch Street southbound off-ramp: close.
    - Taylor Street southbound on-ramp: close.
    - US 26 eastbound to I-405 northbound: widen to two lanes.
    - US 26 eastbound to I-405 southbound: widen to two lanes.
    - I-405 northbound to US 26 westbound: widen to two lanes.
- Inventory internal and external customers affected by the project, and consider activities that would engage them in the project.

Contact:
Charlie Sciscione
(503) 731-3263
charles.p.sciscione@state.or.us

Project:

The Tappan Zee Bridge Partial Superstructure Replacement Project consists of a partial superstructure replacement utilizing prefabricated components, an alternative with a $155 million price tag and a seven-year construction timeframe.

Background

One of the longest bridges in the United States, the Governor Malcolm Wilson Tappan Zee Bridge opened on December 15, 1955, at a cost of $80.8 million. Currently more than 140,000 vehicles cross the Tappan Zee Bridge every day, with traffic volumes climbing as high as 170,000. The 3.1-mile-long Tappan Zee Bridge carries the New York State Thruway (I-87 & I-287) over the Hudson River between Rockland and Westchester Counties, providing a lifeline between New York City and Upstate New York.

Top Recommendations from Workshop

- Utilize alternative bidding to maximize the benefits of the funding available for contract one. The western causeway will serve as the base bid, and the trusses will be add-on bids.
- Utilize issue resolution models (partnering).
- Pre-qualify major suppliers.
- Hold a mandatory pre-bid orientation meeting with potential bidders at the project site.
- Encourage water-borne delivery and erection methods to minimize lane closures and reduce truck deliveries.
- Encourage bidders to consider installing units wider than one lane via the river.
- Enter into confidentiality agreements with bidders since this is a lifeline structure.
- Minimize on-site grouting and concrete pouring.
- Use galvanized steel girders to minimize future maintenance.
- Encourage contractors to consider SPMTs for truss portions.
- Eliminate transverse post-tensioning, which was proposed to minimize leakage between units, as well as match casting. They offer a low cost-benefit ratio.
- Consider using prefabricated deck units and keeping the steel on the truss portions if the steel proves difficult to remove during detailed design.
- Provide incentives rather than disincentives to promote early project completion.
- Provide good field lighting (i.e., placement of light banks over guide rails).
- Plan for job site delivery of materials and supplies.
- Provide worker buffer areas.
- Integrate messages about the partial superstructure replacement with plans for/communication about pending studies and future work in the area to make sure the public is kept up-to-date and does not become confused as to the intent of the current project. Otherwise, the project may be perceived as a short-term solution and a waste of money.
- Use dedicated staff (both internal and contract staff) to provide adequate outreach.
- Have a dedicated project web page(s) with a link from the Thruway Authority home page.

"The workshop exceeded our expectations and gave the Thruway the rare opportunity to gain insight and suggestions. The Thruway would welcome the opportunity to participate in this important workshop in the future."

Gerrie Dottino, Structural Design Bureau
New York State Thruway Authority

Contact:
Gerrie Dottino
(518) 471-4255
gerrie_dottino@thruway.state.ny.us

IOWA

AUGUST 2005

Project:

The Council Bluffs Interstate Systems (CBIS) Improvements Project will enhance mobility throughout the I-80, I-29 and I-480 corridors by improving 18 mainline miles of interstate and 14 interchanges (three system, 11 service). The project is in the study phase, so no cost estimates have been developed.

Background

The project area is located within Pottawattamie County in Iowa and Douglas County in Nebraska and includes the cities of Council Bluffs, Iowa, and Omaha, Nebraska. The project area runs from I-80 from east of the I-480 interchange in Omaha east to US 6 (Kanesville Blvd.). It also includes I-29 from 25th Avenue to just south of US 275 and I-480 from the Missouri River Bridge on the Iowa side to the I-29 interchange.

