



New York City  
Michael R. Bloomberg, Mayor

New York City  
Department of Transportation  
Janette Sadik-Khan, Commissioner

# RECONSTRUCTION OF SEVEN BRIDGES ON THE BELT PARKWAY



Beginning in the last half of 2009, the New York City Department of Transportation (NYCDOT) will begin reconstruction of seven bridges and their approaches on the Belt Parkway, over three local streets and four waterways. They are: Bay Ridge Avenue, Nostrand Avenue, Gerritsen Inlet, Mill Basin, Paerdegat Basin, Rockaway Parkway and Fresh Creek Basin bridges. All are original structures, which were built beginning in 1939. These structures have outlived their useful lives and must be replaced.

During the past 60 years traffic demand along the Belt Parkway corridor has increased dramatically. The opening of New York International Airport (now JFK Airport) in 1948, the development of suburban communities on Long Island post World War II, and the opening of the Verrazano-Narrows Bridge in 1964 have dramatically increased demand on the Belt Parkway. When the parkway first opened the two-way average daily traffic was about 20,000 vehicles per day. Presently it is about 150,000 per day.

Reconstruction of these bridges and their approach roadways is necessary to alleviate substandard conditions and bring these areas into compliance with current state and federal standards. These standards require wider lanes, 12-foot safety shoulders, median barriers, super-elevation of the roadway around curves, and realignment of the approach roadways resulting in improved sight distances. NYCDOT anticipates that these improvements will reduce the current accident rate on this section of the Belt Parkway by approximately 45%.



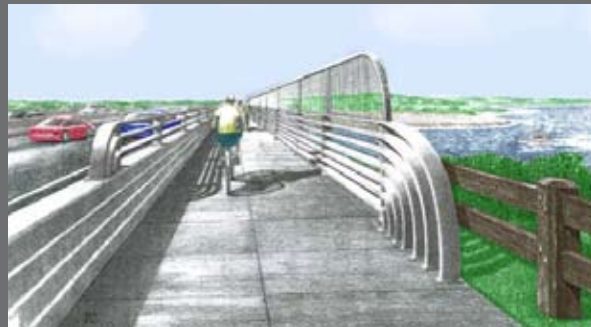
## Common Elements

NYCDOT conducted research to provide recommendations and design guidelines for the treatment of the parkway corridor. The goals of the analysis were threefold: first, to propose improvements to the parkway to satisfy safety and accessibility standards; second, to preserve and re-establish the historic character of the parkway; third, to retain and improve public access for all parkway users. The recommendations also include complementary designs of the seven bridges.

The research provided detailed recommendations on how common elements should be incorporated to achieve a consistent and historical character to the corridor. The research considered items such as trees and vegetation, lighting fixtures, railings and fences, design of bicycle and pedestrian paths across the bridges, as well as stonework detailing on bridge abutments with relief detailing on bridge parapets. In 2006 the NYC Art Commission presented an award for design excellence for this historical inventory.

## Landscaping

As a part of this program landscaping design recommendations were made, which are intended to preserve and enhance the park-like character of the Belt Parkway. These included assessing the suitability of tree and plantings species. At the completion of this project the Belt Parkway corridor will exhibit a coordinated landscape theme.



Section view of proposed Belt Parkway corridor landscape design.



*Rendering of the typical landscape treatment of the Belt Parkway emphasizing the corridor wide landscaping approach. The area between Paerdegat Basin and Fresh Creek Basin is shown.*



*View of a typical section of the Belt Parkway. Uniform design elements, including light poles, center median barriers, and timber guide rails will be consistent along the corridor. Uniform landscape treatments will compliment the design elements.*

- **Pedestrians and Bicyclists:** Four of the seven bridges, Gerritsen Inlet, Mill Basin, Paerdegat Basin, and Fresh Creek Basin, have pedestrian and bicycle paths, which will be maintained at all times during construction.
- **Motorists:** Three lanes will be maintained in both directions during rush hours. Lane closures will be limited to off-peak and late night/early morning hours. There are also specified lane closures permitted during weekends.
- **Transit:** Service levels and routes will not be disrupted. However some bus stops may be temporarily relocated to a safe distance from construction areas.

