

Bayonne Bridge Navigational Clearance Program



***American Association of Port Authorities
October 20, 2015
Dennis Stabile, PMP***



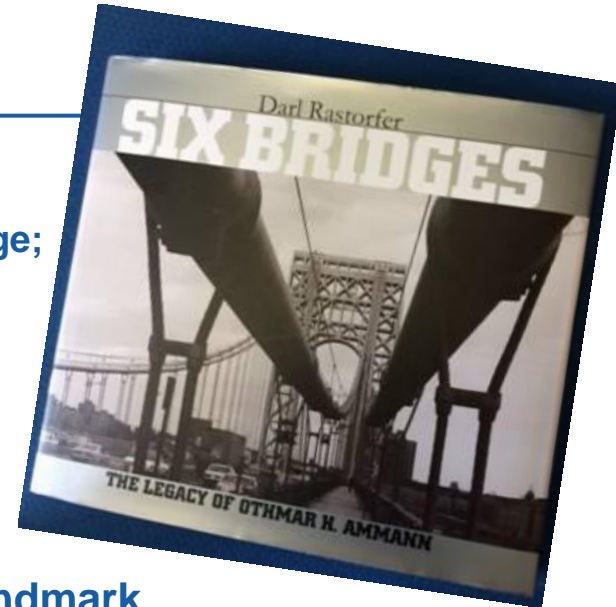
The Port of New York & New Jersey





Bayonne Bridge Historical Context

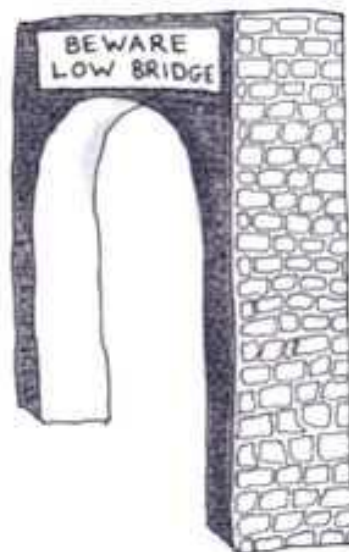
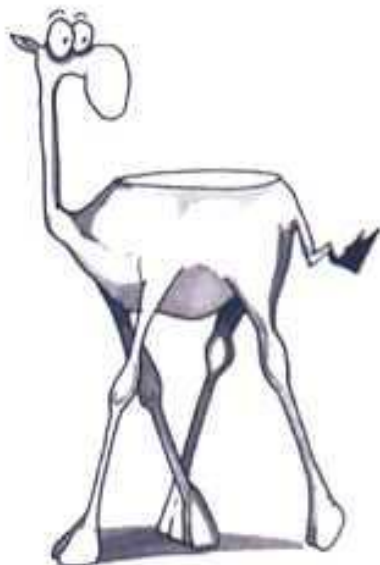
- Designed by Othmar Ammann and Cass Gilbert
Also designed The George Washington Bridge; Triborough Bridge; Bronx - Whitestone; Throgs Neck; and Verrazano-Narrows
- Opened to traffic on November 15, 1931
1675 – foot, steel arch span was the longest in the world at the time, and remained so for 46 years
- 1985 designated a National Historic Civil Engineering Landmark
- 2001 National and NJ State Historic Register Eligible (2003 NY Eligible)





The Bayonne Bridge Navigational Clearance

What's the Problem ????



JC



The Bayonne Bridge Video

**Bayonne Bridge Navigational Clearance Program
(BBNCP)**

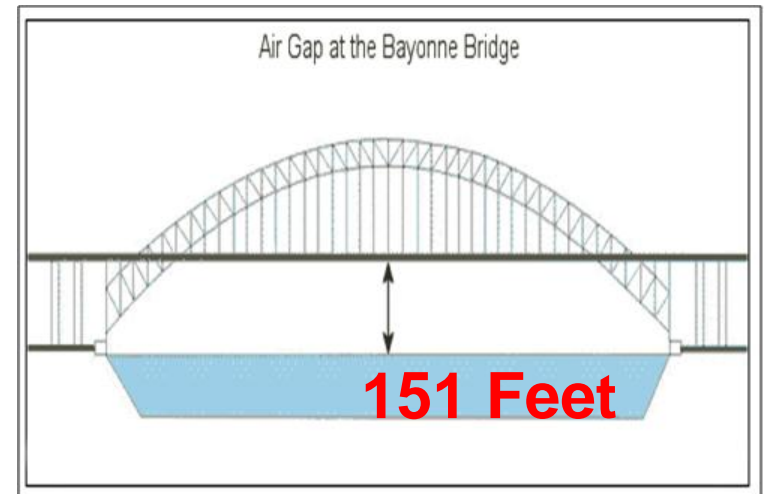
151 Foot Clearance Restriction



Problem:

Bayonne Bridge Air Draft Restriction

- Existing 151-foot air draft
- The expansion of the Panama Canal will allow for newer, larger, (Post-Panamax) ships with increased clearance requirements
- Taller ships (up to 200-ft), will not be able to navigate beneath the Bayonne Bridge
- The *Bridge of the Americas* (Pacific approach to Panama Canal), has a 201 foot clearance
- Trends in Shipping (shown in photo)
 - ❖ 8,000 TEU Regina Maersk
 - ❖ 13,000 TEU Emma Maersk





The Port of New York and New Jersey

Busiest port on the Eastern Seaboard – 30% of shipping traffic

Third largest container port in the Western Hemisphere, and 27th largest in the world

\$202.6 Billion in cargo came through the port in 2013. Almost 80% of imports support commerce in the surrounding region

Port activity supports:

- 280,000 jobs
- \$11.2 Billion in annual personal income

Kill Van Kull provides maritime access to Port Newark-Elizabeth and Howland Hook Marine Terminal in Staten Island, NY

