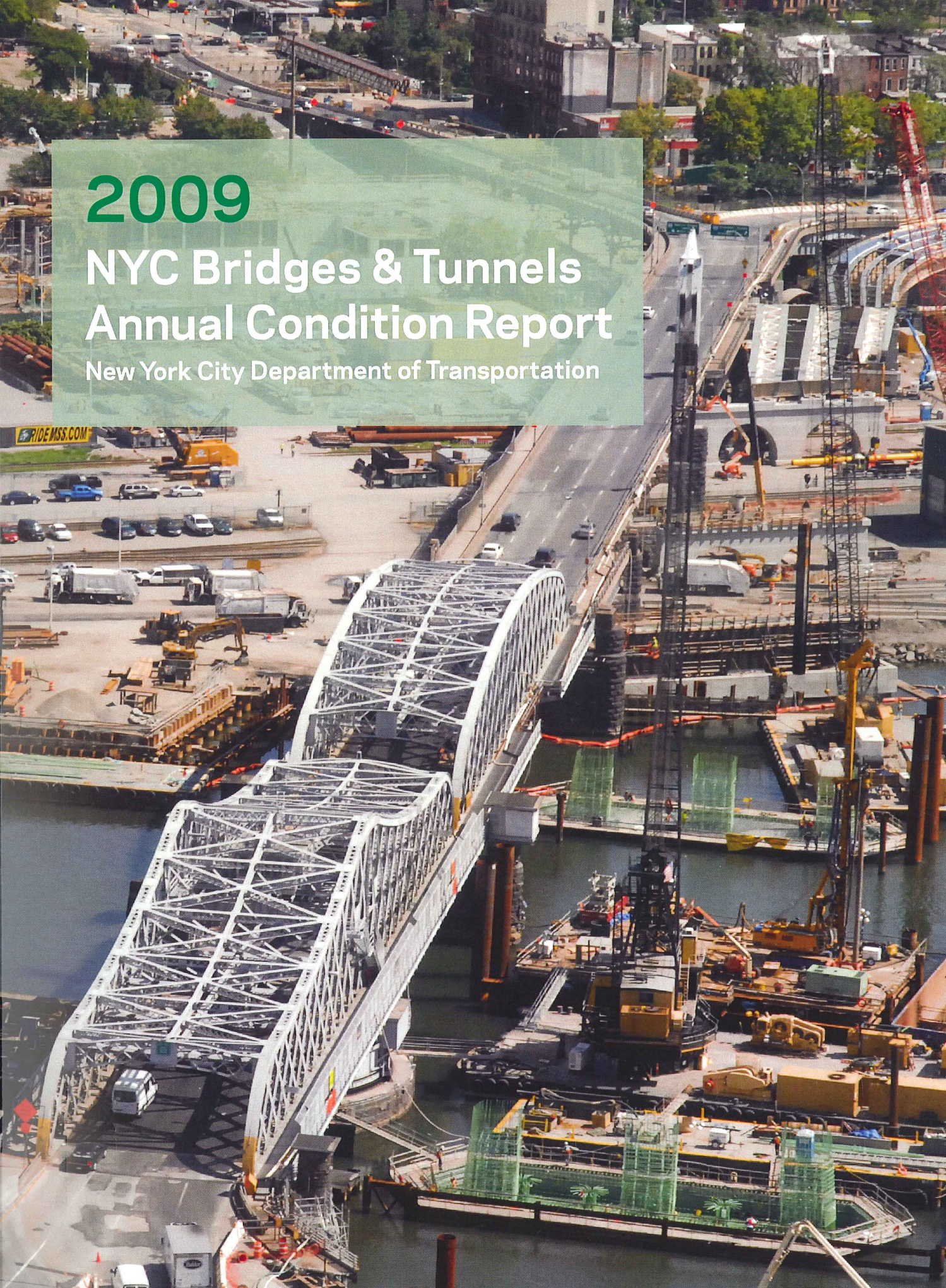

2009
NYC Bridges & Tunnels Annual Condition Report
New York City Department of Transportation

NEW YORK CITY DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES
2009 BRIDGES AND TUNNELS ANNUAL CONDITION REPORT

New York City Celebrated the Centennial Anniversaries of the Queensboro and Manhattan Bridges in 2009.
(Credit: Bernard Ente)

Michael R. Bloomberg, Mayor
Janette Sadik-Khan, Commissioner
Lori A. Ardito, First Deputy Commissioner

Henry D. Perahia, P.E., Chief Bridge Officer
Russell Holcomb, P.E., Deputy Chief Engineer, Maintenance, Inspections & Operations
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Contents

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Cover Photograph

Aerial View of the Existing Willis Avenue Bridge and of the Construction Site of the New Bridge in September 2009.

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A Message from the Commissioner

Dear Friends,

On behalf of the many dedicated professionals who staff the Division of Bridges, it is my pleasure to present the 2009 Edition of the New York City Department of Transportation's Annual Bridges and Tunnels Condition Report, as mandated under New York City's Charter. This report provides DOT with an opportunity to display the many achievements, innovations and improvements that were realized by the Division of Bridges during the 2009 calendar year.

The City's bridges are safe and in their best condition in generations. Our bridges are extremely well managed, they are being rebuilt and upgraded by experts and are subject to one of the strongest inspection systems in the United States. We have a very strong bridge capital investment program, which has turned overall City bridge conditions around and will continue to bring more bridges into good repair. DOT has been an early adopter of high-tech bridge monitoring equipment and techniques, and DOT's Division of Bridges is now further enhancing its inspection capabilities with additional technology and expertise.

The Division of Bridges includes 809 DOT employees who manage the City's capital bridge program and conduct bridge inspections, monitoring and maintenance. Our bridges include, among many others, the notable East River and Harlem River Bridges, the Belt Parkway Bridges, and pedestrian bridges and elevated roadways located City-wide.

On March 30, 2009, Mayor Michael R. Bloomberg announced the City's selections for infrastructure projects that will benefit from federal transportation funding from the American Recovery and Reinvestment Act.

Six projects will receive direct stimulus funding: the rehabilitation of the Saint George Ferry Terminal Ramps, the Brooklyn Bridge Ramps and repainting of the bridge, upgrades to the Ward's Island Pedestrian Bridge, the rehabilitation of deteriorated components of twelve roadway bridges, the painting of two Bruckner Expressway Bridges, and the rehabilitation of the Greenpoint Avenue Bridge over Newtown Creek.

In addition, four projects will receive displaced funding: the reconstruction of the Claremont Parkway and East 8th Street Access Ramp Bridges, and the repainting of six Belt Parkway/Shore Parkway and 11 bridges running over the Staten Island Railway line.

The City has been at the forefront of utilizing new technology to assist us in the monitoring of our bridges. For example, telltales for crack monitoring are installed at several locations, including three pre-stressed bridges in Staten Island and the FDR Drive at 92nd Street, and a borescope and acoustic emission equipment are used for monitoring inaccessible details at the Williamsburg Bridge. As a follow-up of the commitment to enhance bridge inspections by non-destructive remote monitoring techniques, two approach spans of the Brooklyn Bridge are instrumented with fiber optic sensors. Lastly, we are also using sensor devices to monitor the corrosion of the epoxy coated steel reinforcing bars and stainless clad steel reinforcing bars in the Annadale Bridge deck slab.

Preventive maintenance is essential to preserve the City's multi-billion dollar investment in its bridges. These steel and concrete structures must be protected from the stresses of weather, traffic, deterioration and neglect. In the last year alone, 14,905 square feet of concrete were used to renew sidewalks, curbs, and road decks; some 8,527 cubic yards of debris were removed; 1,807 bridge drains were cleaned; and crews eliminated 5,406,237 square feet of graffiti. DOT crews also eliminated 405

safety flag conditions that presented clear vehicle or pedestrian traffic hazards. Also, in the Department's ongoing attempts to minimize construction disruptions, we consistently used incentive and disincentive clauses in contracts to reward contractors who finish work early and penalize contractors who finish work late.

The Division's proud tradition of design and engineering excellence was recognized with awards from various entities, including:

- The American Council of Engineering Companies of New York's Diamond Award for the reconstruction of the Grand Concourse over East 161st Street and Grand Concourse – East 161st -East 166th Streets.
- The Design-Build Institute of America's "Owner of the Year Award" for Design-Build Excellence in Transportation. Significant Design-Build projects include the reconstruction of the Bruckner Expressway over Amtrak and the Staten Island Ferry Terminal ramps.
- The National Steel Bridge Alliance's winner in the movable span category for the Hamilton Avenue Bridge over the Gowanus Canal project.

New York City has a rich tradition of bridge design, construction, maintenance and administration. The Department of Transportation appreciates the importance of its duties and responsibilities, and the Division of Bridges is proud to shoulder the task of maintaining and rehabilitating our city's vital bridge infrastructure.

Sincerely,

Janette Sadik-Khan
Commissioner

Inventory

In calendar year 2009, the inventory of bridges under the jurisdiction of the Division decreased to 786. NYCDOT owns, operates, and/or maintains 756 non-movable bridges, 25 movable bridges, and five tunnels. Over the past 10 years, there has been a mostly steady decline in the number of bridges rated "Poor," and a somewhat steady increase in the number of bridges rated "Very Good," as shown below.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Poor	***13***	***9***	***8***	***4***	***6***	***4***	***3***	***3***	***3***	***[!]4***
Fair	481	459	451	429	456	458	456	459	455	456
Good	180	196	202	209	212	210	210	215	213	209
Vgood	***85***	***88***	***94***	***111***	***116***	***118***	***118***	***111***	***116***	***116***
Closed								1	1	1
	759	**752**	**755**	**753**	**[*]790**	**790**	**787**	**789**	**788**	**786**

[*] In 2004, 32 Department of Parks and Recreation structures, 1 Department of Education structure, and 7 Division of Ferries structures were absorbed into the inventory. 30 of these additions (22 from Parks, 6 from Ferries, and the 1 from Education) were rated "Fair," which accounted for the increase in Fair rated bridges. 1 of the Parks additions was rated "Poor." It has since been closed.

[!] In 2009, the newly "Poor" rated Hill Drive Bridge in Prospect Park was closed to vehicular traffic. Ninety three of the Parks bridges account for 20.4% of the "Fair" rated structures.

The City has four bridges that were rated "poor" after their last inspections. A poor rating means that there are components of the bridge that must be rehabilitated; it does not mean that the bridge is unsafe. If a bridge was deemed unsafe, it would be closed. The term "structural deficiency" is an engineering term-of-art used by the Federal government to indicate a defect requiring corrective action. According to the FHWA, "'structurally deficient' means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is "deficient" does not imply that it is likely to collapse or that it is unsafe. It means they must be monitored, inspected, and maintained." Because we use the New York State rating system, we do not use that term and instead use the terms "very good", "good", "fair" and "poor". As with the Federal term, the terms "fair" and "poor" describe the condition of bridge elements and whether they are functioning as designed. Although these elements are not considered hazardous, the ratings are used to determine whether the elements require repair or rehabilitation. Again, any bridge deemed unsafe would be shut to the public. As this document goes to press, all four "poor" rated bridges are in construction.

The four City bridges that are rated "poor" include the Bruckner Expressway Bridge Northbound over Amtrak and CSX in the Bronx. The October 4, 2005 fire on the bridge weakened its members. The immediate results of the fire were addressed by in-house forces, and repairs requiring immediate attention were handled by the When and Where contractor. The replacement of the bridge's northbound superstructure and the southbound deck, are being performed under a Design-Build contract. A Notice to Proceed was issued to the contractor with a start date of October 27, 2008. Construction is expected to be complete in September 2011.

The second is a pedestrian bridge at 78th Street over the FDR Drive. The columns on this bridge have been shored and there is shielding under the concrete to protect against spalling. As a result, the bridge remains safe until its reconstruction which is expected to begin in May 2010.

The third bridge is the Hill Drive Bridge (Terrace Bridge) over Prospect Park Lake. Repairs requiring immediate attention will be performed by the When and Where contractor. This bridge is closed to vehicular traffic.

The fourth bridge is the Brooklyn Bridge. It was given a "poor" rating during its last inspection because there are certain elements of the bridge that need to be rehabilitated. While the main spans are in good condition, the decks on both the Manhattan and Brooklyn ramps to the bridge are aging and will be replaced during a rehabilitation project beginning in early 2010. It should be noted that of the 75 spans of the bridge, only 6 spans contribute to the low condition rating. None of them are among the three suspended spans (i.e. between the anchorages).

Contract Acceleration

Acceleration measures are a contract provision used in some reconstruction projects that is implemented through a contract pay item. This contract provision provides a mechanism to implement measures to accelerate the contractor's work to maintain critical path milestones. This provision does not apply to measures undertaken by the contractor to make up for time it lost in the progress schedule. Only the NYCDOT representative invokes this provision when the contract schedule is compromised due to unforeseen conditions during construction that are out of the contractor's control, and when it is deemed in the City's interests to accelerate.

Incentive and disincentive clauses are another contract provision used in some reconstruction projects that is implemented through a contract pay item. Under this provision, the contractor is compensated a certain amount of money for each day if the identified work in a critical milestone is completed ahead of schedule and is assessed a deduction for each day the contract overruns the allocated time. The amounts for the I/D clauses are based upon such items as traffic safety, maintenance and road user delay costs, Resident Engineering & Inspection (REI) expenses and cost of traffic enforcement agents. These amounts are implemented in accordance with guidelines established by Federal Highway Administration (FHWA).

East River Bridges Anti-Icing Program

The Division's Anti-Icing Program uses the liquid chemical potassium acetate and aggregate chemical sodium acetate. The anti-icing fleet consists of twenty-two spray trucks, six plow trucks and several smaller plows. Ten of the spray trucks are combination spray/plow trucks with a 1,000 gallon tank capacity, and five are spray-spreader/plow trucks with a 360 gallon spray capacity, and a nine cubic yard spreader capacity. There are twenty chemical storage tanks, with a total storage capacity of 114,250 gallons.

In the winter of 2008-2009, a total of 52,445 gallons of potassium acetate and 180 tons of sodium acetate were applied on the roadways of all four East River Bridges.

Marine Borer Remediation

In October 1999, the Department began a study to assess the present damage caused by marine borers as well as the potential for future damage at several waterfront DOT structures, including the supporting structures of the relieving platforms along the FDR and Harlem River Drives, and the timber piles and structures of the Carroll Street and Ocean Avenue bridges in Brooklyn. The underwater inspection of timber piles supporting the FDR Drive began on May 8, 2000. Inspection of the Brooklyn sites was conducted during the week of October 23, 2000. The inspections were completed in October 2000, and the Marine Borer Evaluation Report was published in June 2001. Using the results of the underwater inspections, preliminary plans were developed for the implementation of repairs and remediation measures to protect the structures from attack. These preliminary plans were completed in December 2001. The final design is complete. Mitigation work for the impact of the construction on the bodies of water will be done under a separate contract. A search for a suitable location for open water mitigation is being

conducted with the assistance of the Army Corps of Engineers and NYSDEC. The construction work is expected to commence in January 2011, and to be complete in November 2014.

2009 Awards

In 2009, the outstanding work of the Division was recognized by the receipt of several awards. In March 2009, the American Council of Engineering Companies of New York selected the reconstruction of the Grand Concourse over East 161st Street and Grand Concourse – East 161st -East 166th Streets for the Diamond Award in the transportation engineering category in its 2009 Engineering Excellence Awards. This project was substantially completed in November 2008.

In April 2009, the Design-Build Institute of America selected the Agency for an "Owner of the Year Award" for Design-Build Excellence in Transportation. The award recognizes an owner organization in transportation that has made significant contributions in advancing awareness, understanding, and use of the design-build project delivery method. Significant Design-Build projects include the reconstruction of the Bruckner Expressway over Amtrak and the Staten Island Ferry Terminal ramps.

In September 2009, the National Steel Bridge Alliance selected the Hamilton Avenue Bridge over the Gowanus Canal project as the winner in the movable span category in its 80th awards competition. The Steel Prize Bridge Awards honor significant and innovative steel bridges constructed within the United States and Canada. Projects are judged on cost effectiveness, initial cost, life-cycle cost, innovation, aesthetics, and design.

In October 2009, Chief Bridge Officer Henry Perahia received an Outstanding Achievement Award from the South Asian American Association.

In November 2009, Deputy Chief Engineer Russell Holcomb was presented the Municipal Engineer of the Year award from the Municipal Engineers of the City of New York.

The dedication and hard work of all members of the Division ensures that the Department is stronger than ever and more capable than ever to meet the challenges of maintaining a diverse and impressive bridge infrastructure.

As an integral part of New York City's Department of Transportation, the Division of Bridges has a two-fold mission: to maintain an optimal transportation network by ensuring smooth mobility on the city's bridges, and to ensure the safety of the public.

The New York City Department of Transportation's Division of Bridges is comprised of six major bureaus. The **Chief Bridge Officer** is responsible for formulating policy and providing executive direction. He oversees all aspects of the design, construction, rehabilitation and reconstruction, maintenance, operation and administration of the 786 bridges (including 5 tunnels), and 61 culverts presently under the jurisdiction of the New York City Department of Transportation (NYCDOT). In addition to broad supervision, the Chief Bridge Officer also provides overall executive and administrative direction for the Division of Bridges, and ensures that all contractors are promptly paid.

Reporting to the Chief Bridge Officer, the **Community Affairs Unit** maintains liaison with elected officials, community boards, community groups, and civic/neighborhood associations. The Unit takes a pro-active approach in addressing design issues and roadway closures and detours by reaching out to communities prior to the onset of construction. This enables the Division to proceed with its rehabilitation program with community input, and allows the Agency and its contractors to co-exist in a more harmonious manner with the community surrounding the project. Issues and problems of concern to the communities are brought to the attention of the appropriate Division personnel and addressed.

The **Bureau of Bridge Maintenance, Inspections and Operations** employs almost 500 engineering, professional, administrative, and skilled trades employees in the maintenance and smooth operation of New York City's elevated infrastructure; it is composed of five major sections:

The ***Flag Engineering*** section is an engineering group that reviews, routes, and tracks hazardous or potentially hazardous safety and structural conditions ("flags") in or on the city's 786 bridges (including 5 tunnels). The Flags staff is on call 24 hours a day to respond to bridge emergencies. The section can be alerted to flag conditions by city and state inspectors and other sources, such as the Communications Center. All conditions undergo an evaluation involving review of the flag report, photographs of condition, and, if necessary, a visit to the site. Subsequently, a "flag packet" describing the type of repair or response that is required is created and routed to an appropriate group, in-house or contractor, for elimination. Flags engineers supervise repair work performed by contractors. The section monitors the status of each flag, and reports on all activities on a monthly basis.

The in-house engineers and skilled trades personnel of the ***Bridge Repair Section*** perform repairs to address flagged conditions. Flag repairs include structural and safety work, such as the repair of steel members damaged by corrosion or accident impact, the replacement of box beams and bridge railings, the replacement of roadway gratings, repairs to traffic control devices, and the rebuilding of wooden walkways. Much of this work is performed in the off-hours, either to accommodate traffic or in response to emergencies.

This section also rehabilitates and replaces damaged, worn, or defective components whose failure can affect service. This type of work, known as *Corrective Repair*, primarily involves the electrical, mechanical and operational control systems for the twenty-five movable bridges, as well as the travelers (movable underdeck access platforms) on the four East River bridges. The Bridge Repair Section is also responsible for the lubrication of the movable bridges as well as the mechanical components and the main cables of the East River bridges. In addition, this section administers federally funded contracts for the preventive maintenance of the four East River Bridges.

The ***Inspections and Bridge Management*** section performs three essential functions: *Bridge Inspections, Bridge Management,* and *Research and Development*.

The *Inspections Unit* inspects the city's bridges in accordance with state and federal standards; monitors bridge conditions with a high hazard potential, such as temporary repairs, outstanding flags, and fire hazards; responds to emergency inspection requests from NYCDOT and external sources; recommends repairs and remedial measures for hazardous conditions; generates flag and inspection reports for the Division; engages in special programs such as non-destructive monitoring of sensitive bridge components by advanced techniques; supervises inspections by consultants working for the Division; conducts inspections and inventories of expansion joints; conducts acoustic emission monitoring; and inspects non-structural cladding.

The *Bridge Management Unit* develops and maintains the database for the City's bridge inventory, condition ratings, and inspection information. The unit is also responsible for maintaining records of privately-owned bridges in the City. The database is the source of information used in a variety of reports, including the present Bridges and Tunnels Annual Condition Report. This unit uses the bridge and span condition database to determine current and future needs for bridge rehabilitation, bridge component rehabilitation, flag forecasting, inspections and monitorings.

This Section is also responsible for investigating new materials and methods to improve existing bridge conditions. It sponsors a series of lectures by experts on subjects relevant to design, construction, and maintenance, such as seismic retrofitting of bridges, salt substitutes, cathodic protection against corrosion, concrete patching materials, new paint strategies, non-destructive bridge testing, and deck resurfacing. The unit also participates in research programs with interested transportation and infrastructure entities. In conjunction with the Port, MTA Bridges and Tunnels, and NYS Bridge Authorities, it sponsored a report on suspension bridge cables that led to a federal project for the entire United States. A number of articles on bridge management are published by the unit in technical journals in the United States, Japan, France, and elsewhere. This section created the system for generating bridge inspection reports with portable computers; a similar system is now being adopted by the NYSDOT.

Preventive Maintenance is a vital part of the overall bridge program. This section is responsible for functions including debris removal; mechanical sweeping; pointing of masonry brick and block; and emergency response, such as snow removal, oil/cargo spills, and overpass hits. The section also performs some corrective repair work such as asphalt and concrete deck repairs, sidewalk patching, fence repair, and brick and masonry repairs. Preventive Maintenance is responsible for conducting the Department's anti-icing operations on the four East River bridges.

Bridge and Tunnel Operations is responsible for operating the 25 City-owned movable bridges that span city waterways. This section operates under a variety of federal mandates that call for 24-hour coverage at many locations; its mission is to provide safe and expedient passage to all marine and vehicular traffic under and on movable bridges. In calendar year 2009 Bridge Operations effected a total of 4,743 openings, 3,666 of which allowed 6,318 vessels to pass beneath the bridges. The remaining 1,077 openings were for operational and maintenance testing. The section also operates the city's five mechanically-ventilated tunnels, performing electrical maintenance and arranging for roadway cleaning.

The overall mission of the Bureau of Bridge Maintenance, Inspections and Operations is to maintain the structural integrity of elevated structures and tunnels and to prolong their life by slowing the rate of deterioration. While our objective may be seen as "maintaining the status quo" of the infrastructure, we continue to take a new look at our methods, procedures, and general focus as we formulate our operational plans for the next several years.

As more bridges are rehabilitated, it becomes incumbent upon us to protect the government's investment in the infrastructure by developing and implementing a more ***substantive preventive maintenance program*** to keep these bridges in good condition.

The Deputy Chief Engineer for Bridge Maintenance, Inspections and Operations also acts as the **Deputy Chief Bridge Officer**, assuming the responsibilities of the Chief Bridge Officer in that person's absence.

The **East River and Movable Bridges Bureau** is responsible for all design and construction activities for all rehabilitation/reconstruction work that is planned, or currently taking place on the four East River Bridges, as well as all City-owned movable bridges and tunnels. This involves overseeing and supervising design consultants who prepare plans and specifications for bridge rehabilitation/reconstruction projects on the four East River Bridges and all Movable Bridges, as well as overseeing and supervising contractors, Resident Engineers and Inspection Consultants, and Construction Support Services Consultants during the construction phase.

This Bureau consists of two major areas: ***East River Bridges***, and ***Movable Bridges***. Each of these areas is headed by a Director to whom Section Heads or Engineers-in-Charge (E.I.C.'s) report. Each is assigned a specific bridge, or bridges, where they are responsible for all design and construction activities. The Directors, in turn, report to the Deputy Chief Engineer of the Bureau.

The **Bureau of Roadway Bridges** is responsible for both design and construction activities for all rehabilitation/reconstruction work that is planned, or currently taking place on all City-owned, non-movable bridges, with the exception of the four East River Bridges. This involves overseeing and supervising design consultants who prepare plans and specifications for bridge rehabilitation/reconstruction projects, as well as overseeing and supervising contractors, Resident Engineers and Inspection Consultants, and Construction Support Services Consultants during the construction phase.

This Bureau covers two major geographic areas; ***Brooklyn and Manhattan Bridges***, and ***Bronx, Queens and Staten Island Bridges***. In each geographic area, the workload is divided by Community Board. Engineers-In-Charge report to the Directors of each major area, who, in turn, report to the Deputy Chief Engineer of the Bureau.

The **Engineering Review and Support Bureau** is responsible for providing Division-wide engineering support services. The following areas make up this Bureau: ***In-House Design, Engineering Support, Engineering Review, and Quality Assurance***.

In-House Design staff (comprised of the Structural, Electrical, and CADD Groups) prepare plans and specifications for bridge rehabilitation/replacement projects that enable the Division to restore bridges considered "structurally deficient," to a "very good" condition rating. This unit also handles urgent Division projects, as well as special repair projects of the **Bureau of Bridge Maintenance, Inspections and Operations**. Over the last 20 years, In-House Design has completed contract documents for over 30 major replacement/rehabilitation projects. Some of these structures were in highly environmentally sensitive areas, such as the FDR Drive from 42nd to 54th Streets, Hylan Boulevard over Lemon Creek, Chelsea Road over Sawmill Creek, Cropsey Avenue over Coney Island Creek, the Exterior Street Ramp, Belt Parkway Bridge over Paerdegat Basin, and the 145th Street Bridge over Harlem River. The staff also provided plans, working drawings, and shop drawings for in-house built projects such as the temporary Pedestrian Bridge for PS-5, Ferry Terminals at 34th Street, the Hamilton Avenue Asphalt Plant conveyor supports, and the Yankee Stadium Ferry Access.

The Electrical Group reviews and/or prepares contract documents for the electrical and street lighting work for all projects in the Division's capital program. They further review plans and specifications prepared by consultants and test electrical systems on the movable bridges.

The ***Engineering Support Section*** is comprised of four units: *Specifications, Surveying and Load Rating, Records Management,* and *Special Projects*.

The *Specifications Unit* prepares and reviews specifications for all City-let in-house and consultant-designed bridge construction projects, processes the contracts for bidding, prepares and transmits addenda, maintains and updates City bridge construction boiler plates, and maintains an inventory of all NYC and NYS special specifications used in City-let bridge projects.

The *Surveying and Load Rating Unit* performs the survey, inspection and load rating of bridges, monitoring of cracks and movements in bridge structures and settlement of foundations. This unit also performs corrosion potential testing in all bridge resurfacing projects.

The *Records Management Unit* establishes drafting, microfilming, and digital media standards for the archiving of bridge records. It reviews design, as-built and shop drawings prepared by consulting firms, as well as CDs and DVDs. This unit maintains original plan files, upgrades the records database and converts original drawings into electronic media formats. It also answers requests for information regarding records of City-owned bridges.

The *Special Projects Unit* reviews contract bid documents and specifications for public and private agencies to ensure compliance with City, State and Federal standards and guidelines.

The ***Engineering Review Section*** consists of five units: *Engineering Review and Estimates, Utilities, Land Acquisition, Geotechnical Engineering,* and *Scope Development*.

The *Engineering Review and Estimates Unit* reviews all City-let bridge construction contract drawings; reviews drawings from other Agencies and entities, as well as State and private companies; and ensures that the work to be performed conforms to NYCDOT requirements. This unit establishes design standards, including seismic requirements, and oversees estimates prepared by consultants. It is involved in the preparation of Total Design Packages for the rehabilitation/reconstruction of poorly rated bridges. This unit also reviews superload truck permit applications, performs load analyses for the City's bridges, reviews load postings for City owned bridges and provides architectural review of various projects. It is also responsible for inspecting City-owned retaining walls, identifying walls in poor condition, and creating an inventory of all City-owned retaining walls. Retaining walls in poor condition requiring immediate attention are referred to in-house repair staff or When and Where contractors. Information on poorly rated retaining walls is also forwarded to the New York City Department of Design and Construction (DDC) for permanent rehabilitation. Walls of questionable ownership are researched for ownership and jurisdiction. Thus far, 633 City owned retaining walls (along major streets) have been inspected and inventoried; 27 of which have been estimated to be in poor condition. DDC has been requested to accelerate the rehabilitation of these walls. A consultant has been assisting the unit in the inspection, condition assessment, temporary repair design, inventorying and budgeting for the permanent rehabilitation of the retaining walls.

The unit currently provides engineering review supervision of private developers' projects supervision such as the Atlantic Yards Project, the Eastside Access Project, the Riverside South Project, and the Yankee Development Project. In addition, the unit conducts other, non-bridge engineering projects, such as the annual balloon wind study for the Macy's Thanksgiving Day Parade.

The *Utilities Unit* coordinates all issues related to utility design as they affect City-owned bridge projects and related projects.

The *Land Acquisition Unit* reviews and maintains a database of easement issues, right-of-way, and Uniform Land Use Review Procedures (ULURP). This unit also reviews Design reports and Environmental Impact Statement (EIS) of various other Agency projects with respect to their impact on City-owned bridges.

The *Geotechnical Engineering Unit* provides geotechnical-engineering services and oversees seismic design requirements for City-let contracts for bridge projects.

The *Scope Development Unit* reviews inspection reports and structural condition ratings to develop the scope of work for the rehabilitation of deficient bridges, and initiates the procurement of Design Consultant contracts.

The ***Quality Assurance Section*** ensures that materials installed for the Bridge Rehabilitation Program meet contractual requirements and are incorporated in strict compliance with plans and specifications. This section operates under its own formulated Quality Assurance Plan that is based on NYSDOT requirements and procedures. Quality Assurance has contractually retained the services of private inspection/testing firms. The provision of services required for various projects is better coordinated through this centralized method, which is also timely and cost effective.

Off-site Quality Assurance services relative to a wide variety of basic and manufactured construction materials including concrete, asphalt, soils, reinforcing steel, bridge bearings, timber, structural steel and precast/prestressed structural components for all bridge projects, irrespective of the funding source, are handled by this section. Through its engineers at bridge construction sites, Quality Assurance ensures that only acceptable materials are incorporated into rehabilitation/reconstruction work in strict accordance with plans, specifications and acceptable construction practice. Current major projects include the Manhattan Bridge, Willis Avenue, Roosevelt Island, Belt Parkway Bridge over Paerdegat Basin, Belt Parkway Bridge over Rockaway Parkway, Belt Parkway Bridge over Fresh Creek Basin, 11th Avenue Viaduct over LIRR Westside Yard, East 8th Street Access Ramp over Belt Parkway, St. George Staten Island Ferry Terminal Ramps, Northbound and Southbound Bruckner Expressway Bridges, emergency reconstruction of the west abutment and wing walls of the Borden Avenue Bridge over Dutch Kills, Annadale Road Bridge, and the Shore Road Circle Bridge. In addition, the Section provided services to the Component Rehabilitation Section on an as-needed basis and was actively involved in the approving materials required for the emergency repairs to the FDR Drive.

Through its *Environmental Engineering Unit*, Quality Assurance also oversees the implementation of the Final Environmental Impact Statement on bridge construction projects involving the removal and disposal of lead-based paint. The unit's active involvement in training the supervisors and overseeing the abrasive blasting operations has resulted in the successful completion of various paint removal projects. This unit also oversees the proper and safe disposal of other hazardous waste and regulated waste encountered during construction activities.

In addition to enforcing the lead paint removal protocols, the unit handles other environmental concerns. Typically, the unit participates in the design stage to ensure that any environmental issues are addressed during the construction phase of the project. These issues include, but are not limited to, asbestos abatement, soil sampling, groundwater sampling, remediation of contaminated soils and groundwater, worker exposure to environmental contaminants, management of waste oil, storage of hazardous waste, site safety, and OSHA compliance. The role of this unit in ensuring public safety has been recognized and commended by the community.

The unit continues to monitor waste water discharge for numerous projects involving the generation and disposal of waste water, such as the Willis Avenue and Roosevelt Island bridges. The unit is responsible for discharge monitoring in conjunction with the NYS SPDES Discharge Permits for discharges at the Eastern Boulevard Bridge, Hunters Point Avenue Bridge, Greenpoint Avenue Bridge, Cropsey Avenue Bridge, Manhattan Plaza Underpass, Battery Park Underpass, and the Metropolitan Avenue Bridge. The unit continues to provide environmental oversight and compliance on major capital projects such as the Willis Avenue Bridge, Roosevelt Island Bridge, Manhattan Bridge, Williamsburg Bridge, Belt Parkway Bridges, Borden Avenue Bridge, and the Queensboro Bridge, as well as Component Rehabilitation, Roadway Bridge, and Design/Build projects.

The unit provided expertise and oversight for the cleanup of the historical oil spill discovered during the emergency repair of the Borden Avenue Bridge. Corrective action plans and soil remediation designs were developed and coordinated with NYSDEC to remediate the site and enable the continuation of the bridge repair operations.

The unit also provided assistance to the Hamilton Avenue Asphalt Plant with testing and analysis of storm water run-off to ensure facility compliance with federal and state storm water regulations.

The **Specialty Engineering and Construction Bureau** is responsible for all ***Component Rehabilitation*** activities, ***Emergency Declarations/Specialty Engineering Services***, ***Bridge Painting***, and the ***When and Where Unit***.

Component Rehabilitation is the revamping or replacement of damaged, worn or defective bridge components. This type of work is performed primarily on those structures not classified as being "deficient," but which contain specific components that have low condition ratings. By rehabilitating these components, the Division can ensure that these bridges remain in "good" or "very good" condition; usually extending the bridge's useful life by up to 10 years. Section Heads or Engineers-in-Charge (E.I.C.'s) report to the Director of Component Rehabilitation. Each is assigned a specific bridge, or bridges, for which they are responsible for all component rehabilitation activities. In addition, the Component Rehabilitation Unit will be administering a new capital When and Where contract. The When and Where Unit will be responsible for the active construction and daily monitoring and supervision of the contract.

The ***Emergency Declarations/Specialty Engineering Group*** provides technical and procurement expertise related to the following areas: preparing Emergency Declarations for unsafe conditions that require immediate remediation; assisting the Chief Bridge Officer in the contractor selection process for declared emergency situations; providing technical expertise related to the development, procurement and administration of Design-Build contracts throughout the various areas of the Division; preparing and administering Design-Build agreements; and supervision of Design-Build project design, construction, and inspection services.

The ***Bridge Painting*** section's function is to maintain the protective coating of the City's bridges. The section is divided into two programs, the in-house (expense) program and the capital program. The capital program oversees total paint removal and repainting, performed by contractors; this is done at twelve-year intervals on bridges measuring more than 100,000 square feet of painted area, and bridges over railroads. In-house personnel provide the inspection services on East River Bridge preventive maintenance contracts for quality control purposes. The in-house program is responsible for full steel painting of bridges measuring less than 100,000 square feet, and bridges that are not over railroads. This includes local surface preparation of deteriorated areas and overcoating of the entire bridge. In addition, the in-house program is responsible for salt splash/spot painting.

Salt splash/spot painting is performed four years after full steel painting, and again four years later. After another four years, we once again perform full steel painting. The interval between full steel applications remains twelve years.

Members of the in-house program respond to emergency flag repairs alongside the in-house repair forces, to perform surface preparation prior to, and painting upon completion of, the steel work. In-house painting personnel also perform environmental clean-up after the iron workers finish their repair work.

The engineers and inspectors of the ***When and Where Unit*** supervise the contractors' repairs of structural and safety flags citywide under both marine and general repair contracts, as well as a new capital contract. The use of these contracts allows the unit greater flexibility in deploying the contractors' resources as necessary, and in obtaining a variety of construction equipment and materials that are not readily available to in-house forces. In addition, the unit responds to bridge emergencies, providing on-site inspection to verify field conditions, taking measurements for

repairs and providing emergency lane closures. The section also supervises the repair work performed during night hours to reduce the impact on traffic and on public safety.

The **Bureau of Management and Support Services** provides essential administrative and analytic services to each of the operational bureaus of the Division of Bridges. The Bureau is divided into five primary sections: ***Office of the Executive Director, Administration and Finance, Capital Procurement, Capital Coordination, and the Truck Permit Unit.*** Each highly-specialized section is designed to address those issues and requirements that are critical to the operation of the respective Bureaus within the Division.

In addition to the Division-wide responsibility for conflict resolution, Equal Employment Opportunity enforcement, confidential investigations, Bridges' Engineering Service Agreements, space allocation, and special projects, the ***Executive Director*** oversees, on an executive level, the following areas and functions:

The ***Senior Director of the Administration and Finance Section*** oversees and administers all administrative/personnel-related functions for the Division, acting as a liaison with the Central Personnel Coordinator in NYCDOT Personnel including, but not limited to, recruiting for vacancies (this includes reviewing for completeness and submitting the necessary paperwork, and reviewing and distributing candidates' resumes); maintaining all Managerial Position Descriptions; maintaining all Division organization charts; scheduling training; confidential investigations; maintaining records of IFA-funded positions; initiating and assisting in resolving disciplinary/grievance actions; serving as Conflicts of Interest and Financial Disclosure Officer; collecting and reviewing managerial and non-managerial performance evaluations; absence control; providing interpretive advice to Division management regarding City and Agency policy and procedures; and overseeing telephone and facility-related issues for personnel located at 55 Water Street and 59 Maiden Lane in Manhattan.

The Senior Director of the Administration and Finance Section also oversees the following three units:

The *Analytic Unit* prepares comprehensive bi-weekly and monthly reports that address major issues confronting the Division; compiles statistical data detailing the Division's productivity; processes and monitors all FOIL requests; frames issues in which oversight assistance is required for use by the Division, NYCDOT Executive Management and the Mayor's Office; and prepares the City Charter-mandated ***Bridges and Tunnels Annual Condition Report.***

The *Vehicle Coordination Unit* tracks the placement and condition of all vehicles under the jurisdiction of Bridges. It maintains a database and prepares reports containing this information; provides information and reports to appropriate inquiring Divisions and Agencies such as the Auditor General's Office, NYCDOT Legal Department and NYCDOT Litigation Support Services; coordinates the assignments of vehicles and their movement throughout various borough field locations and job sites; prepares reports on Vehicle Status and replacement; prepares reports for the purpose of tracking Overnight Vehicle Assignments for all Division vehicles; receives and routes vehicle Accident Reports, Police Reports and Security Incident Reports relating to vehicle accident, theft and/or vandalism; coordinates priorities for vehicle and equipment repair with Fleet Services; prepares reports and memoranda regarding vehicle safety issues and communication procedures for the NYCDOT Communication Center; and collects required documentation from field personnel for checking Driver Certifications with the Department of Motor Vehicles and EZ Pass.

The *Finance Unit* oversees the Division's entire expense budget process including, but not limited to, base-line preparation, spending plans, overtime control, financial plan changes, and budget modifications. The unit further oversees all Division-wide fiscal activities, including the establishment and monitoring of all IFA-related project budgets, while simultaneously ensuring that the budget and plans represent the Division's priorities.

The ***Capital Procurement Section*** serves as a liaison between the Division of Bridges and the Office of the Agency Chief Contracting Officer. The duties of this unit include: overseeing the Division's capital consultant contract procurement from scope to registration; acting as liaison between engineers and the consultant programs unit, handling all engineering questions and answers; preparing status reports; and coordinating Railroad Force Account Agreements for Division construction projects.

Railroad Force Account Agreements are a vital component in the rehabilitation/reconstruction program since train traffic affects 326 (41%) of City-owned bridges. Careful cooperation between the NYCDOT and the various railroad agencies that service the metropolitan area is required. The Railroad Coordinator provides a single point of contact for all railroad issues. This coordination includes the use of railroad personnel for track safety, approval of reconstruction design drawings, track shutdowns and reductions in train service for bridge construction work. The coordinator informs managers of "typical" railroad problems and attempts to avoid them through proactive measures.

NYCDOT bridge designers make every effort to prepare accurate and complete contract documents. Unfortunately, in many instances, the original design drawings for the deteriorating bridges no longer exist, and previous records of modifications and repairs are not available. When the contract documents for the bridge reconstruction projects do not accurately address conditions found in the field, Contract Change Requests (CCR) are needed. Change order work can not proceed until the CCR is registered. Due to the nature of bridge construction projects, change order work is often on the critical path. Any delay in the issuance of a change order affects the overall project, and adds substantial overruns to the final cost. A tracking process for change orders has been implemented that significantly reduces the time for the approval process.

The ***Capital Coordination Section*** is responsible for preparing, coordinating and updating the capital budget and capital program initiative within the Division of Bridges. Currently, the Division's Ten Year Capital Plan is worth approximately $5 billion. This plan is designed to rehabilitate the City's bridges. Responsibilities include: administering and participating in the development and implementation of planning capital projects; acting as liaison with oversight agencies, DOT Administration and all responsibility centers within Bridges; coordinating the submission of New and Revised Certificates to Proceed for submission to Capital Budget; reviewing and processing transfer of fund requests in an attempt to resolve funding issues; and maintaining the Division's registration report for all current year capital contracts.

The ***Truck Permit Section*** issues approximately 1,500 Annual Overweight Load Permits (renewals only), 100 Annual Self-Propelled Crane Permits, and in excess of 35,000 Daily Oversize/Overdimensional/Supersize Truck Permits annually; all in accordance with the New York City Department of Transportation Policy and Procedures and the New York City Traffic Rules and Regulations section 4-15.

In 2009, the traffic rules were amended to increase the fees collected for overweight and overdimensional truck permits. The fees previously charged by the Department no longer accurately reflects administrative and labor costs incurred in processing these permits. The new fees for the overdimensional permits are already in effect.

The traffic rules were amended to authorize the issuance of permits for overdimensional and/or overweight combinations of vehicles utilized by haulers of bulk milk. On a daily basis, over one hundred vehicles hauling bulk milk enter the City of New York to transport bulk milk to processing facilities and exit the City empty or carrying bulk cream. The vast majority of these vehicles currently exceed the length and weight limitations set forth in section 4-15 for vehicles operating or moving on highways or bridges in the City. These overdimensional and overweight trucks damage City streets and highways. At the same time, milk haulers will require additional time to convert their fleets to trucks that comply with the City's length and weight requirements. Section 385(15)(d) of the Vehicle and Traffic Law recognizes that milk haulers may be offered permits not available to other truck haulers. Thus, the Commissioner promulgated a rule that will provide the

haulers of bulk milk an incentive to phase in, over a six-year period, the use of smaller trucks that, when carrying bulk milk or cream, would meet the City's length and weight limitations. To accomplish this goal, the rule authorizes the issuance of quarterly overdimensional and overweight permits over a period of six years and imposes a schedule of fees that increase if the applicant does not decrease the number of permits required by a certain percentage. The increases will be implemented beginning with those permits issued during the third year of the rule if the number of permits issued during the prior year has not decreased by a fixed percentage from the first year that the proposed rule is in effect. After the sixth year, no permits will be issued.

The traffic rules were amended to increase the legal weight limit for trucks in order to comply with statewide standards. Engineers within the Department currently use the same formula as those from the New York State Department of Transportation when evaluating the permissible weight of vehicles crossing structures in New York City. As State DOT permits weight of up to 80,000 pounds, the Department wants its rules to be accordingly consistent in order to minimize disruptions in interstate commerce.

In February 2009, a Permit Was Issued for the Move of the Beam Plug of a High Flux Beam Reactor From Brookhaven National Laboratory. The Plug Was Loaded Into a Steel-Supported, Lead Lined Shipping Cask. Although the Metal is Radioactive, the Radiation Cannot be Dispersed. The Driver Was Federally Certified, Accompanied by Armed Escorts, and Only Traveled at Night.

JANUARY

Anti-Icing

Anti-icing crews were deployed on the East River bridges from 7:00 AM to 5:00 PM on January 2, 2009, and again from 1:00 PM on January 6, 2009 until 4:00 AM the following day. No applications of chemicals were necessary. Icicle patrols monitored the FDR Drive, the Brooklyn Queens and Cross Bronx Expressways, and the Battery Park Underpass.

Icicle Removal From an FDR Drive Bridge.

Anti-Icing

On January 10, 2009, 1 inch of snow fell in Central Park, 1.4 inches at La Guardia, and .6 inch at JFK. On January 15, 2009, 1 inch of snow fell in Central Park, 1.3 inches at La Guardia Airport, and .9 inch at JFK Airport. Anti-icing crews were deployed on the East River bridges from 6:00 AM on January 10, 2009 until 8:00 AM the following morning; 20 applications of chemicals were made. They were again deployed on the night of January 13, 2009, making no applications, and on January 14 and 15, 2009, making 14 applications. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Gennaro Montello Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on January 10, 2009, in tribute to Gennaro Montello of the Department of Environmental Protection. Mr. Montello, 45, a seven year veteran of the Department, died in the line of duty on January 9 while working in the Owls Head Waste Water Treatment plant in Bay Ridge, Brooklyn. The flags were raised on January 14, 2009.

Anti-Icing

On January 18, 2009, 2.2 inches of snow fell in Central Park, 2.5 inches at La Guardia Airport, and 1.8 inches at JFK Airport. On January 19, 2009, 1.8 inches of snow fell in Central Park, and .8 inch at JFK Airport. Anti-icing crews were deployed on the East River bridges from 5:30 AM on January 18, 2009 until 4:00 AM the following morning; 16 applications of chemicals were made. They were again from noon to 10:00 PM on January 19, 2009; making no applications. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Antonio Pagán Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on January 27, 2009, in tribute to Antonio Pagán, former Councilmember and later Commissioner of the NYC Department of Employment, who died on January 25, 2009. Mr. Pagán, 50, became one of the two first openly gay men elected to the Council in 1991. He headed the Latino Coalition within the Council. Mr. Pagán served as Commissioner under Mayor Rudolph W. Giuliani from January 1998 until 2002; when the Department of Employment was merged into

what is now the Department of Small Business Services under a City reorganization. The flags were raised on January 29, 2009.

Anti-Icing
On January 28, 2009, 3 inches of snow fell in Central Park, 2.9 inches at La Guardia Airport, and 2.3 inchers at JFK Airport. Anti-icing crews were deployed on the East River bridges from 9:00 PM on January 25, 2009 until 4:00 AM the following morning. No applications of chemicals were necessary. They were again deployed from 10:00 PM on January 27, 2009 until 10:30 the following morning; 13 applications were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Department of Transportation Harper Street Maintenance and Repair Shop (Queens)
Cleaning and painting of this structure began and was completed in January 2009.

Department of Transportation Ironworker Shop at 59th Street (Manhattan)
Cleaning and painting of this structure began and was completed in January 2009.

Grand Concourse Bridge over East 204th Street (Bronx)
Cleaning and painting of the bridge, which began in August 2008, was completed in January 2009.

Metropolitan Avenue Bridge over English Kills (Brooklyn)
Cleaning and painting of the bridge operator's house began and was completed in January 2009.

FEBRUARY

Anti-Icing
On February 3, 2009, 4.3 inches of snow fell in Central Park, 2.5 inches at La Guardia Airport, and 1.3 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 3:30 PM until 9:00 PM on January 30, 2009. No applications of chemicals were necessary. They were again deployed from 10:00 PM on February 2, 2009 until 4:00 AM the following morning; 11 applications were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Councilmember Samuel Horowitz Tribute
The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on February 18, 2009, in tribute to former Councilmember Samuel Horowitz, who died on February 16. Mr. Horowitz, 90, was a Brooklyn councilmember for 20 years, representing Coney Island, Brighton Beach, and Sheepshead Bay. He sponsored the first bill requiring that new and repaired sidewalks have curb cuts.

Anti-Icing
Anti-icing crews were deployed on the East River bridges from 11:00 PM on February 21, 2009 until 9:00 AM the following morning. No applications of chemicals were necessary. Icicle patrols monitored the FDR Drive and the Cross Bronx and Brooklyn-Queens Expressways.

Hamilton Avenue Asphalt Plant (Brooklyn)
On February 27 and 28, 2009, Division ironworkers repaired the plant's chutes, bin, and drum.

Department of Transportation Bridge Preventive Maintenance Facilities at Pulaski Yard (Brooklyn)

Cleaning and painting of these structures, which began in January 2009, was completed in February 2009.

Department of Transportation South 6th Street Shop (Brooklyn)

Cleaning and painting of this structure, which began in January 2009, was completed in February 2009.

Belt Parkway Bridge over Mill Basin (Brooklyn)

Cleaning and painting of the bridge operator's house began and was completed in February 2009.

MARCH

Award

In March 2009, the American Council of Engineering Companies of New York selected the reconstruction of the Grand Concourse over East 161st Street and Grand Concourse – East 161st -East 166th Streets for the Diamond Award in the transportation engineering category in its 2009 Engineering Excellence Awards. Founded in 1921, ACEC New York is the oldest continuing organization of professional consulting engineering firms in the United States. The Engineering Excellence Awards Program recognizes engineering achievements that demonstrate the highest degree of skill and ingenuity. This project was substantially completed in November 2008.

Grand Concourse Boulevard Between East 161st and East 166th Streets in 2005 and 2008.

Lou Gehrig Plaza Before and After Reconstruction.

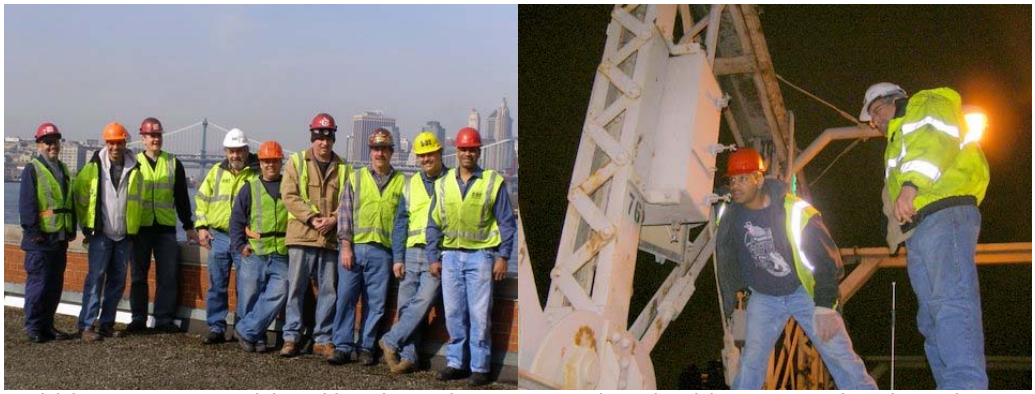
Anti-Icing
On March 1, 2009, 1.4 inches of snow fell at La Guardia Airport, and 1.8 inches at JFK Airport. On March 2, 2009, 6.5 inches of snow fell in Central Park, 5.2 inches at La Guardia Airport, and 5.1 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 8:00 PM on February 28, 2009 until 4:00 AM on March 3, 2009; 26 applications of chemicals were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive and the Cross Bronx and Brooklyn-Queens Expressways.

Hamilton Avenue Asphalt Plant (Brooklyn)
On March 7, 2009, Division ironworkers repaired the plant's chutes, ducts, and drum.

Brooklyn Bridge
On March 18, 2009, Executive Director of Inspections and Bridge Management Dr. Bojidar Yanev escorted a contingent of civil engineering students from Avans University in the Netherlands on a tour of the Brooklyn Bridge. The group and their professors learned about the original construction of the bridge, as well as the subsequent bridge retrofits, rehabilitation and ongoing maintenance projects.

Hamilton Avenue Asphalt Plant (Brooklyn)
On March 28 2009, Division ironworkers repaired the plant's chutes, bins, and end scoop.

Brooklyn, Manhattan, Queensboro and Williamsburg Bridges
The necklace lights on the Brooklyn, Manhattan, Williamsburg, and Queensboro Bridges were turned off at 8:30 PM on March 28, 2009 as part of the worldwide observance of Earth Hour. This event, organized by the World Wildlife Fund, took place from 8:30 PM to 9:30 PM, and participating venues included Rockefeller Center, 7 World Trade Center, the United Nations headquarters building, the New York Public Library, the Time Warner Center, and the Empire State Building, among others. Over 1,000 cities around the world committed to participate this year, up from 370 last year. The event began in Fiji and then rolled around the globe by time zone throughout the day. Cities participating included Cape Town, Chicago, Copenhagen, Dubai, Hong Kong, Istanbul, Las Vegas, Lisbon, London, Los Angeles, Manila, Mexico City, Moscow, Nashville, Oslo, Rome, San Francisco, Singapore, Sydney, Toronto, and Warsaw. Earth Hour raises awareness about climate change and the threat from rising greenhouse gas emissions.



Division Crews Prepared the Bridges for Earth Hour: Supervisor Electricians Raymond Hanley and Jose Done, Electrician Eugene Kolesnyk, ERB Supervisor Electrician Ben Cipriano, Electrician Richard Parisi, Carpenter Joseph Moschella, and Electricians Jerry Salzman, Thomas Cipriano, and Paul A. Betts. (Credit: Thomas Whitehouse) Electrician Paul Betts and Supervisor Electrician Ben Cipriano on the Brooklyn Bridge Preparing for Earth Hour. (Credit: Hany Soliman)

Astoria Boulevard South over BQE West Leg and 49th Street (Queens)
At about 7:35 PM on March 29, 2009, the Communications Center reported that the bridge rail had been damaged in a motor vehicle accident. The responding engineer found approximately 45 feet of damaged rail. Crews removed the debris and damaged rail and made the area safe

with Jersey barriers. Division ironworkers later installed new posts and rail.

Greenpoint Avenue Bridge over Newton Creek (Brooklyn/Queens)

On March 30, 2009, with the backdrop of the Greenpoint Avenue Bridge, Mayor Michael R. Bloomberg announced the City's selections for infrastructure projects that will benefit from federal transportation funding from the American Recovery and Reinvestment Act.

Six projects will receive direct stimulus funding: the rehabilitation of the Saint George Ferry Terminal Ramps, the Brooklyn Bridge Ramps, upgrades to the Ward's Island Pedestrian Bridge, the rehabilitation of twelve roadway bridges, the painting of two Bruckner Expressway Bridges, and the component rehabilitation of the Greenpoint Avenue Bridge over Newtown Creek.

In addition, four projects will receive displaced funding: the reconstruction of the Claremont Parkway and East 8th Street Access Ramp Bridges, and the repainting of six Belt Parkway/Shore Parkway and 11 bridges running over the Staten Island Railway line.

Commissioner Janette Sadik-Khan, Deputy Mayor Edward Skyler, Mayor Michael R. Bloomberg, and State Assembly Member David Weprin at the announcement. (Credit: Edward Reed)

Queensboro Bridge

March 30, 2009 marked the 100th anniversary of the opening of the bridge.

Department of Environmental Protection Plant at North River (Manhattan)

Cleaning and painting of this structure, which began in January 2009, was completed in March 2009.

Department of Transportation Facilities at Brookville Yard (Queens)

Cleaning and painting of these structures, which began in February 2009, was completed in March 2009.

Department of Transportation Facilities at 390 Kent Avenue (Brooklyn)

Cleaning and painting of these structures began and was completed in March 2009.

Department of Transportation Facilities at Kew Loop Yard (Queens)

Cleaning and painting of these structures began and was completed in March 2009.

Paul Schwartz

Interim Director of Bridge Preventive Maintenance Paul Schwartz was the subject of the "Staff Spotlight" feature in the March 2009 edition of "Byways," the official Agency newsletter.

Interim Director of Bridge Preventive Maintenance Paul Schwartz at the Gracie Mansion Reception on May 15, 2007 in Honor of the 30th Anniversary of the Five Borough Bike Tour. (Credit: Peter Basich)

APRIL

Award

In April 2009, the Design-Build Institute of America selected the Agency for an "Owner of the Year Award" for Design-Build Excellence in Transportation. The award recognizes an owner organization in transportation that has made significant contributions in advancing awareness, understanding, and use of the design-build project delivery method. Significant Design-Build projects include the reconstruction of the Bruckner Expressway over Amtrak and the Staten Island Ferry Terminal ramps.

Hamilton Avenue Asphalt Plant (Brooklyn)

On April 4 2009, Division ironworkers repaired the plant's chutes, bins, and blocks.

Hamilton Avenue Bridge over the Gowanus Canal (Brooklyn)

The reconstruction of this bridge was substantially completed on April 17, 2009.

Eighth Annual "Take Our Children to Work Day"

On April 23, 2009, as part of the Agency's eighth annual "Take Our Children to Work Day," Division personnel explained and illustrated the activities necessary to maintain the Brooklyn Bridge and to operate the Union and Carroll Street Bridges. This year's theme was "Building Partnerships to Educate and Empower" in order to shape the future for a new generation at work.

Deputy Director of In-House Painting Earlene Powell, Chief Bridge Officer Henry Perahia, Deputy Chief Engineer Russell Holcomb, and Interim Director of Bridge Preventive Maintenance Paul Schwartz With the Children. (Credit: Michele N. Vulcan)

Answering Children's Questions on the Brooklyn Bridge: Interim Director of Bridge Preventive Maintenance Paul Schwartz. Director of Bridge Management Kevin McAnulty. Assistant Civil Engineer Clara Medina and Supervisor Bridge Painter Cesar Pazmino. (Credit: Earlene Powell) Deputy Director of In-House Painting Earlene Powell.

Children and Staff on the Brooklyn Bridge. Supervisor Bridge Operator Mohamed Adel Tork Explaining the Machinery at the Carroll Street Bridge. Children and Staff, Including Bridge Operator David Stewart, Supervisor Bridge Operator Edgardo Montanez, Supervisor Bridge Operator Mohamed Adel Tork, and Bridge Operator in Charge William Bizaldi on the Carroll Street Bridge. (Credit: Earlene Powell)

Department of Transportation Parking Garage Under the FDR Drive at Old Slip (Manhattan)

Cleaning and painting of this structure began and was completed in April 2009.

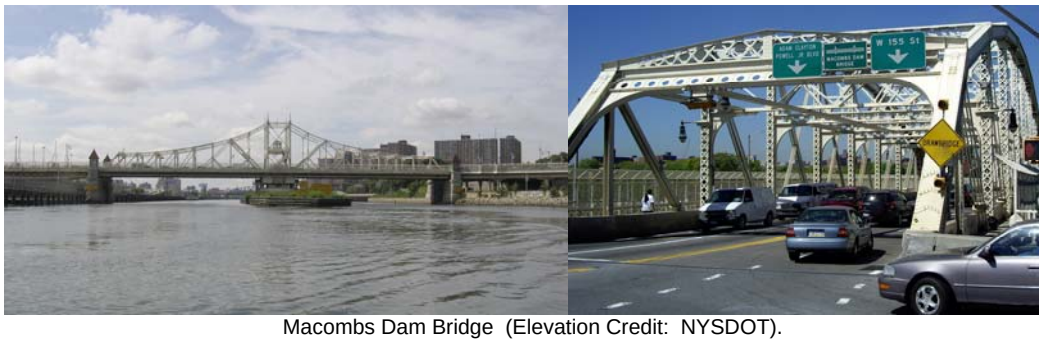
Queensboro Bridge Ramp from 11th Street & Terrain (Queens)

Cleaning and painting of this bridge, which began in December 2008, was completed in April 2009.

MAY

Macombs Dam Bridge over the Harlem River (Bronx/Manhattan)

May 1, 2009 marked the 114th anniversary of the opening of the bridge.



Macombs Dam Bridge (Elevation Credit: NYSDOT).

West 252nd Street Bridge over Henry Hudson Parkway (Bronx)

The reconstruction of this bridge was substantially completed on May 4, 2009.

West 252nd Street Bridge With New Signage.

32nd Annual Five Borough Bike Tour

In preparation for the 42-mile Five Borough Bike Tour on May 3, 2009, Division personnel swept the Queensboro, Pulaski, Third Avenue, and Madison Avenue Bridges. Carpenters installed temporary plywood covers over the finger joints of the Pulaski Bridge, which were removed after the tour concluded that day.

The Five Borough Bike Tour is produced by Bike New York and the New York City Department of Transportation. Bike New York is a non-profit organization that promotes and encourages bicycling and bicycle safety through education, public events, and collaboration with community and government organizations. Best known for the Five Borough Bike Tour, Bike New York also organizes smaller rides and runs a Bicycle Education Program offering free classes and workshops for adults and children.

Brooklyn Bridge

On May 8, 2009, Division staff hosted students and faculty from the University of Calgary's Schulich School of Engineering on a tour of the public areas of the Brooklyn Bridge and a bridge repair facility.

Supervisor Bridge Painter Cesar Pazmino, Deputy Chief Engineer Russell Holcomb, Supervisor Carpenter Joseph Vaccaro, and Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse With the University of Calgary Students on the Brooklyn Bridge in May 2009. Bridge Repairer and Riveters Joseph Antony, Ignazio Trapani, and Yiu Liu With an Engineering Student.

Queensboro Bridge

The south upper roadway was closed on May 31, 2009 from 6:00 AM until 11:00 AM for the Centennial celebration. The Division provided back-up trucks to assist the NYPD in the roadway closure, and swept the roadway prior to and after the event. Division electricians provided power for the special event's needs. On May 31, the Chief Bridge Officer presented a talk at Rockefeller University regarding recent construction on the bridge.

Queensboro Bridge Centennial Celebration: Department of Records and Information Services Commissioner Brian G. Anderson, Mayor Michael R. Bloomberg, Commissioner Janette Sadik-Khan, NYC Bridge Centennial Commission Sam Schwartz, Queens Borough President Helen Marshall, and Manhattan Borough President Scott Stringer. (Credit: Kristen Artz, Office of the Mayor)

Alan Renz (Grandson of the Queensboro Bridge Designer Gustav Lindenthal), Francesca Lindenthal-Gephardt (Daughter of Gustav Lindenthal), Department of Records and Information Services Commissioner Brian G. Andersson, Queens Borough President Helen Marshall, and NYC Bridge Centennial Commission Director of Community Affairs Joshua A. Knoller. NYC Bridge Centennial Commission Sam Schwartz Explaining the Old Toll Rates to Mayor Michael R. Bloomberg and Commissioner Janette Sadik-Khan. Closed Roadway. (Toll and First Roadway Credit: Joshua A. Knoller, Second Roadway Credit: Bernard Ente)

Andrew Hoang

Assistant Civil Engineer Andrew Hoang was the subject of the "Staff Spotlight" feature in the May 2009 edition of "Byways," the official Agency newsletter.

Assistant Civil Engineer Andrew Hoang Inspecting the Brooklyn Bridge in October 2007.
(Credit: Clara Medina)

35th Avenue Bridge over Brooklyn-Queens Expressway (Queens)

Cleaning and painting of the bridge began and was completed in May 2009.

JUNE

11th Avenue Viaduct (West 30th Street to West 33rd Street) over LIRR West Side Yard (Manhattan)

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of June 1, 2009.

Brooklyn Bridge

The project to replace the travelers was substantially completed on June 10, 2009.

32nd Street Bridge over Brooklyn-Queens Expressway (Queens)

Cleaning and painting of the bridge, which began in June 2009, was completed on June 12, 2009.

Cypress Hills Street Bridge over Jackie Robinson Parkway (Queens)

Cleaning and painting of the bridge, which began in June 2009, was completed on June 16, 2009.

Shore Road Bridge over Hutchinson River (Bronx) (a.k.a. Pelham Bay Bridge)

Division representatives participated in the 100th anniversary celebration of this bridge on June 17, 2009. A previous reception was hosted by the former Bronx Borough President Adolfo Carrión in October 2008, but the daytime ceremony had been cancelled because of the weather.

Shore Road Bridge. (Credit: George Kern) Leading the Parade. (Credit: Paul Schwartz)

NYC Records and Information Services Commissioner Brian G. Andersson, Chief Staff Manager Joannene Kidder, Bronx Borough President Ruben Diaz Jr., NYC Bridge Centennial Commission Director of Community Affairs Joshua A. Knoller, and NYC Bridge Centennial Commission Secretary Barry Schneider . Chief Bridge Officer Henry Perahia Riding in Carriage. (Credit: Bernard Ente) Chief Bridge Officer Henry Perahia and Celebrants Wearing Vintage Style Clothing. (Credit: Paul Schwartz)

NYC Bridge Centennial Commission Secretary Barry Schneider and Bronx Borough President Ruben Diaz Jr. (Holding Commemorative Medal). Parks Enforcement Officers and U.S. Armed Services Members. (Credit: Bernard Ente) NYFD Fireboat. (Credit: George Kern)

Hamilton Avenue Asphalt Plant (Brooklyn)

On June 20, 2009, Division ironworkers repaired the plant's crusher drive and main drum.

Bethel Avenue Pedestrian Bridge over SIRT (Staten Island)

Flag repairs of the fascia girders and masonry, which began on May 16, 2009, were completed on June 22, 2009.

Highland Boulevard Bridge (NB) over Vermont Avenue (Brooklyn)

Cleaning and painting of the bridge, which began in June 2009, was completed on June 25, 2009.

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

On June 30, 2009, the Agency's summer interns visited the sign, metal fabrication, and paint shops at the Queensboro Bridge plant, and also toured the Willis Avenue Bridge to learn about movable bridge operations.

Administrative Superintendent of Bridge Operations George Kern (Center) Teaching the 2009 Agency Summer Interns at the Willis Avenue Bridge. The 2009 Interns. Bridge Operators-in-Charge Anthony Smalls and Steven Lopez Preparing to Open the Willis Avenue Bridge. (Credit: Edgardo Montanez)

Bridge Site at Full Opening. Bridge Operator Jonathan Martinez Giving the Clearance Signal. Oiler Andrew Sorrentino Assisting With the Opening of the Endlift Platform. (Credit: Edgardo Montanez)

Oiler Daniel Cantirino Near the Endlift Platform. Bridge Operator Antonio Morales Observing the Opening. Bridge Operations Day Crew Reviewing the Opening. (Credit: Edgardo Martinez)

Atlantic Avenue Service Road EB & WB over East New York Avenue, and Atlantic Avenue Service Road over LIRR Atlantic Avenue (Brooklyn)

Cleaning and painting of these bridges, which began in May 2009, was completed in June 2009.

JULY

Cross Island Parkway Bridge over Dutch Broadway – 115th Avenue (Queens)
Cleaning and painting of the bridge, which began in June 2009, was completed on July 7, 2009.

Grand Avenue Bridge over Long Island Expressway (Queens)
Cleaning and painting of the bridge, which began in October 2008, was completed on July 9, 2009.

Hamilton Place Bridge over Long Island Expressway (Queens)
Cleaning and painting of the bridge, which began in October 2008, was completed on July 9, 2009.

Markwood Place Bridge over Jackie Robinson Parkway (Queens)
Cleaning and painting of the bridge, which began in June 2009, was completed on July 9, 2009.

69th Street Bridge over Long Island Expressway (Queens)
Cleaning and painting of the bridge, which began in October 2008, was completed on July 9, 2009.

East 174th Street Bridge over Sheridan Expressway and Amtrak (Bronx)
Cleaning and painting of the bridge, which began in April 2008, was completed on July 10, 2009.

Rosemarie C. O'Keefe Tribute
The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on July 17, 2009, in tribute to former Mayor's Community Assistance Unit Commissioner Rosemarie C. O'Keefe, who died on July 17. Ms. O'Keefe, 65, began her career in public service as a constituent representative under State Senator Christopher Mega and Congresswoman Susan Molinari, and continued as Assistant Deputy Commissioner for the Department of Parks and Recreation in 1994. Within one year, she became the Deputy Commissioner for Recreation. Mayor Giuliani appointed her as the first Commissioner of the City's Community Assistance Unit in 1996. She created the 9/11 Family Assistance Center, a place where victims' family members could find information and support. The flags were raised on July 21, 2009.

Brooklyn Bridge
On July 24, 2009, Division personnel hosted a Boy Scout Troops #9 and #104 from the New Jersey Shore Council on a tour of the bridge.

Chief Staff Manager Joannene Kidder Instructing the Boy Scouts. (Credit: Joseph Flood) Boy Scouts on the Brooklyn Bridge With Supervisor Highway Repairer Joseph Flood, Assistant Civil Engineer Hany Soliman, Civil Engineer Sunil Desai, Deputy Chief Engineer Russell Holcomb, and Supervisor Bridge Painter Cesar Pazmino. (Credit: Joannene Kidder)

Eight Ramps and One Pedestrian Bridge at the St. George Staten Island Ferry Terminal (Staten Island)
A Notice to Proceed for the reconstruction of these structures was issued to the contractor with a start date of July 27, 2009.

Brooklyn and Manhattan Bridges
On July 28, 2009, the Division began a project to install access control improvements at the entrances of the Manhattan Bridge bikeway and walkway and the Brooklyn Bridge Promenade. These measures will prevent unauthorized vehicle access to the Manhattan and Brooklyn Bridges while enhancing both the security of the bridges and the safety for pedestrian and cyclist crossings. The work is expected to be completed in early 2010.

Hempstead Avenue Bridges over Cross Island Parkway (Queens)
Cleaning and painting of the bridges, which began in July 2009, was completed on July 30, 2009.

Pennsylvania Avenue Bridge over Belt Parkway (Brooklyn)
Cleaning and painting of the bridge, which began in July 2009, was completed on July 30, 2009.

Highland Boulevard Bridge (Westbound) over Jackie Robinson Parkway (Brooklyn)
Cleaning and painting of the bridge, which began in June 2009, was completed in July 2009.

AUGUST

Brooklyn-Queens Expressway West Leg over Grand Central Parkway (Queens)
Cleaning and painting of this bridge, which began in April 2009, was completed on August 7, 2009.

Hamilton Avenue Asphalt Plant (Brooklyn)
On August 10, 2009, Division ironworkers repaired the plant's drum, crusher, and rap bin. On August 15 and 22, 2009, they made additional repairs to the main drum.

East 8th Street Access Ramp (Guider Avenue Ramp to Belt Parkway) over Belt Parkway (Brooklyn)
A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of August 10, 2009.

Firefighter Paul Warhola Tribute
The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on August 14, 2009, in tribute to Firefighter Paul Warhola of Engine Company 221 in Brooklyn. He suffered a stroke while answering a fire call in the Williamsburg section of Brooklyn on August 12, and died on August 14. Firefighter Warhola, 47, was a 15-year veteran of the FDNY. He was appointed to the FDNY on January 16, 1994, and spent his entire career working at Engine 221. Firefighter Warhola was the 1,141st member of the New York City Fire Department to make the supreme sacrifice in the Department's 145-year history. The flags remained at half-mast until August 20, 2009.


Firefighter Paul Warhola

Cross Island Parkway over Fort Totten Entrance (Queens)
Cleaning and painting of the bridge, which began in August 2009, was completed on August 24, 2009.

47th Street Bridge over Grand Central Parkway (Queens)
Cleaning and painting of the bridge, which began in April 2009, was completed on August 31, 2009.

SEPTEMBER

Award
In September 2009, the National Steel Bridge Alliance selected the Hamilton Avenue Bridge over the Gowanus Canal project as the winner in the movable span category in its 80th awards competition. The Steel Prize Bridge Awards honor significant and innovative steel bridges constructed within the United States and Canada. Projects are judged on cost effectiveness, initial cost, life-cycle cost, innovation, aesthetics, and design.

Boston Post Road Bridge over Hutchinson River (Bronx)
Cleaning and painting of the bridge, which began in April 2009, was completed on September 4, 2009.

Jackie Robinson Parkway and Union Turnpike over Austin Street (Queens)
Cleaning and painting of the bridge, which began in August 2009, was completed on September 4, 2009.

Queensboro Bridge
The Agency's Urban Art Program enhances public space through art and improved street design and streetscapes. Launched in October 2008, the program brings the vision of the Agency's World Class Streets initiative to life by partnering with community organizations to install murals, sculptures and other art forms in plazas and on medians, triangles, sidewalks, jersey barriers and construction fences for up to 11 months on NYCDOT properties.
The final installation of "Urban Garden," a sculptural piece by Pasqualina Azzarello in partnership with Recycle-A-Bicycle, was completed on September 9, 2009. The artwork, made from recycles bicycle parts, is located under the Queensboro Bridge near an existing fence at Vernon Boulevard.

"Urban Garden." (Credit: Emily Colasacco)

Patriot Day Tribute

The Brooklyn Bridge flags flew at half-mast on September 11, 2009 to commemorate National Day of Service and Remembrance.

Brooklyn Bridge Flag at Half-Mast at Dusk.
(Flag Credit: Michele N. Vulcan)

Beverly Road Bridge over NYCT (Brooklyn)

Flag repairs of the north girders, which began on September 5, 2009, were completed by Division ironworkers on September 19, 2009.

Hamilton Avenue Asphalt Plant (Brooklyn)

On September 19, 2009, Division ironworkers repaired the plant's main drum and chute. On September 26, 2009, they made additional repairs of the main drum. On September 28, 2009, they responded to an emergency call to repair a broken ring on the discharge chute.

Northern Boulevard Bridge over Alley Creek (Queens)

Cleaning and painting of the bridge, which began in September 2009, was completed on September 23, 2009.

Union Turnpike Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began in September 2009, was completed on September 24, 2009.

Manhattan Bridge

Part of the 13th annual DUMBO Art Under the Bridge Festival, from September 25 to 27, 2009, the artist Sean Capone's "Camera Rosetum" artwork consisted of video computer animation projected onto the roof of the Water Street Arch.

Video Projection in the Water Street Arch.
(Credit: DUMBO NYC)

Clintonville Street Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began in September 2009, was completed on September 29, 2009.

Queens Boulevard Bridge over Jackie Robinson Parkway (Queens)

Cleaning and painting of the bridge, which began in September 2009, was completed on September 29, 2009.

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

In September 2009, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month." The Willis Avenue Bridge spans the Harlem River, and connects Manhattan's First Avenue and 125th Street to Willis Avenue and 132nd Street in the Bronx. The bridge, which is currently undergoing replacement, has been used by productions including the movie *Midnight Cowboy*, and the television show *Rescue Me*, and is showcased each year in the New York City Marathon.

