

THE NEW NY BRIDGE

WINTER 2017



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Andrew M. Cuomo
Governor of New York State

MESSAGE FROM THE GOVERNOR

As we celebrate the start of a new year, I want to take a moment to thank the more than 6,300 hardworking men and women building the New NY Bridge. Their drive and dedication is essential to bringing one of the nation's largest transportation projects to life. As we continue to make remarkable progress at the New NY Bridge, it is a reminder that New York State has always set the bar high, met the challenges presented to us, and then raised the bar even higher.

Looking back on all that was accomplished this past year is a reminder of just how far we have come and the incredible impact we are making together:

- The eight towers that define the iconic cable-stayed crossing each reached their ultimate height of 419 feet above the Hudson River. The chamfered design at the top of the angled towers – now clearly visible to anyone driving over the Tappan Zee – is a testament to the community involvement and the residents who voted for the distinctive look during the design stage.
- Tappan Zee Constructors began installing the white stay cables over the summer, which connect the towers to the steel sections that will support the main span road deck of the new 3.1-mile bridge. There will be 192 stay cables installed altogether, with the initial work taking place on the westbound crossing.

· All of the structural steel for the westbound approach spans is now in place.

· Roughly half of the concrete road deck panels on the approach spans have been installed; the last steel pile has been driven into the riverbed; and noise wall work is well underway.

· In the spirit of cooperation that has defined this project from the start, we worked with the village of South Nyack to relocate the end of the new bridge's shared-use path to Thruway Authority property.

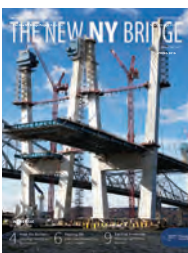
And while we celebrate each project accomplishment, it is also heartening to take in the broader view of the positive impacts the New NY Bridge project is having locally, in the Hudson Valley, and around the state. More than 720 New York companies – 207 in Westchester and 95 in Rockland – are involved with the twin crossing, and they're helping drive \$2.2 billion into the economy.

It has been a remarkable year of progress as the New NY Bridge project evolves into its final magnificent form. We have much to look forward. I wish you all a safe and healthy 2017 ■

Andrew M. Cuomo
Governor of New York State

FEEDBACK

We want to hear from you. Share your thoughts on the project and more by emailing us at info@NewNYBridge.com



ON THE COVER

Towers are completed on the New NY Bridge project.



Andrew M. Cuomo
Governor



New York State
Thruway Authority



New York State
Department of
Transportation



Federal Highway
Administration

THE NEW NY BRIDGE

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Andrew M. Cuomo, Governor of New York State
Joanne M. Mahoney, Chair, New York State Thruway Authority
Bill Finch, Acting Executive Director, New York State Thruway Authority

MILES AHEAD

STEEL STRETCHES ACROSS THE HUDSON



The New NY Bridge project marked several construction achievements on the new approach spans in late 2016 thanks to the efforts of the New York State Thruway Authority and Tappan Zee Constructors.

Using the *I Lift NY* super crane, Tappan Zee Constructors (TZC) operating engineers and ironworkers placed the final structural steel section for the westbound, or Rockland-bound, approach span in October, for a total of 126 sections installed to date. Assembled with individual 12-foot-tall girders measuring as long as 410 feet and weighing up to 1,100 tons, the steel sections support the road deck.

Later this year, *I Lift NY*, the project's largest crane, will set the remaining 14 steel sections on the eastbound span and assist with the demolition of the existing Tappan Zee Bridge so final connections to land can be made.

Here are some other construction highlights:

- All eight main span towers are now at their full 419-foot height.
- TZC has placed all of the road deck panels for the westbound approaches. More than 3,300 panels, which range between 22 and 45 feet wide and are more than 10 inches thick, have been installed to date on each 3.1-mile crossing, totaling more than 3.5 miles.

- More than a mile of the final driving surface has been laid on top of the deck panels on the westbound crossing. The one-inch concrete polymer overlay ensures durability and a safe, even ride for drivers.

- TZC crews continue to install infrastructure to carry communications, electrical power, water and compressed air to support future bridge operations.

- LED roadway lighting stanchions, overhead sign structures and barrier walls are now in place on the westbound approach span.

- Eight of 23 expansion joints have been installed on the new bridge.

- Work has begun to equip the new bridge with technology to monitor its structural health (see Page 5).

We have a busy year ahead as we work to complete the westbound main span and open it to traffic.

