



# The New NY Bridge

## Project Fact Sheet

### OVERVIEW

The New York State Thruway Authority is replacing the existing Tappan Zee Bridge with a new 3.1-mile state-of-the-art, twin-span bridge across the Hudson River between Rockland and Westchester counties.



The \$3.98 billion New NY Bridge project is one of the largest single design-build contracts for a transportation project in the United States. Located less than 20 miles north of New York City, the cable-stayed span crosses one of the widest parts of the river and will be the largest bridge in New York State history.

Tappan Zee Constructors, LLC (TZC), a consortium of some of the world’s best-known and most highly-regarded design, engineering and construction firms, is designing and building the new bridge, which will fully open to traffic in 2018.

All traffic from the existing bridge will be temporarily shifted onto the first new span later this year, providing four lanes in each direction.

### BENEFITS

The new bridge will carry eight general traffic lanes (four each on the westbound and eastbound spans), breakdown/emergency lanes, space for future bus rapid transit and commuter rail, and an advanced traffic monitoring system. The bridge is also designed so that major maintenance will not be necessary for at least 100 years.

The westbound span will also feature a 12-foot-wide shared-use bicycle and pedestrian path, which will include six overlooks — resting points that will reflect the rich culture and history of the Lower Hudson Valley.

### DESIGN FEATURES

The **cable-stayed main span** is supported by eight 419-foot towers, which stand at five-degree angles and feature a sleek, chamfered design. The iconic towers support 192 stay cables, which are made up of roughly 4,900 miles of steel strands.

The bridge will be illuminated at night with **dark-sky compliant LED light fixtures** to reduce light pollution. The highly efficient system uses an estimated 75 percent less energy compared to traditional lighting technology.

LEDs will also be used to emphasize the distinct features of the bridge, including its concrete piers and cable-stayed main span, while respecting the scenic appearance of the Hudson Valley. The Thruway Authority may use changing light displays to mark special occasions and holidays.

#### Project Cost

- \$3.98 Billion

#### Type of Bridge

- Cable-Stayed

#### Total Length

- 3.1 Miles

#### Twin Span Width

- 87 feet - South/Eastbound
- 96 feet - North/Westbound

#### Number of Lanes

- 8 General Traffic Lanes & Shoulders

#### Main Span Length

- 1,200 Feet

#### Main Span Towers

- 8 Total - 4 on Each Span
- 419 Feet Tall

#### Stay Cables

- 192 Total - 96 on Each Span
- 190 to 623 Feet Long

## INNOVATIVE CONSTRUCTION EFFORTS

TZC is utilizing **modular construction** techniques to create large sections of the bridge's foundations, roadway and superstructure on-land. This allows TZC to safely prepare massive segments of the bridge off-site ahead of time, with some steel sections measuring up to 410 feet in length.

TZC is able to install these bridge elements thanks to its largest machine, dubbed **I Lift NY**. The enormous crane has a 328-foot lift arm that is capable of raising up to 1,900 tons of material — the equivalent of 12 Statues of Liberty at once.

The extraordinary lifting power of the crane helps shorten construction time by months from original estimates and reduce project costs by millions of dollars. The crane will also help dismantle and recycle the existing Tappan Zee Bridge.



Other innovative equipment includes: TZC's **mobile concrete batch plants**, which supply the majority of the structure's concrete directly on the river; the **self-climbing jump forms** that rose along with construction efforts to create the iconic main span towers; the **protective bubble curtains** used to absorb the energy produced during pile driving; and the **synchronized jacks** used to lower football-field-length foundations into the Hudson River.

## SUPPORT STRUCTURES

TZC is constructing two buildings in Tarrytown: the Thruway Authority's new maintenance facility and a new State Police facility. The buildings will provide faster bridge access for State Police and Thruway personnel responsible for maintenance, operations and security. These access points will also allow emergency crews to quickly respond to vehicle breakdowns on the new bridge.

TZC has also created a **new maintenance dock** parallel to the new bridge in South Nyack. The dock will assist the Thruway Authority and emergency vessels near the new bridge.

**Intelligent Transportation Systems** will improve safety and mobility on the crossing by monitoring roadway conditions and notifying Thruway Authority staff of any disruptions. Motorists will also be informed of accidents and closed lanes through **overhead electronic signage**. These enhancements have been shown to minimize delays, allowing the public to get the most out of its investment.

The stream of data from the bridge's sensors will be tracked at the Thruway Authority's command center through an advanced **Structural Health Monitoring System**. The system will measure the twin-span crossing's structural behavior under traffic and weather conditions. Routine and preventive maintenance work will also be efficiently scheduled with this state-of-the-art system. This vital communication network will make the bridge one of the most technologically advanced crossings in the United States when it opens in 2018.



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