Willis Avenue Bridge. (Credit: Brain Gill)

OCTOBER

Grand Concourse Bridge over East 175th Street (Bronx)

Cleaning and painting of the bridge, which began in September 2009, was completed on October 2, 2009.

Hamilton Avenue Asphalt Plant (Brooklyn)

On October 2, 2009, Division ironworkers assisted with the installation of a motor for the plant's excavator and repaired the drum and silo.

Richard Timmins Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on October 2, 2009, in tribute to Sanitation Worker Richard Timmins, 46, a 5 year veteran of the Department, who died in the line of duty on that day. The flags were raised on October 8, 2009.

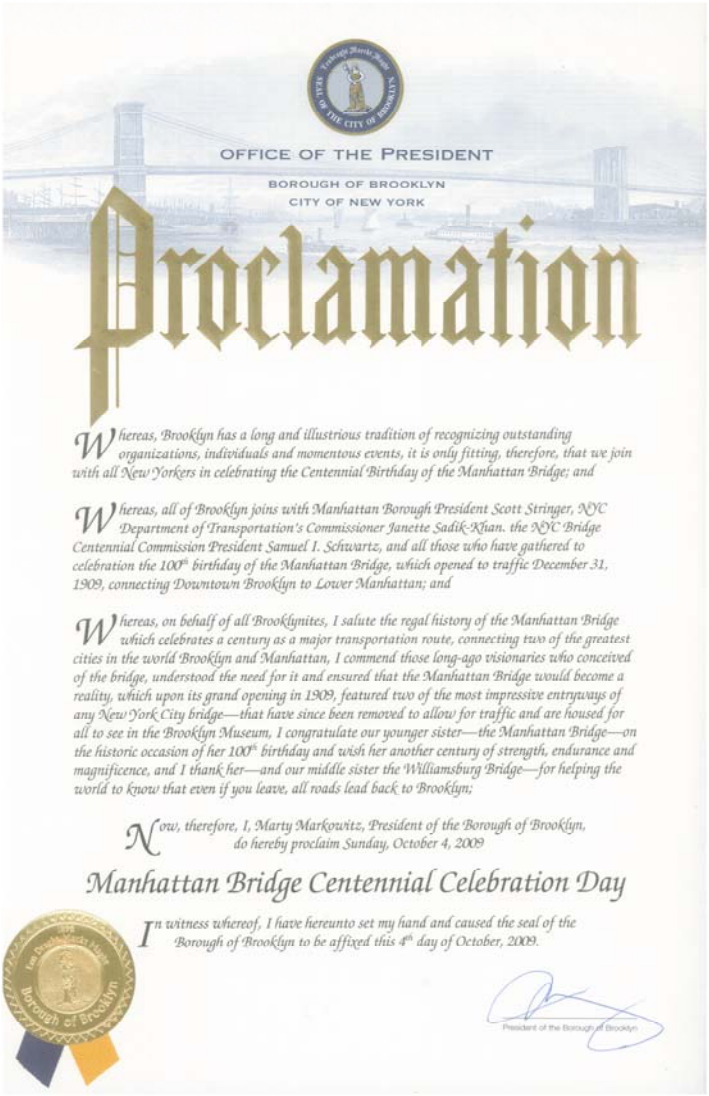
Sanitation Worker Richard Timmins. Brooklyn Bridge Flag at Half-Mast. (Flag Credit: Russell Holcomb)

Manhattan Bridge

In cooperation with the Office of the Mayor, the Offices of the Borough Presidents of Manhattan, Queens, Brooklyn and the Bronx, the Department of Transportation, the Department of Parks and Recreation, the Landmarks Preservation Commission, the Department of Records and Information Services, Hunter College, La Guardia Community College and non-profit groups and private citizens, the aim of the NYC Bridge Centennial Commission is to promote the 100th year anniversary of six historic New York City bridges, to educate the public about the bridges' role in the life of the city, to encourage respect for the history of New York City; to heighten the public's awareness of the City's infrastructure and the need to maintain it; and to stimulate the interest of the public in celebrating the centennial of these six bridges. The six structures are the Borden Avenue, University Heights, Pelham Bay, Queensboro, Manhattan, and Madison Avenue bridges. October 4, 2009 was declared "Manhattan Bridge Centennial Commission Day."

Bridge Detail. (Credit: Russell Holcomb) Manhattan Plaza, Historic Arch, And Colonnades. Bridge Detail. (Credit: Jagtar Khinda)

On October 4, 2009, the Brooklyn-bound upper roadway was closed from 6:00 AM to 12 PM for ceremonies to commemorate the Centennial. Commissioner Sadik-Khan, the Manhattan and Brooklyn Borough Presidents, representatives of the NYC Bridge Centennial Commission and the American Society of Civil Engineers spoke to the crowd about the history of the Bridge, its importance to the City's transportation system, and the Bridge's utility to the people of Manhattan and Brooklyn. On October 6, 2009, the Chief Bridge Officer made a presentation on the design and construction of this bridge at a lecture sponsored by the Bridge Centennial Commission.



OFFICE OF THE PRESIDENT

BOROUGH OF BROOKLYN

CITY OF NEW YORK

Proclamation

Whereas, Brooklyn has a long and illustrious tradition of recognizing outstanding organizations, individuals and momentous events, it is only fitting, therefore, that we join with all New Yorkers in celebrating the Centennial Birthday of the Manhattan Bridge; and

Whereas, all of Brooklyn joins with Manhattan Borough President Scott Stringer, NYC Department of Transportation's Commissioner Janette Sadik-Khan. the NYC Bridge Centennial Commission President Samuel I. Schwartz, and all those who have gathered to celebration the 100th birthday of the Manhattan Bridge, which opened to traffic December 31, 1909, connecting Downtown Brooklyn to Lower Manhattan; and

Whereas, on behalf of all Brooklynites, I salute the regal history of the Manhattan Bridge which celebrates a century as a major transportation route, connecting two of the greatest cities in the world Brooklyn and Manhattan, I commend those long-ago visionaries who conceived of the bridge, understood the need for it and ensured that the Manhattan Bridge would become a reality, which upon its grand opening in 1909, featured two of the most impressive entryways of any New York City bridge—that have since been removed to allow for traffic and are housed for all to see in the Brooklyn Museum, I congratulate our younger sister—the Manhattan Bridge—on the historic occasion of her 100th birthday and wish her another century of strength, endurance and magnificence, and I thank her—and our middle sister the Williamsburg Bridge—for helping the world to know that even if you leave, all roads lead back to Brooklyn;

Now, therefore, I, Marty Markowitz, President of the Borough of Brooklyn, do hereby proclaim Sunday, October 4, 2009

Manhattan Bridge Centennial Celebration Day

In witness whereof, I have hereunto set my hand and caused the seal of the Borough of Brooklyn to be affixed this 4th day of October, 2009.

Borough of Brooklyn

President of the Borough of Brooklyn

Manhattan Bridge Proclamation by the Brooklyn Borough President.

NYC Bridge Centennial Commission Sam Schwartz, Brooklyn Borough President Marty Markowitz, Commissioner Janette Sadik-Khan, and Manhattan Borough President Scott M. Stringer. Robert Olmsted Holding a Copy of the National Historic Civil Engineering Landmark Plaque. NYFD Fireboat. (Credit: Jagtar Khinda)

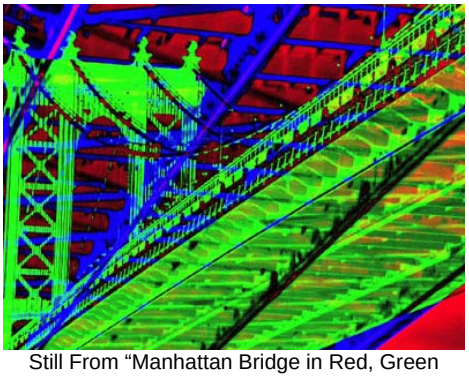
Interim Director of Bridge Preventive Maintenance Paul Schwartz and Manhattan Bridge Engineer-In-Charge Brian Gill. (Credit: Jagtar Khinda) Civil Engineer Jagtar Khinda. (Credit: Brian Gill) The Old Toll Rates. (Credit: Jagtar Khinda)

Parade Across the Bridge. (Credit: Brian Gill) Vintage Cars. (Credit: Jagtar Khinda) Crimson Kings Marching Band. (Credit: Bernard Ente)

U.S. Merchant Marine Academy Fanfare Trumpeters. (Credit: Brian Gill) Manhattan Bridge Engineer-In-Charge Brian Gill and NYC Bridge Centennial Commission Sam Schwartz. (Credit: Jagtar Khinda) Commissioner Janette Sadik-Khan, and Manhattan Borough President Scott M. Stringer. (Credit: Brian Gill)

National Historic Civil Engineering Landmark Plaque on the Bridge. Murray Bergtraum High School Athletic Field Seen Through the Columns of the Manhattan Bridge. Manhattan Bridge Walkway. (Credit: Russell Holcomb) Fireworks Show. (Credit: Brian Gill)

On October 7, 2009, "Bright Nights," a series of digital artwork, was projected on the Manhattan Bridge Anchorage (Adams & Front Street side) in DUMBO, Brooklyn, from 7:00 PM until 10:00 PM. The program was chosen to coincide with the 100th birthday of the bridge and the 10th annual Walk21 conference. Four Brooklyn-based artists created new works that interpret the unique physical, spatial, and historical components of the bridge. The artists were chosen for their ability to energize a public space, in celebration of the major thoroughfare's 100th birthday. Participating artists were Burak Arikan, Motomichi Nakamura, Marius Watz, and Lee Wells. Images by the artist Patrick Singh were projected on the bridge's buttress wall (along Pearl, Water and Front Streets) on the evening of October 24, 2009.



Still From "Manhattan Bridge in Red, Green and Blue" for the Bright Nights Projection (Credit: Lee Wells)

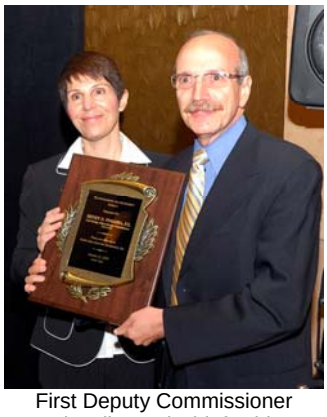
Grand Concourse Bridge over Burnside Avenue (Bronx)

Cleaning and painting of the bridge, which began in October 2009, was completed on October 20, 2009.

Award

On October 21, 2009, Chief Bridge Officer Henry Perahia received an Outstanding Achievement Award from the South Asian American Association.

Deputy Chief Engineer Jay Patel, Mrs. Perahia, Chief Bridge Officer Henry Perahia. Administrative Engineer Udayakumar Dommaraju, Deputy Chief Engineer Kamal Kishore. (Credit: Bernard James)



First Deputy Commissioner Lori Ardito and Chief Bridge Officer Henry Perahia. (Credit: Bernard James)

Eastern Parkway Bridge over Franklin Shuttle (Brooklyn)

The project to reinforce the I-beams, replace deteriorated timber planks, and repoint the joints between bricks with mortar in the vicinity of the utility supports was completed by Division ironworkers, carpenters, masons, and bricklayers on the night of October 22, 2009.

Cement Masons Frank Finizio and Paul Maguire. Bricklayer Vincent Scuilla and Cement Mason Frank Finizio. (Credit: Mohammad Siddiqui)

Belt Parkway Bridges over Paerdegat Basin, Fresh Creek, and Rockaway Parkway (Brooklyn)

A Notice to Proceed for the reconstruction of these bridges was issued to the contractor with a start date of October 26, 2009.

Division Years of Service Ceremony

Division personnel were honored on October 27, 2009 for their years of service to the City. Executive Director of Management and Support Services Dorothy Roses led the ceremony.

35 Years of Service
Associate Staff Analyst Norine Enrione, and First Deputy Chief Engineer Russell Holcomb.

30 Years of Service
Associate Staff Analyst Barbara Pedersen.

25 Years of Service
Bridge Operator In Charge Tony Allen, Associate Staff Analyst Victoria Bailey, Bridge Operator In Charge William Bizaldi, Electrician Thomas Cipriano, Carpenter Thomas Gilmore, Supervisor Highway Repairer Anthony Gnerre, Bridge Operator Theodore Hardwick, Area Supervisor Highway Maintenance Howard Lesser, Supervisor Highway Repairer Salvatore Mazzatenda, Oiler Thomas McAuliffe, Chief Bridge Officer Henry Perahia, Construction Project Manager Victor Sandoval, and Administrative Staff Analyst Michael Tohl.

At the Ceremony: Electrician Thomas Cipriano, Construction Project Manager Victor Sandoval, Administrative Staff Analyst Michael Tohl, Bridge Operator In Charge William Bizaldi, First Deputy Chief Engineer Russell Holcomb, Associate Staff Analyst Norine Enrione, Chief Bridge Officer Henry Perahia, Associate Staff Analyst Barbara Pedersen, Supervisor Highway Repairer Salvatore Mazzatenda, Oiler Thomas McAuliffe, and Bridge Operator Theodore Hardwick. (Credit: Michele Vulcan)

Unable to Attend the Ceremony: Bridge Operator In Charge Tony Allen, Associate Staff Analyst Victoria Bailey, Carpenter Thomas Gilmore, Supervisor Highway Repairer Anthony Gnerre, and Area Supervisor Highway Maintenance Howard Lesser.

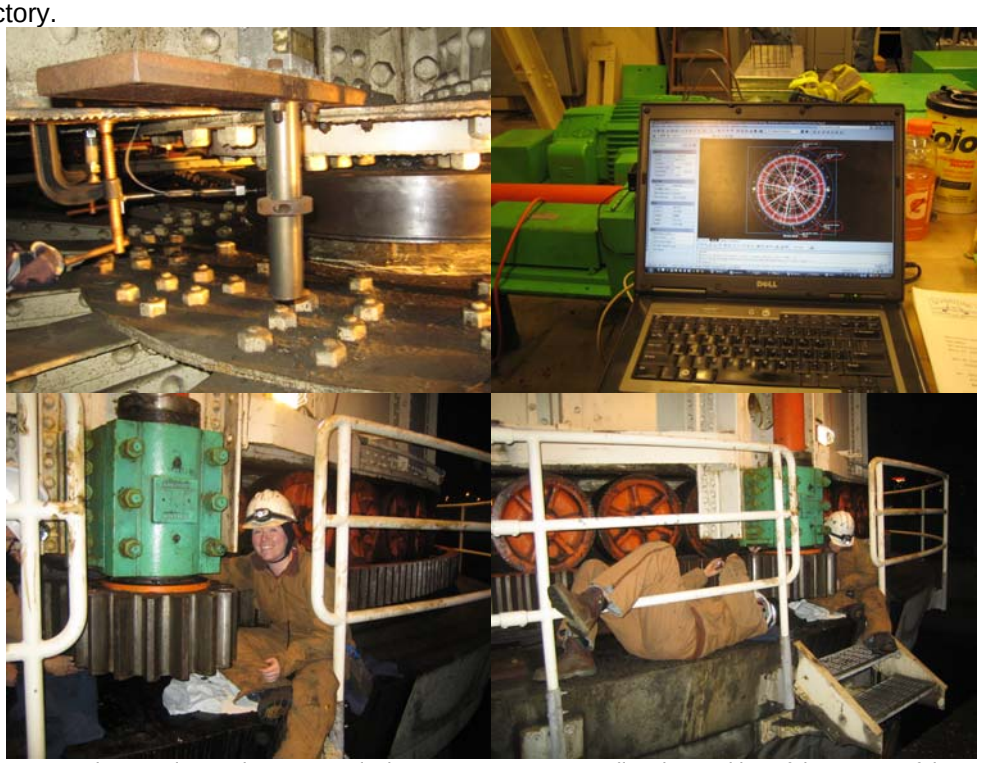
11th Avenue Viaduct (West 30th Street to West 33rd Street) over LIRR West Side Yard (Manhattan)

Installation of the railroad horizontal and vertical protective shields, which began on September 23, 2009, was completed on October 27, 2009.

Installed Railroad Protective Shields.

Macombs Dam Bridge over the Harlem River (Bronx/Manhattan)

The concentricity testing of the bridge by the contractor took place on the nights of October 31 and November 1, 2009, requiring closure of the bridge from 1:00 AM until 6:00 AM. Division engineers, oilers, and electricians were on stand-by and received training. All tests were satisfactory.


Macombs Dam in October 2009. Displacement Sensor Recording the Position of the Center of the Bridge During a Bridge Opening. Sensor Recording Program. Measuring Tooth Backlash for the Concentricity Test. (Credit: Vera Ovetskaya)

Borden Avenue Bridge over Dutch Kills (Queens)

In October 2009, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month." The Borden Avenue Bridge is located just south of the Long Island Expressway between 27th Street and Review Avenue in the Sunnyside section of Queens. The bridge is currently undergoing emergency reconstruction.

44th Street Bridge over Grand Central Parkway (Queens)

Cleaning and painting of the bridge, which began in July 2009, was completed on October 30, 2009.

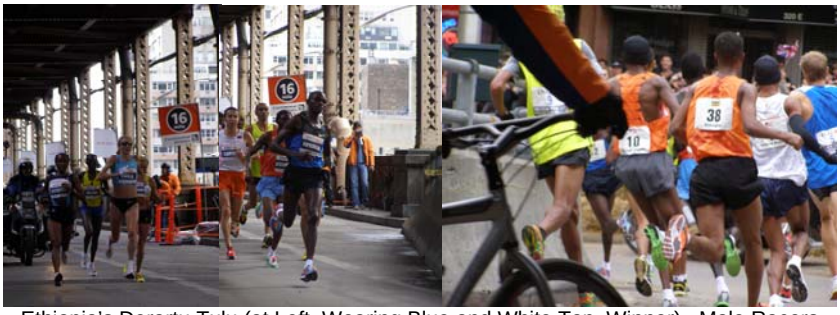
South Conduit Boulevard Bridge over Belt Parkway (Queens)
Cleaning and painting of the bridge, which began in October 2008, was completed in October 2009.

NOVEMBER

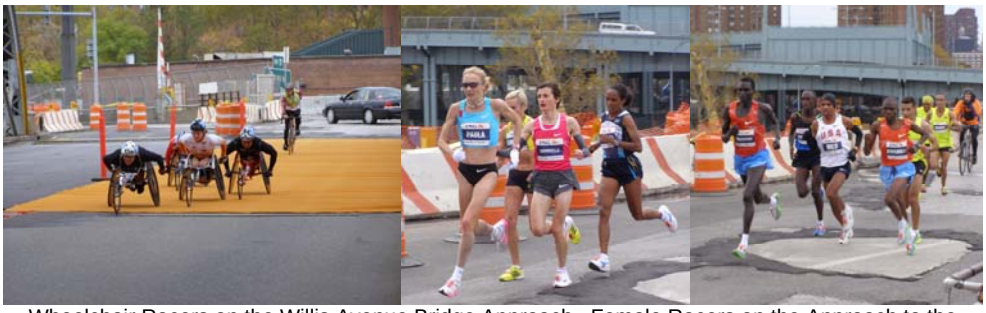
New York City Marathon
In preparation for the Marathon on November 1, 2009, Division personnel inspected and cleaned the Queensboro, Pulaski, and Madison Avenue Bridges, and re-configured the Jersey barriers and placed hay bales at the ramps to the lower level of the Queensboro Bridge. The bridge reconstruction contractor prepared the Willis Avenue Bridge for the event. Painting crews continued graffiti patrols through the morning of the race. An ironworker crew was on standby to install plates if needed. Standard traffic configurations were restored by 4:00 PM on Sunday.

Placing Hay Bales at the Ramps to the Lower level of the Queensboro Bridge: Highway Repairers Louie Dumeng and Darryl Anderson. The Queensboro Bridge Preparation Crew: Assistant City Highway Repairer Joseph Brucculeri and Highway Repairer Joseph Cappello (sitting); Highway Repairers Sharon Britt and Darryl Anderson, Interim Director of Bridge Preventive Maintenance Paul Schwartz, Area Supervisor Highway Maintenance James Campbell, Assistant City Highway Repairer Peter Valentino, Highway Repairer Louie Dumeng, and Supervisor Highway Repairer Michael Parise. (Credit: Joseph Flood)

Australia's Kurt Fearnley, Winner of the Men's Wheelchair Division. Male and Female Wheelchair Racers at Mile 16, On the 59th Street Ramp of the Queensboro Bridge. Female Racers on the Queensboro Bridge: Kenya's Salina Kosgei (Wearing Blue Shorts, 5th Place), Great Britain's Paula Radcliffe (4th Place), Russia's Ludmila Petrova (2nd Place), and France's Christelle Daunay (3rd Place). (Credit: Paul Schwartz)



Ethiopia's Derartu Tulu (at Left, Wearing Blue and White Top, Winner). Male Racers on the Queensboro Bridge: United States' Jorge Torres (Wearing Orange Shorts, 7th Place), and Kenya's Robert Kipkoech Cheruiyot (Wearing Blue Top, 2nd Place). United States' Meb Keflezighi (Wearing White Top, Winner), and Ryan Hall (Wearing Bib #5, 4th Place). (Credit: Paul Schwartz)



Wheelchair Racers on the Willis Avenue Bridge Approach. Female Racers on the Approach to the Willis Avenue Bridge from First Avenue: Great Britain's Paula Radcliffe (4th Place), Russia's Ludmila Petrova (2nd Place), France's Christelle Daunay (3rd Place), and Ethiopia's Derartu Tulu (Winner). Male Racers on the Approach to the Willis Avenue Bridge from First Avenue: Kenya's Robert Kipkoech Cheruiyot (2nd Place), United States' Meb Keflezighi (Winner), and Morocco's Jaouad Gharib (2nd from Right, 3rd Place). (Credit: Edgardo Montanez)

Runners Alongside the Construction Site of the New Willis Avenue Bridge. The Carpeted Willis Avenue Bridge. (Credit: Edgardo Montanez)

Queens Boulevard Bridge over Access Road to BQE SB (Queens)

Cleaning and painting of the bridge, which began in October 2009, was completed on November 4, 2009.

Riverdale Avenue Bridge over Henry Hudson Parkway (Bronx)

The component rehabilitation of this bridge was substantially completed on November 5, 2009.

West 246th Street Bridge over Henry Hudson Parkway (Bronx)

The component rehabilitation of this bridge was substantially completed on November 5, 2009.

West 246th Street Bridge in August 2009. Re-pointing the Abutment Walls and Wing Walls in October 2009.

FDR Drive at Brooklyn Bridge (Manhattan)

On November 8, 2009, in response to safety and red flags issued following a vehicular accident, Division ironworkers replaced damaged railing and repaired a fascia girder. The left lane of the ramp from the southbound drive to the bridge was closed from 11:00 AM. to 7:00 PM.

FDR Drive Safety Flag Condition - Before and After. (Credit: Bojidar Yanev)

Miriam Friedlander Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on November 12, 2009, in tribute to former Councilmember Miriam Friedlander, who died on October 4, 2009. Ms. Friedlander, 95, was a Manhattan councilmember for 17 years, representing the East Village and the Lower East Side. She advocated on behalf of gay and lesbian issues, women, tenants, and the homeless.

Brooklyn Queens Expressway East Leg North Bound over 32nd Avenue (Queens)

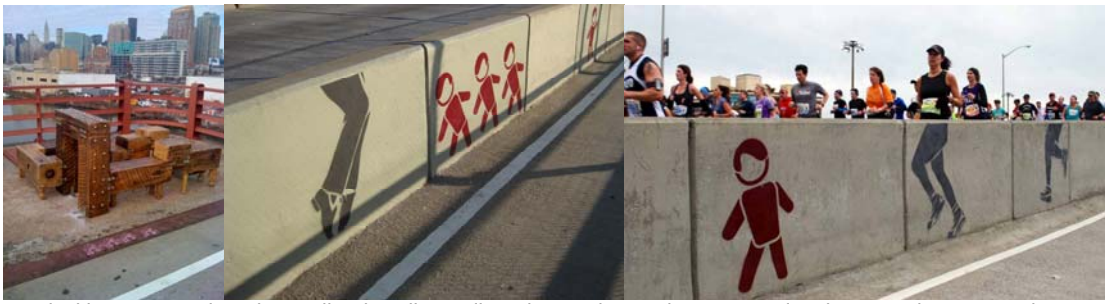
Cleaning and painting of the bridge, which began in October 2009, was completed on November 13, 2009.

Grand Concourse Bridge over East Kingsbridge Road (Bronx)

Cleaning and painting of the bridge, which began in October 2009, was completed on November 13, 2009.

Pulaski Bridge over Newtown Creek (Brooklyn/Queens)

The “Bridge That Binds,” an art installation by Joel Voisard in partnership with Transportation Alternatives, was officially unveiled on the Pulaski Bridge on November 19, 2009. The 11 month installation is part of the Agency’s Urban Art Program. The art consists of a bench sculpture made from reclaimed lumber and stencil graphics. The graphics include a series of silhouettes expressing, gesturing and performing different actions like walking and riding bikes along the pedestrian path to a meeting point at the center of the bridge. Stencils extending from the Queens side are colored in maroon, inspired by the “7” train logo, while those from the Brooklyn side are green in honor of the “G” train.



Pulaski Street Bench and Stencils. (Credit: Emily Colasacco) Marathoners Passing the Artwork on November 1. (Credit: Joel Voisard)

Award

On November 20, 2009, Deputy Chief Engineer Russell Holcomb was presented the Municipal Engineer of the Year award from the Municipal Engineers of the City of New York. Members of the society include professional engineers as well as licensed architects, attorneys and urban planners, all of whom share the common goal of guiding and promoting the development of infrastructure improvements within the New York metropolitan area. Through monthly meetings and lectures, the organization serves as a conduit for these professionals to exchange information and remain up to date with current practice. The organization was founded in 1903. Chief Bridge Officer Henry Perahia presented the award to Mr. Holcomb at the organization's annual dinner-dance.

Deputy Chief Engineer Lawrence King, Deputy Chief Engineer Kamal Kishore, Anand Lalchandani, Chief Bridge Officer Henry Perahia, Retired Deputy Chief Engineer Albert Novak, Paul Kidder, Deputy Director of In-House Painting Earlene Powell, Auditor General Lucita Andres, Mrs. Perahia, Mrs. Novak, and Chief Staff Manager Joannene Kidder. (Bernard James) Deputy Engineer-In-Charge Brian Gill. (Credit: Earlene Powell)

President Paul Nietzschmann, Deputy Chief Engineer Russell Holcomb, Chief Bridge Officer Henry Perahia. Municipal Engineer of the Year Russell Holcomb. (Credit: Earlene Powell)

Brooklyn Bridge

The final installation of "Flock to Living," an art piece by Johan Kritzinger in partnership with the Action Arts League, was completed on November 21, 2009. The 11 month installation is part of the Agency's Urban Art Program. The artwork is located at Frankfort and Pearl Street, and consists of six multi-colored birds inspired by toys found in nearby Chinatown and the actual birds that perch on the Brooklyn Bridge structure. If you listen closely, the faint sound of bells can be heard up above. Antique bells, discovered at various fairs in upstate New York, hang from the bird silhouettes, ringing as gusts of wind move the bells to and fro.

"Flock to Living." (Credit: Emily Colasacco)

Ocean Avenue Pedestrian Bridge over Sheepshead Bay (Brooklyn)

Cleaning and painting of the bridge, which began in October 2009, was completed on November 24, 2009.

Queensboro Bridge (Upper Level) Exit Ramp to East 62nd/63rd Streets (Queens)

Cleaning and painting of the bridge, which began in November 2009, was completed on November 25, 2009.

83rd Annual Macy's Thanksgiving Day Parade

Division engineers assisted the Office of Emergency Management and the NYPD in the selection of the new parade route along 7th and 6th Avenues. They also reviewed and approved the design specifications of four new large balloons to be introduced in the parade, as follows: Sailor Mickey, Spiderman, Pillsbury Dough Boy, and Ronald McDonald. A balloon is classified as large if it is larger than 5,000 cubic feet. However, the balloons in the parade cannot be taller than 70 feet, wider than 40 feet, or longer than 78 feet. Division representatives attended the test flights of the balloons at the Meadowlands Racetrack on November 7, 2009, with NYPD and other agencies.

On November 26, 2009, wind speeds were relatively low and the balloons flew in the parade without incident. The average wind speed was light (between 5 and 10 miles per hour) during the parade. Chief Bridge Officer Henry Perahia, Director of Engineering Review Abul Hossain, and George Jarvis were positioned at various locations along the parade route to observe compliance with the approved procedures. Eight anemometers were mounted on the top of light poles along the new parade route between 77th Street and 34th Street to measure wind speed during the parade. Four Division engineers and four consultant engineers were assigned to the anemometer locations to monitor the wind gusts.

New Spiderman, New Ronald McDonald, New Pillsbury Dough Boy. (Credit: Hu Zhudong)

New Sailor Micky, and Snoopy. (Credit: Hu Zhudong)

Kermit, The National Association of Music Merchants/Sesame Street Float, and Hello Kitty. (Credit: George Jarvis)

Commissioner Janette Sadik-Khan, Chief Bridge Officer Henry Perahia, and First Deputy Commissioner Lori Ardito. Administrative Engineer Udayakumar Dommaraju, First Deputy Commissioner Lori Ardito, Civil Engineer Hu Zhudong, Commissioner Janette Sadik-Khan, and Assistant Civil Engineer George Jarvis. Director of Engineering Review Abul Hossain.

Belt Parkway Bridge over Paerdegat Basin (Brooklyn)

On November 30, 2009, the Division began a significant resurfacing project on the westbound roadway of the Paerdegat Basin Bridge. The work included removal of the existing pavement and installation of new asphalt and pavement markings. The pedestrian/bike path remained open

at all times. The contractor also repaired all inoperable navigation lights. Work was concluded on December 11, 2009.

Brooklyn Queens Expressway (Southbound) over 32nd Avenue (Queens)
Cleaning and painting of the bridge, which began in November 2009, was completed on November 30, 2009.

DECEMBER

World AIDS Day
At the request of the United Nations, the necklace lights on the Brooklyn Bridge were turned off at 6:15 PM on December 1, 2009, World AIDS Day. Other participating venues turning off their lights in New York City included all Broadway theaters, Madison Square Garden, Lincoln Center, the Chrysler Building, Radio City Music Hall, the Beacon Theatre and the Washington Square Park Memorial Arch. The New York City event was part of the global "Light for Rights Campaign" organized by amfAR, the Foundation for AIDS Research; UNAIDS - the Joint United Nations Programme on HIV/AIDS; Broadway Cares/Equity Fights AIDS; and World AIDS Campaign.

Brooklyn Queens Expressway East Leg over 30th Avenue (Queens)
Cleaning and painting of the bridge, which began in October 2009, was completed on December 4, 2009.

Hamilton Avenue Asphalt Plant (Brooklyn)
On December 5, 2009, Division ironworkers repaired the plant's silo and drum.

National Pearl Harbor Remembrance Day
The Brooklyn Bridge flags flew at half-mast on December 7, 2009 to commemorate National Pearl Harbor Remembrance Day, in honor of those who died as a result of their service at Pearl Harbor and to pay special tribute to veterans of World War II.

Hamilton Avenue Asphalt Plant (Brooklyn)
On December 12, 2009, Division ironworkers performed routine maintenance on the plant machinery. They also removed old and damaged plates and installed new plates at the discharge chute located at the top of the silos.

Dennis deLeon Tribute
The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on December 15, 2009, in tribute to former Human Rights Commissioner and long-time AIDS activist Dennis deLeon, who died on December 14. Mr. deLeon, 61, began his career in public service in the City in 1982, when Mayor Edward I. Koch named him Senior Assistant Corporation Counsel. He was then appointed Director of the Mayor's Commission on Latino Concerns in 1986. In 1988, Manhattan Borough President David Dinkins appointed Mr. deLeon Deputy Borough President. After Mr. Dinkins became Mayor in 1990, he named Mr. deLeon Human Rights Commissioner.

In 1993, Commissioner deLeon was one of the first New York City officials to reveal that he had HIV. In 1994, he returned to the private sector and helped found the Latino Commission on AIDS, where he served as its President for 15 years. In 2003, the organization sponsored the first National Latino AIDS Awareness Day, a program that is now held annually on October 15 in 40 states. The organization works in cooperation with 380 AIDS groups around the country to provide support to Latinos living with and affected by HIV/AIDS. In addition, from 1990 to 1996, Mr. deLeon was co-chair and then chair of the Board of Directors of Housing Works, now one of the largest AIDS service providers in the nation. The flags were raised on December 18, 2009.

Belt Parkway Bridge over Mill Basin (Brooklyn)

On July 13, 2009, the Division began a significant resurfacing project on the Belt Parkway's approaches to the Mill Basin Bridge. The work included subsurface repairs and installation of new asphalt and pavement markings. The pedestrian/bike path remained open at all times. Work on the eastbound roadway was completed on October 25. Division crews repaired in excess of 14,000 square feet of roadway pavement, using 345 tons of asphalt. Work on the westbound lanes began the night of October 26, and were suspended for the winter season in December. A grand total of 18,855 square feet of roadway were repaired, using 469 tons of asphalt.

Resurfacing the Belt Parkway Bridge over Mill Basin on August 3, 2009. The Crew Completed a 13'x29' Cut in the Eastbound Center Lane, West Approach Spans. The Area Before Breakout, Exhibiting Rutting, Cracking and Excessive Patching. Breakout and Removal of Deteriorated Wearing Surface.

Belt Parkway Bridge over Mill Basin: Ironworker Assisting the Crew. Prepped Cut, Ready for Asphalt. Installation of New Asphalt. (Credit: Yousef Demis)

Belt Parkway Bridge over Mill Basin: Installation of New Asphalt. Compacting the Asphalt With the Assistance of a Gasoline Roller Engineer From the Roadway Repair and Maintenance Division. Completed Resurfacing Work. (Installation Credit: Yousef Demis, GRE Credit: Ali Mozaffari)

Anti-Icing

On December 19, 2009, 9.1 inches of snow fell in Central Park, 6.8 inches at La Guardia Airport, and 11.1 inches at JFK Airport. On Sunday, December 20, 1.8 inches of snow fell in Central Park, 2.4 inches at La Guardia Airport, and 4.7 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 8:00 AM on December 19, 2009, until 5:00 PM on December 20, 2009; 17 applications of liquid potassium acetate were made totaling 8,200 gallons. 24 tons of solid sodium acetate were also applied. Priority overpasses were cleared of snow and ice, and icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Williamsburg Bridge

December 19, 2009 marked the 106th anniversary of the opening of the bridge.

Williamsburg Bridge in 2003. (Credit: Peter Basich) Tower Detail in 2009. (Credit: Bernard Ente)

Percy E. Sutton Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on December 28, 2009, in tribute to former Manhattan Borough President Percy E. Sutton, who died on December 26. Mr. Sutton, 89, began serving the nation in World War II as a Tuskegee Airman, winning combat stars in two theaters. Captain Sutton later became a civil rights attorney, entrepreneur and politician, serving one term as a State Assemblyman, before taking over as the longest-serving Manhattan Borough President from 1966 to 1977. He was the state's highest-ranking black elected official at the time. Mr. Sutton went on to become a successful entrepreneur, owning both WBLS and WLIB, the city's first black-owned radio station. He purchased and renovated the Apollo Theater in 1981, preventing the landmark's demise. The flags were raised on January 7, 2010.

Hamilton Avenue Asphalt Plant (Brooklyn)

On December 28, 2009, Division ironworkers repaired the plant's cyclone.

Manhattan Bridge

A Notice to Proceed for Contract #14 was issued to the contractor with a start date of December 28, 2009.

New Year's Eve

On the night of December 29, 2009 at the request of the Mayor's Office of Special Events and the NYPD, Division ironworkers temporarily welded shut all manholes in the Times Square area in preparation for New Year's Eve. Celebrating the arrival of the New Year in Times Square was started in 1904 by Adolph Ochs, owner of the *New York Times*. The ball dropping tradition began three years later.

Merrick Boulevard Bridges over Laurelton Parkway (Northbound & Southbound) (Queens)

The component rehabilitation of these bridges was substantially completed on December 30, 2009.

Merrick Boulevard Bridges over Laurelton Parkway (NB and SB) in 2002. (Credit: NYSDOT)

Merrick Boulevard Bridges: Repairing the Under Deck in September 2009. Deck and Sidewalk Repairs in November and December 2009.

130th Avenue Bridges over Laurelton Parkway (Northbound & Southbound) (Queens)

The component rehabilitation of these bridges was substantially completed on December 30, 2009.

130th Avenue Bridges over Laurelton Parkway (EB and WB) in 2002. (Credit: NYSDOT)

130th Avenue Bridges: Under Deck Repair Work in November 2008.

Anti-Icing

On December 31, 2009, 1.5 inches of snow fell in Central Park, 1.7 inches at La Guardia Airport, and 1.6 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 8:30 AM until 3:00 PM; seven applications of liquid potassium acetate were made totaling 5,950 gallons. Icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Manhattan Bridge

December 31, 2009 marked the 100th anniversary of the opening of the bridge.

Manhattan Bridge. (Credit: Bojidar Yanev) Bridge at Night in May 2008. (Credit: Jason Bax)

Grand Street Bridge over Newtown Creek (Brooklyn/Queens)

Cleaning and painting of the bridge, which began in September 2009, was completed in December 2009.

East River Bridges

A $3.6 billion reconstruction program is underway to rehabilitate all four East River crossings. In 2008, these bridges carried some 477,211 vehicles per day. In 2002, working in coordination with the NYPD and other law enforcement agencies, the Division implemented enhanced security measures on these bridges. This work is ongoing.

In 2009, the Manhattan, Queensboro, and Williamsburg Bridges were designated National Historic Civil Engineering Landmarks by the American Society of Civil Engineers, which had previously landmarked the Brooklyn Bridge in 1972.

Water Taxi and NYFD Fireboat near the Brooklyn Bridge in 2009. (Credit: Jagtar Khinda) Motor Yacht Eastern Star Preparing to Pass Under the Brooklyn and Manhattan Bridges in November 2009. (Credit: Bernard Ente)

BROOKLYN BRIDGE

Arguably the most influential bridge in American history, the Brooklyn Bridge remains one of New York City's most celebrated architectural wonders. Designed by the brilliant engineer John Augustus Roebling, and completed by his equally ingenious son Washington Roebling and daughter-in-law Emily Roebling, this elegant structure was, at the time of its completion in 1883, the longest suspension bridge in the world. It was declared a National Historic Landmark in 1967.

Moon Over the Brooklyn, Manhattan, and Williamsburg Bridges. (Credit: Michele N. Vulcan)

Engineering Landmark Plaque. (Credit: Michele N. Vulcan) 1899 Plaque Near the Franklin Truss of the Bridge, Marking the Site of George Washington's First Presidential Mansion, Franklin House. (Credit: Hany Soliman) 1991 New York City Landmark Plaque. (Credit: Peter Basich)

Historic Landmark, 1954 Reconstruction, Two Cities, and Roebling Memorial Plaques. (1954, Cities & Memorial Credit: Michele N. Vulcan)

The Brooklyn Bridge carried some 123,781 vehicles per day in 2008. The $832 million reconstruction commenced in 1980 with Contract #1, and continues with Contract #6, scheduled for completion in 2014. This contract includes the rehabilitation of both approaches and ramps, the painting of the entire bridge, as well as the seismic retrofitting of the structural elements that are within the Contract #6 project limits.

Brooklyn Bridge Ramps and Arches. (Credit: Maria Mikolajczyk)

Seismic retrofitting of the remaining bridge elements requiring strengthening will be carried out under a separate contract by the end of 2017. Work completed on the bridge to date includes reconditioning of the main cables, replacement of the suspenders and cable stays, rehabilitation of the stiffening trusses, and the replacement of the suspended spans deck.

The $25 million recently completed construction contract replaced the four existing travelers with a new state-of-the-art technology system including motors, reducers, braking systems, electrical controls, programmable logic controller system, and trouble shooting devices, as well as AC motors that provide enhanced operational performance and gear boxes that increase life cycle and reliability of the new travelers. A Notice to Proceed was issued to the contractor with a start date of November 22, 2006. During 2007, the existing track beams, supports and electrical equipment (including conductor bars, transformers, conduits, wires and breaker boxes) were removed. All four travelers were removed in November 2007. The fabrication work for the new travelers to be installed was underway at the end of 2007.

2007: Brooklyn Side Traveler. (Credit: Michele N. Vulcan) 2007: Working on a Traveler. (Credit: Peter Basich)

Removing the Brooklyn Bridge Main Span Travelers in 2007.

During 2008, approximately 2,500 feet of new track beams, their supports and new electrical equipment were installed. The first new traveler was installed in June 2008, and the remaining three were installed in November and December of 2008.

The remaining work was completed in 2009, including the field testing of the travelers' electrical system, the installation of the approximately 250 feet of track beams, their supports and

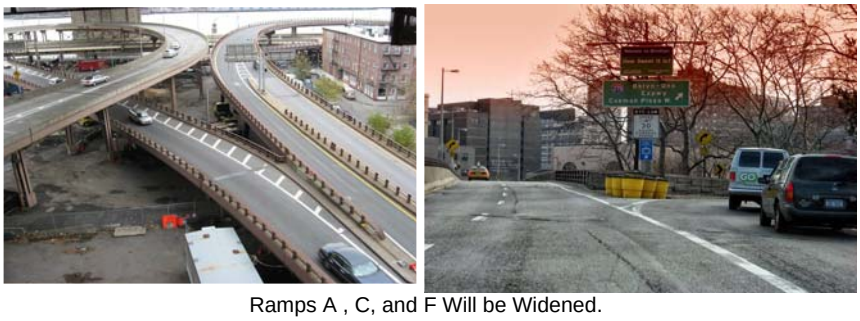
conductor bars, painting, and finally, the removal of the temporary platform and demobilization. The traveler replacement contract was substantially completed on July 8, 2009, and all work was completed by August 31, 2009.

Track Beam Removal in January 2008. First Platform Lift in June 2008.

Lifting Traveler #4 in June 2008. Lifting the New Manhattan Main Span Traveler to the Underside of the Bridge on November. 20, 2008. (Main Span Credit: Bojidar Yanev)

Contract #6

A Notice to Proceed for this $508 million project was issued to the contractor with a start date of January 19, 2010. The ramps and approaches to the Brooklyn Bridge are in need of rehabilitation and repair, to improve safety and reduce congestion along both the Brooklyn-side and Manhattan-side approaches, particularly from the FDR Drive. With stimulus money from the federal government's American Recovery and Reinvestment Act, the ramps in Brooklyn and Manhattan will be rehabilitated and widened and the entire bridge will be repainted to prevent steel corrosion on the structure.



Ramps A , C, and F Will be Widened.

The approach roadway to the Brooklyn Bridge is aging, with a failed membrane system and deteriorated closure walls. The existing roadway pavement above the historic arch blocks and masonry structures will be rehabilitated. A precast concrete roadway slab will be installed in

segments, over sprayed-on waterproofing membrane. Rusted historic railings at Franklin Square, York, and Main Street structures, some from the original bridge construction, will be refurbished and reinstalled. The existing ramp from the FDR southbound roadway will be widened from one to two lanes to reduce bottlenecks and pinch points in traffic flow. All steel structures, including the ramp structures and the main span, will be painted, restoring them to their original Queensborough Tan color, as chosen by the Landmarks Preservation Commission.

On all the bridge approach structures on both the Manhattan and Brooklyn sides, the existing deck will be removed by lifting out sections and replacing them panel by panel with precast concrete-filled steel grid deck panels. This approach will greatly reduce noise from drilling and jackhammers, and will also increase the reliability of the start and end times of construction activities every night.

Painting work, to prevent steel corrosion and improve aesthetics, will likely be the first phase of this project, and will occur in negative-pressure containment units that travel along the bridge structure, high above the traffic. All three travel lanes will be maintained during the course of this work, and painting will take approximately two years. Equipment will be placed on barges anchored to the Manhattan tower, and on land abutting the Brooklyn tower. Dust collection, vacuum and recycle units will be employed to minimize environmental air quality risks, and there will be continuous air monitoring during operations. All painting work will be conducted in accordance to the US Environmental Protection Act and NYS Department of Environmental Conservation requirements. Noise generated by these units will conform to the NYC Noise Code standards adopted in 2007.

On the Brooklyn side, two lanes of free-flowing traffic will be created at the Cadman Plaza exit, and approach roadways will be rehabilitated to replace the membrane system and deteriorated closure walls. On the Manhattan side, the Franklin Square Arch will undergo seismic retrofitting, rusted railings and safety barriers will be replaced, and two lanes of free-flowing traffic will be created from the southbound FDR Drive onto the Brooklyn Bridge.

The contract allows for 24 weekend closures over the four year period; however, the contract also contains clauses that encourage fewer weekend closures with monetary compensation. Although the promenade will be open, there will be sections immediately under the painting area, which will be narrowed by a foot on each side to facilitate work.

In the fall of 2008, to compare options for energy efficiency, we replaced 20 100-watt mercury vapor lamps of the necklace lights on the Brooklyn and Manhattan Bridges with 10 LED fixtures and 10 induction fixtures. The test was completed in spring 2009; we chose an LED fixture in a dish style and will obtain them for the Queensborough, Williamsburg and Brooklyn Bridges. The test fixtures were removed on April 24, 2009. The replacement of the existing mercury vapor lights on the Queensboro and Williamsburg bridges will take place in 2010. The replacement of the Brooklyn Bridge necklace lights will not be scheduled until the completion of Contract #6.

Supervisor Electrician Ben Cipriano in October 2008 With Both Mild and Bright Induction Light Fixtures for Testing. For Comparison Purposes, There is a Mix of Clear and Frosted Globes. (Credit: Russell Holcomb)

MANHATTAN BRIDGE

The youngest of the three NYCDOT suspension bridges that traverse the East River, the Manhattan Bridge carries some 395,841 commuters – 70,341 vehicles and 325,500 mass transit riders - between Manhattan and Brooklyn daily. It was designed by Leon Moisseiff and completed in 1909. The bridge supports seven lanes of vehicular traffic, a bikeway and walkway, as well as a subway transit line upon which four different train lines operate.

Water Taxi Approaching the Manhattan Bridge. (Credit: Peter Basich) Bridge Detail and Coleman Playground at Monroe Street Under the Bridge. (Credit: Bernard Ente) Construction Plaque. (Credit: Peter Basich) Bridge in July 2009. (Credit: Bernard Ente)

The $900 million reconstruction commenced in 1982 with Contract #1, progressed with Contract #10, and continued with Contract #11, substantially completed on April 29, 2008. This work now

continues with Contract #14 to rewrap the cables and replace the suspenders and 168 necklace lights. Completion is expected in 2013. The reconstruction will end with a seismic retrofit of the bridge, slated to begin in 2016. Work completed on the bridge to date includes reconstruction of the south and north upper roadways, reconstruction of the north and south subway lines, installation of a truss stiffening system to reduce twisting, restoration of the Manhattan Plaza, including the historic arch and colonnades, reconstruction of the south walkway, installation of a new north bikeway, replacement of the lower roadway, and rehabilitation of the Brooklyn Plaza.

"The Spirit of Commerce" Sculpture and the Underside of the Arch. Part of the Colonnades. (Credit: Peter Basich) The Historic Arch. (Credit: Earlene Powell)
The "Native American Buffalo Hunt" Sculpture Panel. (Credit: Peter Basich)

Contract #14

Most of the existing suspenders on the Manhattan Bridge were installed under a $2.2 million contract with Roebling and Sons in 1956 and was one of their last before closing their Bridge Division in 1964. Under Contract #14, the existing cable wrapping of the 622 vertical cables will be replaced with wire wrapping and a neoprene barrier to insulate from weather. A Notice to Proceed for this $149 million project was issued to the contractor with a start date of December 28, 2009.

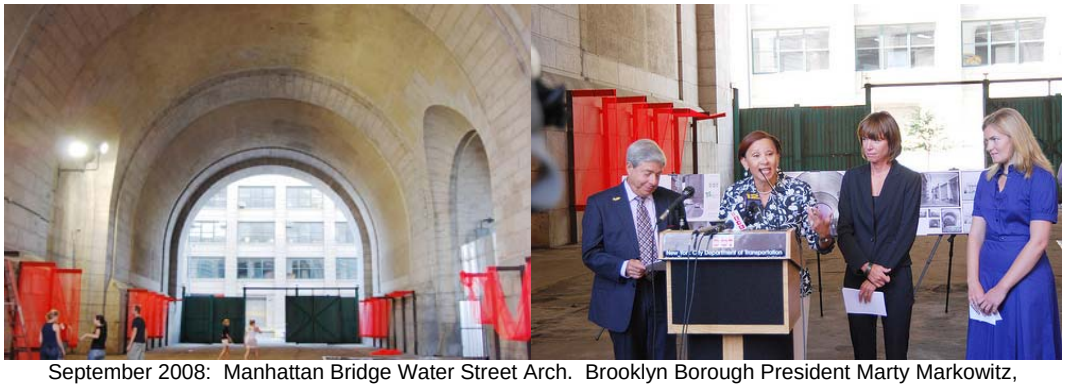
Water Street Arch

For nearly two decades, DUMBO was split in two. The Division of Bridges had long used the 46-foot-wide archway beneath the Manhattan Bridge as bridge metal storage space, which worked well enough when DUMBO was more of an industrial zone. Now, one of the City's hottest neighborhoods, where new developments are springing up daily, DUMBO's denizens are clamoring for more public space.

With our demonstrated commitment to creating public space citywide, the Agency moved quickly to answer the call and "bridge" this long-standing divide. By moving the Division of Bridges' storage materials out of the Water Street archway, we were able to re-open the archway and connect the two parts of the neighborhood that were separated for 17 years. The space, along Water Street between Adams Street and Anchorage Place, is now a unique destination for

residents, public space aficionados, and one day will be a key link in the Brooklyn Waterfront Greenway route. It was partially reopened on September 8, 2008.

But moving the materials out and re-opening the archway was just the first step. The Agency worked with the DUMBO Improvement District to remove the asphalt to reveal the passageway's historic cobblestone, and to add lighting and wooden benches to the archway where users can linger and relax. Opening the DUMBO archway builds on the public plaza built last year at Pearl Street triangle, adjacent to the archway. The archway completely opened on April 19, 2009, coinciding with the Manhattan Bridge's 100th birthday.



September 2008: Manhattan Bridge Water Street Arch. Brooklyn Borough President Marty Markowitz, Congresswoman Nydia Velazquez, Commissioner Janette Sadik-Khan, and DUMBO Improvement District Executive Director Kate Kerrigan. (Credit: DUMBO NYC)

Completely Repaired Water Street Arch in April 2009.
(Credit: DUMBO NYC)

On September 8, 2008, Researchers From Columbia University and Engineer-In-Charge Brian Gill (at Right) Climbed the Manhattan Bridge and Installed Accelerometers and GPS Sensors to Monitor the Overall Dynamic Behavior of the Bridge to Improve Computer Modeling Techniques for a Possible Reduction of Seismic Retrofit Modifications.
(Bridge Climb Credit: Bojidar Yanev)

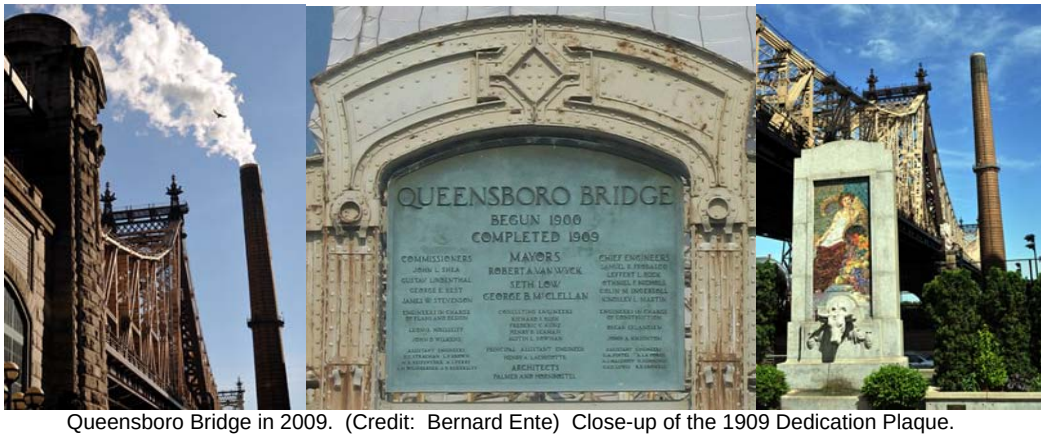
Conducting Soil Borings in November 2008 as Part of the Seismic Retrofit Design of the Manhattan Bridge. Drilling to a Depth of Approximately 210 Feet to Obtain an 8-foot Long Hard Rock Sample. A 2 1/2 –Foot Long Hard Rock Sample Taken From a Depth of Between 202 and 204 ½ Feet.

Installing the National Historic Civil Engineering Landmark Plaque on the Manhattan Bridge on September 30, 2009: Area Selected for the Plaque. (Credit: Earlene Powell) Bricklayers Vincent Sciulla and Luigi Cuffari, Cement Mason Frank Finizio, Supervisor Bricklayer Edward Alfano, and Highway Repairer Thomas Engelken. The Plaque was Recessed in the Granite Stone. (Credit: Thomas Whitehouse) The Plaque. (Credit: Jagtar Khinda)

New York City celebrated the centennial of the bridge in October 2009, in a celebration organized by the NYC Bridge Centennial Commission. Festivities included art shows, lectures a light show and fireworks, and the unveiling of the National Historic Civil Engineering Landmark plaque. A capstone for the celebration will occur in 2010 when the bridge's history will be memorialized with a time capsule. It will contain items such as a photo of the Bridge Commission, a newspaper from December 31, 2009, the Division's Bridges and Tunnels Annual Condition Report, a sample tool commonly used by Bridge Maintenance and a list of the names of Division staffers who currently maintain the bridge. The capsule will be placed on the Manhattan side of the bridge.

QUEENSBORO BRIDGE

At the time of its completion in March 1909, the Queensboro Bridge (popularly referred to as the 59th Street Bridge), was the longest continuous cantilever-truss bridge in the world. While its starring role in the hierarchy of bridges has since been eclipsed by longer and larger structures, the Queensboro Bridge's importance to the mobility and unity of New York City remains undimmed. The bridge was designated as a national landmark on November 23, 1973. The $806 million reconstruction commenced in April 1981 with Contract #1, and continued with Contract #6, which began on October 31, 2003, and was substantially completed on September 30, 2007, and will end with a seismic retrofit of the bridge, slated to begin in 2016. Work completed on the bridge to date includes the rehabilitation of the lower inner roadways, the lower outer roadways, and the restoration of the Guastavino arches and Bridgemarket area. The south outer roadway is open to automobile vehicular traffic, and the north outer roadway is open to pedestrians and bicyclists. The work on this vital link between Manhattan and the outer boroughs will enable this 75,000-ton workhorse to better provide the citizens and commerce of New York City with a second century of reliable, prosperous transport. The Queensboro Bridge carried 176,306 vehicles per day in 2008.



Queensboro Bridge in 2009. (Credit: Bernard Ente) Close-up of the 1909 Dedication Plaque. (Credit: Peter Basich) The Granite Fountain, Built in 1918 for a Farmers' Market Beneath the Bridge, was Rededicated in June 2003 After Restoration. Evangeline Blashfield was the Model for the Fountain's Glass Mosaic of a Woman With a Cornucopia. Her Husband, Artist Edwin Blashfield, Designed the Work. (Description: Greater Astoria Historical Society, Roosevelt Island Historical Society. Credit: Bernard Ente)

Contract #6

Contract #6, which began on October 31, 2003, included the following: condition investigation of the eyebar heads and pins, replacement of the protective screening drainage improvements, rehabilitation of the overhead sign structures in Manhattan, the upgrading of roadway lighting (by replacing all low-pressure sodium lights on the bridge and ramps with high-pressure sodium lights), cleaning and miscellaneous repairs of the anchor piers, the geometric improvement of Crescent Street, bikeway and walkway improvement, and repair of the south upper roadway concrete overfill and overlay, the promenade platform, the traveler platform, the sidewalk between 61st and 62nd Streets, and the underside of the 59th Street overpass. The work also included the rehabilitation of the Sanitation Department area's arch infill, and modifications to the maintenance facility beneath the Manhattan approach plaza. In addition, the kiosk in the plaza on the Manhattan side of the bridge was restored. This small historical structure was in an advanced state of disrepair and had been damaged by repeated vehicular impacts. This $43 million project was complete by the end of December 2008.

A separate contract to replace the bridge aviation lights is expected to begin in spring 2010.

September 2008: Looking West From Tower 1. (Credit: Russell Holcomb)
Bridge Detail in 2009. (Credit: Bernard Ente)

Protective Coating

The $168 million Queensboro Bridge painting contract commenced in January 2004. The Department and its contractor strictly adhered to the safety requirements regarding lead paint removal as approved by the United States Environmental Protection Agency and the Occupational Safety and Health Administration, New York City Departments of Health and Environmental Protection, and the New York State Departments of Health and Environmental Conservation.

The work was performed within an entirely sealed Class 1A containment system (under negative pressure) which acts as an added safety measure to prevent any materials from escaping into the air. Filtration of the enclosed air prevents paint waste dust from being released. The Department placed several air monitoring stations in the area around the bridge. The Department performed continuous monitoring and testing of the soil and air quality as well as noise levels in the area surrounding the containment enclosure to minimize impacts and ensure the safety and quality of life for workers and residents nearby.

Platform Installed for Painting of the Queensboro Bridge. (Credit: Vadim Sokolovsky)
Working Inside the Containment. Protected Roadway.

By the end of 2005, the contractor completed cleaning and painting the Manhattan and Queens anchor piers; the Manhattan approach; ramp A; the off ramp and ramp B over the Silver Cup Studio parking lot; the off ramp over Queens Plaza South towards 13th Street; approaches B and C from 23rd Street to Thompson Avenue (except over the railroad tracks); the Queens approach underside of the lower roadways (from 21st Street to Vernon Boulevard); the main bridge underside of the lower and upper roadways from PP123 to PP68; and the main bridge above the upper roadway from PP77 to PP109.

By the end of 2006, the contractor completed cleaning and painting the Queens approach at the inner roadways from PP0 to PP39; at the main span's inner and under upper roadways above Roosevelt Island and one half of span #2 from PP75 to PP37; the main span trusses above the upper roadway from the Manhattan anchor pier to the Roosevelt Island west tower has been completed from PP0-PP15, PP30-PP47, and PP109-PP123; and the ramps on the Queens side

over the LIRR tracks. Installation of cables and platform, on the main span under the lower roadway from PP17 to PP37, was also underway.

Protective Coating in 2006: Inside the Containment Rigging at Span #1. Finish Coat on the Trusses at Span #5 on the Upper Roadway. Class 1A Containment Installed on the Trusses at Span #2, And the Working Platform Above the South Outer Roadway.

By the end of 2007, the contractor completed cleaning and painting the Queens approach at the inner roadways from PP90 to PP39; at the main span's inner and upper roadways from PP1 to PP37; and the main span trusses above the upper roadway from PP30-PP15 and PP47-PP55. The installation of containment rigging along the upper roadway on Span 3 was also underway.

Protective Coating in 2007: Middle and Last Part of the Year.

Bridge Detail in 2008. (Credit: Bernard Ente)

By the end of 2008, the contractor completed cleaning and painting the upper roadway trusses on Span 3, the entire Queens approach the entire structure at the main span's inner and upper roadways; and the main span trusses above the upper roadway.

In winter 2008 and spring 2009, the contractor completed touch-up of the work areas and various punch list items including the towers' interiors, the travelers, and the curbs on the outer roadways.

Active measures were taken to reduce noise at its source, such as the use of mufflers, sound screens, low noise producing equipment, and noise blankets. Light shields were utilized to reduce glare from work lights. The painting contract was substantially completed on July 8, 2009.

DEP Sludge Boat "Red Hook" Passing Under the Queensboro Bridge in June 2009.
(Credit: Bernard Ente)

WILLIAMSBURG BRIDGE

The largest of the three suspension bridges that traverse the East River, the Williamsburg Bridge carries some 206,783 daily commuters – 106,783 110,545 in vehicles and 100,000 via mass transit - on eight traffic lanes, two heavy rail transit tracks, and a pedestrian footwalk, between Manhattan and Brooklyn. The bridge supports a subway transit line upon which three different train lines operate (J, M, and Z). The $1.2 billion reconstruction commenced in 1983 with Contract #1, and continues with Contract #8, which began in March 2003 and is scheduled for completion by the end of 2010.

Williamsburg Bridge. Bridge Subway Structure. (Credit: Peter Basich).
Contract #: Looking South at a Cable Band Retensioning Crew.

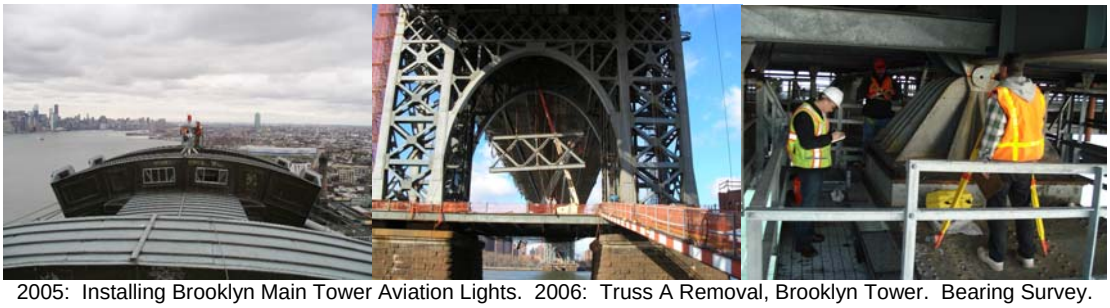
In order to minimize disruption to the riding public and ensure that traffic is maintained across the bridge, the rehabilitation of the Williamsburg Bridge was divided into several contracts. In the contracts completed to date, all four main cables have been completely rehabilitated, the south and north roadways of the bridge have been replaced and the BMT subway structure across the bridge was completely reconstructed.

View From the South. Fireboat on Patrol. (Fireboat Credit: David Paul Gerber)

Contract #8

Contract #8 began on March 3, 2003, and is scheduled to finish by the end of 2010. This $277 million project will see the rehabilitation of the tower bearings, the truss system, the steel structure of all eight towers, and the north comfort station houses, the replacement and/or adjustment of the cable suspenders, the installation of maintenance travelers (inspection platforms) under the main span, as well as painting of the stiffening trusses. Architectural work will include the restoration of decorative lights on the main towers and in the Manhattan Plaza. Work inside the anchorage houses on both the Manhattan and Brooklyn sides will include the construction of new stairs, a hoisting system, ventilation and lighting, and oiling platforms. The project will also include the installation of several Intelligent Transportation System components, including variable message signs and closed circuit television cameras.

2004: Steel Arch Replacement. Cable Band Bolt Retensioning. 2005: Rehabilitation of the Brooklyn Main Tower Steel.



2005: Installing Brooklyn Main Tower Aviation Lights. 2006: Truss A Removal, Brooklyn Tower. Bearing Survey.

The seismic retrofitting of the steel portions of the intermediate towers was completed on July 20, 2007. The Brooklyn and Manhattan maintenance travelers were delivered on barges and raised into position in August and October 2007. The maintenance travelers are currently undergoing pre-operational testing and inspection and are expected to be completed in 2010. Installation of

the top chord transverse bearings at the main towers was completed in October 2007. Installation of the Brooklyn anchorage maintenance platforms, the Manhattan anchorage hoist and new staircases for both anchorages were also completed in 2007.

2007: Seismic Retrofit Concrete Work in Brooklyn. Raising the Manhattan Side Traveler at the Manhattan Tower. Manhattan Tower North.

As Contract #8 concludes the reconstruction of the bridge, extra items deemed necessary were added later, extending the length of the contract. These items included: modification of the footwalk joints, replacement of the south outer roadway overlay system, the seismic retrofit of the steel and concrete portions of the intermediate towers, traffic signal and sign modifications of Delancey Street for the contraflow operation, additional steel flag repairs after the biennial inspection, replacement of some truss bearings at the intermediate towers, rehabilitation of wind tongue casting assembly at the main towers, and the contraflow barrier system installation at the Brooklyn and Manhattan approaches.

Work completed in 2008 includes the installation of the Brooklyn anchorage hoist, the bridge indentification system, the barrier transfer machine, the removal of the main bridge flexible shield system, the top chord transverse truss bearings, the erection of the new Manhattan entry electroliers and rehabilitated main tower electroliers, and the seismic retrofit of the intermediate tower bases.

2008: Installation of Luminares at the Manhattan Plaza Bridge Entrance. Erection of the Manhattan Entry Electrolier. Brooklyn Tower in October 2008. (Tower Credit: Russell Holcomb)

Contract #8 in 2009: Testing the Intermediate Tower Bearings at Lehigh University in January 2009. Assistant Engineer-in-Charge Anil Rudra on the Bridge in July 2009. Resurfaced South Outer Roadway. (Roadway Credit: Bojidar Yanev). Looking South at the Manhattan Main Tower Electrolier in December 2009.

Contract #8 in 2009: Looking Southeast at the Installation of the Triangular Jacking Frame for the Intermediate Tower Bearing Replacement in January 2009. Main Tower Pier Fender System Installation in July 2009.

Work anticipated to be completed in 2010 includes the installation of the intermediate tower truss bearings, maintenance traveler installation, main tower pier fender system, aviation light lightning protection system, wind tongue pin rehabilitation, dry fire standpipe system testing, the implementation of a contraflow of the south inner roadway with local control of movable barriers, the rehabilitation of the south roadway and anchorage modular joints, the rehabilitation of the PP29 orthotropic deck hinged pressure relief joint, and the rehabilitation of the Kent Avenue yard voids.

Movable Bridges

As NYCDOT completes reconstruction work on the East River Bridges, more attention is being devoted to other key City-owned bridges, such as the movable bridges. Building on the success of the East River Bridge projects, the Department is implementing many of the innovative concepts originated during the rehabilitation of East River Bridges on these other major reconstruction projects.

BELT PARKWAY BRIDGE OVER MILL BASIN (BROOKLYN)

Opened on June 29, 1940, the Mill Basin Bridge is adjacent to the Jamaica Bay Wildlife Refuge and the Gateway National Recreation Area. It is the only movable bridge on the Belt Parkway. The current clearance over Mean High Water is 35-feet. When the Mill Basin Bridge was constructed during the first half of the 20th century, New York City's inland waterways were among the most heavily navigated thoroughfares in the country. However, as maritime traffic in New York City steadily decreased since the mid-1960s, the need for movable bridges lessened as well. In 1941, during its first full year of operation, the Mill Basin Bridge was opened 3,100 times; by 1953, that figure decreased to 2,173; by 2009, the number of openings declined further to a total of only 183 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2008, the Mill Basin Bridge carried 144,010 vehicles per day. The average opening and closing time for the bridge (and others like it) is ten minutes. Thus, this structure's operation has a negative and significant effect on the efficiency of New York City's vehicular traffic flow.

In 2009, on a New York State-mandated scale from 1 to 7, this bridge had a condition rating of 3.284, or "fair." While the bridge is not in any immediate danger of structural failure, its reconstruction is required in order to maintain mobility and public safety on this vital artery.

The existing Mill Basin Bridge is 864-feet long and 14 spans, including double movable leaf bascule spans and a steel superstructure, supported on reinforced concrete pier on timber piles, and abutments supported on pre-cast concrete piles. The existing structure and immediate approaches will be demolished and replaced.

Belt Parkway Bridge Over Mill Basin. Aerial View.

The replacement will be a 1,757-foot, 11 span fixed bridge, north of the existing structure. The bridge will have a 36-foot wide roadway with a 12-foot wide right shoulder and a 4-foot wide left shoulder in each direction. The eastbound side will carry a dedicated pedestrian/bike path along

the south fascia. 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. Currently in its final design phase, the reconstruction of the Mill Basin Bridge (part of the second Belt Parkway Group) is scheduled to start in fall 2011, and to last approximately 4 years.

BORDEN AVENUE BRIDGE OVER DUTCH KILLS (QUEENS)

The Borden Avenue Bridge over Dutch Kills is located just south of the Long Island Expressway between 27th Street and Review Avenue in the Sunnyside section of Queens. It is a retractile-type movable bridge. The original bridge construction was completed in 1908 and was opened to traffic on May 25, 1908.

1908 Borden Avenue Bridge Plaque. Waterside View. (Credit: Bernard Ente)

The bridge structure carries two lanes of vehicular traffic with sidewalks on either side. The roadway is 34 feet wide and the sidewalks are 8 feet wide. In 2008, the bridge carried approximately 15,002 vehicles per day.

In the spring of 2008, the Department observed that an existing crack in the west abutment's wingwall had opened up further. Following a series of subsequent inspections, it was determined that there is continuing movement of the west abutment wall. In an effort to mitigate this condition, two pressure relief joints were installed in the roadway, and the speed limit for eastbound traffic was posted at 15 miles per hour. Unfortunately, these measures did not stop or slow the abutment wall's movement.

The movement of the wall is undermining the stability of the bridge. Due to the potentially serious danger to life, public safety and property posed by the current condition, it is critical that the repair work be performed as expeditiously as possible.

On October 16, 2008, in the interest of public safety, pursuant to Section 103(4) of the General Municipal Law and Section 315 of the New York City Charter, the Department declared that an emergency exists relative to the movable bridge carrying the Borden Ave. over the Dutch Kills in Queens.

The repairs will include the following: removal of the fill material under the roadway and sidewalks from behind the west abutment and between the wingwalls; relocation of the existing utilities; digging of a test pit to inspect the supporting piles; inspection of the condition and the taking of measurements; and the implementation of the appropriate repair solution based on the inspection findings.

The bridge was closed at noon on December 31, 2008. A Letter of Intent for the emergency repair of this bridge was issued to the contractor with a start date of January 6, 2009. Construction is expected be complete by August 2010.

Diver Preparing to Inspect the Borden Avenue Bridge in April 2009. (Credit: Bernard Ente)

A project to replace the existing steel bridge and repair the west abutment is scheduled to begin in April 2017. The work will also include upgrades to the mechanical and electrical components of the bridge. Construction is expected to be completed in December 2018.

BROADWAY BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

Broadway extends from the southern tip of Manhattan, through the Bronx and terminates in Westchester County. The Broadway Bridge, a lift type movable bridge crossing the Harlem River, is located between West 220th Street in Manhattan and West 225th Street in the Bronx. In 2008, the bridge carried 33,266 vehicles per day, and three tracks of the IRT subway are carried on its upper deck and a five-lane two-way roadway with sidewalks on either side is carried on its lower deck. The two roadways each measure 34 feet and the sidewalks are 7 feet wide.

The vertical lift bridge is the third movable steel structure at this location. The original steam powered single-deck swing span built in 1895 carried only highway and pedestrian traffic. The second structure was built in 1905 to accommodate the extension of IRT subway into the Bronx from Manhattan. The second bridge was again a double deck swing span to carry the subway line on the upper deck and highway traffic on the lower deck. The current structure, a double deck vertical lift bridge to carry the subway and vehicular traffic, was built in 1960.

Broadway Bridge in December 2008.
(Credit: Sergey Parayev)

The bridge underwent a protective coating project to protect the steel components of the bridge

against the effects of corrosion. This project was completed in October 2003 at a cost of approximately $8.7 million.

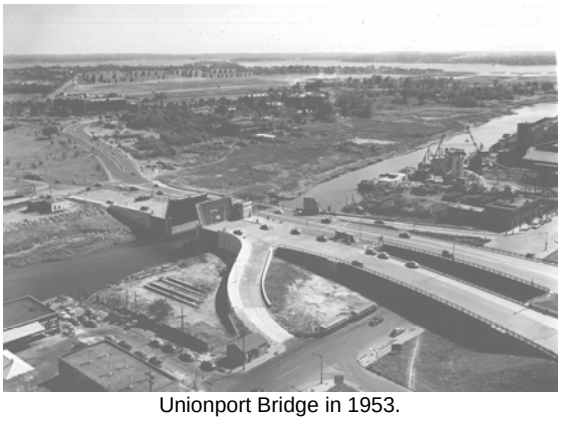
The bridge also underwent recent component rehabilitation, including miscellaneous steel repairs, grating replacement, sealing and waterproofing of its deck, repair of spalled concrete pavement, new expansion joints and new median barrier at an approximate cost of $2.14 million. This project was completed in May 2004.

Currently in its final design phase, the reconstruction of the bridge is scheduled to start in August 2013. The project's scope of work includes a major rehabilitation of the roadway deck, superstructure steel and substructure elements of the vertical lift span, as well as the approach spans. It will also include the replacement and rehabilitation of the electrical and mechanical components of the vertical lift span. Construction is expected to be complete in July 2016.

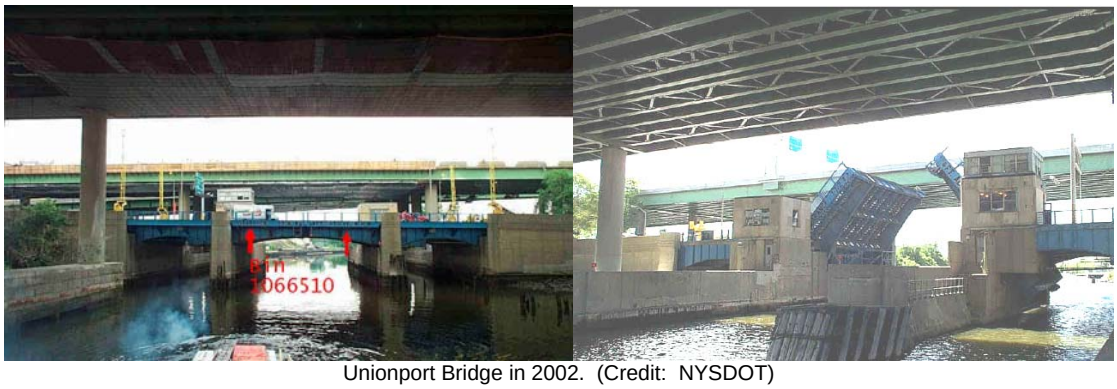
BRUCKNER EXPRESSWAY (NB & SB SERVICE ROAD) OVER WESTCHESTER CREEK (UNIONPORT BRIDGE) (BRONX)

This double leaf bascule bridge opened in 1953. In 2008, the bridge carried 62,342 vehicles per day. The 17 span structure (three waterway and fourteen concrete approach) carries five lanes of the Bruckner Boulevard Expressway service road traffic over Westchester Creek. Currently in its final design phase, the reconstruction of the bridge underwent a Value Engineering Study by the Office of Management and Budget which recommended several changes to the design that are being incorporated. The reconstruction is scheduled to start in October 2014. The project will now incorporate temporary movable bridges to maintain a better flow of traffic during the bridge construction.