You can view the latest progress at
NewNYBridge.com/Webcam ■

Jamey Barbas
Project Director

✓ *The project's structural steel is installed in large sections, allowing for swift and safe installation.*



MEET THE BRIDGE BUILDERS

SHAPING HISTORY ON THE HUDSON



Daniel Jean-Baptiste | Carpenter

"Topping off the main span towers was one of the most exciting days on the job. I'm proud to show my grandkids what we've built."



Rebecca Wright | Electrician

"Our team is installing miles of electrical systems. Eventually, they'll power the LED roadway lights and color-changing light for the towers."



Sal Beauvais | Ironworker

"We've assembled more than 100 steel girder sections so far. They're so tall that we need climbing gear just to work on them."



Hailey Votta | Field Engineer

"It's great to see our plans become reality on the river. The size and scale is so big, I'm just in awe of all that we've accomplished."

MAINTAINING THE FUTURE

HIGH-TECH SYSTEMS ASSIST LONG-TERM SERVICE



Bridge maintenance crews will receive a stream of data from a myriad of monitors on the new bridge. The information will be tracked at the Thruway Authority's command center, helping ensure that the bridge won't need major repairs for at least 100 years.



Angular Movement
Tower sway and alignment



Stress / Deformation
Potential long-term distortions



Cable Force
Tension present on each strand



Cable Temperature
Tracking climate impacts



Corrosion
Material quality and composition



Wind Conditions
Speed and direction



GPS Receiver
Providing precise location



Lighting System
Status of each LED fixture



Weather Station
Air pressure, humidity and climate



Navigation Lights
Guiding marine and aerial traffic



Structural Vibration
Effects of traffic weight on roadway



Traffic Monitoring
Traffic volume and speed

Structural Health Monitoring

The New NY Bridge will be among one of the most technologically advanced crossings in the United States when it opens in 2018.

The new Structural Health Monitoring System will serve as an important tool to help the Thruway Authority protect its investment. The system will be able to measure and monitor the structural behavior of the twin-span crossing under everyday conditions such as traffic and temperature changes, as well as under extreme loads like hurricanes or earthquakes. We will also be able to efficiently schedule routine and preventive

maintenance work using the data provided by this state-of-the-art system.

In addition, the bridge's Intelligent Transportation System will also help with traffic as the Thruway's command center will receive real-time information to make adjustments as needed. For example, Thruway staff can quickly issue alerts if high wind speeds require truck traffic restrictions on the bridge.

This modern engineering coupled with cutting-edge technology will help ensure that this iconic crossing lasts well into the next century.

