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)
What's the Problem ????

The Bayonne Bridge Navigational Clearance
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

- 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

Freighter Zhen Hua Delivers Post – Panamax, 561-foot cranes to PNCT
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)
## Bayonne Bridge Alternatives
### Review and Analysis

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Bridge Modification</th>
<th>Bridge Replacement</th>
<th>Non-Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raise the Roadway</td>
<td>Jack Arch</td>
<td>Lift Bridge</td>
</tr>
<tr>
<td>Constraints/Operational Limitations</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Neighborhood / Environmental Impacts</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Cost</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Schedule</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
“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
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
**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

New Portal Area

Main Span/Deck Removed
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 - 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?