The estimated construction duration will be a total of 36 months with approximately 18 months lead time to procure and install the temporary bridges prior to taking the existing bridge out of service. The project's scope of work includes replacement of the bascule, flanking, and approach superstructures, rehabilitation of the substructures, replacement of the existing mechanical and electrical systems for the bascule span, reconstruction of the bridge operator and control houses, and replacement of the existing fender system, drainage system, street lighting, traffic signal facilities, and gates. The "float out the old/float in the new" technique may be incorporated into the replacement scheme for the bascule span.



Unionport Bridge in 1953.



Unionport Bridge in 2002. (Credit: NYSDOT)

HAMILTON AVENUE BRIDGE OVER THE GOWANUS CANAL (BROOKLYN)

The Hamilton Avenue Bridge opened in 1942. It links Carroll Gardens to Park Slope and points south along busy Hamilton Avenue. In 2008, the bridge carried 52,731 vehicles per day. As part of the $55 million reconstruction of this bridge, the new bascule spans with trunnion towers were shop-assembled and tested off-site, then shipped to the site and erected on the rehabilitated piers. This reduced the roadway closure time for the construction of each span from 14 months to only 2 months. In addition, the project team devised a system of hydraulic cylinders and a temporary hydraulic power unit to permit operation of the bridge while the existing electro-mechanical systems were disassembled. In order to maintain safety on-site, the team also opted for hydraulic shears and lances in lieu of torches.

Other reconstruction work included: the rehabilitation and seismic retrofitting of the existing piers; the replacement of all electrical and mechanical and control equipment; the removal and replacement of the approach slabs of both sides of the bridge; the rehabilitation of the backwalls and abutments; and the renovation and extension of the bridge operator house.

While each of the spans only spanned 47 feet between fenders and measured 42 feet wide (which had to be enlarged to 44 feet as part of the replacement), each new span would still weigh 660 tons. Overall, the materials included 380 tons of structural steel, 1,960 cubic yards of concrete, and 51,000 pounds of reinforcing steel. The heavy-duty lifting and scope of the replacement was met with scalpel-precision demands of the site: Just 90 feet above the Hamilton Bridge runs the Brooklyn-Queens Expressway, which complicated placement of the 300-ton and the 550-ton cranes necessary for the removal and reinstallation of the spans via barge.

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of August 4, 2005. The contract includes an incentive of $25,500 per day for early completion of Milestone B and $13,500 per day for early completion of Milestone D.

Old Hamilton Avenue Bridge. (Credit: NYSDOT)

The bridge's appearance was enhanced artistically. A permanent new lighting art structure was installed in summer 2009 on the bridge buildings that is viewable by pedestrians, motorists, mariners and the general public as part of the Percent For Art Program administered by the Department of Cultural Affairs. The masts of lights are installed above the existing buildings. The lights consist of clusters of long-life L.E.D.'s. The work is by the same artist, a faculty member of the Pratt Institute, who designed the 50-foot high color changing iconic illuminated beacon at the elevated acre plaza at DOT's headquarters at 55 Water Street, and the lighting of the newly reopened Manhattan Bridge Water Street Arch.

Mock-up of the Hamilton Avenue Light Sculpture in 2004. (Credit: Gholamali Mozaffari)

"Assent Ascent" Hamilton Avenue Light Sculpture by James Conti.

"Assent Ascent" Hamilton Avenue Light Sculpture by James Conti. (Night Credit: James Conti)

In Stage I, the Manhattan-bound span was closed from June 29, 2007 to August 31, 2007, and it was replaced. The Manhattan-bound bascule span was removed in halves on July 2 and July 6, 2007. Due to the contractor's chosen means and methods, the new east leaf of the Hamilton Avenue Bridge was not "floated-in" as originally proposed, but was trucked-in, and assembled at the site. The Manhattan-bound span reopened three days earlier than scheduled on the morning of August 31, 2007. The contractor will earn an incentive for early completion of this milestone.

Removing the East Span in July 2007.

2007: Hamilton Avenue Bridge Construction.

Open Manhattan-Bound Span in August 2007. Traffic on New Span.

Construction work completed in 2007 included lead and asbestos abatement work in the control and gate tender houses and the replacement of the Manhattan-bound bascule span and all related tasks, including the installation of new submarine cables, the reopening of all roadways and sidewalks, the replacement of the fender system, and the installation of new dolphin clusters. At the end of 2007, fabrication of structural steel and machinery for the Brooklyn-bound span was in progress.

Open Hamilton Avenue Bridge in August 2007.

In Stage 2, the Brooklyn-bound span was closed from June 29, 2008 to August 16, 2008, and it was replaced. The Gowanus Canal was reopened to navigable vessels on August 12. Utilizing the lessons learned from the Manhattan-bound span, the contractor was able to complete the work 16 days early and will earn the maximum incentive of $216,000 for early completion of the work relating to early opening of the west bridge to traffic.

Removing the Existing Hamilton Avenue West Bridge Structural Steel in June 2008. Removing the Existing Southwest Toe Joint and Installing New Reinforcement of the Southwest Approach Slab in July 2008.

Placement of New Concrete on the Hamilton Avenue Southwest Approach Slab, Installation of New West Bridge Structural Steel, and Installation of New West Bridge Deck and Counterweight in July 2008.

Installation of New Hamilton Avenue West Bridge Structural Steel, and Placement of Concrete for the New Northwest Sleeper Slab in July 2008. Installation of New Southwest Sidewalk in August 2008.

Completion of the New Hamilton Avenue West Bridge Installation in August 2008. Construction of the New Back Up Generator Building in September 2008. New Granite Pavers at the South Median Area in October 2008.

At the end of 2008 the project was in its final testing and acceptance phase, which was followed by training of the Division operations and maintenance forces in preparation for their takeover of the bridge in 2009. The project was substantially completed on April 17, 2009.

Installation of New Hamilton Avenue Parking Fence at the North Median Area in November 2008. Painting the Existing Control House Staircase in December 2008.

MACOMBS DAM BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

The Macombs Dam Bridge, which has one of the longest swing spans in the world, was opened in 1895. In 2008, the bridge carried 38,897 vehicles per day. The $145 million reconstruction of this landmark bridge, which was completed in May 2007, included the West 155th Street viaduct, the west approach plaza over the Harlem River Drive and Seventh Avenue, the swing span over the Harlem River, the deck and camelback trusses over Metro-North Railroad and Conrail, the Major Deegan interchange (consisting of the east approach and four ramps), and the Jerome Avenue viaduct. The rehabilitation work not only strengthened the structure, it returned the bridge's appearance to its turn of the century grandeur.

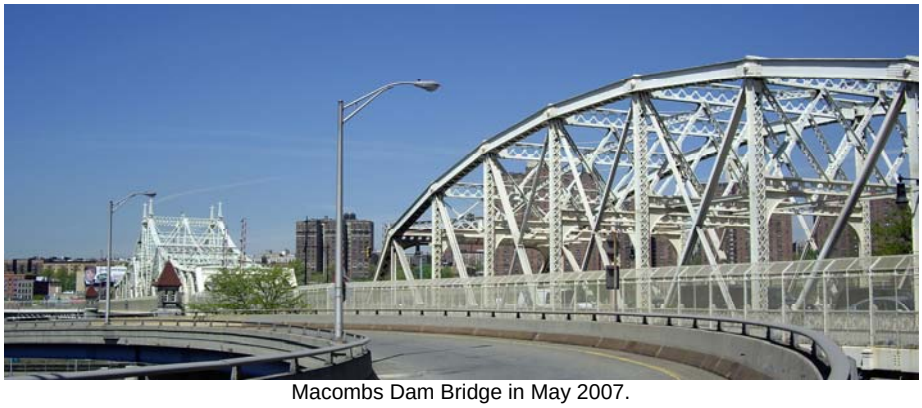
2004: East View of Macombs Dam Bridge Swing Span and Camelback Truss. (Credit: Peter Basich)
Architectural Detail of the Bridge. (Credit: Michele N. Vulcan) Close-up of a Gate House. (Credit: Peter Basich)

Close-up of the 1894 Dedication Plaque. (Credit: Hani Faouri)
View of the Swing Span Control House. (Credit: Michele N. Vulcan)

As part of this project, the historic John Hooper Fountain, which dates from 1894, was fully rehabilitated in 2000. After studying detailed old photographs, the globe and weather vane were recast and replicated. Cast aluminum was used with high impact glazing similar to the lanterns installed in Central Park in the 1980's. Just east of the fountain, a garden of rose bushes was added for the community's pleasure. Other additions included a new paved island, new curbs, and a steel fence. Bollards were installed at the western end of the island to protect the fountain from vehicular traffic.

2000 – 2002: John Hooper Fountain Globe. New Trusses at the Jerome Avenue Approach to the Bridge. View of the Roadway in 2004 From Above the Control House – Old Yankee Stadium is on the Right. (Roadway Credit: Peter Basich)

Bridge Protective Fencing and Staircase. (Credit: Michele N. Vulcan) Detail of the Bridge – Old Yankee Stadium Banner is Visible on the Right.



Macombs Dam Bridge in May 2007.

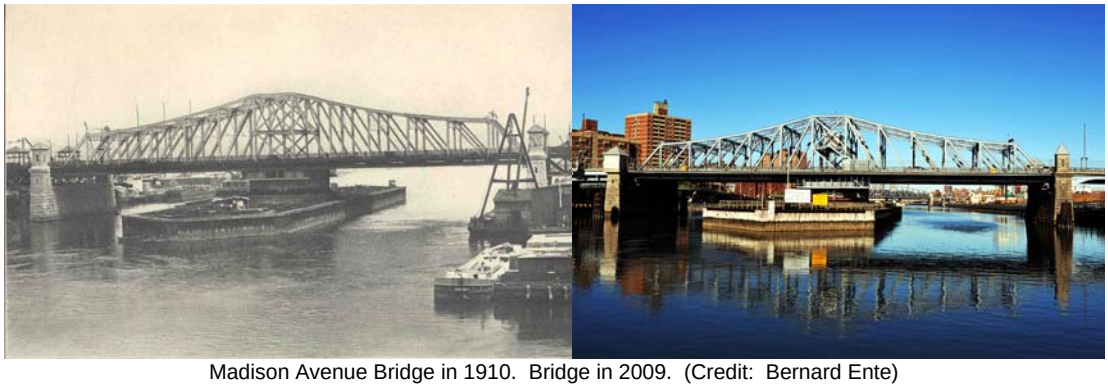
Macombs Dam Bridge in February 2009 - New Yankee Stadium is on the Right. (Credit: Duane Bailey-Castro)

The bridge is also being assessed for seismic vulnerabilities. A seismic retrofit of this bridge will include strengthening the existing foundations and superstructure steel members. Retrofitting work will be completed throughout the length of the structure from the 155th Street Viaduct to the

Jerome Avenue Approach. This will include installation of mini-piles in the existing piers that support the swing span, strengthening of the steel columns and floor beams of the 155th Street Viaduct and installation of lock-up devices to disseminate loads during a seismic event. The contract will also include replacement of the existing fender system protecting the center pivot pier and structural steel repairs identified by ongoing regular inspections. The seismic retrofit project is currently scheduled to start in July 2014 and end in January 2017.

MADISON AVENUE BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN)

A project for seismic retrofit, electrical, mechanical, masonry and miscellaneous work is scheduled to be performed between March 2017 and September 2018. A preliminary seismic assessment indicates that a new center pivot pier may need to be constructed to support the swing span to meet seismic demands. If this assessment is confirmed by a further detailed analysis, the construction duration will be longer since it will require construction of new foundations for the swing span located in the Harlem River. The final design phase of this project is expected to begin in spring 2010. In 2008, the bridge carried 41,740 vehicles per day.



Madison Avenue Bridge in 1910. Bridge in 2009. (Credit: Bernard Ente)

Bridge Sign in 2007. (Credit: Duane Bailey-Castro)

PARK AVENUE TUNNEL OVER 34TH STREET (MANHATTAN)

The Park Avenue Tunnel was originally built as an open cut in 1836 to accommodate horse drawn trolley cars between East 33rd Street and East 42nd Street. In 1854, a five course brick arch roof was constructed and the underground tunnel was used by the New York and Harlem

River Railroad steam engine trains from East 42nd Street to its terminal then located at East 30th Street and Park Avenue. In 1870 the rail road was converted to electric powered trolleys.

The tunnel in its present form was converted to vehicular traffic only in 1917, when trolley tracks were covered with fill and roadway pavement was built. In its present form, the tunnel is located under the center mall of Park Avenue South. The roadway width inside the tunnel varies from 19'-2" to 22'-5" and carries single lane of traffic in each direction. On August 3, 2008, the tunnel was converted to single lane one-way (northbound).

Some rehabilitation work was completed on the tunnel in November 2005. That contract included the rehabilitation of the fans and the ventilation system. The new project is currently in its preliminary engineering phase. The scope of work includes complete rehabilitation of civil and structural components of the tunnel as well as upgrading of fire detection and ventilation system of the tunnel. Construction is expected to start in July 2016 and be complete in January 2019.

Park Avenue Tunnel in 2003. (Credit: NYSDOT)

ROOSEVELT ISLAND BRIDGE OVER EAST RIVER/EAST CHANNEL (MANHATTAN/QUEENS)

This lift bridge opened in 1955. In 2008, the bridge carried 10,161 vehicles per day. The 8 span structure carries two lanes of traffic over the East Channel of the East River. It is the only vehicular access to Roosevelt Island from the Borough of Queens.


Roosevelt Island Bridge Under Construction in 1952.

American Institute of Steel Construction 1955 Award Plaque.

A Notice to Proceed for the $86.5 million reconstruction of this bridge was issued to the contractor with a start date of March 12, 2007. The project's scope of work includes rehabilitation of the existing bridge superstructure, substructure and approaches, replacement of some of the existing mechanical and all of the electrical systems for the lift span, rehabilitation of the bridge operator house, installation of safety fences on the sidewalk, replacement of the street lighting, resurfacing of the approach roadways, installation of pigeon proofing systems and re-painting the entire structure. The project will also include the installation of a dedicated right-hand turn lane onto the southbound Vernon Boulevard in Queens, and the construction of a new back-up generator building under the Queens approach to provide power to allow operation of the bridge in an emergency. Fabrication and testing of mechanical and structural components was in progress by the end of 2007.

Roosevelt Island Bridge in 2005. (Credit: Peter Basich) Bridge Tower and View From Deck in 2005. (Credit: Michele N. Vulcan)

2007: Construction of the Below Deck Shield for the Queens Approach of the Roosevelt Island Bridge. Above Deck Containment on the Lift Span. The Lift Span Shield Looking Northeast.

By the end of 2008, the rehabilitation of the existing bridge superstructure, substructure and approaches was nearly complete. The roadway was returned to full service on December 2, 2008 after the complete re-decking of the main bridge and approaches. The sidewalks were returned to service in 2009. Due to a design change, the replacement of some of the existing mechanical and all of the electrical systems for the lift span, and the rehabilitation of the bridge operator house will be performed during a Navigation Channel closure between October 2009 and August 2010. The installation of safety fences on the sidewalk, replacement of the street lighting, resurfacing of the approach roadways, and installation of pigeon proofing systems was completed in 2009.

Concrete Filled Grid Deck of the Queens Approach in April and May 2008. Stage I Roadway Construction of the Queens Approach in July 2008.

Open Lift Span During United Nations General Assembly Week in September 2008. Stage II Roadway Construction of the Queens Approach in October 2008. Asphalt Placement on the Queens Approach in November 2008.

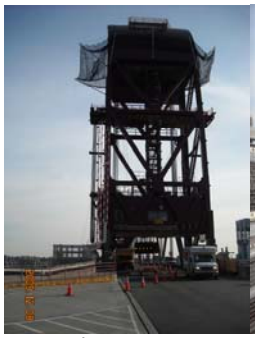
Open Queens Approach Roadway of the Roosevelt Island Bridge in December 2008.

The cleaning and repainting of the bridge began in January 2008, and the structure painting was complete by the end of 2009. The only remaining painting will be local touch up areas after installation of the new machinery. The Department and its contractor strictly adhere to the safety requirements regarding lead paint removal as approved by the United States Environmental Protection Agency and the Occupational Safety and Health Administration, New York City Departments of Health and Environmental Protection, and the New York State Departments of Health and Environmental Conservation.

Lead Paint Removal Containment on the Roosevelt Island Bridge Lift Span in January 2008. Scaffolding Erection on the East Tower in July 2008.

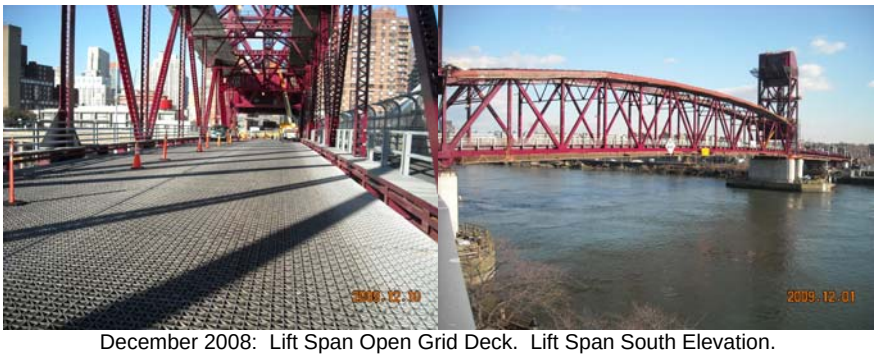
Tower Containment in August 2008. (Credit: Bernard Ente) Lift Span and West Tower in September 2008.

The work was performed within an entirely sealed Class 1A containment system (under negative pressure) which acted as an added safety measure to prevent any materials from escaping into the air. Filtration of the enclosed air prevented paint waste dust from being released. The Department placed several air monitoring stations in the area around the bridge. The Department performed continuous monitoring and testing of the soil and air quality as well as noise levels in the area surrounding the containment enclosure to minimize impacts and ensure the safety and quality of life for workers and residents nearby.




December 2008: Roosevelt Island Bridge West Tower West Elevation. Lift Span Sidewalk.

December 2008: East Approach Roadway and Sidewalk.

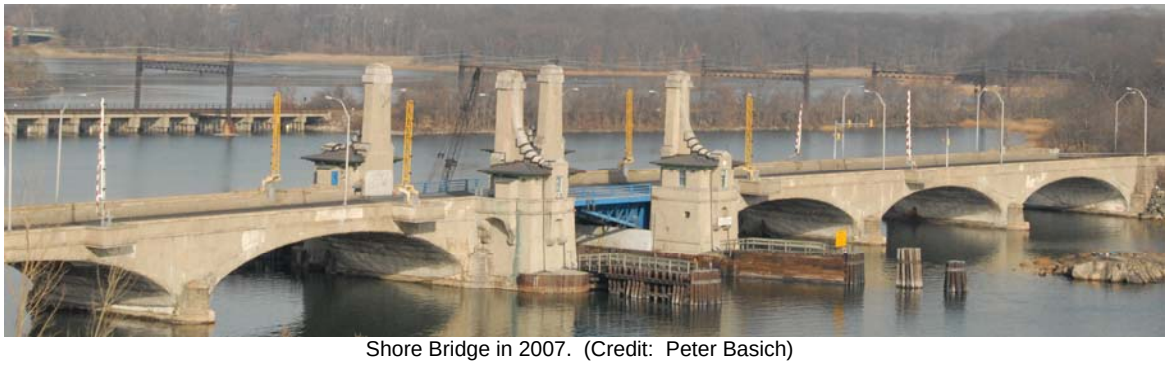


December 2008: Lift Span Open Grid Deck. Lift Span South Elevation.

The contractor is currently working on the rehabilitation of the machinery, replacement of the bridge's power systems and the installation of the bridge control systems. Construction is expected to be completed in March 2011.

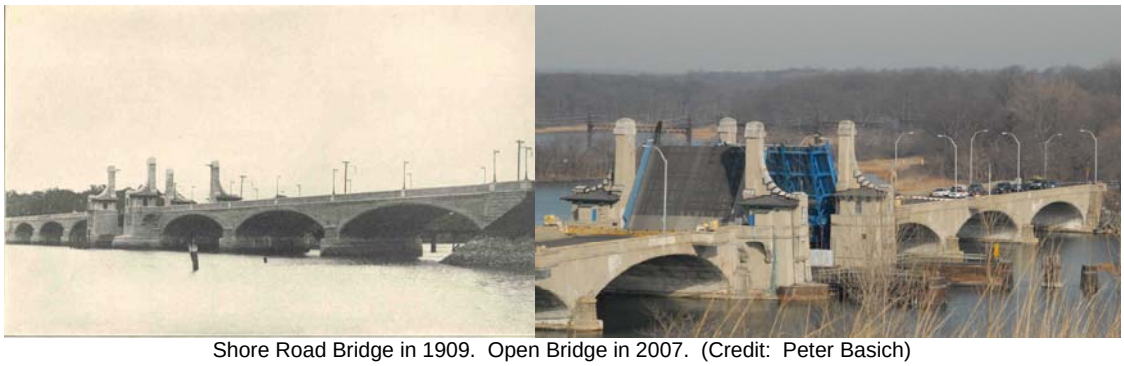
SHORE ROAD BRIDGE OVER THE HUTCHINSON RIVER (BRONX)

This bridge, built in 1908, was originally called the Pelham Parkway Bridge over Eastchester Bay. In 2008, the bridge carried 19,131 vehicles per day. The $5 million interim rehabilitation of the existing bridge superstructure and substructure enables the Department to keep it operational while a new bridge is being designed and built adjacent to the existing bridge. The existing bridge will be demolished once the new bridge is in service. The rehabilitation project began in April 2001, and all traffic lanes were reopened to traffic on April 24, 2002, three days earlier than scheduled. The interim rehabilitation of this bridge was substantially completed on June 17, 2002.



Shore Bridge in 2007. (Credit: Peter Basich)

As of the end of 2009, a mid-level, single leaf bascule movable bridge was in design. It will be constructed to the south of and parallel to the existing bridge, with a wider navigation channel. An environmental impact study, co-sponsored by the Federal Highway Administration, is expected to begin in Fiscal Year 2011. The project to construct a new Shore Road Bridge is scheduled for construction between October 2021 and January 2026.



Shore Road Bridge in 1909. Open Bridge in 2007. (Credit: Peter Basich)

WARDS ISLAND PEDESTRIAN BRIDGE OVER HARLEM RIVER (MANHATTAN)

The Wards Island Bridge is a pedestrian bridge connecting the East River Housing Project at East 103rd Street in Manhattan to Wards Island. Located along the East River, the bridge is located between exits 14 and 15 of the FDR Drive. This vertical-lift bridge has a total of twelve spans. Spans one through four are located on the Manhattan side of the bridge and are oriented from south to north. At span five the bridge turns from west to east. The curb-to-curb width of the lift span is 3.66 meters, the clear width of the Manhattan approach ramp is 3.66 meters and the clear width of the Wards Island approach ramp measures about 3.76 meters. The bridge's Wards Island approach provides immediate pedestrian access to the 68-acre Wards Island Park.

Aerial View. Tower Detail in 2009. (2009 Credit: Duane Bailey-Castro)

The bridge was built by the U.S. Army Corps of Engineers in 1951 and was designed by Othmar Hermann Ammann. The bridge is open for use from April through October during daylight hours. During the months from November through March, the bridge is kept in the "open" position and cannot be accessed. Major reconstruction tasks will be performed during the time when the bridge is completely closed.

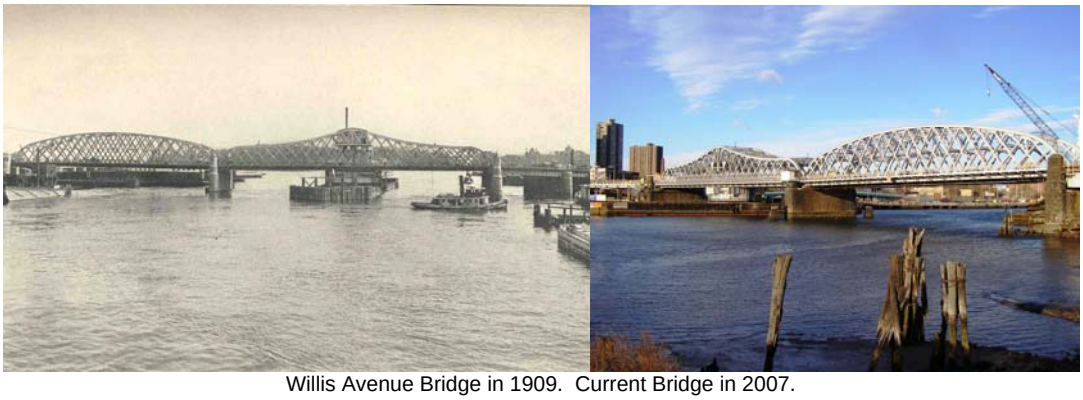
A protective coating project was completed in May 2003 at an approximate cost of $1.2 million. The reconstruction of the bridge is scheduled to start in May 2010. The project's scope of work includes the replacement of the electrical components, the replacement of the walkway deck on the lift span, the repair and overlay of the deck on the other spans and approaches, the rehabilitation of the steel superstructure members, new fencing and lighting, and restoring the control and tender houses to their original condition. Construction is expected to be completed in August 2012.

Wards Island Pedestrian Bridge After Completion of Painting in 2003.
FDNY Rescue Boat Near the Bridge in 2008. (2008 Credit: Bernard Ente)

Proposed Fencing, Lighting, Access Platform and Handrail Along the Wards Island Bridge.

WILLIS AVENUE BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

Measuring 3,212 feet in length and opened to traffic on August 23, 1901, the Willis Avenue Bridge remains one of New York City's most heavily traveled bridges. The bridge is a bowstring truss swing bridge which spans the Harlem River, and connects Manhattan's First Avenue and 125th Street to Willis Avenue and 132nd Street in the Bronx. Engineered by Thomas C. Clarke, the bridge was designed to relieve traffic congestion on the Third Avenue Bridge.



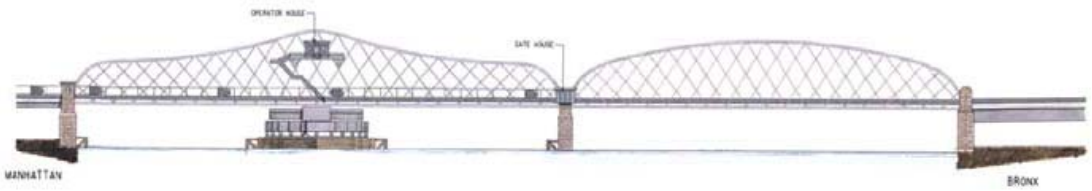
Willis Avenue Bridge in 1909. Current Bridge in 2007.

A major hub between the FDR Drive in Manhattan, the Major Deegan Expressway and the Bruckner Expressway in the Bronx, the Willis Avenue Bridge carried approximately 62,167 vehicles per day in 2008. Ten local and interstate bus lines use the bridge as a principal route from New York City to points throughout the northeastern United States.

Open Willis Avenue Bridge.

Because of substandard curves that are present on the structure's approaches, the Willis Avenue Bridge has been one of the City's most accident-prone crossings. Between 1992 and 1994, there were 809 vehicular accidents on the bridge, for an average of 269 per year. The ramp from the FDR Drive is now out of service and traffic enters the bridge from a temporary loop ramp installed as part of the project. Under the Department's proposed reconstruction program, these substandard curves will be eliminated.

Because of the advanced age and condition of the Willis Avenue Bridge, the City of New York will replace the existing bowstring truss swing bridge with a new swing span bridge constructed just to the south of the existing bridge. Elimination of the center median on the main span will greatly improve the traffic flow on the bridge.



Existing Willis Avenue Bridge Swing Span.

New Willis Avenue Bridge Span.

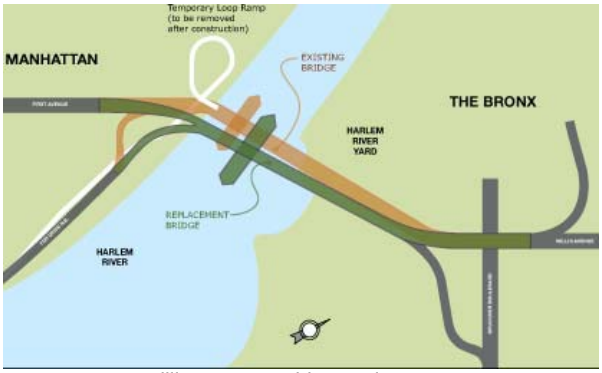
A direct connection to the northbound Major Deegan Expressway in the Bronx will be constructed. There will be wider travel lanes with shoulders, and a broader, combined pedestrian/bicycle pathway along the north side of the bridge.

New, tested and inspected materials will be used including placement of a solid riding surface on the swing span instead of the open grating deck currently in use. In addition, modern electrical, mechanical and communications systems will be installed.

Traffic will continue to use the current bridge until the new bridge opens, resulting in limited impact to motorists and nearby communities. The NYC Marathon will not be impacted: runners

will continue to use the current bridge each year until the new bridge is completed.

Throughout the project, little impact to marine traffic will be experienced. The new swing span is being fabricated and assembled off site, and will be floated into place once the foundations, center pier and rest piers are ready to receive it. A symbolic portion of the historic original Willis Avenue Bridge will be retained in place as a monument to the bridge in Harlem River Park.



Willis Avenue Bridge Project Map.

The project will also replace the FDR Drive approach ramp and the ramp onto Bruckner Boulevard. NYCDOT will also reconstruct Willis Avenue over the Major Deegan Expressway for the New York State Department of Transportation.

A Notice to Proceed for the replacement of this bridge was issued to the contractor with a start date of August 27, 2007. Foundation construction work was in progress by the end of 2007.


Open Willis Avenue Bridge in July 2008. Bridge in April 2009. (2009 Credit: Masroor Mahmood)

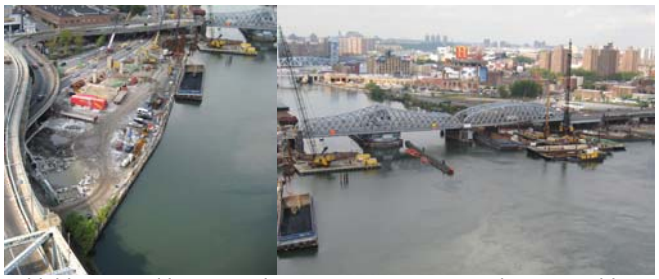

Rendering of the New Willis Avenue Bridge.

On January 3, 2008, the East 125th Street exit ramp off the northbound FDR Drive was closed. This closure was necessary so that work on the construction of a temporary ramp, as well as construction of the new north-bound FDR Drive ramp to the Willis Avenue Bridge, could begin. The East 125th Street exit ramp, which typically carries only a low volume of traffic, will not reopen until the temporary ramp is removed in June 2011.

Current Willis Avenue Bridge and Construction Site in July 2008.

Temporary Loop Ramp in July and October 2008.

Temporary Loop Ramp in October 2008. Pier 9 Drilled Shaft Footing in November 2008.



Shield Removal in September 2008 as Seen From the RFK Bridge.

The First River Pier in November 2008.

In 2008, the project focused on foundation construction work, along with construction of a temporary ramp from the north-bound FDR Drive onto the bridge. At the end of 2008 the loop ramp was nearing completion. It went into service on January 24, 2009. This will allow the removal of the existing ramp and the construction of the new ramp to proceed. One half of the foundations for the new FDR Ramp were installed. Additionally one of the four piers in the river was in place, and work on a second had begun. The foundations in the Harlem River Rail Yard were more than 50 percent complete, and work had begun on the footings for the new Bruckner Boulevard Ramp.

In 2009, the project continued to focus on foundation construction work, with the installation of footings and piers for the new ramp from the FDR Drive as well as the one-half of the 1st Avenue Approach. The precast concrete pier box for River Pier 5 was transported in February 2009 by oceangoing tug and barge from the fabrication yard in Virginia to the contractor's yard in Jersey City, New Jersey. Over 30 automobiles were removed from the Manhattan channel in spring 2009. At the end of 2009 the contractor began the installation of the steel superstructure over the FDR Drive. The work in the river consisted of the installation of the drilled shafts for the four river piers and the installation of three of the four precast pier boxes in the river. The assembly of the new swing span began in Coeymans, near Albany, New York, and is expected to be completed early in 2010. The span will be floated down the Hudson River in summer 2010. In the Bronx, a temporary pedestrian bridge was installed in May 2009 over the Major Deegan Expressway, just south of the existing bridge, to carry pedestrians until the new bridge is constructed. More than half of the paving and drainage work on the expressway is complete. One-half of the bridge over the Major Deegan was removed and work on the new abutment wall began. One-half of the abutment at Bruckner Boulevard was reconstructed and the piers to carry the south half of the new bridge were installed. The foundations in the Harlem River Rail Yard are complete and the first phase of the new Bruckner Boulevard exit ramp is nearing completion. It is expected that traffic will be switched onto the new ramp in early 2010 year, allowing for the demolition of the existing ramp and the installation of main line spans in phases up to 134th Street. The project is slated for completion in December 2012.

View From Harlem River Drive in February 2009. Manhattan Relieving Platform in July 2008 and February 2009.

April 2009: Willis Avenue Bridge Pier 5 Precast Footing, Pier 8 Footing, and Pier 9 Rebar Columns.

Pier 5 in November 2008 and Pier 6 in May 2009. May 2009: Temporary Pedestrian Bridge over the Major Deegan Expressway.

May 2009: Willis Avenue Bridge Construction Site. FDR Drive Ramp Demolition.

June and October 2009: Assembling the Willis Avenue Bridge Swing Span near Albany, New York.

Construction Barge in June 2009. (Credit: Edgardo Montanez)

Willis Avenue Bridge August 2009: Placement of Deck Concrete on New Ramp to Bruckner Boulevard. Curved Girders on New Ramp. Placing Concrete in Pier 7 Box.

Willis Avenue Bridge August 2009: Installation of Tub Girders on Temporary Supports. September 2009: Existing and New Ramps to Bruckner Boulevard.

September 2009: Administrative Engineer Hani Faouri at Pier 7. Pier 7 Box Concrete Infill.

Construction Site in December 2009. (Credit: Brian Gill)

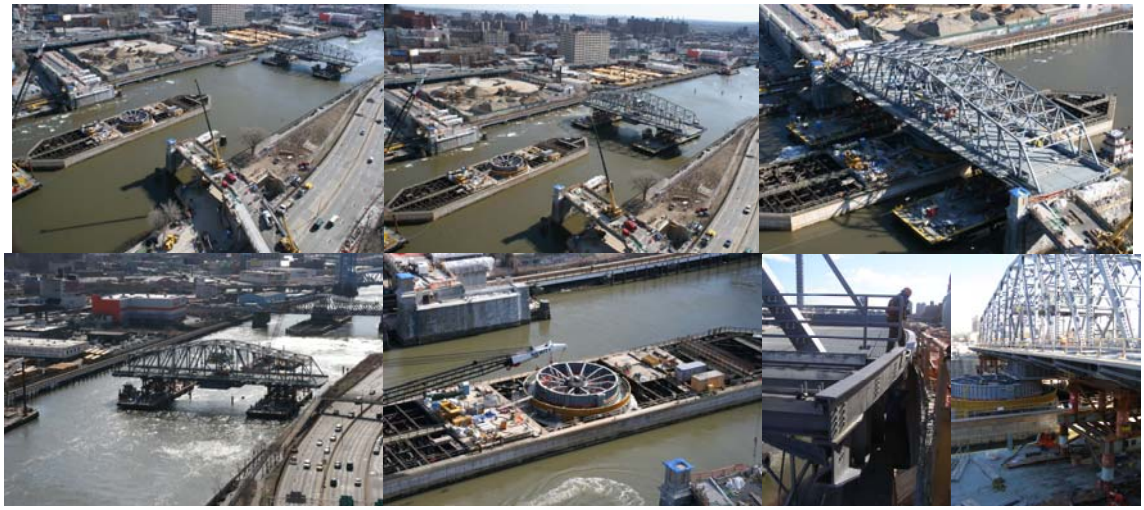
Construction Site in December 2009. (Credit: Brian Gill)

145TH STREET BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

The existing 145th Street Bridge is a swing type bridge with two throughtrusses. An eight-span structure, it carries four lanes of vehicular traffic over the Harlem River Drive, the Harlem River and Oak Point Link Railroad. Spans one and two were constructed in 1957 when the bridge was extended to span the Harlem River Drive. Spans six, seven and eight were reconstructed in 1990 in place of the original Bronx flanking span to provide a right-of-way for the Oak Point Link. In 2008, the 145th Street Bridge carried approximately 23,148 vehicles per day. This makes it one of the most essential routes for vehicles and pedestrians traveling between Manhattan and the Bronx. Vehicles, which cross this rim bearing swing bridge each day between the two boroughs, include buses, trucks and cars.

A Notice to Proceed for the $69.4 million reconstruction of this bridge was issued to the contractor with a start date of July 15, 2004. Fabrication of steel components for the approach and new swing span occurred in Pennsylvania. The new swing span was assembled in Albany, New York in late 2005, and was floated-in on February 9, 2007.

The project included the complete replacement of the swing span and six approach spans, seismic retrofitting, partial reconstruction of substructures and the reconstruction of the approach roadways, sidewalks, and bridge railing. The design for the bridge utilized elements pre-fabricated off-site so as to allow a very quick replacement of the existing bridge in 3 stages totaling 18 months. Traffic was only impacted for the 15-month period of March 16, 2006 to June 18, 2007.



Floating In the New 145th Street Span in February 2007. (Close-up Credit: Bojidar Yanev)

Stage II was completed when two lanes of the bridge were opened to vehicular traffic at 12:20 AM on March 22, 2007. The north sidewalk was opened to pedestrians as well, while demolition work for stage III of the South side continued. The Manhattan and Bronx approaches as well as the Bronx bound lanes of spans 1, 2, 3, 6, 7 and 8 were demolished and rebuilt. All four lanes of the bridge were opened to vehicular traffic at 7:00 AM on June 16, 2007.

2007: New Bridge Ready for Traffic.

June 2007: New 145th Street Bridge Ready and Opening for Marine Traffic.

Bridge Sign. June 2007: New 145th Bridge at Night.

The south sidewalk was re-opened on September 12, 2008 after the bridge was hooked into the permanent electrical feed and the generator supplying power was removed from the sidewalk area. Other work performed in 2008 included installation of mechanical equipment, connection of the gate house plumbing to the city system, centering device alignment checks, pointing of the stone walls, and switching the bridge systems on to the permanent electrical feeders.

Work performed in 2009 included touch up painting, installation of several access platforms, new navigation lighting, installation of new electrical wire tracks in the swing span and the start of the final testing phase.

These upgrades will restore the structural integrity and extend the useful life of the 145th Street Bridge. The project is slated for completion in August 2010.

FLOAT OUT/FLOAT IN

A technique referred to as “float out the old/float in the new” is being incorporated into replacement schemes for many movable bridges. Under this scheme, the old spans are floated out in their entirety and the new spans are floated in. Replacing the spans avoids the need to make cumbersome repairs to the existing trusses, costly removal of lead base paint from the steel, and painting of the entire structure at the site. Having the new spans constructed off-site and barged to the project allows for quick and efficient replacement of the removed span. Current projects that will incorporate this technique are: Borden Avenue Bridge, and Grand Street Bridge. The float-in of the new swing span of the Third Avenue Bridge was successfully performed in October 2004, as was the float-in of the 145th Street Bridge in February 2007. The float-in of the new swing span of the Willis Avenue Bridge is expected to take place in summer 2010. The float-out of the existing swing span will follow by a few months once traffic is running on the new bridge.

Roadway Bridges

INNOVATIONS

Innovations in the design and construction of Roadway Bridges continued in 2009. Where feasible, the continued use of precast elements in bridge reconstruction reduces construction duration and the resulting negative impacts on the traveling public. In addition, the implementation of applicable Environmentally Preferable Purchasing (EPP) standards on bridge projects will ease the impact of the increased demands on resources and surrounding environment, and Best Management Practices (BMP) in all applicable projects will mitigate the impact of the project on the surrounding environment.

TEN CULVERTS: GALLOWAY AVENUE OVER MARIANNE STREET, FOREST AVENUE OVER CRYSTAL AVENUE, NAUGHTON AVENUE OVER PATTERSON AVENUE, MIDLAND AVENUE OVER HYLAN BOULVARD, ROCKLAND AVENUE OVER BRIELLE AVENUE, FOREST AVENUE OVER RANDALL AVENUE, GREGG PLACE OVER RANDALL AVENUE, ARTHUR KILL ROAD OVER MULDOON AVENUE, RICHMOND HILL ROAD OVER RICHMOND ROAD, AND ARTHUR KILL ROAD OVER RIDGEWOOD AVENUE (STATEN ISLAND)

The Galloway Avenue culvert is a single span timber pedestrian bridge supported on a concrete abutment. The reconstruction project is still in the design stage.

The Forest Avenue culvert over Crystal Avenue is a single span reinforced concrete box culvert. The reconstruction will consist of the demolition of the existing culvert, clearance of debris from the channel, replacement of the culvert with a concrete deck slab supported on steel beams on reinforced concrete abutment and wingwalls. The work will be performed in two stages with two traffic lanes maintained in each direction during construction.

The Naughton Avenue culvert consists of three parallel reinforced concrete pipes at the north and south ends separated by a twin barrel box culvert. The rehabilitation will include repairing the concrete cracks and spalls, cleaning the debris, and replacing the missing anchor bolts for the retractable steel grates.

The Midland Avenue culvert consists of a single span reinforced concrete box, which will be replaced with a new pre-cast box culvert. The work will be performed in two stages, with one lane of traffic maintained in each direction.

The Rockland Avenue reinforced concrete culvert project will include concrete repair and a lined and stabilized north embankment.

The Forest Avenue culvert over Randall Avenue is a single span concrete box culvert. It will be replaced with a new precast concrete box culver with new sidewalks and asphalt pavement. The work will take place in three stages while maintaining one traffic lane in each direction during construction.

The Gregg Place culvert is a single span reinforced concrete box culver. It will be replaced at the southern portion with a new precast box culvert with new pavement. The north side of the road will remain open to through traffic.

The Arthur Kill Road culvert over over Muldoon Avenue consists of a reinforced concrete pipe at north and a reinforced box culvert at south. The box culvert will be replaced with a new box culvert, and a structural lining will be installed in the pipe culvert. The construction will be performed in one stage with one lane of traffic maintained in each direction.

The Richmond Hill Road culvert consists of a single span stone masonry arch. The rehabilitation

work will include removing and re-pointing the stone masonry, removing and replacing the fill and asphalt wearing surface above the arch, and cleaning the vegetation and sedimentation. A temporary access bridge will be built over one lane so that one lane will remain open to traffic at all times.

The Arthur Kill Road culvert over Ridgewood Avenue consists of a non-reinforced concrete pipe at south and a corrugated metal pipe at north. The rehabilitation work will include installing a structural lining inside the concrete pipe and repairing the concrete at the head walls and catch basins. There will be two stages of construction and one lane of traffic will be maintained in each direction.

This project to rehabilitate and/or replace the ten culverts is expected to begin in November 2013, and is expected to be complete in 2014.

ANNADALE ROAD BRIDGE OVER SIRT SOUTH SHORE (STATEN ISLAND)

This project will replace the existing two span bridge with a single span bridge, including the removal of the existing pier, the replacement of the existing north abutment and the rehabilitation of the existing south abutment. In addition, the work will include removal and replacement of the existing concrete deck, sidewalks and curbs, and the replacement of the existing bridge railing system. The bridge will be replaced in two stages. One lane in each direction will be open to traffic at all times during construction. Pedestrian access will be provided at all times. A Notice To Proceed was issued with a deferred date of May 27, 2008, the date when the portion of an ongoing DDC area-wide sewer and water main installation project within the bridge limits was completed.

Construction began in May 2008 and is expected to be completed in September 2010.

Annadale Road Bridge in 2001. (Credit: NYSDOT)

In May 2008 the contractor mobilized and commenced Stage-1 construction activities. Stage I construction included the demolition and reconstruction of the eastern half of the bridge. The contractor completed Stage I deck removal on November 26, 2008. In 2009, the contractor completed the demolition of the super- and sub-structures of the existing eastern portion of the bridge, constructed the new east half of the north abutment, modified the top ten feet of the south abutment, erected the structural steel, placed the new concrete deck slab, installed telephone conduits, placed approach slabs, installed new bridge railings and protective fencing, completed roadway restoration work at the intersections of Annadale Road with Sneden Avenue on the south side and Posen Avenue on the north side, installed a temporary pedestrian walkway along the east fascia, and realigned the traffic configuration.

Stringer removal for Stage 1 was completed on February 20, 2009. Placement of concrete for the south abutment modification was completed on March 27, 2009. The joint was sealed between the new and existing concrete for the south abutment on May 6, 2009, and the area behind the south abutment was backfilled on May 7. The contractor removed and replaced the water main

along Sneden Avenue on the night of June 12, 2009. Installation of the formwork and re-bars for the reconstruction of the north abutment stem wall and a portion of the wing wall was completed on July 8, 2009. From August 31, 2009 to September 4, the contractor performed the gas main work on the south side of the bridge at the intersection of Sneden Avenue and Annadale Road. Stage II construction began on December 7, 2009. The completed eastern half of the new bridge was opened to traffic in December 2009. In 2010, the contractor will demolish and reconstruct the western half of the bridge.

Annadale Road Bridge: Stage I Construction in February 2009. Saw Cutting the Diaphragms, Removing the Stringers, And Placing a Temporary Truss to Support Utility Conduits.

Annadale Road Bridge: Removing the Eastern Bridge Railing Fence and the Stringer in February 2009.

Annadale Road Bridge: Removing the South Abutment and Center Pier in March 2009.

Annadale Road Bridge: Removing the North Abutment Footing and the Partly Embedded Abandoned Sewer Pipe Containing Asbestos in May 2009.

Annadale Road Bridge: Placing the Concrete Deck in October 2008.

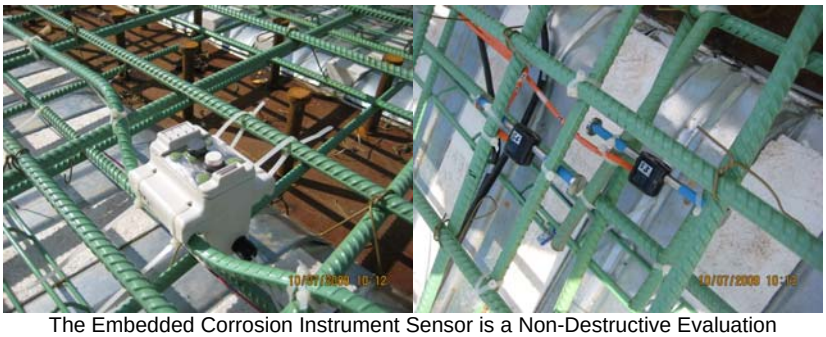
Corrosion of reinforcing steel bars in concrete leads to the premature failure of many structures exposed to harsh environments. Rust products form on the bars, expanding their volume and creating stresses in the surrounding concrete. This leads to cracking and spalling, both of which can severely reduce the service life and strength of structural concrete components.

A unique feature of Stage I construction was the installation of special sensor devices to monitor the corrosion of the epoxy coated steel reinforcing bars in the bridge deck slab; this is Phase I of a pilot study that is being conducted by City University to study the corrosion of reinforcing steel bars in bridge deck slabs. In Stage II construction, another set of sensor devices will be placed in the western half of the deck slab to monitor the corrosion of the stainless clad steel reinforcing bars that would be substituted for the epoxy coated steel reinforcing bars. The secondary objective of the study is to verify the accuracy and reliability of several advanced corrosion monitoring sensors in a field environment. The work is supported through a grant from the FHWA under the Innovative Bridge Research and Construction program.

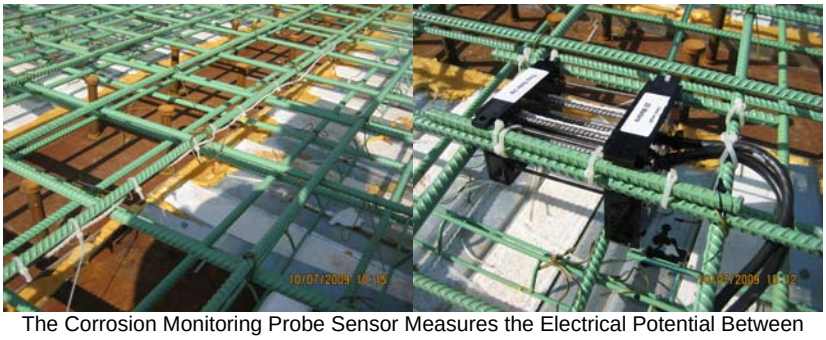
On October 6 and 7, 2009, the contractor installed, activated, and tested the sensors for the corrosion monitoring system. A representative from City University was present during deck slab

placement to ensure the safety of their newly installed sensors. City University will install the second set of sensors next year in Stage II of construction.

The Annadale Road Bridge has four different types of embedded corrosion monitoring sensors distributed across two spans of the bridge.



The Embedded Corrosion Instrument Sensor is a Non-Destructive Evaluation Instrument. The Variable Wire Strain Sensor Gauges Strain.



The Corrosion Monitoring Probe Sensor Measures the Electrical Potential Between the Rebar and the Electrode. The Corrosion Penetration Monitoring Probe Sensor Measures Corrosion Caused by Chlorine Containing Moisture.

BELT PARKWAY BRIDGES OVER PAERDEGAT BASIN, FRESH CREEK, ROCKAWAY PARKWAY, GERRITSEN INLET, MILL BASIN, BAY RIDGE AVENUE, AND NOSTRAND AVENUE (BROOKLYN)

On a New York State-mandated scale from 1 to 7, these seven bridges possess a condition rating of “fair” (3.001 – 4.999. In 2009, the Paerdegat Basin Bridge was 3.222; the Fresh Creek Bridge was 3.250; the Rockaway Parkway Bridge was 3.917; the Gerritsen Inlet Bridge was 3.418; the Mill Basin Bridge was 3.284; the Bay Ridge Avenue Bridge was 3.313; and the Nostrand Avenue Bridge was 4.014. All are original structures, which were built beginning in 1939. While none of the bridges are in any immediate danger of structural failure, their reconstruction is required in order to maintain mobility and public safety on this vital artery.

The Seven Belt Parkway Bridges.

Reconstruction of the seven bridges and their approaches on the Belt Parkway (over three local streets and four waterways) began in the fall of 2009. Group 1 (Paerdegat Basin, Fresh Creek, and Rockaway Parkway Bridges) is expected to be complete in fall 2014. Group 2 (Gerritsen Inlet and Mill Basin Bridges) is expected to start in November 2011, and to be complete in November 2015. Group 3 (Bay Ridge Avenue and Nostrand Avenue) is expected to start in September 2012, and to be complete in May 2015.

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. The Department anticipates that these improvements will reduce the current accident rate on this section of the Belt Parkway by approximately 45%.

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; and 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. Items considered included 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.

On July 18, 2006, the Art Commission (now known as the Public Design Commission) selected the Seven Belt Parkway Bridge reconstruction project for a Design Award in its 24th annual Excellence in Design Awards.

Belt Parkway Bridge Design Renderings.

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 existing Paerdegat Basin Bridge is a 692-foot long, 13 span, multi-girder, simple supported steel superstructure, supported on reinforced concrete pier cap beams and abutments supported on reinforced concrete piles. The bridge has two 34-foot wide roadways carrying three lanes of traffic in each direction; with a 3-foot safety walk on the north side, a 4-foot wide center median/barrier, and an 8-foot wide south pedestrian/bicycle sidewalk. The existing structure and immediate approaches will be demolished and replaced by two new bridges and new approach roadways on split alignments.

The existing 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 replacement bridges will consist of two angled trapezoidal steel box girder structures: the 825-foot, 3 span westbound bridge, north of the existing structure, and the 1,227-foot, 5 span eastbound bridge, south of the existing structure, remaining at 28 feet over the navigable channel. Both bridges will have a 36-foot wide roadway with a 12-foot wide right shoulder. The eastbound bridge will have a 4-foot wide left shoulder, while the westbound bridge will have a 10-foot wide left shoulder. 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.

Paerdegat Basin Bridge.

Proposed Paerdegat Basin Bridge.

The existing Fresh Creek Bridge is a 264.5 foot, 5 span, multi-girder, simple supported steel superstructure, supported on pre-cast concrete columns founded on four reinforced concrete piers on concrete piles with concrete gravity abutment walls on timber piles. The bridge has two 34'-2" wide roadways, a 5-foot wide center median/barrier, and a 10-foot wide south sidewalk. The parkway east and west of the bridge has a 10-foot wide bike footpath on the south side. The existing structure and immediate approaches will be demolished and replaced.

The replacement bridge will be a 309-foot, 3 span structure; the new structure will have only two support piers, resulting in a wider channel. The proposed construction will result in improved landscaping on the bridge approaches. The bridge deck and approaches will be widened to 120 feet from the existing 86 feet to accommodate three 12-foot lanes in each direction, 12-foot wide shoulders, and a 12-foot wide bike path, separated from the traffic lanes by a barrier system. The pedestrian and bicycle pathway will be maintained at all times.

Fresh Creek Bridge in 2002. (Credit: NYSDOT) Proposed Fresh Creek Bridge.

The existing Rockaway Parkway Bridge is a 150-foot, 4 span, multi-stringer, simple supported steel superstructure, supported on steel cap beams on concrete filled steel pipe columns, and reinforced concrete abutment walls supported by concrete pile foundations. The bridge has two

34'-2" wide roadways, a 5-foot wide center median/barrier, and a 10-foot wide south sidewalk. The existing structure and immediate approaches will be demolished and replaced.

The replacement bridge will be a single span structure to improve visibility along Rockaway Parkway. The new structure will be built in the same alignment as the existing bridge. The bridge deck will be widened to 109 ½ feet from the existing 84 feet to accommodate three 12-foot lanes with a 12-foot wide right shoulder and 4-foot left shoulder in each direction, including 5 ½ feet for median and parapet width. The right shoulder lane on each approach will be 10 feet (while the width of the right shoulders on the bridge structure will be 12 feet), with the other dimensions the same width as those on the 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.

Rockaway Parkway Bridge in 2002. (Credit: NYSDOT) Proposed Rockaway Parkway Bridge.

A Notice to Proceed for the reconstruction of the Group 1 bridges was issued to the contractor with a start date of October 26, 2009.

Milestone A consists of all work required to complete the reconstruction of the Paerdegat, Fresh Creek, and Rockaway Bridges, including all roadway sections and ramps, within the limits of the construction, adjacent to and between the bridge structures. The contract provides for an incentive of $35,000 per day for each day that milestone A is early, with a maximum incentive of $14.98 million. There is a similar disincentive if the milestone is exceeded, with no maximum.

The existing Gerritsen Inlet Bridge is a 520-foot long, 9 span, steel girder and reinforced concrete beam superstructure, supported on reinforced concrete piers, and abutments supported on timber piles. The existing structure and immediate approaches will be demolished and replaced.

The replacement bridge will be a consist of a 496-foot, 3 span bridge, aligned 10'-6" north of the centerline of the existing structure, and remaining 35 feet over the navigable channel. The bridge will have a 36-foot wide roadway with a 12-foot wide right shoulder and a 4-foot wide left shoulder in each direction. The eastbound side will carry a dedicated pedestrian/bike path along the south fascia.

Gerritsen Inlet Bridge in 2002. (Credit: NYSDOT) Proposed Gerritsen Inlet Bridge.

Opened on June 29, 1940, the Mill Basin Bridge is adjacent to the Jamaica Bay Wildlife Refuge and the Gateway National Recreation Area. It is the only movable bridge on the Belt Parkway. The current clearance over Mean High Water is 35-feet. When the Mill Basin Bridge was constructed during the first half of the 20th century, New York City's inland waterways were among the most heavily navigated thoroughfares in the country. However, as maritime traffic in New York City steadily decreased since the mid-1960s, the need for movable bridges lessened as well. In 1941, during its first full year of operation, the Mill Basin Bridge was opened 3,100 times; by 1953, that figure decreased to 2,173; by 2009, the number of openings declined further to a total of only 183 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2007, the Mill Basin Bridge carried 148,802 vehicles per day. The average opening and closing time for the bridge (and others like it) is ten minutes. Thus, this structure's operation has a negative and significant effect on the efficiency of New York City's vehicular traffic flow.

The existing Mill Basin Bridge is 864-feet long and 14 spans, including double movable leaf bascule spans and a steel superstructure, supported on reinforced concrete pier on timber piles, and abutments supported on pre-cast concrete piles. The existing structure and immediate approaches will be demolished and replaced.

Pier 3 Column Repair in December 2008. (Credit: NYSDOT)

The replacement will be a 1,757-foot, 11 span fixed bridge, north of the existing structure. The bridge will have a 36-foot wide roadway with a 12-foot wide right shoulder and a 4-foot wide left shoulder in each direction. The eastbound side will carry a dedicated pedestrian/bike path along the south fascia. 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.

Mill Basin Bridge. Proposed Mill Basin Bridge.

The existing Bay Ridge Avenue Bridge is a 58-foot long, single span, reinforced concrete deck on a multi-girder system superstructure over Bay Ridge Avenue. The superstructure is supported by concrete gravity type abutments on pile foundations. The underpass is access to the NYCDEP Owl's Head Waste Treatment Plant. The existing superstructure will be demolished and replaced.

The replacement bridge superstructure will consist of pre-stressed concrete box beams and a reinforced concrete slab. The bridge will have three 12-foot wide lanes in the eastbound direction and two 12-foot wide lanes separated by a 4-foot wide painted stripe flush median in the westbound direction. There is no pedestrian/bike path on the structure. 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 Bridge in 2002. (Credit: NYSDOT) Proposed Bay Ridge Avenue Bridge.

The existing Nostrand Avenue Bridge is a 140-foot long, 3 span, multi-girder superstructure, consisting of a concrete deck with an asphalt overlay over Nostrand Avenue. The superstructure is supported by concrete pier columns with a steel cap beam, and abutments on concrete filled steel pile foundations. The existing structure and immediate approaches will be demolished and replaced.

The replacement will be a single span bridge consisting of standard steel girders with a cast-in-place deck superstructure and reinforced concrete abutments on pile footings, thus eliminating the need for intermediate support piers and resulting in improved sight lines on Nostrand Avenue. The bridge will have three 12-foot wide lanes with a 12-foot wide right shoulder. The approaches will have a 10-foot wide right shoulder and a 4-foot wide left shoulder in each direction. Nostrand Avenue will be widened to 81 feet 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.

Nostrand Avenue Bridge. Proposed Nostrand Avenue Bridge.

A computerized traffic simulation model was developed to analyze traffic conditions in connection with the Division's plans to reconstruct these seven bridges on the Belt Parkway. This model was a useful tool for understanding the impact of construction on the traveling public and helped us determine appropriate construction schedules. It enabled us to rapidly evaluate the impact of a variety of combinations of construction staging.

BEVERLY ROAD BRIDGE OVER BMT SUBWAY (BROOKLYN)

This bridge is a three span structure and was built in 1907. The superstructure consists of two built-up through girders, floor beams and stringers. The stringers are encased in a concrete jack arch deck. The superstructure is supported by concrete gravity wall abutments and piers. The project will involve the replacement of the existing deck with a new floor system using a concrete exodermic deck, and the repair of the existing primary members. The work will also include cleaning and painting the steel, and repairing the bridge seat and deteriorated concrete abutments. The bridge will be constructed in three stages and will remain open to traffic and pedestrians at all times. This project, currently in the final design stage, is expected to begin in April 2014, and is expected to be completed in April 2016.

Beverly Road Bridge in 2006. (Credit: NYSDOT)

BROOKLYN-QUEENS EXPRESSWAY (WB) & (EB) OVER CADMAN PLAZA AND FULTON STREET (BROOKLYN)

The Brooklyn-Queens Expressway over Cadman Plaza and Old Fulton Street, oriented East to West, and located just west of the Brooklyn Bridge, consists of two-level two-span superstructures, one above the other, founded on concrete abutments and piers sharing a common footing on H piles. The bridge was constructed in 1948.

The westbound side (the lower of the two-level structure) is a two-span continuous steel stringer, concrete deck superstructure supported by concrete abutments and a solid concrete center pier. The stringers are supported by fixed bearings at the center pier and with expansion bearings at the abutments. The bridge deck is a reinforced concrete slab overlaid with an asphalt wearing surface.

The eastbound side (located on the upper level) is a cantilever two span continuous steel rigid frame structure of built-up riveted girders. The girders are concrete-encased and rigidly framed into the framing at both abutments and center pier. The existing railings are substandard, and the granite veneer on the substructures has been removed from both of the abutment stems and the south side wing walls.

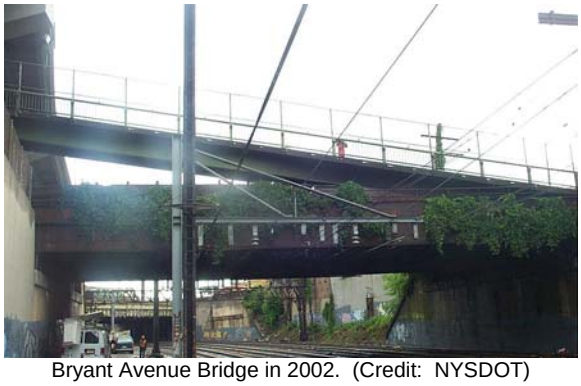
BQE Bridge Over Cadman Plaza in 2008 – Upper Level is Eastbound, Lower Level is Westbound. (Credit: NYSDOT)

Structural demolition will include removing the existing wearing surface, demolishing and removing the existing bridge railings, safety walks, concrete deck (WB), deck expansion joints, concrete approach slabs, and the top portion of existing abutment and pier stems (WB). New construction for both the westbound and eastbound structures will include new top portions for the abutment stems and pier caps, new abutment expansion bearings and pier fixed bearings, new shear stud connectors on top flanges at existing stringers, new exodermic deck on steel stringers, new approach slabs at the westbound and deck/underdeck repair at the eastbound structure, half-size permanent concrete barriers at both fascias, new deck plug joints, a new wearing surface, and a new waterproof membrane over the concrete deck surface.

The project is currently in its final design phase. Construction is expected to begin in March 2014, and is expected to be complete in April 2015.

BRYANT AVENUE BRIDGE OVER AMTRAK AND CSX (BRONX)

This project will include replacing the existing superstructure with a concrete filled steel grid deck, new multi plate girder stringers, and new elastomeric bearings. The existing substructure will be rehabilitated by replacing the top portion of the concrete abutment, and installing new bearings, and the abutments will be retrofitted to meet seismic criteria. The bridge will be closed during construction, but a temporary pedestrian bridge will be constructed and maintained. Construction is expected to begin in October 2011, and is expected to be complete in April 2013.



Bryant Avenue Bridge in 2002. (Credit: NYSDOT)

CITY ISLAND ROAD BRIDGE OVER EASTCHESTER BAY (BRONX)

The existing City Island Road Bridge was built in 1901 and is the only vehicular, bicycle and pedestrian access between the mainland Bronx and City Island. In 2008, the bridge carried 15,955 vehicles per day. The bridge is part of City Island Road, which is located within Pelham Bay Park and crosses over Eastchester Bay. With seven spans and six piers in the water, the bridge has outlived its useful life and requires extensive continuous maintenance.

Original Bridge in 1873. Bridge in 1928. Aerial View of Current Bridge.

The existing bridge will be replaced along the same alignment with a new single span, single tower cable-stayed bridge which will be a unique structure type in the NYC area. The new bridge will be approximately 17 feet wider than the existing one to accommodate three standard 12-foot wide traffic lanes, a 6-foot wide bicycle lane and a 6-foot wide pedestrian walkway on each side. The tower and concrete counterweight for backstay anchorage of the new bridge will be located in Pelham Bay Park. The new bridge will be designed to current standards and with its wider roadway width, will allow future repair and rehabilitation to be carried out while maintaining one 12-foot lane in each direction. In order to maintain traffic during the demolition of the existing bridge and construction of the new bridge, a temporary bridge will be constructed on the south side of the existing bridge.

City Island Road Bridge. Vertical Clearance Posting. (Credit: NYSDOT)

The project is currently in its final design phase. The construction phase for this project is scheduled to begin in November 2011 with an approximate duration of 3 years.

Rendering of New City Island Road Bridge.


Side View Rendering of New City Island Road Bridge.

CLAREMONT PARKWAY BRIDGE OVER METRO NORTH RR (BRONX)

The Claremont Parkway Bridge was built in 1889, with major reconstruction in 1938. Claremont Parkway is a roadway link in the Crotona Park section of the Bronx where the street system features few continuous east-west routes. The existing bridge is a steel superstructure encased in concrete supported on the original stone masonry abutments. It spans the tracks of the extremely busy Harlem Valley and New Haven lines of Metro-North Railroad, an essential regional commuter link between the northern areas of the metropolitan region, key points in the Bronx and Harlem, and the Manhattan central business district. Reconstruction will extend the life of the bridge by 40 years.

Claremont Parkway Bridge. (Credit: NYSDOT) Looking Northwest in 2008

This project, currently in its final design phase, will include removal of the entire superstructure and approaches. The new bridge will consist of pre-stressed concrete box beams supporting a reinforced concrete deck and approach slab, concrete sidewalks and reinforced concrete parapet walls with protective fencing, and reconstructed approach roadways. A portion of both existing abutments will be removed to accommodate the new bridge profile. The utility work will include the installation of two new water mains, a gas main, and electrical conduits. The bridge will be constructed in four stages, with one traffic lane open in each direction at all times during construction. Construction is expected to begin in December 2010, and is expected to be complete by January 2013.

Existing North Side Guardrail and Fence. Proposed Guardrail and Fence.

CONCOURSE VILLAGE AVENUE BRIDGE OVER METRO NORTH (BRONX)

This project will include demolishing the existing bridge deck, removing loose encasement on the structural members, localized steel repairs, and restoring the encasement. A new concrete deck will be installed, and new approach slabs, an east parapet, steel faced curbs, and concrete sidewalks will be built. The existing granite blocks will be repointed as necessary. The bridge will be reconstructed in four stages, with one 14.11 foot wide southbound lane maintained during construction. Construction is expected to begin in November 2019, and is expected to be complete in May 2021.

Concourse Village Avenue Bridge. (Credit: NYSDOT)

CROOKE AVENUE AND NEWKIRK AVENUE BRIDGES OVER BMT SUBWAY (BROOKLYN)

The existing four span Crooke Avenue Bridge was constructed in 1916. A recent inspection revealed significant deterioration of the superstructure. This project, currently in its final design phase, will include removal of the superstructure in the right of way only, approaches and two piers. The new single span bridge will consist of pre-stressed concrete box beams supporting a reinforced deck and approach slabs, concrete sidewalks, reinforced parapet walls with protective fencing and reconstructed approach roadways. The top portion of the abutments will be removed and reconstructed. The utilities will be relocated within project limits. The new bridge will also meet current NYCT sight distance and horizontal clearance standards. The bridge will be constructed in two stages, with one vehicle lane and one sidewalk maintained. Construction is expected to begin in April 2019, and is expected to be complete in October 2020.

The Newkirk Avenue Bridge is a three span structure between East 16th Street and Marlborough Road. This project, currently in its final design stage, will include the removal of the entire superstructure, including girders, deck slabs, approaches, and existing steel caps on the steel pier columns. The new three span bridge will consist of steel stringers and light weight concrete deck. The exterior and middle columns will be replaced with new steel columns. The top portion of the abutments will be removed and reconstructed. New utilities will be installed. Pedestrian access to the Newkirk Avenue station will be maintained during the three stage construction. During Stage III of construction the bridge will be closed to vehicular traffic. Construction is expected to begin in April 2019, and is expected to be complete in September 2020.

Crooke & Newkirk Avenue Bridges. (Credit: NYSDOT)

GRAND CONCOURSE BRIDGE OVER METRO NORTH (BRONX)

The bridge was originally built in 1906. It is a single span bridge consisting of a concrete deck supported on five steel plate girders, one truss, and a steel truss subway structure located in the center of the bridge. The bridge carries three lanes of vehicular traffic in each northbound and southbound direction as well as NYCT subway traffic underneath the Grand Concourse Boulevard and above the Metro North railroad right of way. The upper portion of the bridge carrying the roadway is now structurally supported by the lower portion carrying the subway. The two portions of the bridge are dependent upon each other for support and stability but are being maintained individually by two separate agencies, the NYC Department of Transportation, and NYC Transit Subways respectively. The subway portion of the structure, comprised of four warren trusses, is stabilized by the roadway portion floor beams and the roadway portion is supported by the subway trusses.

Red flag repairs were made in the first half of 2006.

Red Flag Repairs in February 2006: Ironworkers Removed the Plates From the Holes and Replaced Them at the End of Each Day. They Also Placed Reinforcing Bars for the New Concrete Slab. Supervisor Bridge Repairer and Riveter Gean Pilipiak Monitoring Red Flag Repairs in 2006. (Credit: Peter Basich)

In the new rehabilitation scheme, the roadway will be supported independently from the subway structure: the structures will be physically separated. Steel members will be added to the subway trusses to provide the stability previously provided by the roadway portion floor beams. The substructure consists of two concrete abutments bearing on rock ledges. The tops of these abutments lie at two levels, an upper level which supports the bridge stringers and a lower level which supports the subway trusses. The bridges stringers over the subway tracks bear on a composite steel beam/concrete backwall which will be replaced as part of this project. The foundation for the new trusses being installed to carry the roadway superstructure will bear on the rock behind the existing abutments.

The reconstruction project will also include building new sidewalks, as well as bridge railings with protective fencing, expansion deck joints, electrical conduits and fixtures, and the relocation of the existing water main under the sidewalk. Two lanes of vehicular traffic and the pedestrian walkway will be maintained in each direction on the Grand Concourse. This project, currently in

the final design phase, is expected to begin construction in September 2012, and is expected to be complete in December 2014.

Grand Concourse Bridge over Metro North in 2002.
(Credit: NYSDOT)

HIGHLAND PARK PEDESTRIAN BRIDGE OVER PEDESTRIAN PATH (QUEENS)

The Highland Park Pedestrian Bridge, built in 1935, is a single span arch structure with a clear opening of 60 feet under the bridge. Unlike a conventional steel or concrete bridge structure, the main structure is a brick masonry arch, with wing walls and parapet walls consisting of stacks of random size rocks set in mortar. The height of the parapet walls from the roadway surface varies from four to five feet. The bridge, located inside Highland Park, spans a hiking trail, and carries pedestrian and bicycle traffic. It is 27 feet wide with neither sidewalks nor shoulders.

A recent inspection revealed significant deterioration of the masonry arch. The project, currently in the preliminary design phase, will include the rehabilitation of the existing brick masonry arch structure and the specialized wearing surface. The bridge will be closed to all traffic and will be reconstructed in one stage. Construction is expected to begin in July 2014, and is expected to be complete in July 2016.

Highland Park Bridge. (Credit: NYSDOT)

HILL DRIVE BRIDGE (TERRACE BRIDGE) OVER PROSPECT PARK LAKE (BROOKLYN)

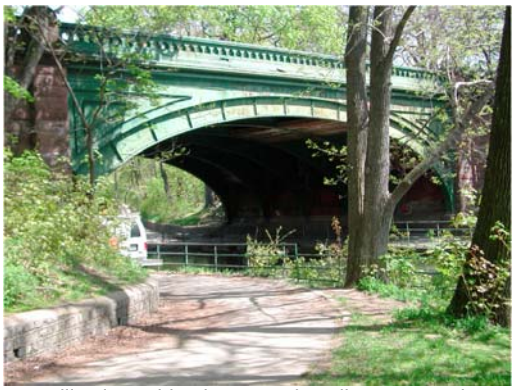
The landmark Hill Drive Bridge was built in 1890, and was previously known as the Breeze Hill Bridge. The existing bridge is a three span simply supported steel girder/beam structure, with the center arch span crossing Prospect Park Lake, and the other two spans consisting of underground masonry cellular structures with multiple interior masonry-bearing walls and non-

composite concrete deck and concrete sidewalk. The substructure of the bridge consists of solid gravity masonry abutments with U-type wing walls.

This project will include the replacement of the existing masonry cellular abutments with new reinforced concrete abutments clad with existing stone and new brick masonry; the removal, storage, and reinstallation of the existing stone wing walls with a new reinforced concrete core; the replacement of the existing stringers and floor beams with new steel stringers; the reinforcement of the existing arch girders with new cover plates; the reinstallation of the steel arch girders at their current locations to replicate original construction; and the replacement of the existing masonry arches spanning between floor beams by masonry cladding on the underside of the new arched concrete deck. The concrete deck, approaches, sidewalk, and roadway will be replaced within the project limits.

The ornamental cast iron and stones will be rehabilitated and reinstalled, replicating all the historic features and aesthetics of the original bridge. New bridge lighting and drainage systems will be installed. The park landscape will be restored, and trees identified by the Prospect Park Alliance as rare and/or historic shall remain undisturbed during construction.