Economic Impact of Bayonne Bridge Construction Program

- 6,300 Total Job years (or approximately 1500 jobs/year)
- \$380 Million in Wages
- \$1.6 Billion in Regional Economic Activity



Program Benefits



Freighter *Zhen Hua* Delivers Post – Panamax,
561-foot cranes to PNCT

- Enhance regional economic competitiveness
- The Bayonne Bridge Project will generate more than 2,500 construction jobs, \$380 Million in wages, and more than \$1.6B in regional economic activity
- Increase environmental sustainability, access for newer larger ships
- Modernize the roadway with wider 12-foot lanes, median divider, and shoulders
- Maintenance of community character – No ROW required
- Wider, full length Pedestrian Walkway / Bikeway
- Potential for future Transit Access

Alternatives Review and Analysis

BRIDGE MODIFICATIONS

✓ Raise the Roadway (Retrofit or New Piers)

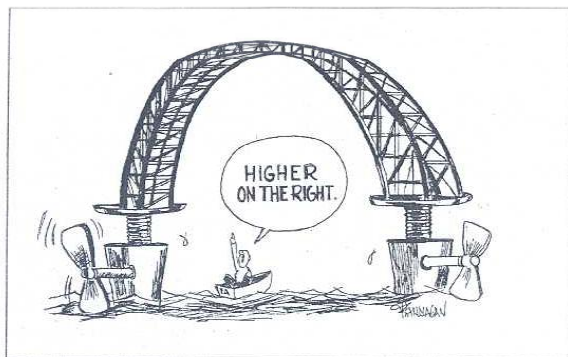
- Jack the Arch
- Lift Bridge

BRIDGE REPLACEMENT

- New Bridge
- New Tunnel

NON- BRIDGE ALTERNATIVES

- Ferry Service (Vehicular/Passenger)
- Lock System (Kill Van Kull)



Staten Island Advance, Monday, August 24, 2009





Bayonne Bridge Alternatives Review and Analysis

Alternative	Bridge Modification			Bridge Replacement		Non-Bridge		
Criteria	Raise the Roadway	Jack Arch	Lift Bridge	New Bridge	New Tunnel	Alternate Port Sites	Lock	Ferry
Constraints/ Operational Limitations	✓	✗	✗	✓	✓	✗	✗	✗
Neighborhood / Environmental Impacts	✓	✓	✗	✗	✗	✗	✗	✗
Cost	✓	✗	✓	✗	✗	✗	-	-
Schedule	✓	✗	✗	✗	✗	✗	✗	-

“ Raise the Roadway “

Bayonne Bridge Rehabilitation and Retrofit



Existing

- 151 ft. air draft
- 6 ft. walkway
- 4-10 ft. lanes, no shoulders
- No median barrier

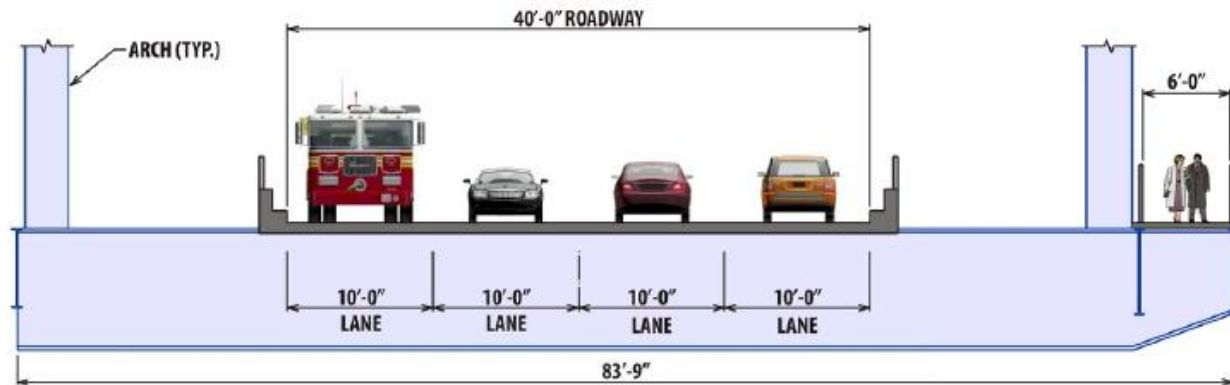


Proposed

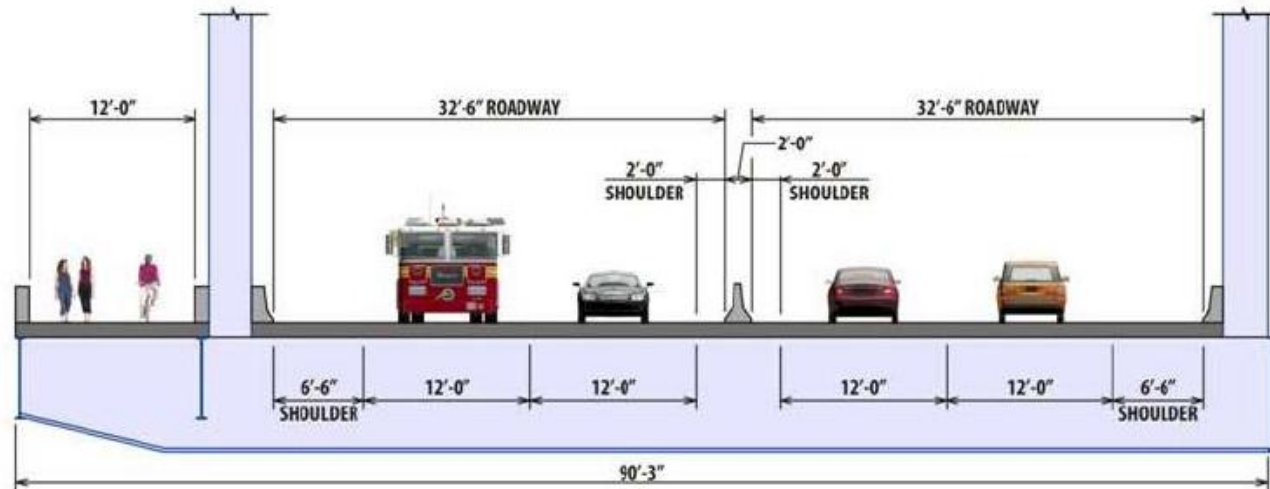
- ✓ 215 ft. air draft
- ✓ 12 ft. walk / bikeway
- ✓ 4-12 ft. lanes, with shoulders
- ✓ Median Barrier and additional width for future transit