The Fresh Creek, Gerritsen Inlet, Rockaway Parkway, Nostrand Avenue, and Bay Ridge Avenue Bridges will be rebuilt on-line. This entails piece-by-piece reconstruction with lane closures to accommodate construction activity. Due to the proximity of the bridges to one another NYCDOT has coordinated the traffic patterns on the Belt Parkway to avoid conflicts. Tow truck services will be provided on site. New York Police Department Traffic Enforcement Agents will also be available to monitor and aid traffic flow on local streets. The Maintenance and Protection of Traffic plan maintains three lanes of travel in each direction during peak hours. **Belt Parkway traffic will not be routed onto local streets.** The Mill Basin and Paerdegat Basin bridges will be constructed off-line or partially off-line. This means that new structures will be built adjacent to the existing bridges. Traffic will remain on the existing bridges until the new structures are complete. Minimal impacts will occur when the approach roadways are configured to move traffic to the new bridges.

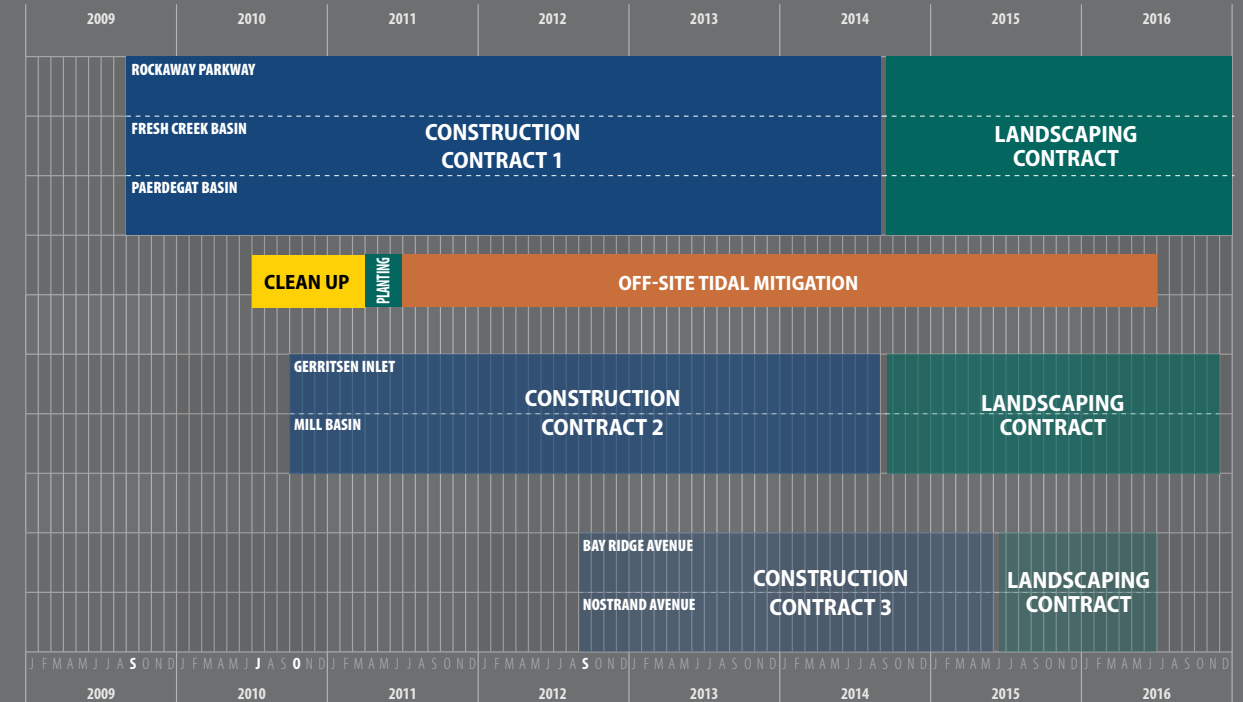
### Construction Mitigation Measures

- Local communities will receive regular updates of project status
- Notice will be issued in advance of each change in project stage
- Variable Message Sign (VMS) systems will provide motorists with traffic conditions
- NYPD Traffic Agents will be available to monitor traffic on local streets
- Tow truck service will ensure quick removal of disabled vehicles
- On site program management office and staff will be provided
- A full time Community Liaison will be available

### Expediting the Work

- In order to expedite the completion of the Belt Parkway Program and minimize the impacts to the community and traveling public, NYCDOT has added a financial incentive/disincentive clause to the contract. If the contractor completes the work early, an incentive is awarded; if the contractor fails to complete the work on time a disincentive is imposed for each day late.
- An acceleration clause may be used when it is in the best interest of NYCDOT

