



Piping up for fresh bridge

Tappan Zee successor is building a solid base of support

New York Gov. Andrew Cuomo spearheaded the initiative to replace New York state's structurally obsolete Tappan Zee Bridge, for which the project team received notice to proceed in January 2013. Construction of the New NY Bridge is already under way, with the New York State Thruway Authority overseeing Tappan Zee Constructors LLC (TZC) design-building the largest highway and bridge project in North America.

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As of April 2014, the bridge's cable-stayed design is 85% complete and features more lanes, a shared-use path and the potential for mass-transit integration. The shared-use path, featured on the westbound span, will also include six unique overlooks where pedestrians and cyclists can pause and take in the views of the Hudson River Valley. TZC plans to have all bridge-design packages set for construction in May 2014. A number of design staff will remain with the project to verify plans as construction continues throughout the next four years.

Construction operations are 15% complete, as TZC continues pile driving permanent foundations for the new bridge's two main spans. While pile driving will continue throughout the year, the project team will be working at staging areas north of the current

bridge to modularly construct enormous precast concrete components. TZC's pile caps will all be precast and serve as floating cofferdams, providing structural support for the bridge. Sixty pier caps also will be precast, filled with concrete and rebar.

The sheer weight of these components would be too much for a single, normal crane to handle. The consortium specially designed and constructed one of the world's largest floating cranes, the Left Coast Lifter (LCL), to be able to pick up larger-than-usual loads. The LCL gives TZC the ability to build larger assemblies on the ground, which makes the assembly more efficient and safer—saving both cost and time. It also serves as risk mitigation, backing up TZC's other large cranes with load capacity, and provides significant advantages in demolition of the old bridge.

With a boom length of 328 ft and around an 1,800-ton lift capacity, the crane helped the design-builder submit a lower bid and shorter construction schedule compared with other bids received by the Thruway Authority. The LCL is scheduled to be on the project site around June 2014 and assist with placing larger modular constructed segments of the



Left: View of the proposed bridge from the Hudson River, due to be completed in 2018.

Below: Installation of the piles that will become the foundation for the main-span towers.

bridge in the late summer and into the fall. Ultimately, being able to lift preassembled structural-steel girders of the bridge will allow for more detail-oriented work to be done on the ground more safely and efficiently.

Safety is the No. 1 priority on the project, with GPS-tracking devices placed on barges and other vessels on the water. Safety precautions will extend beyond construction as well, with the planned installation of a “structural health-monitoring system” on the bridge. The system will help ensure the bridge meets its expected 100 years of longevity without major maintenance.

The New NY Bridge is scheduled for completion in 2018 and will serve as the longest and most complex crossing in the New York State Thruway system. With 14 miles of cable stays, 57 miles of pipe piles and enough structural material to cover a football field with 11 ft of steel, the bridge is set to create a solid piece of infrastructure for the growing community of the Hudson River Valley and ensure economic benefits during construction and beyond. TZC intends to support cultural and economic growth during the construction process by contracting with small businesses and supporting a wide variety of community initiatives.

TZC is a consortium of some of the world’s best-known and most highly regarded design, engineering and construction firms, including Fluor Corp., American Bridge, Granite Construction Northeast and Traylor Bros. Inc., along with key design firms HDR, Buckland & Taylor, URS Corp. and GZA Geoenvironmental. **R&B**

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For more information about this topic, check out the Bridge Rescue Channel at www.roadbridges.com.

