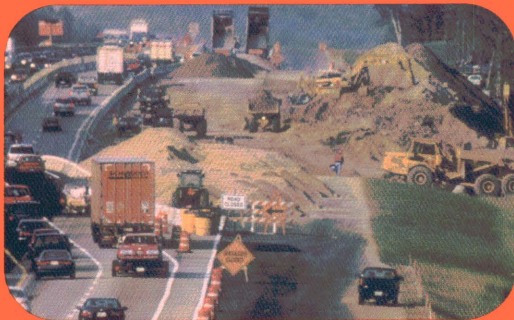


MARCH 2005

ACTT II

The Second Year Report of the Accelerated Construction Technology Transfer Program

Fast Tracking as Standard Practice



U.S. Department
of Transportation

Federal Highway
Administration



Sponsored by the Federal Highway Administration
and the Technology Implementation Group of the
American Association of State Highway and
Transportation Officials

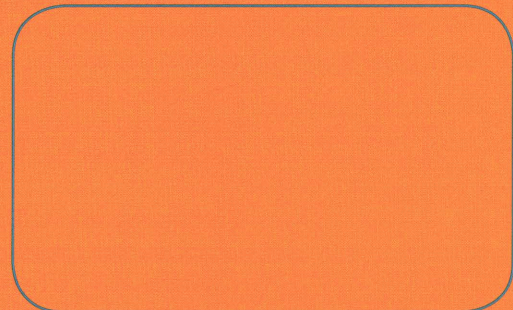
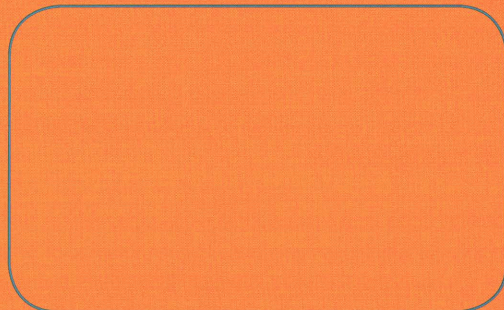
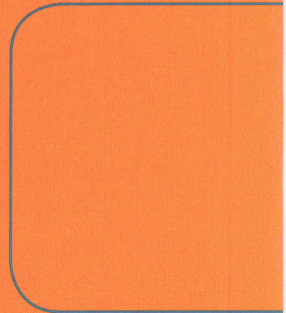
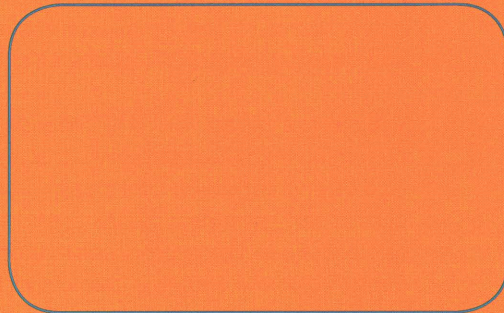
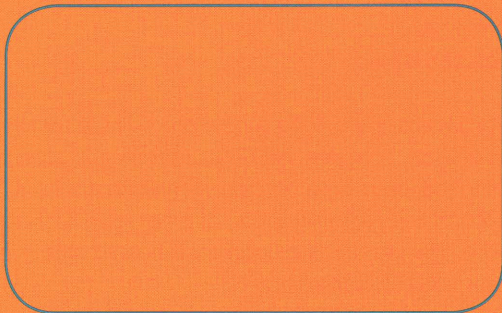
MARCH 2005

ACTT II

A Report on the Institutionalizing of Accelerated Construction Technology Transfer (ACTT)

Fast Tracking as Standard Practice

<http://www.fhwa.dot.gov/construction/accelerated/index.htm>



Dear Colleagues and Fellow Stakeholders,

In two short years, FHWA and AASHTO's Technology Implementation Group have sponsored 14 ACTT workshops, with more in the planning stage. Each attracts national transportation experts in specific skill sets who team up with colleagues from the host States to spotlight ways to shorten construction time, curb work zone congestion, and better serve motorists through improved quality. The workshops literally accelerate technology transfer by bringing innovative ideas to the table in concentrated two-day sessions.

ACTT has cemented a track record of success in its workshops to date, according to participant feedback and results. Most agencies have found ways to slice construction time by 30 percent or more. Recurring recommendations have emerged: solutions with application to other highway projects across the States. The new approach to highway project development and construction is taking root as a standard practice.

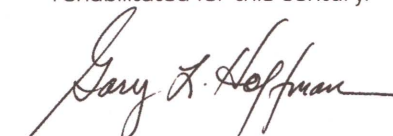
This second year report captures recommendations that have echoed through multiple workshops and distills the "best of" ACTT. It offers:

- recommended solutions by skill set and by project with a spotlight on those resonating through multiple State projects;
- benefits for participating State agencies;
- a look inside a workshop;
- the status of ACTT projects;
- phone numbers and e-mail addresses for experts;
- and an at-a-glance ACTT calendar of States and dates.

We call the report "ACTT II" because the program is entering a new phase as it shows signs of becoming institutionalized into the project delivery process. ACTT is transforming the way the highway construction community does business, causing agencies to integrate the ACTT skill sets in early strategic planning, and supporting the rapid adoption of innovative technologies and practices. Since progress hinges on the sharing of information, we believe this report captures useful data and ideas from the early ACTT workshops.

It is published at an evolutionary time in the highway business. Funding, safety, and the socio-economic impacts of highway quality dominate stakeholder concerns. We are faced with the counterpoints of an aging system, limited capacity growth, and ever increasing traffic demands. The drive to meet the customers' needs and to spare motorists from the impacts of the construction-related activity as much as possible is causing transportation managers to rethink how we deliver our highway improvements.

Fortunately, the ACTT process taps into knowledge and experience bases that arm enterprising agencies with the innovation and skill to shape creative solutions of tomorrow for today's projects. ACTT is harnessing the public-private-partnership that successfully constructed the world's most dynamic highway system in the past century and will now be reconstructed or rehabilitated for this century.



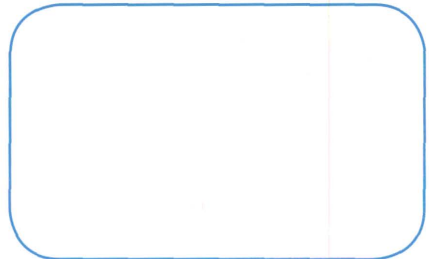
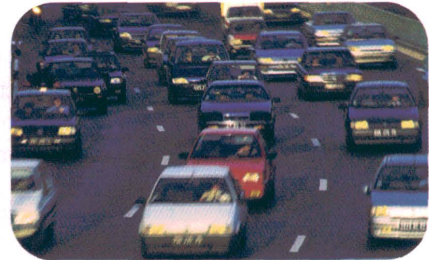
Gary L. Hoffman, P.E.
Chair, AASHTO Technology Implementation Group
Deputy Secretary for Highway Administration
Pennsylvania Department of Transportation



King W. Gee
Associate Administrator for
Infrastructure
Federal Highway Administration

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ACTT NOW

Concern for the driving public and for the economy set in motion the Accelerated Construction Technology Transfer (ACTT) program. Customers want less traffic disruption during construction and they want projects completed as quickly as possible. Bumper-to-bumper traffic is not part of the American dream; unfettered mobility is.

