Belt Parkway Bridges over Bedford Avenue, Nostrand Avenue, Sheepshead Bay Road, and Ocean Avenue

NYCDOT Urban Design – Project Introduction

November 13, 2023
Agenda

- Design Build Process
- Project Overview
- Milestones Completed To-Date
- Proposed Alternative – Scope of Work
- Proposed Roadway Improvements
- Proposed Bridge Improvements
- Proposed Drainage Improvements
- Existing and Proposed Landscape Improvements
- Bridge Aesthetics
- Project Schedule
- Next Steps
PDC Involvement in the DB Process

• PDC involvement primarily informs:
  • The Draft and the Final RFP
  • Specific requirements for project components that require PDC input
  • The Preferred Proposer

• Meetings with PDC to be held early on to:
  • Identify project components that require PDC input
  • Shape the project requirements of the RFP, including required review cycles for submissions and technical/aesthetic requirements

• The goal is to **streamline compliance checks** as much as possible to prevent change orders and delays
PDC Involvement in the DB Process

PRELIMINARY DESIGN
- Project Scoping
- Preliminary Design
- Environmental Assessment

PROCUREMENT
- RFQ Development
- RFP Development
- Select Design-Build Team

DESIGN-BUILD
- Parallel development of Final Design and Construction

PDC Input & Involvement
Provide requirements during RFP development & inform preferred proposer

Project Team ensures compliance with PDC requirements
Project Summary

- Project will be procured as a Design Build

- 100% Funded: Federal/State/City

- This Segment of the Parkway was included under the Shore (Belt) Parkway Master Plan (Pressley Report) prepared in 2000s. This report established architectural features for the corridor. Numerous bridges were reconstructed using the architectural themes from the Pressley Report (Shore Belt Pkwy over Bay Ridge Ave, Rockaway Parkway, Ocean Parkway, Gerritsen Inlet Bridge, Fresh Creek Basin Bridge, etc.)
Location Plan
Project Limits
Bridge Elevation Views

1. SHEEPSHEAD BAY ROAD
2. OCEAN AVE
3. BEDFORD AVE
4. NOSTRAND AVE

Image credits: Google Maps
Project Needs

- Bridges were built in the 1940s with no major rehabilitation and are exhibiting deterioration
- Non-standard lane width (± 10.5’)
- Non-standard shoulder (<1’)
- Non-standard stopping sight distance
- Non-standard vertical clearance over Bedford Avenue (Posted for 11’-11”)
- Non-standard roadway geometry contributes to Belt Parkway crash rates that are above state averages
Project Milestones Completed To-Date

• Brooklyn Community Board 15 Transportation Committee Meeting (October 2021 and May 2023)

• Data collection has been completed (Spring 2022)

• Multiple project alternatives were developed and analyzed (Summer 2022)

• Preferred alternative chosen to best satisfy the project needs and objectives (Fall 2022)

• Environmental analyses completed (Fall 2022)

• Various submittals to New York State DOT are under review (Winter 2023)
Proposed Alternative – Main Scope of Work

• Reconstruction of the Belt Parkway corridor to meet state and federal safety requirements and standards

• Reconstruction includes the following bridges:
  • Sheepshead Bay Road
  • Ocean Avenue
  • Bedford Avenue
  • Nostrand Avenue

• Drainage improvements on the Belt Parkway

• Landscape restoration / improvements (embankment areas)
Roadway Improvements

- **Narrow lanes**
- **Shoulder < 2’**
- **3 – 10.5’ Lanes**
- **Median**
- **3 – 10.5’ Lanes**
- **Shoulder < 2’**
- **80’ ±**

- **Non-standard sight distances**
- **Narrow shoulders**
- **Shoulders & Median**
- **3 – 12’ Lanes**
- **Shoulder**
- **110’ ±**

- **Additional roadway width to improve safety**
- **Improved roadway drainage**
- **Standard shoulders**
- **Standard sight distances**
Bridge Improvements

- Replacement of four bridge structures with single span bridges
- Existing piers removed from sidewalk
- Improved clearances and sight lines under bridges
- Improved pedestrian facilities under bridges
- New lighting under bridges
- Aesthetics keep Belt Parkway character
Drainage Improvements – System Schematic

Schematic Profile Alignment

Schematic Drainage Profile

Connect to Existing Structure to Outfall in Sheepshead Bay

Service Road

Detention Tank

Vegetated Swale

Infiltration

Swale Overflow Structure

Water Quality Structure (Vortex Unit)

