Subcommittee on Bridges and Structures

2011 SCOBS Annual Meeting

Shoukry Elnahal, P.E.
Deputy Chief Engineer for Bridges and Tunnels
MassDOT Highway Division
The focus of this year’s T-4 meeting was on Accelerated Bridge Construction (ABC). Why ABC?
- Supports the FHWA Every Day Counts Initiative
- Perception that current AASHTO Construction Specifications don’t support ABC
- More States are starting to implement ABC
- Increased pressure from the public
The Massachusetts Experience
When the Massachusetts Accelerated Bridge Program (Mass ABP) started in 2009, we found that we didn’t have:

- Specifications for heavy moves
- Materials, Design and Construction Specifications
- Lack of standard details
- Lack of design Standards
Florida International University (FIU) held their first ABC Center meeting in Miami in November 2010. I asked them to address what the industry needs from T-4 for ABC/PBES, here is what they came up with:
- AASHTO Construction Specifications for heavy moves
- AASHTO Materials and Construction Specifications for high-early-strength materials
- AASHTO Construction Specifications on ultra-high performance concrete (UHPC)
- AASHTO Construction Specifications for lightweight concrete
- AASHTO Construction and Materials Specifications on mechanical reinforcing connectors in high seismic zones (adopt ACI?)
At the Tuesday afternoon T-4 Meeting here in Norfolk we had several presentations from industry leaders addressing this topic followed by an open discussion to collect information and ideas from everyone who was there regarding the industry’s ABC needs.
Here is a list of what we have gathered from this discussion on what T-4 Should focus on:
- Guidance on innovative contracting (A+B etc.)
- How to quantify road user cost
- ABC decision making
- Standardization
- Guidance on field welding
- Advance state of the practice through research
Emphasis on details for simple span (DL only) and continuity for LL

Guidance for SPMT and heavy moves:
- Deflection control
- Weight limitation
- Twisting and torsion limitations
- Crack control
What is the next step?
We will ask the AASHTO SCOBS Executive Committee to approve a mid-year meeting for T-4. Things that we hope to accomplish at this meeting are:

- Evaluate and rank all the information that we have collected so far
- Evaluate the current Construction Specifications
- Develop a T-4 ABC Action Plan
We hope to see at the T-4 mid-year meeting:

- All T-4 members
- Strong presence from FHWA
- Strong presence from the design and construction industry
- Strong presence from academia
Innovation, Efficiency, Transparency

Modular Prefabricated Systems

massDOT
Massachusetts Department of Transportation

93 FAST 14
I-93 Rapid Bridge Replacement Project

ACCELERATED BRIDGE PROGRAM
MassDOT Fast 14 Bridge Replacement Showcase
July 16 - 17, 2011
Cambridge, MA
Royal Sonesta Hotel - Boston
40 Edwin Land Boulevard
Cambridge, MA 02142
Registration Fee $25

Includes:
- Travel to site visit
- Workshop on Accelerated Bridge Construction

Please visit pdsshowcase.org and click on “Upcoming Showcases” to register and find out more information about the event.

This summer, the Massachusetts Department of Transportation (MassDOT) will replace 14 deteriorated bridge superstructures on Interstate 93 in the city of Medford, MA. MassDOT’s Accelerated Bridge Program has chosen an innovative approach to replacing the bridges that will expedite the work so that construction will be complete in 2011. This Showcase will focus on the innovative technologies used such as Accelerated Bridge Construction, Prefabricated Bridge Elements and Systems, Design/Build, and Incentive/Disincentive Clauses. The two day event will feature a field trip to view the live construction site and a day long workshop with presenters from MassDOT, the Federal Highway Administration, and Contractors on the project.

You are invited to a project showcase
Innovation, Efficiency, Transparency

Wellesley Heavy Lift

Bridge Assembly Yard (BAY)

Existing bridge superstructure - remove and demolish

massDOT
Massachusetts Department of Transportation

ACCELERATED BRIDGE PROGRAM
Precast Arch Bridges
- INSTRUMENTATION WITH UMass
- Develop live load factors from real data
UMaine-developed, tested and monitored

No corrosive rebar in arches; FRP protects concrete
Folded Steel Plate Bridge
Recognition

- **Construction Management Association of America N.E. Program of the Year 2011**
- **WTS Women in Transportation Seminar Massachusetts Chapter's 2011 Innovative Transportation Solutions Award**
- **American Council of Engineering Companies of Massachusetts' 2011 Gold Award for Professional Design Excellence**
- **Construction Management Association of America N.E. Project of the Year 2011**
- **Construction Management Association of America N.E. Project Achievement Award 2010**
Innovation, Efficiency, Transparency

massDOT
Massachusetts Department of Transportation
Highway Division

Shoukry Elnahal, P.E.
Deputy Chief Engineer for Bridges & Tunnels

Ten Park Plaza, Suite 6500
Boston, MA 02116
Tel: 617-973-7995
Fax: 617-973-8808
Shoukry.elnahal@state.ma.us

www.mass.gov/acceleratedbridges

Leading the Nation in Transportation Excellence