TOPPING OFF

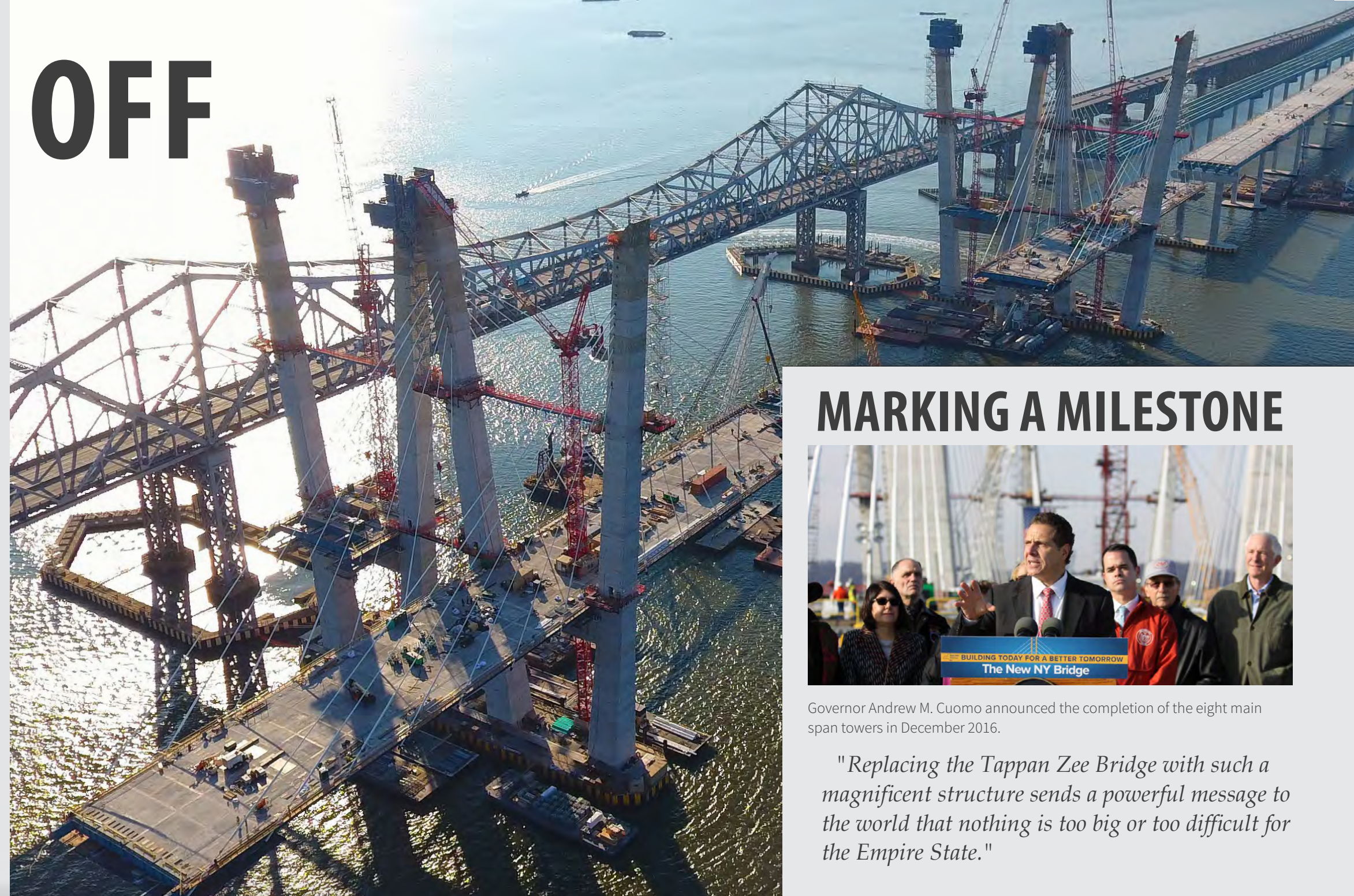
Main Span Towers Rise to Full Height

Standing 419 feet above the Hudson River, the project's newly completed towers are the defining feature of the New NY Bridge's iconic main span.

All eight towers are constructed with the project's innovative, self-climbing workspaces – called jump forms. The blue, box like forms were removed after the final segments of the towers were completed.

All of the towers stand at a 5-degree angle and sport a sleek, chamfered top. The chamfered design was decided after the project's Visual Quality Panel received input from hundreds of interested stakeholders. Now, years after that decision, the community is seeing their preference become reality as the completed structures are finally revealed.

The new towers will support the main span roadway through a stay cable system, which is detailed below.



MARKING A MILESTONE



Governor Andrew M. Cuomo announced the completion of the eight main span towers in December 2016.

"Replacing the Tappan Zee Bridge with such a magnificent structure sends a powerful message to the world that nothing is too big or too difficult for the Empire State."

MAIN SPAN ROADWAY



STAY CABLE INSTALLATION

MAIN SPAN | FALL 2016

TZC Crews communicate with boaters and the U.S. Coast Guard to ensure safe passage through the main navigation channel.

The project is focusing efforts on the westbound (Rockland-bound) bridge and its stay cable system before continuing on the eastbound bridge.

Red, extendable tower cranes raise construction materials to the towers, including concrete, steel reinforcement and stay cables.

Cables are anchored to the interior of the concrete towers and tensioned until they can support the weight of the main span roadway.

Each section of structural steel includes a pair of cable anchor points. More than 9,000 tons of steel will be supported by the main span towers and cables.

Cables length varies from 190 to 623 feet, providing support for the crossing's widest open water area – the main navigation channel.

STAYING POWER

BUILDING THE HUDSON'S FIRST CABLE-STAYED STRUCTURE

The New NY Bridge is taking on its final shape as Tappan Zee Constructors (TZC) installs high-strength stay cables on the main span. The stay cables connect the bridge's eight concrete towers and sections of structural steel, creating a roadway more than 100 feet above the Hudson River.

Each of the stay cables are comprised of bundled metal strands that are tightly packed in a protective casing. The strands are tethered through the casings and individually anchored in the towers. This collective method gives the bridge connections greater strength and flexibility. More than 700 miles of metal strands will be used to connect the 192 stay cables on the project.

When the bridge is complete, maintenance crews will be able to monitor the structural integrity of the stay cable system. Their compartmentalized design will

allow future replacement of stay cable strands with minimal traffic disruption, making for a more convenient crossing in the years to come.

The new cable-stayed bridge will be the first of its kind over the Hudson River.

You can view the latest progress and updates online by visiting NewNYBridge.com/Webcam and subscribing to our monthly newsletter ■

“The installation of the stay cables marks a major milestone in the construction of the main span. They provide structural integrity while defining the iconic look of the new bridge.”