Belt PKWY

Proposed Belt PKWY Manholes
Proposed Drainage: Vegetated Swale

**Roadside Example**

**Section**

**Vegetated swale**
Open, shallow channels with short vegetation along bottom and sides that infiltrates water as it is conveyed along swale. Commonly consists of a shallow topsoil that is planted with short grasses and may also have check dams to regulate flow within the channel.
Proposed Drainage: Vortech to Detention Tank

Access points outside of bridge footprint for maintenance with no overhead height restrictions
Existing Embankment Areas

North side of Parkway at East 28th Street, looking west

South side of Parkway at Nostrand Avenue, looking east

North side of Parkway at Ocean Avenue, looking east

South side of Parkway at East 21st Street, looking west

Image credits: H&H/AKRF
Proposed Landscape Restoration

- Restoration of landscaped embankment areas (currently being coordinated with NYC Parks)
- Use of native / sustainable plant species where applicable
- Access points near bridge abutments
- 3:1 max slope in maintenance zone

*Swale on both sides shown, swale on one side similar. Swale lengths vary (approximately 650 feet max.)
Belt Parkway Bridges
Architectural Design Discussion
7/19/2023
Shore (Belt) Parkway Master Plan – Chapter 4 Bridges and Structures – Nostrand Ave Cont.

- Linear, stepped reveal on outside fascia barriers
- Rectangular steel railing on top of concrete barrier
- Exposed concrete barrier and slab should be color and texture of plain concrete for a unified appearance
- Sloped, granite-faced masonry wingwalls
- Eliminate vertical incised details on wingwall fascias; retain typical expansion joints
- Steel brackets as visual support for the deck overhang, detailed to retain similar appearance of the original fascia beam

*There were FHWA safety concerns with this detail on prior projects; barrier/railing required retrofit on some projects, and railing was not used on subsequent projects*
Belt Parkway Bridges
Complete Projects

Rockaway Parkway

Ocean Parkway (Design Build Contract)

Bay Ridge Ave.

nyc.gov/dot
Belt Parkway Bridges
Pressley Design Minor Modifications

Align vertical lines in barrier, retaining wall, and roadway slab

Continue grooved concrete along retaining walls

Remove non-compliant metal rail

Remove decorative steel brackets on fascia beams
Belt Parkway Bridges
Bedford Ave.
Belt Parkway Bridges
Bedford Ave. with Landscaping

nyc.gov/dot
Belt Parkway Bridges
Nostrand Ave. with Landscaping
THE SPECIFIED BARRIER ARCHITECTURAL DETAIL MUST BE USED THROUGHOUT THE ENTIRE PROJECT LENGTH.

3. AESTHETIC DETAILS SHALL BE INCORPORATED ON THE BASEMENT, OVER ROOF, AND WALLS OF THE RETAINING WALLS.

2. THE STRUCTURAL BEAM AND BEARING SHOWN ON THIS DRAWING ARE NOT DIRECTIVE. STRUCTURAL DESIGN FOR BRIDGE SUPERSTRUCTURES AND SUBSTRUCTURES TO BE PERFORMED BY THE DESIGN BUILDER.

3. THE SPECIFIED BARRIER ARCHITECTURAL DETAIL MUST BE USED THROUGHOUT THE ENTIRE PROJECT LENGTH.
## Anticipated Project Schedule

<table>
<thead>
<tr>
<th>Month</th>
<th>Event</th>
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<tbody>
<tr>
<td>September 2023</td>
<td>• Design-Build RFQ Issued</td>
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<tr>
<td>December 2023</td>
<td>• NYSDOT/FHWA Design Approval</td>
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<tr>
<td>January 2024</td>
<td>• Draft Design-Build RFP Issued</td>
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<tr>
<td>February 2024</td>
<td>• Final Design-Build RFP Issued</td>
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<tr>
<td>May 2024</td>
<td>• Proposals Due</td>
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<tr>
<td>October 2024</td>
<td>• Notice to Proceed</td>
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PDC Coordinating Schedule

**PRELIMINARY DESIGN**
- Project Scoping
- Preliminary Design
- Environmental Assessment

**PROCUREMENT**
- RFQ Development
- RFP Development
- Select Design-Build Team

**DESIGN-BUILD**
- Parallel development of Final Design and Construction

**PDC Input & Involvement**
- Provide requirements during RFP development & inform preferred proposer

- October 2023
  - PDC Conceptual Submission

- November 2023
  - PDC Comments / Input

- December 2023
  - PDC Review / Approval

- February 2024
  - Contract Documents Advertised

- May 2024*
  - Contract Bids Received

- December 2023
  - PDC Review / Approval

* Any changes past this date will result in a Contract Change Order and additional funds would need to be produced.
Thank You!