At the national level, as the renowned demographer and transportation analyst, Alan Pisarski, has observed, "Transportation is all about reducing the time and cost penalties of distance on our economic and social interactions. To the extent that a nation succeeds in this, it unleashes tremendous forces of economic opportunity, social cohesion and national unity."

Transportation agencies are committed to offering motorists high-quality, longer-lasting highways while reducing construction time. Front-burner priorities are to stem the annual loss of over 40,000 lives to accidents and to reduce the \$63 billion generally attributed to congestion. They operate, however, against a backdrop of challenges that include intensified construction activities needed to restore a system built largely in the 1950s and 60s; capacity that has increased little in the past two decades; and growing communities and increasing traffic volumes.

What would it take, the Transportation Research Board (TRB) asked, to give agencies a tool that addresses the necessity of highway improvement projects on the one hand, and taxpayers' desires for minimal work zone congestion and construction time on the other?

The answer: forums focused on specific projects or corridors that bring together experts drawn from a national resource pool and representing the skill sets essential to highway planning, design, contracting, financing and construction. These experts would evaluate all facets of a given project or corridor improvement and target ways to reach agency goals while reducing construction time.

By 2002, the TRB Task Force on Accelerating Innovation in the Highway Industry (formerly A5T60, now AFH35T), the Technology Implementation Group (TIG) of the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) had joined forces to reach out for participants in a 195-member resource pool called the "National Skill Sets Council." These professionals began sharing their knowledge and experience at workshops centered on individual State projects involving construction of an existing facility under traffic. FHWA, State agencies, industry, academia, and other stakeholders participate in the quest for practical, creative, viable ideas.

After a steady series of workshops, Accelerated Construction Technology Transfer is proving itself as a strategic tool for fast-tracking, idea sharing and technology transfer.

ACTT projects are about meeting customers' needs during and after construction. They're about saving time, improving safety, quality and potentially saving money and more. They're about sparing lives by limiting the time workers and drivers spend in work zones. They're about helping the nation realize its aspirations that depend on mobility. What better reasons to fast track as standard practice?

“Do we have to take three to five years to complete the project or can we do it in two years?”

Jack Lettiere, New Jersey Department of Transportation Commissioner
November 16, 2004 at the kickoff of NJDOT's second ACTT workshop

Workshops at a Glance

[Workshops completed as of December 1, 2004]

State	Project Cost	Planned Construction Time	Project Goal
Indiana	\$400 million	5 - 8 years	3 years
Pennsylvania	\$140 million	4 years	2 years
Texas	\$760 million	7 years	4 years
New Jersey	\$10 million*	1.5 years	0.3 years
California	\$80 million	2.2 years	N/A
Louisiana	\$8 million	N/A	N/A
Montana	\$100 million	5 years	3 years
Washington	\$1.5 - \$3.4 billion	6 years	4.5 - 5 years
Tennessee	\$160 million	6 - 8 years	2 - 3 years
Oklahoma	\$400 million		Open ML by 2008
Minnesota	\$200 million	4 years	3 years
Wyoming	\$100 million	7 - 9 years	5 years
New Jersey	\$300 million	3 - 5 years	2 years

*Cost estimate reduced to \$7.2 million as a result of ACTT workshop

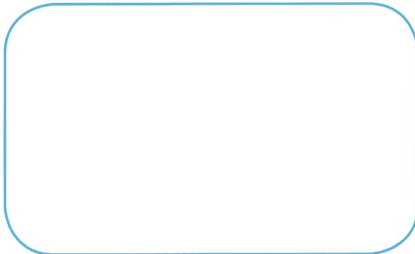
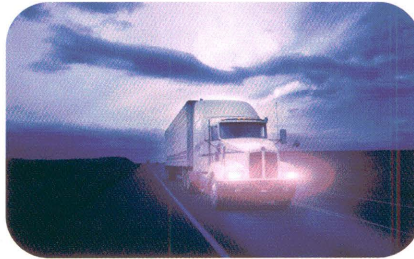
INSIDE A WORKSHOP

How does an Accelerated Construction Technology Transfer workshop come about? In evaluating construction alternatives for an existing facility under traffic, a State DOT consults with ACTT team members from the FHWA and AASHTO's Technology Implementation Group. A proposal with basics about the corridor, timeline and goals (the proposal form is at <http://www.fhwa.dot.gov/construction/accelerated/question.htm>) goes to the FHWA Division Office. Finally, the ACTT management team (listed at the end of this booklet) arranges for a pre-workshop meeting where details are ironed out with the host agency.

Next, experts are tapped from the National Skill Sets Council. The scope of the project determines which skill sets will be represented at the workshop; some may not be necessary, depending on the project.

A typical workshop attracts up to 100 participants. When the date arrives, the ACTT team meets with the agency team, tours the project site, and engages in two days of lively exchanges about cutting edge ways to get in, build it (and build it right), and get out as soon as possible, minimizing impacts on the traveling public. By the end, the State has in hand a set of recommendations to consider while moving forward with the project.

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



The Skill Sets

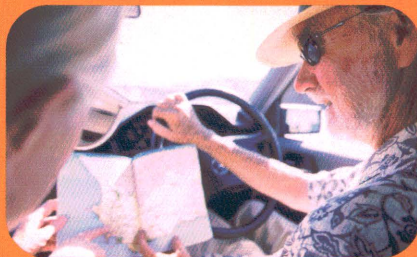
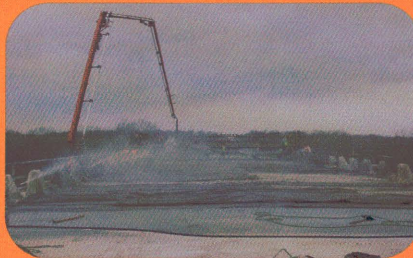
The Recurring Recommendations

The Contacts

Innovative Contracting/Financing
Roadway/Geometric Design
Structures
Traffic Engineering/Safety/ITS
Construction

Right-of-Way/Utilities/Railroads
Geotechnical/Materials
Long Life Pavements
Environment
Public Relations

As the Accelerated Construction Technology Transfer process is implemented by State DOTs, recurring recommendations are materializing from workshops, and could apply to other local and national projects. This section displays the skill sets used at the 14 workshops held from 2002 through 2004 and presents repeat recommendations for seven of the skill sets. It offers primary areas of focus for the skill sets of Innovative Contracting/Financing, Environment and Roadway/Geometric Design, whose recommendations have focused on the unique needs of the owner. This section also supplies contact information for Skill Set Team Leaders.



Skill Sets Represented at ACTT Workshops

WORKSHOP STATE DOT	Innovative Contracting/ Financing	Right-of-Way/ Utilities/Railroads	Roadway/ Geometric Design	Geotechnical/ Materials
INDIANA page 24	●	●		●
PENNSYLVANIA page 25	●	●		●
NEW JERSEY page 26				
TEXAS page 27	●	●	●	●
CALIFORNIA page 28	●	●	●	●
LOUISIANA page 29				
MONTANA page 30	●	●		●
WASHINGTON page 31	●	●	●	●
TENNESSEE page 32	●			●
OKLAHOMA page 33	●	●	●	●
MINNESOTA page 34	●	●		●
WYOMING page 35	●			●
NEW JERSEY page 36	●		●	●

Structures	Long Life Pavements	Traffic Engineering/ Safety/ITS	Environment	Construction	Public Relations
●	●	●		●	
●	●	●			
●					
●	●	●	●	●	
●	●	●	●	●	
●		●		●	
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●	●	●	●	●	●
●		●	●	●	●

INNOVATIVE CONTRACTING/FINANCING

Skill Set Summary

Members of this skill set seek to align financing and contracting options with the goals of the project. They suggest ways to match anticipated cash flow with project management, while recognizing competing priorities for existing resources. Innovative contracting explores state-of-the-art in construction using techniques like performance-related specifications, warranties, design-build, cost-plus-time strategies, partnering escalation agreements, lane rental, incentives/disincentives, and value engineering. Finance tools include cost sharing strategies, tolling mechanisms, contractor financing, leveraging techniques, credit assistance, cost management, and containment concepts.