– David R. Capobianco
Project Manager for Delivery

» Crews guide the project's first stay cable from a transportation barge to a tower anchor point.



BUILDING KNOWLEDGE

SHARING ENGINEERING MARVELS



For the 2016-17 school year, the New NY Bridge project's educational outreach team revamped its presentation to focus on the main span towers. Containing a wealth of new information, the new "Bridge Rising" presentation features construction methods to build the towers, a time-lapse video and a project update.

The monumental effort to replace the Tappan Zee Bridge is one of the largest active bridge projects in the country, and using this real-world example helps inspire students to pursue many different fields of study, including science, technology, engineering, mathematics and skilled labor.

To date, the outreach team has reached nearly 50,000 students, sharing their can-do message across the Hudson Valley and beyond.

The project team presents to students of all ages and uses visualizations to help illustrate the enormous undertaking on the river. New animations even show the creation sequence of the concrete towers and the stringing of the stay cables.

The project team's educational outreach efforts will continue throughout the duration of the project.

To learn more, please contact the outreach team at NewNYBridge.com/Contact ■



Want to Learn More?

Visit Our Outreach Centers

Located at 2 North Broadway in Tarrytown and 142 Main Street in Nyack, the centers provide a window into the project's latest efforts.

The centers include informative materials that detail many different aspects of construction, past and present, as well as the safety gear worn by the project team. Visitors also get hands-on experiences with different bridge elements.

The outreach centers are open from 11 a.m. to 7 p.m. seven days a week. Learn more at NewNYBridge.com/Contact.

Andy O'Rourke | Public Outreach Coordinator



This year we have a great opportunity to share the rising towers. We have a new 3-D video that shows the computer engineering behind them. It's a great kickoff point for educators, what they call a "teachable moment."

You can see how it affects the younger kids, particularly. They tend to ask so many more questions than the older students. They're eager to learn and we're happy to show them more.

The public outreach team is a small part of a big and talented organization, and it's an honor to share their hard work with people of all ages.



OUR COMMUNITY TIMELINE

The New NY Bridge project team is actively involved in the community, partnering with local stakeholders and groups, leading educational outreach efforts and sharing project updates.



2016 ANNUAL MEETINGS

The project's annual public meetings in Westchester and Rockland counties gave residents the opportunity to share their questions and comments with project officials.

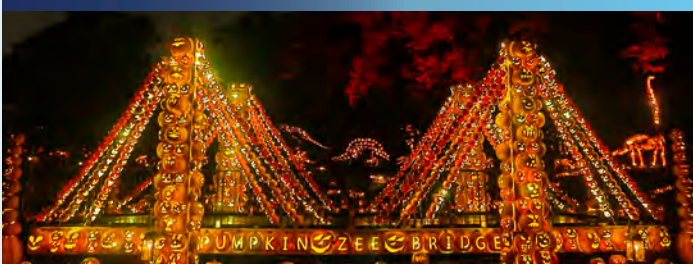
NYACK HIGH SCHOOL 60TH REUNION

The project team shared information with the class of 1956, who graduated Nyack High School months after the original Tappan Zee Bridge opened to traffic.



HALLOWEEN AT LYNDHURST

Historic Hudson Valley's Great Jack O'Lantern Blaze for the first time featured the Pumpkin Zee Bridge. The 80-foot-long pedestrian bridge was made up of 1,000 carved pumpkins.



SOUTH NYACK PARKING FACILITY

South Nyack residents received a detailed look at the shared-use path parking facility in Rockland County and a side path that will run alongside part of the Esposito Trail.



TERMINUS DESIGN

The design for the project's shared-use path connections in Westchester and Rockland counties was selected after extensive community support and feedback.



AFL-CIO BOAT TOUR

Project officials guided representatives from the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) – the largest federation of unions in the United States.

WIZGIRLS: BUILDING THE FUTURE

Project Director Jamey Barbas collaborated with WizGirls, an organization that helps 4th-7th grade girls discover, explore and learn skills in technology and engineering.



NEWNYBRIDGE.COM

The project website continues to provide a wealth of current and historical information about the project, including the latest news releases, videos and articles.



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NEWNYBRIDGE.COM

The project website provides detailed information about the design and construction of the New NY Bridge project. Check back often to see the latest progress.



1-855-TZBRIDGE

Our phone hotline is open 24 hours a day, 7 days a week, ready for your questions and comments. You can reach us at 1-855-TZBridge (1-855-892-7434).