Top Recommendations from Workshop

- Prepare a conceptual layout for each interchange: need consistent structure types and appearance.
- Conduct early geotechnical investigation and load testing.
- Solicit early contractor input and education on atypical bridges.
- Include user delay costs in estimate.
- Use quality assurance/performance specifications.
- Provide design alternates for structures.
- Institute special pre-qualification procedures, especially for specialty work.
- Have a multi-parameter bidding with emphasis on quality. Use an A-plus-B-plus-C evaluation process, where C is the warranty.
- Require warranty provisions of five to 10 years for selected projects.
- Require maintenance contracts during construction.
- Utilize standardized details/a master aesthetics plan.
- Set bar for a 100-year design life.
- Pre-assemble elsewhere and barge into place via the Missouri River.
- Have on-site ROW/project/utilities/public involvement office.
- Re-visit building a potential SPUI at 24th and Madison.
- Develop an access management plan for roads away from the ramp terminals.
- Seek general consolidation of railroads and abandonment of the Burlington-Northern line through the power mall.
- Build common ducts for all communication cables (including ITS).
- Address unique construction issues causes by loess soils.
- Address utility clearance issues early.

Contact:
Lisa Biggs
(515) 239-1343
lisa.biggs@dot.iowa.gov

Project:

The I-94 North-South Corridor Project faces pavement needs, design deficiencies and traffic congestion concerns that will require full reconstruction and redesign. No cost estimates have been developed for the project to date, but construction is tentatively scheduled for 2009 to 2016.

Background

The 35-mile I-94 North-South Corridor stretches from the Illinois State line through Kenosha and Racine Counties to the Mitchell Interchange (the junction with I-43 and I-894) in Milwaukee County. The corridor also includes the WIS 119 Airport Spur to General Mitchell International Airport in Milwaukee. The corridor serves as the primary commerce and tourism route between Chicago, Milwaukee, the Fox Valley and Door County. It also services growing industrial and residential areas in Kenosha, Racine and southern Milwaukee Counties.

Top Recommendations from Workshop

PARTNERING

- Promote incentives (partnering) with utilities.
- Investigate leveraging opportunities, such as:
  - Transit project partnering.
  - Leveraging FTA dollars (more flexible) to do land use planning associated with a proposed commuter rail system, i.e., park and ride.
  - Storm water management/mitigation.
  - Working with local jurisdictions.
  - Utilizing cash in lieu of mitigation.
- Have a line item in the construction contract requiring partnering on public relations with the public involvement office.

FRONTAGE ROADS

- Evaluate potential coordination between frontage road and freeway operations (during construction and permanently).
- Consider converting frontage roads to a one-way pair.
- Consider using frontage roads as part of the construction phasing plan.
- Evaluate need for improvements to frontage roads (temporary and permanent).
- Use frontage roads to provide alternate access while adjoining service interchanges are closed.

OTHER RECOMMENDATIONS

- Build a viaduct.
- Build off the centerline.
- Build structures off-site.
- Acquire borrow and staging areas early.
- Involve the community early.
- Provide contractor incentives.

"When someone mentioned keeping three lanes open during construction, I thought it was crazy…well, there are ways to make it happen."

Finn Hubbard, Chief Bridge Design Engineer
WisDOT

Contact:
John Oimoen
(262) 548-5638
john.oimoen@dot.state.wi.us

IOWA/ILLINOIS

OCTOBER 2005

Project:

The I-74 Iowa-Illinois Corridor Study, a major interstate reconstruction project now in the planning phase, will upgrade roadway geometrics to modern standards. In addition, it will improve safety by adding capacity and shoulders to the Mississippi River crossing, increasing ramp taper rates, eliminating reverse curves on the Illinois approach, and increasing interchange spacing throughout the 7.4-mile corridor that passes through two States and three cities.

Background

Over the next 20 years, the number of vehicles traveling across the Mississippi River in the Quad Cities region is expected to increase by 50 percent. Given the limited availability of viable alternative river-crossing routes, it is vital to maintain access to the downtown areas of Moline, Illinois, and Bettendorf Iowa, during construction. This project will require close coordination between the various agencies of the two States and the three cities (Moline, Bettendorf and Davenport, Iowa) that the 7.4-mile corridor passes through.