Existing/ Proposed Roadway Design - Within Arch



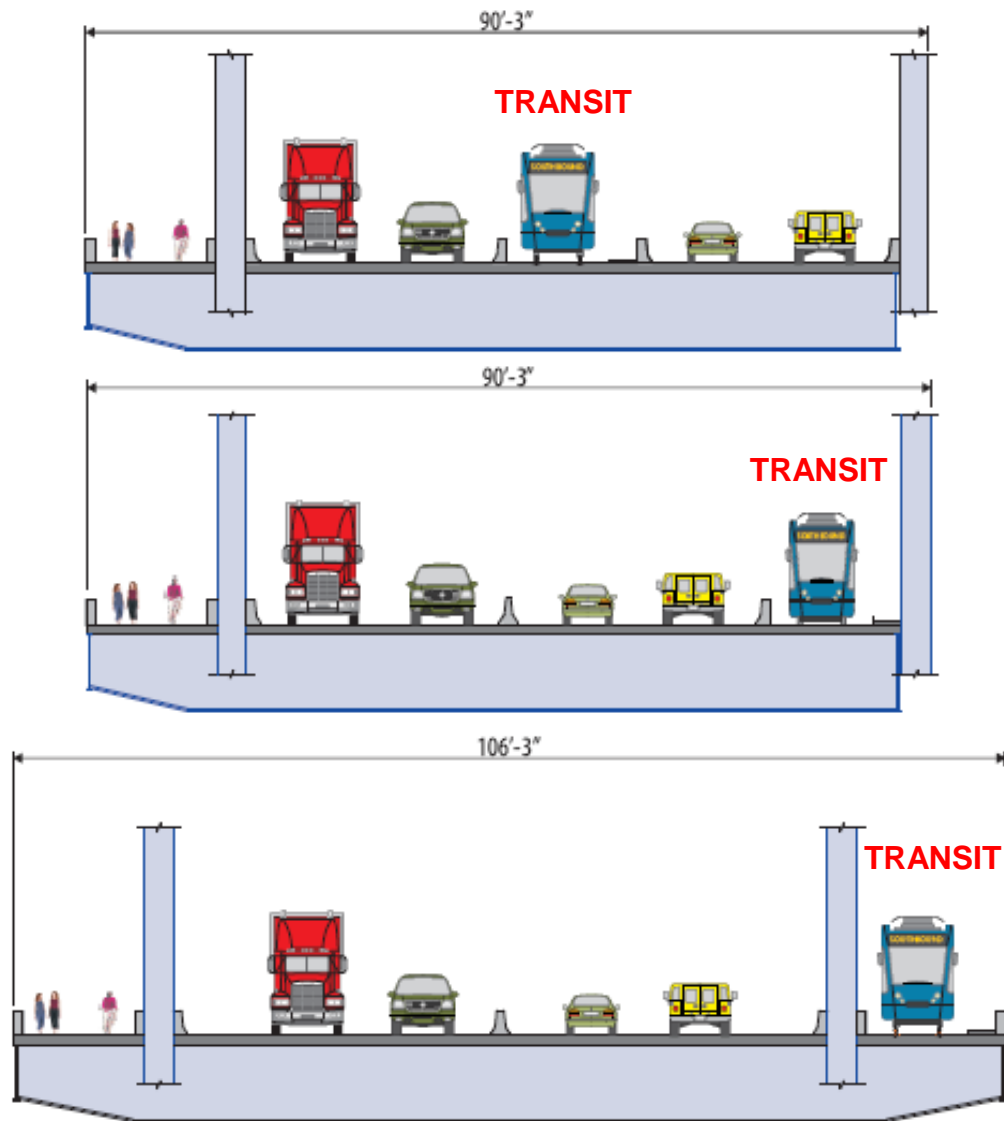
EXISTING ROADWAY (4 - 10 FOOT LANES, NO SHOULDERS, 6 FOOT WALKWAY)



PROPOSED ROADWAY (4 - 12 FOOT LANES, PARTIAL SHOULDERS, 12 FOOT WALKWAY/BIKEWAY)



Roadway Design - Future Transit Options





Bayonne Bridge Interagency Coordination and Regulatory Review Process

**Approximately 50 permits from
20 different Agencies**

Federal

- US Army Corp of Engineers
- US Coast Guard
- US Fish and Wildlife Service
- Marine Fisheries Service
- Amer Council on Historic Preservation
- US Environmental Protection Agency (EPA)

State of New York

- NYS Dept of Environmental Conservation
- NYS Dept of State
- NYS Dept of Transportation
- State Historic Preservation Officer (SHPO)
- Utility Relocation / Coordination