Innovative Contracting

The innovative contracting/financing skill set team normally considers a wide umbrella of contracting topics that may be classified in three primary focus areas: project delivery systems, procurement methods, and contract management methods.

Project delivery systems are the overall processes by which a project is designed and constructed, and, in some cases operated, maintained, or financed. The project delivery system defines the contractual relationship between the contracting agency, designers, construction managers, and the contractors. It defines the sequencing and execution of design and construction. The traditional design-bid-build method may often be the delivery system of choice, however, depending on the statutory authority of the contracting agency and the project goals, the contracting agency may elect to use an alternative project delivery system such as design-build or construction manager-at-risk.

The second subject area of innovative contracting relates to the procurement method that the contracting agency will use to select the successful firm. The procurement method defines the procedure for evaluating and selecting designers, contractors, and various consultants. Evaluation and selection can be based solely on price, solely on technical qualifications, or on a combination of price, technical qualifications, time, and other factors (best value). The traditional fixed-price, sealed bidding method is an example of a procurement method that only considers price. Other procurement methods, such as cost-plus-time bidding and best value contracting include price and non-price factors in determining the successful firm.

The third subject area for this skill set features a discussion of contract management methods. These methods are procedures and contract

provisions used to manage construction projects on a day-to-day basis to ensure timely completion, maintain quality, and avoid disputes and claims. The range of available contract management methods is very broad and includes quality assurance specifications, performance specifications, incentives for quality/schedule/reduced congestion, prequalification procedures, claims avoidance, constructability reviews, and others.

While the topics and issues addressed by the innovative contracting skill set are broad and diverse, the ACTT discussions are always focused toward the unique project goals and objectives of the contracting agency. Thus, the final recommendations of this skill set are targeted for the unique goals of the owner.

Innovative Financing

The innovative contracting/financing skill set team discussions have focused on three general financing areas: revenue sources, financing mechanisms, and project finance plan and cost estimates.

Revenue sources may include regular federal-aid highway program funds, State and local funds, user charges, and non-traditional funding sources such as developer assessments, sales taxes and property taxes. Financing mechanisms can include long-term vehicles such as GARVEE bonds, trust fund tax-free debt, "63/20 corporations," developer financing, and right-of-way lease-purchase (annuity) agreements. They may also include short-term mechanisms such as construction cash-flow financing and commercial debt issued by the owner.

The most important part of this process however, is the development of the project estimate, financing plan and time schedule for each alternative. The cost estimate and project schedule should involve a probability-based assessment of the costs to be incurred in all project development phases including environmental, traffic management, utilities, design, construction and if appropriate operation and maintenance.

Contact

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RIGHT-OF-WAY / UTILITIES / RAILROADS

Skill Set Summary

This group focuses on reducing construction delays by resolving potential conflicts early in the planning process while minimizing any disruptive impacts on the community. Right-of-way considerations include State laws and procedures, numbers and types of businesses and residences affected, ready availability of additional right-of-way, and the number of outdoor advertising structures in the project area. Utility relocation issues include industry responsiveness, incentive-based utility agreements, corridor approaches to utility agreements, contracting for utility work, and nondestructive methods of utility relocation. For some projects, close railroad coordination is essential for maintaining both construction access and railroad schedules.

Recurring Findings and Recommendations

- Form a ROW/utility/design team to coordinate issues and needs. The need for additional ROW associated with new design or utility configurations can be identified early. Use preliminary plans for subsurface utility engineering (SUE) investigations, proposed location of facilities, investigation of conduits and corridors, and utility planning.
- Set ROW limits earlier using a generous footprint. Utility and ROW work can begin on agreements, abstracts, descriptions, appraisals, and acquisition without a final design. This may speed up ROW clearance by as much as a year. Designers need to rethink the design process to work within the ROW bought and limit additional ROW changes.
- Get statutory authority to purchase whatever land is needed in conjunction with the project. This includes land needed for environmental mitigation, utility relocation and authority to acquire land for utilities beyond the Interstate system.
- Update or develop new agreements. NCDOT has a signed agreement with environmental groups and permitting agencies where the mitigation site can be identified later. The resource agency receives funds to accomplish the mitigation and issues the permits early.
- For States acquiring ROW with State funds, consider early acquisition of parcels with structures. Businesses may want to relocate early to avoid construction difficulties or accomplish complex relocations.



- Consider getting FHWA approval to use acquisition and relocation incentive payment. These funds are above the offer amount and do not count against the relocation payment.
- Consider having utilities adjusted by the road contractor as part of a project or by one utility contractor. Get a utility coordinator on board early for large projects; firms are limited.
- Use a dedicated utility corridor for culvert placements. Establish ground rules for when a corridor is “full,” causing some utilities to relocate to new areas outside of project ROW.
- Consider emergency services; can utilities be down for some periods of time?
- Develop and implement an electronic data management system for easy communication of parcel data by all users. Consider a GIS interface.

Contact

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ROADWAY / GEOMETRIC DESIGN

Skill Set Summary

Highway geometrics can have a significant impact on project funding and integrity. This group examines the different design options that meet design standard requirements to identify the one that will best achieve the project goals while minimizing adverse impacts and construction delays.

Since many ACTT projects have involved reconstruction of an existing facility on existing alignment, not all have required this skill set's expertise. Typically, projects involving new alignment and/or extensive deviations from existing alignment such as reconstruction of major interchanges benefit most, particularly during early project development before final decisions are made and documents signed.

An excellent example was the second New Jersey ACTT workshop, which focused on the reconstruction of the I-295/I-76/Rt. 42 interchange. NJDOT was evaluating various interchange geometrics alternatives and sought additional expertise to help determine the most accommodating configuration.

Recommendations from this skill set are generally project specific and don't have application to other projects. However, principles such as quality of flow (based on traffic operation analysis), safety, capacity, access management and geometrics integrity are common project elements considered by this skill set, with an emphasis on:

- Maintenance of traffic during construction;
- Alternate routes and necessary improvements;
- Sequence and staging of construction;
- Roadside environment and project drainage;
- Earthwork requirements;
- Work zones, worker safety and permanent safety features.

Contact

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GEOTECHNICAL / MATERIALS

Skill Set Summary

The geotechnical experts in this skill set explore subsurface conditions and issues to assess their impacts on the project. Based on the geography of the project, subsurface investigators may have to deal with traffic volume, environmental hazards, utilities, railroad property, and right-of-way concerns in order to perform an accurate analysis. This team also pursues options to expedite and facilitate turnaround times in material testing for material acceptance and contractor payment. The use of innovative materials is also fully considered and encouraged on projects to improve performance and increase durability.