All of the bridges except for the Bay Ridge Avenue and Nostrand Avenue Bridges are either located within, or adjacent to, the Gateway National Recreation Area, (GNRA) a division of the US Parks Service. This bridge and highway program will be in full compliance with New York City Department of Environmental Protection (NYCDEP) requirements for the initiation of a long-term plan that will increase wetlands, decrease pollution into the bay, and decrease the highway’s footprint around the rim of Jamaica Bay. NYCDOT is also working closely with New York City Department of Parks and Recreation (NYCDPR), New York State Department of Environmental Conservation (NYSDEC), GNRA, the US Coast Guard (USCG), and the US Army Corps of Engineers (USACE) to ensure compliance with all environmental protocols. In addition to mitigating environmental impacts along the Belt Parkway corridor an off-site Wetland Mitigation Plan has been approved. This plan focuses on compensating for wetland losses by increasing and improving the quality of habitats. Approximately 2.3 acres of land at Floyd Bennett Field will be cleaned of rubbish and debris and converted to wetland area.



The Belt Parkway Bridge over Bay Ridge Avenue is situated within the residential Bay Ridge neighborhood. There is pedestrian access under the bridge to both the American Veterans Memorial Pier, as well as to the Shore Parkway Seawall pedestrian and bicycle paths. Safe access to the pier and the bicycle and pedestrian paths will be maintained at all times during construction. Additionally, access will be maintained to the NYCDEP Owl's Head Pollution Control Plant at all times.

The existing bridge will be reconstructed using pre-cast deck sections. The clearance will be increased to 14-feet 6-inches, which removes the need for clearance signs currently posted for a substandard condition and will obviate the need for underdeck wood shielding.



Bay Ridge Avenue Pier



Existing condition of Bay Ridge Avenue Bridge

### Proposed Bay Ridge Avenue Bridge

Rendering of the Bay Ridge Avenue Bridge and adjacent park. The design called for specific styles of street lights, and stone work on the bridge abutments and relief details on the parapet to evoke the historical character of the bridge.





**Existing Nostrand Avenue Bridge**

*Situated within the Sheepshead Bay community, the Nostrand Avenue Bridge was built in 1940. It is a three span structure with vehicular traffic under the center span. There are support piers on both sides of the roadway. Sidewalks cross under the structure on both sides. The Nostrand Avenue approaches under the bridge are not aligned with the rest of the roadway. Nostrand Avenue will be realigned to alleviate this condition.*



**Proposed Nostrand Avenue Bridge**

*The proposed structure will result in several improvements on both Nostrand Avenue and the Belt Parkway. The new structure will consist of a single span, eliminating the need for intermediate support piers and resulting in improved sight lines on Nostrand Avenue. Nostrand Avenue will be widened to 81-foot and realigned with the existing approaches. On the Belt Parkway, the bridge will be widened in order to provide new safety shoulders in both directions. New safety-shape parapets will be installed and the existing corrugated metal center guide-rails will be replaced with a reinforced concrete center median, which will result in a safer condition.*



#### Existing Gerritsen Inlet

Situated within the Gerritsen Beach community, the Gerritsen Inlet Bridge was built circa 1940. It is a nine span structure over Gerritsen Inlet, with a clearance of 35-feet above mean high water. Because the Gerritsen Inlet Bridge is located within the Gateway National Park Recreation Area, NYCDOT is working with the United States Coast Guard, the United States Parks Service, and the New York City Department of Parks and Recreation to ensure all construction methods comply with environmental protection laws.

#### Proposed Gerritsen Inlet Bridge

The new structure will consist of three spans over Gerritsen Inlet. The 35-foot mean high water clearance will remain unchanged. The navigable channel width will also remain unchanged. As part of our community outreach activities we will be in contact with local boating groups in order to mitigate any impacts to recreational boaters during construction. The pedestrian and bicycle pathways will be maintained at all times during construction. The completed structure will include uniform design elements such as railings, lighting, and parapets, consistent with the historic character of the original Belt Parkway construction, which will be implemented on each of the seven bridges in the program resulting in a unified theme along the corridor.