State of New Jersey

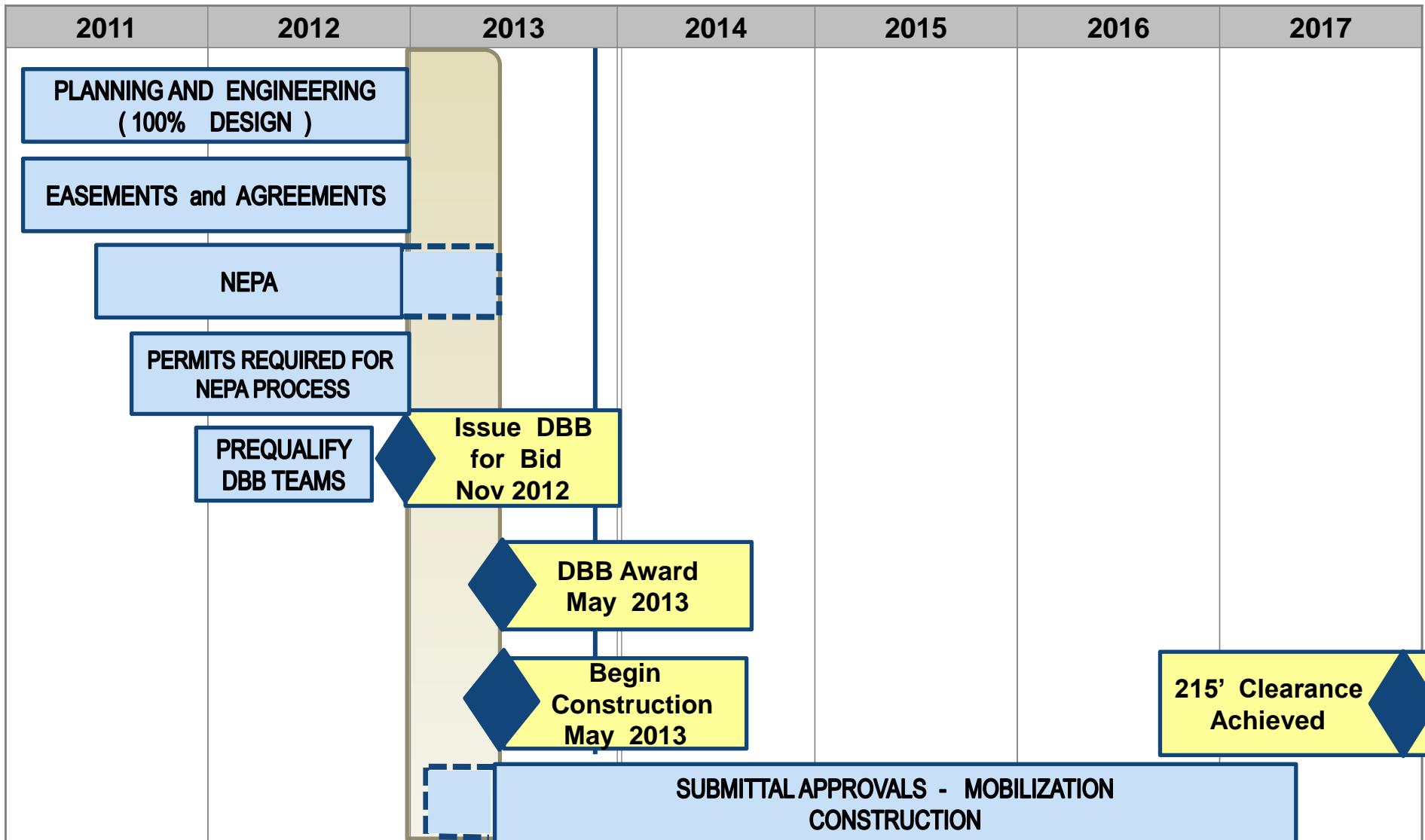
- NJ Dept of Environmental Protection
- NJ Dept of Transportation
- State Historic Preservation Officer
- Utility Coordination

Local / Municipal

- City of Bayonne
- County of Hudson
- Hudson County Sheriff's Office
- NY / NJ Elected Officials
- NYC Dept of Environmental Protection
- NYC DOB
- NYC Dept of Transportation
- NYC Transit Authority



