Reconstruction of Hillside and Jamaica Avenue Bridges over I-678 - Van Wyck Expressway

The Roll-in/Roll Out Method
Project Partners

NYS DOT
Owners

BI-COUNTY PAVING CORP.
Contractor

AMMANN & WHITNEY
Resident Engineer

HNTB
Designer
QUEENS, NEW YORK

PROJECT SITE
Jamaica Avenue
Early 1900’s

Van Wyck Expressway
1951
AERIAL OF PROJECT SITE
Description of Project

Scope of Bridge Work -
- Remove entire superstructure - 110 feet long
- Remove and relocate abutments
- Remove and replace center pier stem
- Install new two-span continuous bridge - 28 feet longer than existing

Scope of Work on Van Wyck Expressway (I-678) -
- Widen segment by addition of accel/decel lanes in both directions
- Improve safety of VWE with full width flush shoulders
- Resurface all six lanes over a half mile in length
- Upgrades to drainage, lighting, ITS, signing, landscaping
Why Roll-in/Roll-Out?

- High local volumes – more than 1,100 VPH (peak)
- High Expressway volumes ADT 160,000 (VWE)
- Difficult to detour over extended period
- Problematic to stage due to highly congested area
- Must maintain access to Jamaica Hospital
Primary Roll-in/Roll-out Benefits

✓ Potential to reduce overall construction time

✓ Substructure and superstructure can progress concurrently

✓ Improved quality of new structure

✓ Mitigate the impacts on the community and traffic.
JFK AIRTRAIN (PANYNJ)
Design Issues

- Interagency Coordination
- Subway tracks – vibration monitoring, no loads transferred to subway at any time
- Verizon phone lines – could not relocate
- Substructure design – spatial constraints
- Utility relocation – utility bridge
- Camber adjustments due to temporary support locations
- First LRFD superstructure
- Limited window for rolling
- Rolling scheme was fully designed – sled on fixed rollers
- Special specifications
Animation
Construction Challenges

- Unconventional for roadway bridges – unknowns
- Demolition while maintaining traffic
- Erection and demo over traffic
- Asbestos abatement
- Utilities
- Proximity to JFK Airport
- Hours of closure – roll-in had to be completed in one weekend
Public Outreach

- Began substantial public outreach campaign 3-4 weeks in advance of construction
- Communicated project details via letters, meetings, etc. to: area elected officials; service agencies (PANYNJ, NYPD, FDNY, MTA); hospitals; JFK Airport interests (Taxi and Limousine Commission, airlines, airport employees, private bus companies, trucking companies).
- Broadcast of press release/travel advisory to Tri-State media outlets and coordination of area-wide VMS signs (NY, NJ, CT)
- Posted construction details on State and City websites
- Notifications to area residents, community boards and businesses on Jamaica Avenue
- Produced extensive radio advertisements

Special Efforts

- Established 24/7 “Command Center” at Jamaica Hospital staffed by NYSDOT, NYCDOT, NYPD, FDNY, and hospital Emergency Services. The Center remained activated for four days to monitor and report on the status of the work and address any critical situations.
Construction Photos
Construction Photos
Construction Photos
ROLLING THE BRIDGE
LOWERING THE BRIDGE
Project Cost: $32 Million
Hillside Avenue’s Roll-In/Roll-Out
July 2006