Top Recommendations from Workshop

- Consider a monthly project update breakfast with local officials/downtown business community to keep them informed about project progress.
- Utilize ITS for traveler information and as a tool to aid in traffic management.
- Provide agency and contractor work zone safety training.
- Maintain two lanes of traffic in each direction throughout construction (for peak periods).
- Accelerate the construction in the downtown Bettendorf and Moline areas, particularly at the tie-in locations.
- Advocate formal partnering agreements between parties, including a defined conflict resolution process.
- Provide a DOT project manger in a project office in both Iowa and Illinois.
- Recycle existing pavement material.
- Use precast concrete slabs.
- Consider public focus groups and other public outreach strategies.
- Communicate with maintenance personnel during design and construction.
- Extend subdrain outlets beyond the mowing lines.
- Consider an automated brining system or heated deck for snow removal on the bridge.
- Advance the ROW and utility work as much as possible.
- Utilize A-plus-B bidding, warranties, no excuse bonuses and constructability meetings.
- Consider rapid construction techniques for the approach spans.
- Incorporate a fiber-optic bridge attachment into the bridge design.
- Allow utilities to remain in place in existing ROW (in the downtown areas).
- Include ROW, utility and railroad disciplines from Iowa and Illinois in the I-74 project management team.
- Utilize SUE where appropriate, especially near the two communication buildings.
- Meet with all utilities at plan/phase development stages.
- Build the main span bridge superstructure offline.
- Consider precast foundations for the main span bridges.

Contact:
Dan Long
(815) 284-5351
longdr@dot.il.gov

ACTT

Key Contacts and Calendar

ACTT Management Team

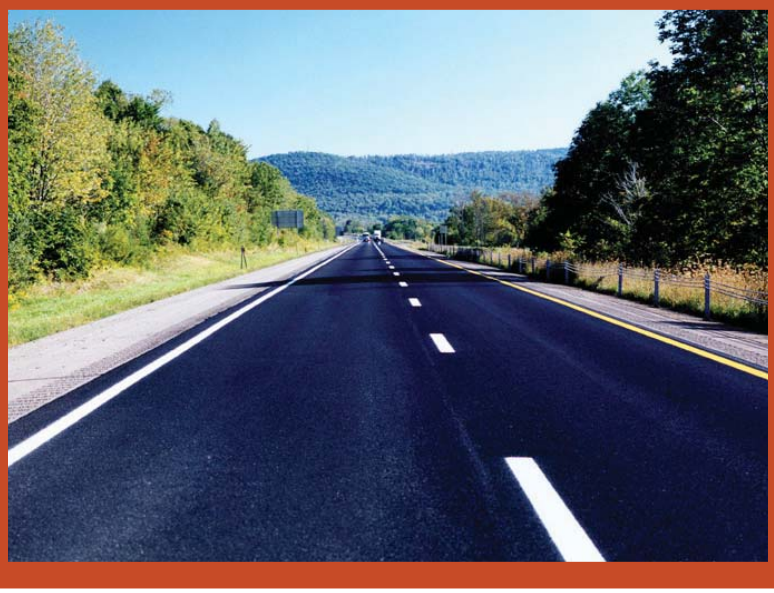
Calendar of ACTT Workshops

ACTT Management Team

Program Manager
Jim Sorenson
Construction and System Preservation
Team Leader
Office of Asset Management
Federal Highway Administration
400 7th Street, SW Room 3211
Washington, DC 20590
(202) 366-1333 phone
(202) 366-9981 fax
james.sorenson@fhwa.dot.gov

Jerry Blanding
Innovative Contracting Engineer
National Resource Center
Construction & Project Management
Technical Service Team
Federal Highway Administration
City Crescent Building
10 S. Howard Street
Suite 4000
Baltimore, MD 21201
(410) 962-2253 phone
(410) 962-4586 fax
jerry.blanding@fhwa.dot.gov

Joe Huerta
Pavement Management Engineer
National Resource Center
Federal Highway Administration
10 South Howard Street
Suite 4000
Baltimore, MD 21201
(410) 962-2298 phone
(410) 962-4586 fax
joseph.huerta@fhwa.dot.gov



State	Pending Workshop Date/Status
New Hampshire	February 21-23, 2006
New York	March 21-23, 2006
Hawaii	April 18-20, 2006
North Carolina	April 24-26, 2006
Ohio – Cleveland	February 2006
Alaska	Spring 2006
Ohio – Columbus	Summer 2006
Ohio – Cincinnati	Fall 2006
New Mexico	Workshop under consideration
Arkansas	Workshop under consideration
Maryland	Workshop under consideration
Idaho	Workshop under consideration
Massachusetts	Workshop under consideration
Maine	Workshop under consideration
Delaware	Workshop under consideration
Arizona	Workshop under consideration
Virginia	Workshop under consideration
District of Columbia	Workshop under consideration

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