Bayonne Bridge Schedule - Expedited Program Schedule



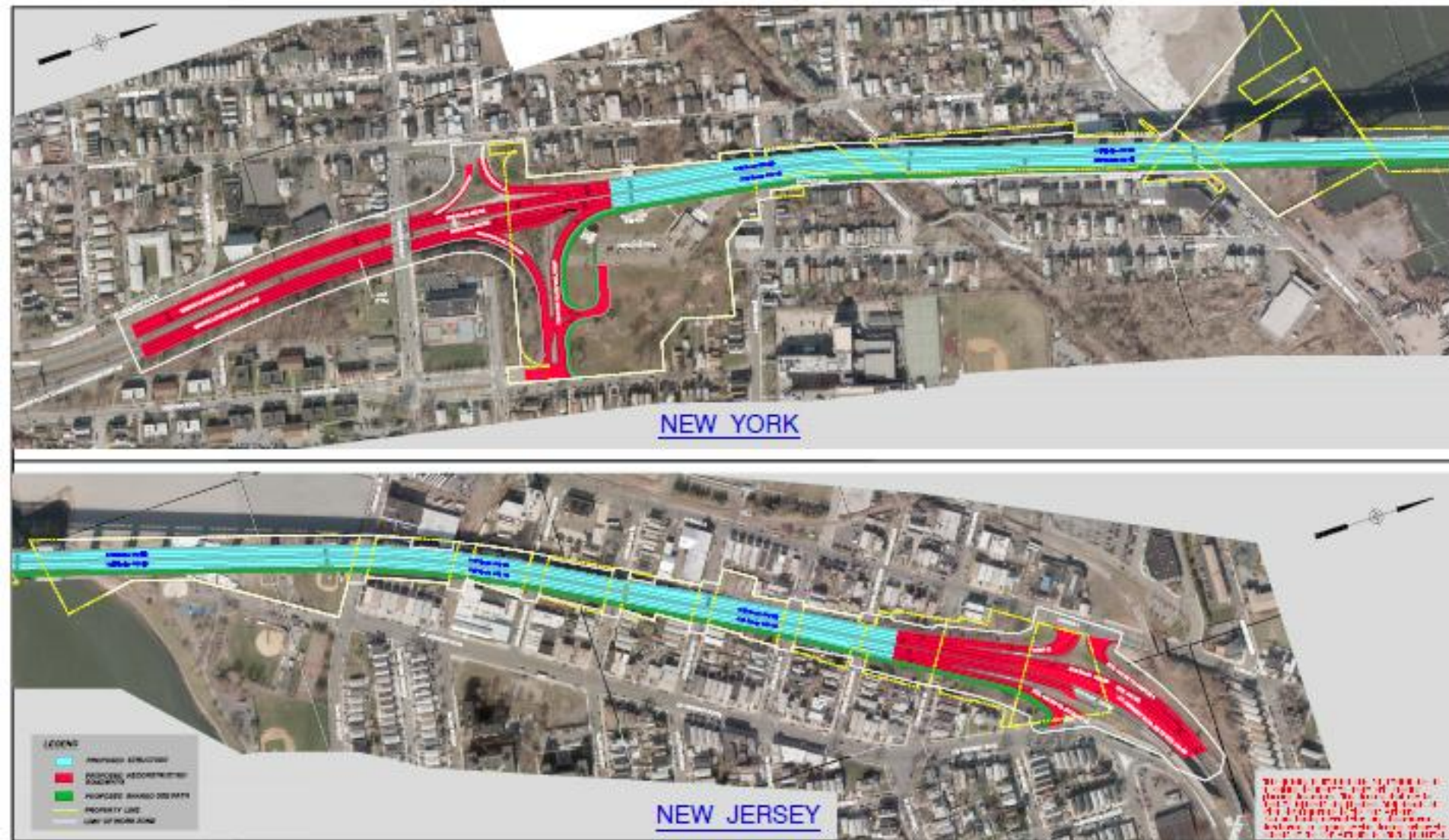


Program Timeline

- **March 2008** – US Army Corps of Engineers initiates National Cost Benefit Analysis (Federal Funding Potential)
- **August 2009** – PA Initiates Conceptual Planning and Engineering
- **December 2010** – PA selects “Raise the Roadway” Alternative
- **Nov 2011** – Complete Preliminary Engineering Design (Joint Venture – HDR/PB)
- **August 2011** – NEPA Environmental Review Initiated (USCG Lead Fed’l Agency)
- **April 2012** – Contractor Pre Qualification (RTQ) Solicitation Outreach Meeting
- **July 2012** – Announce Pre Qualified Construction Contractor Teams
- **December 2012** – Complete Final Engineering Design
- **Q2 2013** – Complete Environmental Review and Permits
- **Q2 2013** – Award Bayonne Construction Contract: Skanska-Koch Kiewit, JV
- **2017** - Interim Milestone: Navigational Clearance
- **2019** - Complete Construction



Construction Work Zone Overview





Environmental, Regulatory, and Community Issues - Overview

Traffic - Roadway Closures - Parking

Noise *

- Compliance with Noise Code (day; night; weekend limits)

Air Quality *

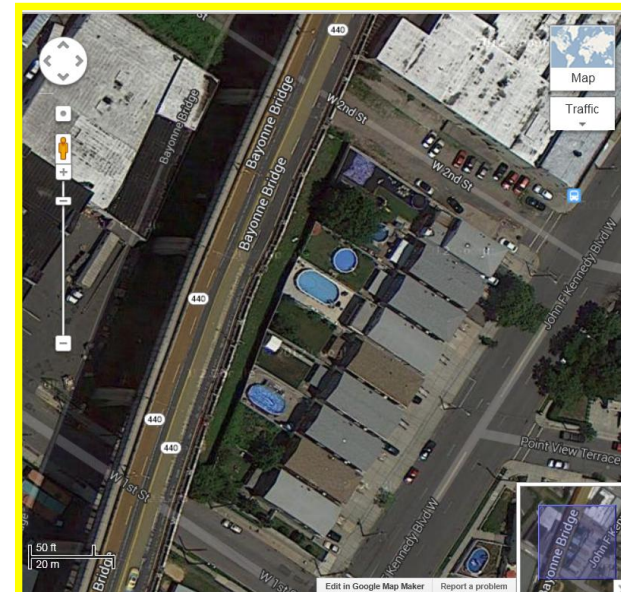
- 3 Tiered Dust / Air Monitoring Program – (1) Regional Air Quality,
- (2) Areas with Known Contaminants (Lead/Arsenic), (3) Perimeter Dust Trackers
- Real Time Investigation and Incident Reports

Community Assistance Program

- Window Replacement Program
- Temporary Hotel Program

NY / NJ Outreach Office / 800 Hot Line

* Air and noise monitoring exceeds all Federal requirements





BBNCP Comprehensive Community Assistance Program (CCAP)

- **Air, Dust, and Soil Monitoring and Testing**
- **Noise Monitoring**
- **Pre-Construction Condition Surveys**
- **Window Replacement Program (Approximately 30% residences complete)**
- **Temporary Hotel Stay Program**
- **Local Street Cleaning Services**
- **Summer Shuttle Service**
- **Misc (Power Washing, Extermination Services, Pool Cleaning, Pool Covers, Car Wash Vouchers, Landscaping Repairs, etc.)**
- **Air Conditioner Reimbursement Program**
- **Community Mitigation Program Management and Audit Services**
- **Traffic and Air Quality Monitoring and Mitigation Program**

