



## **Project Description:**

Moses Wheeler  
Bridge Replacement  
over the Housatonic  
River,  
Milford/Stratford

### **Projects:**

138-232 – Foundations  
138-221 – Superstructure



### **Update – February 24, 2014**

View from the South Br. 134, 135, and 6613 (October 2013 aerial)

The Connecticut Department of Transportation identified and addressed a constructability issue with the current phase of the replacement of the Moses Wheeler Bridge, which carries I-95 over the Housatonic River between Stratford and Milford. The issue was not a safety concern to motorists or the construction workers on the project and has been remedied.

It was discovered that the new concrete bridge support columns had deflected or “flexed” outward slightly since their initial construction. As a result, temporary restraints were installed around the columns and will remain in place until the construction of the center portion of the bridge piers is completed. The purpose of the restraints is to facilitate completion of the third and final center phase which will connect the three phases and eliminate future deflection.

The project designer, STV, Inc., has acknowledged the situation, confirmed the overall safety of the structure, and worked cooperatively with the DOT and the prime contractor, Walsh Construction/PCL JV II, to implement the remedial work.

Regular ongoing inspections revealed that several of the newly constructed bridge support columns had deflected outward by a matter of inches. To evaluate this condition, DOT called in STV, and more recently, two nationally recognized engineering firms: FIGG, to evaluate the concrete structures; and GM2 to perform structural steel analysis.

“The safety and integrity of the bridge has been fully evaluated and confirmed,” said DOT Commissioner James P. Redeker. “We anticipate that final design and construction modifications will meet all of the required bridge performance and life cycle performance requirements.”

Additional project costs are anticipated, but the DOT will pursue normal insurance remedies to seek reimbursement for the additional costs. The \$300 million construction project is still expected to be complete in late 2016 or early 2017 as initially envisioned.

No additional or new impacts to traffic are anticipated as a result of this work.



**Project Scope:**

The Moses Wheeler Bridge Replacement Project was separated into two major phases, the Foundations Project and the Superstructure Project. When the projects are completed, the Moses Wheeler Bridge, carrying I-95 traffic over the Housatonic River, will include three travel lanes in each direction with full shoulders conforming to current design standards. The existing bridge was put into service in 1958 and currently handles 130,000 vehicles per day.

**Project No. 138-232 – Foundations Contract:** The Foundations Contract, now complete, included the installation of 39 individual 10-foot diameter foundations (note: a change order added the four remaining foundations). Other Contract work included: the installation of a trestle designed to carry 350 ton cranes, the installation of storm drainage, a waste stockpile area on the Stratford side of the project, and the relocation of utilities.

**Project No. 138-221 – Superstructure Contract:** The Moses Wheeler Superstructure Replacement is being constructed in three stages. The stages roughly equate to building the project in thirds, starting with the northerly third, then the southerly third, and finishing with the middle third. For Bridge No. 135, two construction options were offered to prospective bidders. Walsh Construction/PCL JV II (WPJV) was the low bidder and chose the steel alternate. Other contract work includes modifications to Bridge No. 132, the replacement of Bridge Nos. 133 and 134 and a new independent bridge over Naugatuck Avenue.

**Status:** WPJV is nearing completion of the new I-95 northbound barrel (Stage 2), which is the southern third of the highway. Completion of this portion of the highway involves many similar features that were constructed in Stage 1; however no retaining walls were required, which made the work progress at a faster pace. After successful erection of the Stage 2 structural steel on Bridge 135, WPJV was able to place all of the deck concrete in only one month. This was followed up by 'slip-forming' the entire fascia parapet in three individual placements (Units 1, 2, and 3). The concrete decks for all structures have been waterproofed and the bituminous concrete surface has been installed in all areas. WPJV has been securing and pinning temporary concrete barrier curbing, installing impact attenuators, installing temporary speed limit and guide signs, and applying all epoxy line striping in preparation for the upcoming stage traffic switch.

**Financial Sources – Project No. 138-232 – Foundations Contract:**

- \$52,150,862 – Contractor’s Bid
- \$60,500,000 – Cost at Completion
- 90% Federal Funding

**Financial Sources – Project No. 138-221 – Reconstruction/Superstructure Contract:**

- \$166,476,700 – Contractor’s Bid
- \$174,765,096 (\$8,288,395 Approved CO’s) – Current Value
- 90% Federal Funding

**Timeline:**

**Project No. 138-232 - Foundations**

- Start Date: September 13, 2009
- Completion Date: November 26, 2011

**Project No. 138-221 - Superstructure**

- Start Date: August 22, 2011
- Forecasted Completion Date: September 6, 2016 (Orig. Completion: November 1, 2017; at the request of WPJV, the project completion time was reduced by 14 months).



### **Challenges and Risks:**

Many of the issues to date have been resolved through a process called partnering; however, the following matters are still under discussion:

- Demolition of the existing substructure to Bridge 135 will require the removal of several large underwater pier foundations. WPJV is in the process of developing a submittal, to request the use of underwater blasting. If approved, a monitoring system will have to be established, to measure any adverse effects on the surrounding structures which would include; local businesses, Metro-North Railroad, and the present active highway.

### **Outlook:**

- The Superstructure Project is behind schedule and is approximately 40% complete. The Contractor's latest schedule shows completion on June 23, 2017. This late finish is currently generated by an environmental constraint that must be satisfied during the construction of Wetland Mitigation Area No.1. WPJV should be able to recover all of this time by completing weather-sensitive work during the winter periods through mitigation methods.

### **Recent Activity (As of November 30, 2013):**

- The Stage 2 deck concrete has been placed for Bridge Nos. 133, 134, 135, and 6613. Parapet construction has also been completed for the permanent south fascia of all bridges.
- All bridge abutments have been backfilled and the concrete approach slabs were constructed at Bridge Nos.  
133, 134, 135, and  
6613.
- Omega Demolition has demobilized from the project and will be returning in January of 2014 to begin setting up equipment for Stage 3 structure demolition.
- O&G Industries: Supplying concrete for structures and installing bituminous concrete pavement as areas become available along the northbound widening.
- KTM: Relocating highway lighting for Stage 2 alignment. Also installing conduit for the Metro-North Railroad communication & signalization upgrades.
- Quaker: Continuing construction of the Noise Wall along the I-95 Exit 34 northbound off ramp. This work is nearing completion. Also installing permanent overhead sign structures and sign panels.
- Other Subcontractors include:
  - Berkshire Concrete Cutting: Saw cutting parapet control joints.
  - Safety Markings: Pavement markings.
  - Empire State Piping: Installation of 300mm fiberglass bridge drainage.