The project is currently in its final design phase. Repairs requiring immediate attention will be performed by the When and Where contractor. This bridge is closed to vehicular traffic.

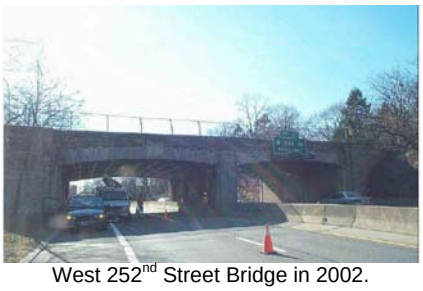


Hill Drive Bridge in 2001. (Credit: NYSDOT)

MANHATTAN COLLEGE PARKWAY, WEST 232ND STREET, WEST 239TH STREET, AND WEST 252ND STREET BRIDGES OVER HENRY HUDSON PARKWAY (BRONX)

This $6.6 million project reconstructed four bridges over the Henry Hudson Parkway. A Notice to Proceed was issued to the contractor with a start date of February 23, 2004. The reconstruction of the West 239th Street and West 252nd Street Bridges commenced after the substantial completion of the Manhattan College Parkway and West 232nd Street Bridges. Work on the Manhattan College Parkway, West 232nd Street, and West 239th Street Bridges included the demolition and removal of the existing pavement and roadway slab down to the concrete arch of each bridge, and replacing it with a new deck on a protected membrane waterproofing system. In addition, the reconstruction of these bridges included drainage, repointing the existing stone masonry, new signage and pavement markings, improving the under deck lighting systems, and private utility work.

The reconstruction of the Manhattan College Parkway and West 232nd Street Bridges was substantially completed on September 28, 2006. The reconstruction of the West 239th Street Bridge was substantially completed on December 5, 2006.



West 252nd Street Bridge in 2002.
(Credit: NYSDOT)

Work on the West 252nd Street Bridge included the demolition of the existing concrete arch bridge deck, and replacing it with a new prestressed concrete box beam superstructure. In addition, the reconstruction of this bridge included installing a new 12 inch diameter water main, improving the under deck lighting systems, private utility work, partial removal of the pier and abutments, new roadway lighting, and adjustment of the existing drain inlets, manholes, and catch basins. The work was completed in four stages. The work on this bridge began with Stage I on January 3, 2006.

West 252nd Street Bridge and Protective Chain Link Fence Before Reconstruction.

The removal of the existing bridge sections over the northbound Henry Hudson Parkway was performed at night on October 25 and 26, 2006. The removal of the sections over the southbound Henry Hudson Parkway was performed at night on October 31 and November 1, 2006. The demolition of the north half of the bridge was completed in November 2006.

2006: Cutting and Removing the Existing West 252nd Street Bridge Sections Over the Parkway.

2006: Wire Sawing the Deck and Removing the Existing West 252nd Street Bridge Sections Over the Parkway.

2007: West 252nd Street Bridge Formwork and Rebar Fabrication at the Pier and West Abutment. Concrete Placement in Progress.

The new superstructure for the north half of the bridge, comprised of pre-stressed concrete beams and cast-in-place reinforced concrete deck and sidewalks, was completed in May 2007. The approach pavements, steel-backed timber guide rails and ashlars veneer parapet wall on the bridge were completed in October 2007.

Grouting of the West 252nd Street Bridge Box Beams in February 2007.

West 252nd Street Bridge: Transverse Post-Tensioning of the Pre-Cast Concrete Beams in March 2007. Installed Asphalt on Bridge Approach in July 2007.

Stage I was completed in February 21, 2008 and the traffic was switched to this newly constructed portion of the bridge by continuing to maintain one westbound traffic lane. Stage II began on February 25, 2008.

The contractor completed the removal of the southern half of the bridge on April 23, 2008. In 2008, the contractor installed the new pre-stressed concrete box beams for the superstructure, completed the water and Con Edison gas mains across the bridge along with their connections to the mains in the approaches, placed the reinforced concrete bridge deck, as well the light weight concrete fill within the limits of the bridge approach slabs, and the back fill behind the concrete fill. In addition, the contractor also completed work on the left lanes of the service roads which included saw cutting and removing the existing pavement, placing roadway base course and asphalt pavement, installing the steel faced curb, pouring sidewalk slabs and constructing reinforced concrete approach slabs and sleeper slabs.

West 252nd Street Bridge: Placing New Precast Prestressed Concrete Box Beam on the Bridge Deck in June 2008. Installation of Water and Gas Mains in July 2008.

The southern half of the bridge was opened to traffic on November 26, 2008, thus restoring the two way traffic onto the bridge structure. The contractor also reopened the left lanes of the east and west service roads and restored all turning movements from the east and west service roads onto the bridge. At the end of 2008, Stage III and Stage IV construction were in progress.

The remaining work on the east and west service roads, and the weather-sensitive work such as placing the concrete base and asphalt pavement, were completed in the spring of 2009. The service roads were reopened to two lane traffic after the completion of Stage IV work. The reconstruction of the West 252nd Street Bridge was substantially completed on May 4, 2009.

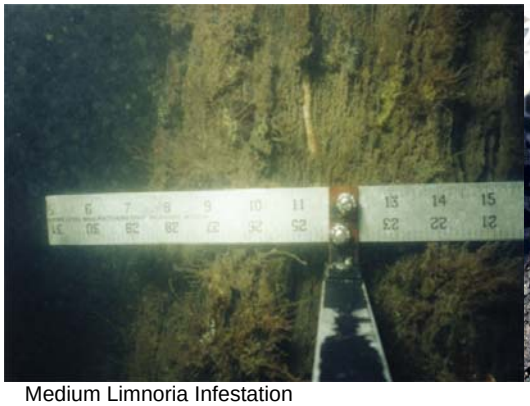
West 252nd Street Bridge: Installing the Protective Steel Picket Fence. View of the Sidewalk After Reconstruction.

MARINE BORER REMEDIATION (MANHATTAN & BROOKLYN)

Marine borers pose an immediate and serious danger to the thousands of piles and other structures of timber built in the marine environment. In New York Harbor, as the water quality improved due to many years of clean up efforts, marine borer (limnoria, teredo, etc.) activity has increased significantly in recent years. The recent inspections of timber structures by various local agencies (such as The Port Authority of NY & NJ, NYS Department of Transportation, NYC Department of Sanitation, and NYC Economic Development Corporation) indicate increasing damage to their structures resulting from marine borer activity. These agencies are implementing measures to protect the structures against marine borers.

Marine Borer – Limnoria Species

Marine Borer – Teredo Species



Medium Limnoria Infestation

Teredo Damage (holes up to ¼" diameter)

In October 1999, the Department began a study to assess the existing damage caused by marine borers as well as the potential for future damage at several waterfront DOT structures, including the supporting structures of the relieving platforms along the FDR and Harlem River Drives, and the timber piles and structures of the Carroll Street and Ocean Avenue bridges in Brooklyn. The underwater inspection of timber piles supporting the FDR Drive began on May 8, 2000. Inspection of the Brooklyn sites was conducted during the week of October 23, 2000. The inspections were completed in October 2000, and the Marine Borer Evaluation Report was published in June 2001. Using the results of the underwater inspections, preliminary plans were developed for the implementation of repairs and remediation measures to protect the structures from attack. These preliminary plans were completed in December 2001. The final design is complete. Mitigation work for the impact of the construction on the bodies of water will be done under a separate contract. A search for a suitable location for open water mitigation is being conducted with the assistance of the Army Corps of Engineers and NYSDEC.

The construction project will include barrier wrapping (placement of plastic barrier wrap around a timber pile to prevent marine borers from settling on and penetration into exposed wood); pile encasement (concrete encasement of selected severely damaged piles to reinforce and protect them from marine borers); pile posting (cutting off deteriorated upper portion of pile and replacing it with a new treated timber post); pile cap encapsulation (encapsulation of submerged timber pile caps and timber fascia with plastic lumber and synthetic mastic); bracing replacement (replacement of structural timber bracing with new treated lumber); timber removal (removing timber stays, bracing and formwork located at the top of the piles); installation of additional two-way bracing (installation of two-way bracing using tread lumber to upgrade the strength of piles by reducing the unbraced length); placement of light weight concrete fill (filling with light weight concrete where the distance from underside of the platform deck to the top of the mudline/water interface is less than one meter creating insufficient headroom for divers to wrap or jacket piles); and superstructure timber replacement (timber pile caps, railing members and other timber superstructure elements along with severely corroded steel correction hardware located above the high water line will be replaced in kind). The construction work is expected to commence in January 2011, and to be complete in November 2014.

NORTHBOUND FDR DRIVE AT EAST 53RD STREET (MANHATTAN) – EMERGENCY CONTRACT

The Department is currently engaged in the procurement process for the marine borer remediation construction contract. The contract is for the rehabilitation of the timber substructures at selected locations along the FDR Drive and other locations noted above. The rehabilitation project is intended to address the structural damage and infestation of marine borer organisms in the timber substructures.

On September 18, 2009, a Notice to Proceed was issued to the consultant to perform a diving inspection and determine the current condition of the timber piles, which were last inspected in 2005. The re-inspection began on October 5, 2009.

On October 29, 2009, the divers discovered a line of piles that are broken and severely deteriorated by marine borer infestation and are no longer able to function as designed. These timber piles support the bulkhead and relieving platform which in turn support the East River Esplanade and northbound FDR Drive in the vicinity of East 53rd Street. The consultant analyzed the diver's report and determined the structure's condition is serious. The consultant further recommended that the Department take immediate and appropriate action to constantly monitor the structure until the remedial work is completed. Failure of these timber piles could lead to the sudden collapse of the East River Esplanade and northbound FDR Drive at that location.

Based on these red structural flag conditions, the Department closed the adjacent East River Esplanade at East 53rd Street to visually monitor the structure for any movement and as a precaution for public safety. Due to the potentially serious danger to life and public safety posed by the current condition, it is critical that the repair work be performed as expeditiously as

possible.

On December 2, 2009, in the interest of public safety, pursuant to Section 103(4) of the General Municipal Law and Section 315 of the New York City Charter, the Department declared that an emergency exists relative to the northbound section of the FDR Drive at East 53rd Street in Manhattan.

The repairs will include the following: temporarily securing of the existing sea wall; repair of all of the piles within the designated emergency repair work area; installation of a new intermediate support between the existing bents (each new support will consist of two mini-piles, one drilled in-place outboard of the sea wall and one drilled through the existing relieving platform deck inboard of the existing sea wall); cutting off of the new mini-piles by divers below the relieving platform deck and installation of a new steel support beam. This will be shimmed to the existing deck to transfer load into the new piles.

A Letter of Intent for the emergency repair of this bridge was issued to the contractor with a start date of December 17, 2009. Construction is expected be complete in summer 2010.

ROOSEVELT AVENUE BRIDGE OVER VAN WYCK EXPRESSWAY (QUEENS)

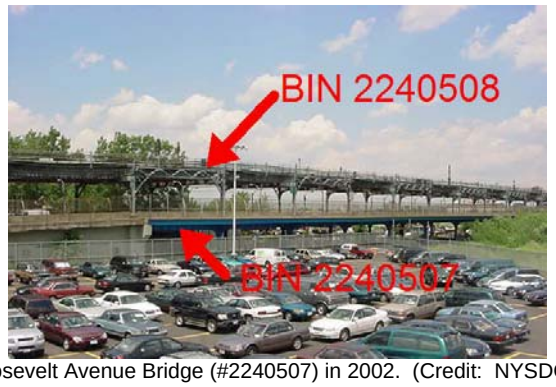
The existing bridge is a two level dual-use steel viaduct consisting of 27 spans. The first level, which carries Roosevelt Avenue, consists of a plate girder floor beam system supported by steel columns, intermediate piers supporting a bascule span spanning over the Van Wyck Expressway, and end abutments. The second level of the viaduct supports and carries the overhead NYC Transit Authority's #7 – Flushing line subway structure.

Concrete deck repairs were performed in July, August, and October of 2003, June and July of 2004, April, May, June, and July of 2005, and June and July of 2006. In the summer of 2005, the When and Where contractor repaired red and yellow flag conditions caused by damage by over-sized trucks using the Van Wyck Expressway. Red-flagged steel shoring and yellow-flagged cracked stringer connection angles were repaired in the spring of 2008.

In April 2009, the reconstruction plans of the bridge underwent a Value Engineering Study by the Office of Management and Budget which recommended several changes to the design that are being incorporated.

The project, currently in the final design phase, will include the construction of a new concrete-filled steel grid deck, rehabilitation of the existing east and west viaduct sections, bascule span, piers, abutments, and painting of the entire bridge. In addition, a new bicycle/pedestrian path will be constructed on the north and south sides of the bridge.

The lower level carrying Roosevelt Avenue will be reconstructed in three stages. Both vehicular and pedestrian traffic will be maintained throughout the construction of the bridge, with one lane in each direction. Construction is expected to begin in May 2012, and is expected to be complete in May 2015.



Roosevelt Avenue Bridge (#2240507) in 2002. (Credit: NYSDOT)

SHORE ROAD CIRCLE BRIDGE OVER AMTRAK (BRONX)

This project will include the removal of the existing two span bridge and the construction of a new single span bridge structure with a reinforced concrete deck over steel girders. The work will also include the construction of new reinforced concrete abutments and wing walls, as well as new parapet walls with protective steel fences. The bridge will be reconstructed in three stages, with one lane of traffic maintained in each direction during construction. A Notice to Proceed for the project was issued to the contractor with a start date of May 18, 2008.


Shore Road Circle Bridge in 2003. (Credit: NYSDOT)

Construction was expected to begin in May 2008, however, due to Amtrak's inability to provide the electric traction crew services for track outage, the construction activities on this project were on hold from September 21, 2008 until April 15, 2009. Construction is expected to be complete in January 2013.

SNUFF MILL ROAD BRIDGE OVER BRONX RIVER, EAST 175TH STREET BRIDGE OVER METRO NORTH, AND MOSHOLU PARKWAY BRIDGE OVER BRONX RIVER (BRONX)

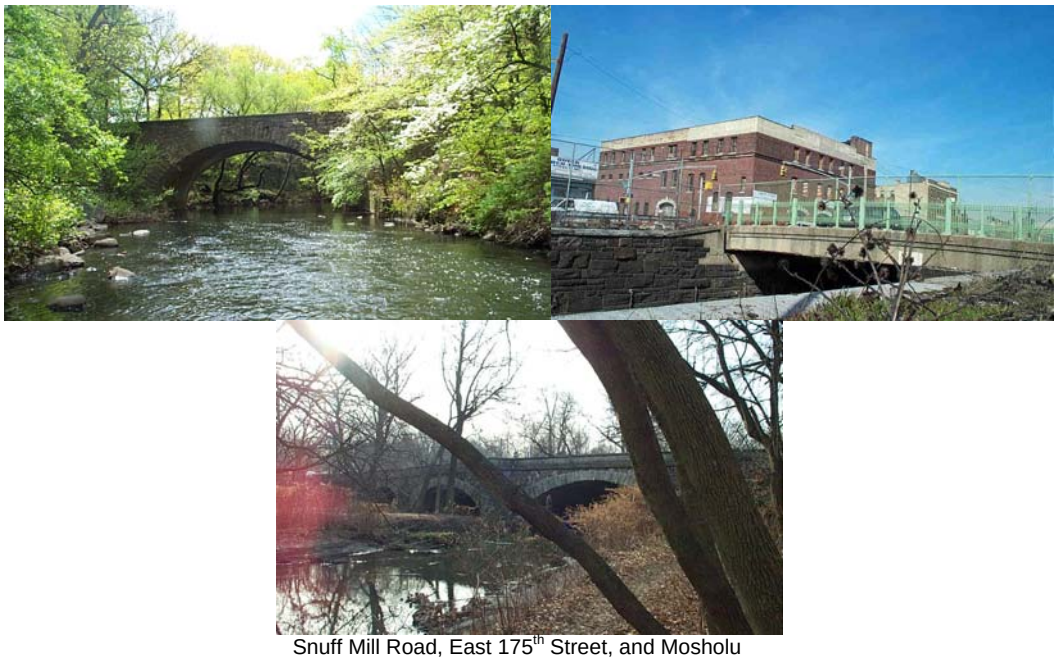
The Snuff Mill Road Bridge over the Bronx River is a two span concrete arch structure originally built in 1920 and subsequently reconstructed in 1947. It measures 104 feet long between abutments and 34' wide from parapet to parapet. The substructure consists of reinforced concrete stem walls of varying heights, widths, and thicknesses, supported by reinforced concrete footings founded on bedrock. The bridge consists of two 10-foot wide lanes, one eastbound and

one westbound. However, it is mostly used as a pedestrian bridge, as it is inside the New York Botanical Garden and Bronx Park.

The East 175th Street Bridge over Metro North was originally built in 1889 and it underwent reconstruction in 1938. The reconstruction work included a new steel superstructure, concrete deck slab and sidewalk in conjunction with repairs to the existing stone masonry substructure and relocation of various utilities. It is a single span multi-girder steel structure with a steel reinforced concrete deck, and it measures 61.68 feet long from abutment to abutment and 60 feet wide from parapet to parapet.

The Mosholu Parkway Bridge over the Bronx River was originally built in 1905 and it is located within the Bronx Park. It is a five-span stone masonry arch structure and measures 245 ½ feet long from abutment to abutment and 65 feet wide from parapet to parapet. It carries vehicular, pedestrian and bicycle traffic over the Bronx River. Component rehabilitation of the bridge was performed in 2000 including replacement of the concrete sidewalk, curb, concrete median barrier, box beam guide rail, under deck lighting, asphalt overlay, re-pointing of masonry joints and new pavement markings. The bridge consists of 3 lanes: one eastbound lane that tapers into two 12-foot wide eastbound lanes (towards the beginning approach), and one 14-foot wide westbound lane.

The consultant completed the field survey and in-depth inspection of the bridges in 2009. Construction is expected to begin in 2019.



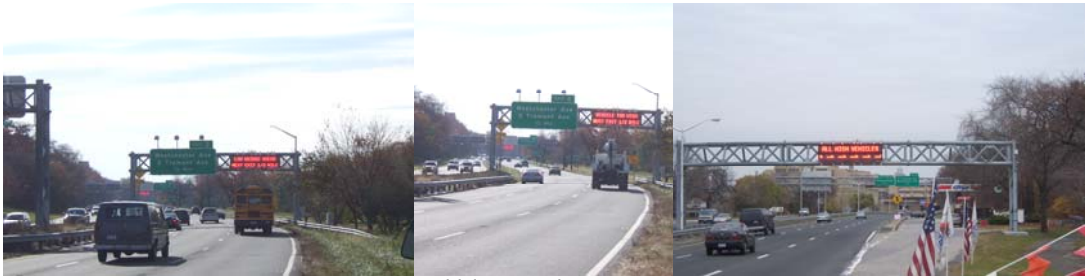
Snuff Mill Road, East 175th Street, and Mosholu Parkway Bridges in 2002. (Credit: NYSDOT)

WESTCHESTER AVENUE BRIDGE OVER THE HUTCHINSON RIVER PARKWAY (BRONX)

This two span bridge supports a transit structure overhead and has substandard clearance over the highway below. A project to install an ITS solution, which includes an overheight vehicle detection system that flashes signs directing vehicles identified as being over 9' in height to exit the parkway, was substantially completed on December 3, 2004. It also includes cameras that are activated by acoustics and that will document future damage to the bridge as well as the

offending vehicles' descriptions and plate numbers for recoupment of costs by the City. The contractor completed extra work associated with landscaping in the spring of 2006. The underdeck at both spans is currently covered by approximately 154 square feet of timber planking. In addition, the underdeck at span 1 is covered with approximately 18 square feet of steel wire mesh netting. A separate project is underway to reconstruct the bridge and lower the Parkway.

Westchester Avenue Bridge in 2001 and 2006. (Credit: NYSDOT) Overheight Sensor Unit on the Hutchinson River Parkway. (Credit: Roly Parroco)



Vehicle Detection System.

Video Stills From the Westchester Avenue Bridge BDSS.

The Westchester Avenue Bridge's vertical clearance over the Hutchinson River Parkway is sub-standard. Due to the number of truck and bus vehicles that mistakenly enter the Hutchinson River Parkway, where commercial vehicles are not allowed, the fascia steel girders of the bridge have been severely impacted and damaged numerous times. The planned lowering of the parkway will make it possible to eliminate the existing sub-standard vertical clearance of the bridge over the parkway without adversely impacting the NYCT elevated structure and its transit train operations. The total length for the lowering of the parkway will be 1000 feet (north and south), with a maximum lowering of the parkway of 2.5 feet under the Westchester Avenue Bridge.

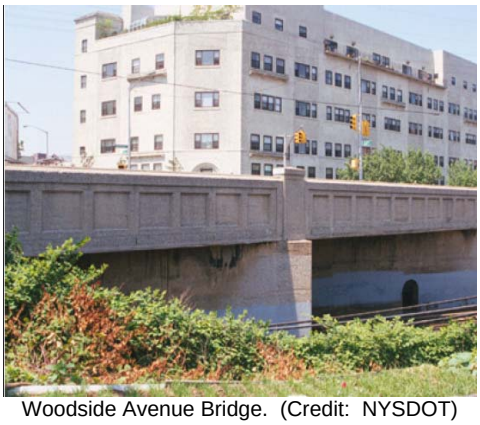
The rehabilitation of the bridge will include the replacement of the existing reinforced concrete

deck slab with a new reinforced concrete deck, steel faced curbs, a new parapet wall and protective screenings, concrete sidewalks, rehabilitation of the damaged steel fascia girders, and replacement of the diaphragms and other bridge elements, including a new steel water main.

This rehabilitation project is currently in final design. Computer traffic simulation models for the proposed maintenance and protection of traffic schemes for both the Westchester Avenue Bridge and the Hutchinson River Parkway were completed. The purpose of the models was to investigate traffic lane capacity/queuing, traffic signal timing optimization and traffic network simulation for the highway and streets during the construction phase. Construction is expected to begin in February 2013, and is expected to be complete in October 2015.

WOODSIDE AVENUE OVER LIRR (QUEENS)

This project, currently in its final design phase, will include the removal of the existing three span bridge and the construction of a new single span structure. The superstructure and abutments will be completely redesigned to comply with current seismic requirements. The bridge will be fully closed to traffic for ten months. Traffic will be detoured to adjacent streets during this period. Construction is expected to begin in December 2016, and is expected to be complete by December 2018.



Woodside Avenue Bridge. (Credit: NYSDOT)

5TH AVENUE BRIDGE OVER LIRR & SEA BEACH NYCT (BROOKLYN)

The bridge is a four span concrete-encased steel girder and floor beam structure, built in 1914. The reconstruction project will include replacement of the superstructure, rehabilitation of the abutments and wingwalls, reinforcement of existing piers, construction of new reinforced concrete sidewalks, approach slabs, new concrete parapet, and bridge fence. Construction is expected to begin in May 2020, and is expected to be complete in June 2022.

5th Avenue Bridge in 2006. (Credit: NYSDOT) Aerial View in 2009.

EAST 8TH STREET ACCESS RAMP (GUIDER AVENUE RAMP TO BELT PARKWAY) OVER BELT PARKWAY (BROOKLYN)

The East 8th Street access ramp (Guider Avenue ramp), built in 1942, provides vehicular access to the westbound Belt Parkway from Coney Island Avenue and the surrounding area, south of the Belt Parkway. The bridge also serves pedestrian traffic crossing the Belt Parkway. The bridge is a four span, simply supported, multi-girder steel superstructure with a reinforced concrete deck. The abutments and wingwalls are also reinforced concrete, as are the three piers. The entire substructure is supported on reinforced concrete pile caps and steel piles. The project will include the replacement of the superstructure with new steel stringers, a cast-in-place deck including a new sidewalk, a new steel bridge railing with protective screen fencing, and the replacement of the tops of the existing pier columns and abutments. In addition, the piers will be modified by adding two columns on new steel pile foundation, and underdeck and ramp lighting will be installed, as well as new catch basin frames. The ramp will be closed to both vehicular and pedestrian traffic for the duration of the reconstruction. Traffic will be diverted to local streets.

A Notice to Proceed for the project was issued to the contractor with a start date of August 10, 2009. Construction is expected to be complete in April 2011.

East 8th Street Bridge in 2002. (Credit: NYSDOT) Aerial View in 2009.

11TH AVENUE VIADUCT (WEST 30TH STREET TO WEST 33RD STREET) OVER LIRR WEST SIDE YARD (MANHATTAN)

This project will consist of the re-decking of the viaduct, the replacement of the sidewalks, the upgrading of the existing bearings to seismic isolation bearings, and the replacement of the street lighting. The work will also include performing repairs of the existing pier and abutment walls. The viaduct will be constructed in two stages, one half of the viaduct at a time. Three south bound travel lanes will be maintained at all times. A Notice to Proceed for the project was issued to the contractor with a start date of June 1, 2009.

11th Avenue Viaduct Site Overview.

11th Avenue Viaduct (West 30th Street to West 33rd Street) in 2006. (Credit: NYSDOT)

The installation of the LIRR horizontal and vertical protective shield was completed under Stage 1A. The west side sidewalk was modified for the traffic shift at Stage 1B. Demolition and reconstruction of the east half of the viaduct parapet and deck slab began under Stage 1B in December 2009. Construction is expected to be completed in February 2011.

11th Avenue Viaduct Stage 1A Construction. Traffic Enforcement Agent on Duty During Stage 1B Construction.

WEST 31ST STREET BRIDGE OVER AMTRAK (MANHATTAN)

This bridge between Ninth Avenue and Dyer Street, is a nine simple span multi-girder jack arch encased in concrete, and was built in 1909. The superstructure is supported by the west

abutment, the south retaining wall, and steel columns resting on spread footings. The project will involve installation of new floorbeams and steel stringers with a reinforced concrete deck slab, as well as the bridge seats and steel pier columns. Traffic will be maintained during the relocation of the utilities, but the bridge will be closed during the bridge replacement. This project, currently in the final design stage, is expected to begin in December 2019, and is expected to be complete in March 2023.

West 31st Street Bridge in 2004. (Credit: NYSDOT)

50TH STREET BRIDGE OVER LIRR BAY RIDGE (BROOKLYN)

This bridge is a two span skewed steel structure, and was built in 1928. It is a simply supported concrete-encased steel through-girder structure with multiple interior concrete-encased floor beams which crosses over an active LIRR track as well as abandoned LIRR tracks. The bridge deck consists of a concrete-encased steel multi-girder system with a non-composite reinforced concrete deck slab topped with a concrete wearing surface. The substructure consists of two reinforced concrete gravity wall abutments.

This project will replace the existing bridge with a single span superstructure; remove the top portion of the existing abutments, abandoning the remaining portions of the abutments and construct two new abutments at new locations; remove the existing pier and foundation; install new elastomeric bearings; construct a cast-in-place concrete deck, approaches and sidewalk; and install new reinforced concrete approach slabs. Construction is expected to begin in July 2014, and is expected to be complete in August 2016.

50th Street Bridge in 2003. (Credit: NYSDOT)

EAST 78TH STREET PEDESTRIAN BRIDGE OVER FDR DRIVE (MANHATTAN)

The current bridge is a nine span reinforced concrete structure over the FDR Drive. There is a ferry house on the East River Esplanade which was used for storage for the old ferry when the bridge was built in 1940. The bridge is supported on the ferry house structure on the Esplanade side. This project, currently in its final design phase, will include the removal of the entire superstructure; concrete deck, floor beams, parapet, girders, railing, protective screening, encased steel beams in the ferry house, existing concrete stair case on the esplanade side, existing substructure of piers, and ramp walls and wall of the ferry house, as well as a portion of the pier foundations below grade. The new fourteen span bridge will include steel piers with caisson foundations, a ramp retaining wall, and new superstructure using welded structural tubing, vertical steel railing, and horizontal hand rails, as well as protective fencing. A new cast-in-place reinforced concrete deck will be installed. The proposed west ramp will be enclosed with a stone masonry wall to match the existing park wall. The new bridge will comply with ADA regulations.

During construction, pedestrian traffic will be detoured to the 71st and 81st Street pedestrian bridges. Construction is expected to begin in June 2010, and is expected to be complete in July 2011.

East 78th Street Bridge. Aerial View. Proposed Bridge and Fencing – Looking West.

153RD STREET BRIDGE OVER METRO NORTH (BRONX)

This project, currently in the final design stage, will construct a two-span, single tower, cable stayed vehicular bridge. It will be the first of its kind in New York City. The new four lane bridge will extend East 153rd Street in the Bronx across the Mott Haven rail yards from Morris Avenue to the Grand Concourse just north of Hostos Community College in the Melrose Section of the

Bronx. This bridge will complete a link the street lost in the early 1980's when the old turn-of-the-century bridge was closed and demolished because of its age and deterioration. The project to demolish the condemned buildings on the property is currently in the final design stage. Demolition is expected to begin in 2010, and is expected to be complete in 2011. Construction of the new bridge is tentatively scheduled to begin in March 2020 and be completed in April 2023.

Original 153rd Street Bridge. Bridge in Early 1980's.

The new bridge will significantly ease congestion on the current east-west streets in the South Bronx, along 149th and 161st Streets as well as on the local streets in this neighborhood. With this bridge, East 153rd Street will be a continuous east-west thoroughfare from the commercial hub of Third Avenue to the Civic Center area of the Grand Concourse. It will serve the new revitalization projects of Melrose Commons, the Concourse Shopping Plaza and the Bronx Criminal Court Complex.

The bridge's graceful design, similar to the Tampa Bay Bridge in Florida, will create a very prominent landmark for this neighborhood. The cable-stayed structure will contain a tower rising above East 153rd Street to add to the Bronx skyline, with ribbons of steel cables holding up the roadway structure. The roadway will run between the two towers, and the sidewalk and bicycle lanes will be located on cantilever sections outside of the towers. This will reduce the overall depth of the superstructure by reducing the floor beam depths. On July 14, 2003, the Art Commission selected the East 153rd Street Bridge project for a Design Award in its 21st annual Excellence in Design Awards.

Rendering of New 153rd Street Bridge

EAST 183RD STREET BRIDGE OVER METRO NORTH (BRONX)

The current bridge was built in 1896 and the superstructure was replaced in 1937. This project will include the removal of the existing single span bridge and the construction of a new single span bridge structure with a reinforced concrete deck over steel girders. The work will also include the rehabilitation of existing abutments and wing walls. The bridge will be closed during construction and will be reconstructed in a single stage. This project, currently in the final design stage, is expected to begin in July 2011 and is expected to be completed in September 2012.

East 183rd Street Bridge in 2002. (Credit: NYSDOT)

Specialty Engineering and Construction

Design-Build

In 2009 the Department continued to use the Design-Build process to expedite capital bridge rehabilitation. These contracts retain the same company for both design and construction on selected projects. It is evident that there are many advantages to the Design-Build program, including the use of one consolidated procurement rather than two or more, resulting in significant time savings; the ability to commence construction before design completion; the avoidance of project escalation costs as construction commences two or three years earlier than with the conventional design-bid-build method; minimization of design change orders; and better coordination between design and construction, as critical field issues are addressed expeditiously. In addition, the design is custom made and reflects the capabilities and strength of the specific contractor; the Department establishes a single point of contact for communicating its goals and objectives; and overall costs are reduced substantially.

RIKERS ISLAND BRIDGE OVER RIKERS ISLAND CHANNEL (QUEENS)

Cores taken from the bridge deck in 2003 revealed that the estimated useful life of the deck would soon expire, thus making bridge rehabilitation necessary. In 2008, the bridge carried approximately 15,621 vehicles per day.

Rikers Island Bridge in 2001. (Credit: NYSDOT)

The Division had previously completed the replacement of the bridge's substructure in 1998. The salty environment of the channel significantly contributes to the deterioration of the superstructure. This continued deterioration could also negatively impact the recently completed substructure work. The Division considered Design-Build to be the best delivery method for this project, as it can expeditiously bring projects to the construction stage, and is the preferred method in all cases where time is of the essence. As the bridge exclusively serves the Rikers Island Correctional Facility, the replacement of the bridge will require coordination with the Department of Corrections. Construction is expected to begin in 2020, and is expected to be complete in 2022.

As an interim measure, a project was planned to rehabilitate the bridge deck. The Notice to Proceed was issued to the contractor with a start date of August 24, 2005.

2006: Looking North at a New Bridge Slab And The Roadway Repairs. Painting Under the Bridge.

2006: Performing Underdeck Repairs. Working Inside the West Rebar Box Frame. Beam Repair. Concrete Placement.

The project work was expanded to include superstructure painting, various superstructure repairs, and repairs of the pier caps. The rehabilitation of the bridge deck was substantially completed on December 22, 2006. The painting was completed in 2006, and all of the other repairs were completed in summer 2007. This rehabilitation will allow the extension of the bridge's useful life to at least 2020, when the existing bridge will be replaced.

BRUCKNER EXPRESSWAY BRIDGES (NB AND SB) OVER AMTRAK & CSX (BRONX)

The Bruckner Expressway, named in honor of former Bronx Borough President and Congressman, Henry Bruckner (1871-1942), opened in 1973 and was one of the last roads on the New York City Expressway system to be built. The Bruckner Expressway Bridges are single span bridges on the Bruckner Expressway which run over the Amtrak/CSX railroads. Built over 60 years ago, the Bruckner Expressway Bridges carry over 140,000 motorists and cyclists daily.

A tanker truck carrying home heating fuel overturned and caught fire on the northbound bridge on the evening of October 4, 2005. The traffic on the bridge, and on the Amtrak and CSX railroad lines below, was adversely affected. The bridge was inspected and core samples of the concrete from the fire-affected deck were tested. Division crews assisted in emergency repairs and clean-up, re-setting all expansion plates on the abutment, and performing deck repair. The crews worked continuously, and the roadway was reopened in time for the morning rush hour on October 6, 2005.

Bruckner Expressway Bridge NB in 2002. (Credit: NYSDOT)

2005: The Tanker Truck. Repairs and Cleanup. (Credit: Bojidar Yanev)

To protect the trains and railroad facilities below the bridge after the October 4, 2005 tanker truck fire, contractor crews began the nighttime installation of protective timber shielding under the bridge on October 5, 2005. The project was completed on November 8, 2005. The Division's Surveying Unit assisted the Inspections Unit in monitoring the deflection of the bridge.

Deteriorated Bridge Deck With Exposed Rebar and Warped Steel Bracing Due to the Heat From the Fire. Timber Shielding on the Underside of the Bridge.

Arial View of the Bridges in August 2008. View of the Bridge in December 2009. (2009 Credit: Lacy Shelby)

The fire on the bridge weakened its members. While the immediate results of the fire were addressed by in-house forces, the aftereffects remain unresolved. The most recent inspection conducted on September 14, 2006 revealed that at least four girders have sagged and they are hit by CSX railroad cars below. The concrete deck has separated from the steel girder and there is a one to two inch gap between the top of the flange and the bottom of the haunches. In addition, the diaphragms between the girders have been burned and their capacity has been weakened. Repairs requiring immediate attention were handled by the When and Where contractor. The contractor installed additional timber bracing of the bridge's timber shielding in January and February 2007, performed emergency removal of loose underdeck concrete in July and August 2007, and repaired a red flag condition at the bridge stringers in September 2007. This will be followed up by the replacement of the bridge's northbound superstructure and the southbound deck, which will be done under a Design-Build contract. A Notice to Proceed was issued to the contractor with a start date of October 27, 2008. Due to delays in obtaining the railroad force account agreements, the contractor focused on work off-structure, such as the water main and the installation of complex maintenance and protection of traffic. Demolition of the northbound structure commenced in November 2009. Construction is expected to be complete in September 2011. The bridge carries approximately 140,000 motorists and pedestrians per day.

CROSS ISLAND PARKWAY BRIDGE OVER TOTTEN AVENUE (QUEENS)

A recent inspection by the Division revealed that the superstructure of the bridge has outlived its useful service life. The effects of age and weather have rendered reconstruction necessary. This project will include a new superstructure; pushing back the abutments to establish a longer bridge; adding one lane in each direction on 212th Street; geometric alignment improvements; and signal and lighting modifications. This project is currently in the preliminary engineering stage. Construction is expected to begin in winter 2020, and is expected to be complete in 2022.

Cross Island Parkway Bridge in 2002. (Credit: NYSDOT) Aerial View.

Cross Island Bridge Exit Ramp on the Northeast Side. Bridge Underdeck. South View of the Bridge. (Credit: Tamara Berlyavsky)

HARLEM RIVER DRIVE AT EAST 127TH STREET (MANHATTAN)

This project involves the replacement of the existing 11 span bridge and the reconstruction of the Harlem River Drive between the Willis Avenue and Third Avenue Bridges, in addition to various highway improvements. It eliminates a major weaving problem between the southbound Harlem River Drive traffic destined for the Second Avenue exit and the Third Avenue Bridge exit ramp, and allows at-grade access for a future Park/Promenade to be developed by the Department of Parks at 127th Street between the Harlem River Drive and the Harlem River. The viaduct currently carries two northbound and three southbound traffic lanes and serves approximately 79,000 vehicles per day. This area currently has 40 times the State average number of accidents. Construction is expected to begin in spring 2014, and is expected to be complete in spring 2016.

Harlem River Drive at East 127th Street.

EIGHT RAMPS AND ONE PEDESTRIAN BRIDGE AT THE ST. GEORGE STATEN ISLAND FERRY TERMINAL (STATEN ISLAND)

Ferry service between Staten Island and Manhattan began in 1898, and its operations were taken over by the City's Department of Docks and Ferries in 1905. Today it is run by NYCDOT's Passenger Transport Division and services more than 19 million passengers each year, according to Captain James C. DeSimone, the ferry's Chief Operations Officer. The St. George Ferry Terminal itself recently underwent a major reconstruction project. The old drab, dingy building was converted into a well-lit, modern multi-modal facility. In addition to ferry service, the terminal also includes a very active MTA bus station and a Staten Island Railway Station. The ramps that will be rehabilitated serve 23 NYC Transit bus routes that contribute significantly to ferry ridership. To complete the make-over of the St. George Terminal, the Division's Design-Build Unit is undertaking a major rehabilitation project to upgrade vehicular access to the site.

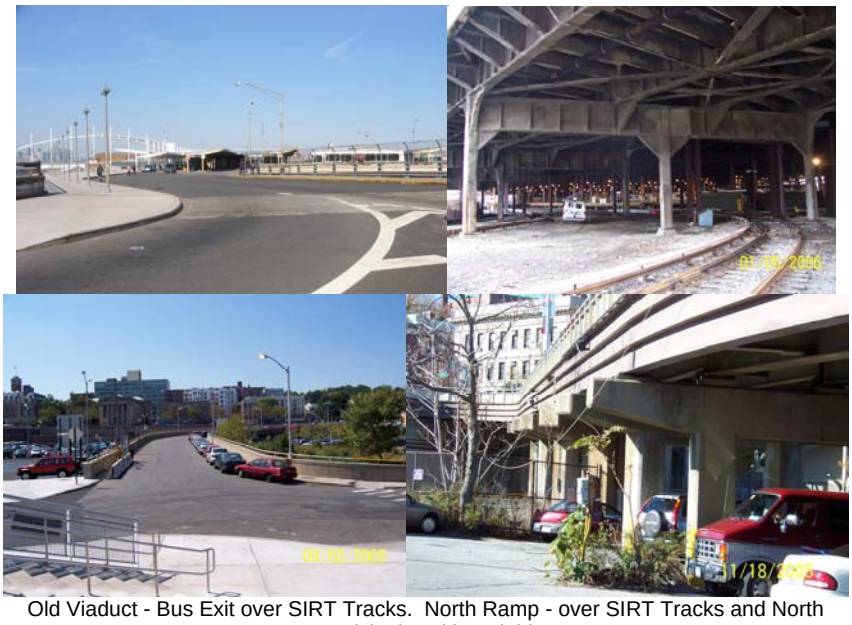
Arial Views of the Staten Island Ferry Terminal Ramps.

Currently a series of eight ramps carry bus and passenger car traffic in and out of the facility. The eight vehicular ramp structures consist of 73 spans that provide access to the Staten Island Ferry Terminal for pedestrians, private vehicles, taxis, and New York City Transit buses. The ramps span over the Staten Island Railway, terminal buildings, and terminal parking. Two of the structures serve as a bus station as well as providing a roof over the rail station below. Limited parking is provided on several of the ramps. The North Ramp provides access to the North Municipal Parking Field and the Richmond County Bank Stadium and stadium parking lot, which provides supplemental parking to the Ferry Terminal. The five span pedestrian bridge provides access between the main Ferry Terminal building and the 69th Street Terminal building as well as access to the Bus Entrance Ramp (Ramp B) above and the Commuter Pick-Up and Drop-Off Area below.

Ramp A - Borough Place over SIRT Tracks. Ramp B - Bus Entrance Ramp over SIRT Tracks & South Municipal Parking Field.

Ramp C - Commuter Entrance over SIRT Tracks. Ramp D - Commuter Exit over SIRT Tracks & Employee Parking Lot.

Bus Station North - over Terminal Building, SIRT Station and Employee Parking Lot.
Station South - over SIRT Station and Employee Parking Lot.



Old Viaduct - Bus Exit over SIRT Tracks. North Ramp - over SIRT Tracks and North Municipal Parking Field.

Pedestrian Breezeway - Over Commuter Drop-Off / Pick-Up Area.

North Municipal Parking Field.

Seven of the eight ramps were constructed in 1948, with the eighth dating back to the early part of the 20th century. The last major structural work on these bridges was a deck replacement project in 1985 that only addressed three of the eight bridge structures. The planned design-build project will upgrade these eight vehicular structures (and one pedestrian bridge), and provide a design life of 75 years. For seven of the ramps, the project will provide new decks and eliminate joints where feasible, retrofit poorly detailed steel connections, and rehabilitate/replace deteriorated steel superstructure and substructure members, as well as install new paint systems. Lead paint removal and the installation of a new drainage system as well as a pigeon deterrent system will also be included. The eighth ramp is the existing load-restricted north ramp adjacent to the Richmond County Bank Stadium. It will be demolished and reconstructed on a more efficient alignment in order to alleviate traffic congestion at the intersection of Richmond Terrace and Wall Street. In addition, this project will replace the superstructure of a pedestrian bridge (the 69th Street Terminal Building Overpass) connecting the terminal to an office facility, and will address traffic improvements for the entire stretch of Richmond Terrace outside the terminal. Construction began in summer 2009, and is expected to be complete by spring 2013.

A Notice to Proceed for the reconstruction of these structures was issued to the contractor with a start date of July 27, 2009. During the demolition of the concrete encasement at the old viaduct, which began in October 2009, lead paint on the underlying structural steel was discovered. The contractor will perform the concrete removal activities inside a Class 3P containment.

Emergency Contracts

BORDEN AVENUE BRIDGE OVER DUTCH KILLS (QUEENS)

The Borden Avenue Bridge over Dutch Kills is located just south of the Long Island Expressway between 27th Street and Review Avenue in the Sunnyside section of Queens. It is a retractile-type movable bridge. The original bridge construction was completed in 1908 and was opened to traffic on May 25, 1908.

The bridge structure carries two lanes of vehicular traffic with sidewalks on either side. The roadway is 34 feet wide and the sidewalks are 8 feet wide. In 2008, the bridge carried approximately 15,002 vehicles per day.

Borden Avenue Bridge. (Credit: Peter Basich) General View of the Crack in the Wingwall.

In the spring of 2008, the Department observed that an existing crack in the west abutment's wingwall had opened up further. Following a series of subsequent inspections, it was determined that there is continuous movement of the west abutment wall. In an effort to mitigate this condition, two pressure relief joints were installed in the roadway, and the speed limit for eastbound traffic was posted at 15 miles per hour. Unfortunately, these measures did not stop or slow the abutment wall's movement.

On September 11, 2008, the Department and its consultant met to discuss the problem, and it was determined that there were two possible solutions: either to install a tieback-suported anchoring system, which would restrain the west abutment wall's movement, or, to fully replace the bridge's west abutment wall and its wingwalls. The Department would not be able to determine which solution would be the best long-term solution until further detailed inspections of the abutment wall and wingwalls were performed.

In early 2009, based on the findings of the underwater inspection, the consultant provided its recommendation to the Department to proceed with the second option, and the Department concurred.

The movement of the wall is undermining the stability of the bridge. Due to the potentially serious danger to life, public safety and property posed by the current condition, it is critical that the repair work be performed as expeditiously as possible.

On October 16, 2008, in the interest of public safety, pursuant to Section 103(4) of the General Municipal Law and Section 315 of the New York City Charter, the Department declared that an emergency exists relative to the movable bridge carrying the Borden Ave. over the Dutch Kills in Queens.

The repairs will include the following: removal of the fill material under the roadway and sidewalks from behind the west abutment and between the wingwalls; relocation of the existing utilities; digging of a test pit to inspect the supporting piles; inspection of the condition and the taking of measurements; and the implementation of the appropriate repair solution based on the inspection findings.

The bridge was closed at noon on December 31, 2008. A Letter of Intent for the emergency repair of this bridge was issued to the contractor with a start date of January 6, 2009.

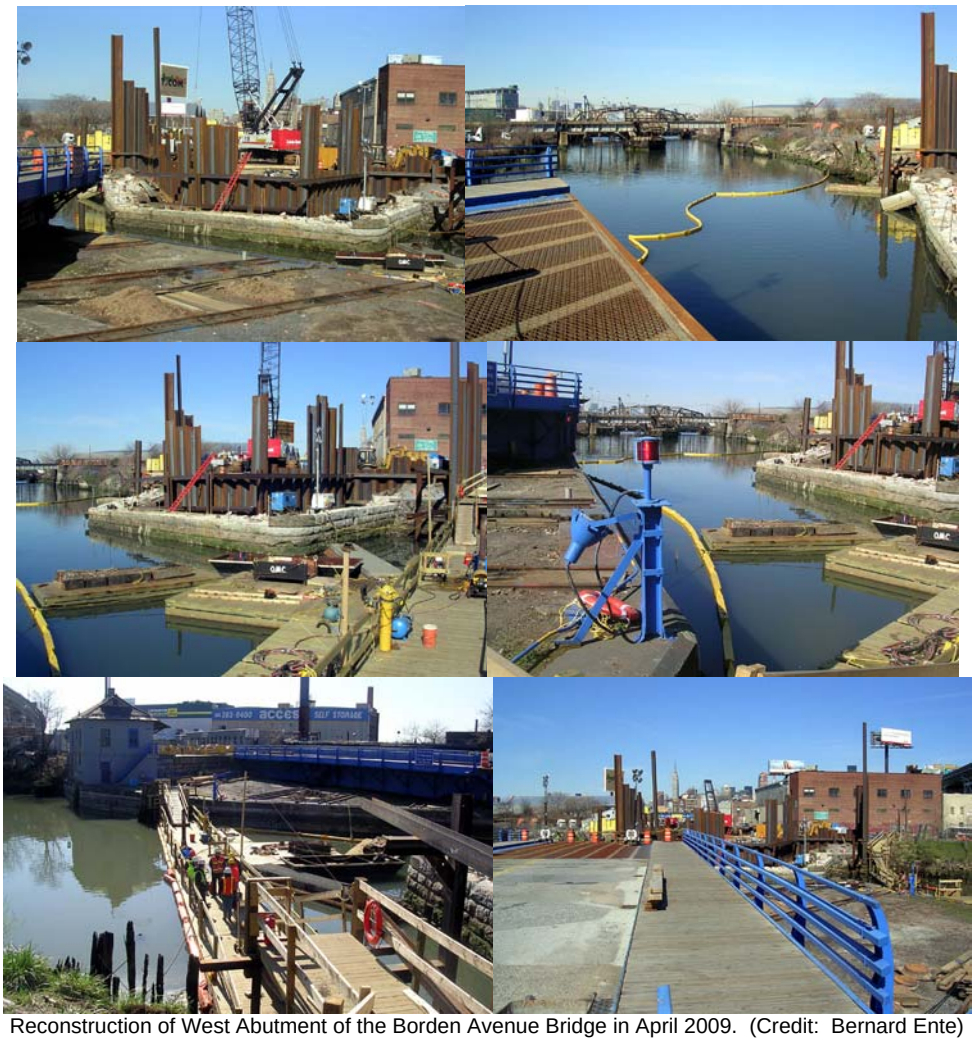
Borden Avenue Bridge Closed for Emergency Repairs in January 2009. (Credit: Bernard Ente) Roadway Excavation in January 2009.

The contractor began the excavation work behind the west abutment in February 2009. Installation of the cofferdam sheeting began in March 2009.

Demolition of the West Abutment and Wingwall in February 2009. (Third View Credit: Reza Lotfi)

Borden Avenue Bridge in February and March 2009. (Credit: Tamara Berlyavsky)

Demolition and Disposal of West Abutment Wall. (Credit: Reza Lotfi) Sheet Piling of Cofferdam. Closeup of Sheet Pile Driving Operation for the West Abutment. (West Abutment Credit: Reza Lotfi)



Reconstruction of West Abutment of the Borden Avenue Bridge in April 2009. (Credit: Bernard Ente)

Removal of Obstructions for the Sheeting Operation in May 2009. Deep Well Installation Southwest of the Bridge in June 2009.

A supplement to the Declaration of Emergency was added on August 3, 2009. During the excavation portion of the abutment wall repair work, the contractor encountered oil contaminated sediments in the Dutch Kills requiring the Department to notify the relevant federal and state regulatory agencies. The New York State Department of Environmental Conservation subsequently mandated that the Department prepare a Corrective Action Plan to address the contaminated sediments and dewatering fluids generated by the work. Since the environmental remediation work is incidental to the abutment wall repair work, the remediation work was added to the current emergency contract.

In addition, during the course of the abutment wall repair work, it was discovered that many areas of the superstructure of the moveable span exhibit deterioration. The additional repairs will include steel repairs on the stringers, floor beams and brackets; the installation of a new 5.5 inch concrete slab, and localized cleaning and painting.

The contractor began the demolition of the concrete deck in September 2009 and the repair of the structural steel in October 2009.

The Division identified a pocket of contaminated soil which was classified as "contaminated non-hazardous". As such, it poses no significant health risk to workers or the surrounding community. However, precautionary measures were taken and every effort is being made to remove and dispose of the contamination quickly, yet safely, within all New York City and State guidelines. A Corrective Action Plan (CAP) for the removal and disposal of the contamination was submitted to the NYS Department of Environmental Conservation (NYSDEC) for review and approval. Upon receipt of the NYSDEC approval in November 2009, the contractor proceeded with the environmental work. Construction is expected be complete by August 2010.

NORTHBOUND FDR DRIVE BETWEEN EAST 14Th AND EAST 16TH STREET (MANHATTAN)

The original construction of this structure was completed in 1947, and the last major rehabilitation was completed in 1998. Since that time, a series of undermining conditions of the north bound roadway have occurred, caused by the loss of fill in the relieving platform area. The northbound bridge structure is 40 feet wide and carries three lanes of vehicular traffic and a sidewalk.

On Friday, July 31, 2009, at 10:35 AM, a sunken roadway condition was reported in the left and center lanes of the northbound roadway, near the Con Edison 14th Street power plant. NYCDEP responded and closed the left lane. NYCDOT, NYSDOT, and Con Edison senior staff joined DEP on-site to evaluate the condition and determine responsibility for repair. The center lane was closed after rush hour as a Con Edison contractor excavated the left and center lanes. After finding a 10-foot deep void and no apparent defect in the Con Edison facility, the Department's When and Where contractor took over the site.

On August 1, Con Edison was directed to shut down the power plant so that divers could inspect the underside of the platform. The excavation was temporarily filled and traffic was restored around 1 PM on August 2. At approximately 10 AM on August 2, NYSDOT contracted divers inspected the underside of the platform.

Although this immediate temporary repair began the night of July 31, 2009 and was completed on August 2, 2009, review of the extent and degree of the emergency necessarily continued.

First Emergency Repairs at the FDR Drive in August 2009. Executive Director of Inspections and Bridge Management Dr. Bojidar Yanev (at Right) Visiting the Site.

Filling the Excavation on the FDR Drive.

The Department's preliminary assessment of the collapse was that a tidal surge from the East River apparently entered the supporting fill in the area of the undermined portion of the roadway.

A condition inspection commissioned by NYSDOT discovered that the support provided by the relieving platform became compromised at the beginning of August 2009. The City was directed to immediately take steps to protect the public under emergency conditions, and to make permanent repairs to restore the support of the roadway and sidewalk areas. As with the adjacent section to the north, it was decided that after interim repairs were made to restore the two lanes of the roadway to vehicular traffic, the entire area under the roadway and sidewalk would be filled in with concrete from the river bed to the underside of the pavement.

Emergency permanent repair of failed relieving platform on the northbound FDR Drive between East 14th Street and East 16th Street.

On August 19, 2009, in the interest of public safety, pursuant to Section 103(4) of the General Municipal Law and Section 315 of the New York City Charter, the Department declared that an emergency exists relative to the northbound section of the FDR Drive at East 15th Street in Manhattan. A Letter of Intent for the emergency repair of the failed relieving platform was issued to the contractor with a start date of August 19, 2009.

The right lane was closed on August 13, and the remainder of the northbound FDR Drive between Houston and 20th Streets was fully closed to traffic at 9:00 PM on August 18. The emergency contractor placed a timber mat across the entire width of the northbound FDR Drive near 15th Street. The mat was approximately 60 feet long, with 75 foot approach ramps to and from the mat. The Roadway Repair and Maintenance Division placed asphalt on the mat and ramps, and the Traffic Operations Division striped the roadway and placed appropriate signage. The northbound Drive was reopened to two lanes of traffic at 2:00 AM on August 20.

The conditions at the base of the timber piles were immediately addressed by placement of normal weight concrete around the exposed timber. The next phase included the "forming and filling" of the area beneath the platform. A light weight cementitious fill was utilized for the majority of the structure, and a 10-inch thick reinforced structural layer was utilized at the timber deck elevation. Due to lead time issues on material, the contractor used stay-in- place forms. Finally, for sealing purposes and additional lateral support, a steel sheet pile bulkhead backed with normal weight concrete was constructed in front of the platform. The full roadway was restored to traffic, and construction was substantially completed on October 16, 2009.

Emergency Repairs on the FDR Drive in August and September 2009.

When and Where Unit

In 2009, the following structures were worked on under the Division's When and Where contracts: Brooklyn-Queens Expressway WB over Furman Street, 51st Avenue Pedestrian Bridge over LIRR Main Line, 79th Street Pedestrian Plaza over 79 Street Boat Basin Garage, Boston Post Road Bridge over Hutchinson River, Belt Parkway Bridge over Mill Basin, Belt Parkway Bridge over Paerdegat Basin, Bus Station Exit Ramp over SIRT, Bus Station North over SIRT, Depot Place Bridge over Metro North, East 78th Street Pedestrian Bridge over FDR Drive, East 156th Street Bridge over Access to Housing, East 81st Street Pedestrian Bridge over FDR Drive, Flushing Meadow Park Pedestrian Bridge over Lawrence Street, Flushing Meadow Park Bridge over Stream North of Long Island Expressway, Flushing Meadow Park Bridge over Willow Lake and 76th Road, Flushing Meadow Park Bridge over Aquacade Lake, Forest Park Drive Bridge over Abandoned LIRR, Hempstead Avenue Bridge over BCIP, Henry Hudson Parkway over Amtrak 30th Street Line, Henry Hudson Parkway Viaduct over West 72nd to West 79th Street, Harlem River Drive NB Ramp over Harlem River Drive, Isham Park Pedestrian Bridge over Harlem River Inlet, Jamaica Avenue Bridge over BCIP, Knapp Street Bridge over Belt Parkway, Linden Boulevard Bridge over BCIP, Markwood Road Bridge over Jackie Robinson Parkway, Motor Parkway Pedestrian Bridge over Bell Boulevard, Parking Entrance Ramp over SIRT, Parking Exit Ramp over SIRT, Pedestrian Bridge at 73rd Street over Conrail, Pedestrian Bridge near Union Turnpike over Abandoned LIRR, Pulaski Bridge over Newtown Creek, Queensboro Bridge (LL) over East River, West 148th Street Pedestrian Bridge over Amtrak 30 Street Branch, West 181st Street Pedestrian Bridge over Henry Hudson Parkway NB, West 39th Street Bridge over Amtrak 30th Street Branch, West 41st Street Bridge over Amtrak 30th Street Branch, Winchester Boulevard Bridge SB over BCIP, and Woodhaven Boulevard Bridge over Atlantic Avenue.

Currently scheduled projects include Harlem River Drive NB Ramp over Harlem River Drive, Henry Hudson Parkway Viaduct over West 72nd Street to West 79th Street, and the Footbridge over Brook Lake Dam.

Fixing the Railing at the West 148th Street Pedestrian Bridge over Amtrak 30th Street Branch in January 2009.

Installing Steel Shoring at the 81st Street Pedestrian Bridge over FDR Drive in January and February 2009.

Removing Loose Concrete at the West 39th Street Bridge over Amtrak 30th Street Branch in March 2009.

Installing Steel Grating for the Circular Gutter at the West 79th Street Rotunda in March 2009.

In response to a series of red flags for the deteriorated stringers supporting the Henry Hudson Parkway between 72nd Street and 96th Street, the When & Where contractor was mobilized to perform emergency steel repairs. Rapid coordination was achieved with Amtrak to enable these emergency repairs to proceed unimpeded. The work is still on-going, during night shifts.

Nighttime Repair Work in April 2009 at the Henry Hudson Parkway Viaduct over West 72nd to West 79th Street.

Repairs at the Henry Hudson Parkway Viaduct in May and June 2009.

MARINE WHEN AND WHERE

New York State DOT conducts the underwater inspections of our waterway structures. A contract was needed to facilitate the performance of marine repairs and to maintain structures in need. The objective is to perform marine structural repairs and maintenance together with other appurtenant work, which constitutes repairs of defective and deteriorated parts of bridge structures due to and in a water environment. The Department has neither the staffing nor the equipment to handle this type of special work. The work could not be handled under the usual time and materials When and Where contract, because the work is unique, in that it requires a consultant with underwater-licensed inspectors to supervise and inspect the work for compliance and adequacy. Furthermore, detailed note taking is necessary by the inspectors to check and approve payments for the contractor's work.

Marine bridge repairs already completed include 163rd Street Pedestrian Bridge over Hawtree Basin, Broadway Bridge over Harlem River, Brooklyn Bridge, Belt Parkway Bridge over Mill Basin, FDR Drive Viaduct over Ave C to East 25th Street, Ocean Avenue Pedestrian Bridge over Sheepshead Bay, West 207th Street Bridge/West Fordham Road over Harlem River (University Heights Bridge), and Wards Island Pedestrian Bridge over Harlem River.

Some of these locations experience repeated damage due to heavy marine traffic and/or a narrow channel. The issuance of new flags necessitates new visits to even recently completed projects. Timber fender systems are subject to recurring hits by barge traffic, and consequently require periodic restoration. In addition to damage due to impact, timber elements are also replaced because of deterioration and attack by marine borers, whose activity has vastly increased as the water quality in the New York City area has improved.

In response to a PIA safety flag received from NYSDOT requiring the removal of a "menace to navigation" hazard in the Harlem River (steel and concrete elements falling from the structure), our Marine When and Where contractor immediately mobilized at the Broadway Bridge. The work consisted of the removal of deteriorated, loose and unsound concrete and steel angles below the lift span deck. These elements are part of a stringer protection system which prevents rusting of the top flanges of the lift span stringers. The system consists of steel clip angles and concrete. Over the years, many of the steel angles became severely deteriorated to the extent that portions are in danger of falling into waterway channel. In addition, concrete areas behind these deteriorated angles have also deteriorated and pose the same risk. Removal of these

elements was extremely difficult, because large area work platforms could not be used on the lift span. This necessitated the use of barges and man lifts to access the numerous individual work areas.

Working on the Broadway Bridge in November and December 2009.

Currently scheduled projects include additional repairs to the Broadway Bridge over Harlem River and City Island Road Bridge over Eastchester Bay.

PAINTING

In 2009, the following bridges were painted: Atlantic Avenue Service Road EB over East New York Avenue, Atlantic Avenue Service Road WB over East New York Avenue, Atlantic Avenue Service Road over LIRR Atlantic Avenue, Boston Post Road Bridge over Hutchinson River, Brooklyn-Queens Expressway West Leg over Grand Central Parkway, Brooklyn Queens Expressway East Leg over 30th Avenue, Brooklyn Queens Expressway East Leg North Bound over 32nd Avenue, Brooklyn Queens Expressway (Southbound) over 32nd Avenue, Clintonville Street Bridge over Cross Island Parkway, Cross Island Parkway Bridge over Dutch Broadway – 115th Avenue, Cross Island Parkway Bridge over Fort Totten Entrance, Cypress Hills Street Bridge over Jackie Robinson Parkway, Grand Avenue Bridge over Long Island Expressway, Grand Concourse Bridge over Burnside Avenue, Grand Concourse Bridge over East Kingsbridge Road, Grand Concourse Bridge over East 175th Street, Grand Concourse Bridge over East 204th Street, Grand Street Bridge over Newton Creek, Hamilton Place Bridge over Long Island Expressway, Hempstead Avenue Bridges over Cross Island Parkway, Highland Boulevard Bridge (Westbound) over Jackie Robinson Parkway, Highland Boulevard Bridge (NB) over Vermont Avenue, Jackie Robinson Parkway and Union Turnpike over Austin Street, Markwood Place Bridge over Jackie Robinson Parkway, Northern Boulevard Bridge over Alley Creek, Ocean Avenue Pedestrian Bridge over Sheepshead Bay, Pennsylvania Avenue Bridge over Belt Parkway, Queensboro Bridge Ramp from 11th Street and Terrain, Queensboro Bridge (Upper Level) Exit Ramp to East 62nd/63rd Streets, Queens Boulevard Bridge over Access Road to BQE SB, Queens Boulevard Bridge over Jackie Robinson Parkway, South Conduit Boulevard Bridge over Belt Parkway, Union Turnpike Bridge over Cross Island Parkway, 32nd Street Bridge over BQE, 35th Avenue Bridge over BQE, 44th Street Bridge over Grand Central Parkway, 47th Street Bridge over Grand Central Parkway, 69th Street Bridge over Long Island Expressway, and the East 174th Street Bridge over Sheridan Expressway and Amtrak.

Bridge Painting in May and July 2009: Bridge Painters Willie Tyler, Nicholas Krevatas, Frank Hollen and William Budge. (Credit: Earlene Powell)

Painting Along the Grand Central Parkway in August 2009. Crew: Bridge Painters Joao Silva, Thomas Anzalone, Reynaldo Grant, Michael Scotti, Oswaldo Lima, Albert Pappas, and Supervisor Bridge Painter Georgeios Ploumis. (Credit: Earlene Powell)

During 2009, the following structures were also painted: DEP Plant at North River, DOT Ironworker Shop at 59th Street, DOT Facilities at 390 Kent Avenue, DOT Harper Street Maintenance and Repair Shop, Metropolitan Avenue Bridge Operator's House, Bridge Preventive Maintenance Facilities at the Pulaski Yard, 17 South 6th Street Shop, Mill Basin Bridge Operator House, DOT Facilities at the Brookville Yard, DOT Facilities at the Kew Loop Yard, and the DOT Parking Garage under the FDR Drive at Old Slip.

GRAFFITI REMOVAL

In 2009, 5,406,237 square feet of graffiti were eliminated. This program focuses its primary attention on the four East River bridges, as well as the following 21 arterial highways: Clearview Expressway, Gowanus Expressway/Belt Parkway, Major Deegan Expressway, Harlem River Drive, Van Wyck Expressway/Whitestone Expressway, Brooklyn-Queens Expressway, Jackie Robinson Parkway, Sheridan Expressway, Hutchinson River Parkway, Henry Hudson Parkway, West Shore Expressway, Richmond Parkway, Martin Luther King Jr. Expressway, Staten Island Expressway, Bruckner Expressway, Prospect Expressway, Grand Central Parkway, Long Island Expressway, Cross Bronx Expressway, Nassau Expressway, and Bronx River Parkway.

Pressure Washing Machine Used for Graffiti Removal. It is Set to 2500 psi and 212˚ F. Bridge Painters Frank Duic and Russell Newme Feeding the Spray Pump and Preparing the Paint.

Removing Graffiti From the Manhattan Bridge in September 2009: William Budge at the Railing. (Credit: Earlene Powell)

Removing Graffiti From the Manhattan Bridge in September 2009: Cleaned Area. Supervisor Bridge Painter Cesar Pazmino Inspecting the Next Area to be Cleaned. Bicycle Commuter on Newly Cleaned Path. (Credit: Earlene Powell)

Removing Graffiti From the Manhattan Bridge in September 2009: Assistant Civil Engineer Andrew Hoang Inspecting the Plaque. Bridge Painter William Budge, Supervisor Bridge Painter Cesar Pazmino and Bridge Painter Vlatko Zic. Plaque Details. (Credit: Peter Basich)

Manhattan Bridge Plaque Details. (Credit: Peter Basich)

During 2009, graffiti was also removed from the following structures: Atlantic Avenue at Woodhaven Boulevard, Austin Street Concrete Tunnel, Bedford Park Bridge and 205th Street, Borden Avenue Bridge, Burnside Avenue at Grand Central Parkway, Conduit Boulevard at Belt Parkway, Corporal Kennedy Street between 41st and 42nd Avenue, Cross Island Parkway, DOT Facilities at the Crescent Street Yard, DOT Facilities at the East 206th Street Yard, Dover Street and Water Street, Cross Island Parkway Bridge over Dutch Broadway – 115th Avenue, FDR Drive, FDR Drive at 23rd Street, Five Borough Bicycle Tour Route, Grand Concourse over Bedford Park Boulevard, Grand Concourse over East Tremont Avenue, Grand Concourse over East 161st Street, Grand Concourse over East 175th Street, Grand Concourse over East 204th Street, Madison Avenue Bridge over Harlem River, Marathon Route, North Channel Bridge, Pulaski Bridge, Queens Boulevard near Long Island Expressway, Randall Avenue and Clarence Avenue, St. Paul's Place and Caton Avenue, Summer Streets locations, Thomson Avenue and Queensboro Bridge, Whitestone Expressway / Shea Stadium, Yankee Stadium Vicinity, East 10th Street Pedestrian Bridge over the FDR Drive, 12th Avenue from 57th to 59th Streets, 32nd Street and 24th Avenue, 37th Street at 9th Avenue, 44th Avenue and 94th Street, 72nd Street and Henry Hudson Parkway, 94th Street Pedestrian Bridge over LIRR, 123rd to 138th Streets along Amtrak and the Henry Hudson Parkway, 138th and 145th Street Bridges over the Amtrak area, 138th Street at Henry Hudson Parkway, West 138th Street at 12th Avenue, 153rd to 158th Streets along Amtrak and the Henry Hudson Parkway, 163rd Street Pedestrian Bridge over Hawtree Basin, 167th Street & Station Road, West 181st Street Bridge over ramp to George Washington Bridge, East 222nd Street and Baychester Avenue, West 235th Street at Henry Hudson Parkway, and 256th Street over Boston Post Road.

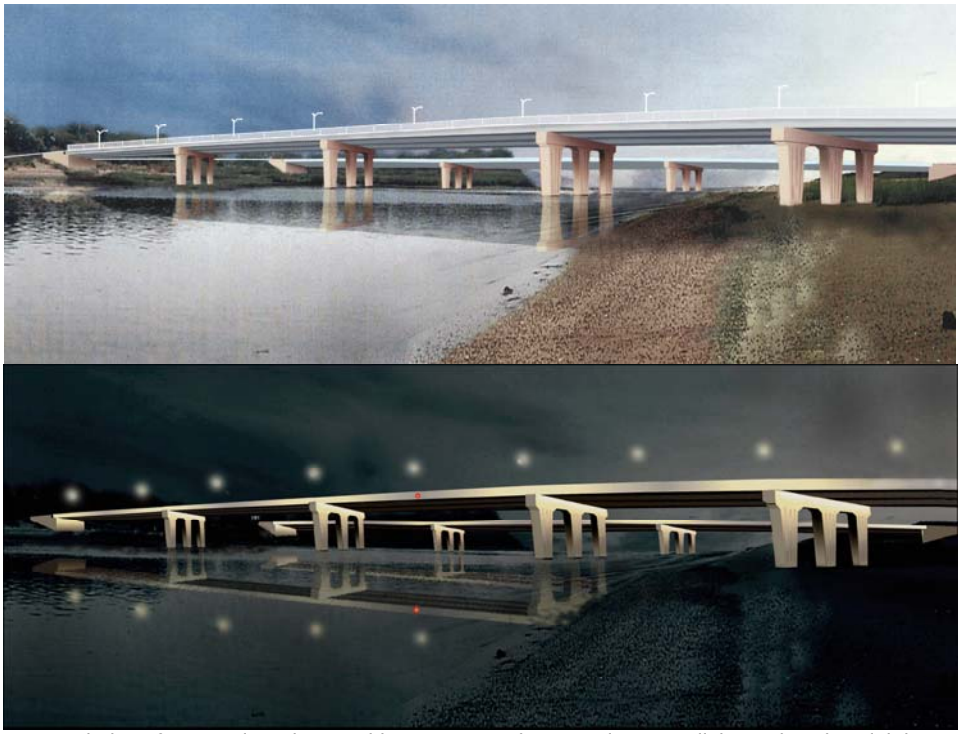
Performing Component Rehabilitation of Ramp G of the Queensboro Bridge in June 2009.

Engineering Review and Support

IN-HOUSE DESIGN

In-House Design staff prepares plans and specifications for bridge replacement/rehabilitation projects that enable the Division to restore bridges considered "structurally deficient" to a "very good" condition rating. This unit handles urgent Division projects, as well as special projects under construction by the Bureau of Bridge Maintenance, Inspections and Operations.

Projects underway in 2009 included the Belt Parkway Bridge over Paerdegat Basin in Brooklyn. The existing bridge with its nest of thirteen piers will be replaced in its entirety by two split bridges, one each for eastbound and westbound traffic. The bridge for eastbound traffic will have four piers whereas the bridge for westbound traffic will have two piers. This is the first bridge to be designed by NYCDOT with trapezoidal steel box girders utilizing high performance steel and seismic isolation sliding bearings. In addition, the aesthetics of the bridge will be enhanced by its nightly illumination utilizing light emitting diodes on both fascias and piers. This project will also include wetland mitigation and landscaping in the immediate vicinity of the proposed bridges. The construction commenced on October 26, 2009 along with two other adjacent bridges in the Belt Parkway Corridor as a combined contract.



Rendering of New Belt Parkway Bridge Over Paerdegat Basin, In Daylight, and Under Nightly Illumination. (Credit: Alexander Berens)

Rendering of Existing and Proposed Belt Parkway Bridges Over Paerdegat Basin. (Credit: Alexander Berens)

Final design was completed for the component rehabilitation project to replace the concrete-filled steel grid deck of the Greenpoint Avenue Bridge over Newtown Creek, which connects the boroughs of Brooklyn and Queens. Greenpoint Avenue is a key corridor that links light industry in northern Brooklyn with freight distribution hubs and Interstate highway routes in western Queens. The existing bascule span bridge was built in 1990 and carries two lanes of traffic in each direction. The bridge consists of eleven fixed spans and a bascule span. This project will also include the replacement of the cracked stringers and the compression seals at all of the joints, as well as the resurfacing of the approach pavement and the intersection at the Queens end, and will extend the useful life of the bridge structure by 10 years. The project is scheduled to start in spring 2010.

Arial View of Greenpoint Avenue Bridge. Elevation Right Span.

Other projects underway include the Union Turnpike Bridge over Cross Island Parkway (and Creedmoor Center Road), and Hillside Avenue Bridge over Cross Island Parkway in Queens. Both bridges are two span rigid frame concrete structures. The In-House Design staff prepared the scope of work and a sub-consultant performed surveys, borings, corings, hazardous material evaluation, and traffic studies. The unit then proceeded with the preliminary design. The construction project is scheduled to start in late 2016.

This unit is supervising the design of a proposed pedestrian bridge that will connect Park Row to the existing One Police Plaza overpass. The bridge will enhance the area while providing a safe

pedestrian connection from Police Plaza to Park Row. The new bridge will be part of a Park Row/Chatham Square reconstruction project, which is being handled by DDC. The project is currently in the final design phase.

In-House Design's Electrical Group reviews and/or prepares contract documents for all electrical and street lighting work on all projects on the Division's Capital Program. Some of the contracts reviewed during 2009 included the Willis Avenue, Broadway, 145th Street, and Wards Island Pedestrian Bridges over the Harlem River; Hamilton Avenue and Union Street Bridges over the Gowanus Canal; and Belt Parkway Bridge over Paerdegat Basin in Brooklyn; Roosevelt Island Bridge over East River Channel; Bruckner Expressway NB & SB Service Road (Unionport Bridge) over Westchester Creek in the Bronx; Shore Road Bridge over Hutchinson River; Queensboro Bridge; Williamsburg Bridge; the East River Waterfront; and City Island Road Bridge over Eastchester Bay.

FRESH CONCRETE INSPECTION AND TESTING PROTOCOL

Concrete is one of the major materials utilized in our bridge construction/rehabilitation projects. The Quality Assurance Section's in-place procedures to ascertain the quality of the fresh concrete delivered to our bridge sites require that all of its raw ingredients be obtained from NYSDOT-approved sources. Inspections are conducted at the batching plant during the manufacture of the concrete, in accordance with the design mixes reviewed and approved by the Section. Fresh concrete brought to the project site is then tested to ensure it meets its specification requirements, and concrete cylinder specimens are made at the point of placement by our own resident engineering staff. These specimens are then tested by an inspection firm in direct contract with us, without any influence from the contractor or its supplier, to confirm that hardened concrete has met its design strength.