City of Bayonne Reimbursement Agreement
Staten Island Reimbursement Agreement



Animation



Proposed Deck Removal By Barge

- Minimizes community impacts, versus segmented roadway removal by truck
- Saves time.
- Partial channel closure successfully utilized in prior projects
- Assume partial channel closures: North, Center, and South
- Each closure period is 6-8 hours long and up to two deck segments can be removed during each closure
- Removal of all 12 deck segments will require a total of 8 closure periods, each 6 - 8 hours in length
- Flexibility for nonconsecutive, off-peak, or midday closures



Navigational Clearance Obtained: 2017



Bayonne Bridge Construction Activities

Construction Staging

- Bridge remains open during construction
- Shift four lanes of traffic into two lanes (west side)
- Construct two (2) travel lanes on the east side at the higher 215-foot elevation
- Remove existing 151-foot roadway deck
- Continue construction and complete bridge (2018)

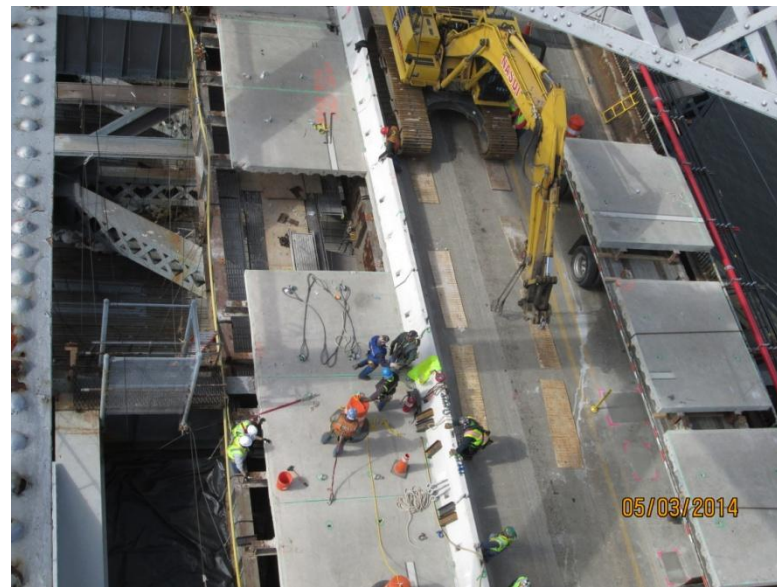
View from top of Arch

- Northbound, Two-Lane, Roadway Deck Removed (East Side)
- Steel Safety scaffolding Exposed Under former Northbound Roadway
- Two Vehicular Travel lanes (one northbound and one southbound), shown on