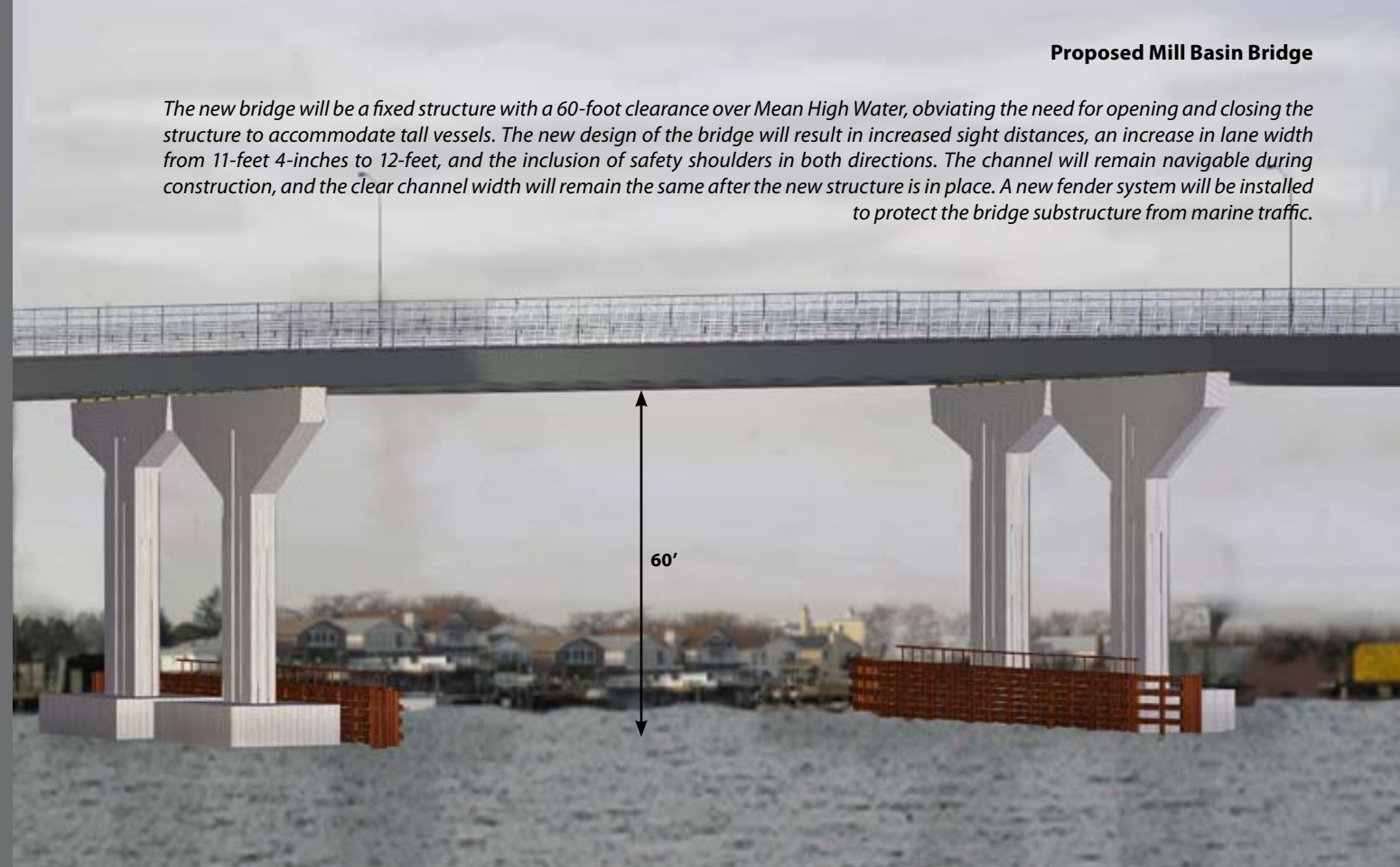


**Existing Mill Basin Bridge**

Opened on June 29, 1940, the Mill Basin Bridge is adjacent to the Jamaica Bay Wildlife Refuge and the Gateway National Recreation Area. The Mill Basin Draw Bridge is the only movable bridge on the Belt Parkway. The current clearance over Mean High Water is 35-feet. Construction will take place in an off-line configuration reducing the need for lane closures and resultant traffic delays.

**Proposed Mill Basin Bridge**

The new bridge will be a fixed structure with a 60-foot clearance over Mean High Water, obviating the need for opening and closing the structure to accommodate tall vessels. The new design of the bridge will result in increased sight distances, an increase in lane width from 11-feet 4-inches to 12-feet, and the inclusion of safety shoulders in both directions. The channel will remain navigable during construction, and the clear channel width will remain the same after the new structure is in place. A new fender system will be installed to protect the bridge substructure from marine traffic.