When the indictment/conviction of some private testing firms, retained by builders or agencies other than NYCDOT, on grounds that they falsified concrete test results on their projects in the City raised concerns about the quality of concrete utilized on those projects and invoked an additional scrutiny by the Building Department, our Quality Assurance staff's independent and thorough procedures confirmed that we do not have issues with the quality of concrete provided to our projects. None of the indicted/convicted firms worked on our bridge projects.

Upon learning that a concrete supplier on our major on-going bridge project was being investigated by DOI for a possible connection with the indicted/convicted testing firms, we introduced a stepped-up inspection and testing protocol which not only reassured us that the concrete supplied by this vendor is of the utmost quality and conforms fully to our specification requirements, but also that our standard inspection and testing protocol was fully adequate.

ENVIRONMENTAL ENGINEERING

The Environmental Engineering staff of the Quality Assurance section provides environmental oversight and compliance on all capital projects in the Division. Lead paint abrasive cleaning projects underway or completed in 2009 included the Queensboro Bridge, Manhattan Bridge, Rikers Island Bridge, Roosevelt Island Bridge, Brooklyn Bridge, Willis Avenue Bridge, Williamsburg Bridge, and various bridges over the Brooklyn-Queens Expressway and Grand Central Parkway. In addition, the unit continued to provide emergency response related to environmental issues.

As part of the Environmental Committee for the Office of Environmental Assessment and Compliance (OEAC), the unit assisted in developing environmental procedures such as spill prevention, control and countermeasures protocols, roadway spill clean-up protocols, RCRA

contingency plans and the disposal of universal waste. The unit also worked with OEAC to develop and implement training for working over water as well as the Clean Water Act.

The unit performs quarterly water discharge monitoring in compliance with the NYSDEC SPDES system for bridges that cross waterways such as the Gowanus Canal, English Kills Creek and the Newtown Creek. Environmental oversight was provided to emergency work-over-water projects on the Brooklyn Bridge, Mill Basin Bridge, Roosevelt Island Bridge, Willis Avenue Bridge, Hamilton Avenue Bridge, Gerritsen Inlet Bridge, Paerdegat Basin Bridge, Third Avenue Bridge, Borden Avenue Bridge, Grand Street Bridge, Borden Avenue Bridge, Hutchinson River Parkway Bridge, Unionport Bridge, and Greenpoint Avenue Bridge. This environmental oversight ensured that there was no environmental impact to the city's waterways during emergency repair projects.

The unit also manages hazardous waste generated by both the in-house work of the Division and the capital projects. Through the use of environmental testing laboratories, the unit has continued to identify and dispose of out-of-date and expired chemical products stored in bridge facilities. Hazardous waste such as spent paints, solvents, oils and lead-paint debris is generated during maintenance and construction projects. This waste is managed in accordance with all applicable regulations for treatment and disposal. The unit is responsible for providing reports to the NYSDEC regarding the management and disposal of this waste.

The unit ensures compliance with storm water regulations, hazardous waste management, Clean Air Act requirements, Clean Water Act requirements, asbestos regulations, lead paint removal protocols, and health and safety on NYCDOT bridge projects. This includes projects such as the Willis Avenue Bridge, Belt Parkway Bridge over Paerdegat Basin, Belt Parkway Bridge over Rockaway Parkway, Belt Parkway Bridge over Fresh Creek Basin, and Roosevelt Island Bridge, where compliance with environmental concerns such as dredging and dewatering is required in conjunction with submarine cable installation, pier demolition, pier construction, and channel widening.

In preparation for the construction of a new 153rd Street Bridge over Metro North in the Bronx, the Agency acquired several private properties. One of these was a former car wash and oil change station located at 670 Grand Concourse. Oil contamination was found throughout the building from the previous site operations. The unit assisted in developing work procedures to remediate the site as well as to provide oversight during the clean up operations. Stored petroleum products and chemicals, oil spills and piping systems were cleaned and decommissioned prior to securing of the site for future demolition.

The unit also continued to provide environmental oversight during the environmental investigation of a gas station located over the Metropolitan Avenue Bridge. Numerous underground storage tanks needed to be removed, and the unit assisted in conjunction with Exxon/Mobil in the closing of the station as part of a planned bridge rehabilitation project. In accordance with NYSDEC requirements, the soil and groundwater continue to be tested and analyzed at the site to determine the extent of petroleum contamination.

In addition, the staff continued the implementation of a new quality assurance plan for coating inspection and application on Division bridge structures. Services are implemented through the use of consultant contracts. Coating inspection services and engineering were provided on numerous projects such as the Brooklyn Bridge traveler repair project, Roosevelt Island Bridge, Manhattan Bridge, Williamsburg Bridge, Grand Central Parkway Bridges, Brooklyn-Queens Expressway Bridges, Willis Avenue Bridge, and the Queensboro Bridge Painting Project.

BRIDGE PROJECT SPECIFICATIONS

In 2009, the Specifications staff of the Engineering Support Section prepared and/or reviewed contract proposal books and/or specifications for 13 bridge rehabilitation and reconstruction contracts. Nine of these contracts totaling approximately $730 million in construction costs were

either bid or advertised for bid. Six previously Law Department approved contracts totaling approximately $1.043 billion in construction costs were advertised for bid and were bid in 2009. Another 13 bridge projects were under active review, including the East River Waterfront Project for the Lower Manhattan Borough Office and the Park Row Pedestrian Bridge for DDC.

Notable among the bridge contracts prepared and/or reviewed, advertised and sent for bid are: rehabilitation of the Manhattan Bridge cables and suspenders; approach and ramp rehabilitation of the Brooklyn Bridge (as well as its complete painting); component rehabilitation of 12 bridges City-wide; protection of timber structures against marine borers; reconstruction of Borden Avenue Bridge over Dutch Kills; emergency maintenance of the Financial District security barriers and gates; component rehabilitation of Greenpoint Avenue Bridge over Newton Creek; reconstruction of Wards Island Pedestrian Bridge; installation of aviation lights on the Queensboro Bridge, and reconstruction of Belt Parkway Bridges over Fresh Creek Basin, Paerdegat Basin, and Rockaway Parkway.

CONVERSION OF DIVISION ENGINEERING ARCHIVES

Since the first digitizing contract of engineering records began 11 years ago, we have converted over 58,000 full-size contract drawings and 20,000 construction photographs into digital formats.

The next phase of the project consisted of the digitizing of the microfilm collection. Since we began microfilming bridge drawings in the early 1980s, we accumulated more than 450 microfilm rolls (over 110,000 frames of film). Microfilming of records is rapidly becoming an obsolete technology as it cannot be used to perform rapid searches, sort records, send/ share files via the Internet, or copy electronic files to CDs/DVDs.

Under the digitizing contract completed in July 2009, these microfilms were transferred to digital media, and the records were consolidated according to their BIN (Bridge Identification Number) for future use.

In order to expand our records database we were able to acquire a complete digital set of the NYSDOT contracts from 1930. The NYC-based bridge-related records consisted of about 1,000 projects, which we were able to extract, label and incorporate into our server-based database according to their BIN and contract.

Server-based records support quality communications and enhance our public image. They ensure faster, flexible and effective delivery, improve document security, and organize, retrieve, distribute and print all documents more efficiently.

The Records Management Unit updated the specifications for the preparation of record drawings and electronic media. This major revision of the specifications is concentrated on the elimination of the microfilming requirements, the deletion of hard copies at the end of projects, and conversion to the US custom system. The new specifications are concise, well-illustrated, and simple to follow. A copy of the specifications in PDF format is easy to transmit electronically and we do not need to print large quantities of books.

The switch to electronic media and server-based archiving will save money on drawing submissions as well, and will lead to the establishment of a unified electronic database for bridge archives. Digitizing documents and storing them online, where they are easy to access and print, will simplify contract submission process and cut project costs in a long run.

SURVEYING AND LOAD RATING

The Borden Avenue Bridge over Dutch Kills is over 100 years old. This retractile bridge is mounted on tracks which are positioned to one side of a navigational channel. To open the

bridge, it is withdrawn or retracted to shore. A recent bridge inspection report discovered signs of significant movement on the south corner of the west abutment, and the separation of the existing vertical crack was getting wider at the mid-section of the south wing wall. The staff performed weekly monitoring of the movement of the west abutment and wing walls until the emergency contract was awarded.

On February 27, 2003, one of the fascia columns of the concrete pier on the Belt Parkway Bridge over Paerdegat Basin collapsed after a hit by a barge. The staff monitored the movement of the first three existing concrete columns from the north fascia of pier #6 to pier #8 from that day until the reconstruction contract was awarded.

The stone masonry retaining wall at 2465 Palisade Avenue in the Bronx is approximately 252 feet long with a varying height of one to 30 feet. Overall, the wall is in poor condition with visible bulging, stone displacements, and settlement. The unit performed weekly monitoring of the movement of the west abutment and wing walls until a contract was awarded.

GRACE ASPHALT PLANT

The Department intends to acquire the Grace Asphalt Plant in Corona, Queens (both the real estate and the plant equipment) for its Roadway Repair and Maintenance Division. The acquisition of this private plant will help the City streamline its asphalt procurement and save costs. The Department will also be able to recycle some milled asphalt materials. The Land Use Unit coordinated the ULURP application process for this project. This process and the Phase I and II environmental site investigations are complete. DCAS will conduct the property appraisal. After that the property will be acquired either by negotiated acquisition or by condemnation.

CRP/EXTELL PARCEL H PROJECT

The CRP/Extell Parcel H, LP project (Riverside Drive between 59th and 72nd Streets) includes the construction of seven new bridges, a ramp, and connector roads along Riverside Drive as a part of the residential and commercial development over the former Penn Central Rail Yard. The project will also include a half tunnel section in what was formerly known as the Miller Highway Tunnel. When completed, the infrastructure network will be transferred to DOT for maintenance. The Division is providing engineering review of the design drawings, as well as quality assurance inspections, to ensure the developer's compliance with DOT's construction and design standards. Construction is complete for four of the bridges (which are open for traffic), and the other three bridges are under construction. The first phase of construction for the half tunnel section is complete and phase two is in progress. The project is now in its second stage, and is 92 percent complete overall.

BRIDGE SEISMIC DESIGN AND RETROFITTING

The seismic retrofitting of bridges in New York City is part of the inspection and rehabilitation program mandated by Congress and administrated by the FHWA through the local authorities. During the period of 1993 to 1996, four major bridge owners in the New York City area (NYCDOT, NYSDOT, MTA, and the Port Authority of New York and New Jersey) retained seismologists to study hard rock seismic ground motions. The rock motions generated by these studies differed from each other and from the AASHTO spectrum as modified by NYSDOT. The differences were such that the resulting retrofit costs varied widely, depending upon which motions were adopted. To resolve this issue, NYCDOT, in association with NYSDOT and the

FHWA, retained a consultant to assemble an expert panel to develop recommendations for rock motions that would be adopted uniformly by the New York City region. The panel consisted of a team of six internationally recognized experts in the fields of seismology, geology, earthquake engineering, ground motion, and geotechnical studies. There were several brainstorming workshops held in New York, where the senior officials from NYCDOT, NYSDOT, and the FHWA provided their input to the panel members.

The expert panel formulated recommendations regarding rock motions and corresponding time histories. Subsequently, the consultant derived soil generic response spectra, based on the hard rock motions and NEHRP amplification factors. The consultant also established bridge performance criteria to be used for critical, essential or other bridges undergoing structural analyses. The recommendations are described in the report entitled "New York City, Seismic Hazard Study and its Applications, Final Report, December 1998." This report is now extensively used by NYCDOT, NYSDOT, the FHWA, their consultants, and other agencies in the New York area for bridge projects. Thus, NYCDOT's leading role and efforts to establish ground motion standards have brought uniformity in seismic design to the New York City area.

In 2002, the consultant convened a second panel of seismologists to update the 1998 Hazard Study and associated rock motions. On June 3, 2004, after the USGS national hazard maps were adopted by NEHRP, in a meeting attended by NYCDOT, NYSDOT and FHWA, it was unanimously agreed to adopt the new hard rock ground motions recommended by the panel of seismologists.

Following the adoption of the very hard rock motions, the consultant started the preparation of a new edition of the NYCDOT Seismic Design Guidelines for Bridges. Data from geotechnical bridge studies performed within the five boroughs of NYC were compiled. A series of generalized subsurface soil and bedrock profiles were developed to be representative of the range of soil profiles, overburden thickness, and rock types found within NYC. A fully probabilistic approach, utilizing Random Vibration Theory (RVT) in conjunction with the new hard rock ground motions, (from the 2002 Hazard Study) and the generalized NYC subsurface profiles, was used to develop vertical and horizontal Uniform Hazard Spectra (UHS), which, in turn, served as the starting point to derive design rock and soil response spectra. The method allowed computation of soil UHS, while preserving the hazard level of the very hard rock UHS. It accounted, in a rigorous probabilistic manner, for variations and uncertainties in soil stiffness, stress-strain nonlinearity, and material damping; depth of soil to rock; and, stiffness of the rock under the soil.

Generic horizontal and vertical design spectra were derived using the calculated UHS as the starting point. Generic design V/H ratios to be used in site-specific studies to generate site specific vertical motions, were also produced. All the generic soil curves are presented as a function of three parameters: soil class; depth to rock; and, rock class under the soil.

The development of these parameters for the NYCDOT Guidelines represent a significant improvement to the previous guidelines and other codes, since it will result in better representation of the ground motions at a bridge site, bringing closer the generic ground motions to those that could be obtained from site-specific studies. The fact that the new guidelines better fit the specific characteristics of the NYC region, will permit the engineers to evaluate the need for retrofitting existing bridges or strengthening new ones at the right places.

Recommendations for liquefaction evaluation are also provided in the guidelines, including recommendations for earthquake magnitude and peak ground surface accelerations, which are critical parameters for evaluating liquefaction potential and which have not been included in previous guidelines. The new document also includes recommendations for site-specific studies, providing guidelines and minimum requirements that must be satisfied. These include: procedures to establish soil horizontal and vertical design motions; recommendations to evaluate the effects of the depth to the rock surface; recommendations to account for uncertainties in the soil properties; minimum requirements to establish lower bound horizontal design motions; recommendations for time history analysis of bridges; recommendations for the incorporation of

spatial variation effects in the analysis; and different requirements for critical and non-critical bridges site-specific studies.

The final draft of the new NYCDOT Seismic Design Guidelines for Bridges was submitted in September 2008. Upon completion of a review by NYSDOT, these guidelines will be adopted for the seismic and retrofit design of bridges in New York State. The review is expected to be complete by the middle of 2011.

Bridge Maintenance, Inspections and Operations

EAST RIVER BRIDGES ANTI-ICING PROGRAM

Traditional snow and ice control practices rely heavily on the use of salt, a material known to corrode steel and accelerate the deterioration of concrete and asphalt surfaces. A new method of snow and ice control was needed to protect the City's $2.5 billion investment in the rehabilitated East River Bridges. This method, known as anti-icing, involves the application of a chemical freezing point depressant to the roadway surface to prevent snow and ice from bonding to the roadway. Frequent plowing removes any accumulation of unbonded snow or ice before traffic is affected.

The Division's Anti-Icing Program uses the liquid chemical potassium acetate and aggregate chemical sodium acetate. The anti-icing fleet consists of twenty-two spray trucks, six plow trucks and several smaller plows. Ten of the spray trucks are combination spray/plow trucks with a 1,000 gallon tank capacity, and five are spray-spreader/plow trucks with a 360 gallon spray capacity, and a nine cubic yard spreader capacity. There are twenty chemical storage tanks, with a total storage capacity of 114,250 gallons.

New anti-icing yards storing both chemicals have been established under all four East River bridges. Supervisors monitor the bridge decks during storm events by traversing them and using thermal instrumentation installed in their vehicles to make informed decisions as to when to apply chemicals. GPS capabilities have been installed in key vehicles to assist supervisors with the decision making process.

In the winter of 2008-2009, a total of 52,445 gallons of potassium acetate and 180 tons of sodium acetate were applied on the roadways of all four East River Bridges.

Anti-Icing Trucks. (Credit: Chris Gilbride)

Anti-Icing Trucks on the Queensboro Bridge During a Storm.
(Credit: Paul Schwartz)

INSPECTIONS

In 2009, Inspections covered 94 bridges and 538 spans. Emphasis was placed on ensuring public safety through the monitoring of potentially hazardous conditions and temporary repairs. The unit performed 544 monitoring inspections, and 254 special winter monitoring inspections of cellular structures, shorings, and potential fire hazards. In addition, 160 emergency inspections were conducted in response to hot line calls, in-house requests, or citizen complaints.

The Bridge Data System (BDS) allows inspection reports to be generated and transmitted electronically. It provides access to data from the latest inspection reports on all bridges to all Division units. In addition, when an emergency arises, our inspectors are able to send photographs and other information to the main office via a wireless connection to the internet. This feature enables bridge repair engineers to assess the condition and dispatch repair crews with the appropriate equipment in a timely manner. The test version of the system was field verified in 2006, along with the selected portable computers. The production version of the system was implemented in 2007.

Work is underway under a new contract to expand the BDS capabilities by incorporating data from capital reconstruction projects. Additional features will include in-depth inspection reports by consultants as well as GPS data.

In 2002, the Division began to receive State DOT bridge inspection reports in CD-ROM format. Flag reports are now also transmitted electronically. As of September 2003, standard inspection work is funded by a federal grant. Emergency response inspections and administrative support remain city funded.

Following the collapse of the bridge carrying I-35W in Minnesota on August 1, 2007, inspection practices nationwide were intensely scrutinized. On instruction of Commissioner Janette Sadik-Khan, Dr. Yanev assembled a panel of experts including representatives of the consultant community, academia and members of the Bridge Management and Maintenance Committees of the Transportation Research Board, of which he is a member. A questionnaire was circulated among the panelists in order to facilitate their responses. These responses and the opinion of in-house experts were taken into account in considering the potential benefits of using non-destructive techniques for the health monitoring of structures in the future. It was concluded that the current inspection methods and frequency are safe. As a result of the rehabilitations of the past decade, bridge conditions have improved significantly. The Bridge Inspection and Research and Development Units have pioneered the use of various nondestructive tests on City bridges, including X-ray diffraction, fiber optics, strain-gauging, ground penetrating radar, and ultrasonic testing. Future applications of such technologies are under consideration.

On September 17, 2007, Division representatives, along with engineers from NYS DOT, the Port Authority of New York and New Jersey, and the Metropolitan Transit Authority reported to the

New York City Council on the safety of the bridges and the methods of inspection and hazard mitigation.

Inspecting the Bridge over the Dam at the North End of Clove Lake in Staten Island in October 2009. (Credit: Syed Mahmood)

STRAIN GAUGE AND TELLTALE TESTING

Telltales for crack monitoring are installed at several locations, including three pre-stressed bridges in Staten Island and the FDR Drive at 92nd Street. These devices are attached to both sides of the crack and allow us to measure the changes from one inspection to the next. There is a grid on the face of the telltale that allows for precise measurements.

In 2008, the Research and Development Unit successfully used a new borescope and the acoustic emission equipment for monitoring inaccessible details at the Williamsburg Bridge, and the Bridge Inspection Unit retained consultants to inspect and evaluate the potential vulnerability to scour of bridges over the Bronx River.

Director of Bridge Management Kevin McAnulty (in Red Jacket) Utilizing a Borescope to Inspect the Joints of the Williamsburg Bridge in April 2009.

Snuff Mill Road Bridge is One of the Bridges Investigated for Scour Vulnerability and Found to be Structurally Sound, But it Remains Under Surveillance During Heavy Rains and Floods.

In December 2008, as a follow-up of the commitment to enhance bridge inspections by non-destructive remote monitoring techniques, two approach spans of the Brooklyn Bridge were instrumented with fiber optic sensors.

In January 2009, in-house forces assisted researchers from the University of Illinois at Chicago in the installation of fiber optic sensors on the Manhattan approach of the Brooklyn Bridge, designed to monitor the condition of two brick masonry arches. The sensors monitor the behavior of existing cracks with the results transmitted electronically to the website, using a computer system capable of monitoring up to 40 channels of information on displacements, vibration, and temperature. The project is sponsored by the FHWA and contracted by NYSDOT at no cost to the City. Dr. Yanev will be presenting its progress at the Non-Destructive Testing TRB Committee meeting in early 2010.

Director of Bridge Management Kevin McAnulty Utilizing a Borescope to Investigate the Suspension Cable Model at Columbia University. The Cable is 20 Inches Thick and 20 Feet Long, Made of 10,000 Steel Wires, Each Five Millimeters in Diameter. Sensors in the Cable Measure Corrosion Rates, Temperature, Humidity, Acidity and Chlorine Content, and Microphones Detect Cracking in the Steel Strands. (Credit: Bojidar Yanev)

CLEANING

In 2009, 8,527 cubic yards of debris were removed from bridges and their surrounding areas, and 1,807 drains were cleaned.

Highway Repairer Ruben Sanchez Cleaning the 174th Street Bridge Seat. (Credit: Louis Garzia)

Debris Removal Crew: Highway Repairer Eudosio Perez, Supervisor Highway Repairer Thomas Cruz, Highway Repairer Donald Riconda, and Assistant City Highway Repairer Sonia Lopez.

Cleaning a Drain: Supervisor Highway Repairer Michael Parise, Highway Repairer Anthony Irizarry, and Assistant City Highway Repairer Danny Alvarado. Darin Crew: Assistant City Highway Repairer Danny Alvarado, Highway Repairer Anthony Irizarry, Supervisor Highway Repairer Michael Parise, Assistant City Highway Repairer Claudia Wilkinson, and Highway Repairer Michael Cunningham. (Credit: James Campbell)

PIGEON DETERRENCE

Excessive numbers of pigeons cause property deterioration, unsafe working conditions and health hazards. Besides being unsightly, accumulation of pigeon droppings and feathers is corrosive to steel structures and raises concerns about health hazards. Many disease organisms have been associated with pigeons. They harbor ectoparasites which can infest or bite humans. Pigeon droppings also harbor fungi that can trigger serious, even fatal, lung diseases such as Histoplasmosis, Cryptococosis and Toxoplasmosis, when the spores are transmitted to humans who breathe in the harmful dust.

The Division utilizes a relatively low tech, and passive, approach to deterring pigeons. In 2006, the type of barrier used to cage out pigeons was changed from the drop ceiling method to netting. The netting is supported by steel cables that are clipped to the beams. This method is currently in use under the Brooklyn Queens Expressway (over Prospect Street), at the Pulaski Bridge, under the Brooklyn Bridge at “Ash Alley,” and at the anti-icing tank storage area under the Brooklyn Bridge at Dover Street. In addition, a pigeon deterrent system involving low voltage wires is in place at the Belt Parkway Bridge over Ocean Parkway. The wires are installed along the web of the girders and are hardly visible, yet highly effective. The system has been in operation for over three years now and no pigeons have been observed under or by the bridge ever since. The community is pleased that we addressed one of their most serious and longstanding complaints. The system requires minimum maintenance and is extremely easy to operate.

In 2009, pigeon dropping removal and/or pigeon proofing were performed at the 207th Street (University Heights) Bridge over the Harlem River; Bruckner Expressway over Westchester Creek (Unionport Bridge); the Madison Avenue Bridge (138th Street) over Harlem River; the Hutchinson River Parkway Bridge, the Northern Boulevard (Prince Street) Bridge over Flushing Creek; the Queensboro Bridge; the Brooklyn Bridge at Prospect Street; the Pulaski Bridge; and the Belt Parkway Bridge over Nostrand Avenue.

Nature's Pigeon Deterrent—A Falcon on the Brooklyn Bridge South Side Tower. Falcons Have Lived on the Brooklyn Bridge Since 1995. Falcon Family on the Williamsburg Bridge. According to the New York State Department of Environmental Conservation, New York State now has the largest population of peregrines in the eastern United States. There Are Now 17 Falcon Pairs in New York City. (Family Credit: Russell Holcomb) "Owl" Guarding the Machinery Room of the Broadway Bridge. A Hawk on the Broadway Bridge. (Owl and Hawk Credit: Albert Hong)

BRIDGE CLASSIFICATION

The Coast Guard regulations, which govern the operation of the City's movable bridges, define the owner's responsibility to the mariner by classifying a bridge as "open on demand" or "open on advance notice." An "on demand" bridge provides an immediate opening to any vessel wishing to pass the bridge. An "advance notice" bridge opens after the mariner requests an opening several hours in advance. "On demand" bridges must be staffed at all times. "Advance notice" bridges are staffed only when necessary. DOT redesigned the work process in order to reduce personnel costs to the City and improve the delivery of services to the maritime community.

In October 2000, the Department implemented the United States Coast Guard-approved changes, establishing a four-hour notice for the Harlem River bridges, and a two-hour notice for the remaining "advance notice" bridges. The "on demand" classification remains for three bridges. The revised advance notice requirements allowed the formation of mobile crews with

overlapping responsibilities, meeting the mariners' needs and, in some instances, improving service by providing two mobile crews to expedite a vessel's travel along a waterway.

The reduction in planned personnel will save approximately $1,042,480 annually. In addition, bridge operational capabilities, general maintenance, and debris and snow removal have been enhanced through the more efficient utilization of existing personnel.

The remaining task is the conversion of the three remaining bridges to "on demand" status. This will be achieved by the replacement of the Shore Road over Hutchinson River and the Belt Parkway over Mill Basin bridges with new bridges built with higher clearances, thereby reducing the number of times the bridges must be opened. The third bridge, Hamilton Avenue, does not require a higher elevation.

Summary of Vessel Openings 1995 - 2009

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Brdn Ave. (Q)	0	105	15	0	3	0	28	0	0	0	1	0	0	0	0
Brdwy (B/M)	7	24	7	2	0	6	27	83	49	16	2	18	42	58	57
Brcknr Expwy (Estrn Blvd) (B)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brcknr Expwy (Unnprt Brdg) (B)	431	386	363	257	345	385	420	332	300	309	253	250	281	323	349
Carroll St. (K)	432	245	142	110	174	102	80	124	186	49	22	28	13	38	91
Grand St. (K/Q)	239	189	37	23	24	17	50	19	10	8	5	2	5	0	0
Grnpoint Ave. (K/Q)	498	557	626	669	787	688	641	659	738	1093	1045	905	641	485	428
Hmltn Ave. (K)	1246	1191	1157	996	982	933	832	946	824	757	677	1077	354	0	150
Hntrs Point Ave. (Q)	0	113	15	0	1	0	36	0	0	0	0	0	1	0	0
Htchnsn River Pkwy (B)	37	31	32	75	46	5	120	30	5	37	10	2	51	61	170
Macombs Dam (B/M)	5	13	3	0	0	0	0	0	0	0	0	0	4	2	0
Mdsn Ave. (B/M)	0	0	0	0	0	0	0	0	0	7	0	9	35	8	0
Metrpltn Ave. (K)	272	407	423	448	513	279	366	339	342	153	0	104	329	245	240
Mill Bsn (K)	954	903	628	591	433	336	317	142	173	164	162	174	182	190	183
Pulaski (K/Q)	206	195	291	332	383	276	208	308	599	694	734	433	489	639	611
Rsvlt Islnd (M/Q)	0	0	0	4	0	58	48	125	63	669	150	54	48	0	62
Shore Rd (Pelham Pky) (B)	2190	2167	2158	2274	2162	2168	2222	1897	1910	2011	1683	1704	1645	1446	806
Union St. (K)	432	236	144	103	144	85	101	62	24	21	11	9	5	10	28
Ward's Isnd Pdstrn (M)	1	0	2	1	0	0	279	0	0	7	2	8	4	6	3
Willis Ave. (B/M)	24	17	9	0	4	4	40	0	7	25	2	41	67	17	9
3rd Ave. (B/M)	20	18	9	0	2	1	1	0	0	0	0	6	60	7	0
3rd St. (K)	432	256	149	112	157	178	117	212	152	99	43	31	39	49	89
9th St. (K)	0	0	0	0	192	513	808	733	547	457	360	480	333	287	387
145th St. (B/M)	24	24	3	0	0	1	6	0	0	9	0	0	0	0	0
W.207th St. (B/M)	4	12	7	2	0	6	14	4	6	10	1	12	24	2	3
TOTAL	**7454**	**7089**	**6220**	**5999**	**6352**	**6041**	**6761**	**6015**	**5935**	**6595**	**5163**	**5347**	**4652**	**3873**	**3666**

RESEARCH AND PRESENTATIONS

In 2009, research work and/or case histories of the Division were presented in the following proceedings:

ASCE Long Island Branch, ASHE Long Island, Levittown, Long Island, 15 January 2009. Nyman, W. *Willis Avenue Swing Bridge: Carrying a $612 Million Project From Design Into Construction*.

ASCE Metropolitan Section Structures Group Technical Lecture, New York City, 25 February 2009, Griesing, K. *Replacement of a Rare Hanover Skewed Bascule – The Hamilton Avenue Bridge*.

Yegin, M. K., Arzoumanidis, S., Strohman, B. P., Kishore, K., and Patel, J. *Appraising the Brooklyn Bridge*. Civil Engineering, February 2009, Volume 79, Number 2.

2009 International Foundation Congress and Equipment Expo, Lake Buena Vista, Florida, 15 – 19 March 2009. Krstic, V., Mankbadi, R., and Ramakrishna, A. *Willis Avenue Swing Bridge: Design and Construction of Drilled Shaft Foundations*.

National Association of Corrosion Engineers (NACE), Corrosion 2009, Atlanta, Georgia, New Orleans, Louisiana, 22 - 26 March 2009. Trapani, P. *The Challenges of Painting the Brooklyn Bridge*.

Polytechnic Institute of NYU, Advances In Coating Technologies for Infrastructure Corrosion Control Symposium: Sustainability, Durability, Performance Assessment, and Aesthetics, New York City, 5 May 2009. Yanev, B. *NYCDOT Coating Program*.

ASCE Metropolitan Section Structures Group Seminar, New York City, 12 May 2009. Nyman, W. E. *Willis Avenue Swing Bridge*.

ASCE Metropolitan Section Structures Group Seminar, New York City, 14 May 2009. Razzaq, A. *Queensboro Bridge Centennial*.

ASCE Metropolitan Section Structures Group Seminar, New York City, 19 May 2009, Olmstead, R. A. *Three New ASCE National Historical Civil Engineering Landmarks: The Queensboro, Manhattan, and Williamsburg Bridges.*

Municipal Engineers of the City of New York, New York City, 27 May 2009. Ahmad, H. *The Brooklyn Bridge Rehabilitation Project*.

Queensboro Bridge Centennial Celebration, New York City, 1 June 2009. Miscione, M., Perahia, H., and Schwartz, S. *The Queensboro Bridge - History, Construction Into the 2nd Century, Courage to Build the Bridge*.

Queensboro Bridge Centennial Celebration, New York City, 2 June 2009. Berdy, J., Singleton, B., and Frieder, D. *Different Aspects of the Queensboro Bridge: Consisting of the Trolley and Kiosk, Construction and Images*.

Queensboro Bridge Centennial Celebration, New York City, 3 June 2009. Regan, J. W. *How the Bridge Transformed the Life of NYC*.

Queensboro Bridge Centennial Celebration, New York City, 3 June 2009. Schwartz, S. *The Queensboro Bridge as Seen Through the Eyes of Gridlock Sam.*

Yanev, B. *New York City Bridges: Expenditures, Conditions and Services*. Public Works Research Institute, June 2009.

Department of Homeland Security 2009 Aging Infrastructures Workshop, Columbia University, New York City, 21 – 23 July 2009. Yanev, B. *Suspension Bridge Cables: 200 Years of Empiricism, Analysis and Management.*

5th New York City Bridge Conference, New York City, 17 – 18 August 2009. Csogi, R. *Reconstruction of the East River Bridges in New York City.*

5th New York City Bridge Conference, New York City, 17 – 18 August 2009. Griesing, K. *Replacement of a Rare Hanover Skewed Bascule – The Hamilton Avenue Bridge*.

5th New York City Bridge Conference, New York City, 17 – 18 August 2009. Perahia, H., and Gill, B. *Manhattan Bridge at 100 Years: An Innovation of Design and Construction*.

Construction Institute of ASCE: CI Student Day - New York 2009, New York City, 25 September 2009. Sauer, R., Mohr, T., O'Donnell, E., and Makabadi, R. *Willis Avenue Bridge Reconstruction Project*.

Manhattan Bridge Centennial Celebration, New York City, 5 October 2009. Tolle, B., and Lemmey, K. *Miss Manhattan, Miss Brooklyn and Their Creator, Daniel Chester French*.

Manhattan Bridge Centennial Celebration, New York City, 6 October 2009. Miscione, M., Perahia, H., and Schwartz, S. *Manhattan Bridge - History, Construction and Safety.*

Manhattan Bridge Centennial Celebration, New York City, 7 October 2009. Eng, P. *Bridges of New York*.

Manhattan Bridge Centennial Celebration, New York City, 8 October 2009. Frieder, D. *Engineering, Construction and History of the Manhattan Bridge.*

Manhattan Bridge Centennial Celebration, New York City, 9 October 2009. Olmsted, R., Miscione, M., Schwartz, S., Rasenberger, J., and Chan, S. *Panel Discussion on the Manhattan Bridge.*

25th US – Japan Bridge Engineering Workshop, Tsukuba City, Japan, 19 – 21 October 2009. Yanev, B. *Suspension Bridge Cables: 200 Years of Empiricism, Analysis and Management*.

Yanev. B. University of Tokyo, Japan, 23 October 2009. *The Difficult Relationship Between Bridge Engineering and Management*.

Ansari, F., and Yanev, B. *Remote Monitoring of the Brooklyn Bridge*. Technology Transfer News, Fall 2009, Volume 5, Number 3.

Drissi-Habti, M., Betti, R., and Yanev, B. *Structural Health Monitoring of Bridge Cables*. Materials Evaluation, November 2009, Volume 67, Number 11.

Frieder, D. *Happy 100th, Manhattan Bridge.* Rebuilding America's Infrastructure, November 2009.

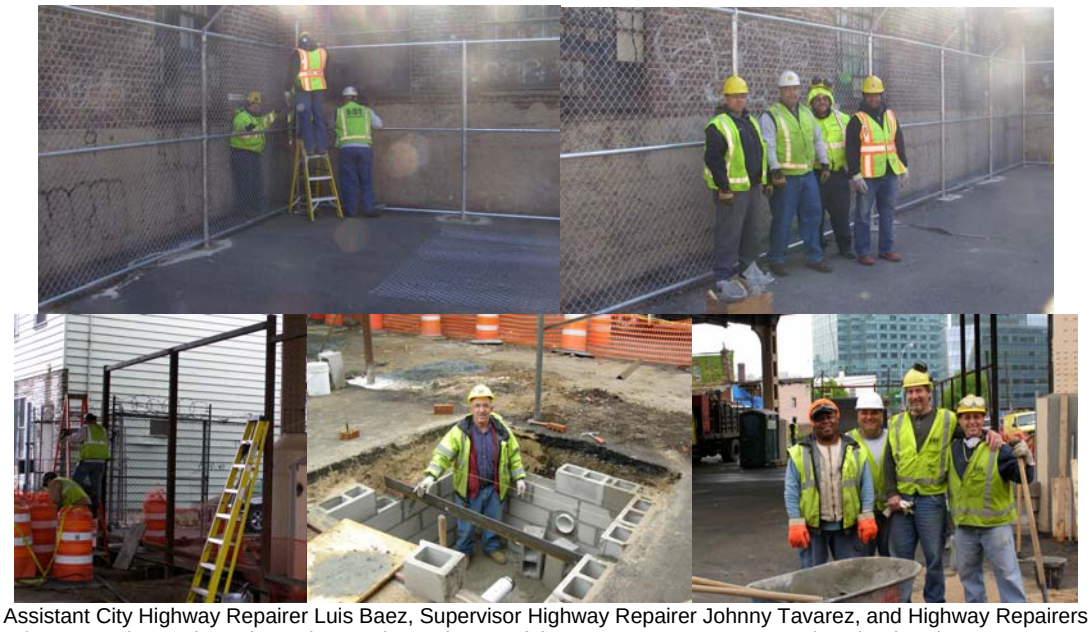
Transportation Research Board 89th Annual Meeting, Washington, D.C., 10 – 14 January 2010. Mayer, L., Yanev, B., Olson, L. D., and Smyth, A. W. *Monitoring of Manhattan Bridge for Vertical and Torsional Performance with GPS and Interferometric Radar Systems*.

Transportation Research Board 89th Annual Meeting, Washington, D.C., 10 – 14 January 2010. Talebinejad, I., Fischer, C., Ansari, F., and Yanev, B. *Structural Health Monitoring of the Masonry Arch Approach Spans in Brooklyn Bridge*.

In addition, Dr. Bojidar Yanev continued his participation on the FHWA project "Structural Safety Appraisal Guidelines for Suspension Bridge Cables" along with the principal investigator, Columbia University. He guided a team of researchers installing sensors on the Manhattan Bridge during the final phase of the project. He is a member of the expert panel reviewing the progress of the FHWA project "Long Term Health Monitoring of Bridges," along with principal investigator Rutgers University.

Dr. Yanev is on the review panel for NCHRP Project 20-07/Task 244 *Modifications for AASHTO LRFD Bridge Design Specifications to Incorporate or Update the Guide Specifications for Design of Pedestrian Bridges*. He is also a member of the Transportation Research Board Committees on Bridge Maintenance, Management, and Seismic Design.

In addition, the Division sponsors an in-house lecture series, inviting speakers from industry and academia several times a month. Highlight topics of the presentations in 2009 included: high performance polymer systems; non-destructive testing and evaluation of new and existing structures; structural health monitoring using optical sensing applications; anti-icing systems; Manhattan Bridge monitoring; electrochemical fatigue sensors; Port Authority New York/New Jersey study; metalizing for permanent corrosion control; weather and pavement information system; concrete repair methods, and inspection of steel suspenders and cable stays utilizing magnetic flux leakage.



Assistant City Highway Repairer Luis Baez, Supervisor Highway Repairer Johnny Tavarez, and Highway Repairers Luis Soto and Joseph Davis Setting Up the Perimeter of the New Crescent Street Yard Under the Thomson Avenue Ramp of the Queensboro Bridge in April 2009. Division Ironworkers Installing Expanded Metal Fence Supports, and Mason Crew Building a Water Shutoff Chamber in the New Yard in May 2009. (Credit: Joseph Flood)

In June 2009, Assistant City Highway Repairer Seveul Redzeposki, Highway Repairers Robert Bynes and Ruben Sanchez, Supervisor Highway Repairer Dionisio Matos, and Assistant City Highway Repairer E'boni Brown Removed Vegetation From the Fascia Girder and Performed Chain Link Fence Repairs on the City Island Bridge. (Credit: Paul Schwartz)

Bridge Repairer and Riveters Ignazio Trapani and Christopher Sabbagh Fabricating a New Grizzly for the Agency Asphalt Plant. (Credit: Russell Holcomb) Bridge Repairer and Riveters Michael Greenwood and Damian Venezia Replacing Deteriorated Planks on the Grand Street Bridge in October 2009.

Appendix A

BRIDGE CAPITAL PROGRAM

MANHATTAN BRIDGE

REHABILITATION ITEMS

TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Repair floor beams. (1982)	0.70*
• Replace inspection platforms, subway stringers on approach spans. (1985)	6.30*
• Install truss supports on suspended spans. (1985)	0.50*
• Partial rehabilitation of walkway. (1989)	3.00*
• Rehabilitate truss hangers on east side of bridge. (1989)	0.70*
• Install anti-torsional fix (side spans) and rehabilitate upper roadway decks on approach spans on east side; replace drainage system on approach spans, install new lighting on entire upper roadways east side, including purchase of fabricated material for west side of bridge. (1989)	40.30*
• Eyebar rehabilitation - Manhattan anchorage Chamber “C”. (1988)	12.20*
• Replacement of maintenance platform in the suspended span. (1982)	4.27*
• Reconstruct maintenance inspection platforms, including new rail and hanger systems and new electrical and mechanical systems; over 2,000 interim repairs to structural steel support system of lower roadway for future functioning of roadway as a detour during later construction contracts. (1992)	23.50*
• Install anti-torsional fix on west side (main and side spans); west upper roadway decks, replace drainage systems on west suspended and approach spans; walkway rehabilitation (install fencing, new lighting on west upper roadways and walkways); rehabilitate cables in both Brooklyn and Manhattan anchorage chambers; dehumidify Brooklyn and Manhattan anchorages. (1997)	141.82*
• Installation of test panels. (1982)	1.55****
• Removal of existing suspender ropes and sockets in the suspended spans; replacement with new suspender ropes and sockets in the suspended spans and re-tensioning of suspender ropes bearing plates; re-tensioning of cable band bolts; removal of existing main cable wrapping; cleaning of main cables; application of new protective paste on main cables; replacement of new main cable wrapping; reinforcement of truss verticals and gusset plates. Replacement of necklace lighting and multirotational bearings at truss “C” and “D”, installation of access platforms at towers, rehabilitation of south upper Roadway Lighting. (2010)	149.38**
• Interim Steel Rehabilitation and Painting - cable and saddle repairs lower roadway floorbeams @PP 37/38 on approaches and at anchorages; west side truss rockers and grillages on approaches; cable and suspender repairs. Removal of parking desk. Painting entire west side, all four cables. (2001)	127.98*

MANHATTAN BRIDGE

REHABILITATION ITEMS

TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Stiffening of Main Span; Reconstruction of North Subway framing; reconstruction of North upper roadway deck at suspended spans; rehabilitation of north approach span trusses; replace overlay on north upper roadway approach spans; rehabilitation of north elevated structures and subway tunnels; removal of railing on truss "D" in the north spans; painting of north side of bridge; new inspection platforms and debris protection in approach spans; construction of new north bikeway, replacement of approach span bearings and grillages; installation of Intelligent Vehicle Highway System for North and South Upper Roadways as well as for Lower Roadway. (In Progress)	184.78*
• Rehabilitation of Lower Roadway; rehabilitation of anchorage roofs under lower roadway; rehabilitation of substructures and retaining walls in Brooklyn and Manhattan approaches; installation of new signage on bridge and at plaza areas; installation of new lighting on lower roadway and plaza areas; clean and paint lower roadway; installation of grating platform under towers at lower roadway; canopy lighting at towers. (Present)	143.38*
• Seismic Retrofit. (2013)	40.00 to 60.00***
TOTAL:	**$ 880.36 to $ 900.36**

* Construction Complete
** In Construction
*** In Design
**** Research and Development (completed)

Revised 11/6/09

QUEENSBORO BRIDGE

REHABILITATION ITEMS
TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Repair lower outer roadways / reconstruct two ramps in lower Queens. (1984)	18.80*
• Reconstruct south upper roadway, replace inspection platforms, lighting. (1986)	31.50*
• Interim rehabilitation, contracts A, B, & C (repairs to lower deck and main bridge approaches). (1985)	2.80*
• Interim rehabilitation, contract D (repairs to lower deck, main bridge, and new median barrier). (1988)	3.00*
• Reconstruct north upper roadway and Queens approaches A & B, rehabilitate bearings at Queens approach. (1989)	50.00*
• Reconstruct ramps C & D (Queensboro only, not Thompson Avenue). (1988)	10.40*
• Rehabilitate bridge bearings, pier tops, and truss lower chords. (1989)	18.00*
• Rehabilitate Queens approach trusses, lower inner roadways on the main span and approaches. (1996)	172.00*
• Rehabilitate lower outer roadways main span and approaches, (bikeway) cleaning and painting. (2001)	227.05*
• Cleaning and painting main bridge upper trusses. (In Progress)	167.75**
• Miscellaneous Items. (In Progress)	43.88*
• Seismic Retrofit. (2014)	40.00 to 60.00***
• Installation of aviation lighting (2010)	0.875***
TOTAL:	**$ 786.05 to $ 806.05**

* Construction Complete
** In Construction
*** In Design

Revised 11/6/09

WILLIAMSBURG BRIDGE

REHABILITATION ITEMS
TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Replace main span outer roadway. (1983)	11.20*
• Replace one third of suspenders. (1984)	3.20*
• Repair pier 20E foundation, and replace bulkhead. (1986)	2.30*
• Paint side spans and towers. (1985)	1.10*
• Paint main and approach spans. (1989)	4.24*
• Emergency interim repairs. (1989)	10.00*
• Install temporary hand-rope system on main cables. (1990)	0.63*
• Main cable preservation (field test - oiling). (1991)	0.44*
• Main cable strand splicing at Manhattan anchorage. (1991)	0.29*
• Interim pedestrian walkway. (1994)	1.05*
• Component repairs of flag conditions on the north outer roadway and north inner roadway. (1994)	4.12*
• Rehabilitate main cables and new redundant suspender system. (1996)	88.30*
• Demolish existing building under approaches. (1993)	1.50*
• Testing Program for bored-in piles. (1993)	0.74*
• Demolish DOS and DOH buildings, replace entire south outer roadway approach structures, rehabilitate south outer roadway deck and south inner roadway deck of the main bridge, and replace south inner roadway substructure of the approaches. (1998)	198.00*

WILLIAMSBURG BRIDGE

REHABILITATION ITEMS

TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Portion of Contract #6 BMT track structure work transferred to Contract #5 south approach roadway reconstruction work. (1998)	65.00*
• Paint main and intermediate towers. (2001)	14.90 *(1)
• Reconstruct BMT Subway structure; install new signals, tracks and communication system. (2000)	166.65*
• Miscellaneous rehabilitation work: rehabilitation of towers, replace bearings, travelers, architectural work, painting of north and south trusses, suspender adjustment, tower jacking, construction of colonnades, purchase of barrier transfer machine BTM) and contra-flow barriers, lane control signal field system. Seismic retrofit – reinforce concrete with granite cladding, bearing replacement at PP10 & 15, rehabilitation of wind tongue casting assembly at main towers, contra-flow of south inner roadway – installation of contra-flow barriers, lightning protection grounding system. (In Progress)	257.73**
• Replace north approach structures (Manhattan / Brooklyn), and rehabilitate north half of bridge. (2002)	233.00*
• Building of Barrier Transfer Machine garage.	1.60***
• Rehabilitation of Kent Avenue Yard soil erosion.	1.30***
• Modular joint repairs.	2.20***
• Rehabilitation of Outer Roadway Deck Pins at PP29 E/W.	1.50***
• Structural flag repairs.	2.50***
TOTAL:	**$1,073.49**

* Construction Complete
** In Construction
*** In Design
(1) Painting suspended in 1996 pending publication of Environmental Impact Statement (EIS) in 1998. Painting resumed under a new schedule in 1999 and was completed in 2001.

Revised 11/6/09

BROOKLYN BRIDGE

REHABILITATION ITEMS

TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Brooklyn Tower protection and new sign gantries. (1981)	2.72*
• Rehabilitate promenade between towers. (1983)	0.94*
• Rehabilitate cables in anchorage and replace short rod suspenders; rehabilitate balance of promenade and construct bikeway and new pedestrian ramp. (1988)	22.68*
• Rehabilitate and paint York, Main, William and Prospect Street structures and main bridge roadway deck overlay. (1988)	6.21*
• Replace suspenders, cable posts, stay cables, hand-rope necklace lights, main cable wrapping; paint suspended spans. (1991)	53.57*
• Rehabilitate ramp E. concrete piers of ramp C and abutment at ramps C & I, and rehabilitate Sands and Washington Street structures in Brooklyn. (1991)	4.73*
• Rehabilitate ramp D and H in Manhattan; permanent improvement of promenade at Manhattan approach. (1993)	17.92*
• Rehabilitate floor systems, stiffening trusses, roadways of suspended spans and Franklin Square trusses. (1994)	66.30*
• Rehabilitate Manhattan traveler (electrical work). (1997)	1.83*
• Rehabilitate ramp D and widening along the FDR Drive. (1996)	11.50*
• Arch supports for Franklin Square truss structure.	9.50*
• Replacement of Suspended Span Deck. (2000)	36.2*
• Resurfacing of the main spans. (1998)	6.67*

BROOKLYN BRIDGE

REHABILITATION ITEMS
TOTAL ESTIMATED COST

	Est. Cost ($ in millions)
• Improvement of Manhattan end of promenade. (2001)	4.50*
• Rehabilitate Brooklyn approach & ramps (B, S, F), Rehabilitate Manhattan approaches and remaining ramps (A,B,C,F,G,I,J), and Paint entire bridge. (2009)	508.61***
• Seismic Retrofit. (2013)	30.00 to 60.00**
• Replacement of Travelers.	22.34*
TOTAL:	**$ 806.22 to $ 836.22**

* Construction Complete
** In Design
*** In Construction

Revised 11/16/09

APPENDIX A-2

BRIDGES UNDER CONSTRUCTION

CALENDAR YEAR 2009

CONTRACT #	BRIDGE
HBX1029	145th Street Bridge over Harlem River
HBX1123	Bruckner Expressway SB & NB over Amtrak & CSX
HBX1157	West 252nd Street Bridge over Henry Hudson Parkway
HBX1195	Shore Road Circle Bridge over Amtrak
HBM1117	Roosevelt Island Bridge over East River/East Channel
HBM1120	11th Avenue Viaduct (West 30th Street to West 33rd Street) over LIRR West Side Yard
HBM1124	Willis Avenue Bridge over Harlem River
HBCYFDRWW096E	Northbound FDR Drive at East 15th Street
HBK668	East 8th Street Access Ramp (Guider Avenue Ramp to Belt Parkway) over Belt Parkway
HBK1024	Belt Parkway Bridge over Paerdegat Basin
HBK1072	Belt Parkway Bridge over Fresh Creek
HBK1091	Belt Parkway Bridge over Rockaway Parkway
HBK1140	Hamilton Avenue Bridge over Gowanus Canal
HBQ1162E	Borden Avenue Bridge over Dutch Kills
HBR1166	Annadale Road Bridge over SIRT South Shore
HBR1217	Staten Island Ferry Terminal - Parking Exit Ramp over SIRT
HBR1217	Staten Island Ferry Terminal - Bus Station North over SIRT
HBR1217	Staten Island Ferry Terminal - Bus Station South over SIRT
HBR1217	Staten Island Ferry Terminal - North Ramp over SIRT
HBR1217	Staten Island Ferry Terminal - Bus Station Entrance Ramp over SIRT
HBR1217	Staten Island Ferry Terminal - Parking Entrance Ramp over SIRT
HBR1217	Staten Island Ferry Terminal - Bus Station Exit Ramp over SIRT
HBR1217	Staten Island Ferry Terminal - Pedestrian Overpass at Breezeway
HBR1217	Staten Island Ferry Terminal - Ramp A
BRC156R	Manhattan Bridge - Contract #14
BRC253CC	Williamsburg Bridge – Contract #8
BRC270T	Brooklyn Bridge – Traveler Replacement

APPENDIX A-2

BRIDGE CONSTRUCTION

Projects Completed in Calendar Year 2009

CONTRACT #	BRIDGE
HBX1157	West 252nd Street Bridge over Henry Hudson Parkway
HBCYFDRWW096E	Northbound FDR Drive at East 15th Street
HBK1140	Hamilton Avenue Bridge over Gowanus Canal
BRC270T	Brooklyn Bridge – Traveler Replacement

Component Rehabilitation

The following table illustrates the program's performance over the last eight years:

	*FY 02	**FY 03	#FY 04	FY 05	*FY 06	##FY 07	FY 08	###FY 09
Number of Bridges	0	0	12	9	0	0	10	0
Construction Cost	$0	$0	$8.25	$5.63	$0	$0	$14.93	$0

*No contracts were bid during the 2002 and 2006 calendar years.
**One contract was bid during the 2003 calendar year, but was not registered until February 2004.
One contract was bid during the 2004 calendar year, but was not registered until February 2005.
One contract was bid during the 2007 calendar year, but was not registered until April 2008.
###Two contracts were bid during the 2009 calendar year, but are still under evaluation.

In 2009, work was completed at the following bridges, in the indicated boroughs, at the final cost shown, in millions:

Riverdale Avenue/HHP (BX)	$1.390
West 246th Street/HHP (BX)	$0.930
Merrick Boulevard over Laurelton Parkway N.B. (Q)	$0.430
Merrick Boulevard over Laurelton Parkway S.B. (Q)	$0.350
130th Avenue over Laurelton Parkway N.B. (Q)	$0.280
130th Avenue over Laurelton Parkway S.B. (Q)	$0.320
TOTAL	**$3.7 M**

During calendar year 2009, work commenced at the following bridges:

Belt Parkway over Ocean Avenue (K)
Queensboro Bridge Ramp F to 21st & 22nd Streets (Q)
Queensboro Bridge Ramp G to 11th Street & Terrain (Access from Bridge Plaza South) (Q)

Revised 1/8/10

APPENDIX A-3

Component Rehabilitation

There are no projects "still under construction" since the 2008 *Annual Report* was issued.

21 component rehabilitation projects are slated to continue, commence or be completed in the 2010 calendar year. They are:

3rd Avenue/Conrail Port Morris (BX)
East 156th Street/Conrail Port Morris (BX)

149th Street over LIRR (Q)
Queensboro Bridge Ramp F to 21st & 22nd Streets (Q)
Queensboro Bridge Ramp G to 11th Street & Terrain (Access from Bridge Plaza South) (Q)
United Nations Plaza over 1st Avenue Tunnel (M)
Belt Parkway over Ocean Avenue (K)
Ocean Avenue over LIRR Bay Ridge (K)

Greenpoint Avenue over Newtown Creek (KQ)

East 174th Street (North) Pedestrian Bridge over Sheridan Expressway (BX)
East 174th Street (South) Pedestrian Bridge over Sheridan Expressway (BX)
37th Street over Brooklyn-Queens Expressway (Q)
Superior Road over Cross Island Parkway (Q)
15th Avenue over LIRR Bay Ridge (K)
13th Avenue over LIRR & Sea Beach (K)
East Drive over East Wood Arch (K)
West 148th Street Pedestrian Bridge over Amtrak 30th Street Branch (M)
Inwood Hill Park Footbridge over Amtrak 30th Street Branch (M)
West 181st Street over Ramp to Washington Bridge (M)
Jackie Robinson Parkway & Union Turnpike over Austin Street (Q)
Albee Avenue over SIRT South Shore (R)

Revised 1/8/10

BRIDGES UNDER DESIGN BY NEW YORK CITY

BIN NO.	CAPIS NO.	FEATURE CARRIED	FEATURE CROSSED	FY CNST	PHASE	BORO
2230300	HBCR01B	MOSHOLU PARKWAY	CONRAIL (ABANDONED)	2012	PD	B
2241139	HBCR01B	LEGGETT AVENUE	AMTRAK - CSX	2012	PD	B
2241620	HBCR01B	EAST 162ND ST	METRO NORTH RR HAR	2012	PD	B
2241630	HBCR01B	EAST 165TH ST	METRO NORTH RR HAR	2012	PD	B
2241820	HBCR01B	EAST 187TH ST	METRO NORTH RR HAR	2012	PD	B
2242029	HBCR01B	SOUTHERN BOULEVARD	EAST FORDHAM ROAD	2012	PD	B
2242280	HBCR01B	GRAND CONCOURSE	EAST 167TH ST	2012	PD	B
2242400	HBCR01B	EAST 180TH ST	BRONX RIVER	2012	PD	B
2241570	HBX199	EAST 153RD ST	METRO NORTH RR	2020	FD	B
2075837	HBX1086	WESTCHESTER AVENUE	HRP	2013	FD	B
2241590	HBX1103	CONCOURSE VILL AVE	METRO NORTH RR HAR	2020	FD	B
1066510	HBX1131	BRUCKNER EXP.	WESTCHESTER CREEK	2014	FD	B
2241800	HBX1139	EAST 183RD ST	METRO NORTH RR HAR	2010	FD	B
NEW 2240200	HBX1148B	SHORE ROAD (NEW)	HUTCHINSON RIVER	2021	PD	B
2241210	HBX1152	BRYANT AVE	AMTRAK	2011	PD	B
2241710	HBX1160	CLAREMONT PKWY	METRO NORTH RR HAR	2010	FD	B
2240210	HBX1164	CITY ISLAND ROAD	EASTCHESTER BAY	2011	FD	B
2241810	HBX1172	EAST 188TH ST	METRO NORTH RR HAR	2018	FD	B
2241409	HBX1190	GRAND CONCOURSE	METRO NORTH RR HUD	2013	FD	B
2242319	HBX1191	GRAND CONCOURSE	EAST 174TH ST	2018	PD	B
2242220	HBX1214	SNUFF MILL ROAD (SOUTHERN BLVD)	BRONX RIVER	2019	PD	B
2241740	HBX1215	EAST 175TH ST	METRO NORTH RR	2019	PD	B
2230250	HBX1216	MOSHOLU PARKWAY	BRONX RIVER	2019	PD	B
2240137	HBM1147	BROADWAY	HARLEM RIVER	2014	PD	BM
2240079	HBX644S	MADISON AVE	HARLEM RIVER	2017	PD	BM
1240090	BRX287S	MACOMBS DAM BRIDGE	HARLEM RIVER	2015	PD	BM
2240027	BRC156R	MANHATTAN BRIDGE (LL)	EAST RIVER	2010	FD	KM
2240028	BRC156S2	MANHATTAN BRIDGE (UL)	NYCTA TRACKS-BMT	2014	PD	KM
2240019	BRC270C	BROOKLYN BRIDGE	2781 (B.Q.E.)	2010	FD	KM
2240019	BRC270S	BROOKLYN BRIDGE	2781 (B.Q.E.)	2014	PD	KM
VARIOUS	HBCBORERS-R	VARIOUS	VARIOUS	2010	FD	KM
2230360	HBCR01A	UNION ST	2781 (B.Q.E.)	2012	FD	K
2230440	HBCR01A	2781 (B.Q.E.)	ADAMS ST N.B.	2012	FD	K
2230450	HBCR01A	2781 (B.Q.E.)	ADAMS ST S.B.	2012	FD	K
2231270	HBCR01A	4TH AVE	BSHP	2012	FD	K
2231429	HBCR01A	BSHP	BEDFORD AVE	2012	FD	K
2240260	HBCR01A	CARROLL ST	GOWANUS CANAL	2012	FD	K
2243230	HBCR01A	CROWN ST	FRANKLIN SHUTTLE	2012	FD	K
2243490	HBCR01A	BEDFORD AVE	LIRR BAY RIDGE	2012	FD	K
2244060	HBCR01A	CLEFT RIDGE SPAN	PROSPECT PARK	2012	FD	K
2244480	HBCR01A	5TH AVE	GREENWOOD CEMETERY	2012	FD	K
2243710	HBKC062	19TH AVE	BMT SEA BEACH	2016	FD	K
2243100	HBKC064	BEVERLY ROAD	BMT SUBWAY, BRIGHTON	2014	FD	K
2240250	HBKC068	3RD STREET	GOWANUS CANAL	2018	PD	K
2243020	HBK530	PARKSIDE AVE	BMT SUBWAY, BRIGHTON	2015	FD	K
2243050	HBK531	CATON AVE	BMT SUBWAY, BRIGHTON	2019	FD	K

PD=Preliminary Design; FD=Final Design; DB=Design Build

BRIDGES UNDER DESIGN BY NEW YORK CITY

BIN NO.	CAPIS NO.	FEATURE CARRIED	FEATURE CROSSED	FY CNST	PHASE	BORO
2243820	HBK548	21ST AVE	BMT SEA BEACH	2020	FD	K
2231450	HBK643	BSHP	GERRITSEN INLET	2012	FD	K
2231479	HBK1023	BSHP	MILL BASIN	2012	FD	K
2243080	HBK1032	CHURCH AVE	BMT SUBWAY, BRIGHTON	2019	FD	K
2243510	HBK1046	FLATBUSH AVE	LIRR BAY RIDGE	2020	FD	K
2231249	HBK1089	BSHP	BAY RIDGE AVE	2013	FD	K
2231439	HBK1090	BSHP	NOSTRAND AVE	2013	FD	K
2230887	HBK1151	278I W.B. (B.Q.E.)	CADMAN PLAZA	2013	FD	K
2230888	HBK1151	2781 E.B. (B.Q.E.)	CADMAN PLAZA	2013	FD	K
2243140	HBK1153	NEWKIRK AVE	BMT SUBWAY, BRIGHTON	2019	FD	K
2243040	HBK1154	CROOKE AVE	BMT SUBWAY, BRIGHTON	2019	FD	K
2243569	HBK1201	ATLANTIC AVE	LIRR ATLANTIC AVE	2015	FD	K
2240270	HBK1213	UNION STREET BRIDGE	GOWANUS CANAL	2018	PD	K
2240390	HBK1161	GRAND ST BRIDGE	NEWTON CREEK	2019	PD	KQ
2231319	HBK1202	BELT PARKWAY	BAY PARKWAY	2015	PD	K
2243400	HBK1204	50TH STREET	LIRR BAY RIDGE	2014	FD	K
2243580	HBK1205	5TH AVENUE	LIRR & SEA BEACH	2020	PD	K
2244120	HBK1206	HILL DRIVE	PROSPECT PARK LAKE	2014	FD	K
2243150	HBK1208	FOSTER AVENUE	BMT SUBWAY BRIGHTON	2020	FD	K
2240047	BRC231S	QUEENSBORO BRIDGE (LL)	EAST RIVER	2014	PD	MQ
2240048	BRC231S	QUEENSBORO BRIDGE (UL)	EAST RIVER	2014	PD	MQ
2246980	HBCR01B	RIVERSIDE DRIVE	WEST 138TH ST	2012	PD	M
2267130	HBCR01B	RIVERSIDE DRIVE	WEST 145TH ST	2012	PD	M
2245090	HBMC032	W 43RD ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245130	HBMC033	W 47TH ST	AMTRAK 30TH ST BRANCH	2019	PD	M
2245150	HBMC034	W 49TH ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245340	HBMC035	W 50TH ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245180	HBMC036	W 53RD ST	AMTRAK 30TH ST BRANCH	2020	PD	M
224501C	HBMC037	W 33RD ST	LAND ADJ TO AMTRAK	2020	FD	M
2246540	HBM551	EAST 34TH ST	PARK AVE TUNNEL	2017	FD	M
2233059	HBM1027	HARLEM RIVER DRIVE	RAMP TO HRD N.B.	2013	DB	M
2245010	HBM1120	11TH AVE VIADUCT [NORTH]	LIRR WEST SIDE YARD	2020	FD	M
2246490	HBM1145	A.C. POWELL BLVD N.B.	A.C. POWELL BLVD	2017	FD	M
2246710	HBM1145B	WEST 153RD ST	A.C. POWELL BLVD	2017	FD	M
2240620	HBM1159	WARDS ISLAND PED BRDG	HARLEM RIVER	2010	FD	M
2246720	HBM1165	RIVERSIDE DRIVE	WEST 158TH ST	2017	PD	M
226672A	HBM1171	W 31ST ST	AMTRAK LAYUP TRACKS	2020	FD	M
2245070	HBM1174	W 38TH ST	AMTRAK 30TH ST BRANCH	2019	PD	M
2245080	HBM1175	W 39TH ST	AMTRAK 30TH ST BRANCH	2019	PD	M
2245100	HBM1176	W 44TH ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245120	HBM1177	W 46TH ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245140	HBM1178	W 48TH ST	AMTRAK 30TH ST BRANCH	2019	PD	M
2245210	HBM1179	W 42ND ST	AMTRAK 30TH ST BRANCH	2019	PD	M
2245440	HBM1180	W 40TH ST	AMTRAK 30TH ST BRANCH	2020	PD	M
2245330	HBM1183	W 41ST ST	AMTRAK 30TH ST BRANCH	2020	PD	M
224501B	HBM1184	W 33RD ST	AMTRAK 30TH ST BRANCH	2020	FD	M
224501D	HBM1185	W 34TH ST	AMTRAK 30TH ST BRANCH	2020	FD	M
224501E	HBM1186	W 35TH ST	AMTRAK 30TH ST BRANCH	2020	FD	M

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BRIDGES UNDER DESIGN BY NEW YORK CITY

BIN NO.	CAPIS NO.	FEATURE CARRIED	FEATURE CROSSED	FY CNST	PHASE	BORO
224501F	HBM1187	W 36TH ST	AMTRAK 30TH ST BRANCH	2020	FD	M
2245209	HBM1188	11TH AVE	AMTRAK 30TH ST BRANCH	2020	PD	M
2229290	HBM1189	W 79TH ST	AMTRAK	2017	PD	M
2267717	HBM1189	79TH ST PED PLAZA	79TH ST BOAT BASIN GARAGE	2013	PD	M
2267718	HBM1189	79TH ST TRAFFIC CIRCLE	79TH ST PED PLAZA	2013	PD	M
226771A	HBM1189	79TH ST RAMP TO HHP	79TH ST BOAT BASIN GARAGE	2013	PD	M
226771B	HBM1189	79TH ST RAMP TO GARAGE	79TH ST BOAT BASIN GARAGE	2013	PD	M
226771C	HBM1189	GARAGE RAMP TO 79TH ST	79TH ST BOAT BASIN GARAGE	2013	PD	M
226771D	HBM1189	SB HHP RAMP TO 79TH ST	79TH ST BOAT BASIN GARAGE	2013	PD	M
2240660	BRC289A	RIKERS ISLAND BRIDGE	RIKERS ISLAND CHANNEL	2020	DB	Q
2214004D	HBCR01C	RAMP TO QUEENSBORO BRIDGE	E 59TH ST	2012	PD	Q
224004H	HBCR01C	RAMP FROM QUEENSBORO BRIDGE	BRIDGE PLAZA SOUTH	2012	PD	Q
2247220	HBCR01C	80TH ROAD	LIRR	2012	PD	Q
2248300	HBCR01C	71ST AVE	COOPER AVENUE	2012	PD	Q
2266129	HBCR01C	DOUGLASTON PARKWAY SB	BCIP	2012	PD	Q
2266139	HBCR01C	DOUGLASTON PARKWAY NB	BCIP	2012	PD	Q
2267160	HBCR01C	ROOSEVELT AVE	PARK ROAD	2012	PD	Q
1247560	HBQ1112	METRO AVE (FRESH POND)	LIRR MONTAUK DIV	2014	FD	Q
2231780	HBQ1114	HEMPSTEAD AVE	BCIP	2020	PD	Q
2266149	HBQ1114	HEMPSTEAD AVE	RAMP TO BCIP NB	2020	PD	Q
2231850	HBQ1115	UNION TPKE	BCIP	2016	PD	Q
2247120	HBQ1130	WOODSIDE AVE	LIRR MAIN LINE	2017	FD	Q
2248159	HBQ1134	WOODHAVEN BLVD	QUEENS BLVD	2018	FD	Q
2248160	HBQ1137	ELLIOT AVE	QUEENS BLVD	2019	PD	Q
2231760	HBQ1173	BCIP	DUTCH BRDWAY-115 AVE	2020	PD	Q
2240507	HBQ1203	ROOSEVELT AVE	VAN WYCK EXPRY	2012	PD	Q
2248280	HBQ1206	HIGHLAND PK PED BRDG	PEDESTRIAN PATH	2014	PD	Q
2231840	HBQ1207	HILLSIDE AVE	BCIP	2016	PD	Q
2266160	HBQC064	WHITESTONE EXPRY/VAN WYCK EXPRY SB TO BCIP EB	ACCESS ROAD FROM WHITESTONE EXPRY/VAN WYCK EXPRY	2019	PD	Q
2249520	HBCR01C	HANNAH STREET	SIRT SOUTH SHORE	2012	PD	R
2249800	HBCR01C	FOREST AVE	CLOVE LAKES PARK STREAM	2012	PD	R
R00010	HBRC036	GALLOWAY AVE	MARIANNE ST	2014	PD	R
R00011	HBRC037	FOREST AVE	CRYSTAL AVE	2014	PD	R
R00013	HBRC038	NAUGHTON AVE	PATTERSON AVE	2014	PD	R
R00023	HBRC039	MIDLAND AVE	HYLAN BLVD	2014	PD	R
R00034	HBRC040	ROCKLAND AVE	BRIELLE AVE	2014	PD	R
R00068	HBRC041	FOREST AVE	RANDALL AVE	2014	PD	R
R00069	HBRC042	GREGG PLACE	RANDALL AVE	2014	PD	R

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BRIDGES UNDER DESIGN BY NEW YORK CITY

BIN NO.	CAPIS NO.	FEATURE CARRIED	FEATURE CROSSED	FY CNST	PHASE	BORO
R00084	HBRC043	ARTHUR KILL RD	MULDOON AVE	2014	PD	R
R00097	HBRC044	RICHMOND HILL RD	RICHMOND RD	2014	PD	R
R00122	HBRC045	ARTHUR KILL RD	RIDGEWOOD AVE	2014	PD	R
2249820	HBRC1149	ARTHUR KILL ROAD	ARTHUR KILL STREAM	2020	FD	R

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PD=Preliminary Design; FD=Final Design; DB=Design Build

Appendix B

FLAG CONDITIONS

FLAG DEFINITIONS AND PROCEDURES

(Source: NYSDOT *Engineering Instruction 94-002*)

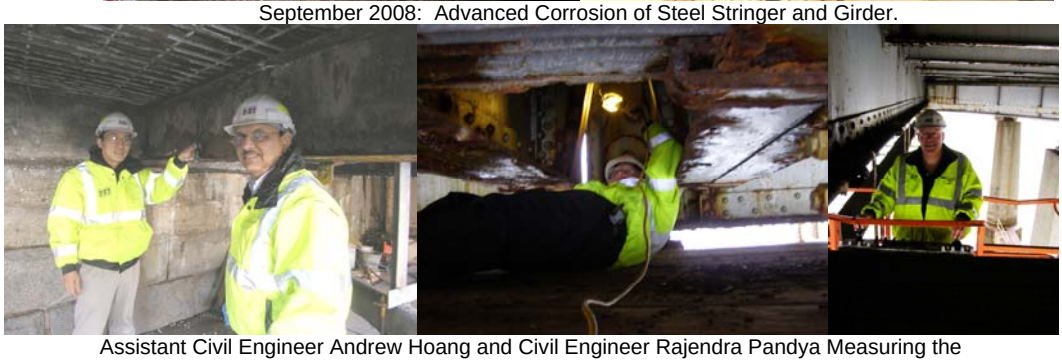
New York State Department of Transportation (NYSDOT) bridge inspection procedures require that "Flags" be issued to report the existence of conditions that pose a clear and present danger, or conditions which, if left unattended for an extended period, would likely become a clear and present danger.

A "Flag" is classified as either a Red Flag, Yellow Flag or Safety Flag.

Red Flag is used to report the failure or potentially imminent failure of a critical primary structural component. Potentially imminent means that a failure is likely before the next scheduled inspection. The maximum time between bridge inspections is two years. Red Flags must be addressed within six weeks.

Flag Engineers Inspecting a Red Flag (Floor Beam Web) on the Tower Structure of the Manhattan Bridge. Closeup of the Location. (Credit: Bojidar Yanev)

September 2008: Advanced Corrosion of Steel Stringer and Girder.



Assistant Civil Engineer Andrew Hoang and Civil Engineer Rajendra Pandya Measuring the Section Loss of the Bottom Flange of A Floor Beam, Utilizing a Digital Caliper. Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse Inspecting a Red Flag on a Girder Floor Beam at the Belt Parkway Bridge over Gerritsen Inlet. Mr. Whitehouse Operating a Zoomboom. (Gerritsen Credit: Steve Havemann)

Yellow Flag is used to report a potentially hazardous condition which, if left unattended beyond the next scheduled inspection, would likely become a clear and present danger. A Yellow Flag is also used to report the actual or imminent failure of a non-critical primary structural component, where its failure may diminish the reserve capacity or redundancy of the bridge but would not result in structural collapse or a clear and present danger.

FLAG DEFINITIONS AND PROCEDURES

(Source: NYSDOT *Engineering Instruction 94-002*)

February 2008: Originally a Safety Flag Due to Loose Material, but Upgraded to a Yellow Structural Flag Due to the Deteriorated Cap Beam. October 2008: Corrosion of Steel Secondary Member. November 2008: Crack in Steel Girder.

Safety Flag is used to report a condition that presents a clear and present vehicle or pedestrian traffic hazard, but there is no danger of structural failure or collapse.

August, October, and November 2008: Examples of Tripping Hazards.

February 2008: Loose Bolts at the Lighting Base. October 2008: Electrical Hazard, and Loose Joint.

Certain Red or Safety Flags may be further classified as Prompt Interim Action (PIA) flags. PIA flags must be addressed within 24 hours of discovery.

Example of PIA Safety Flag: Broken Grating. Executive Director of Bridge Preventive Maintenance and Repair Tom Whitehouse (White Hardhat) Ensuring the Proper Setup of Containment Procedures at the St. George Ferry Terminal Landing Slips Before the Masons Address A PIA Flag (Falling Concrete). Inspecting the Flagged Condition.

PIA Flag (Truck Wedged Under the FDR Drive at Span 41): Removing the Debris. (Credit: Victor Sandoval) PIA Flag Repair (Through Hole) on Harlem River Drive Ramp. (Credit: Bojidar Yanev)

APPENDIX B-2

FLAG CONDITIONS BY CALENDAR YEAR

Citywide

	2005*	2006*	2007*	2008*	2009*	% increase (2005 – 2009)
FLAGS ROUTED	1,138	1,253	1,261	1,764	1,286	13%
RED	21	24	41	84	72	243%
YELLOW	121	127	206	247	155	28%
SAFETY	996	1,102	1,014	1,433	1,059	6%
TTL FLGS ELIMINATED	1,072	987	1,083	1,137	973	-9%
RED	22	19	36	60	67	205%
YELLOW	151	99	214	195	188	25%
SAFETY	899	869	833	882	718	-20%
TTL FLGS OUTSTANDING	1,912	2,178	2,356	2,983	3,296	72%
RED	5	10	15	39	44	780%
YELLOW	548	576	568	620	587	7%
SAFETY	1,359	1,592	1,773	2,324	2,665	96%

Division of Bridges Workload

FLAGS ROUTED	953	1,002	931	1,127	973	2%
RED	21	19	38	66	66	214%
YELLOW	121	119	203	240	147	21%
SAFETY	811	864	690	821	760	-6%
FLAGS ELIMINATED	923	796	916	969	897	-3%
RED	21	14	34	41	67	219%
YELLOW	150	99	193	188	185	23%
SAFETY	752	683	689	740	645	-14%
FLAGS OUTSTANDING	1,457	1,638	1,650	1,823	1,903	31%
RED	5	10	14	39	38	660%
YELLOW	509	527	537	594	556	9%
SAFETY	943	1,101	1,099	1,190	1,309	39%

*The number of flags routed, eliminated, and outstanding has been revised since the 2008 *Annual Condition Report*.