Recurring Findings and Recommendations

- Consider use of recycled material from project site for base, backfill, and aggregate. Other recycled materials may include ground tires, tennis balls, glass, and RAP.
- Consider use of lightweight fills like geofom, foamed concrete, wood fiber, shredded tires, expanded shale or clay, flyash, boiler slag, and air cooled slag.
- Consider performance-related specs including warranties; optimized aggregate gradation; prequalified aggregate sources; and performance modified binders.
- Consider mandating pre-approved borrow sites.
- Optimize use of MSE walls. Other options in order of preference include continuous diaphragm walls, soldier piles lagging, soil nailing, and cast-in-place.
- Provide MSE wall training course for bridge, construction, and materials folks.
- Use spread footing unless proven inadequate to minimize deep foundation needs.
- Eliminate end slopes under bridges by using MSE walls.
- Consider drilled piling to eliminate vibration of nearby structures or environmentally sensitive grounds.
- Obtain geotechnical information and borings early to help make design decisions.

Contact

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STRUCTURES

Skill Set Summary

Much of the construction time savings that the ACTT process engenders can be attributed to this group. Systems and concepts like prefabrication, preassembly, incremental launching, lift-in, and roll-in have a proven track record in accelerating construction of various highway structures, including bridges, retaining walls, and culverts. Designers have several options in structure types and materials to meet design requirements; identifying the most accommodating system while minimizing adverse project impacts is the objective of this skill set.

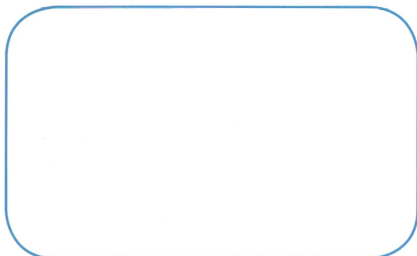
Recurring Findings and Recommendations

- Use robust designs; do not design each component to be customized to just carry the expected load.
- Standardize structure designs.
 - Maximize use of prefabricated elements like:
 - Pier caps
 - Pile bent caps
 - Pier columns
 - Girders
 - Full depth decks
 - Deck and girder units (partial or complete superstructure units)
 - Mono-shafts under columns
- Preassemble/prefabricate structure components as much as possible.
- Consider alternative construction methods (examples: incremental launching, off site construction and roll in or lift in place).
- Use high performance materials.
- Use maturity meters for concrete strength gain.
- Schedule let dates that yield optimized seasonal construction time.
- Group bridges in a single contract.
- Include road user costs and other benefits in VE cost proposals.
- Pre-construct foundations.

Contact

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- Use self-consolidating concrete (SCC).
- Use steel girder detailing that permits girder segments to be erected from pier to pier and continuity developed over pier (eliminates field splicing).
- Advance material procurement: pre-procure materials that are on critical path such as beams, retaining wall panels and noise walls.
- Consider full span prefabrication and erection.
- Use non-peak traffic periods for construction.
- Use lightweight concrete to reduce weight of prefabricated components.
- Use polymer concrete where early strength and set is required such as joints.
- Use prefab modular bridges for temporary structures and reuse on other projects.
- Use prefabrication to extend the construction season.



LONG LIFE PAVEMENTS

Skill Set Summary

Members of this skill set concentrate on designing pavements with an expected service life of up to 50 to 60 years. They specify ends rather than means: not how to build the pavement, but how long the pavement must last. When pavement performance goals and objectives are clearly identified, the designer and contractor have the maximum freedom to determine the appropriate methodology. This skill set also explores future maintenance issues for a project site, including winter maintenance, traffic operations, preventative maintenance, and any other concerns that may have an impact on the roadway's design life.

Recurring Findings and Recommendations

- Consider long life pavements (40-50 year life).
- Consider on-site asphalt and concrete plants to minimize traffic congestion due to construction vehicle ingress/egress, and to reduce haul time and accelerate construction.
- Use long term warranties to assure performance of long life pavements. Warranties should be performance based and include variables like smoothness, friction, and cracking.
- Consider pavement design based on mechanistic method.
- Consider use of technology like maturity meter, air void analyzer, and superpave suite of tests.
- Conduct density testing at longitudinal joints.
- Consider use of joint sealer at time of construction.
- Investigate additional staging areas to minimize impacts on old/new pavements and to increase efficiency of construction activities.
- Fast track concrete mixes; match strength to time demand.
- Schedule seasonal limitations for paving in construction sequencing.

Contact

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TRAFFIC ENGINEERING / SAFETY / ITS

Skill Set Summary

This skill set promotes enhanced safety and improved traffic management through use of corridor contracting methods. These methods may include the use of incentives to enhance safety and improve traffic flow both during and after construction. ITS technologies can communicate real-time traffic information both during and after construction to motorists via radio, Internet, interactive signing and wireless alerts, and can provide incident management systems/services.

Recurring Findings and Recommendations

- Utilize wireless communications, traveler information through navigator and public information officers, dynamic message signs, CCTY, HERO, performance-based tow service, and pre-defined incident response plans.
- Coordinate with local jurisdictions to develop a concept of operations like origin/destination, short/long commute, HOV/HOT/commercial, express/through trips, etc.
- Coordinate with the public relations unit to provide information for motorists in real time like travel (trip) time and delay time.
- Establish various means of delivering project information to stakeholders like the web site, HAR, telephone, TMOC, etc.
- Partner with law enforcement agencies to develop an incident management plan to quickly locate and clear incident sites.
- Implement smart work zones using cameras, variable message signs, and advance warning signs.
- Consider performance measures for enforcing traffic control specs.
- Identify and involve all stakeholders, including neighboring States.
- Identify opportunities for improved efficiencies on alternate routes and prepare marketing materials to encourage their use.
- Start with project goals and develop specific performance criteria like work zone operating speed, limiting lane reduction, accommodating local/regional/national events, and minimizing traffic delays. Consider use of portable ITS to monitor performance.



Contact

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ENVIRONMENT

Skill Set Summary

For projects that have not completed environmental analysis, this group provides input on important environmental considerations and National Environmental Policy Act (NEPA) procedural requirements. Their focus is to help assure that alternatives being explored as part of the workshop can be productively utilized in the environmental document and subsequent project decision-making.

When projects have completed the environmental analysis and have an approved Record of Decision, or a Finding of No Significant Impact, this group focuses on building the selected alternative in a manner that is safe and efficient, while also enhancing environmental, community and scenic resources. Their input ensures that scope-of-work and construction activities reflect environmental commitments and that project implementation is sensitive to community concerns.

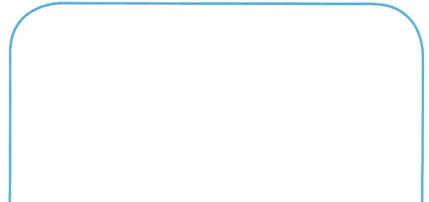
ACTT projects are in various stages of development, ranging from pre-draft environmental document to draft supplemental document, to post ROD/pre-contract. All the phases of project development have unique environmental issues associated with them, so ACTT workshops have not produced recurring themes in terms of the environmental skill set.

Three consistent threads, however, have emerged:

- Ensure that appropriate feedback loops are in place to inform designers, project managers, and contractors of the environmental commitments made on a project.
- Establish clear communication channels to assure that commitments made are constructible and will be permissible, and that changes in design are reviewed to assure that there will be no new or greater impacts to sensitive resources, both natural and community/cultural, as a result of the change.
- Include the environmental skill set as part of workshop teams, especially for workshops that occur prior to a Record of Decision.