Construction Activities – Main Span – Arch Lightening



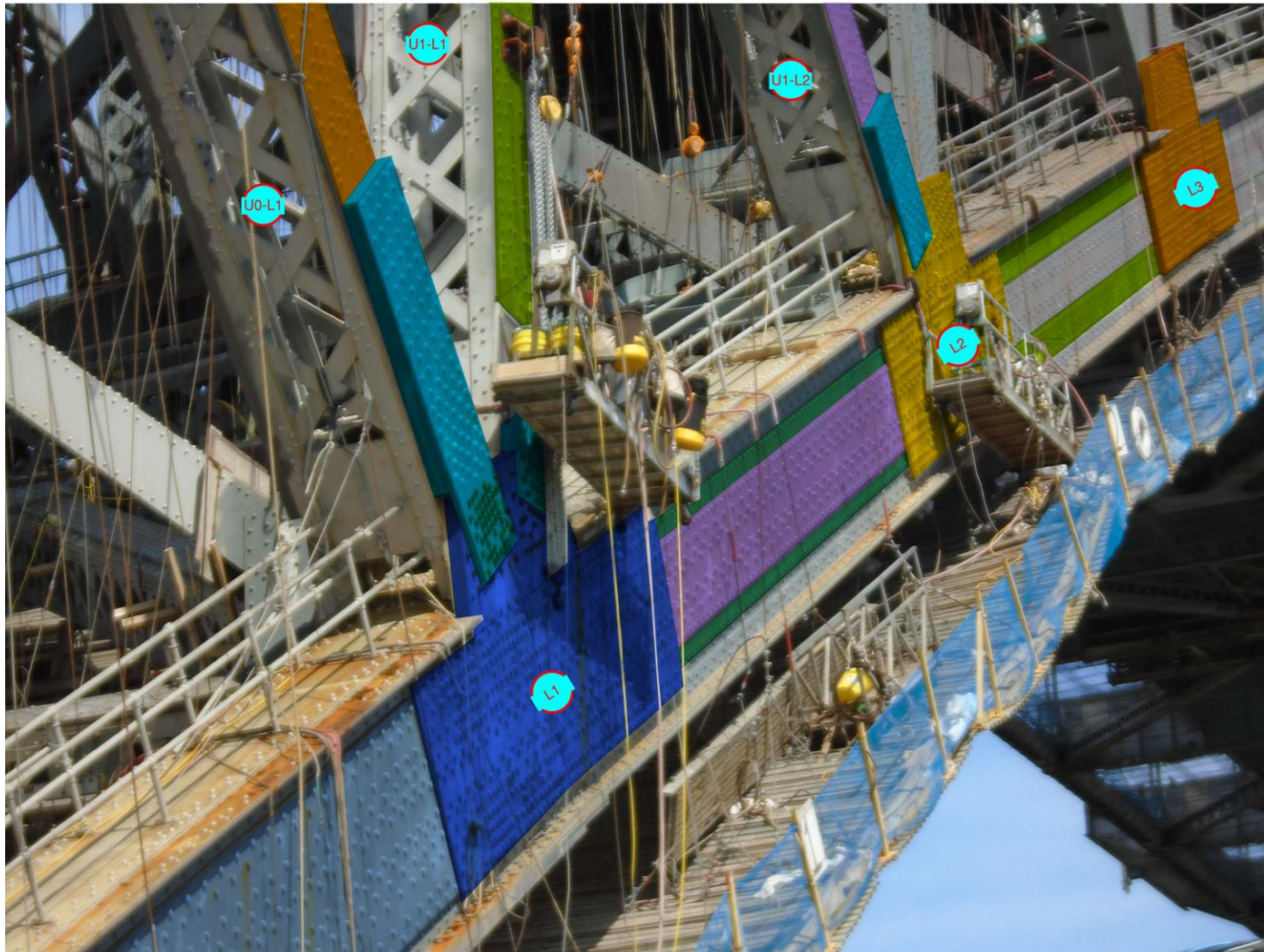


Construction Activities – Main Span – NY Tower and Portal





Construction Activities – Main Span – NY Lower Chord and Node Strengthening





Construction Activities – Main Span – NY Lower Chord Strengthening





Construction Activities – Main Span – New Steel Framing





Construction Activities – Main Span – New Steel Framing





BBNCP: Construction Activities – New Steel Tower NJ Side





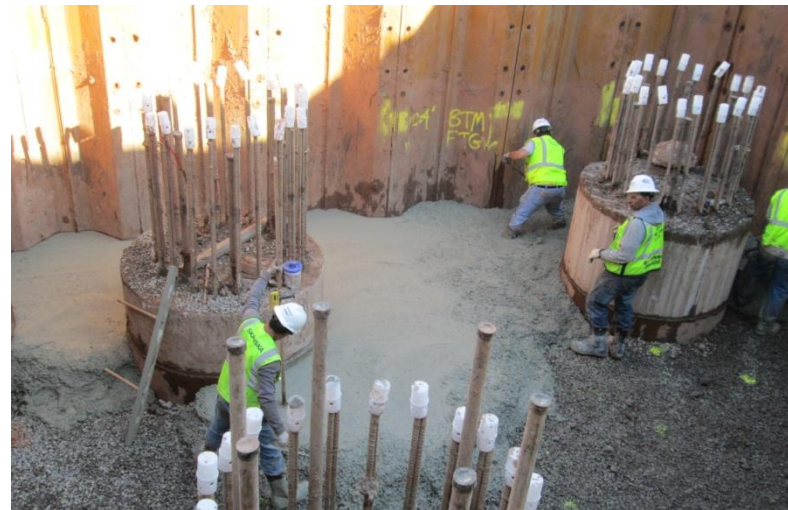
Construction Activities – Approaches – Selective Demolition