**Existing Paerdegat Basin Bridge**

The bridge consists of 12 cast-in-place concrete bents. Two navigation channels cross under the bridge. At one of these channels (bent number 7) a concrete pier has been damaged. Because of this damage and other structural concerns, the Paerdegat Basin Bridge has been under continuous monitoring since September of 2004.

The existing 13 span bridge and immediate approach roadways will be demolished completely and replaced by two new bridges and new approach roadways on split alignments. The southern structure will carry eastbound traffic while the northern structure will accommodate westbound traffic. Both the horizontal and vertical alignments will change resulting in improved sight distances on the bridge and its approach roadways. The bridge carrying eastbound traffic will also have a dedicated pedestrian/ bicycle path along the south side. The pedestrian/ bicycle path will be separated from traffic lanes by a concrete barrier on the bridge, and by a 15-foot wide grass mall on the approach roadways.



The existing bridge will remain in service while the new structures are being built. Upon completion of the new structures traffic will transition to the new alignment and the old structure will be demolished.

**Proposed Paerdegat Basin Bridges**



**Existing Rockaway Parkway Bridge**

*The existing Belt Parkway Bridge over Rockaway Parkway was built circa 1940. It is a four span steel superstructure with Rockaway Parkway traffic under the two center spans. The bridge and the approach roadways will be constructed in five stages, while maintaining three traffic lanes in each direction during peak hours during construction.*



**Proposed Rockaway Parkway Bridge**

*The existing structure will be replaced with a single span structure to improve visibility along Rockaway Parkway. The width of the new structure will exceed that of the existing bridge. In addition to reconstruction of the bridge, four access ramps will also be reconstructed as will Rockaway Parkway in the vicinity of the Belt Parkway.*



**Existing Fresh Creek Basin Bridge**

*The existing Fresh Creek Basin Bridge consists of five steel spans over Fresh Creek Basin with a 21-foot clearance over mean high water. There are four support piers in the channel. This structure will be replaced with a new three span structure*

### **Proposed Fresh Creek Basin Bridge**

*The new structure will consist of three spans of approximately 100-feet each. The new structure will only have two support piers resulting in a wider channel. The proposed construction will result in improved landscaping on the bridge approaches. The bridge deck and the approaches will be widened to accommodate three 12-foot lanes in each direction, 12-foot wide safety shoulders and a 12-foot wide bike path. The pedestrian and bicycle pathway will be maintained at all times.*



The proposed bridge reconstructions over Mill Basin, Paerdegat Basin, and Fresh Creek Basin are adjacent to Jamaica Bay. The bridge over Gerritsen Inlet is adjacent to Rockaway Inlet, which connects Jamaica Bay with Lower New York Bay. This system of waterways is one of the largest coastal wetland systems in New York State and is one of the most significant natural resources that may be found in the city's marine waters, inlets, bays and estuaries. The bridges are also adjacent to the Gateway National Recreation Area (GNRA), a national park that encompasses 26,200 acres of coastal areas including 24,500 acres in New York City. Mill Basin, Paerdegat Basin, and Fresh Creek Basin are also waterways of the New York State designated Jamaica Bay Significant Coastal Fish and Wildlife Habitat.

Since the reconstruction activity will unavoidably impact both Jamaica Bay and the Gateway National Recreation Area, the New York State Department of Environmental Conservation (NYSDEC) has mandated that the program include off-site mitigation work to compensate for the impacts. Mitigation goals and objectives are to restore and preserve wetland functions and expand aquatic and terrestrial wildlife habitats. A separate contract will be bid to remove debris and fill materials from the existing shoreline, the re-grading of the shoreline to pre-existing contours, the planting of beneficial marsh plants, such as spartina, which will stabilize the shoreline and eliminate the potential of high erosion in the wetland areas. These mitigation measures will allow for renewed vegetation to occur.





**Floyd Bennett Field**

*Debris at Floyd Bennett Field Off-Site Mitigation Area. All rubbish and debris will be removed, and native species of flora will be established. The mitigation contract will be concurrent with construction operations.*



*Replanting of native Spartina grasses at the Off-Site Mitigation Area*

**For more information:**

- Call the Belt Parkway Community Liaison at 347-702-6430
- Visit our website at: [www.nyc.gov/dot](http://www.nyc.gov/dot)

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