Contact

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CONSTRUCTION

Skill Set Summary

This skill set explores the options available to keep traffic flowing during construction, maintain safety, and achieve project completion milestones, among other concerns. Common suggestions that would have an impact on time, constructability or quality include enhanced construction management techniques, contractor design input, and improved construction scheduling. These techniques can improve the effectiveness and efficiency of the overall project completion. Construction skill set experts also explore the use of automation to enhance the performance of construction equipment and contract administration.

Recurring Findings and Recommendations

PROJECT MANAGEMENT

- Designate one project manager with a senior management team as advisors.
- Broaden approval authority at project level to expedite change orders and issue resolution.
- Shorten turnaround time on shop drawing and other submittals.
- Assign specialists for immediate on-site recommendations (like geologists).

INNOVATIVE CONTRACTING

- Consider A+B, design/build, incentives and disincentives, lane rentals.
- Consider DB with performance specifications.
- Explore possibility of best value contracting.
- Modify specifications to allow maximum innovation.
- Shorten overall project time by overlapping design and construction contracts.
- Consider using one general contractor for whole corridor and increase subcontracting limit to 50 percent.

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CONSTRUCTION, continued

TRAFFIC CONTROL

- Allow contractor to develop traffic control plans.
- Make contractor responsible for traffic management and traffic control.
- Consider certified traffic control coordinator for whole corridor.
- Pursue ways to expedite traffic flow: detours, alternate routes, truck restrictions, closures.
- Allow flexibility in the sequence of operations.
- Consider temporary roadway transitions and using old bridge as working stage area.

PRE-MAINLINE CONTRACTS

- Consider issuing pre-mainline contracts to complete work that does not impact traffic: utility relocations, access roads, noise walls, fencing, railroads, high mast lighting, route alternates, etc.
- Conduct subsurface investigations for contaminated or hazardous material before mainline contracts.

UTILITY ISSUES

- Conduct intensive utility survey early to minimize risks. Consider hiring a 3rd party to conduct and manage utility work.
- Consider constructing a utility corridor or tunnel along side roadway.
- Designate utility coordinator and proceed with relocation at 30 percent design stage.

LONG-LEAD ITEMS AND PREFABRICATION

- Address delivery times for long-lead items. Consider alternative material sources or early procurement contracts.
- Consider using precast bridge elements to expedite construction.
- Consider prefab of entire bridge span off-site and then erect in place.

PROJECT PACKAGING

- Combine projects into larger contracts which may facilitate coordination (fewer contractors) and shorten time frames.
- Assign group specialty contracts like slide mitigation and rock-cut.

CONFLICT RESOLUTION

- Develop a planned conflict resolution process.
- Require mandatory Partnering with alternative dispute resolution.

NIGHT WORK

- Investigate potential of night work and obtain permits for local noise ordinances.
- Consider full night closures for work on mainline and structures.

CONSTRUCTABILITY REVIEWS

- Perform constructability reviews in design process with review team including contractors, retired DOTers, consultants, and others.
- Involve construction industry early in review process to help minimize redesign.

STAGING AREAS

- Address staging areas in the contract especially if ROW is needed or work area very restricted.

SCHEDULING

- Use CPM scheduling with bi-weekly updates for both the owner and the contractor.
- Consider double shifts.
- For snow areas, pursue ways to get early season start with a snow management plan, advance clearing, and optimized start work dates.

TRANSPORTATION OF MATERIALS

- Explore innovative methods for transporting materials to minimize traffic impact, such as use of rail or barge or night hauling.

CONTRACTOR PREQUALIFICATION

- Use enhanced contractor prequalification process that includes a quality factor in the selection process which may involve legislative approvals.
- Consider giving prequalified contractors advance plans and shortening bid time.

QC/QA PROCESS

- Develop specific QC/QA processes and responsibilities.
- Consider changing material testing to expedite inspection/testing such as change density testing from sand cone to nuclear gauge and reduce frequency by proof rolling.

STANDARDIZATION

- Standardize structures, use longer spans, reduce skew angles.
- Optimize bridge and retaining wall standardization along with modular and precast concepts.

INCENTIVES

- Provide more incentives for innovation.
- Increase attention to quality by improving and expanding quality incentives.
- Increase level of value engineering reward above 50/50 split. Include more incentive for time-based solutions.

MAXIMIZE CONTRACTOR CONTROL

- Allow more flexibility in specifications in areas such as materials, traffic control, alternate bid items.
- Use contractor staking and predetermined pay quantities. Urge GPS grade control.
- Coordinate waste removal and excavation hauling.
- Pursue reusing excavated embankment material either on-site or nearby to minimize hauling.
- Coordinate removal and disposal with other local agencies.

RETAINING WALLS

- Consider long-term service life, aesthetically pleasing, top-down wall construction.

PUBLIC RELATIONS (PR)

Skill Set Summary

The vast majority of the nation's highway projects involve reconstruction of existing facilities, with the need to maintain traffic flow during construction. This skill set develops strategies to partner with local entities and contractors to inform communities and the traveling public, minimizing construction delays as well as adverse socio-economic impacts.

Recurring Findings and Recommendations

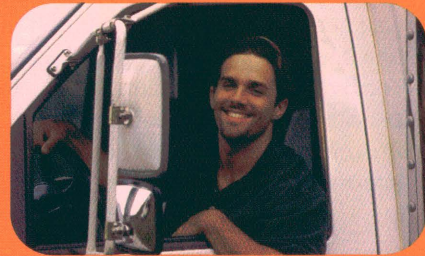
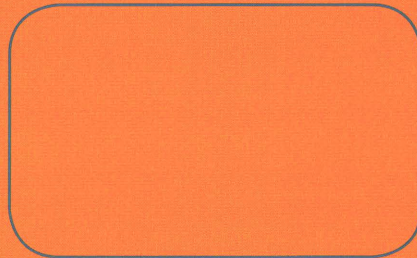
- Include PR representative on project advisory committee.
- Brand the project, design project logo and use on web site and other PR documents.
- Identify stakeholders, communities, and the cultural environment; explore areas of resonance within each in terms of project actions and priorities; and find out how to deliver information most effectively in each arena.
- Develop a comprehensive and detailed communication plan.
- Launch intensive media outreach ahead of construction to inform motorists and communities of upcoming construction and project benefits.
- Focus people on positive aspects of the project.
- Conduct project tours for legislators, teachers, business organizations, and community leaders; keep all informed of project details with newsletters.
- Identify major construction milestones and announce/celebrate their completion.
- Institute a 24-hour information line.
- Partner with the media.
- Establish visible, friendly presence in the community via a mobile information center.
- Budget for communications needs.

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ACTT Projects, Backgrounds, and Top Recommendations by State

Sharing national knowledge and
expertise to promote accelerated
construction and keep traffic moving



PROJECT

Improving I-465 on the west side of Indianapolis from IN-67 to 56th Street includes adding a travel lane in each direction and modifying eight interchanges on a 12-mile stretch of the Interstate. Auxiliary lanes will be added along the main-line pavement between interchanges to increase the efficiency of weaving movements and adjacent through lanes. I-465 will then prevail as a 10-lane/12-lane facility, versus the existing six lanes. Following standard practice for reconstruction would mean five to eight years of construction, two to three engineering contracts, and five construction contracts, with INDOT serving as lead coordinator for all activities.