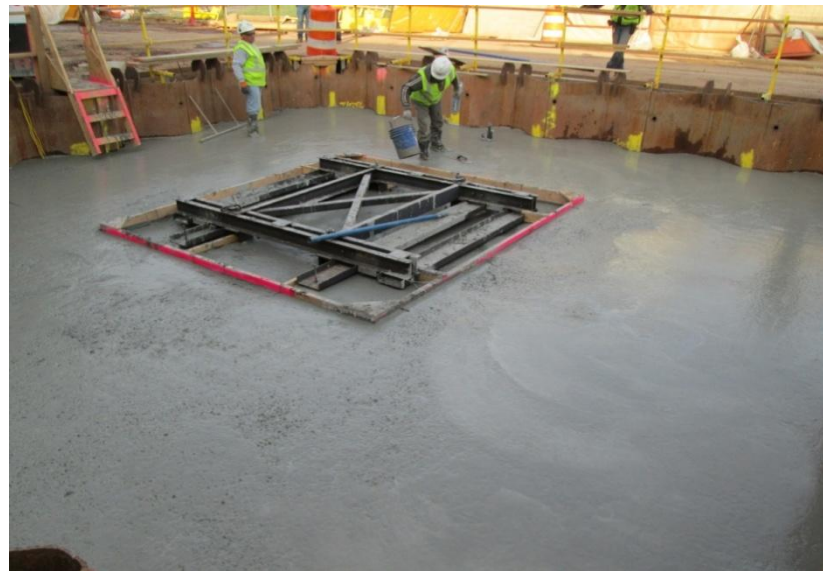
Construction Activities – Approaches

- Drilled Shafts



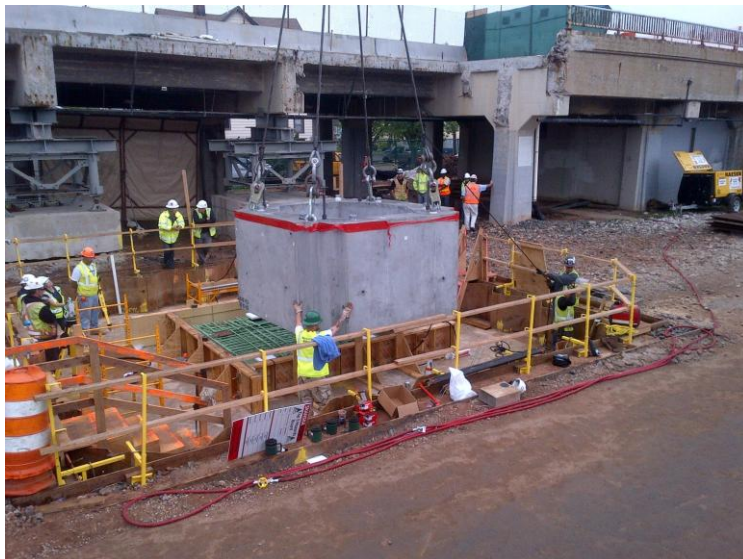


Construction Activities – Approaches - Foundations





Construction Activities – Approaches - Precast Concrete Pier Segments





Construction Activities – Approaches – Pier Erection





Construction Activities – Approaches - Precast Concrete Roadway Segments





Construction Activities – NY Tower





Construction Activities – NY Approach Structure Launching Gantry





Construction Activities – NJ Approach Structure Pier Erection





Construction Activities – NY Approach Structure Pier Erection





Construction Activities – Main Span Arch





Bayonne Bridge “Raise the Roadway” Gantry Operation Time Lapse





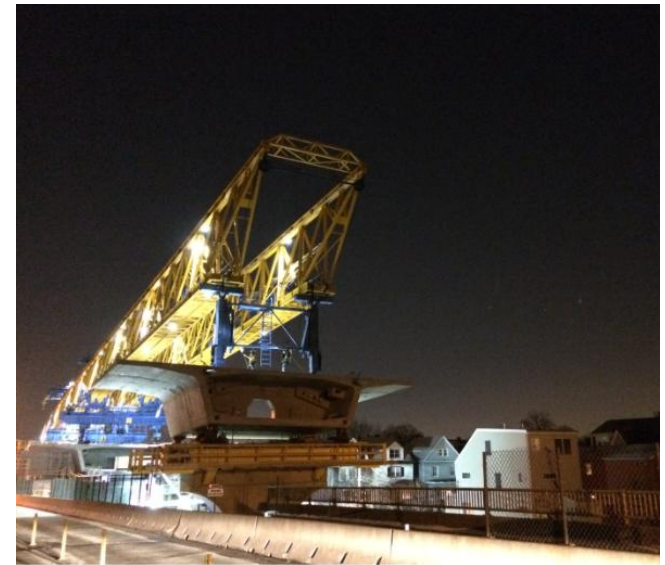
Bayonne Bridge “Raise the Roadway” Gantry Operation Time Lapse



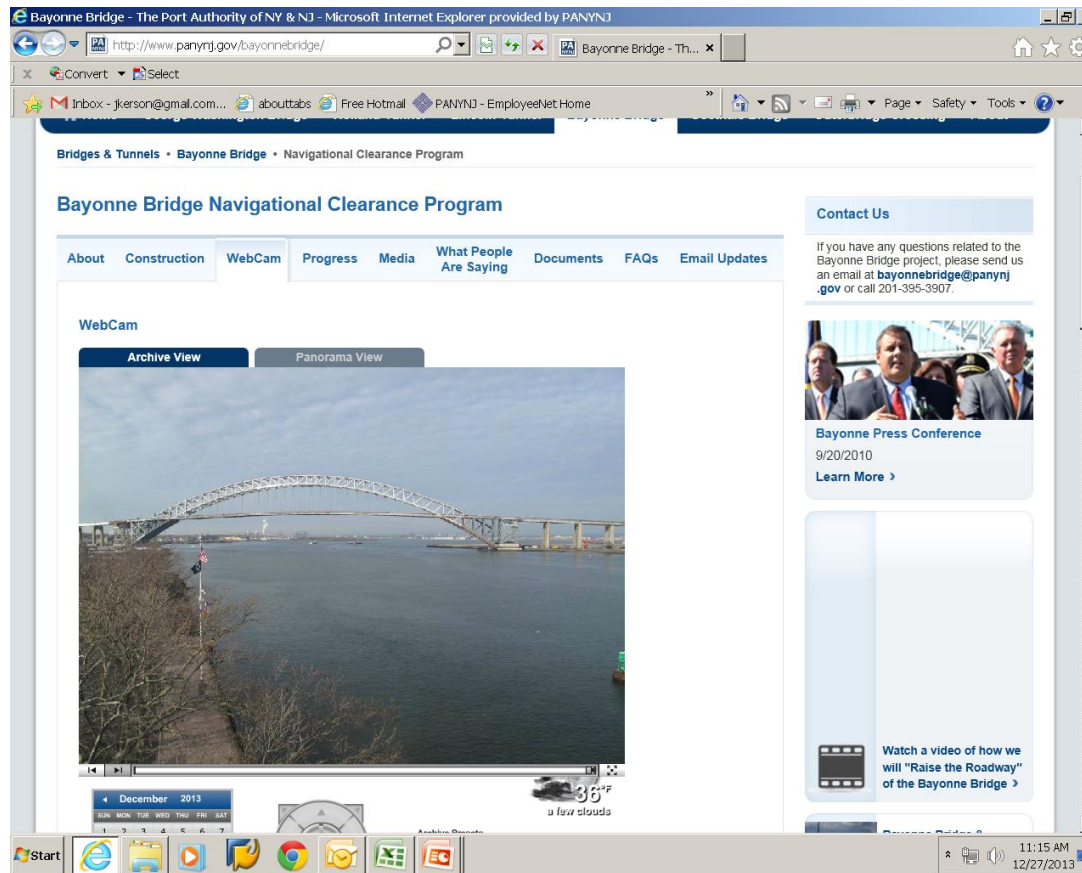


Bayonne Bridge Summary

- **40 % overall construction complete**
- **Northbound Roadway**
 - Drilled Shafts – 100% complete
 - Sheeting – 100% complete
 - Foundations – 100% complete
 - Pier Segments Cast – 100% Complete
 - Pier Columns – 12 of 24 complete
 - Steel Towers – 100% Complete
 - NY & NJ Abutments – 95% complete
 - Precast segment NY & NJ launching gantries complete and operational
 - Roadway segments cast – 94% Complete
 - Roadway segments Installed
 - NY – 18%
 - NJ - 32%



Program Website



www.panynj.gov/bayonnebridge

Sign up for E-Alerts for Up to Date Travel Information



Questions?