Revised 1/8/10

APPENDIX B-3

FLAG REPORTING AND TRACKING PROCESS

There are three primary sources from which flags originate:

- NYSDOT inspectors
- NYCDOT inspectors
- NYCDOT Communications Center

State DOT Inspectors

1. State inspectors identify flag conditions.
2. Written notification of flag conditions are sent to the Bridge's Flags unit. (Immediate verbal notification is given for Red Flags and PIA flags.)
3. Flag condition reports are entered into the Division's “City Flag” and "State Flag" database.
4. Flag conditions are reviewed by City engineers who have four routing options:
   - assign flags to outside agencies for repair, or
   - have City inspectors monitor flags until further action is desired, or
   - assign flags to the Maintenance Section for in-house or contractor repair, or
   - assign flags to the Construction Section for Capital contractor repair.
5. Each flag condition is assigned a City Flag number, and routed to the appropriate group.
6. When flag conditions are eliminated, the respective databases are updated.

City DOT Division of Bridges Inspectors

1. City inspectors identify flag conditions and prepare a scope of work. (Immediate verbal notification is given for Red Flags and PIA flags.)
2. Flag condition reports are received and reviewed by the Flags unit.
3. Flag condition reports are entered into the "City Flag" database.
4. Flag conditions are reviewed by City engineers who have four routing options:
   - assign flags to outside agencies for repair, or
   - have City inspectors monitor flags until further action is desired, or
   - assign flags to the Maintenance Section for in-house or contractor repair, or
   - assign flags to the Construction Section for Capital contractor repair.
5. When flag conditions are eliminated, the database is updated.

City DOT Communications Center

1. Flag condition is phoned in.
2. City inspectors visit the site to review the reported condition.
3. If the deficiency warrants, a flag condition report is filed.
4. Flag condition reports are entered into the "City Flag" database.
5. Flag conditions are reviewed by City engineers who have four routing options:
   - assign flags to outside agencies for repair, or
   - have City inspectors monitor flags until further action is desired, or
   - assign flags to the Maintenance Section for in-house or contractor repair, or
   - assign flags to the Construction Section for Capital contractor repair.
6. When flag conditions are eliminated, the database is updated.

Appendix C

2009 INVENTORY

Inventory Summary

In Calendar Year 2009, the total number of bridge and tunnel structures under the jurisdiction of the New York City Department of Transportation (NYCDOT) decreased to 786. NYCDOT owns, operates, and/or maintains 756 non-movable bridges, 25 movable bridges, and five tunnels. In 1999, a Memorandum of Understanding between NYCDOT and the New York City Department of Environmental Protection (NYCDEP) added 67 culverts (since reduced to 61) in Staten Island to the Division's Inventory. While the Division is responsible for the capital rehabilitation of these structures, maintenance and inspection responsibilities remain with NYCDEP.

The condition of New York City's 786 elevated bridge structures (including five tunnels), as measured by the City's general condition rating, are as follows: 4 structures were rated *Poor*, 456 structures were rated *Fair*, 209 structures were rated *Good*, 116 structures were classified *Very Good,* and one structure is not rated (closed).

The bridges in the Division's inventory connect a vast and diverse highway and street network throughout the City. The impressive East River crossings – the Brooklyn, Manhattan, Williamsburg, and Queensboro Bridges – are the most visible and famous structures, but are by no means representative of all the bridges in the City's inventory. Three hundred nineteen (40.5%) of the Division's structures consist of one span (the portion of a bridge between two supports). One hundred three (13%) bridges carry pedestrian traffic. Of the 786 structures in the City's inventory, 101 (13%) cross waterways; of these, 20 connect the boroughs of the Bronx, Brooklyn, Manhattan and Queens. Three hundred twenty-six (41%) structures cross the City's labyrinthine system of railroad and subway tracks. Two hundred forty-eight (31.5%) structures cross or connect arterial highways, such as the Henry Hudson Parkway, the Brooklyn-Queens Expressway, and the Belt Parkway, which facilitate traffic flow through and around the five boroughs of the City of New York.

Rating System

The Division of Bridges bases its general condition ratings directly on the numerical ratings assigned during bridge inspections. Federal law mandates that bridge structures be inspected at least once every two years. The New York State Department of Transportation hires engineering consultants to perform biennial inspections for all bridge structures except pedestrian bridge structures, and bridge structures less than 20 feet in length. Bridge structures not inspected by the State are inspected by the NYC Department of Transportation's Division of Bridges, with the exception of the East 64th Street Pedestrian Bridge over the FDR Drive, which was inspected by Rockefeller University.

The State inspected 671 (85%) bridge structures. The balance of 114 (14.5%) were inspected by the City, with the exception of the High Bridge over the Harlem River, which was inspected by the Department of Parks and Recreation. Each structure in a biennial inspection is given an overall numerical condition rating from 1 (structural failure) to 7 (new condition), reflecting a weighting of key features of the structure (see Appendix C-4). In certain cases, where a bridge structure is closed to traffic, only a city condition rating is given.

City condition ratings coincide with the following ranges of State ratings:

State Numerical Rating		City Condition Rating
1.000 – 3.000	=	POOR
3.001 – 4.999	=	FAIR
5.000 – 6.000	=	GOOD
6.001 – 7.000	=	VERY GOOD

This method is used as a guide in assessing what operational action is needed. The overall bridge rating, in and of itself, is not always indicative of whether a bridge needs major rehabilitation. Further inspection and analysis must be done to determine specific rehabilitation or corrective repair needs.

Summary of 2009 Structure Conditions

Rating	Number of Structures	Percent	Number of Spans	Percent	Deck Area Sq Ft	Percent
Poor	4	0.51%	88	1.98%	524,188	3.63%
Fair	456	58.09%	3,433	77.29%	9,993,707	69.30%
Good	209	26.62%	609	13.71%	2,551,857	17.70%
Very Good	116	14.78%	312	7.02%	1,351,167	9.37%
Not Rated	1	—	—	—	—	—
Total	786	100%	4,442	100%	14,420,919	100.00%

As of December 31, 2009, the condition of the City's bridges and tunnels indicated that 0.51% were rated as *Poor*; 58.09% were classified as *Fair*; 26.62% were awarded ratings of *Good*; and 14.78% as *Very Good*. Those structures given ratings of Poor and Fair encompassed 79.27% of bridge spans.

Rating	2006		2007		2008		2009	
Poor	3	0.38%	3	0.38%	3	0.38%	4	0.51%
Fair	456	57.94%	459	58.25%	455	57.81%	456	58.09%
Good	210	26.68%	215	27.28%	213	27.06%	209	26.62%
Very Good	118	14.99%	111	14.09%	116	14.74%	116	14.78%
Not Rated			1		1		1	
Total	787	100%	789	100%	788	100	786	100

During 2009, Manhattan had the highest percentage of bridge structures rated *fair* – 75.14% - as well as the lowest percentage of bridge structures rated *good* – 20.81%. Staten Island had the second highest percentage of bridge structures classified as *good* – 29.85%, and the third highest percentage of bridge structures rated *very good* – 19.40%, for a total of 49.25%. In 2009, Brooklyn had the highest percentage of bridge structures rated as *very good* – 24.57%. The Bronx had the second highest percentage of bridge structures classified as *fair* – 62.50%, and the third highest percentage of bridge structures rated as *good* – 28.95%. Queens had no bridges rated as poor, the second highest percentage of bridge structures classified as *very good* – 20.20%, and the highest percentage of bridge structures rated as *good* – 30.30%.

Borough*	Poor	% of Boro	Fair	% of Boro	Good	% of Boro	Very Good	% of Boro	Total
Bronx	1	0.66%	95	62.50%	44	28.95%	12	7.89%	152
Brooklyn	1	0.57%	85	48.57%	46	26.29%	43	24.57%	175
Manhattan	1	0.58%	130	75.14%	36	20.81%	6	3.47%	173
Queens	0	0.00%	98	49.49%	60	30.30%	40	20.20%	198
Staten Island	0	0.00%	34	50.75%	20	29.85%	13	19.40%	67
Total	3	0.39%	442	57.78%	206	26.93%	114	14.90%	765

* Does not include borough-crossing bridges (see next table).

Summary of 2009 Structure Conditions

Seventy five percent of the 20 bridge structures that service the five boroughs were rated in either *poor* or *fair* condition in 2009, and 25% were rated *good* or *very good*.

Boro-Crossing	Poor	% of Boro Crossing	Fair	% of Boro Crossing	Good	% of Boro Crossing	Very Good	% of Boro Crossing	Total
Bronx-Manhattan	0	0.00%	7	70.00%	1	10.00%	2	20.00%	10
Brooklyn-Manhattan	1	25.00%	2	50.00%	1	25.00%	0	0.00%	4
Queens-Manhattan	0	0.00%	2	66.67%	1	33.33%	0	0.00%	3
Brooklyn-Queens	0	0.00%	3	100.00%	0	0.00%	0	0.00%	3
Total	1	5.00%	14	70.00%	3	15.00%	2	10.00%	20

These figures evidence that the Division is continuing to make progress in improving the conditions of the City's bridges. The number of bridges rated *Poor* and *Fair* has decreased over the past few years while the number of bridges rated *Good* and *Very Good* has increased. However, it continues to remain essential that the overall bridge program include an expansion of the Preventive Maintenance and Corrective Repair programs which have traditionally slowed the deterioration of *good* and *very good* bridges.

During 2009, the total number of closed or partially closed bridge structures was three, with one closed and two partially-closed structures (see Appendix C-2).

APPENDIX C-2

Bridges with Posted Weight Restrictions

NEW YORK CITY DEPARTMENT OF TRANSPORTATION

BIN	BOROUGH	LOCATION FEATURE-1	LOCATION FEATURE-2	LOCATION FEATURE-3	FISCAL YEAR*	POSTED TONS	REMARKS
2-23145-0	BROOKLYN	BELT SHORE PKWY.	GERRITSEN INLET		2011	5	CONDITION OF PAERDEGAT BASIN BRIDGE
2-23147-9	BROOKLYN	BELT SHORE PKWY.	MILL BASIN CREEK		2011	5	CONDITION OF PAERDEGAT BASIN BRIDGE
2-23148-9	BROOKLYN	BELT SHORE PKWY	PAERDEGAT BASIN		2010	5	
2-23149-9	BROOKLYN	BELT SHORE PKWY.	ROCKAWAY PKWY.		2010	5	PASSENGER CARS ONLY
2231509	BROOKLYN	BELT SHORE PKWY.	FRESH CREEK		2010	5	PASSENGER CARS ONLY
	MANHATTAN	FDR DRIVE (NB & SB)	23RD TO 63RD STREET			4	PASSENGER CARS ONLY
2-24001-9	BROOKLYN & MANHATTAN	BROOKLYN BRIDGE	EAST RIVER	INCLUDING RAMPS	2009	3	NO COMMERCIAL TRAFFIC NO TRUCKS, NO BUSSES; 11'0" CLEARANCE
2240027	MANHATTAN & BROOKLYN	MANHATTAN BRIDGE	EAST RIVER				DESIGN LOAD FOR HS 20 TRUCK LOAD [36 TONS]; FROM 6 TO 10 AM, M-F, THE LEFT LANE OF THE NORTH UPPER ROADWAY IS HOV2+ BUSSES ONLY; MANHATTAN-BOUND TRUCKS MUST USE THE LOWER ROADWAY 5 AM TO 3 PM, M-F; BICYCLES ONLY ON NORTH BIKEWAY.
2-24003-9	BROOKLYN & MANHATTAN	WILLIAMSBURG BRIDGE	EAST RIVER				INNER ROADWAYS, NO TRUCKS; OUTER ROADWAYS DESIGN FOR HS20 [36 TONS] AND TRUCKS ARE PERMITTED ON OUTER ROADWAY
2-24004-7	MANHATTAN & QUEENS	QUEENSBORO BRIDGE	EAST RIVER			7.5	LOWER OUTER ROADWAYS POSTED AS H-7.5 [7.5 TONS] (PASSENGER CARS ONLY FOR SOUTHBOUND; PEDESTRIANS AND BICYCLES ONLY FOR NORTHBOUND); LOWER INNER ROADWAYS ARE DESIGNED FOR HS20 TRUCK LOAD [36 TONS]; UPPER ROADWAYS DESIGNED FOR H-15 [15 TONS], NO TRUCKS, ONLY BUSES
2-24026-0	BROOKLYN	CARROLL STREET BRIDGE	GOWANUS CANAL	CARROLL STREET	2011	10	
2-24064-0	MANHATTAN & QUEENS	ROOSEVELT ISLAND	EAST CHANNEL OF THE EAST RIVER			36	
2-24066-0	QUEENS	RIKERS ISLAND BRIDGE	RIKERS ISLAND CHANNEL		2017	36	
2-24655-0	MANHATTAN	PARK AVENUE VIADUCT	42ND STREET			15	NO COMMERCIAL TRAFFIC
2-24759-0	QUEENS	FOREST PARK DRIVE	LIRR			8	
2-24546-0	MANHATTAN	PARK AVENUE SB	EAST 45TH STREET			15	NO COMMERCIAL TRAFFIC
2-24547-0	MANHATTAN	PARK AVENUE NB	EAST 45TH STREET			15	NO COMMERCIAL TRAFFIC
2-26976-0	STATEN ISLAND	NORTH RAMP	SIRT SOUTH SHORE		2010	5	

18 COUNT * - **CONSTRUCTION CONTRACT LETTING**

Revised 10/20/09

Partially Closed Bridges

NEW YORK CITY DEPARTMENT OF TRANSPORTATION

BIN	BOROUGH	LOCATION FEATURE-1	LOCATION FEATURE-2	LOCATION FEATURE-3	FISCAL YEAR*	REMARKS
2-07664-0	BRONX	DEPOT PLACE	CONRAIL HUDSON DIVISION			ONE LANE CLOSED TO TRAFFIC AND ONE LANE OPEN
2244120	BROOKLYN	HILL DRIVE	PROSPECT PARK LAKE		2014	CLOSED TO VEHICULAR TRAFFIC, OPEN TO PEDESTRIAN TRAFFIC, ALONG THE CENTER OF THE ROADWAY.

2 COUNT *** - CONSTRUCTION CONTRACT LETTING**

Revised 11/30/09

Paerdegat Basin, Fresh Creek, and Carroll Street Bridge Posted Weight Restriction Signs. (Credit: NYSDOT)

Closed Bridges

NEW YORK CITY DEPARTMENT OF TRANSPORTATION

There is one closed bridge.

BIN	BOROUGH	LOCATION FEATURE-1	LOCATION FEATURE-2	LOCATION FEATURE-3	REMARKS
2248130	QUEENS	FLUSHING MEADOW PARK PEDESTRIAN	WILLOW LAKE	76th ROAD	BRIDGE IS IN FLUSHING CORONA PARK, WHICH IS IN A REMOTE LOCATION AND WAS DAMAGED BY FIRE.

10/20/09

APPENDIX C-3

Bridge Identification Numbers

In 1972, the State of New York developed a computerized system to store inventory and inspection data on bridges that are greater than 20 feet in length. In New York City, structures that are 20 feet in length or less, "mini-bridges," are tracked independently by the City. Each structure is distinguished by a separate Bridge Identification Number (B.I.N.).

A six-digit B.I.N. identifies a single structure or group of connected or associated structures, while the seven-digit B.I.N. identifies each of those connected or associated bridge structures individually. Each level of a bi-level bridge, each separate bridge structure in a parallel configuration, and each ramp attached to a main bridge is considered an individual structure and assigned its own unique B.I.N. for example, the Brooklyn Bridge has one six-digit B.I.N., 2-24002, which incorporates the entire bridge. All ramps and secondary structures, as well as the main structure, are identified by their own seven-digit numbers, such as 2-24001-A, 2-24001-B, etc.

If the prefix (first number) of the B.I.N. is:

1, the bridge is considered part of the **State** bridge system. This number might include City bridges if maintenance is shared between City and State.

2, the bridge is considered part of the **City** bridge system. This number might include State bridges if maintenance is shared between City and State.

M, **Q**, or **R**, the bridge is a "mini-bridge," and is considered part of the **City** bridge system. They are located in Manhattan, Queens, or Staten Island, respectively.

If the suffix (last character) of the B.I.N. is:

1 through 6, the bridge is in parallel configuration. The left-most bridge in the Direction of Orientation has a last character of 1. The next left-most bridge has a last character of 2, and so on.

7 or 8, the bridge is in a bi-level configuration. Seven indicates the lower level and eight indicates the upper level.

0 or 9, the bridge is not in parallel or bi-level configuration.

A letter of the alphabet, the structure is a ramp physically attached to the main bridge. If more than one ramp is attached to the same span of the main bridge, the characters are assigned alphabetically starting with the left-most ramp in the Direction of Orientation. Other ramps attached to the bridge are assigned alphabetical characters in a clockwise direction.

APPENDIX C-4

New York State Biennial Bridge Inspection and Condition Rating System

During the regularly scheduled State biennial bridge inspections, each bridge element is investigated and its structural condition is numerically rated according to the system indicated below:

Numerical Rating	Description
1	Potentially Hazardous
2	Used to shade between a rating of 1 and 3
3	Serious deterioration, or not functioning as originally designed
4	Used to shade between a rating of 3 and 5
5	Minor deterioration, and is functioning as originally designed
6	Used to shade between a rating of 5 and 7
7	New condition
8	Not Applicable
9	Unknown (due to inaccessibility, e.g. footings or piles)

Based on these individual ratings for each element, a weighted average rating is computed for the entire structure.

These ratings (both individual and weighted average) are recorded on New York State Department of Transportation Inspection report Forms. Together with photographs and explanatory descriptions, the ratings provide the Division with information on the existing condition of each bridge.

A description of the condition ratings 1 through 7, with programmed responses to certain critical ratings, demonstrates the importance of these inspections:

A rating of 1 describes an extremely serious condition which is deemed potentially hazardous. This rating, which is phoned in by the inspection leader, necessitates that the Division respond immediately by 1) closing the structure either completely or partially until emergency repairs are made, or 2) limiting the vehicle weight permitted on the structure and then performing repairs on a timely basis.

A rating of 3 describes a bridge element that is not functioning as designed. Although not considered hazardous, such members require extensive rehabilitation. A determination is then made to repair such rated members either by the Division's in-house repair personnel, the critical maintenance contractor (When and Where contracts), or a major capital contract. Until such repairs are made, this condition is periodically monitored.

A rating of 5 indicates the member is functioning as designed but exhibits minor deterioration. These members are prioritized and scheduled for repair by the Bridge Maintenance, Inspection and Operations Bureau.

A rating of 7 indicates a new condition requiring no remediation.

The ratings of 2, 4, and 6 are utilized to shade between each of the above ratings.

APPENDIX C-5

Standard Abbreviations

General Abbreviations :

APP:	Approach
AVE:	Avenue
BLVD:	Boulevard
BR:	Bridge
CPK:	Central Park
DR:	Drive
EB:	Eastbound
EXPWY:	Expressway
I:	Interstate
LN:	Lane
NB:	Northbound
PED BR:	Pedestrian Bridge
PKWY:	Parkway
PL:	Place
RD:	Road
SB:	Southbound
ST:	Street
TPKE:	Turnpike
WB:	Westbound
X:	No State accepted mileage markers exist on this route

Routes :

No.	Borough	Name
25	Queens	Union Turnpike
25A	Queens	Northern Boulevard
27	Brooklyn	Southern Parkway
I-87	Manhattan, Bronx	Major Deegan Expressway
I-95	Manhattan, Bronx	Cross Bronx Expressway
I-278	Brooklyn, Queens	Brooklyn-Queens Expressway
I-278	Bronx	Bruckner Expressway
I-278	Staten Island	Staten Island Expressway
I-295	Queens	Clearview Expressway
I-295	Bronx	Throgs Neck Expressway
I-440	Staten Island	Richmond Parkway
I-478	Brooklyn	Brooklyn Battery Tunnel
I-495	Queens	Long Island Expressway
I-678	Queens	Whitestone Expressway, Van Wyck
I-878	Queens	Nassau Expressway
I-895	Bronx	Sheridan Expressway

Standard Abbreviations

Highways :

BCIP:	Belt System -- Cross Island
BE:	Bruckner Expressway
BLP:	Belt System -- Laurelton Parkway
BPP:	Bronx Pelham Parkway
BQE:	Brooklyn-Queens Expressway
BRPC:	Bronx River Parkway (in NYC)
BSHP:	Belt System -- Shore Parkway
BSOP:	Belt System -- Southern Parkway
CBE:	Cross Bronx Expressway
FDRD:	Franklin D. Roosevelt Drive
GCP:	Grand Central Parkway
GW:	George Washington Bridge
HHP:	Henry Hudson Parkway
HRD:	Harlem River Drive
HRPC:	Hutchinson River Parkway (in NYC)
IP:	Jackie Robinson (Interborough) Parkway
LIE:	Long Island Expressway
MAP:	Marine Parkway
MDE:	Major Deegan Expressway
MP:	Mosholu Parkway
OCP:	Ocean Parkway
PR:	Prospect Expressway
RP:	Richmond Parkway
VWE:	Van Wyck Expressway
WLMBRG:	Williamsburg Bridge
WSE:	West Shore Expressway

Information Available On Division Of Bridges Inventory Of Structures

- **Bridge Identification Number (B.I.N.)**

- **Borough :**

B - The Bronx	Q - Queens	R - Staten Island
K - Brooklyn	M - Manhattan	

- **Feature Carried** : Name of passageway carrying vehicle or pedestrian traffic.

- **Feature Crossed** : Description of area crossed.

  - **Railroad Crossed** (if applicable):

A - Amtrak	N - New York & Atlantic
C - CSX	O - B & O Railroad
L - Long Island Railroad	S - Staten Island Rapid Transit Operating Authority
M - Metro-North (MTA)	T - NYC Transit Authority

- **Other Owner** :

ED	Department of Education
F	Ferries (Department of Transportation)
P	Department of Parks and Recreation

- **Bridge Type :**

A - Arterial	W - Waterway
O - Off-System	M - Movable
PED - Pedestrian	E - East River

- **Rating Source:**

(C)	City Inspection	(P)	Parks Inspection
(S)	State Inspection	(U)	Rockefeller University Inspection

- **Rating** : Numerical and/or verbal rating

1.000 - 3.000:	(P)	POOR
3.001 - 4.999:	(F)	FAIR
5.000 - 6.000:	(G)	GOOD
6.001 - 7.000:	(V)	VERY GOOD

- **Deck Area:** Square feet

- **CD:**

  Community Board District

APPENDIX C-7

2009 Bridge Inventory Adjustments

B.I.N.	BORO	FEATURE CARRIED	FEATURE CROSSED	EXPLANATION
- Bridges deleted from the City's Inventory:				
2232158	M	FDR DRIVE SB	FDR DRIVE NB	**TRANSFERRED TO NEW YORK STATE**
2231580	Q	AQUEDUCT RACETRACK RAMP	BELT PARKWAY	**TRANSFERRED TO PORT AUTHORITY OF NEW YORK & NEW JERSEY**

REV. DATE 10/7/09

INVENTORY SORTED BY B.I.N.

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
1065210	Q	WHITESTONE EXP NB	BCIP (2065210)			A	1	S	9/4/2008	4.683	F	2500	$10,000,000	407		
1066510	B	BRUCKNER EXP.(2066510)	WESTCHESTER CREEK			WMA	17	S	11/2/2009	3.597	F	39400	$157,600,000	209		
1067150	B	NEREID AVE (2241880)	BRONX RIVER PKWY	M		O	10	S	12/16/2009	4.632	F	57750	$231,000,000	212		
1240090	BM	MACOMBS DAM BRIDGE	HARLEM RIVER	M		WMO	52	S	12/22/2009	3.930	F	220000	$880,000,000	110	204	
1247010	Q	91 PLACE (2247010)	LIRR PT WASH BR	L		O	1	S	11/17/2009	6.567	V	2760	$11,040,000	404		
1247200	Q	67 AVE PED BR (2247200)	LIRR MAIN LINE	L		O-PED	3	C	10/9/2009	4.500	F	1300	$5,200,000	406		
1247280	Q	51 AVE PED BR (2247280)	LIRR MAIN LINE	L		O-PED	5	C	10/6/2009	3.018	F	700	$2,800,000	402		
1247560	Q	METROPOLITAN AVE	LIRR -NY&ATL	LN		O	2	S	10/24/2008	3.762	F	20900	$83,600,000	405		
2055801	Q	NORTHERN BLVD WB	FLUSHING RIVER			WO	40	S	11/4/2008	4.620	F	71900	$287,600,000	407		
2055802	Q	NORTHERN BLVD EB	FLUSHING RIVER			WO	40	S	11/4/2008	4.366	F	78894	$315,576,000	407		
205580A	Q	N.BLVD WB TO 678I SB	VACANT LAND			AR	16	S	8/28/2008	5.571	G	8600	$34,400,000	407		
2065629	B	BRONX RVR PKWY	BOSTON RD BX ZOO			A	1	S	8/28/2009	5.276	G	6300	$25,200,000	227		
2065930	Q	HAMILTON PLACE	495I (L.I.E.)			A	2	S	3/5/2008	6.069	V	11111	$44,444,000	405		
2065940	Q	GRAND AVE	495I (L.I.E.)			A	2	S	12/2/2008	4.875	F	12850	$51,400,000	405		
2065950	Q	69TH STREET	495I (L.I.E.)			A	2	S	5/20/2009	5.361	G	10336	$41,344,000	405		
2066002	Q	495I (2066000)	WOODHAVEN BLVD			A	2	S	6/26/2009	5.592	G	25200	$100,800,000	406	404	
2066100	K	5TH AVE	27 X PROSPECT EXPWY			A	1	S	5/21/2008	5.104	G	8800	$35,200,000	307		
2066671	B	BRUCKNER EXPWY SB	BRONX RIVER			WMA	3	S	11/3/2009	5.222	G	12400	$49,600,000	202	209	
2066672	B	BRUCKNER EXPWY NB	BRONX RIVER			WMA	8	S	7/19/2007	4.567	F	22300	$89,200,000	202	209	
2066720	B	E 174TH ST	SHERIDAN EXPWY/AMTRAK	A		A	13	S	10/30/2008	4.125	F	35573	$142,292,000	209	203	
206672A	B	174TH ST-NTH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	4.875	F	1800	$7,200,000	209		
206672B	B	174TH ST-STH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	5.209	G	1900	$7,600,000	209		
2066919	BM	WASHINGTON BRIDGE	HARLEM RIVER	M		WO	9	S	10/8/2008	4.642	F	128339	$513,356,000	112	205	204
2075351	B	BRUCKNER EXPWY SB	AMTRAK - CSX	AC		A	1	S	11/25/2008	3.625	F	11600	$46,400,000	202		
2075352	B	BRUCKNER EXPWY NB	AMTRAK - CSX	AC		A	1	S	11/10/2009	2.875	P	10900	$43,600,000	202		
2075820	B	E TREMONT AVE	HUTCHINSON RVR PKWY			A	2	S	12/18/2007	4.472	F	10200	$40,800,000	210		
2075837	B	WESTCHESTER AVE	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	4.333	F	15858	$63,432,000	210	211	
2075849	B	BRONX PELHAM PKWY	HUTCHINSON RVR PKWY			A	2	S	6/17/2008	3.974	F	17600	$70,400,000	210	211	
2075859	B	HUTCHINSON RVR PKWY	HUTCHINSON RIVER			WMA	7	S	12/18/2009	4.859	F	60500	$242,000,000	210	228	
2076109	B	BE NB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	9/8/2009	4.632	F	7800	$31,200,000	210		
2076129	B	BE SB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	5.105	G	7100	$28,400,000	210		
2076640	B	DEPOT PLACE	METRO NORTH RR HUD	CM		O	11	S	8/12/2009	5.083	G	26566	$106,264,000	204		
2076929	B	BRUCKNER EXPWY	CSX - HUNTS POINT	C		A	1	S	9/30/2009	4.700	F	3800	$15,200,000	202		
2229289	M	HHP VIADUCT	AMTRAK - W72 ST - W79 ST	A		A	145	S	12/23/2008	3.373	F	236100	$944,400,000	107		
222928C	M	PED BR AT 73RD ST	HHP - AMTRAK	A	P	A-PED	5	C	10/26/2008	4.145	F	3480	$13,920,000	107		
2229290	M	W 79 ST	AMTRAK	A		A	1	S	12/7/2009	4.220	F	4500	$18,000,000	107		
2229309	M	HHP	RIVERSIDE PARK			A	1	S	1/22/2008	5.267	G	2172	$8,688,000	107		
2229311	M	HHP SB	RAMP TO 96 ST			A	1	S	2/17/2008	4.636	F	2000	$8,000,000	107		
2229312	M	HHP NB	RAMP TO 96 ST			A	1	S	2/17/2008	4.364	F	2000	$8,000,000	107		
2229321	M	HHP SB	RAMP FROM 96 ST			A	1	S	3/14/2008	5.133	G	2000	$8,000,000	107		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2229322	M	HHP NB	RAMP FROM 96 ST			A	1	S	3/10/2008	5.300	G	2000	$8,000,000	107		
2229349	M	HHP	W 158 ST	A		A	44	S	12/11/2008	4.268	F	140000	$560,000,000	109	112	
222934A	M	RAMP TO N.B. HHP	AMTRAK WEST SIDE	A		AR	26	S	11/4/2008	3.875	F	10800	$43,200,000	112		
2229400	M	W 181ST ST PED BRDG	HHP N.B.		P	A-PED	7	C	2/11/2009	4.400	F	1500	$6,000,000	112		
2229440	B	HHP	KAPPOCK ST			A	1	S	8/25/2009	4.931	F	3900	$15,600,000	208		
2229450	B	232ND ST	HHP			A	2	S	8/26/2009	5.026	G	4900	$19,600,000	208		
2229460	B	236TH ST PED BRDG	HHP			A-PED	3	C	6/4/2009	4.607	F	2500	$10,000,000	208		
2229470	B	239TH ST	HHP			A	2	S	5/27/2009	5.368	G	6100	$24,400,000	208		
2229480	B	MANHATTAN COLL PKWY	HHP			A	3	S	5/26/2009	5.368	G	6200	$24,800,000	208		
2229490	B	246TH ST	HHP			A	2	S	5/22/2009	4.947	F	5600	$22,400,000	208		
2229500	B	252ND ST	HHP			A	2	S	2/28/2008	5.474	G	4500	$18,000,000	208		
2229510	B	RIVERDALE AVE	HHP			A	2	S	8/25/2009	4.474	F	5200	$20,800,000	208		
2229520	B	FIELDSTON ROAD	HHP			A	1	S	8/20/2009	5.500	G	6600	$26,400,000	208		
2229530	B	HHP	BROADWAY			A	1	S	8/20/2009	4.660	F	7500	$30,000,000	208		
2229540	B	VAN CRTLDT PARK	HHP		P	A-PED	2	C	7/15/2009	4.306	F	3900	$15,600,000	226		
2229550	B	VAN CRTLDT EQUES	HHP		P	A-PED	2	C	7/15/2009	4.556	F	2100	$8,400,000	226		
2229560	B	BRONX PELHAM PKWY	AMTRAK - CSX	AC		A	3	S	11/17/2008	4.722	F	24591	$98,364,000	211		
2229579	B	BOSTON POST ROAD	HUTCHINSON RIVER			WO	14	S	6/25/2009	4.194	F	95700	$382,800,000	212		
2230000	K	HIGHLAND BLVD E.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.600	F	4900	$19,600,000	305		
2230010	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.933	F	3500	$14,000,000	305		
2230020	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	2	S	5/20/2008	4.842	F	4700	$18,800,000	305		
2230040	Q	CYPRESS HILLS ST	JACKIE ROBINSON PKWY			A	1	S	4/17/2008	5.278	G	5000	$20,000,000	405		
2230099	Q	JACKIE ROBINSON PKWY	CYPRESS HILLS CEMETRY			A	1	S	1/18/2008	5.444	G	4200	$16,800,000	405		
2230120	Q	MYRTLE AVE	JACKIE ROBINSON PKWY			A	1	S	5/2/2008	5.479	G	6400	$25,600,000	405	482	
2230179	Q	JACKIE ROBINSON PKWY	METROPOLITAN AVE			A	2	S	5/21/2008	5.321	G	8673	$34,692,000	482		
2230180	Q	UNION TPKE	JACKIE ROBINSON PKWY			A	1	S	2/25/2008	5.891	G	5359	$21,436,000	482		
2230190	Q	MARKWOOD ROAD	JACKIE ROBINSON PKWY			A	1	S	5/5/2008	5.389	G	4400	$17,600,000	482	406	
2230209	Q	QUEENS BLVD	JACKIE ROBINSON PKWY	T		A	5	S	7/29/2008	4.746	F	37700	$150,800,000	409		
2230220	K	HIGHLAND BLVD NB	VERMONT AVE			A	1	S	6/10/2009	5.857	G	3995	$15,980,000	305		
2230250	B	MOSHOLU PARKWAY	BRONX RIVER			WA	5	S	1/30/2008	4.263	F	16300	$65,200,000	227		
2230260	B	MOSHOLU PARKWAY	METRO NORTH	M		A	1	S	4/7/2008	5.516	G	8880	$35,520,000	227	207	
2230270	B	MOSHOLU PARKWAY	WEBSTER AVE			A	1	S	6/17/2009	5.422	G	8480	$33,920,000	207		
2230287	B	JEROME AVE	MOSHOLU PARKWAY	T		A	3	S	5/18/2009	4.711	F	11800	$47,200,000	207		
2230290	B	MOSHOLU PARKWAY	EQUESTRIAN PATH			A	1	S	1/23/2008	4.448	F	4300	$17,200,000	226		
2230300	B	MOSHOLU PARKWAY	CONRAIL (ABANDONED)	C		A	1	S	10/29/2008	4.146	F	4600	$18,400,000	226		
2230310	B	MOSHOLU PARKWAY	SB RAMP TO HHP			A	2	S	10/8/2009	4.919	F	7400	$29,600,000	226		
2230350	K	SUMMIT ST PED BRDG	278I (B.Q.E.)			A-PED	2	S	5/4/2008	4.500	F	1400	$5,600,000	306		
2230360	K	UNION ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.375	F	5000	$20,000,000	306		
2230370	K	SACKETT ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.500	F	5000	$20,000,000	306		
2230380	K	KANE ST	278I (B.Q.E.)			A	2	S	4/11/2008	4.069	F	5000	$20,000,000	306		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230390	K	CONGRESS ST	278I (B.Q.E.)			A	2	S	4/10/2008	6.382	V	5000	$20,000,000	306		
2230410	K	278I EB (B.Q.E.)	WASHINGTON ST			A	1	S	7/31/2009	4.375	F	2500	$10,000,000	302		
2230420	K	278I WB (B.Q.E.)	WASHINGTON ST			A	1	S	7/23/2008	4.750	F	2500	$10,000,000	302		
2230430	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	2/28/2008	5.000	G	1100	$4,400,000	302		
2230440	K	278I WB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	5.200	G	2700	$10,800,000	302		
2230450	K	278I EB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	4.933	F	2500	$10,000,000	302		
2230460	K	278I (B.Q.E.)	PEARL ST			A	1	S	3/10/2008	5.333	G	4500	$18,000,000	302		
2230470	K	278I (B.Q.E.)	JAY ST			A	1	S	3/10/2008	4.833	F	5100	$20,400,000	302		
2230480	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	4/24/2008	5.093	G	8400	$33,600,000	302		
2230490	K	278I (B.Q.E.)	SANDS ST			A	1	S	3/26/2008	5.019	G	12600	$50,400,000	302		
2230500	K	278I (B.Q.E.)	RAMP TO BQE EB			A	1	S	3/25/2008	5.100	G	1300	$5,200,000	302		
2230510	K	278I (B.Q.E.)	NASSAU ST			A	6	S	12/4/2009	4.606	F	51200	$204,800,000	302		
2230520	Q	65TH PLACE	278I (B.Q.E.)			A	2	S	2/22/2008	4.508	F	11600	$46,400,000	402		
2230530	Q	QUEENS BLVD	278I (B.Q.E.)			A	2	S	12/4/2008	6.417	V	25543	$102,172,000	402		
2230540	Q	WOODSIDE AVE	278I (B.Q.E.)			A	1	S	1/29/2008	5.797	G	7500	$30,000,000	402		
2230550	Q	69TH ST	278I (B.Q.E.)			A	2	S	2/15/2008	5.123	G	12600	$50,400,000	402		
2230560	Q	70TH ST	278I (B.Q.E.)			A	2	S	12/11/2008	6.667	V	8580	$34,320,000	402		
2230570	Q	41ST AVE	278I (B.Q.E.)			A	2	S	11/5/2008	6.735	V	8580	$34,320,000	402		
2230587	Q	ROOSEVELT AVE	278I (B.Q.E.)			A	2	S	10/29/2009	5.917	G	11022	$44,088,000	402		
2230590	Q	BROADWAY	278I (B.Q.E.)			O	2	S	12/11/2008	5.789	G	16000	$64,000,000	402		
2230600	Q	STEINWAY ST	278I WB (BQE)			A	1	S	10/21/2008	6.581	V	5229	$20,916,000	401		
2230610	Q	STEINWAY ST	278I EB (BQE)			A	1	S	10/21/2008	6.581	V	5146	$20,584,000	401		
2230620	Q	37TH ST	278I (B.Q.E.)			A	2	S	3/26/2008	4.583	F	5300	$21,200,000	401		
2230630	Q	35TH ST	278I (B.Q.E.)			A	4	S	4/14/2008	4.736	F	9000	$36,000,000	401		
2230640	Q	32ND ST	278I (B.Q.E.)			A	2	S	6/15/2009	4.903	F	8100	$32,400,000	401		
2230657	Q	31ST ST	278I (B.Q.E.)			A	2	S	10/24/2008	4.847	F	9500	$38,000,000	401		
2230669	Q	278I (B.Q.E.)	35TH AVE			A	1	S	8/6/2009	6.525	V	13135	$52,540,000	402		
2230679	Q	278I (B.Q.E.)	34TH AVE			A	1	S	6/11/2009	6.203	V	7793	$31,172,000	402		
2230680	Q	278I (B.Q.E.)	NORTHERN BLVD			A	1	S	11/12/2008	6.079	V	27011	$108,044,000	402	401	
2230690	Q	278I NB (BQE WEST LEG)	32ND AVE			A	1	S	8/20/2008	6.627	V	4080	$16,320,000	401		
2230700	Q	278I NB (BQE EAST LEG)	32ND AVE (TO BQE WEST LEG)			A	8	S	11/6/2008	6.746	V	31600	$126,400,000	401	403	
2230710	Q	278I SB (BQE WEST LEG)	32ND AVE			A	1	S	8/5/2009	6.695	V	5240	$20,960,000	401		
2230720	Q	278I SB (BQE EAST LEG)	278I NB (BQE WEST LEG)			A	3	S	5/15/2009	6.364	V	20896	$83,584,000	401		
2230730	Q	31ST AVE	278I NB (BQE WEST LEG)			A	1	S	7/20/2009	6.433	V	5875	$23,500,000	401		
2230740	Q	278I SB (BQE WEST LEG)	31ST AVE			A	1	S	8/4/2009	6.217	V	5246	$20,984,000	401		
2230750	Q	278I SB (BQE EAST LEG)	31ST AVE			A	1	S	8/24/2009	6.508	V	4221	$16,884,000	401	403	
2230760	Q	278I NB (BQE EAST LEG)	31ST AVE			A	1	S	10/6/2008	6.610	V	4161	$16,644,000	401		
2230770	Q	278I (BQE WEST LEG)	30TH AVE			A	1	S	6/19/2009	6.695	V	6199	$24,796,000	401		
2230780	Q	278I (BQE EAST LEG)	30TH AVE			A	1	S	6/19/2009	6.524	V	7071	$28,284,000	403	401	
2230790	Q	BULOVA AVE	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	3300	$13,200,000	401		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230800	Q	49TH ST	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	4900	$19,600,000	401		
2230810	Q	ASTORIA BLVD EB	278I (BQE WEST LEG)			A	4	S	5/12/2009	4.103	F	8200	$32,800,000	401		
2230820	Q	47TH ST	GCP			A	2	S	5/20/2008	4.944	F	5700	$22,800,000	401		
2230830	Q	278I NB (BQE WEST LEG)	GCP			A	2	S	5/20/2008	4.750	F	7600	$30,400,000	401		
2230840	Q	44TH ST	GCP			A	2	S	5/13/2008	4.847	F	5000	$20,000,000	401		
2230857	K	278I WB (B.Q.E.)	JORALEMON ST			A	1	S	5/24/2008	5.000	G	2100	$8,400,000	302		
2230858	K	278I EB (B.Q.E.)	JORALEMON ST / BQE WB			A	2	S	6/29/2009	4.177	F	5900	$23,600,000	302		
2230869	Q	QUEENS BLVD	ACCESS RD BQE S.B.			A	1	S	12/9/2008	5.727	G	7900	$31,600,000	402		
2230870	K	COLUMBIA HEIGHTS	278I (B.Q.E.)			A	1	S	9/3/2008	4.550	F	16500	$66,000,000	302		
2230887	K	278I W.B. (B.Q.E.)	CADMAN PLAZA			A	2	S	8/21/2008	4.426	F	4500	$18,000,000	302		
2230888	K	278I E.B. (B.Q.E.)	CADMAN PLAZA / 278I WB			A	2	S	8/21/2008	5.053	G	4500	$18,000,000	302		
2230890	Q	49TH ST	GCP			A	2	S	5/14/2008	4.667	F	6350	$25,400,000	401		
2231249	K	BSHP	BAY RIDGE AVE			A	1	S	6/12/2009	3.313	F	4900	$19,600,000	310		
2231250	K	81ST ST PED BR	BSHP		P	A-PED	5	C	12/23/2008	4.881	F	3100	$12,400,000	310		
2231260	K	92ND ST PED BR	BSHP		P	A-PED	6	C	8/4/2009	4.113	F	3000	$12,000,000	310		
2231270	K	4TH AVE	BSHP			A	2	S	4/10/2008	4.842	F	6100	$24,400,000	310		
2231290	K	BAY 8TH ST	BSHP			A	1	S	5/29/2009	5.921	G	4950	$19,800,000	311		
2231300	K	17TH AVE PED BRDG	BSHP		P	A-PED	1	C	11/4/2009	3.397	F	2100	$8,400,000	311		
2231319	K	BSHP	BAY PKWY			A	1	S	6/24/2009	4.535	F	7200	$28,800,000	311		
2231329	K	BSHP	26TH AVE			A	1	S	6/5/2008	4.867	F	6700	$26,800,000	313		
2231330	K	27TH AVE PED BRDG	BSHP		P	A-PED	1	C	1/13/2009	3.927	F	2100	$8,400,000	313		
2231340	K	CROPSEY AVE	BSHP			A	2	S	7/18/2008	4.806	F	13100	$52,400,000	313		
2231360	K	BSHP	OCEAN PKWY			A	3	S	8/20/2008	6.776	V	29637	$118,548,000	313		
2231370	K	GUIDER AV RAMP TO BSHP	BSHP			A	4	S	11/6/2009	3.292	F	12800	$51,200,000	313		
2231380	K	CONEY ISLAND AVE	BSHP			A	4	S	9/21/2009	6.181	V	19866	$79,464,000	313		
2231390	K	E 12TH ST	BSHP			A	4	S	7/12/2008	4.875	F	17200	$68,800,000	315		
2231409	K	BSHP	SHEEPSHEAD BAY ROAD			A	1	S	4/30/2008	4.967	F	6500	$26,000,000	315		
2231419	K	BSHP	OCEAN AVE			A	3	S	5/1/2008	4.222	F	14000	$56,000,000	315		
2231429	K	BSHP	BEDFORD AVE			A	3	S	5/3/2008	4.167	F	12000	$48,000,000	315		
2231439	K	BSHP	NOSTRAND AVE			A	3	S	6/8/2009	4.014	F	13000	$52,000,000	315		
2231449	K	KNAPP ST	BSHP			A	1	S	6/10/2008	4.391	F	9500	$38,000,000	315		
2231450	K	BSHP	GERRITSEN INLET			WA	11	S	10/2/2009	3.418	F	52000	$208,000,000	356		
2231460	K	FLATBUSH AVE	BSHP			A	2	S	10/13/2009	6.306	V	14058	$56,232,000	356		
2231479	K	BSHP	MILL BASIN			WMA	14	S	10/9/2009	3.284	F	73500	$294,000,000	318		
2231489	K	BSHP	PAERDEGAT BASIN			WA	15	S	10/5/2009	3.222	F	58300	$233,200,000	318		
2231499	K	BSHP	ROCKAWAY PKWY			A	4	S	9/18/2009	3.917	F	11500	$46,000,000	356		
2231509	K	BSHP	FRESH CREEK			WA	5	S	8/7/2009	3.250	F	23000	$92,000,000	356		
2231519	K	PENNSYLVANIA AVE	BSHP			A	2	S	5/14/2009	5.806	G	6640	$26,560,000	356		
2231559	Q	CROSS BAY BLVD	BSHP			A	4	S	5/29/2008	5.139	G	23205	$92,820,000	410		
2231560	Q	S CONDUIT BLVD	BSOP			A	2	S	7/29/2008	5.465	G	15776	$63,104,000	410		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2231570	Q	COHANCY ST	BSOP			A	2	S	5/7/2008	4.632	F	6400	$25,600,000	410		
2231590	Q	130TH ST	BSOP			A	2	S	2/12/2008	4.659	F	6800	$27,200,000	410		
2231610	Q	GUY R. BREWER BLVD	BSOP			A	4	S	5/12/2009	6.319	V	12342	$49,368,000	413		
2231620	Q	FARMERS BLVD	BSOP			A	2	S	6/26/2008	4.568	F	6400	$25,600,000	413		
2231630	Q	SPRINGFIELD BLVD	BSOP			A	2	S	5/20/2008	4.614	F	8500	$34,000,000	413		
2231640	Q	225TH ST	BSOP			A	2	S	6/26/2008	5.000	G	7000	$28,000,000	413		
2231650	Q	SUNRISE HWY W.B.	BLP E.B.			A	1	S	4/16/2008	4.623	F	4100	$16,400,000	413		
2231660	Q	SUNRISE HWY W.B.	BLP W.B.			A	2	S	3/10/2008	4.652	F	5350	$21,400,000	413		
2231670	Q	N CONDUIT AVE WB	BLP E.B.			A	1	S	2/7/2008	4.917	F	4000	$16,000,000	413		
2231680	Q	N CONDUIT AVE WB	BLP W.B.			A	2	S	2/12/2008	4.932	F	6500	$26,000,000	413		
2231690	Q	FRANCIS LEWIS BLVD	BLP E.B.			A	1	S	4/18/2008	5.167	G	6000	$24,000,000	413		
2231700	Q	FRANCIS LEWIS BLVD	BLP W.B.			A	1	S	4/17/2008	4.833	F	6000	$24,000,000	413		
2231710	Q	MERRICK BLVD	BLP N.B.			A	1	S	2/27/2008	4.400	F	6000	$24,000,000	413		
2231720	Q	MERRICK BLVD	BLP S.B.			A	1	S	2/27/2008	4.200	F	6000	$24,000,000	413		
2231730	Q	130TH AVE	BLP N.B.			A	1	S	1/23/2008	5.267	G	4400	$17,600,000	413		
2231740	Q	130TH AVE	BLP S.B.			A	1	S	2/8/2008	4.767	F	4400	$17,600,000	413		
2231750	Q	LINDEN BLVD	BCIP			A	2	S	3/7/2008	4.341	F	6700	$26,800,000	413		
2231760	Q	BCIP	DUTCH BROADWAY-115 AVE			A	1	S	3/7/2008	4.442	F	7300	$29,200,000	413		
2231770	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	2/14/2008	4.688	F	3200	$12,800,000	413		
2231780	Q	HEMPSTEAD AVE	BCIP			A	2	S	2/19/2008	3.903	F	14200	$56,800,000	413		
2231790	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	1/29/2008	4.563	F	3400	$13,600,000	413		
2231800	Q	SUPERIOR ROAD	BCIP			A	2	S	4/14/2008	4.136	F	7000	$28,000,000	413		
2231819	Q	JAMAICA AVE	BCIP			A	2	S	3/3/2008	4.773	F	11500	$46,000,000	413		
2231829	Q	BRADDOCK AVE	BCIP			A	2	S	5/27/2009	4.591	F	10600	$42,400,000	413		
2231840	Q	HILLSIDE AVE	BCIP			A	2	S	4/8/2008	4.184	F	9672	$38,688,000	413		
2231850	Q	UNION TPKE	BCIP			A	2	S	4/3/2008	4.409	F	13600	$54,400,000	413		
2231860	Q	W ALLEY ROAD	BCIP			A	2	S	7/28/2009	5.263	G	7200	$28,800,000	411		
2231870	Q	NORTHERN BLVD	BCIP			A	2	S	9/22/2008	6.236	V	9400	$37,600,000	411		
2231880	Q	CROCHERON PK PED	BCIP		P	A-PED	9	C	6/8/2009	4.551	F	2300	$9,200,000	411		
2231890	Q	28TH AVE PED BRDG	BCIP		P	A-PED	24	C	6/1/2009	4.613	F	7600	$30,400,000	411		
2231900	Q	BCIP	TOTTEN AVE			A	1	S	6/27/2008	4.797	F	4900	$19,600,000	407		
2231910	Q	UTOPIA PKWY	BCIP			A	2	S	3/14/2008	5.114	G	7200	$28,800,000	407		
2231920	Q	160TH ST	BCIP			A	2	S	4/24/2009	5.694	G	5550	$22,200,000	407		
2231930	Q	FRANCIS LEWIS BLVD	BCIP			A	3	S	2/15/2008	4.773	F	9100	$36,400,000	407		
2231940	Q	CLINTONVILLE ST	BCIP			A	2	S	2/19/2008	4.705	F	7400	$29,600,000	407		
2231950	Q	150TH ST	BCIP			A	2	S	3/4/2008	4.795	F	5900	$23,600,000	407		
2231960	Q	149TH ST	BCIP			A	2	S	2/28/2008	4.841	F	6210	$24,840,000	407		
2231970	Q	14TH AVE	BCIP			A	2	S	2/28/2008	4.614	F	8100	$32,400,000	407		
2231980	Q	147TH ST	BCIP			A	2	S	3/6/2008	4.523	F	6300	$25,200,000	407		
2232000	M	BATTERY PLACE	FDR DRIVE			AT	2	S	11/18/2009	5.318	G	142000	$568,000,000	101		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
223201A	M	FDR DR N.B. OFF RMP	FDR DR & SOUTH ST			AR	17	S	2/29/2008	3.716	F	23373	$93,492,000	101		
223201B	M	STH ST RMP TO FDR S.B.	SOUTH ST			AR	10	S	2/27/2008	3.761	F	44625	$178,500,000	101		
223201C	M	FDR DR S.B. OFF RMP	SOUTH ST			AR	8	S	2/20/2008	4.701	F	39150	$156,600,000	103		
223201D	M	RAMP TO N.B. FDR DRIVE	FDR & SOUTH ST.			AR	22	S	3/2/2008	4.967	F	15825	$63,300,000	101	103	
2232029	M	CORLEARS PARK ROAD	FDR DRIVE		P	A	4	S	2/24/2008	3.625	F	4100	$16,400,000	103		
2232030	M	DELANCEY ST PED BRDG	FDR DRIVE		P	A-PED	12	C	11/15/2009	4.174	F	2900	$11,600,000	103		
2232040	M	HOUSTON ST	FDR DRIVE			A	2	S	6/7/2009	3.455	F	11010	$44,040,000	103		
223204A	M	FDR NB RAMP TO HOUSTON ST	RELIEF			AR	4	S	1/30/2008	4.471	F	6150	$24,600,000	103		
223204B	M	HOUSTON ST RAMP TO FDR NB	RELIEF			AR	4	S	2/1/2008	4.625	F	7125	$28,500,000	103		
2232050	M	E 6TH ST PED BRDG	FDR DRIVE		P	A-PED	22	C	3/15/2009	4.196	F	2200	$8,800,000	103		
2232070	M	E 25TH ST PED BRDG	FDR DRIVE			A-PED	4	C	3/15/2009	4.525	F	1700	$6,800,000	106		
2232100	M	E 51ST ST PED BRDG	FDR DRIVE		P	A-PED	10	C	3/22/2009	4.390	F	2800	$11,200,000	106		
2232110	M	E 64TH ST PED BRDG	FDR DRIVE		P	A-PED	24	U	9/24/2009	5.931	G	2100	$8,400,000	108		
2232120	M	E 71ST ST PED BRDG	FDR DRIVE		P	A-PED	19	C	7/12/2009	5.000	G	1800	$7,200,000	108		
2232140	M	E 78TH ST PED BRDG	FDR DRIVE		P	A-PED	9	C	3/29/2009	2.745	P	1700	$6,800,000	108		
2232167	M	PROMENADE OVER FDR	FDR - E81ST ST - E90TH ST		P	A-PED	53	S	7/9/2009	3.857	F	93000	$372,000,000	108		
2232180	M	E 103RD ST PED BRDG	FDR DRIVE			A-PED	20	C	8/23/2009	4.739	F	6000	$24,000,000	111		
2232190	M	E 111TH ST PED BRDG	FDR DRIVE		P	A-PED	14	C	8/3/2008	4.689	F	2600	$10,400,000	111		
2232200	M	E 120TH ST PED BRDG	FDR DRIVE		P	A-PED	21	C	8/3/2008	4.522	F	2500	$10,000,000	111		
2233020	M	E 10TH ST PED BRDG	FDR DRIVE		P	A-PED	25	C	9/7/2008	5.216	G	1632	$6,528,000	103		
2233038	M	FDR DRIVE SB	FDR NB / E 62ND ST			AT	34	S	12/19/2008	6.620	V	58700	$234,800,000	106	108	
2233040	M	E 60TH ST	FDR DRIVE			A	17	S	8/3/2009	4.806	F	24480	$97,920,000	108		
2233059	M	HARLEM RIVER DRIVE	RAMP TO & FROM HRD N.B.			A	11	S	9/9/2009	3.269	F	51000	$204,000,000	111		
2233080	K	E 14 ST PED BR	BSHP			A-PED	14	C	7/22/2009	3.852	F	4700	$18,800,000	315		
2240019	KM	BROOKLYN BRIDGE	EAST RIVER			WEO	75	S	10/25/2008	2.944	P	503788	$2,015,152,000	103	302	101
224001A	M	PARK ROW TO BKLN	WILLIAM ST N.B.			OE	4	S	5/28/2009	4.167	F	10167	$40,668,000	101		
224001B	M	TO BKLN FRM FDR	FRANKFRT & CITY			OE	31	S	12/20/2008	4.074	F	51400	$205,600,000	101	103	
224001C	M	PEARL ST TO BKLN	LAND ADJ TO BRDG			OE	9	S	5/21/2009	3.814	F	6365	$25,460,000	101		
224001D	M	TO FDR DR N.B.	PEARL STREET			OE	30	S	6/8/2009	4.868	F	49600	$198,400,000	101	103	
224001E	M	TO PEARL ST	LAND ADJ TO BRDG			OE	3	S	6/1/2009	5.141	G	5300	$21,200,000	101		
224001F	M	PEARL ST TO FDR DR	LAND ADJ TO BRDG			OE	3	S	5/21/2009	5.338	G	5200	$20,800,000	103		
224001G	M	TO PARK ROW	ROSE ST			OE	11	S	6/8/2009	4.606	F	16551	$66,204,000	101		
2240027	KM	MANHATTAN BRIDGE(LL)	EAST RIVER	T		WEO	23	S	11/24/2008	5.014	G	616390	$2,465,560,000	103	302	
2240028	KM	MANHATTAN BRIDGE(UL)	NYCTA TRACKS-BMT	T		WEO	43	S	11/24/2008	4.214	F	587424	$2,349,696,000	103	302	
2240039	KM	WILLIAMSBURG BRIDGE	EAST RIVER	T		WEO	53	S	10/31/2008	4.653	F	824000	$3,296,000,000	103	301	
2240047	MQ	QUEENSBORO BRIDGE (LL)	EAST RIVER	AL		WEO	53	S	12/8/2008	4.208	F	626900	$2,507,600,000	108	402	401
2240048	MQ	QUEENSBORO BRIDGE (UL)	EAST RIVER - LL			WEO	37	S	12/8/2008	4.340	F	322300	$1,289,200,000	108	402	401
224004A	M	TO E 60TH ST FROM QNS	FIRST AVE			OE	13	S	5/9/2008	5.254	G	14800	$59,200,000	108		
224004B	M	TO QNS FRM E 59TH ST	FIRST AVE			OE	13	S	5/9/2008	5.708	G	14800	$59,200,000	108		
224004C	M	TO E 62ND ST FROM QNS	E 60TH ST			OE	10	S	10/2/2008	4.985	F	16720	$66,880,000	108		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
224004D	M	TO QNS FROM E 58TH ST	E 59TH ST			OE	12	S	7/10/2008	4.547	F	11781	$47,124,000	106	108	
224004E	Q	TO NY FR THOMSON AVE	JACKSON AVE	L		OE	94	S	12/24/2008	4.642	F	104600	$418,400,000	402		
224004F	Q	TO NY FROM 21ST ST	21ST ST			OE	63	S	12/12/2008	4.833	F	63310	$253,240,000	402	401	
224004G	Q	TO NY FROM 11TH ST	TERRAIN (CHAMBER)			OE	36	S	11/20/2008	4.390	F	8360	$33,440,000	401	402	
224004H	Q	TO 21ST ST FROM NY	22ND ST			OE	43	S	12/4/2008	4.324	F	48100	$192,400,000	402		
224004I	Q	TO THOMSON AVE FROM NY	JACKSON AVE	L		OE	39	S	12/20/2008	4.951	F	59100	$236,400,000	402		
224004J	M	25X	NYC GARAGE			OE	14	S	5/19/2008	4.537	F	22058	$88,232,000	108		
2240059	BM	WILLIS AVENUE	HARLEM RIVER			WMO	26	S	11/6/2009	3.292	F	94700	$378,800,000	111	201	
224005A	M	FROM FDR DRIVE	HARLEM RIVER DR			OR	19	S	6/6/2008	4.299	F	29900	$119,600,000	111		
224005B	B	TO BRUCKNER BLVD	RELIEF			OR	5	S	11/4/2009	4.028	F	12100	$48,400,000	201		
2240069	BM	THIRD AVE BRIDGE	HARLEM RIVER			WMO	14	S	10/9/2008	6.746	V	100232	$400,928,000	111	201	
224006A	B	FROM BRUCKNER BLVD	RELIEF			OR	5	S	10/6/2009	6.817	V	14037	$56,148,000	201		
2240079	BM	MADISON AVE BRIDGE	HARLEM RIVER			WMO	21	S	10/30/2008	4.833	F	80000	$320,000,000	111	201	
224007A	M	TO MADISON AVENUE	E 138TH ST			OR	7	S	4/18/2008	5.225	G	19880	$79,520,000	111		
2240089	BM	145TH ST BRIDGE	HARLEM RIVER			WMO	8	S	11/13/2009	6.403	V	56700	$226,800,000	110	204	201
2240120	BM	W 207TH/W FORDHAM RD	HARLEM RIVER			WMO	5	S	9/22/2008	5.333	G	31784	$127,136,000	112	207	
2240137	BM	BROADWAY BRIDGE	HARLEM RIVER	TM		WMO	3	S	11/12/2009	3.972	F	46848	$187,392,000	112	207	208
2240138	BM	NYCTA IRT	HARLEM RVR/BROADWAY	TM		WMO	3	S	11/17/2009	4.706	F	19520	$78,080,000	112	207	208
2240180	B	WESTCHESTER AVE	BRONX RIVER			WO	1	S	9/18/2009	4.765	F	5476	$21,904,000	202	209	
2240200	B	SHORE ROAD	HUTCHINSON RIVER			WMO	7	S	7/9/2008	4.478	F	43576	$174,304,000	228		
2240210	B	CITY ISLAND ROAD	EASTCHESTER BAY			WO	7	S	8/25/2009	3.389	F	19915	$79,660,000	228		
2240231	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	12/2/2008	5.472	G	7300	$29,200,000	307	306	
2240232	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	9/10/2009	5.306	G	7300	$29,200,000	306		
2240240	K	NINTH ST BRIDGE	GOWANUS CANAL			WMO	3	S	6/11/2009	6.581	V	5772	$23,088,000	306		
2240250	K	THIRD ST	GOWANUS CANAL			WMO	5	S	6/12/2009	4.931	F	4900	$19,600,000	306		
2240260	K	CARROLL ST	GOWANUS CANAL			WMO	2	S	6/10/2009	4.803	F	3000	$12,000,000	306		
2240270	K	UNION ST	GOWANUS CANAL			WMO	5	S	10/14/2008	4.014	F	4900	$19,600,000	306		
2240290	K	METROPOLITAN AVE	ENGLISH KILLS			WMO	5	S	7/30/2009	6.139	V	10550	$42,200,000	301		
2240301	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/8/2009	5.225	G	9400	$37,600,000	313		
2240302	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/28/2009	5.028	G	9400	$37,600,000	313		
2240310	K	THIRD AVE	GOWANUS CANAL			WO	1	S	6/19/2009	7.000	V	3200	$12,800,000	306		
2240320	K	OCEAN AVE PED BRDG	SHEEPSHEAD BAY			WO-PED	30	C	9/29/2009	3.939	F	4000	$16,000,000	315		
2240350	R	RICHMOND AVE	RICHMOND CREEK			WO	3	S	7/8/2009	5.444	G	32589	$130,356,000	502		
2240370	KQ	GREENPOINT AVE BRIDGE	NEWTOWN CREEK	L		WMO	12	S	8/6/2009	4.861	F	76106	$304,424,000	301	402	
2240390	KQ	GRAND ST BRIDGE	NEWTOWN CREEK			WMO	2	S	8/28/2009	4.236	F	5100	$20,400,000	301	405	
2240410	Q	BORDEN AVE	DUTCH KILLS			WMO	2	S	12/8/2009	3.181	F	8400	$33,600,000	402		
2240440	Q	NORTHERN BLVD	ALLEY CREEK			WO	2	S	8/15/2008	4.750	F	8300	$33,200,000	411		
2240450	Q	HUNTERS PT AVE	DUTCH KILLS			WMO	4	S	7/22/2008	5.083	G	12168	$48,672,000	402		
2240507	Q	ROOSEVELT AVE	678I - FLUSHING RIVER			WA	27	S	12/29/2008	3.535	F	84424	$337,696,000	407	481	
2240540	K	STILLWELL AVE	CONEY ISLAND CRK			WO	2	S	6/17/2009	6.292	V	17000	$68,000,000	313		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2240620	M	WARDS ISLAND PED BRDG	HARLEM RIVER			WMO-PED	10	C	11/1/2008	4.367	F	12600	$50,400,000	111		
2240639	KQ	PULASKI BRIDGE	NEWTOWN CREEK			WMO	44	S	6/3/2008	4.408	F	205770	$823,080,000	301	402	
2240640	MQ	ROOSEVELT ISLAND BRDG	E. RIVER E. CHANNEL			WMO	8	S	11/4/2008	5.389	G	36500	$146,000,000	108	401	
2240650	Q	163RD AVE PED BRDG	HAWTREE BASIN			WO-PED	13	C	9/30/2009	4.333	F	5000	$20,000,000	410		
2240660	Q	RIKERS ISLAND BRIDGE	RIKERS ISL CHANNEL			WO	56	S	11/19/2009	4.493	F	183100	$732,400,000	401	480	
2241000	B	WESTCHESTER AVE	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	5.128	G	1740	$6,960,000	201		
2241010	B	E 156TH STREET	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	4.556	F	2400	$9,600,000	201		
2241020	B	E 161ST STREET	CSX TRANS - PT MORRIS	C		O	1	S	5/12/2008	6.700	V	12800	$51,200,000	203		
2241030	B	E 163RD STREET	CSX TRANS - PT MORRIS	C		O	1	S	4/11/2008	4.796	F	3200	$12,800,000	203		
2241040	B	THIRD AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/28/2008	4.563	F	2700	$10,800,000	201	203	
2241050	B	E 149TH ST/JACKSON AVE	CSX TRANS - PT MORRIS	C		O	1	S	6/30/2008	4.850	F	65000	$260,000,000	201		
2241060	B	ST. MARYS & CONCORD	CSX TRANS - PT MORRIS	C		O	1	S	9/12/2008	5.333	G	4500	$18,000,000	201		
2241070	B	WALES AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/17/2008	6.567	V	2535	$10,140,000	201		
2241080	B	SOUTHERN BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	4.259	F	3900	$15,600,000	201		
2241099	B	BRUCKNER BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	6.583	V	6700	$26,800,000	201		
2241110	B	MELROSE AVE	CSX TRANS - PT MORRIS	C		O	8	S	8/24/2009	5.611	G	37854	$151,416,000	203		
2241129	B	E 149TH ST	AMTRAK - CSX	AC		O	2	S	12/12/2008	4.620	F	18258	$73,032,000	201	202	
2241139	B	LEGGETT AVE	AMTRAK - CSX	AC		O	3	S	12/11/2008	4.690	F	41551	$166,204,000	202		
2241159	B	LONGWOOD AVE	AMTRAK - CSX	AC		O	2	S	7/23/2008	5.306	G	10625	$42,500,000	202		
2241169	B	LAFAYETTE AVE	AMTRAK - CSX	AC		O	1	S	12/12/2008	5.730	G	12000	$48,000,000	202		
2241170	B	TIFFANY ST	AMTRAK - CSX	AC		O	1	S	11/1/2009	5.627	G	7267	$29,068,000	202		
2241180	B	BARRETTO ST	AMTRAK - CSX	AC		O	1	S	7/25/2008	6.000	G	5313	$21,252,000	202		
2241190	B	HUNTS POINT AVE	AMTRAK - CSX	AC		O	1	S	11/7/2008	4.984	F	10049	$40,196,000	202		
2241200	B	FAILE ST	AMTRAK - CSX	AC		O	1	S	11/7/2008	5.672	G	6208	$24,832,000	202		
2241210	B	BRYANT AVE	AMTRAK - CSX	AC		O	1	S	11/10/2009	3.136	F	5300	$21,200,000	202		
2241230	B	WESTCHESTER AVE	AMTRAK - CSX	AC		O	3	S	11/23/2008	6.111	V	15600	$62,400,000	202	209	
2241259	B	204TH ST PED BRDG	METRO NORTH RR HAR	M	P	O-PED	1	C	3/4/2009	4.034	F	4700	$18,800,000	227	207	
2241269	B	E 177TH ST	AMTRAK - CSX	AC		O	3	S	11/20/2008	5.458	G	16606	$66,424,000	209		
2241270	B	E TREMONT AVE	AMTRAK - CSX	AC		O	2	S	11/19/2008	5.153	G	22300	$89,200,000	209	211	
2241329	B	WHITE PLAINS ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.797	F	6900	$27,600,000	211		
2241330	B	UNIONPORT ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.781	F	7631	$30,524,000	211		
2241369	B	WILLIAMSBRIDGE RD	AMTRAK - CSX	AC		O	2	S	11/18/2008	4.836	F	6510	$26,040,000	211		
2241380	B	PELHAM BAY PK EQUES	AMTRAK - CSX	AC	P	O-PED	1	C	3/7/2009	3.508	F	4223	$16,892,000	228		
2241390	B	SHORE RD CIRCLE	AMTRAK - CSX	AC		O	2	S	12/30/2009	3.313	F	4800	$19,200,000	228		
2241409	B	GRAND CONCOURSE	METRO NORTH RR HUD	MT		O	1	S	4/21/2008	3.859	F	14300	$57,200,000	204		
2241410	B	WALTON AVE	METRO NORTH RR HUD	M		O	1	S	4/22/2008	5.297	G	3600	$14,400,000	204		
2241420	B	GERARD AVE	METRO NORTH RR HUD	M		O	1	S	4/29/2008	5.922	G	5063	$20,252,000	204		
2241430	B	RIVER AVE	METRO NORTH RR HUD	M		O	1	S	8/5/2009	6.156	V	5040	$20,160,000	204		
2241460	B	W TREMONT AVE	METRO NORTH RR HUD	M		O	8	S	5/9/2008	4.194	F	12900	$51,600,000	205		
2241470	B	W FORDHAM RD	METRO NORTH RR HUD	M		O	4	S	8/6/2009	5.694	G	16052	$64,208,000	207		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241489	B	W 225TH ST	CSX TRASP - PUTNAM	C		O	2	S	5/2/2008	5.149	G	10900	$43,600,000	207	208	
2241490	B	W 230TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/10/2009	5.625	G	5600	$22,400,000	208		
2241509	B	W 231ST ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	10/29/2008	4.745	F	4723	$18,892,000	208		
2241510	B	W 233RD ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.275	G	3760	$15,040,000	208		
2241520	B	W 234TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.176	G	3770	$15,080,000	208		
2241550	B	E 144TH ST	METRO NORTH RR HAR	M		O	2	S	8/5/2009	6.319	V	8290	$33,160,000	201		
2241560	B	E 149TH ST	METRO NORTH RR HAR	M		O	8	S	4/21/2008	4.708	F	27900	$111,600,000	201	204	
2241590	B	CONCOURSE VILL AVE	METRO NORTH RR HAR	M		O	1	S	4/14/2008	3.875	F	12077	$48,308,000	204		
2241600	B	E 158TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	5.200	G	3400	$13,600,000	204		
2241610	B	E 161ST ST	METRO NORTH RR HAR	M		O	1	S	12/8/2009	5.050	G	6600	$26,400,000	204	203	
2241620	B	E 162ND ST	METRO NORTH RR HAR	M		O	1	S	4/14/2008	4.859	F	4700	$18,800,000	203		
2241630	B	E 165TH ST	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.200	F	16400	$65,600,000	203		
2241650	B	E 167TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	5.510	G	3363	$13,452,000	203		
2241660	B	E 168TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.859	F	4800	$19,200,000	203		
2241670	B	E 169TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.250	F	3300	$13,200,000	203		
2241680	B	E 170TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	6.333	V	3150	$12,600,000	203		
2241700	B	ST PAULS PL PED BRDG	METRO NORTH RR HAR	M		O-PED	2	C	2/10/2009	5.000	G	600	$2,400,000	203		
2241710	B	CLAREMONT PKWY	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.391	F	6300	$25,200,000	203		
2241720	B	E 173RD ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.875	F	3000	$12,000,000	203		
2241740	B	E 175TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.813	F	3600	$14,400,000	206		
2241760	B	E TREMONT AVE	METRO NORTH RR HAR	M		O	1	S	7/22/2009	6.517	V	8424	$33,696,000	206		
2241770	B	E 178TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	1	C	2/11/2009	5.159	G	700	$2,800,000	206		
2241780	B	E 179TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	6	C	2/11/2009	5.797	G	700	$2,800,000	206		
2241790	B	E 180TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.906	F	5000	$20,000,000	206		
2241800	B	E 183TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.109	F	3600	$14,400,000	206		
2241810	B	E 188TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.063	F	5300	$21,200,000	206		
2241820	B	E 187TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.438	F	3800	$15,200,000	206		
2241839	B	E 189TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	6.467	V	43157	$172,628,000	206	207	
2241840	B	BEDFORD PARK BLVD	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.594	F	6400	$25,600,000	227	207	
2241860	B	GUN HILL RD	METRO NORTH RR HAR	M		O	1	S	5/13/2008	6.531	V	9000	$36,000,000	212		
2241870	B	E 233RD ST	METRO NORTH RR HAR	M		O	1	S	5/2/2008	4.941	F	7664	$30,656,000	212	207	
2241890	B	E 241ST ST	BRP, METRO NORTH HAR	M		WO	28	S	10/9/2009	4.444	F	49500	$198,000,000	212		
2241900	B	EASTCHESTER ROAD	NYCTA-DYRE AVE LN	T		O	3	S	8/14/2008	4.667	F	13500	$54,000,000	212		
2241910	B	GUN HILL ROAD	NYCTA-DYRE AVE LN	T		O	1	S	8/14/2008	6.000	G	7500	$30,000,000	211	212	
2241930	B	BEDFORD PARK BLVD	NYCTA IND YARDS	T		O	4	S	8/12/2008	5.681	G	46300	$185,200,000	207		
2241940	B	W 205TH ST	NYCTA IND YARDS	T		O	4	S	8/14/2008	5.625	G	32508	$130,032,000	207		
2241959	B	HUTCHINSON RVR PKWY	AMTRAK - CSX	AC		O	1	S	11/14/2008	5.915	G	15444	$61,776,000	210	211	
2242010	B	EAST FORDHAM RD	BRONX RIVER			WA	1	S	5/7/2008	5.207	G	9200	$36,800,000	227		
2242029	B	SOUTHERN BLVD	EAST FORDHAM ROAD			O	2	S	3/19/2008	4.658	F	12900	$51,600,000	227		
2242030	B	CROTONA AVE	BRONX PELHAM PKWY			O	2	S	3/19/2008	5.447	G	7600	$30,400,000	206		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2242071	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.633	F	1800	$7,200,000	212		
2242072	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.967	F	1800	$7,200,000	212		
2242081	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.467	F	2800	$11,200,000	212		
2242082	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.467	F	2800	$11,200,000	212		
2242099	B	PARK ROAD (204TH ST)	BRONX RIVER			WO	1	S	6/19/2008	4.793	F	4700	$18,800,000	212		
2242100	B	BOTANICAL GARDEN ROAD	TWIN LAKES		P	WO	1	S	5/7/2008	4.900	F	2200	$8,800,000	227		
2242110	B	BOSTON ROAD	BRONX RIVER			WO	1	S	5/6/2008	4.273	F	6200	$24,800,000	227		
2242120	B	FTBG N OF RTE 1	BRONX RIVER		P	WO-PED	1	C	12/2/2008	4.000	F	1904	$7,616,000	209		
2242149	B	E TREMONT AVE	BRONX RIVER			WO	2	S	5/5/2008	4.500	F	12900	$51,600,000	206		
2242210	B	S OF ALLERTON AVE	BRONX RIVER			WO	3	S	5/27/2008	4.763	F	6200	$24,800,000	227		
2242220	B	SNUFF MILL ROAD	BRONX RIVER			WO	2	S	1/31/2008	4.395	F	4800	$19,200,000	227		
2242259	B	GRAND CONCOURSE	E 161ST ST			O	1	S	9/18/2008	6.533	V	27017	$108,068,000	204		
2242260	B	EAGLE AVE	E 161ST ST			O	1	S	3/17/2008	5.017	G	2800	$11,200,000	201	203	
2242280	B	GRAND CONCOURSE	E 167TH ST			O	2	S	8/4/2008	4.754	F	42900	$171,600,000	204		
2242299	B	GRAND CONCOURSE	E 138TH ST			O	1	S	6/4/2009	4.733	F	9500	$38,000,000	201		
2242300	B	GRAND CONCOURSE	E 170TH ST			O	2	S	4/24/2008	4.789	F	39300	$157,200,000	204		
2242319	B	GRAND CONCOURSE	E 174TH ST	T		O	1	S	3/27/2008	4.067	F	14900	$59,600,000	204		
2242329	B	GRAND CONCOURSE	E 175TH ST	T		O	1	S	8/5/2008	4.867	F	11900	$47,600,000	205		
2242330	B	GRAND CONCOURSE	E TREMONT AVE			O	1	S	10/22/2009	5.983	G	11700	$46,800,000	205		
2242340	B	GRAND CONCOURSE	EAST KINGSBRIDGE			O	2	S	9/15/2008	4.714	F	18285	$73,140,000	207		
2242350	B	EAST FORDHAM RD	GRAND CONCOURSE			O	1	S	4/8/2008	4.567	F	10300	$41,200,000	205	207	
2242360	B	GRAND CONCOURSE	BURNSIDE AVE			O	2	S	9/16/2008	4.441	F	8400	$33,600,000	205		
2242370	B	GRAND CONCOURSE	BEDFORD PARK BLVD			O	1	S	4/23/2008	4.412	F	8418	$33,672,000	207		
2242380	B	GRAND CONCOURSE	E 204TH ST			O	1	S	10/15/2009	5.484	G	9272	$37,088,000	207		
2242400	B	E 180TH ST	BRONX RIVER			WO	1	S	10/6/2008	4.810	F	4500	$18,000,000	206	227	
2242430	B	GUN HILL ROAD	BRONX BLVD			O	4	S	4/29/2008	4.772	F	9400	$37,600,000	212		
2242440	B	GUN HILL ROAD	BRONX RIVER			WO	1	S	2/29/2008	4.900	F	8700	$34,800,000	212		
2242459	B	E 233RD ST	BRONX RIVER			WO	1	S	5/2/2008	4.367	F	7000	$28,000,000	212		
2242460	B	E 233RD ST	ENTR RD BNX RVR PKWY			O	1	S	2/1/2008	4.900	F	5300	$21,200,000	212		
2243010	K	LINCOLN ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/3/2008	6.722	V	6016	$24,064,000	355		
2243020	K	PARKSIDE AVE	BMT SUBWAY, BRIGHTON	T		O	6	S	10/1/2008	4.043	F	48700	$194,800,000	314		
2243040	K	CROOKE AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/25/2009	4.105	F	6000	$24,000,000	314		
2243050	K	CATON AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/13/2009	4.500	F	20800	$83,200,000	314		
2243080	K	CHURCH AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/14/2009	4.545	F	18200	$72,800,000	314		
2243100	K	BEVERLY ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/11/2009	3.667	F	4200	$16,800,000	314		
2243110	K	CORTELYOU ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/21/2009	6.139	V	4810	$19,240,000	314		
2243120	K	DORCHESTER ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/19/2008	5.882	G	4825	$19,300,000	314		
2243130	K	DITMAS AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/22/2009	5.723	G	5150	$20,600,000	314		
2243140	K	NEWKIRK AVE	BMT SUBWAY, BRIGHTON	T		O	3	S	10/21/2009	4.544	F	4100	$16,400,000	314		
2243150	K	FOSTER AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/19/2009	4.550	F	3000	$12,000,000	314		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2243170	K	STERLING PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.500	V	2300	$9,200,000	308		
2243180	K	ST JOHNS PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.781	V	2300	$9,200,000	308		
2243190	K	LINCOLN PLACE	FRANKLIN SHUTTLE	T		O	1	S	10/15/2008	6.922	V	2460	$9,840,000	308		
2243200	K	UNION ST	FRANKLIN SHUTTLE	T		O	2	S	10/13/2008	5.043	G	4100	$16,400,000	309		
2243210	K	PRESIDENT ST	FRANKLIN SHUTTLE	T		O	2	S	10/10/2008	5.314	G	2500	$10,000,000	309		
2243220	K	CARROLL ST PED BRDG	FRANKLIN SHUTTLE	T		O-PED	3	C	9/14/2009	5.268	G	600	$2,400,000	309		
2243230	K	CROWN ST	FRANKLIN SHUTTLE	T		O	3	S	9/4/2009	5.097	G	4060	$16,240,000	309		
2243240	K	MONTGOMERY ST	FRANKLIN SHUTTLE	T		O	1	S	9/4/2009	6.275	V	2240	$8,960,000	309		
2243250	K	WASHINGTON AVE	FRANKLIN SHUTTLE	T		O	1	S	10/6/2008	6.344	V	3657	$14,628,000	309	355	
2243260	K	FLATBUSH AVE	FRANKLIN SHUTTLE	T		O	2	S	9/2/2008	4.961	F	11300	$45,200,000	309		
2243279	K	EASTERN PKWY	FRANKLIN SHUTTLE	T		O	1	S	10/14/2008	4.861	F	7700	$30,800,000	309	308	
2243280	K	6TH AVE	LIRR ATLANTIC AVE	L		O	9	S	11/23/2008	5.403	G	12276	$49,104,000	302		
2243290	K	CARLTON AVE	LIRR ATLANTIC AVE	L		O	7	S	12/6/2008	5.069	G	10823	$43,292,000	302		
2243310	K	2ND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	6.444	V	17751	$71,004,000	310		
2243320	K	3RD AVE	LIRR BAY RIDGE	N		O	4	S	8/31/2009	5.083	G	17230	$68,920,000	310		
2243330	K	4TH AVE	LIRR BAY RIDGE	NT		O	4	S	9/9/2009	5.736	G	13668	$54,672,000	310		
2243340	K	15TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	4.723	F	3614	$14,456,000	311		
2243350	K	60TH ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.267	V	3900	$15,600,000	311		
2243360	K	16TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	5.350	G	4345	$17,380,000	311		
2243370	K	17TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.824	F	3406	$13,624,000	312		
2243380	K	18TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.656	F	6006	$24,024,000	312		
2243390	K	52ND ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	6.250	V	3293	$13,172,000	312		
2243400	K	50TH ST	LIRR BAY RIDGE	N		O	2	S	9/4/2009	4.731	F	7100	$28,400,000	312		
2243410	K	MCDONALD AVE	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.047	G	2760	$11,040,000	312		
2243420	K	E 3RD ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.583	V	1840	$7,360,000	312		
2243439	K	OCEAN PKWY	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.018	G	7000	$28,000,000	312		
2243440	K	CONEY ISLAND AVE	LIRR BAY RIDGE	N		O	1	S	12/12/2008	5.234	G	3231	$12,924,000	312		
2243450	K	E 14TH ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.809	F	1775	$7,100,000	314		
2243460	K	E 15TH ST PED BRDG	LIRR BAY RIDGE	N		O-PED	3	C	9/16/2008	5.193	G	900	$3,600,000	314		
2243480	K	OCEAN AVE	LIRR BAY RIDGE	N		O	2	S	12/10/2008	4.912	F	5000	$20,000,000	314		
2243490	K	BEDFORD AVE	LIRR BAY RIDGE	N		O	6	S	12/15/2008	4.264	F	12000	$48,000,000	314		
2243500	K	NOSTRAND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	4.966	F	4320	$17,280,000	314		
2243510	K	FLATBUSH AVE	LIRR BAY RIDGE	N		O	2	S	9/16/2009	4.702	F	5900	$23,600,000	318		
2243520	K	BROOKLYN AVE	LIRR BAY RIDGE	N		O	3	S	9/11/2009	6.236	V	4500	$18,000,000	318		
2243530	K	AVENUE H	LIRR BAY RIDGE	N		O	2	S	9/10/2009	5.956	G	35100	$140,400,000	318		
2243569	K	ATLANTIC AVE	LIRR ATLANTIC AVE	L		O	75	S	9/13/2008	3.789	F	135100	$540,400,000	316	305	
2243570	K	86TH ST	BMT SEA BEACH	T		O	1	S	9/11/2008	6.078	V	12167	$48,668,000	313		
2243580	K	5TH AVE	LIRR & SEA BEACH	NT		O	4	S	12/2/2008	4.147	F	12395	$49,580,000	310		
2243590	K	6TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.250	V	14382	$57,528,000	310		
2243600	K	7TH AVE	LIRR & SEA BEACH	NT		O	7	S	12/9/2008	5.028	G	18628	$74,512,000	310		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2243610	K	8TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.153	V	10834	$43,336,000	310		
2243620	K	FORT HAMILTON PKWY	LIRR & SEA BEACH	NT		O	3	S	12/18/2008	4.797	F	14800	$59,200,000	310		
2243630	K	11TH AVE	LIRR & SEA BEACH	NT		O	5	S	12/18/2008	6.103	V	9700	$38,800,000	310		
2243640	K	13TH AVE	LIRR & SEA BEACH	NT		O	5	S	9/23/2009	4.694	F	16000	$64,000,000	310		
2243650	K	14TH AVE	LIRR BAY RIDGE	N		O	1	S	12/5/2008	6.967	V	4720	$18,880,000	311		
2243660	K	NEW UTRECHT AVE	LIRR BAY RIDGE	N		O	1	S	12/6/2008	6.217	V	2350	$9,400,000	311		
2243670	K	15TH AVE	BMT SEA BEACH	T		O	4	S	9/24/2009	6.386	V	16020	$64,080,000	311		
2243680	K	16TH AVE	BMT SEA BEACH	T		O	3	S	11/26/2008	5.370	G	6816	$27,264,000	311		
2243690	K	17TH AVE	BMT SEA BEACH	T		O	4	S	11/26/2008	6.327	V	8946	$35,784,000	311		
2243700	K	18TH AVE	BMT SEA BEACH	T		O	1	S	9/25/2009	6.632	V	5200	$20,800,000	311		
2243710	K	19TH AVE	BMT SEA BEACH	T		O	4	S	10/27/2008	4.395	F	4800	$19,200,000	311		
2243720	K	20TH AVE	BMT SEA BEACH	T		O	1	S	10/28/2008	6.673	V	12500	$50,000,000	311		
2243730	K	65TH ST	BMT SEA BEACH	T		O	4	S	9/24/2008	5.237	G	12000	$48,000,000	311		
2243740	K	BAY PKWY	BMT SEA BEACH	T		O	4	S	9/26/2008	4.921	F	16800	$67,200,000	311		
2243750	K	AVENUE O	BMT SEA BEACH	T		O	1	S	10/7/2009	5.863	G	4658	$18,632,000	311		
2243760	K	AVENUE P	BMT SEA BEACH	T		O	1	S	10/7/2009	6.605	V	5544	$22,176,000	311		
2243770	K	KINGS HIGHWAY	BMT SEA BEACH	T		O	1	S	10/8/2009	6.767	V	5032	$20,128,000	311		
2243780	K	HIGHLAWN AVE	BMT SEA BEACH	T		O	1	S	10/8/2009	6.440	V	6960	$27,840,000	311		
2243790	K	AVENUE S	BMT SEA BEACH	T		O	1	S	10/8/2009	5.967	G	5360	$21,440,000	315		
2243800	K	AVENUE T	BMT SEA BEACH	T		O	1	S	10/8/2009	6.033	V	5360	$21,440,000	311		
2243810	K	AVENUE U	BMT SEA BEACH	T		O	1	S	10/24/2008	5.725	G	5880	$23,520,000	315		
2243820	K	21ST AVE	BMT SEA BEACH	T		O	4	S	10/28/2009	3.921	F	21400	$85,600,000	311		
2243839	K	4TH AVE	NYCTA BMT TRACKS	T		O	1	S	9/18/2009	6.267	V	4440	$17,760,000	307		
2243840	K	9TH AVE	NYCTA BMT YARD	T		O	5	S	9/18/2009	6.028	V	12440	$49,760,000	312		
2243850	K	LIBERTY AVE	LIRR BAY RIDGE	N		O	3	S	10/27/2008	6.368	V	6659	$26,636,000	316		
2243860	K	GLENMORE AVE	LIRR BAY RIDGE	N		O	2	S	10/27/2008	6.559	V	5616	$22,464,000	316		
2243870	K	PITKIN AVE	LIRR BAY RIDGE	N		O	2	S	10/29/2008	6.515	V	5328	$21,312,000	316		
2243890	K	SUTTER AVE	LIRR BAY RIDGE	N		O	3	S	10/31/2008	6.542	V	5497	$21,988,000	316		
2243900	K	BLAKE AVE	LIRR BAY RIDGE LINE	N		O	3	S	12/17/2008	5.000	G	4912	$19,648,000	316		
2243910	K	LIVONIA AVE PED BRDG	LIRR BAY RIDGE LINE	N		O-PED	6	C	2/19/2009	5.000	G	2500	$10,000,000	316		
2243920	K	7TH AVE	NYCTA BMT YARD	T		O	2	S	10/16/2008	6.324	V	4700	$18,800,000	307		
2243940	K	9TH AVE	NYCTA IND SBWY	T		O	5	S	9/18/2009	4.737	F	6300	$25,200,000	312		
2244010	K	EAST DR (ENDALE ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	C	5/18/2009	4.367	F	900	$3,600,000	355		
2244020	K	WEST DR (MEADOWPORT ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	S	4/28/2009	5.321	G	2500	$10,000,000	355		
2244030	K	EAST DRIVE	BRIDLE PATH NR ZOO		P	O	1	S	4/28/2009	4.796	F	2000	$8,000,000	355		
2244040	K	EAST DR (EAST WOOD ARCH)	PED PATH NR CENTER DR		P	O	1	C	6/19/2009	4.200	F	900	$3,600,000	355		
2244050	K	CENTER DR (NETHERMEAD ARCHES)	PED PATH & STREAM		P	WO	3	S	5/1/2009	5.000	G	7400	$29,600,000	355		
2244060	K	HILL DR (CLEFT RIDGE SPAN)	PED PATH SO OF BOATHOUSE		P	O	1	C	4/10/2009	4.767	F	900	$3,600,000	355		
2244100	K	WEST FOOTBRIDGE	PROSPCT PK STREAM		P	WO-PED	1	C	12/14/2009	4.875	F	308	$1,232,000	355		
2244120	K	HILL DR (TERRACE BRDG)	PROSPECT PK LAKE		P	WO	3	S	5/19/2009	2.927	P	7800	$31,200,000	355		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2244130	K	PED NR BOATHSE (LULLWATER BRDG)	PROSPECT PK LAKE		P	WO-PED	1	C	9/10/2009	5.000	G	1260	$5,040,000	355		
2244150	K	RIDGE BLVD	SHORE RD DRIVE			O	1	S	5/13/2009	6.667	V	4350	$17,400,000	310		
2244160	K	3RD AVE	SHORE RD DRIVE			O	1	S	5/8/2009	6.727	V	4360	$17,440,000	310		
2244170	K	ATLNTC AV SVC RD E.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.474	G	3192	$12,768,000	305		
2244180	K	ATLNTC AV SVC RD W.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.105	G	5600	$22,400,000	305		
2244440	K	SOUTH OF TILLARY ST	NAVY ST			O-PED	1	C	8/20/2009	4.271	F	6200	$24,800,000	302		
2244460	K	CONDUIT BLVD NB	ATLANTIC AVE EB			O	1	S	11/15/2008	4.833	F	3800	$15,200,000	305		
2244470	K	SEELEY ST	PROSPECT AVE			O	1	S	6/7/2007	4.100	F	8482	$33,928,000	307		
2244480	K	5TH AVE	GREENWOOD CEMETERY			O	1	S	9/9/2009	4.667	F	3600	$14,400,000	307		
2245010	M	11TH AVE VIADUCT	LIRR WEST SIDE YARD	AL		O	39	S	12/30/2008	4.028	F	157500	$630,000,000	104		
224501B	M	W 33RD ST	AMTRAK 30 ST BRANCH	A		O	8	S	3/21/2008	4.611	F	16500	$66,000,000	104		
224501C	M	W 33RD ST	LAND ADJ TO AMTRAK	A		O	2	S	6/25/2009	4.417	F	4620	$18,480,000	104		
224501D	M	W 34TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	6/26/2009	4.514	F	11800	$47,200,000	104		
224501E	M	W 35TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.141	F	6500	$26,000,000	104		
224501F	M	W 36TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	12/15/2008	4.015	F	16400	$65,600,000	104		
2245040	M	MARGARET CORBIN DR	PED PATH NEAR CAFÉ		P	O	1	C	5/14/2009	4.933	F	750	$3,000,000	112		
2245050	M	MARGARET CORBIN DR	PED PATH NR NO ENTR		P	O	1	C	5/14/2009	4.800	F	750	$3,000,000	112		
2245060	M	W 37TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	11/20/2009	6.190	V	7505	$30,020,000	104		
2245070	M	W 38TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/2/2008	4.154	F	6200	$24,800,000	104		
2245080	M	W 39TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.196	F	6300	$25,200,000	104		
2245090	M	W 43RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4100	$16,400,000	104		
2245100	M	W 44TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4300	$17,200,000	104		
2245110	M	W 45TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	5.662	G	4100	$16,400,000	104		
2245120	M	W 46TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	4.412	F	4100	$16,400,000	104		
2245130	M	W 47TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/21/2008	4.721	F	4100	$16,400,000	104		
2245140	M	W 48TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/24/2008	4.618	F	4100	$16,400,000	104		
2245150	M	W 49TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/2/2008	4.426	F	4100	$16,400,000	104		
2245160	M	W 51ST ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.868	F	4300	$17,200,000	104		
2245170	M	W 52ND ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.015	G	4300	$17,200,000	104		
2245180	M	W 53RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.029	G	5100	$20,400,000	104		
2245190	M	W 58TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.706	F	4100	$16,400,000	104		
2245209	M	11TH AVE	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	4.471	F	15400	$61,600,000	104		
2245210	M	W 42ND ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/22/2008	4.619	F	9155	$36,620,000	104		
2245220	M	W 57TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/11/2008	4.765	F	9100	$36,400,000	104		
2245230	M	W 148TH ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	3	C	10/25/2008	4.033	F	1100	$4,400,000	109		
2245250	M	W 158TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	11/14/2009	6.319	V	29170	$116,680,000	112		
2245260	M	W 173RD ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	2	C	10/25/2008	4.446	F	1500	$6,000,000	112		
2245290	M	W 155TH ST PED BRDG	AMTRAK 30 ST BRANCH	A		O-PED	3	C	10/25/2008	3.292	F	800	$3,200,000	109	112	
2245300	M	INWOOD HILL PK FTBR	AMTRAK 30 ST BRANCH	A	P	O-PED	6	C	10/26/2008	4.100	F	700	$2,800,000	112		
2245319	M	E 97TH ST	METRO NORTH MAIN LN	M		O	1	S	12/31/2008	4.647	F	3200	$12,800,000	111		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2245330	M	W 41ST ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/29/2008	4.388	F	6200	$24,800,000	104		
2245340	M	W 50TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/4/2008	4.574	F	4100	$16,400,000	104		
2245350	M	W 54TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/8/2008	5.476	G	4700	$18,800,000	104		
2245360	M	W 55TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.382	G	4300	$17,200,000	104		
2245370	M	W 56TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.618	G	4400	$17,600,000	104		
2245380	M	TRANSVERSE RD #1 WB	PED PATH OPP E 66TH ST		P	O	1	S	1/23/2008	5.000	G	1500	$6,000,000	164		
2245420	M	W 65TH ST ENTR EB	BRIDLE PATH W END		P	O	1	S	2/5/2008	4.900	F	1600	$6,400,000	164		
2245440	M	W 40TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/2/2009	4.125	F	9400	$37,600,000	104		
2245460	M	PARK AVE S.B.	E 45TH ST			O	1	S	7/28/2009	4.514	F	2400	$9,600,000	105		
2245470	M	PARK AVE N.B	E 45TH ST			O	1	S	7/28/2009	4.865	F	2400	$9,600,000	105		
2245480	M	TO GWB OPP W 171ST ST	RIVERSIDE DRIVE			O	1	S	4/11/2008	5.048	G	10800	$43,200,000	112		
2246000	M	WEST DR (GREYSHOT ARCH)	PED BET 61ST & 62ST		P	O	1	S	1/28/2008	5.400	G	2500	$10,000,000	164		
2246010	M	W 62 ST PED BRDG (PINEBANK ARCH)	BRIDLE PATH		P	O-PED	1	C	7/7/2009	4.723	F	1026	$4,104,000	164		
2246030	M	E 62 ST PED BRDG (GAPSTOW BRDG)	THE POND		P	O-PED	1	C	5/29/2009	4.172	F	1400	$5,600,000	164		
2246040	M	EAST DR (INSCOPE ARCH)	PED PATH OPP E 62 ST		P	O	1	C	4/13/2009	4.400	F	1200	$4,800,000	164		
2246050	M	CENTER DR (DRIPROCK ARCH)	PED OPP 63RD ST		P	O	1	S	1/30/2008	5.133	G	2000	$8,000,000	164		
2246069	M	EAST DR (GREEN GAP ARCH)	PED BET E 63ST & E 64ST		P	O	1	S	2/6/2008	4.500	F	2700	$10,800,000	164		
2246070	M	CENTER DR (PLAYMATES ARCH)	PED PATH OPP 65TH ST		P	O	1	C	6/19/2009	4.367	F	1200	$4,800,000	164		
2246080	M	WEST DR (DALEHEAD ARCH)	BRIDLE OPP W 64TH ST		P	O	1	S	1/22/2008	4.667	F	2000	$8,000,000	164		
2246090	M	PED BRDG OPP 65 ST	TRANSVERSE RD #1		P	O-PED	1	C	7/8/2009	4.583	F	2300	$9,200,000	164		
2246100	M	CENTER DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.467	F	6000	$24,000,000	164		
2246110	M	EAST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.667	F	6000	$24,000,000	164		
2246120	M	WEST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/3/2008	4.967	F	7900	$31,600,000	164		
2246130	M	EAST DR (WILLOWDELL ARCH)	PED PATH OPP E 67TH ST		P	O	1	C	5/20/2009	4.233	F	1200	$4,800,000	164		
2246140	M	W 72 ST ENTR (RIFTSTONE ARCH)	BRIDLE PATH		P	O	1	S	1/25/2008	4.633	F	3600	$14,400,000	164		
2246150	M	72 ST CROSS DR (TERRACE BRDG)	PED PATH TO FOUNTAIN		P	O	3	S	3/14/2008	6.018	V	7300	$29,200,000	164		
2246160	M	73 ST PED BRDG (BOW BRIDGE)	THE LAKE		P	WO-PED	1	C	10/30/2009	4.171	F	1655	$6,620,000	164		
2246170	M	EAST DR (TREFOIL ARCH)	PED PATH OPP E 73RD ST		P	O	1	S	2/15/2008	5.056	G	1900	$7,600,000	164		
2246230	M	EAST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.600	F	6500	$26,000,000	164		
2246240	M	WEST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.167	F	7200	$28,800,000	164		
2246250	M	EAST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.300	F	5100	$20,400,000	164		
2246260	M	WEST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.800	F	5100	$20,400,000	164		
2246270	M	EAST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	3.967	F	7000	$28,000,000	164		
2246280	M	WEST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	4.300	F	4700	$18,800,000	164		
2246330	M	WEST DR (BALCONY BRDG)	STREAM TO THE LAKE		P	WO	1	S	2/7/2008	5.000	G	2019	$8,076,000	164		
2246340	M	W77 ST PED (LADIES POND BRDG)	STREAM TO THE LAKE		P	WO-PED	3	C	11/19/2009	4.032	F	455	$1,820,000	164		
2246350	M	EAST DR (GREYWACKE ARCH)	PED PATH OPP E 80TH ST		P	O	1	C	5/21/2009	4.000	F	750	$3,000,000	164		
2246360	M	WEST DR (WINTERDALE ARCH)	PED PATH OPP W 82 ST		P	O	1	S	2/6/2008	5.636	G	3100	$12,400,000	164		
2246380	M	W86 ST PED (SW RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	1	C	11/10/2009	4.347	F	714	$2,856,000	164		
2246390	M	E86 ST PED (SE RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	3	C	11/9/2009	4.263	F	1095	$4,380,000	164		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246400	M	PED PATH OPP E79 ST	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	4.233	F	3700	$14,800,000	164		
2246410	M	TRNSVRS RD 1 EB (DENESMOUTH ARCH)	PED PATH OPP E 65TH ST		P	O	1	S	2/8/2008	4.182	F	1739	$6,956,000	164		
2246430	M	W110 ST ENTR (MOUNTCLIFF ARCH)	PED PATH OPP W109 ST		P	O	1	S	4/25/2008	4.383	F	1200	$4,800,000	164		
2246440	M	79 TH ST PED BRDG	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	3.926	F	5900	$23,600,000	164		
2246450	M	E77 ST PED (GLADE ARCH)	PED PATH OPP E77 ST		P	O-PED	1	C	1/27/2009	4.655	F	5000	$20,000,000	164		
2246460	M	W77 ST ENTR (EAGLEVALE ARCH)	PED PATH OPP W77 ST		P	O	2	S	1/29/2008	4.263	F	5800	$23,200,000	164		
2246470	M	EAST DR (HUDDLESTONE ARCH)	THE LOCH		P	WO	1	S	2/11/2008	4.500	F	1100	$4,400,000	164		
2246489	M	W 181 ST	RAMP TO WASH BR			O	1	S	2/17/2008	4.500	F	8200	$32,800,000	112		
2246490	M	A.C. POWELL BLVD N.B.	A.C. POWELL BLVD			O	1	S	2/22/2008	4.020	F	5600	$22,400,000	110		
2246500	M	FORT TRYON PLACE	ENTR FROM RIVERSIDE DR		P	O	1	S	3/3/2008	4.333	F	6600	$26,400,000	112		
2246510	M	CORBIN PL OVERPASS	CORBIN PLACE		P	O	1	S	1/25/2008	5.000	G	2223	$8,892,000	112		
2246540	M	E 34TH ST	PARK AVE TUNNEL			OT	1	S	11/19/2008	4.117	F	36200	$144,800,000	105	106	
2246550	M	PARK AVE VIADUCT	E 42ND ST			O	10	S	10/15/2009	4.537	F	22150	$88,600,000	105		
2246560	M	TUDOR CITY PLACE	E 42ND ST			O	1	S	2/14/2008	5.133	G	6600	$26,400,000	106		
2246570	M	E42ND ST - E47TH ST	FIRST AVE TUNNEL			OT	2	S	7/13/2008	5.078	G	95000	$380,000,000	106		
2246580	BM	HIGH BRIDGE PDOVP	I87 - HARLEM RIVER	M	P	WA-PED	11	P	8/12/2002	3.759	F	34100	$136,400,000	112	204	
2246600	M	W 176TH ST PED BRDG	APPROACH TO G.W.B.			O-PED	1	C	2/6/2009	3.897	F	1200	$4,800,000	112		
2246620	M	W 128TH ST PED BRDG	3RD AVE BRDG APPR			O-PED	18	C	8/5/2009	4.000	F	2300	$9,200,000	111		
2246660	M	RIVERSIDE DRIVE	W125TH ST - W134TH ST			O	27	S	7/16/2009	4.444	F	148300	$593,200,000	109		
2246670	M	W 134 ST	TERRAIN			O	4	S	7/13/2009	4.870	F	7500	$30,000,000	109		
2246690	M	ISHAM PK VEHICULR	HARLEM RIVER INLET		P	O	1	S	7/7/2008	6.261	V	911	$3,644,000	112		
2246700	M	ISHAM PK PED BRDG	HARLEM RV INLET		P	WO-PED	1	C	1/13/2009	3.828	F	285	$1,140,000	112		
2246710	M	W 153 ST	A.C. POWELL BLVD			O	1	S	2/22/2008	4.370	F	3082	$12,328,000	110		
2246720	M	RIVERSIDE DRIVE	W 158TH ST - AMTRAK	A		O	77	S	9/30/2009	3.472	F	185658	$742,632,000	109	112	
2246970	M	RIVERSIDE DRIVE	W 96TH ST			O	3	S	7/2/2009	5.500	G	10600	$42,400,000	107		
2246980	M	RIVERSIDE DRIVE	W 138TH ST			O	1	S	2/8/2008	4.767	F	6700	$26,800,000	109		
2246990	M	E 129TH ST PED BRDG	3RD AVE BRDG RAMP			O-PED	5	C	11/2/2009	4.636	F	500	$2,000,000	111		
2247020	Q	94TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	5	C	10/8/2009	4.030	F	500	$2,000,000	404		
2247040	Q	UNION ST	LIRR PORT WASH BR	L		O	1	S	9/15/2009	6.328	V	3313	$13,252,000	407		
2247050	Q	BOWNE AVE	LIRR PORT WASH BR	L		O	1	S	9/9/2008	5.490	G	4974	$19,896,000	407		
2247060	Q	PARSONS BLVD	LIRR PORT WASH BR	L		O	1	S	9/10/2008	4.824	F	4200	$16,800,000	407		
2247070	Q	147TH ST	LIRR PORT WASH BR	L		O	1	S	9/10/2009	5.353	G	2800	$11,200,000	407		
2247080	Q	149TH ST	LIRR PORT WASH BR	L		O	1	S	9/8/2009	4.776	F	4100	$16,400,000	407		
2247090	Q	149TH PLACE	LIRR PORT WASH BR	L		O	2	S	9/9/2009	5.000	G	4300	$17,200,000	407		
2247100	Q	150TH ST	LIRR PORT WASH BR	L		O	2	S	9/4/2009	6.176	V	7830	$31,320,000	407		
2247110	Q	MURRAY ST	LIRR PORT WASH BR	L		O	1	S	9/3/2009	5.370	G	4000	$16,000,000	407		
2247120	Q	WOODSIDE AVE	LIRR MAIN LINE	L		O	3	S	10/28/2009	4.444	F	14900	$59,600,000	402		
2247130	Q	CORPORAL KENNEDY ST	LIRR PORT WASH BR	L		O	1	S	10/30/2009	6.235	V	3379	$13,516,000	411		
2247140	Q	BELL BLVD	LIRR PORT WASH BR	L		O	1	S	9/17/2009	5.780	G	4320	$17,280,000	411		
2247150	Q	65TH ST	LIRR MAIN LINE	L		O	3	S	10/26/2009	6.375	V	6344	$25,376,000	402		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2247160	Q	65TH PLACE	LIRR MAIN LINE	L		O	3	S	10/29/2009	6.441	V	8381	$33,524,000	402		
2247170	Q	DOUGLASTON PKWY	LIRR PORT WASH BR	L		O	3	S	9/11/2008	4.712	F	6300	$25,200,000	411		
2247180	Q	GRAND AVE	LIRR MAIN LINE	L		O	3	S	10/8/2008	4.660	F	7415	$29,660,000	404		
2247190	Q	55TH AVE PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/7/2009	4.309	F	13000	$52,000,000	404		
2247220	Q	80TH ROAD	LIRR MAIN LINE	L		O	3	S	10/7/2009	4.857	F	4100	$16,400,000	409		
2247230	Q	82ND AVE	LIRR MAIN LINE	L		O	3	S	10/6/2009	5.377	G	4100	$16,400,000	409		
2247240	Q	LEFFERTS BLVD	LIRR MAIN LINE	L		O	3	S	10/8/2009	5.750	G	5460	$21,840,000	409		
2247260	Q	JACKSON AVE	LIRR MONTAUK DIV	L		O	1	S	11/26/2008	6.183	V	4517	$18,068,000	402		
2247270	Q	21ST ST	LIRR N SIDE DIV	L		O	6	S	11/23/2009	5.306	G	17590	$70,360,000	402		
2247290	Q	49TH AVE	LIRR,AMT,CON NE	L		O	5	S	10/2/2009	3.958	F	20400	$81,600,000	402		
2247300	Q	THOMPSON AVE	AMTRAK & LIRR YARD	AL		O	14	S	11/19/2008	5.042	G	61280	$245,120,000	402		
2247310	Q	QUEENS BLVD	AMTRAK & LIRR YARD	AL		O	19	S	12/5/2008	6.408	V	92400	$369,600,000	402	401	
2247320	Q	HONEYWELL ST	AMTRAK & LIRR YARD	AL		O	22	S	11/11/2009	5.903	G	99036	$396,144,000	402	401	
2247330	Q	39TH ST (NORTH)	SUNNYSIDE YARD	A		O	14	S	11/3/2009	6.556	V	48200	$192,800,000	402	401	
2247370	Q	37TH AVE	CSX - HELLGATE	C		O	1	S	9/22/2009	6.447	V	6868	$27,472,000	402		
2247380	Q	ROOSEVELT AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	6.389	V	7380	$29,520,000	402	403	404
2247390	Q	41ST AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	4.942	F	4400	$17,600,000	402	404	
2247400	Q	WOODSIDE AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.033	G	8200	$32,800,000	402	404	
2247410	Q	43RD AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	4800	$19,200,000	402	404	
2247420	Q	44TH AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	5100	$20,400,000	402	404	
2247430	Q	45TH AVE	CSX TRANSPORT	C		O	1	S	10/2/2009	5.306	G	2400	$9,600,000	402	404	
2247440	Q	GRAND AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.183	V	3280	$13,120,000	405		
2247450	Q	57TH AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.073	V	2248	$8,992,000	405		
2247460	Q	CALDWELL AVE	CSX TRANSPORT	C		O	1	S	9/22/2008	6.167	V	2243	$8,972,000	405		
2247470	Q	ELIOT AVE	CSX TRANSPORT	C		O	1	S	10/5/2009	5.250	G	2960	$11,840,000	405		
2247480	Q	JUNIPER BLVD SO	CSX TRANSPORT	C		O	1	S	10/6/2009	5.000	G	9000	$36,000,000	405		
2247490	Q	69TH ST JUNPR BLVD	CSX TRANSPORT	C		O	1	S	9/22/2008	5.149	G	6175	$24,700,000	405		
2247500	Q	METROPOLITAN AVE	CSX TRANSPORT	C		O	1	S	10/6/2009	4.233	F	18650	$74,600,000	405		
2247530	Q	ANDREWS AVE	LIRR MONTAUK DIV	L		O	1	S	9/23/2009	7.000	V	1765	$7,060,000	405		
2247540	Q	60TH ST	LIRR MONTAUK DIV	L		O	2	S	10/23/2009	5.097	G	5340	$21,360,000	405		
2247550	Q	ELIOT AVE	LIRR MONTAUK DIV	L		O	2	S	9/23/2009	5.712	G	9550	$38,200,000	405		
2247570	Q	80TH ST	77TH AVE - LIRR MT	L		O	5	S	12/4/2008	5.254	G	11725	$46,900,000	405		
2247590	Q	FOREST PARK DRIVE	LIRR MONTAUK DIV	L	P	O	5	S	9/21/2009	5.333	G	6000	$24,000,000	409		
2247600	Q	PARK LANE SOUTH	LIRR MONTAUK DIV	L		O	1	S	10/9/2008	6.983	V	3024	$12,096,000	409	482	
2247620	Q	MYRTLE AVE	ABANDONED LIRR			O	3	S	1/16/2008	5.028	G	6725	$26,900,000	482	406	
2247630	Q	PED BRG NEAR UNION TPK	ABANDONED LIRR			O-PED	8	C	5/11/2009	5.359	G	900	$3,600,000	406		
2247640	Q	39TH ST (SOUTH)	AMTRAK & LIRR YARD	AL		O	9	S	11/11/2009	6.125	V	34100	$136,400,000	402		
2247650	Q	60TH RD PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/16/2009	5.000	G	2293	$9,172,000	405	406	
2247660	Q	FOREST PARK DRIVE	ABANDONED LIRR		P	O	6	S	4/21/2009	5.032	G	10000	$40,000,000	409		
2247680	Q	221ST ST	LIRR PORT WASH BR	L		O	3	S	9/16/2009	5.941	G	6050	$24,200,000	411		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2248019	Q	WOODHAVEN BLVD	ATLANTIC AVE			O	3	S	4/9/2008	4.306	F	19400	$77,600,000	409		
2248020	Q	WHITELAW PED BRDG	CONDUIT AVE			O-PED	7	C	11/12/2009	4.775	F	5500	$22,000,000	410		
2248039	Q	CROSS BAY BLVD	NASSAU EXPWY - RTE 27			O	2	S	6/30/2009	6.417	V	16544	$66,176,000	410		
2248040	Q	RAMP TO LINDEN BLVD	SO. CONDUIT AVE			O	1	S	7/18/2008	5.267	G	3352	$13,408,000	410		
2248059	Q	MOTOR PKWY (PED)	FRANCIS LEWIS BLVD		P	O-PED	2	C	6/23/2009	4.194	F	2756	$11,024,000	408		
2248060	Q	MOTOR PKWY (PED)	BELL BLVD		P	O-PED	2	C	6/23/2009	4.000	F	2648	$10,592,000	411		
2248070	Q	MOTOR PKWY (PED)	SPRINGFIELD BLVD		P	O-PED	3	C	6/17/2009	4.179	F	2940	$11,760,000	411		
2248080	Q	MOTOR PKWY (PED)	HOLLIS COURT BLVD		P	O-PED	3	C	12/3/2008	5.000	G	2670	$10,680,000	408		
2248090	Q	FLSHG MDW PK PED	COLLEGE POINT BLVD		P	O-PED	3	C	1/8/2009	4.690	F	8418	$33,672,000	407		
2248100	Q	MOTOR PKWY (PED)	73RD AVE		P	O-PED	3	C	2/10/2009	4.965	F	2640	$10,560,000	408		
2248110	Q	MOTOR PKWY (PED)	ALLEY PK PED WALK		P	O-PED	1	C	7/16/2009	4.305	F	963	$3,852,000	413		
2248129	Q	UNION TPKE	CREEDMOORE HOSP RD			O	1	S	6/30/2009	4.867	F	3500	$14,000,000	413		
2248130	Q	FLUSHING MEADOW PK PED	WILLOW LK&76TH RD		P	WO-PED	4	C	4/20/2002	1.000	C	1891	$7,564,000	481		
2248140	Q	FLUSHING MEADW PK RD	STREAM N OF LIE		P	WO	5	C	7/10/2009	4.636	F	4102	$16,408,000	481		
2248159	Q	WOODHAVEN BLVD	QUEENS BLVD			O	2	S	9/15/2008	4.288	F	11500	$46,000,000	404		
2248160	Q	ELLIOT AVE	QUEENS BLVD			O	2	S	9/15/2008	4.922	F	13785	$55,140,000	406		
2248200	Q	RUST ST	FLUSHING AVE			O	1	S	7/15/2009	5.047	G	2940	$11,760,000	405		
2248220	Q	SERVICE RD TURNAROUND	FLUSHING AVE			O	1	S	7/15/2009	5.125	G	2940	$11,760,000	405		
2248230	Q	BEACH CHANNEL DR WB	BEACH CHANNEL DR EB			O	1	S	7/15/2009	4.400	F	3600	$14,400,000	484		
2248240	Q	FLUSHING AV SERVICE RD	FLUSHING AVE			O	1	S	7/15/2009	5.250	G	2940	$11,760,000	405		
2248250	Q	102ND ST	HAWTREE BASIN			WO	3	S	8/17/2009	5.941	G	4900	$19,600,000	410		
2248260	Q	FLUSHING MDW PARK RD	MEADOW LAKE		P	WO	5	S	8/21/2009	4.745	F	4200	$16,800,000	481		
2248280	Q	HIGHLAND PK PED.	PEDESTRIAN PATH		P	O-PED	1	C	11/19/2009	3.667	F	1856	$7,424,000	405		
2248299	Q	J.R. PKWY-UNION TPKE	AUSTIN ST			O	1	S	6/2/2008	4.250	F	5900	$23,600,000	409	406	
2248300	Q	71ST AVE	COOPER AVE			O	1	S	7/13/2009	4.373	F	2800	$11,200,000	405		
2248340	Q	FOREST PARK DR	MYRTLE AVE		P	O	3	S	6/15/2009	4.984	F	5100	$20,400,000	409		
2248369	Q	ROCKAWAY BLVD	THURSTON BASIN			WO	2	S	8/20/2009	5.158	G	6000	$24,000,000	483	413	
2248379	Q	FLUSHING MDW PARK RD	AQUACADE LAKE		P	WO	5	C	7/13/2009	4.041	F	6321	$25,284,000	481		
2249040	R	TOMPKINS AVE	B&O RR (ABANDONED)			O	1	S	8/1/2008	6.047	V	5096	$20,384,000	501		
2249070	R	JOHN ST	B&O RR (ABANDONED)	O		O-PED	3	C	10/16/2009	5.648	G	5800	$23,200,000	501		
2249090	R	MORNINGSTAR ROAD	B&O RR (ABANDONED)	O		O	4	S	5/4/2009	4.593	F	7900	$31,600,000	501		
2249100	R	GRANITE AVE	B&O RR (ABANDONED)	O		O	4	S	5/13/2008	6.034	V	7300	$29,200,000	501		
2249110	R	LAKE AVE	B&O RR (ABANDONED)	O		O	3	S	4/30/2009	5.333	G	5900	$23,600,000	501		
2249120	R	SIMONSON AVE	B&O RR (ABANDONED)	O		O	3	S	4/24/2009	5.981	G	5819	$23,276,000	501		
2249130	R	VAN NAME AVE	B&O RR (ABANDONED)	O		O	3	S	4/23/2009	5.254	G	5474	$21,896,000	501		
2249140	R	VAN PELT AVE	B&O RR (ABANDONED)	O		O	3	S	4/28/2009	5.644	G	5000	$20,000,000	501		
2249160	R	DE HART AVE	B&O RR (ABANDONED)	O		O	4	S	4/27/2009	6.500	V	6700	$26,800,000	501		
2249170	R	UNION AVE	B&O RR (ABANDONED)	O		O	4	S	4/28/2009	5.426	G	6500	$26,000,000	501		
2249180	R	HARBOR ROAD	B&O RR (ABANDONED)	O		O	4	S	6/20/2009	6.322	V	5778	$23,112,000	501		
2249200	R	SOUTH AVE	B&O RR (ABANDONED)	O		O	3	S	6/20/2009	6.745	V	8322	$33,288,000	501		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2249210	R	MAIN ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	3/21/2009	4.164	F	400	$1,600,000	503		
2249230	R	TRACY AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	6/8/2009	3.681	F	200	$800,000	503		
2249240	R	ARTHUR KILL ROAD	SIRT SOUTH SHORE	S		O	1	S	11/13/2008	4.611	F	3650	$14,600,000	503		
2249250	R	BETHEL AV PED BRDG	SIRT SOUTH SHORE	S		O-PED	12	C	4/1/2009	3.525	F	500	$2,000,000	503		
2249269	R	PAGE AVE	SIRT SOUTH SHORE	S		O	4	S	8/25/2009	6.347	V	30710	$122,840,000	503		
2249270	R	RICHMOND VALLY ROAD	SIRT SOUTH SHORE	S		O	4	S	8/24/2009	5.284	G	9440	$37,760,000	503		
2249280	R	CHAMP COURT PED BRDG	SIRT SOUTH SHORE	S		O-PED	7	C	3/31/2009	4.393	F	200	$800,000	503		
2249290	R	SEGUINE AVE	SIRT SOUTH SHORE	S		O	1	S	10/19/2009	6.016	V	3250	$13,000,000	503		
2249300	R	HUGUENOT AVE	SIRT SOUTH SHORE	S		O	2	S	10/20/2009	4.864	F	4900	$19,600,000	503		
2249320	R	ALBEE AVE	SIRT SOUTH SHORE	S		O	3	S	10/21/2009	4.623	F	6500	$26,000,000	503		
2249330	R	ANNADALE ROAD	SIRT SOUTH SHORE	S		O	2	S	8/18/2009	4.576	F	4500	$18,000,000	503		
2249350	R	NELSON AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	3/1/2009	4.115	F	300	$1,200,000	503		
2249360	R	GIFFORDS LANE	SIRT SOUTH SHORE	S		O	1	S	11/12/2008	5.781	G	3042	$12,168,000	503		
2249370	R	GREAVES AVE	SIRT SOUTH SHORE	S		O	1	S	8/26/2009	6.750	V	2650	$10,600,000	503		
2249380	R	GUYON AVE	SIRT SOUTH SHORE	S		O	3	S	8/27/2009	4.869	F	6900	$27,600,000	503		
2249390	R	CEDARVIEW AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	2/22/2009	4.077	F	600	$2,400,000	503		
2249400	R	BEACH AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.576	G	3700	$14,800,000	502		
2249410	R	ROSS AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.379	G	3800	$15,200,000	502		
2249420	R	ROSE AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.591	G	3800	$15,200,000	502		
2249430	R	NEW DORP LANE	SIRT SOUTH SHORE	S		O	2	S	11/4/2009	4.903	F	7600	$30,400,000	502		
2249440	R	BANCROFT AVE	SIRT SOUTH SHORE	S		O	3	S	11/4/2009	5.361	G	5900	$23,600,000	502		
2249450	R	FREMONT AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	4/3/2009	3.745	F	800	$3,200,000	502		
2249460	R	LINCOLN AVE	SIRT SOUTH SHORE	S		O	1	S	11/4/2009	5.276	G	4500	$18,000,000	502		
2249470	R	MIDLAND AVE	SIRT SOUTH SHORE	S		O	1	S	11/25/2009	5.466	G	3000	$12,000,000	502		
2249480	R	FINGERBOARD ROAD	SIRT SOUTH SHORE	S		O	2	S	11/25/2009	6.542	V	5100	$20,400,000	502		
2249490	R	CLOVE ROAD	SIRT SOUTH SHORE	S		O	3	S	11/10/2008	6.097	V	5104	$20,416,000	502		
2249510	R	TOMPKINS AVE	WILLOW AVE, SIRT	S		O	2	S	11/15/2008	5.567	G	5378	$21,512,000	501		
2249520	R	HANNAH ST	SIRT SOUTH SHORE	S		O	10	S	9/25/2009	4.763	F	10020	$40,080,000	501		
2249530	R	MINTHORNE ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	26	C	3/30/2009	4.755	F	1600	$6,400,000	501		
2249580	R	BELFIELD AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	4/2/2009	4.098	F	400	$1,600,000	503		
2249710	R	WEST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.568	F	899	$3,596,000	501		
2249720	R	EAST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.343	F	899	$3,596,000	501		
2249730	R	BRIDGE OVER DAM	N.END CLOVE LAKE		P	WO-PED	1	C	10/2/2009	3.784	F	972	$3,888,000	501		
2249760	R	MARTLINGS AVE	RICHMOND LAKE DAM			WO	2	S	6/2/2009	4.600	F	7000	$28,000,000	501		
2249770	R	S OF BROOKS LAKE	STREAM IN PARK		P	WO-PED	3	C	12/17/2009	5.000	G	696	$2,784,000	501		
2249780	R	FOOTBRIDGE	BROOKS LAKE DAM		P	WO-PED	1	C	11/17/2009	3.967	F	800	$3,200,000	501		
2249790	R	FB S OF FOREST AV	STREAM IN PARK		P	WO-PED	3	C	11/10/2009	4.814	F	658	$2,632,000	501		
2249800	R	FOREST AVE	CLOVE LAKES PK STREAM		P	WO	1	S	11/4/2009	4.867	F	1600	$6,400,000	501		
2249810	R	HYLAN BLVD	LEMON CREEK			WO	1	S	4/25/2008	6.406	V	11400	$45,600,000	503		
2249820	R	ARTHUR KILL ROAD	ARTHUR KILL STREAM			WO	1	S	5/8/2009	4.286	F	2000	$8,000,000	503		