BACKGROUND

A top challenge was to see if construction could be completed in three years while still maintaining the traffic flow. Major traffic generators affected by the project include Indianapolis International Airport, Indianapolis Motor Speedway, Indianapolis Raceway Park, Ameriplex Industrial Park, and Eagle Creek City Park. Few alternative routes exist to reach many of the destinations along the corridor, which serves more than 150,000 vehicles a day. INDOT goals include minimizing traffic disruption during construction; maintaining traffic flow at 45 mph in the construction zone or a minimum of three lanes in each direction; providing access to the airport throughout construction; and designing and building the project within the estimate of \$400 million.

TOP RECOMMENDATIONS FROM WORKSHOP

- Let one corridor design engineering contract.
- Consider one design/build construction contract and look at several other phasing and construction options.
- Have the contractor serve as lead coordinator for the project if design/build is the option of choice.
- Consider using Grant Anticipation Revenue Vehicle (GARVEE) bonds as principal financing; maximize federal matching tools; and contain costs through value engineering and other methods.
- Employ prefabricated bridge systems.
- Design a long-life (60-year) pavement.
- Use subsurface utility engineering to obtain better information on utility locations and potential interference.
- Form a Right-of-Way, Utility and Design Team to coordinate issues as early as possible.
- Accompany accelerated construction efforts by extensive media and public information campaigns to keep motorists informed.

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PROJECT

PENNDOT plans improvements to PA-28 from Chestnut Street in Pittsburgh to the Millvale interchange in Millvale Borough at a cost of \$140 million. PA-28 serves as a major interregional transportation facility connecting the communities in Armstrong, Butler, Clarion and Jefferson Counties with I-76 (Pennsylvania Turnpike), I-279, I-579, the city of Pittsburgh, and Pittsburgh International Airport.

BACKGROUND

Proposed improvements include elevating and bifurcating PA-28 to accommodate widening to four 12-foot lanes with shoulders and median barrier; providing grade-separated interchanges at the 31st and 40th Street Bridges; and realigning Rialto Street to a “plus” intersection with the 31st Street Bridge. PENNDOT goals include completing construction in two years; reducing the date to bid by a year; maintaining traffic flow of 35 mph during construction; expediting ROW acquisitions and utility relocations; and providing long-life pavement: 50 years without a major maintenance cycle.

TOP RECOMMENDATIONS FROM WORKSHOP

- Optimize use of MSE walls.
- Construct southbound retaining walls first, complete utility work, and complete westbound lanes while maintaining existing traffic operation to help reduce construction time from three to two years and, more importantly, limit traffic disruption to one year.
- Use capacity-driven piles if concerned about the excavation of contaminated soil.
- Use design-build and performance-based specifications for greater flexibility for the contractor.
- Relocate utilities to a dedicated corridor adjacent to the highway using a tunnel to provide easy access for future utility work without traffic disruptions. If utilities can't be relocated separately, place in a 20'x12', 3-sided RCB (specified by utility companies) under the road.
- Minimize traffic disruptions during construction for hauling purpose; haul materials using barges.
- Utilize prefabricated structural units.
- Develop a pre-ROD hardship acquisition.
- Identify stakeholders and communities and find out how they would like to receive real-time project information; keep them informed.

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PROJECT

Project Pegasus is a major reconstruction of downtown Dallas traffic arteries involving total reconstruction of the I-30/I-35E interchange (the "Mixmaster") as well as other portions of both highways. The project includes 11 miles of roadway and over 99 entrance/exit ramps, and the estimated cost is \$760 million.

BACKGROUND

Neither I-30 nor I-35E has been substantially improved since original construction in the early 1960s, so dramatic changes will be necessary to comply with current design guidelines. Among other challenges, the roads to be rebuilt are crossed by busy rail lines, and are abutted by historic buildings, hospitals, public parks and flood-control levees; and hundreds of thousands of vehicles travel daily through the "Mixmaster." TxDOT goals are to maintain traffic with minimal disruption, accommodate regional/national/international events, provide access to emergency facilities, reduce construction time from seven to four years, and maximize work zone safety.

TOP RECOMMENDATIONS FROM WORKSHOP

- Construct Trinity parkway first, to be used as detour during construction.
- Dedicate 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.
- Give broader latitude and decision-making authority to Dallas District to accelerate the response process.
- Screen and select a number of large contractors to get involved throughout the design process—candidates who can then bid on the job.
- Close portions of the project to traffic during construction, which is expected to help reduce construction time beyond the three year reduction originally targeted.
- Allow the contractor to build his plant onsite to minimize time and congestion.
- Use on-site prefabrication of structural components, and installation methods such as rolling, launching, or lifting into final position.

FOR MORE INFORMATION

www.projectpegasus.org and

<http://www.fhwa.dot.gov/construction/accelerated/if04003.htm>

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PROJECT

In determining the most viable alternative for the Rt-46 bridge structure spanning the Overpeck Creek next to the New Jersey Turnpike, cost effectiveness ranked as a top consideration. Alternatives range from partial replacement of the westbound deck to full replacement of the structure. The latter option was estimated at \$10 million, with 18 months of work.

BACKGROUND

Challenges included the location of the bridge—five miles west of the George Washington Bridge that leads into New York City; the need to minimize, if not avoid, impacts on the traveling public; and the need to limit costs insofar as possible. After the ACTT team met with NJDOT at the workshop, toured the site, studied options and made recommendations, NJDOT decided not to replace the entire superstructure or use road closures, but to use prestressed, precast HPC for a new bridge deck to expedite construction. Estimated cost: \$7.2 million. Estimated construction time: 4 months. The project is expected to be advertised in spring, 2005

TOP RECOMMENDATIONS FROM WORKSHOP

- Close the westbound structure completely during construction.
- Make use of precast elements such as double I-girders, deck bulb tee, precast box beam, adjacent bulb tee, inverted modular bridge deck units, and concrete/steel beams with a full-depth precast deck.
- Utilize lightweight high-performance concrete (HPC) to reduce deadload.
- Employ polymer concrete for joint closures.
- Use fiber-reinforced polymer composites for the deck.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cptnj04.htm>

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PROJECT

The French Valley project located on I-15 between the cities of Temecula and Murrietta, CA will add capacity and improve conditions to mitigate congestion. Proposed improvements of the \$80 million project include construction of a new interchange between the I-15/I-215 and I-15/SR-79 junctions.

BACKGROUND

In recent years this region has experienced population growth exceeding 30 percent, with 68 percent of the adults commuting away from the area for daily employment. Project goals include easing traffic congestion, reducing traffic accident rates, and providing additional access to local communities.

TOP RECOMMENDATIONS FROM WORKSHOP

- Modify the design to eliminate two bridge structures and braided ramps.
- Pave the median to use as a detour during construction and provide for future HOV lanes.
- Prefabricate the entire bridge span on site and roll, launch, or lift it into final position to drastically reduce construction time and minimize traffic disruptions.
- Make the contractor responsible for the traffic control and management, but have Caltrans be responsible for quality control/quality assurance. This should be incorporated into the contract specifications.
- Explore alternative revenue streams such as tax increment financing, a city or regional transportation tax, truck toll lanes, and special assessments. Include utility design and utility coordination in the design/construction contracts.
- Dedicate a Caltrans utility/right-of-way expert to guide and assist the design and construction teams.
- Solicit contractor input during design or preconstruction through AGC review, mandatory pre-bid meetings, and constructability reviews.
- Employ demand management techniques such as transit incentives during the construction.
- Provide dedicated freeway service patrols (FSPs) and incident response teams.
- Clearly define incident management roles and responsibilities during project planning and design based on types of incidents.

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PROJECT

The \$8 million Monroe Bridge Rehabilitation Project on I-20 will restore the superstructure and address structural deficiencies in this 40-year-old bridge that crosses the Ouachita River.

BACKGROUND

Traffic control during construction poses the biggest challenge. Approximately 95,000 vehicles a day travel over the bridge, which has two 12-foot lanes in each direction. Shifting through traffic onto other highway systems in the area would result in a detour of 60 miles or more. To date, all but one recommendation from the ACTT Workshop have been incorporated into the project, which is scheduled to be let in April, 2005.

TOP RECOMMENDATIONS FROM WORKSHOP

- For the laminated deck areas, use high early strength (rapid set) latex modified concrete (LMC-VE).
- Consider use of structural fibers to improve toughness of the overlay, since it has to be reopened to through traffic daily.
- Place overlay at nights while the bridge is closed to traffic to avoid premature cracking of the mat or loss of strength due to vibration.
- Completely close the Interstate to traffic at night and provide for two lanes of continuous flow traffic to detour from I-20 onto local streets. Allow I-20 lane closures only at night.
- Ensure prior completion of nearby projects to ease traffic flow.
- Restrict all Interstate traffic detours to the roadway network adjacent to the Interstate, avoiding Interstate traffic detours to other Ouachita River crossings.
- Modify traffic signals on other river crossings to allow for dynamic traffic flows.
- Implement an aggressive incident management system, including performance-based wrecker service.
- Use a smart work zone with cameras, variable message signs, and advance warning signs.
- Extend the limits of the project to perform all needed roadway rehabilitation at one time.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cptla04.htm>

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PROJECT

The \$100 million project will reconstruct the 50 mile stretch of US 93 between Evaro and Polson in western Montana to meet today's design standards and add capacity.

BACKGROUND

The project is located within the Flathead Indian Reservation, the homeland of the Confederated Salish and Kootenai Tribes. The tribes recognize these lands as their homeland as well as the homeland for a variety of wildlife. The biggest challenge is upgrading to best accommodate traffic demands while minimizing impact on wildlife, culturally sensitive issues, and the overall Spirit of the Land. Another primary challenge is maintaining traffic flow during construction to ensure minimized disruption of tourist traffic, which peaks during the short construction season.

TOP RECOMMENDATIONS FROM WORKSHOP

- Establish a corridor management/communication team to include all three governments with a single-point-contact speaker.
- Change the sequence of project construction to allow for a more efficient use of resources.
- Employ such construction methods and materials as jet grouting, welded wire walls for wall facings, and controlled staging of geotech work. Utilize contractor staking and predetermined pay quantities. Accommodate and encourage GPS grade control.
- Use prefabricated structural components and install them at night. Due to the short construction season, prefabricate structural components during the off-season.
- Pre-approve tribal borrow sites to minimize inspection time during construction.
- Establish a comprehensive traffic management plan, including considerations such as pedestrian traffic control, elderly drivers, property access, wildlife concerns, and regular coordination meetings.
- Allow contractors to bid with an option for traffic control/sequence of operation.
- Employ transportation demand management techniques to reduce the number of vehicles on the roadway resulting from local commuters.
- Create a database accessible by all entities to track right-of-way/utilities progress.
- Make automated acquisition forms available.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cptmt04.htm>

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PROJECT

This is the largest ACTT project to date, and centers on construction of SR-250 between I-5 and I-405 in Seattle. Designed for an average daily traffic of 65,000 vehicles, the road now carries between 110,000 and 120,000 vehicles daily and is often congested for 13 hours on weekdays. The workshop in Seattle looked at ways to accelerate the replacement of SR-520's 40-year-old Evergreen Point floating bridge across Lake Washington.

BACKGROUND

One of the oldest floating bridges in the world, the Evergreen Point Bridge is reaching the end of its useful life. Challenges include moving as many as 120,000 vehicles per day across the lake while the floating bridge is under construction, and funding for the project.

TOP RECOMMENDATIONS FROM WORKSHOP

- Use self consolidating concrete (SCC), particularly for the construction of the pontoons. The great depths of the pontoons and the large quantity of concrete required would make use of conventional concrete very labor intensive. Contrary to conventional concrete, SCC flows easily and fills all cavities, thus eliminating the need for vibration, which could harm previously placed concrete.
- Design the simple pontoons first so construction may begin while the more complex pontoons are still being designed.
- Look at segmenting contracts, such as for the replacement of the Evergreen Point Bridge, which could be completed in four segments.
- Issue a separate contract for anchor system fabrication, looking at other anchor types, such as suction piles.
- Consider installing the anchor system before the pontoons arrive.
- Maximize use of an existing graving dock for pontoon construction through double shifts or another facility.
- Consider a temporary roadway transition span on the south side of the road, using the old bridge as a working stage and then demolishing the old bridge as work progresses.
- Remove juvenile salmon from the work area by placing curtains between islands to keep the salmon away.
- Set up a regional traffic model and look at staging options to consider the impact of other projects in the area.
- Utilize design/build with performance specifications for lids and structures, keeping in mind that fewer lids will shorten construction.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cptwa04.htm>

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PROJECT

The \$160 million project entails widening and reconstruction of I-40 between I-275 and Cherry Street in downtown Knoxville.

BACKGROUND

The existing facility was built in the early 1960s and includes substandard features like short weaving sections, left-hand entrance ramps with short acceleration lanes, and inadequate shoulders. While I-40 has a minimum of six through lanes east and west of downtown Knoxville, the section proposed for reconstruction is a bottleneck that has only four through lanes. The team is on schedule with right-of-way acquisition, plans, environmental permits, and CPM schedule. A traffic impact study has been completed, and TDOT is in the process of reviewing the study.

TOP RECOMMENDATIONS FROM WORKSHOP

- Include all possible utility work in the Phase 1 construction contract.
- Permit the use of areas under existing bridges for construction staging.
- Design clear span bridges where feasible to improve safety and increase usable space under bridges
- Conduct a mandatory pre-bid conference for all prospective bidders.
- Adjust bridge span lengths to minimize the number of foundations and expedite construction.
- Start footing construction early where possible.
- Incorporate high early strength concrete into the project where feasible.
- Require training on MSE/drilled shafts prior to contract.
- Expand drilling program during design phase to better identify sub-surface conditions.
- Have web cam/ITS cameras on site.
- Include language in the contract to prevent unannounced lane/road closures.
- Have an on site CEI/TDOT community relations office; hold project update meetings and attend neighborhood group meetings as requested; compile an e-mail group and send periodic project updates.
- Plan noise walls with an aesthetically pleasing design.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cpttn04.htm>

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PROJECT

This \$400 million project will replace a section of I-40 located between interchanges with I-44 and I-35 at the southern edge of downtown Oklahoma City. This mostly elevated section of I-40 will be replaced on offset alignment to the south; a large section of the new facility will be depressed.