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2249840	R	TOMPKINS AVE	GREENFIELD AVE			O	1	S	4/7/2008	5.106	G	2690	$10,760,000	501		
2249860	R	SLATER BLVD	NEW CREEK			WO	1	S	5/6/2009	5.673	G	2037	$8,148,000	502		
2249870	R	TRAVIS AVE	MAIN CREEK			WO	1	S	9/15/2009	5.733	G	1700	$6,800,000	502		
2249880	R	CHELSEA ROAD	SAWMILL CREEK			WO	1	S	5/11/2009	6.816	V	2205	$8,820,000	502		
2257569	M	MILLER HIGHWAY	TERRAIN			A	64	S	10/19/2009	4.803	F	264190	$1,056,760,000	104	107	
2266129	Q	DOUGLASTON PKWY	BCIP SB			A	1	S	4/1/2008	4.592	F	4400	$17,600,000	411		
2266139	Q	DOUGLASTON PKWY	BCIP NB			A	1	S	3/25/2008	4.551	F	6400	$25,600,000	411		
2266149	Q	HEMPSTEAD AVE	BCIP RAMP NB			A	2	S	3/10/2008	4.190	F	9500	$38,000,000	413		
2266160	Q	678I SB TO BCIP EB	ACCESS RD FROM 678I			A	1	S	8/26/2009	3.984	F	2300	$9,200,000	407		
2266229	M	HHP	PED UNDERPASS @ 148 ST			A	1	S	2/19/2008	5.476	G	1840	$7,360,000	109		
2266230	M	HHP NB	PED UNDERPASS INWD PK			A	1	S	1/23/2008	5.286	G	800	$3,200,000	112		
2266240	M	HHP SB	PED UNDERPASS INWD PK			A	1	S	1/24/2008	5.571	G	1100	$4,400,000	112		
2266540	B	278I	BRUCKNER BLVD			A	2	S	7/8/2009	4.565	F	32900	$131,600,000	201		
226672A	M	W 31ST ST	AMTRAK LAYUP TRACKS	A		O	9	S	12/29/2008	3.619	F	8800	$35,200,000	104		
2266770	Q	BCIP	LAURELTON PKWY			A	1	S	3/7/2008	5.250	G	9508	$38,032,000	109		
2267130	M	RIVERSIDE DRIVE	W 145TH ST			O	1	S	6/22/2009	4.867	F	5800	$23,200,000	109		
2267160	Q	ROOSEVELT AVE	FLUSHING MDW PK ROAD			O	4	S	8/12/2009	4.873	F	7280	$29,120,000	408		
2267199	Q	FRANCIS LEWIS BLVD	CUNNINGHAM PK RD			O	1	S	4/9/2009	5.033	G	7085	$28,340,000	103		
2267240	M	HRD RAMP TO GWB	HARLEM RIVER DR SB			A	55	S	10/9/2009	3.431	F	122900	$491,600,000	112		
2267250	M	HHP	AMTRAK - W96TH ST	A		A	55	S	11/25/2008	3.710	F	40000	$160,000,000	107		
2267380	M	WEST STREET	RECTOR ST			AT	1	S	11/19/2009	5.033	G	25760	$103,040,000	101		
2267717	M	79 ST PED PLAZA	79 ST BT BASIN GAR		P	A	10	S	5/1/2009	4.519	F	27400	$109,600,000	107		
2267718	M	79 ST TRAFFIC CIRC	79 ST PED PLAZA		P	A	34	S	5/8/2009	3.885	F	24130	$96,520,000	107		
226771A	M	79 ST RAMP TO HHP	79 ST BT BASIN GAR		P	AR	4	S	5/11/2009	4.221	F	3131	$12,524,000	107		
226771B	M	79 ST RAMP TO GAR	79 ST BT BASIN GAR		P	AR	21	S	5/1/2009	4.532	F	8989	$35,956,000	107		
226771C	M	GAR RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	21	S	5/13/2009	4.565	F	9095	$36,380,000	107		
226771D	M	SB HHP RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	4	S	5/15/2009	4.516	F	2601	$10,404,000	107		
2267860	K	BROOKLYN BR APPROACH	STORAGE (SANDS ST)			O	1	S	7/31/2008	4.607	F	6490	$25,960,000	302		
2268350	K	BROOKLYN PROMENADE	278I EB (BQE)		P	A-PED	35	C	9/28/2008	3.643	F	46184	$184,736,000	302		
2268480	M	CHAMBERS ST PED BRDG	RTE 9A - WEST ST			O-PED	10	C	2/20/2009	5.358	G	3344	$13,376,000	101		
2268497	K	278I W.B. (B.Q.E.)	FURMAN ST			A	45	S	7/14/2009	4.381	F	86406	$345,624,000	302		
2268498	K	278I E.B. (B.Q.E.)	278I WB (BQE)			A	69	S	7/17/2009	3.965	F	133708	$534,832,000	302		
2268507	K	278I W.B. (B.Q.E.)	YORK ST			A	6	S	5/26/2009	4.071	F	10388	$41,552,000	302		
2268508	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	11	S	5/26/2009	4.034	F	20529	$82,116,000	302		
2268517	K	278I W.B. (B.Q.E.)	FURMAN ST			A	7	S	6/29/2009	3.882	F	10988	$43,952,000	302		
2268518	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	5	S	7/2/2009	4.214	F	9275	$37,100,000	302		
2268650	M	FDR NB E42ND TO E49TH ST	EAST RIVER			A	119	S	10/20/2009	4.075	F	30767	$123,068,000	106		
2268760	M	PS-5 PED BRDG	TENTH AVE			O-PED	5	C	1/14/2009	4.735	F	1500	$6,000,000	112		
2268770	Q	SPRINGFIELD BLVD	EQUES. PATH (ABAND.)			O	1	S	4/20/2009	4.667	F	1470	$5,880,000	111		
2268920	R	AMBOY ROAD	LEMON CREEK			WO	1	S	4/22/2008	6.500	V	1310	$5,240,000	207		

INVENTORY SORTED BY B.I.N.

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2268930	M	MORRIS ST PED BRDG	BKLN-BATTERY TUNN PLZ			A-PED	3	C	2/17/2009	3.443	F	1200	$4,800,000	101		
2269030	B	MATTHEWSON ROAD	MAC CRACKEN AVE			O	15	S	12/26/2008	4.544	F	14880	$59,520,000	205		
2269190	M	W 70TH ST	AMTRAK	A		O	3	S	11/19/2009	5.806	G	17258	$69,032,000	107		
2269210	M	W 68TH ST	AMTRAK	A		O	3	S	11/24/2009	6.780	V	5382	$21,528,000	107		
2269240	M	RIVERSIDE DRIVE	W. 155TH ST			O	1	S	6/23/2009	4.640	F	2780	$11,120,000	109	112	
2269260	K	W. 8TH ST PED BRDG	SURF AVE.		P	O-PED	39	C	3/11/2009	3.130	F	14742	$58,968,000	313		
2269600	K	ERSKINE ST	BSHP			A	1	S	11/13/2008	5.938	G	8258	$33,032,000	305		
2269730	R	PARKING EXIT RAMP	SIRT	S	F	O	10	S	12/4/2009	4.028	F	20727	$82,908,000	501		
2269740	R	BUS STATION NORTH	SIRT	S	F	O	12	S	12/4/2009	3.980	F	64605	$258,420,000	501		
2269750	R	BUS STATION SOUTH	SIRT	S	F	O	12	S	12/10/2009	4.720	F	154688	$618,752,000	501		
2269760	R	NORTH RAMP	SIRT	S	F	O	9	S	11/16/2009	4.042	F	17589	$70,356,000	501		
2269770	R	BUS STA ENTR RAMP	SIRT	S	F	O	19	S	12/26/2008	4.181	F	39333	$157,332,000	501		
2269780	R	PARKING ENTR RAMP	SIRT	S	F	O	3	S	12/18/2008	4.986	F	8589	$34,356,000	501		
2269790	R	BUS STATION EXIT RAMP	SIRT	S	F	O	7	S	12/26/2008	4.722	F	28721	$114,884,000	501		
2269820	M	E 81 ST PED BRDG	FDR DRIVE N.B.		P	A-PED	3	C	10/26/2008	3.149	F	900	$3,600,000	108		
2270030	B	E 156TH ST	ACCESS TO HOUSING		ED	O	16	S	10/16/2009	3.821	F	49696	$198,784,000	204		
2270170	R	SI FERRY PED BRDG	PARKING LOT EXIT RDWY		F	O-PED	5	C	3/23/2009	3.936	F	1750	$7,000,000	501		
2270180	R	BOROUGH PLACE - RAMP A	SN ISLAND RAILWAY	S	F	O	1	S	12/29/2005	4.938	F	1250	$5,000,000	501		
2270250	B	BROOKE AVE	CSX TRANS - PT MORRIS			O	1	S	6/29/2009	3.800	F	21035	$84,140,000	201		
2300130	Q	ROCKAWAY BLVD	HOOK CREEK			WO	3	S	8/19/2009	6.271	V	18302	$73,208,000	112		
7703720	Q	216TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	6	C	10/25/2009	3.556	F	400	$1,600,000	411		
7705510	Q	167TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	3	C	10/9/2009	3.902	F	600	$2,400,000	407		
M00001	M	W191ST ST PED TNL	BROADWAY - IRT #1 SUBWAY			O-PED	1	C	1/20/2009	4.556	F	2000	$8,000,000	112		
M00003	M	HHP ON/OFF RMP-79TH ST SO. SIDE	PED PATH SO. OF 79TH ST			A	1	C	5/27/2009	4.067	F	900	$3,600,000	107		
M00004	M	HHP ON/OFF RMP-79TH ST NO. SIDE	PED PATH NO. OF 79TH ST			A	1	C	6/2/2009	5.000	G	900	$3,600,000	107		
Q00002	Q	BCIP	PATH OPP. 88TH RD			A	1	C	6/30/2009	4.667	F	1200	$4,800,000	413		
		785 OPEN BRIDGES				OPEN SPANS 4,446				OPEN SF		14,420,919	$57,691,240,000			

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241129	B	E 149TH ST	AMTRAK - CSX	AC		O	2	S	12/12/2008	4.620	F	18258	$73,032,000	201	202	
2241040	B	THIRD AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/28/2008	4.563	F	2700	$10,800,000	201	203	
2242260	B	EAGLE AVE	E 161ST ST			O	1	S	3/17/2008	5.017	G	2800	$11,200,000	201	203	
2241560	B	E 149TH ST	METRO NORTH RR HAR	M		O	8	S	4/21/2008	4.708	F	27900	$111,600,000	201	204	
224005B	B	TO BRUCKNER BLVD	RELIEF			OR	5	S	11/4/2009	4.028	F	12100	$48,400,000	201		
224006A	B	FROM BRUCKNER BLVD	RELIEF			OR	5	S	10/6/2009	6.817	V	14037	$56,148,000	201		
2241000	B	WESTCHESTER AVE	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	5.128	G	1740	$6,960,000	201		
2241010	B	E 156TH STREET	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	4.556	F	2400	$9,600,000	201		
2241050	B	E 149TH ST/JACKSON AVE	CSX TRANS - PT MORRIS	C		O	1	S	6/30/2008	4.850	F	65000	$260,000,000	201		
2241060	B	ST. MARYS & CONCORD	CSX TRANS - PT MORRIS	C		O	1	S	9/12/2008	5.333	G	4500	$18,000,000	201		
2241070	B	WALES AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/17/2008	6.567	V	2535	$10,140,000	201		
2241080	B	SOUTHERN BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	4.259	F	3900	$15,600,000	201		
2241099	B	BRUCKNER BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	6.583	V	6700	$26,800,000	201		
2241550	B	E 144TH ST	METRO NORTH RR HAR	M		O	2	S	8/5/2009	6.319	V	8290	$33,160,000	201		
2242299	B	GRAND CONCOURSE	E 138TH ST			O	1	S	6/4/2009	4.733	F	9500	$38,000,000	201		
2266540	B	278I	BRUCKNER BLVD			A	2	S	7/8/2009	4.565	F	32900	$131,600,000	201		
2270250	B	BROOKE AVE	CSX TRANS - PT MORRIS			O	1	S	6/29/2009	3.800	F	21035	$84,140,000	201		
2066671	B	BRUCKNER EXPWY SB	BRONX RIVER			WMA	3	S	11/3/2009	5.222	G	12400	$49,600,000	202	209	
2066672	B	BRUCKNER EXPWY NB	BRONX RIVER			WMA	8	S	7/19/2007	4.567	F	22300	$89,200,000	202	209	
2240180	B	WESTCHESTER AVE	BRONX RIVER			WO	1	S	9/18/2009	4.765	F	5476	$21,904,000	202	209	
2241230	B	WESTCHESTER AVE	AMTRAK - CSX	AC		O	3	S	11/23/2008	6.111	V	15600	$62,400,000	202	209	
2075351	B	BRUCKNER EXPWY SB	AMTRAK - CSX	AC		A	1	S	11/25/2008	3.625	F	11600	$46,400,000	202		
2075352	B	BRUCKNER EXPWY NB	AMTRAK - CSX	AC		A	1	S	11/10/2009	2.875	P	10900	$43,600,000	202		
2076929	B	BRUCKNER EXPWY	CSX - HUNTS POINT	C		A	1	S	9/30/2009	4.700	F	3800	$15,200,000	202		
2241139	B	LEGGETT AVE	AMTRAK - CSX	AC		O	3	S	12/11/2008	4.690	F	41551	$166,204,000	202		
2241159	B	LONGWOOD AVE	AMTRAK - CSX	AC		O	2	S	7/23/2008	5.306	G	10625	$42,500,000	202		
2241169	B	LAFAYETTE AVE	AMTRAK - CSX	AC		O	1	S	12/12/2008	5.730	G	12000	$48,000,000	202		
2241170	B	TIFFANY ST	AMTRAK - CSX	AC		O	1	S	11/1/2009	5.627	G	7267	$29,068,000	202		
2241180	B	BARRETTO ST	AMTRAK - CSX	AC		O	1	S	7/25/2008	6.000	G	5313	$21,252,000	202		
2241190	B	HUNTS POINT AVE	AMTRAK - CSX	AC		O	1	S	11/7/2008	4.984	F	10049	$40,196,000	202		
2241200	B	FAILE ST	AMTRAK - CSX	AC		O	1	S	11/7/2008	5.672	G	6208	$24,832,000	202		
2241210	B	BRYANT AVE	AMTRAK - CSX	AC		O	1	S	11/10/2009	3.136	F	5300	$21,200,000	202		
2241020	B	E 161ST STREET	CSX TRANS - PT MORRIS	C		O	1	S	5/12/2008	6.700	V	12800	$51,200,000	203		
2241030	B	E 163RD STREET	CSX TRANS - PT MORRIS	C		O	1	S	4/11/2008	4.796	F	3200	$12,800,000	203		
2241110	B	MELROSE AVE	CSX TRANS - PT MORRIS	C		O	8	S	8/24/2009	5.611	G	37854	$151,416,000	203		
2241620	B	E 162ND ST	METRO NORTH RR HAR	M		O	1	S	4/14/2008	4.859	F	4700	$18,800,000	203		
2241630	B	E 165TH ST	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.200	F	16400	$65,600,000	203		
2241650	B	E 167TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	5.510	G	3363	$13,452,000	203		
2241660	B	E 168TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.859	F	4800	$19,200,000	203		
2241670	B	E 169TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.250	F	3300	$13,200,000	203		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241680	B	E 170TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	6.333	V	3150	$12,600,000	203		
2241700	B	ST PAULS PL PED BRDG	METRO NORTH RR HAR	M		O-PED	2	C	2/10/2009	5.000	G	600	$2,400,000	203		
2241710	B	CLAREMONT PKWY	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.391	F	6300	$25,200,000	203		
2241720	B	E 173RD ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.875	F	3000	$12,000,000	203		
2241610	B	E 161ST ST	METRO NORTH RR HAR	M		O	1	S	12/8/2009	5.050	G	6600	$26,400,000	204	203	
2076640	B	DEPOT PLACE	METRO NORTH RR HUD	CM		O	11	S	8/12/2009	5.083	G	26566	$106,264,000	204		
2241409	B	GRAND CONCOURSE	METRO NORTH RR HUD	MT		O	1	S	4/21/2008	3.859	F	14300	$57,200,000	204		
2241410	B	WALTON AVE	METRO NORTH RR HUD	M		O	1	S	4/22/2008	5.297	G	3600	$14,400,000	204		
2241420	B	GERARD AVE	METRO NORTH RR HUD	M		O	1	S	4/29/2008	5.922	G	5063	$20,252,000	204		
2241430	B	RIVER AVE	METRO NORTH RR HUD	M		O	1	S	8/5/2009	6.156	V	5040	$20,160,000	204		
2241590	B	CONCOURSE VILL AVE	METRO NORTH RR HAR	M		O	1	S	4/14/2008	3.875	F	12077	$48,308,000	204		
2241600	B	E 158TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	5.200	G	3400	$13,600,000	204		
2242259	B	GRAND CONCOURSE	E 161ST ST			O	1	S	9/18/2008	6.533	V	27017	$108,068,000	204		
2242280	B	GRAND CONCOURSE	E 167TH ST			O	2	S	8/4/2008	4.754	F	42900	$171,600,000	204		
2242300	B	GRAND CONCOURSE	E 170TH ST			O	2	S	4/24/2008	4.789	F	39300	$157,200,000	204		
2242319	B	GRAND CONCOURSE	E 174TH ST	T		O	1	S	3/27/2008	4.067	F	14900	$59,600,000	204		
2270030	B	E 156TH ST	ACCESS TO HOUSING		ED	O	16	S	10/16/2009	3.821	F	49696	$198,784,000	204		
2242350	B	EAST FORDHAM RD	GRAND CONCOURSE			O	1	S	4/8/2008	4.567	F	10300	$41,200,000	205	207	
2241460	B	W TREMONT AVE	METRO NORTH RR HUD	M		O	8	S	5/9/2008	4.194	F	12900	$51,600,000	205		
2242329	B	GRAND CONCOURSE	E 175TH ST	T		O	1	S	8/5/2008	4.867	F	11900	$47,600,000	205		
2242330	B	GRAND CONCOURSE	E TREMONT AVE			O	1	S	10/22/2009	5.983	G	11700	$46,800,000	205		
2242360	B	GRAND CONCOURSE	BURNSIDE AVE			O	2	S	9/16/2008	4.441	F	8400	$33,600,000	205		
2269030	B	MATTHEWSON ROAD	MAC CRACKEN AVE			O	15	S	12/26/2008	4.544	F	14880	$59,520,000	205		
2241839	B	E 189TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	6.467	V	43157	$172,628,000	206	207	
2242400	B	E 180TH ST	BRONX RIVER			WO	1	S	10/6/2008	4.810	F	4500	$18,000,000	206	227	
2241740	B	E 175TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.813	F	3600	$14,400,000	206		
2241760	B	E TREMONT AVE	METRO NORTH RR HAR	M		O	1	S	7/22/2009	6.517	V	8424	$33,696,000	206		
2241770	B	E 178TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	1	C	2/11/2009	5.159	G	700	$2,800,000	206		
2241780	B	E 179TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	6	C	2/11/2009	5.797	G	700	$2,800,000	206		
2241790	B	E 180TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.906	F	5000	$20,000,000	206		
2241800	B	E 183TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.109	F	3600	$14,400,000	206		
2241810	B	E 188TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.063	F	5300	$21,200,000	206		
2241820	B	E 187TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.438	F	3800	$15,200,000	206		
2242030	B	CROTONA AVE	BRONX PELHAM PKWY			O	2	S	3/19/2008	5.447	G	7600	$30,400,000	206		
2242149	B	E TREMONT AVE	BRONX RIVER			WO	2	S	5/5/2008	4.500	F	12900	$51,600,000	206		
2241489	B	W 225TH ST	CSX TRASP - PUTNAM	C		O	2	S	5/2/2008	5.149	G	10900	$43,600,000	207	208	
2230270	B	MOSHOLU PARKWAY	WEBSTER AVE			A	1	S	6/17/2009	5.422	G	8480	$33,920,000	207		
2230287	B	JEROME AVE	MOSHOLU PARKWAY	T		A	3	S	5/18/2009	4.711	F	11800	$47,200,000	207		
2241470	B	W FORDHAM RD	METRO NORTH RR HUD	M		O	4	S	8/6/2009	5.694	G	16052	$64,208,000	207		
2241930	B	BEDFORD PARK BLVD	NYCTA IND YARDS	T		O	4	S	8/12/2008	5.681	G	46300	$185,200,000	207		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241940	B	W 205TH ST	NYCTA IND YARDS	T		O	4	S	8/14/2008	5.625	G	32508	$130,032,000	207		
2242340	B	GRAND CONCOURSE	EAST KINGSBRIDGE			O	2	S	9/15/2008	4.714	F	18285	$73,140,000	207		
2242370	B	GRAND CONCOURSE	BEDFORD PARK BLVD			O	1	S	4/23/2008	4.412	F	8418	$33,672,000	207		
2242380	B	GRAND CONCOURSE	E 204TH ST			O	1	S	10/15/2009	5.484	G	9272	$37,088,000	207		
2229440	B	HHP	KAPPOCK ST			A	1	S	8/25/2009	4.931	F	3900	$15,600,000	208		
2229450	B	232ND ST	HHP			A	2	S	8/26/2009	5.026	G	4900	$19,600,000	208		
2229460	B	236TH ST PED BRDG	HHP			A-PED	3	C	6/4/2009	4.607	F	2500	$10,000,000	208		
2229470	B	239TH ST	HHP			A	2	S	5/27/2009	5.368	G	6100	$24,400,000	208		
2229480	B	MANHATTAN COLL PKWY	HHP			A	3	S	5/26/2009	5.368	G	6200	$24,800,000	208		
2229490	B	246TH ST	HHP			A	2	S	5/22/2009	4.947	F	5600	$22,400,000	208		
2229500	B	252ND ST	HHP			A	2	S	2/28/2008	5.474	G	4500	$18,000,000	208		
2229510	B	RIVERDALE AVE	HHP			A	2	S	8/25/2009	4.474	F	5200	$20,800,000	208		
2229520	B	FIELDSTON ROAD	HHP			A	1	S	8/20/2009	5.500	G	6600	$26,400,000	208		
2229530	B	HHP	BROADWAY			A	1	S	8/20/2009	4.660	F	7500	$30,000,000	208		
2241490	B	W 230TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/10/2009	5.625	G	5600	$22,400,000	208		
2241509	B	W 231ST ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	10/29/2008	4.745	F	4723	$18,892,000	208		
2241510	B	W 233RD ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.275	G	3760	$15,040,000	208		
2241520	B	W 234TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.176	G	3770	$15,080,000	208		
2066720	B	E 174TH ST	SHERIDAN EXPWY/AMTRAK	A		A	13	S	10/30/2008	4.125	F	35573	$142,292,000	209	203	
2241270	B	E TREMONT AVE	AMTRAK - CSX	AC		O	2	S	11/19/2008	5.153	G	22300	$89,200,000	209	211	
1066510	B	BRUCKNER EXP.(2066510)	WESTCHESTER CREEK			WMA	17	S	11/2/2009	3.597	F	39400	$157,600,000	209		
206672A	B	174TH ST-NTH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	4.875	F	1800	$7,200,000	209		
206672B	B	174TH ST-STH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	5.209	G	1900	$7,600,000	209		
2241269	B	E 177TH ST	AMTRAK - CSX	AC		O	3	S	11/20/2008	5.458	G	16606	$66,424,000	209		
2242120	B	FTBG N OF RTE 1	BRONX RIVER		P	WO-PED	1	C	12/2/2008	4.000	F	1904	$7,616,000	209		
2075837	B	WESTCHESTER AVE	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	4.333	F	15858	$63,432,000	210	211	
2075849	B	BRONX PELHAM PKWY	HUTCHINSON RVR PKWY			A	2	S	6/17/2008	3.974	F	17600	$70,400,000	210	211	
2241959	B	HUTCHINSON RVR PKWY	AMTRAK - CSX	AC		O	1	S	11/14/2008	5.915	G	15444	$61,776,000	210	211	
2075859	B	HUTCHINSON RVR PKWY	HUTCHINSON RIVER			WMA	7	S	12/18/2009	4.859	F	60500	$242,000,000	210	228	
2075820	B	E TREMONT AVE	HUTCHINSON RVR PKWY			A	2	S	12/18/2007	4.472	F	10200	$40,800,000	210		
2076109	B	BE NB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	9/8/2009	4.632	F	7800	$31,200,000	210		
2076129	B	BE SB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	5.105	G	7100	$28,400,000	210		
2241910	B	GUN HILL ROAD	NYCTA-DYRE AVE LN	T		O	1	S	8/14/2008	6.000	G	7500	$30,000,000	211	212	
2229560	B	BRONX PELHAM PKWY	AMTRAK - CSX	AC		A	3	S	11/17/2008	4.722	F	24591	$98,364,000	211		
2241329	B	WHITE PLAINS ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.797	F	6900	$27,600,000	211		
2241330	B	UNIONPORT ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.781	F	7631	$30,524,000	211		
2241369	B	WILLIAMSBRIDGE RD	AMTRAK - CSX	AC		O	2	S	11/18/2008	4.836	F	6510	$26,040,000	211		
2241870	B	E 233RD ST	METRO NORTH RR HAR	M		O	1	S	5/2/2008	4.941	F	7664	$30,656,000	212	207	
1067150	B	NEREID AVE (2241880)	BRONX RIVER PKWY	M		O	10	S	12/16/2009	4.632	F	57750	$231,000,000	212		
2229579	B	BOSTON POST ROAD	HUTCHINSON RIVER			WO	14	S	6/25/2009	4.194	F	95700	$382,800,000	212		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241860	B	GUN HILL RD	METRO NORTH RR HAR	M		O	1	S	5/13/2008	6.531	V	9000	$36,000,000	212		
2241890	B	E 241ST ST	BRP, METRO NORTH HAR	M		WO	28	S	10/9/2009	4.444	F	49500	$198,000,000	212		
2241900	B	EASTCHESTER ROAD	NYCTA-DYRE AVE LN	T		O	3	S	8/14/2008	4.667	F	13500	$54,000,000	212		
2242071	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.633	F	1800	$7,200,000	212		
2242072	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.967	F	1800	$7,200,000	212		
2242081	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.467	F	2800	$11,200,000	212		
2242082	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.467	F	2800	$11,200,000	212		
2242099	B	PARK ROAD (204TH ST)	BRONX RIVER			WO	1	S	6/19/2008	4.793	F	4700	$18,800,000	212		
2242430	B	GUN HILL ROAD	BRONX BLVD			O	4	S	4/29/2008	4.772	F	9400	$37,600,000	212		
2242440	B	GUN HILL ROAD	BRONX RIVER			WO	1	S	2/29/2008	4.900	F	8700	$34,800,000	212		
2242459	B	E 233RD ST	BRONX RIVER			WO	1	S	5/2/2008	4.367	F	7000	$28,000,000	212		
2242460	B	E 233RD ST	ENTR RD BNX RVR PKWY			O	1	S	2/1/2008	4.900	F	5300	$21,200,000	212		
2229540	B	VAN CRTLDT PARK	HHP		P	A-PED	2	C	7/15/2009	4.306	F	3900	$15,600,000	226		
2229550	B	VAN CRTLDT EQUES	HHP		P	A-PED	2	C	7/15/2009	4.556	F	2100	$8,400,000	226		
2230290	B	MOSHOLU PARKWAY	EQUESTRIAN PATH			A	1	S	1/23/2008	4.448	F	4300	$17,200,000	226		
2230300	B	MOSHOLU PARKWAY	CONRAIL (ABANDONED)	C		A	1	S	10/29/2008	4.146	F	4600	$18,400,000	226		
2230310	B	MOSHOLU PARKWAY	SB RAMP TO HHP			A	2	S	10/8/2009	4.919	F	7400	$29,600,000	226		
2230260	B	MOSHOLU PARKWAY	METRO NORTH	M		A	1	S	4/7/2008	5.516	G	8880	$35,520,000	227	207	
2241259	B	204TH ST PED BRDG	METRO NORTH RR HAR	M	P	O-PED	1	C	3/4/2009	4.034	F	4700	$18,800,000	227	207	
2241840	B	BEDFORD PARK BLVD	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.594	F	6400	$25,600,000	227	207	
2065629	B	BRONX RVR PKWY	BOSTON RD BX ZOO			A	1	S	8/28/2009	5.276	G	6300	$25,200,000	227		
2230250	B	MOSHOLU PARKWAY	BRONX RIVER			WA	5	S	1/30/2008	4.263	F	16300	$65,200,000	227		
2242010	B	EAST FORDHAM RD	BRONX RIVER			WA	1	S	5/7/2008	5.207	G	9200	$36,800,000	227		
2242029	B	SOUTHERN BLVD	EAST FORDHAM ROAD			O	2	S	3/19/2008	4.658	F	12900	$51,600,000	227		
2242100	B	BOTANICAL GARDEN ROAD	TWIN LAKES		P	WO	1	S	5/7/2008	4.900	F	2200	$8,800,000	227		
2242110	B	BOSTON ROAD	BRONX RIVER			WO	1	S	5/6/2008	4.273	F	6200	$24,800,000	227		
2242210	B	S OF ALLERTON AVE	BRONX RIVER			WO	3	S	5/27/2008	4.763	F	6200	$24,800,000	227		
2242220	B	SNUFF MILL ROAD	BRONX RIVER			WO	2	S	1/31/2008	4.395	F	4800	$19,200,000	227		
2240200	B	SHORE ROAD	HUTCHINSON RIVER			WMO	7	S	7/9/2008	4.478	F	43576	$174,304,000	228		
2240210	B	CITY ISLAND ROAD	EASTCHESTER BAY			WO	7	S	8/25/2009	3.389	F	19915	$79,660,000	228		
2241380	B	PELHAM BAY PK EQUES	AMTRAK - CSX	AC	P	O-PED	1	C	3/7/2009	3.508	F	4223	$16,892,000	228		
2241390	B	SHORE RD CIRCLE	AMTRAK - CSX	AC		O	2	S	12/30/2009	3.313	F	4800	$19,200,000	228		
1240090	BM	MACOMBS DAM BRIDGE	HARLEM RIVER	M		WMO	52	S	12/22/2009	3.930	F	220000	$880,000,000	110	204	
2240089	BM	145TH ST BRIDGE	HARLEM RIVER			WMO	8	S	11/13/2009	6.403	V	56700	$226,800,000	110	204	201
2240059	BM	WILLIS AVENUE	HARLEM RIVER			WMO	26	S	11/6/2009	3.292	F	94700	$378,800,000	111	201	
2240069	BM	THIRD AVE BRIDGE	HARLEM RIVER			WMO	14	S	10/9/2008	6.746	V	100232	$400,928,000	111	201	
2240079	BM	MADISON AVE BRIDGE	HARLEM RIVER			WMO	21	S	10/30/2008	4.833	F	80000	$320,000,000	111	201	
2246580	BM	HIGH BRIDGE PDOVP	I87 - HARLEM RIVER	M	P	WA-PED	11	P	8/12/2002	3.759	F	34100	$136,400,000	112	204	
2066919	BM	WASHINGTON BRIDGE	HARLEM RIVER	M		WO	9	S	10/8/2008	4.642	F	128339	$513,356,000	112	205	204
2240120	BM	W 207TH/W FORDHAM RD	HARLEM RIVER			WMO	5	S	9/22/2008	5.333	G	31784	$127,136,000	112	207	