BACKGROUND

The existing facility was built in the 1960s and designed for ultimate traffic volume of 76,000 ADT; today's ADT exceeds 110,000 over this section, and 90 percent of this section of I-40 is rated as a critically high crash facility. The existing facility will be removed at the completion of the mainline construction and a six-lane at-grade boulevard will be constructed on the existing alignment for local traffic. Currently, geotechnical investigations are proceeding; hydrovac excavation has been used to identify the limits of the debris in a nearby old landfill; 404 permits have been submitted; and a constructability review has been completed and recommendations implemented.

TOP RECOMMENDATIONS FROM WORKSHOP

- Combine projects to reduce total number of contracts from 10-14 to 3-4.
- Designate a utility coordinator and proceed with utility coordination and relocation at 30 percent design stage.
- Conduct a two-phase geotech investigation with phase one to resume now in order to determine if material from the depressed section is suitable for borrow.
- Incorporate water and sewer utilities as a part of roadway contracts.
- Eliminate shoe-fly for the BNSF RR bridge construction by constructing permanent bridge structure on site and then positioning it in place overnight.
- Standardize structures, use longer spans, and reduce skew angle.
- Identify the limits of the old landfill in the areas of Byers, Canal, and the proposed I-40 corridor.
- Conduct an immediate, comprehensive HazMat subsurface investigation.
- Identify appropriate areas for contractor staging sites and obtain permits.
- Construct noise walls and fencing early.
- Maximize off-site prefabrication to minimize disruption of traffic flow.
- Brand the project ASAP, determine and select a dedicated public information officer, develop a chart of communication flow, and designate an on-site PR office.

FOR MORE INFORMATION

<http://www.fhwa.dot.gov/construction/accelerated/cptok04.htm>

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PROJECT

Reconstruction of the Crosstown Reconstruction Project, one of the most congested and heavily traveled locations within the Twin Cities metropolitan highway system, is the focus of this \$200 million project. Six miles of I-35W will be reconstructed, along with two miles of Highway 62 and nine interchanges.

BACKGROUND

The interchange is severely substandard, lacks capacity, and with over 250,000 ADT remains congested over 13 hours a day. The accident rate is currently three times the metro average. Besides increasing capacity, the proposed improvements should upgrade geometrics to today's standards and improve safety by eliminating dangerous merging conditions. Maintaining the existing number of lanes throughout construction is the primary challenge.

TOP RECOMMENDATIONS FROM WORKSHOP

- Use the same structure type for V75 and V76 bridges instead of using pre-cast box for one and cast-in-place for the other.
- Change precast concrete box to steel for the flyover bridge at the north end of the project to open in fall of 2006 instead of July 2007.
- Consider a one percent communication budget under MNDOT's control.
- Add a third lane to HWY 100 prior to start of mainline work.
- Consider performance measures for enforcing traffic control specs.
- Stage and prioritize the right-of-way acquisition based on critical parcels and construction staging.
- Install sheet pile protection at the storm sewer locations instead of supporting the retaining wall on the piling.
- Use high-performance concrete (HPC) on bridge decks to eliminate the need to overlay.
- Use SUE and master utility agreements.
- Recognize the paving limitations on this project due to seasonal constraints resulting in multiple (yearly) mobilizations.
- Use spread footings unless proven inadequate to minimize deep foundation needs (15 percent cost savings on bridge).
- Use innovative Best Management Practices (BMPs), such as the use of polyacrylamide.

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PROJECT

Reconstruction of US-287/26 between Moran Junction and Dubois will upgrade this 37-mile stretch of highway to a super-two facility with passing lanes. Project cost is \$80 million.

BACKGROUND

The primary project challenge is to complete the project under traffic while minimizing socioeconomic, environmental and wildlife impacts. Prior to the workshop, WYDOT was evaluating several scheduling options including an accelerated 5-year construction option, a 7-year option, and a 9-year option. The corridor project was being designed as five projects that could be constructed individually or combined. The first project, about 10 miles in length, was scheduled to begin in 2005 with completion in the 2006 construction season. To accelerate construction of the corridor, WYDOT is now considering combining contracts as recommended by workshop participants.

TOP RECOMMENDATIONS FROM WORKSHOP

- Extend the construction season by using heaters and geogrid; by placing snow fences to mitigate snow storage conflicts; by using alternate materials/methods like the use of large crushed aggregate, which can be placed in colder weather; and by using cold-weather concrete. Bid contracts in the fall and procure materials, submit shop drawings, and certify materials during the off season.
- Change the density testing from sand cones to nuclear gauge and reduce the testing frequency by using proof rolling.
- Shift alignment to the north for the Rosie's Ridge contract to minimize impact on drivers and potentially reduce construction time by two years.
- Use webcams, geogauge, maturity meters, and prefabrication.
- Use a surcharge over the winter to accelerate consolidation of the approaches to Buffalo Fork Bridge.
- Assign group specialty contracts like slide mitigation and rock cut by type and not by location.
- Deploy a traffic control system with a certified coordinator for the whole corridor.
- Eliminate frost-heaves using methods like an elevated profile with a rock cap, over excavation and replacement of material with drainage, Polystyrene board insulation layers, vertical edge drains or horizontal geo-composite drains.
- Have a public relations representative on the advisory committee and develop a comprehensive and detailed communication plan, ensuring real-time construction and road condition information including possible alternative routes.

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PROJECT

The \$300 million project entails reconstruction of the severely substandard interchange of I-295/I-76 with SR-42 southeast of Philadelphia.

BACKGROUND

With over 250,000 vehicles going through this interchange daily, capacity is a principal reason for the 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. Congestion ranks among the nation's worst. The project is currently undergoing the NEPA process, which will be completed in 2006. Construction is slated to begin in 2009.

TOP RECOMMENDATIONS FROM WORKSHOP

- Consider 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 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 augured piles
- where vibration is a major issue.
 - Test piles during the design phase.
- Consider special prequalification of contractors based on specialized expertise and
- pass/fail criteria.
 - Consider ROW lease-purchase (annuity) option for long term financing.
- Meet with Bellmawr Park Community residents to discuss impacts and mitigation options like use of undeveloped land adjacent to the park for relocation, use of open space within the park, and/or construction of higher density units along the alignment within the park.
- Deploy a communication plan which includes:
 - Establishing visible friendly presence in the community via a mobile information center;
 - Developing newsletter for community residents, elected officials, and community leaders with projected details and milestones;
 - Full time communication professional;
 - Frequent updates to elected officials to include project tours.
- Modify 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 million-\$100 million;
 - Reduce construction time by one year.

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Calendar of ACTT Workshops

COMPLETED ACTT WORKSHOPS

Indiana	March 2002	Washington	March 2004
Pennsylvania	April 2002	Tennessee	April 2004
Texas	September 2003	Oklahoma	May 2004
New Jersey	October 2003	Minnesota	June 2004
California	December 2003	Wyoming	September 2004
Louisiana	December 2003	New Jersey	November 2004
Montana	January 2004	Georgia	Nov - Dec 2004

UPCOMING ACTT WORKSHOPS

Rhode Island	January 2005	Oregon	April 2005
Utah	February 2005	Hawaii	January 2006
Nevada	March 2005		

OTHER STATES CONSIDERING ACTT WORKSHOPS

Iowa	Ohio	Arkansas	Massachusetts
Illinois	New Mexico	Virginia	Delaware
Maine	Idaho	Wisconsin	New York

Please visit <http://www.fhwa.dot.gov/construction/accelerated/index.htm> for more details.