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2240137	BM	BROADWAY BRIDGE	HARLEM RIVER	TM		WMO	3	S	11/12/2009	3.972	F	46848	$187,392,000	112	207	208
2240138	BM	NYCTA IRT	HARLEM RVR/BROADWAY	TM		WMO	3	S	11/17/2009	4.706	F	19520	$78,080,000	112	207	208
2240290	K	METROPOLITAN AVE	ENGLISH KILLS			WMO	5	S	7/30/2009	6.139	V	10550	$42,200,000	301		
2230410	K	278I EB (B.Q.E.)	WASHINGTON ST			A	1	S	7/31/2009	4.375	F	2500	$10,000,000	302		
2230420	K	278I WB (B.Q.E.)	WASHINGTON ST			A	1	S	7/23/2008	4.750	F	2500	$10,000,000	302		
2230430	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	2/28/2008	5.000	G	1100	$4,400,000	302		
2230440	K	278I WB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	5.200	G	2700	$10,800,000	302		
2230450	K	278I EB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	4.933	F	2500	$10,000,000	302		
2230460	K	278I (B.Q.E.)	PEARL ST			A	1	S	3/10/2008	5.333	G	4500	$18,000,000	302		
2230470	K	278I (B.Q.E.)	JAY ST			A	1	S	3/10/2008	4.833	F	5100	$20,400,000	302		
2230480	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	4/24/2008	5.093	G	8400	$33,600,000	302		
2230490	K	278I (B.Q.E.)	SANDS ST			A	1	S	3/26/2008	5.019	G	12600	$50,400,000	302		
2230500	K	278I (B.Q.E.)	RAMP TO BQE EB			A	1	S	3/25/2008	5.100	G	1300	$5,200,000	302		
2230510	K	278I (B.Q.E.)	NASSAU ST			A	6	S	12/4/2009	4.606	F	51200	$204,800,000	302		
2230857	K	278I WB (B.Q.E.)	JORALEMON ST			A	1	S	5/24/2008	5.000	G	2100	$8,400,000	302		
2230858	K	278I EB (B.Q.E.)	JORALEMON ST / BQE WB			A	2	S	6/29/2009	4.177	F	5900	$23,600,000	302		
2230870	K	COLUMBIA HEIGHTS	278I (B.Q.E.)			A	1	S	9/3/2008	4.550	F	16500	$66,000,000	302		
2230887	K	278I W.B. (B.Q.E.)	CADMAN PLAZA			A	2	S	8/21/2008	4.426	F	4500	$18,000,000	302		
2230888	K	278I E.B. (B.Q.E.)	CADMAN PLAZA / 278I WB			A	2	S	8/21/2008	5.053	G	4500	$18,000,000	302		
2243280	K	6TH AVE	LIRR ATLANTIC AVE	L		O	9	S	11/23/2008	5.403	G	12276	$49,104,000	302		
2243290	K	CARLTON AVE	LIRR ATLANTIC AVE	L		O	7	S	12/6/2008	5.069	G	10823	$43,292,000	302		
2244440	K	SOUTH OF TILLARY ST	NAVY ST			O-PED	1	C	8/20/2009	4.271	F	6200	$24,800,000	302		
2267860	K	BROOKLYN BR APPROACH	STORAGE (SANDS ST)			O	1	S	7/31/2008	4.607	F	6490	$25,960,000	302		
2268350	K	BROOKLYN PROMENADE	278I EB (BQE)		P	A-PED	35	C	9/28/2008	3.643	F	46184	$184,736,000	302		
2268497	K	278I W.B. (B.Q.E.)	FURMAN ST			A	45	S	7/14/2009	4.381	F	86406	$345,624,000	302		
2268498	K	278I E.B. (B.Q.E.)	278I WB (BQE)			A	69	S	7/17/2009	3.965	F	133708	$534,832,000	302		
2268507	K	278I W.B. (B.Q.E.)	YORK ST			A	6	S	5/26/2009	4.071	F	10388	$41,552,000	302		
2268508	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	11	S	5/26/2009	4.034	F	20529	$82,116,000	302		
2268517	K	278I W.B. (B.Q.E.)	FURMAN ST			A	7	S	6/29/2009	3.882	F	10988	$43,952,000	302		
2268518	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	5	S	7/2/2009	4.214	F	9275	$37,100,000	302		
2230000	K	HIGHLAND BLVD E.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.600	F	4900	$19,600,000	305		
2230010	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.933	F	3500	$14,000,000	305		
2230020	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	2	S	5/20/2008	4.842	F	4700	$18,800,000	305		
2230220	K	HIGHLAND BLVD NB	VERMONT AVE			A	1	S	6/10/2009	5.857	G	3995	$15,980,000	305		
2244170	K	ATLNTC AV SVC RD E.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.474	G	3192	$12,768,000	305		
2244180	K	ATLNTC AV SVC RD W.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.105	G	5600	$22,400,000	305		
2244460	K	CONDUIT BLVD NB	ATLANTIC AVE EB			O	1	S	11/15/2008	4.833	F	3800	$15,200,000	305		
2269600	K	ERSKINE ST	BSHP			A	1	S	11/13/2008	5.938	G	8258	$33,032,000	305		
2230350	K	SUMMIT ST PED BRDG	278I (B.Q.E.)			A-PED	2	S	5/4/2008	4.500	F	1400	$5,600,000	306		
2230360	K	UNION ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.375	F	5000	$20,000,000	306		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

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2230370	K	SACKETT ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.500	F	5000	$20,000,000	306		
2230380	K	KANE ST	278I (B.Q.E.)			A	2	S	4/11/2008	4.069	F	5000	$20,000,000	306		
2230390	K	CONGRESS ST	278I (B.Q.E.)			A	2	S	4/10/2008	6.382	V	5000	$20,000,000	306		
2240232	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	9/10/2009	5.306	G	7300	$29,200,000	306		
2240240	K	NINTH ST BRIDGE	GOWANUS CANAL			WMO	3	S	6/11/2009	6.581	V	5772	$23,088,000	306		
2240250	K	THIRD ST	GOWANUS CANAL			WMO	5	S	6/12/2009	4.931	F	4900	$19,600,000	306		
2240260	K	CARROLL ST	GOWANUS CANAL			WMO	2	S	6/10/2009	4.803	F	3000	$12,000,000	306		
2240270	K	UNION ST	GOWANUS CANAL			WMO	5	S	10/14/2008	4.014	F	4900	$19,600,000	306		
2240310	K	THIRD AVE	GOWANUS CANAL			WO	1	S	6/19/2009	7.000	V	3200	$12,800,000	306		
2240231	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	12/2/2008	5.472	G	7300	$29,200,000	307	306	
2066100	K	5TH AVE	27 X PROSPECT EXPWY			A	1	S	5/21/2008	5.104	G	8800	$35,200,000	307		
2243839	K	4TH AVE	NYCTA BMT TRACKS	T		O	1	S	9/18/2009	6.267	V	4440	$17,760,000	307		
2243920	K	7TH AVE	NYCTA BMT YARD	T		O	2	S	10/16/2008	6.324	V	4700	$18,800,000	307		
2244470	K	SEELEY ST	PROSPECT AVE			O	1	S	6/7/2007	4.100	F	8482	$33,928,000	307		
2244480	K	5TH AVE	GREENWOOD CEMETERY			O	1	S	9/9/2009	4.667	F	3600	$14,400,000	307		
2243170	K	STERLING PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.500	V	2300	$9,200,000	308		
2243180	K	ST JOHNS PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.781	V	2300	$9,200,000	308		
2243190	K	LINCOLN PLACE	FRANKLIN SHUTTLE	T		O	1	S	10/15/2008	6.922	V	2460	$9,840,000	308		
2243279	K	EASTERN PKWY	FRANKLIN SHUTTLE	T		O	1	S	10/14/2008	4.861	F	7700	$30,800,000	309	308	
2243250	K	WASHINGTON AVE	FRANKLIN SHUTTLE	T		O	1	S	10/6/2008	6.344	V	3657	$14,628,000	309	355	
2243200	K	UNION ST	FRANKLIN SHUTTLE	T		O	2	S	10/13/2008	5.043	G	4100	$16,400,000	309		
2243210	K	PRESIDENT ST	FRANKLIN SHUTTLE	T		O	2	S	10/10/2008	5.314	G	2500	$10,000,000	309		
2243220	K	CARROLL ST PED BRDG	FRANKLIN SHUTTLE	T		O-PED	3	C	9/14/2009	5.268	G	600	$2,400,000	309		
2243230	K	CROWN ST	FRANKLIN SHUTTLE	T		O	3	S	9/4/2009	5.097	G	4060	$16,240,000	309		
2243240	K	MONTGOMERY ST	FRANKLIN SHUTTLE	T		O	1	S	9/4/2009	6.275	V	2240	$8,960,000	309		
2243260	K	FLATBUSH AVE	FRANKLIN SHUTTLE	T		O	2	S	9/2/2008	4.961	F	11300	$45,200,000	309		
2231249	K	BSHP	BAY RIDGE AVE			A	1	S	6/12/2009	3.313	F	4900	$19,600,000	310		
2231250	K	81ST ST PED BR	BSHP		P	A-PED	5	C	12/23/2008	4.881	F	3100	$12,400,000	310		
2231260	K	92ND ST PED BR	BSHP		P	A-PED	6	C	8/4/2009	4.113	F	3000	$12,000,000	310		
2231270	K	4TH AVE	BSHP			A	2	S	4/10/2008	4.842	F	6100	$24,400,000	310		
2243310	K	2ND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	6.444	V	17751	$71,004,000	310		
2243320	K	3RD AVE	LIRR BAY RIDGE	N		O	4	S	8/31/2009	5.083	G	17230	$68,920,000	310		
2243330	K	4TH AVE	LIRR BAY RIDGE	NT		O	4	S	9/9/2009	5.736	G	13668	$54,672,000	310		
2243580	K	5TH AVE	LIRR & SEA BEACH	NT		O	4	S	12/2/2008	4.147	F	12395	$49,580,000	310		
2243590	K	6TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.250	V	14382	$57,528,000	310		
2243600	K	7TH AVE	LIRR & SEA BEACH	NT		O	7	S	12/9/2008	5.028	G	18628	$74,512,000	310		
2243610	K	8TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.153	V	10834	$43,336,000	310		
2243620	K	FORT HAMILTON PKWY	LIRR & SEA BEACH	NT		O	3	S	12/18/2008	4.797	F	14800	$59,200,000	310		
2243630	K	11TH AVE	LIRR & SEA BEACH	NT		O	5	S	12/18/2008	6.103	V	9700	$38,800,000	310		
2243640	K	13TH AVE	LIRR & SEA BEACH	NT		O	5	S	9/23/2009	4.694	F	16000	$64,000,000	310		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2244150	K	RIDGE BLVD	SHORE RD DRIVE			O	1	S	5/13/2009	6.667	V	4350	$17,400,000	310		
2244160	K	3RD AVE	SHORE RD DRIVE			O	1	S	5/8/2009	6.727	V	4360	$17,440,000	310		
2231290	K	BAY 8TH ST	BSHP			A	1	S	5/29/2009	5.921	G	4950	$19,800,000	311		
2231300	K	17TH AVE PED BRDG	BSHP		P	A-PED	1	C	11/4/2009	3.397	F	2100	$8,400,000	311		
2231319	K	BSHP	BAY PKWY			A	1	S	6/24/2009	4.535	F	7200	$28,800,000	311		
2243340	K	15TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	4.723	F	3614	$14,456,000	311		
2243350	K	60TH ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.267	V	3900	$15,600,000	311		
2243360	K	16TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	5.350	G	4345	$17,380,000	311		
2243650	K	14TH AVE	LIRR BAY RIDGE	N		O	1	S	12/5/2008	6.967	V	4720	$18,880,000	311		
2243660	K	NEW UTRECHT AVE	LIRR BAY RIDGE	N		O	1	S	12/6/2008	6.217	V	2350	$9,400,000	311		
2243670	K	15TH AVE	BMT SEA BEACH	T		O	4	S	9/24/2009	6.386	V	16020	$64,080,000	311		
2243680	K	16TH AVE	BMT SEA BEACH	T		O	3	S	11/26/2008	5.370	G	6816	$27,264,000	311		
2243690	K	17TH AVE	BMT SEA BEACH	T		O	4	S	11/26/2008	6.327	V	8946	$35,784,000	311		
2243700	K	18TH AVE	BMT SEA BEACH	T		O	1	S	9/25/2009	6.632	V	5200	$20,800,000	311		
2243710	K	19TH AVE	BMT SEA BEACH	T		O	4	S	10/27/2008	4.395	F	4800	$19,200,000	311		
2243720	K	20TH AVE	BMT SEA BEACH	T		O	1	S	10/28/2008	6.673	V	12500	$50,000,000	311		
2243730	K	65TH ST	BMT SEA BEACH	T		O	4	S	9/24/2008	5.237	G	12000	$48,000,000	311		
2243740	K	BAY PKWY	BMT SEA BEACH	T		O	4	S	9/26/2008	4.921	F	16800	$67,200,000	311		
2243750	K	AVENUE O	BMT SEA BEACH	T		O	1	S	10/7/2009	5.863	G	4658	$18,632,000	311		
2243760	K	AVENUE P	BMT SEA BEACH	T		O	1	S	10/7/2009	6.605	V	5544	$22,176,000	311		
2243770	K	KINGS HIGHWAY	BMT SEA BEACH	T		O	1	S	10/8/2009	6.767	V	5032	$20,128,000	311		
2243780	K	HIGHLAWN AVE	BMT SEA BEACH	T		O	1	S	10/8/2009	6.440	V	6960	$27,840,000	311		
2243800	K	AVENUE T	BMT SEA BEACH	T		O	1	S	10/8/2009	6.033	V	5360	$21,440,000	311		
2243820	K	21ST AVE	BMT SEA BEACH	T		O	4	S	10/28/2009	3.921	F	21400	$85,600,000	311		
2243370	K	17TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.824	F	3406	$13,624,000	312		
2243380	K	18TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.656	F	6006	$24,024,000	312		
2243390	K	52ND ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	6.250	V	3293	$13,172,000	312		
2243400	K	50TH ST	LIRR BAY RIDGE	N		O	2	S	9/4/2009	4.731	F	7100	$28,400,000	312		
2243410	K	MCDONALD AVE	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.047	G	2760	$11,040,000	312		
2243420	K	E 3RD ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.583	V	1840	$7,360,000	312		
2243439	K	OCEAN PKWY	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.018	G	7000	$28,000,000	312		
2243440	K	CONEY ISLAND AVE	LIRR BAY RIDGE	N		O	1	S	12/12/2008	5.234	G	3231	$12,924,000	312		
2243840	K	9TH AVE	NYCTA BMT YARD	T		O	5	S	9/18/2009	6.028	V	12440	$49,760,000	312		
2243940	K	9TH AVE	NYCTA IND SBWY	T		O	5	S	9/18/2009	4.737	F	6300	$25,200,000	312		
2231329	K	BSHP	26TH AVE			A	1	S	6/5/2008	4.867	F	6700	$26,800,000	313		
2231330	K	27TH AVE PED BRDG	BSHP		P	A-PED	1	C	1/13/2009	3.927	F	2100	$8,400,000	313		
2231340	K	CROPSEY AVE	BSHP			A	2	S	7/18/2008	4.806	F	13100	$52,400,000	313		
2231360	K	BSHP	OCEAN PKWY			A	3	S	8/20/2008	6.776	V	29637	$118,548,000	313		
2231370	K	GUIDER AV RAMP TO BSHP	BSHP			A	4	S	11/6/2009	3.292	F	12800	$51,200,000	313		
2231380	K	CONEY ISLAND AVE	BSHP			A	4	S	9/21/2009	6.181	V	19866	$79,464,000	313		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2240301	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/8/2009	5.225	G	9400	$37,600,000	313		
2240302	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/28/2009	5.028	G	9400	$37,600,000	313		
2240540	K	STILLWELL AVE	CONEY ISLAND CRK			WO	2	S	6/17/2009	6.292	V	17000	$68,000,000	313		
2243570	K	86TH ST	BMT SEA BEACH	T		O	1	S	9/11/2008	6.078	V	12167	$48,668,000	313		
2269260	K	W. 8TH ST PED BRDG	SURF AVE.		P	O-PED	39	C	3/11/2009	3.130	F	14742	$58,968,000	313		
2243020	K	PARKSIDE AVE	BMT SUBWAY, BRIGHTON	T		O	6	S	10/1/2008	4.043	F	48700	$194,800,000	314		
2243040	K	CROOKE AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/25/2009	4.105	F	6000	$24,000,000	314		
2243050	K	CATON AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/13/2009	4.500	F	20800	$83,200,000	314		
2243080	K	CHURCH AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/14/2009	4.545	F	18200	$72,800,000	314		
2243100	K	BEVERLY ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/11/2009	3.667	F	4200	$16,800,000	314		
2243110	K	CORTELYOU ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/21/2009	6.139	V	4810	$19,240,000	314		
2243120	K	DORCHESTER ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/19/2008	5.882	G	4825	$19,300,000	314		
2243130	K	DITMAS AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/22/2009	5.723	G	5150	$20,600,000	314		
2243140	K	NEWKIRK AVE	BMT SUBWAY, BRIGHTON	T		O	3	S	10/21/2009	4.544	F	4100	$16,400,000	314		
2243150	K	FOSTER AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/19/2009	4.550	F	3000	$12,000,000	314		
2243450	K	E 14TH ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.809	F	1775	$7,100,000	314		
2243460	K	E 15TH ST PED BRDG	LIRR BAY RIDGE	N		O-PED	3	C	9/16/2008	5.193	G	900	$3,600,000	314		
2243480	K	OCEAN AVE	LIRR BAY RIDGE	N		O	2	S	12/10/2008	4.912	F	5000	$20,000,000	314		
2243490	K	BEDFORD AVE	LIRR BAY RIDGE	N		O	6	S	12/15/2008	4.264	F	12000	$48,000,000	314		
2243500	K	NOSTRAND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	4.966	F	4320	$17,280,000	314		
2231390	K	E 12TH ST	BSHP			A	4	S	7/12/2008	4.875	F	17200	$68,800,000	315		
2231409	K	BSHP	SHEEPSHEAD BAY ROAD			A	1	S	4/30/2008	4.967	F	6500	$26,000,000	315		
2231419	K	BSHP	OCEAN AVE			A	3	S	5/1/2008	4.222	F	14000	$56,000,000	315		
2231429	K	BSHP	BEDFORD AVE			A	3	S	5/3/2008	4.167	F	12000	$48,000,000	315		
2231439	K	BSHP	NOSTRAND AVE			A	3	S	6/8/2009	4.014	F	13000	$52,000,000	315		
2231449	K	KNAPP ST	BSHP			A	1	S	6/10/2008	4.391	F	9500	$38,000,000	315		
2233080	K	E 14 ST PED BR	BSHP			A-PED	14	C	7/22/2009	3.852	F	4700	$18,800,000	315		
2240320	K	OCEAN AVE PED BRDG	SHEEPSHEAD BAY			WO-PED	30	C	9/29/2009	3.939	F	4000	$16,000,000	315		
2243790	K	AVENUE S	BMT SEA BEACH	T		O	1	S	10/8/2009	5.967	G	5360	$21,440,000	315		
2243810	K	AVENUE U	BMT SEA BEACH	T		O	1	S	10/24/2008	5.725	G	5880	$23,520,000	315		
2243569	K	ATLANTIC AVE	LIRR ATLANTIC AVE	L		O	75	S	9/13/2008	3.789	F	135100	$540,400,000	316	305	
2243850	K	LIBERTY AVE	LIRR BAY RIDGE	N		O	3	S	10/27/2008	6.368	V	6659	$26,636,000	316		
2243860	K	GLENMORE AVE	LIRR BAY RIDGE	N		O	2	S	10/27/2008	6.559	V	5616	$22,464,000	316		
2243870	K	PITKIN AVE	LIRR BAY RIDGE	N		O	2	S	10/29/2008	6.515	V	5328	$21,312,000	316		
2243890	K	SUTTER AVE	LIRR BAY RIDGE	N		O	3	S	10/31/2008	6.542	V	5497	$21,988,000	316		
2243900	K	BLAKE AVE	LIRR BAY RIDGE LINE	N		O	3	S	12/17/2008	5.000	G	4912	$19,648,000	316		
2243910	K	LIVONIA AVE PED BRDG	LIRR BAY RIDGE LINE	N		O-PED	6	C	2/19/2009	5.000	G	2500	$10,000,000	316		
2231479	K	BSHP	MILL BASIN			WMA	14	S	10/9/2009	3.284	F	73500	$294,000,000	318		
2231489	K	BSHP	PAERDEGAT BASIN			WA	15	S	10/5/2009	3.222	F	58300	$233,200,000	318		
2243510	K	FLATBUSH AVE	LIRR BAY RIDGE	N		O	2	S	9/16/2009	4.702	F	5900	$23,600,000	318		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2243520	K	BROOKLYN AVE	LIRR BAY RIDGE	N		O	3	S	9/11/2009	6.236	V	4500	$18,000,000	318		
2243530	K	AVENUE H	LIRR BAY RIDGE	N		O	2	S	9/10/2009	5.956	G	35100	$140,400,000	318		
2243010	K	LINCOLN ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/3/2008	6.722	V	6016	$24,064,000	355		
2244010	K	EAST DR (ENDALE ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	C	5/18/2009	4.367	F	900	$3,600,000	355		
2244020	K	WEST DR (MEADOWPORT ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	S	4/28/2009	5.321	G	2500	$10,000,000	355		
2244030	K	EAST DRIVE	BRIDLE PATH NR ZOO		P	O	1	S	4/28/2009	4.796	F	2000	$8,000,000	355		
2244040	K	EAST DR (EAST WOOD ARCH)	PED PATH NR CENTER DR		P	O	1	C	6/19/2009	4.200	F	900	$3,600,000	355		
2244050	K	CENTER DR (NETHERMEAD ARCHES)	PED PATH & STREAM		P	WO	3	S	5/1/2009	5.000	G	7400	$29,600,000	355		
2244060	K	HILL DR (CLEFT RIDGE SPAN)	PED PATH SO OF BOATHOUSE		P	O	1	C	4/10/2009	4.767	F	900	$3,600,000	355		
2244100	K	WEST FOOTBRIDGE	PROSPCT PK STREAM		P	WO-PED	1	C	12/14/2009	4.875	F	308	$1,232,000	355		
2244120	K	HILL DR (TERRACE BRDG)	PROSPECT PK LAKE		P	WO	3	S	5/19/2009	2.927	P	7800	$31,200,000	355		
2244130	K	PED NR BOATHSE (LULLWATER BRDG)	PROSPECT PK LAKE		P	WO-PED	1	C	9/10/2009	5.000	G	1260	$5,040,000	355		
2231450	K	BSHP	GERRITSEN INLET			WA	11	S	10/2/2009	3.418	F	52000	$208,000,000	356		
2231460	K	FLATBUSH AVE	BSHP			A	2	S	10/13/2009	6.306	V	14058	$56,232,000	356		
2231499	K	BSHP	ROCKAWAY PKWY			A	4	S	9/18/2009	3.917	F	11500	$46,000,000	356		
2231509	K	BSHP	FRESH CREEK			WA	5	S	8/7/2009	3.250	F	23000	$92,000,000	356		
2231519	K	PENNSYLVANIA AVE	BSHP			A	2	S	5/14/2009	5.806	G	6640	$26,560,000	356		
2240039	KM	WILLIAMSBURG BRIDGE	EAST RIVER	T		WEO	53	S	10/31/2008	4.653	F	824000	$3,296,000,000	103	301	
2240019	KM	BROOKLYN BRIDGE	EAST RIVER			WEO	75	S	10/25/2008	2.944	P	503788	$2,015,152,000	103	302	101
2240027	KM	MANHATTAN BRIDGE(LL)	EAST RIVER	T		WEO	23	S	11/24/2008	5.014	G	616390	$2,465,560,000	103	302	
2240028	KM	MANHATTAN BRIDGE(UL)	NYCTA TRACKS-BMT	T		WEO	43	S	11/24/2008	4.214	F	587424	$2,349,696,000	103	302	
2240370	KQ	GREENPOINT AVE BRIDGE	NEWTOWN CREEK	L		WMO	12	S	8/6/2009	4.861	F	76106	$304,424,000	301	402	
2240639	KQ	PULASKI BRIDGE	NEWTOWN CREEK			WMO	44	S	6/3/2008	4.408	F	205770	$823,080,000	301	402	
2240390	KQ	GRAND ST BRIDGE	NEWTOWN CREEK			WMO	2	S	8/28/2009	4.236	F	5100	$20,400,000	301	405	
223201D	M	RAMP TO N.B. FDR DRIVE	FDR & SOUTH ST.			AR	22	S	3/2/2008	4.967	F	15825	$63,300,000	101	103	
224001B	M	TO BKLN FRM FDR	FRANKFRT & CITY			OE	31	S	12/20/2008	4.074	F	51400	$205,600,000	101	103	
224001D	M	TO FDR DR N.B.	PEARL STREET			OE	30	S	6/8/2009	4.868	F	49600	$198,400,000	101	103	
2232000	M	BATTERY PLACE	FDR DRIVE			AT	2	S	11/18/2009	5.318	G	142000	$568,000,000	101		
223201A	M	FDR DR N.B. OFF RMP	FDR DR & SOUTH ST			AR	17	S	2/29/2008	3.716	F	23373	$93,492,000	101		
223201B	M	STH ST RMP TO FDR S.B.	SOUTH ST			AR	10	S	2/27/2008	3.761	F	44625	$178,500,000	101		
224001A	M	PARK ROW TO BKLN	WILLIAM ST N.B.			OE	4	S	5/28/2009	4.167	F	10167	$40,668,000	101		
224001C	M	PEARL ST TO BKLN	LAND ADJ TO BRDG			OE	9	S	5/21/2009	3.814	F	6365	$25,460,000	101		
224001E	M	TO PEARL ST	LAND ADJ TO BRDG			OE	3	S	6/1/2009	5.141	G	5300	$21,200,000	101		
224001G	M	TO PARK ROW	ROSE ST			OE	11	S	6/8/2009	4.606	F	16551	$66,204,000	101		
2267380	M	WEST STREET	RECTOR ST			AT	1	S	11/19/2009	5.033	G	25760	$103,040,000	101		
2268480	M	CHAMBERS ST PED BRDG	RTE 9A - WEST ST			O-PED	10	C	2/20/2009	5.358	G	3344	$13,376,000	101		
2268930	M	MORRIS ST PED BRDG	BKLN-BATTERY TUNN PLZ			A-PED	3	C	2/17/2009	3.443	F	1200	$4,800,000	101		
223201C	M	FDR DR S.B. OFF RMP	SOUTH ST			AR	8	S	2/20/2008	4.701	F	39150	$156,600,000	103		
2232029	M	CORLEARS PARK ROAD	FDR DRIVE		P	A	4	S	2/24/2008	3.625	F	4100	$16,400,000	103		
2232030	M	DELANCEY ST PED BRDG	FDR DRIVE		P	A-PED	12	C	11/15/2009	4.174	F	2900	$11,600,000	103		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2232040	M	HOUSTON ST	FDR DRIVE			A	2	S	6/7/2009	3.455	F	11010	$44,040,000	103		
223204A	M	FDR NB RAMP TO HOUSTON ST	RELIEF			AR	4	S	1/30/2008	4.471	F	6150	$24,600,000	103		
223204B	M	HOUSTON ST RAMP TO FDR NB	RELIEF			AR	4	S	2/1/2008	4.625	F	7125	$28,500,000	103		
2232050	M	E 6TH ST PED BRDG	FDR DRIVE		P	A-PED	22	C	3/15/2009	4.196	F	2200	$8,800,000	103		
2233020	M	E 10TH ST PED BRDG	FDR DRIVE		P	A-PED	25	C	9/7/2008	5.216	G	1632	$6,528,000	103		
224001F	M	PEARL ST TO FDR DR	LAND ADJ TO BRDG			OE	3	S	5/21/2009	5.338	G	5200	$20,800,000	103		
2257569	M	MILLER HIGHWAY	TERRAIN			A	64	S	10/19/2009	4.803	F	264190	$1,056,760,000	104	107	
2245010	M	11TH AVE VIADUCT	LIRR WEST SIDE YARD	AL		O	39	S	12/30/2008	4.028	F	157500	$630,000,000	104		
224501B	M	W 33RD ST	AMTRAK 30 ST BRANCH	A		O	8	S	3/21/2008	4.611	F	16500	$66,000,000	104		
224501C	M	W 33RD ST	LAND ADJ TO AMTRAK	A		O	2	S	6/25/2009	4.417	F	4620	$18,480,000	104		
224501D	M	W 34TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	6/26/2009	4.514	F	11800	$47,200,000	104		
224501E	M	W 35TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.141	F	6500	$26,000,000	104		
224501F	M	W 36TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	12/15/2008	4.015	F	16400	$65,600,000	104		
2245060	M	W 37TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	11/20/2009	6.190	V	7505	$30,020,000	104		
2245070	M	W 38TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/2/2008	4.154	F	6200	$24,800,000	104		
2245080	M	W 39TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.196	F	6300	$25,200,000	104		
2245090	M	W 43RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4100	$16,400,000	104		
2245100	M	W 44TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4300	$17,200,000	104		
2245110	M	W 45TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	5.662	G	4100	$16,400,000	104		
2245120	M	W 46TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	4.412	F	4100	$16,400,000	104		
2245130	M	W 47TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/21/2008	4.721	F	4100	$16,400,000	104		
2245140	M	W 48TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/24/2008	4.618	F	4100	$16,400,000	104		
2245150	M	W 49TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/2/2008	4.426	F	4100	$16,400,000	104		
2245160	M	W 51ST ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.868	F	4300	$17,200,000	104		
2245170	M	W 52ND ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.015	G	4300	$17,200,000	104		
2245180	M	W 53RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.029	G	5100	$20,400,000	104		
2245190	M	W 58TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.706	F	4100	$16,400,000	104		
2245209	M	11TH AVE	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	4.471	F	15400	$61,600,000	104		
2245210	M	W 42ND ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/22/2008	4.619	F	9155	$36,620,000	104		
2245220	M	W 57TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/11/2008	4.765	F	9100	$36,400,000	104		
2245330	M	W 41ST ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/29/2008	4.388	F	6200	$24,800,000	104		
2245340	M	W 50TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/4/2008	4.574	F	4100	$16,400,000	104		
2245350	M	W 54TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/8/2008	5.476	G	4700	$18,800,000	104		
2245360	M	W 55TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.382	G	4300	$17,200,000	104		
2245370	M	W 56TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.618	G	4400	$17,600,000	104		
2245440	M	W 40TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/2/2009	4.125	F	9400	$37,600,000	104		
226672A	M	W 31ST ST	AMTRAK LAYUP TRACKS	A		O	9	S	12/29/2008	3.619	F	8800	$35,200,000	104		
2246540	M	E 34TH ST	PARK AVE TUNNEL			OT	1	S	11/19/2008	4.117	F	36200	$144,800,000	105	106	
2245460	M	PARK AVE S.B.	E 45TH ST			O	1	S	7/28/2009	4.514	F	2400	$9,600,000	105		
2245470	M	PARK AVE N.B	E 45TH ST			O	1	S	7/28/2009	4.865	F	2400	$9,600,000	105		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246550	M	PARK AVE VIADUCT	E 42ND ST			O	10	S	10/15/2009	4.537	F	22150	$88,600,000	105		
2233038	M	FDR DRIVE SB	FDR NB / E 62ND ST			AT	34	S	12/19/2008	6.620	V	58700	$234,800,000	106	108	
224004D	M	TO QNS FROM E 58TH ST	E 59TH ST			OE	12	S	7/10/2008	4.547	F	11781	$47,124,000	106	108	
2232070	M	E 25TH ST PED BRDG	FDR DRIVE			A-PED	4	C	3/15/2009	4.525	F	1700	$6,800,000	106		
2232100	M	E 51ST ST PED BRDG	FDR DRIVE		P	A-PED	10	C	3/22/2009	4.390	F	2800	$11,200,000	106		
2246560	M	TUDOR CITY PLACE	E 42ND ST			O	1	S	2/14/2008	5.133	G	6600	$26,400,000	106		
2246570	M	E42ND ST - E47TH ST	FIRST AVE TUNNEL			OT	2	S	7/13/2008	5.078	G	95000	$380,000,000	106		
2268650	M	FDR NB E42ND TO E49TH ST	EAST RIVER			A	119	S	10/20/2009	4.075	F	30767	$123,068,000	106		
2229289	M	HHP VIADUCT	AMTRAK - W72 ST - W79 ST	A		A	145	S	12/23/2008	3.373	F	236100	$944,400,000	107		
222928C	M	PED BR AT 73RD ST	HHP - AMTRAK	A	P	A-PED	5	C	10/26/2008	4.145	F	3480	$13,920,000	107		
2229290	M	W 79 ST	AMTRAK	A		A	1	S	12/7/2009	4.220	F	4500	$18,000,000	107		
2229309	M	HHP	RIVERSIDE PARK			A	1	S	1/22/2008	5.267	G	2172	$8,688,000	107		
2229311	M	HHP SB	RAMP TO 96 ST			A	1	S	2/17/2008	4.636	F	2000	$8,000,000	107		
2229312	M	HHP NB	RAMP TO 96 ST			A	1	S	2/17/2008	4.364	F	2000	$8,000,000	107		
2229321	M	HHP SB	RAMP FROM 96 ST			A	1	S	3/14/2008	5.133	G	2000	$8,000,000	107		
2229322	M	HHP NB	RAMP FROM 96 ST			A	1	S	3/10/2008	5.300	G	2000	$8,000,000	107		
2246970	M	RIVERSIDE DRIVE	W 96TH ST			O	3	S	7/2/2009	5.500	G	10600	$42,400,000	107		
2267250	M	HHP	AMTRAK - W96TH ST	A		A	55	S	11/25/2008	3.710	F	40000	$160,000,000	107		
2267717	M	79 ST PED PLAZA	79 ST BT BASIN GAR		P	A	10	S	5/1/2009	4.519	F	27400	$109,600,000	107		
2267718	M	79 ST TRAFFIC CIRC	79 ST PED PLAZA		P	A	34	S	5/8/2009	3.885	F	24130	$96,520,000	107		
226771A	M	79 ST RAMP TO HHP	79 ST BT BASIN GAR		P	AR	4	S	5/11/2009	4.221	F	3131	$12,524,000	107		
226771B	M	79 ST RAMP TO GAR	79 ST BT BASIN GAR		P	AR	21	S	5/1/2009	4.532	F	8989	$35,956,000	107		
226771C	M	GAR RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	21	S	5/13/2009	4.565	F	9095	$36,380,000	107		
226771D	M	SB HHP RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	4	S	5/15/2009	4.516	F	2601	$10,404,000	107		
2269190	M	W 70TH ST	AMTRAK	A		O	3	S	11/19/2009	5.806	G	17258	$69,032,000	107		
2269210	M	W 68TH ST	AMTRAK	A		O	3	S	11/24/2009	6.780	V	5382	$21,528,000	107		
M00003	M	HHP ON/OFF RMP-79TH ST SO. SIDE	PED PATH SO. OF 79TH ST			A	1	C	5/27/2009	4.067	F	900	$3,600,000	107		
M00004	M	HHP ON/OFF RMP-79TH ST NO. SIDE	PED PATH NO. OF 79TH ST			A	1	C	6/2/2009	5.000	G	900	$3,600,000	107		
2232110	M	E 64TH ST PED BRDG	FDR DRIVE		P	A-PED	24	U	9/24/2009	5.931	G	2100	$8,400,000	108		
2232120	M	E 71ST ST PED BRDG	FDR DRIVE		P	A-PED	19	C	7/12/2009	5.000	G	1800	$7,200,000	108		
2232140	M	E 78TH ST PED BRDG	FDR DRIVE		P	A-PED	9	C	3/29/2009	2.745	P	1700	$6,800,000	108		
2232167	M	PROMENADE OVER FDR	FDR - E81ST ST - E90TH ST		P	A-PED	53	S	7/9/2009	3.857	F	93000	$372,000,000	108		
2233040	M	E 60TH ST	FDR DRIVE			A	17	S	8/3/2009	4.806	F	24480	$97,920,000	108		
224004A	M	TO E 60TH ST FROM QNS	FIRST AVE			OE	13	S	5/9/2008	5.254	G	14800	$59,200,000	108		
224004B	M	TO QNS FRM E 59TH ST	FIRST AVE			OE	13	S	5/9/2008	5.708	G	14800	$59,200,000	108		
224004C	M	TO E 62ND ST FROM QNS	E 60TH ST			OE	10	S	10/2/2008	4.985	F	16720	$66,880,000	108		
224004J	M	25X	NYC GARAGE			OE	14	S	5/19/2008	4.537	F	22058	$88,232,000	108		
2269820	M	E 81 ST PED BRDG	FDR DRIVE N.B.		P	A-PED	3	C	10/26/2008	3.149	F	900	$3,600,000	108		
2229349	M	HHP	W 158 ST	A		A	44	S	12/11/2008	4.268	F	140000	$560,000,000	109	112	
2245290	M	W 155TH ST PED BRDG	AMTRAK 30 ST BRANCH	A		O-PED	3	C	10/25/2008	3.292	F	800	$3,200,000	109	112	

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246720	M	RIVERSIDE DRIVE	W 158TH ST - AMTRAK	A		O	77	S	9/30/2009	3.472	F	185658	$742,632,000	109	112	
2269240	M	RIVERSIDE DRIVE	W. 155TH ST			O	1	S	6/23/2009	4.640	F	2780	$11,120,000	109	112	
2245230	M	W 148TH ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	3	C	10/25/2008	4.033	F	1100	$4,400,000	109		
2246660	M	RIVERSIDE DRIVE	W125TH ST - W134TH ST			O	27	S	7/16/2009	4.444	F	148300	$593,200,000	109		
2246670	M	W 134 ST	TERRAIN			O	4	S	7/13/2009	4.870	F	7500	$30,000,000	109		
2246980	M	RIVERSIDE DRIVE	W 138TH ST			O	1	S	2/8/2008	4.767	F	6700	$26,800,000	109		
2266229	M	HHP	PED UNDERPASS @ 148 ST			A	1	S	2/19/2008	5.476	G	1840	$7,360,000	109		
2267130	M	RIVERSIDE DRIVE	W 145TH ST			O	1	S	6/22/2009	4.867	F	5800	$23,200,000	109		
2246490	M	A.C. POWELL BLVD N.B.	A.C. POWELL BLVD			O	1	S	2/22/2008	4.020	F	5600	$22,400,000	110		
2246710	M	W 153 ST	A.C. POWELL BLVD			O	1	S	2/22/2008	4.370	F	3082	$12,328,000	110		
2232180	M	E 103RD ST PED BRDG	FDR DRIVE			A-PED	20	C	8/23/2009	4.739	F	6000	$24,000,000	111		
2232190	M	E 111TH ST PED BRDG	FDR DRIVE		P	A-PED	14	C	8/3/2008	4.689	F	2600	$10,400,000	111		
2232200	M	E 120TH ST PED BRDG	FDR DRIVE		P	A-PED	21	C	8/3/2008	4.522	F	2500	$10,000,000	111		
2233059	M	HARLEM RIVER DRIVE	RAMP TO & FROM HRD N.B.			A	11	S	9/9/2009	3.269	F	51000	$204,000,000	111		
224005A	M	FROM FDR DRIVE	HARLEM RIVER DR			OR	19	S	6/6/2008	4.299	F	29900	$119,600,000	111		
224007A	M	TO MADISON AVENUE	E 138TH ST			OR	7	S	4/18/2008	5.225	G	19880	$79,520,000	111		
2240620	M	WARDS ISLAND PED BRDG	HARLEM RIVER			WMO-PED	10	C	11/1/2008	4.367	F	12600	$50,400,000	111		
2245319	M	E 97TH ST	METRO NORTH MAIN LN	M		O	1	S	12/31/2008	4.647	F	3200	$12,800,000	111		
2246620	M	W 128TH ST PED BRDG	3RD AVE BRDG APPR			O-PED	18	C	8/5/2009	4.000	F	2300	$9,200,000	111		
2246990	M	E 129TH ST PED BRDG	3RD AVE BRDG RAMP			O-PED	5	C	11/2/2009	4.636	F	500	$2,000,000	111		
222934A	M	RAMP TO N.B. HHP	AMTRAK WEST SIDE	A		AR	26	S	11/4/2008	3.875	F	10800	$43,200,000	112		
2229400	M	W 181ST ST PED BRDG	HHP N.B.		P	A-PED	7	C	2/11/2009	4.400	F	1500	$6,000,000	112		
2245040	M	MARGARET CORBIN DR	PED PATH NEAR CAFÉ		P	O	1	C	5/14/2009	4.933	F	750	$3,000,000	112		
2245050	M	MARGARET CORBIN DR	PED PATH NR NO ENTR		P	O	1	C	5/14/2009	4.800	F	750	$3,000,000	112		
2245250	M	W 158TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	11/14/2009	6.319	V	29170	$116,680,000	112		
2245260	M	W 173RD ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	2	C	10/25/2008	4.446	F	1500	$6,000,000	112		
2245300	M	INWOOD HILL PK FTBR	AMTRAK 30 ST BRANCH	A	P	O-PED	6	C	10/26/2008	4.100	F	700	$2,800,000	112		
2245480	M	TO GWB OPP W 171ST ST	RIVERSIDE DRIVE			O	1	S	4/11/2008	5.048	G	10800	$43,200,000	112		
2246489	M	W 181 ST	RAMP TO WASH BR			O	1	S	2/17/2008	4.500	F	8200	$32,800,000	112		
2246500	M	FORT TRYON PLACE	ENTR FROM RIVERSIDE DR		P	O	1	S	3/3/2008	4.333	F	6600	$26,400,000	112		
2246510	M	CORBIN PL OVERPASS	CORBIN PLACE		P	O	1	S	1/25/2008	5.000	G	2223	$8,892,000	112		
2246600	M	W 176TH ST PED BRDG	APPROACH TO G.W.B.			O-PED	1	C	2/6/2009	3.897	F	1200	$4,800,000	112		
2246690	M	ISHAM PK VEHICULR	HARLEM RIVER INLET		P	O	1	S	7/7/2008	6.261	V	911	$3,644,000	112		
2246700	M	ISHAM PK PED BRDG	HARLEM RV INLET		P	WO-PED	1	C	1/13/2009	3.828	F	285	$1,140,000	112		
2266230	M	HHP NB	PED UNDERPASS INWD PK			A	1	S	1/23/2008	5.286	G	800	$3,200,000	112		
2266240	M	HHP SB	PED UNDERPASS INWD PK			A	1	S	1/24/2008	5.571	G	1100	$4,400,000	112		
2267240	M	HRD RAMP TO GWB	HARLEM RIVER DR SB			A	55	S	10/9/2009	3.431	F	122900	$491,600,000	112		
2268760	M	PS-5 PED BRDG	TENTH AVE			O-PED	5	C	1/14/2009	4.735	F	1500	$6,000,000	112		
M00001	M	W191ST ST PED TNL	BROADWAY - IRT #1 SUBWAY			O-PED	1	C	1/20/2009	4.556	F	2000	$8,000,000	112		
2245380	M	TRANSVERSE RD #1 WB	PED PATH OPP E 66TH ST		P	O	1	S	1/23/2008	5.000	G	1500	$6,000,000	164		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2245420	M	W 65TH ST ENTR EB	BRIDLE PATH W END		P	O	1	S	2/5/2008	4.900	F	1600	$6,400,000	164		
2246000	M	WEST DR (GREYSHOT ARCH)	PED BET 61ST & 62ST		P	O	1	S	1/28/2008	5.400	G	2500	$10,000,000	164		
2246010	M	W 62 ST PED BRDG (PINEBANK ARCH)	BRIDLE PATH		P	O-PED	1	C	7/7/2009	4.723	F	1026	$4,104,000	164		
2246030	M	E 62 ST PED BRDG (GAPSTOW BRDG)	THE POND		P	O-PED	1	C	5/29/2009	4.172	F	1400	$5,600,000	164		
2246040	M	EAST DR (INSCOPE ARCH)	PED PATH OPP E 62 ST		P	O	1	C	4/13/2009	4.400	F	1200	$4,800,000	164		
2246050	M	CENTER DR (DRIPROCK ARCH)	PED OPP 63RD ST		P	O	1	S	1/30/2008	5.133	G	2000	$8,000,000	164		
2246069	M	EAST DR (GREEN GAP ARCH)	PED BET E 63ST & E 64ST		P	O	1	S	2/6/2008	4.500	F	2700	$10,800,000	164		
2246070	M	CENTER DR (PLAYMATES ARCH)	PED PATH OPP 65TH ST		P	O	1	C	6/19/2009	4.367	F	1200	$4,800,000	164		
2246080	M	WEST DR (DALEHEAD ARCH)	BRIDLE OPP W 64TH ST		P	O	1	S	1/22/2008	4.667	F	2000	$8,000,000	164		
2246090	M	PED BRDG OPP 65 ST	TRANSVERSE RD #1		P	O-PED	1	C	7/8/2009	4.583	F	2300	$9,200,000	164		
2246100	M	CENTER DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.467	F	6000	$24,000,000	164		
2246110	M	EAST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.667	F	6000	$24,000,000	164		
2246120	M	WEST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/3/2008	4.967	F	7900	$31,600,000	164		
2246130	M	EAST DR (WILLOWDELL ARCH)	PED PATH OPP E 67TH ST		P	O	1	C	5/20/2009	4.233	F	1200	$4,800,000	164		
2246140	M	W 72 ST ENTR (RIFTSTONE ARCH)	BRIDLE PATH		P	O	1	S	1/25/2008	4.633	F	3600	$14,400,000	164		
2246150	M	72 ST CROSS DR (TERRACE BRDG)	PED PATH TO FOUNTAIN		P	O	3	S	3/14/2008	6.018	V	7300	$29,200,000	164		
2246160	M	73 ST PED BRDG (BOW BRIDGE)	THE LAKE		P	WO-PED	1	C	10/30/2009	4.171	F	1655	$6,620,000	164		
2246170	M	EAST DR (TREFOIL ARCH)	PED PATH OPP E 73RD ST		P	O	1	S	2/15/2008	5.056	G	1900	$7,600,000	164		
2246230	M	EAST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.600	F	6500	$26,000,000	164		
2246240	M	WEST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.167	F	7200	$28,800,000	164		
2246250	M	EAST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.300	F	5100	$20,400,000	164		
2246260	M	WEST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.800	F	5100	$20,400,000	164		
2246270	M	EAST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	3.967	F	7000	$28,000,000	164		
2246280	M	WEST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	4.300	F	4700	$18,800,000	164		
2246330	M	WEST DR (BALCONY BRDG)	STREAM TO THE LAKE		P	WO	1	S	2/7/2008	5.000	G	2019	$8,076,000	164		
2246340	M	W77 ST PED (LADIES POND BRDG)	STREAM TO THE LAKE		P	WO-PED	3	C	11/19/2009	4.032	F	455	$1,820,000	164		
2246350	M	EAST DR (GREYWACKE ARCH)	PED PATH OPP E 80TH ST		P	O	1	C	5/21/2009	4.000	F	750	$3,000,000	164		
2246360	M	WEST DR (WINTERDALE ARCH)	PED PATH OPP W 82 ST		P	O	1	S	2/6/2008	5.636	G	3100	$12,400,000	164		
2246380	M	W86 ST PED (SW RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	1	C	11/10/2009	4.347	F	714	$2,856,000	164		
2246390	M	E86 ST PED (SE RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	3	C	11/9/2009	4.263	F	1095	$4,380,000	164		
2246400	M	PED PATH OPP E79 ST	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	4.233	F	3700	$14,800,000	164		
2246410	M	TRNSVRS RD 1 EB (DENESMOUTH ARCH)	PED PATH OPP E 65TH ST		P	O	1	S	2/8/2008	4.182	F	1739	$6,956,000	164		
2246430	M	W110 ST ENTR (MOUNTCLIFF ARCH)	PED PATH OPP W109 ST		P	O	1	S	4/25/2008	4.383	F	1200	$4,800,000	164		
2246440	M	79 TH ST PED BRDG	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	3.926	F	5900	$23,600,000	164		
2246450	M	E77 ST PED (GLADE ARCH)	PED PATH OPP E77 ST		P	O-PED	1	C	1/27/2009	4.655	F	5000	$20,000,000	164		
2246460	M	W77 ST ENTR (EAGLEVALE ARCH)	PED PATH OPP W77 ST		P	O	2	S	1/29/2008	4.263	F	5800	$23,200,000	164		
2246470	M	EAST DR (HUDDLESTONE ARCH)	THE LOCH		P	WO	1	S	2/11/2008	4.500	F	1100	$4,400,000	164		
2240640	MQ	ROOSEVELT ISLAND BRDG	E. RIVER E. CHANNEL			WMO	8	S	11/4/2008	5.389	G	36500	$146,000,000	108	401	
2240047	MQ	QUEENSBORO BRIDGE (LL)	EAST RIVER	AL		WEO	53	S	12/8/2008	4.208	F	626900	$2,507,600,000	108	402	401
2240048	MQ	QUEENSBORO BRIDGE (UL)	EAST RIVER - LL			WEO	37	S	12/8/2008	4.340	F	322300	$1,289,200,000	108	402	401

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2267199	Q	FRANCIS LEWIS BLVD	CUNNINGHAM PK RD			O	1	S	4/9/2009	5.033	G	7085	$28,340,000	103		
2266770	Q	BCIP	LAURELTON PKWY			A	1	S	3/7/2008	5.250	G	9508	$38,032,000	109		
2268770	Q	SPRINGFIELD BLVD	EQUES. PATH (ABAND.)			O	1	S	4/20/2009	4.667	F	1470	$5,880,000	111		
2300130	Q	ROCKAWAY BLVD	HOOK CREEK			WO	3	S	8/19/2009	6.271	V	18302	$73,208,000	112		
224004G	Q	TO NY FROM 11TH ST	TERRAIN (CHAMBER)			OE	36	S	11/20/2008	4.390	F	8360	$33,440,000	401	402	
2230700	Q	278I NB (BQE EAST LEG)	32ND AVE (TO BQE WEST LEG)			A	8	S	11/6/2008	6.746	V	31600	$126,400,000	401	403	
2230750	Q	278I SB (BQE EAST LEG)	31ST AVE			A	1	S	8/24/2009	6.508	V	4221	$16,884,000	401	403	
2240660	Q	RIKERS ISLAND BRIDGE	RIKERS ISL CHANNEL			WO	56	S	11/19/2009	4.493	F	183100	$732,400,000	401	480	
2230600	Q	STEINWAY ST	278I WB (BQE)			A	1	S	10/21/2008	6.581	V	5229	$20,916,000	401		
2230610	Q	STEINWAY ST	278I EB (BQE)			A	1	S	10/21/2008	6.581	V	5146	$20,584,000	401		
2230620	Q	37TH ST	278I (B.Q.E.)			A	2	S	3/26/2008	4.583	F	5300	$21,200,000	401		
2230630	Q	35TH ST	278I (B.Q.E.)			A	4	S	4/14/2008	4.736	F	9000	$36,000,000	401		
2230640	Q	32ND ST	278I (B.Q.E.)			A	2	S	6/15/2009	4.903	F	8100	$32,400,000	401		
2230657	Q	31ST ST	278I (B.Q.E.)			A	2	S	10/24/2008	4.847	F	9500	$38,000,000	401		
2230690	Q	278I NB (BQE WEST LEG)	32ND AVE			A	1	S	8/20/2008	6.627	V	4080	$16,320,000	401		
2230710	Q	278I SB (BQE WEST LEG)	32ND AVE			A	1	S	8/5/2009	6.695	V	5240	$20,960,000	401		
2230720	Q	278I SB (BQE EAST LEG)	278I NB (BQE WEST LEG)			A	3	S	5/15/2009	6.364	V	20896	$83,584,000	401		
2230730	Q	31ST AVE	278I NB (BQE WEST LEG)			A	1	S	7/20/2009	6.433	V	5875	$23,500,000	401		
2230740	Q	278I SB (BQE WEST LEG)	31ST AVE			A	1	S	8/4/2009	6.217	V	5246	$20,984,000	401		
2230760	Q	278I NB (BQE EAST LEG)	31ST AVE			A	1	S	10/6/2008	6.610	V	4161	$16,644,000	401		
2230770	Q	278I (BQE WEST LEG)	30TH AVE			A	1	S	6/19/2009	6.695	V	6199	$24,796,000	401		
2230790	Q	BULOVA AVE	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	3300	$13,200,000	401		
2230800	Q	49TH ST	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	4900	$19,600,000	401		
2230810	Q	ASTORIA BLVD EB	278I (BQE WEST LEG)			A	4	S	5/12/2009	4.103	F	8200	$32,800,000	401		
2230820	Q	47TH ST	GCP			A	2	S	5/20/2008	4.944	F	5700	$22,800,000	401		
2230830	Q	278I NB (BQE WEST LEG)	GCP			A	2	S	5/20/2008	4.750	F	7600	$30,400,000	401		
2230840	Q	44TH ST	GCP			A	2	S	5/13/2008	4.847	F	5000	$20,000,000	401		
2230890	Q	49TH ST	GCP			A	2	S	5/14/2008	4.667	F	6350	$25,400,000	401		
2230680	Q	278I (B.Q.E.)	NORTHERN BLVD			A	1	S	11/12/2008	6.079	V	27011	$108,044,000	402	401	
224004F	Q	TO NY FROM 21ST ST	21ST ST			OE	63	S	12/12/2008	4.833	F	63310	$253,240,000	402	401	
2247310	Q	QUEENS BLVD	AMTRAK & LIRR YARD	AL		O	19	S	12/5/2008	6.408	V	92400	$369,600,000	402	401	
2247320	Q	HONEYWELL ST	AMTRAK & LIRR YARD	AL		O	22	S	11/11/2009	5.903	G	99036	$396,144,000	402	401	
2247330	Q	39TH ST (NORTH)	SUNNYSIDE YARD	A		O	14	S	11/3/2009	6.556	V	48200	$192,800,000	402	401	
2247380	Q	ROOSEVELT AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	6.389	V	7380	$29,520,000	402	403	404
2247390	Q	41ST AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	4.942	F	4400	$17,600,000	402	404	
2247400	Q	WOODSIDE AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.033	G	8200	$32,800,000	402	404	
2247410	Q	43RD AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	4800	$19,200,000	402	404	
2247420	Q	44TH AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	5100	$20,400,000	402	404	
2247430	Q	45TH AVE	CSX TRANSPORT	C		O	1	S	10/2/2009	5.306	G	2400	$9,600,000	402	404	
1247280	Q	51 AVE PED BR (2247280)	LIRR MAIN LINE	L		O-PED	5	C	10/6/2009	3.018	F	700	$2,800,000	402		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230520	Q	65TH PLACE	278I (B.Q.E.)			A	2	S	2/22/2008	4.508	F	11600	$46,400,000	402		
2230530	Q	QUEENS BLVD	278I (B.Q.E.)			A	2	S	12/4/2008	6.417	V	25543	$102,172,000	402		
2230540	Q	WOODSIDE AVE	278I (B.Q.E.)			A	1	S	1/29/2008	5.797	G	7500	$30,000,000	402		
2230550	Q	69TH ST	278I (B.Q.E.)			A	2	S	2/15/2008	5.123	G	12600	$50,400,000	402		
2230560	Q	70TH ST	278I (B.Q.E.)			A	2	S	12/11/2008	6.667	V	8580	$34,320,000	402		
2230570	Q	41ST AVE	278I (B.Q.E.)			A	2	S	11/5/2008	6.735	V	8580	$34,320,000	402		
2230587	Q	ROOSEVELT AVE	278I (B.Q.E.)			A	2	S	10/29/2009	5.917	G	11022	$44,088,000	402		
2230590	Q	BROADWAY	278I (B.Q.E.)			O	2	S	12/11/2008	5.789	G	16000	$64,000,000	402		
2230669	Q	278I (B.Q.E.)	35TH AVE			A	1	S	8/6/2009	6.525	V	13135	$52,540,000	402		
2230679	Q	278I (B.Q.E.)	34TH AVE			A	1	S	6/11/2009	6.203	V	7793	$31,172,000	402		
2230869	Q	QUEENS BLVD	ACCESS RD BQE S.B.			A	1	S	12/9/2008	5.727	G	7900	$31,600,000	402		
224004E	Q	TO NY FR THOMSON AVE	JACKSON AVE	L		OE	94	S	12/24/2008	4.642	F	104600	$418,400,000	402		
224004H	Q	TO 21ST ST FROM NY	22ND ST			OE	43	S	12/4/2008	4.324	F	48100	$192,400,000	402		
224004I	Q	TO THOMSON AVE FROM NY	JACKSON AVE	L		OE	39	S	12/20/2008	4.951	F	59100	$236,400,000	402		
2240410	Q	BORDEN AVE	DUTCH KILLS			WMO	2	S	12/8/2009	3.181	F	8400	$33,600,000	402		
2240450	Q	HUNTERS PT AVE	DUTCH KILLS			WMO	4	S	7/22/2008	5.083	G	12168	$48,672,000	402		
2247120	Q	WOODSIDE AVE	LIRR MAIN LINE	L		O	3	S	10/28/2009	4.444	F	14900	$59,600,000	402		
2247150	Q	65TH ST	LIRR MAIN LINE	L		O	3	S	10/26/2009	6.375	V	6344	$25,376,000	402		
2247160	Q	65TH PLACE	LIRR MAIN LINE	L		O	3	S	10/29/2009	6.441	V	8381	$33,524,000	402		
2247260	Q	JACKSON AVE	LIRR MONTAUK DIV	L		O	1	S	11/26/2008	6.183	V	4517	$18,068,000	402		
2247270	Q	21ST ST	LIRR N SIDE DIV	L		O	6	S	11/23/2009	5.306	G	17590	$70,360,000	402		
2247290	Q	49TH AVE	LIRR,AMT,CON NE	L		O	5	S	10/2/2009	3.958	F	20400	$81,600,000	402		
2247300	Q	THOMPSON AVE	AMTRAK & LIRR YARD	AL		O	14	S	11/19/2008	5.042	G	61280	$245,120,000	402		
2247370	Q	37TH AVE	CSX - HELLGATE	C		O	1	S	9/22/2009	6.447	V	6868	$27,472,000	402		
2247640	Q	39TH ST (SOUTH)	AMTRAK & LIRR YARD	AL		O	9	S	11/11/2009	6.125	V	34100	$136,400,000	402		
2230780	Q	278I (BQE EAST LEG)	30TH AVE			A	1	S	6/19/2009	6.524	V	7071	$28,284,000	403	401	
1247010	Q	91 PLACE (2247010)	LIRR PT WASH BR	L		O	1	S	11/17/2009	6.567	V	2760	$11,040,000	404		
2247020	Q	94TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	5	C	10/8/2009	4.030	F	500	$2,000,000	404		
2247180	Q	GRAND AVE	LIRR MAIN LINE	L		O	3	S	10/8/2008	4.660	F	7415	$29,660,000	404		
2247190	Q	55TH AVE PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/7/2009	4.309	F	13000	$52,000,000	404		
2248159	Q	WOODHAVEN BLVD	QUEENS BLVD			O	2	S	9/15/2008	4.288	F	11500	$46,000,000	404		
2247650	Q	60TH RD PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/16/2009	5.000	G	2293	$9,172,000	405	406	
2230120	Q	MYRTLE AVE	JACKIE ROBINSON PKWY			A	1	S	5/2/2008	5.479	G	6400	$25,600,000	405	482	
1247560	Q	METROPOLITAN AVE	LIRR -NY&ATL	LN		O	2	S	10/24/2008	3.762	F	20900	$83,600,000	405		
2065930	Q	HAMILTON PLACE	495I (L.I.E.)			A	2	S	3/5/2008	6.069	V	11111	$44,444,000	405		
2065940	Q	GRAND AVE	495I (L.I.E.)			A	2	S	12/2/2008	4.875	F	12850	$51,400,000	405		
2065950	Q	69TH STREET	495I (L.I.E.)			A	2	S	5/20/2009	5.361	G	10336	$41,344,000	405		
2230040	Q	CYPRESS HILLS ST	JACKIE ROBINSON PKWY			A	1	S	4/17/2008	5.278	G	5000	$20,000,000	405		
2230099	Q	JACKIE ROBINSON PKWY	CYPRESS HILLS CEMETRY			A	1	S	1/18/2008	5.444	G	4200	$16,800,000	405		
2247440	Q	GRAND AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.183	V	3280	$13,120,000	405		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2247450	Q	57TH AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.073	V	2248	$8,992,000	405		
2247460	Q	CALDWELL AVE	CSX TRANSPORT	C		O	1	S	9/22/2008	6.167	V	2243	$8,972,000	405		
2247470	Q	ELIOT AVE	CSX TRANSPORT	C		O	1	S	10/5/2009	5.250	G	2960	$11,840,000	405		
2247480	Q	JUNIPER BLVD SO	CSX TRANSPORT	C		O	1	S	10/6/2009	5.000	G	9000	$36,000,000	405		
2247490	Q	69TH ST JUNPR BLVD	CSX TRANSPORT	C		O	1	S	9/22/2008	5.149	G	6175	$24,700,000	405		
2247500	Q	METROPOLITAN AVE	CSX TRANSPORT	C		O	1	S	10/6/2009	4.233	F	18650	$74,600,000	405		
2247530	Q	ANDREWS AVE	LIRR MONTAUK DIV	L		O	1	S	9/23/2009	7.000	V	1765	$7,060,000	405		
2247540	Q	60TH ST	LIRR MONTAUK DIV	L		O	2	S	10/23/2009	5.097	G	5340	$21,360,000	405		
2247550	Q	ELIOT AVE	LIRR MONTAUK DIV	L		O	2	S	9/23/2009	5.712	G	9550	$38,200,000	405		
2247570	Q	80TH ST	77TH AVE - LIRR MT	L		O	5	S	12/4/2008	5.254	G	11725	$46,900,000	405		
2248200	Q	RUST ST	FLUSHING AVE			O	1	S	7/15/2009	5.047	G	2940	$11,760,000	405		
2248220	Q	SERVICE RD TURNAROUND	FLUSHING AVE			O	1	S	7/15/2009	5.125	G	2940	$11,760,000	405		
2248240	Q	FLUSHING AV SERVICE RD	FLUSHING AVE			O	1	S	7/15/2009	5.250	G	2940	$11,760,000	405		
2248280	Q	HIGHLAND PK PED.	PEDESTRIAN PATH		P	O-PED	1	C	11/19/2009	3.667	F	1856	$7,424,000	405		
2248300	Q	71ST AVE	COOPER AVE			O	1	S	7/13/2009	4.373	F	2800	$11,200,000	405		
2066002	Q	495I (2066000)	WOODHAVEN BLVD			A	2	S	6/26/2009	5.592	G	25200	$100,800,000	406	404	
1247200	Q	67 AVE PED BR (2247200)	LIRR MAIN LINE	L		O-PED	3	C	10/9/2009	4.500	F	1300	$5,200,000	406		
2247630	Q	PED BRG NEAR UNION TPK	ABANDONED LIRR			O-PED	8	C	5/11/2009	5.359	G	900	$3,600,000	406		
2248160	Q	ELLIOT AVE	QUEENS BLVD			O	2	S	9/15/2008	4.922	F	13785	$55,140,000	406		
2240507	Q	ROOSEVELT AVE	678I - FLUSHING RIVER			WA	27	S	12/29/2008	3.535	F	84424	$337,696,000	407	481	
1065210	Q	WHITESTONE EXP NB	BCIP (2065210)			A	1	S	9/4/2008	4.683	F	2500	$10,000,000	407		
2055801	Q	NORTHERN BLVD WB	FLUSHING RIVER			WO	40	S	11/4/2008	4.620	F	71900	$287,600,000	407		
2055802	Q	NORTHERN BLVD EB	FLUSHING RIVER			WO	40	S	11/4/2008	4.366	F	78894	$315,576,000	407		
205580A	Q	N.BLVD WB TO 678I SB	VACANT LAND			AR	16	S	8/28/2008	5.571	G	8600	$34,400,000	407		
2231900	Q	BCIP	TOTTEN AVE			A	1	S	6/27/2008	4.797	F	4900	$19,600,000	407		
2231910	Q	UTOPIA PKWY	BCIP			A	2	S	3/14/2008	5.114	G	7200	$28,800,000	407		
2231920	Q	160TH ST	BCIP			A	2	S	4/24/2009	5.694	G	5550	$22,200,000	407		
2231930	Q	FRANCIS LEWIS BLVD	BCIP			A	3	S	2/15/2008	4.773	F	9100	$36,400,000	407		
2231940	Q	CLINTONVILLE ST	BCIP			A	2	S	2/19/2008	4.705	F	7400	$29,600,000	407		
2231950	Q	150TH ST	BCIP			A	2	S	3/4/2008	4.795	F	5900	$23,600,000	407		
2231960	Q	149TH ST	BCIP			A	2	S	2/28/2008	4.841	F	6210	$24,840,000	407		
2231970	Q	14TH AVE	BCIP			A	2	S	2/28/2008	4.614	F	8100	$32,400,000	407		
2231980	Q	147TH ST	BCIP			A	2	S	3/6/2008	4.523	F	6300	$25,200,000	407		
2247040	Q	UNION ST	LIRR PORT WASH BR	L		O	1	S	9/15/2009	6.328	V	3313	$13,252,000	407		
2247050	Q	BOWNE AVE	LIRR PORT WASH BR	L		O	1	S	9/9/2008	5.490	G	4974	$19,896,000	407		
2247060	Q	PARSONS BLVD	LIRR PORT WASH BR	L		O	1	S	9/10/2008	4.824	F	4200	$16,800,000	407		
2247070	Q	147TH ST	LIRR PORT WASH BR	L		O	1	S	9/10/2009	5.353	G	2800	$11,200,000	407		
2247080	Q	149TH ST	LIRR PORT WASH BR	L		O	1	S	9/8/2009	4.776	F	4100	$16,400,000	407		
2247090	Q	149TH PLACE	LIRR PORT WASH BR	L		O	2	S	9/9/2009	5.000	G	4300	$17,200,000	407		
2247100	Q	150TH ST	LIRR PORT WASH BR	L		O	2	S	9/4/2009	6.176	V	7830	$31,320,000	407		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2247110	Q	MURRAY ST	LIRR PORT WASH BR	L		O	1	S	9/3/2009	5.370	G	4000	$16,000,000	407		
2248090	Q	FLSHG MDW PK PED	COLLEGE POINT BLVD		P	O-PED	3	C	1/8/2009	4.690	F	8418	$33,672,000	407		
2266160	Q	678I SB TO BCIP EB	ACCESS RD FROM 678I			A	1	S	8/26/2009	3.984	F	2300	$9,200,000	407		
7705510	Q	167TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	3	C	10/9/2009	3.902	F	600	$2,400,000	407		
2248059	Q	MOTOR PKWY (PED)	FRANCIS LEWIS BLVD		P	O-PED	2	C	6/23/2009	4.194	F	2756	$11,024,000	408		
2248080	Q	MOTOR PKWY (PED)	HOLLIS COURT BLVD		P	O-PED	3	C	12/3/2008	5.000	G	2670	$10,680,000	408		
2248100	Q	MOTOR PKWY (PED)	73RD AVE		P	O-PED	3	C	2/10/2009	4.965	F	2640	$10,560,000	408		
2267160	Q	ROOSEVELT AVE	FLUSHING MDW PK ROAD			O	4	S	8/12/2009	4.873	F	7280	$29,120,000	408		
2248299	Q	J.R. PKWY-UNION TPKE	AUSTIN ST			O	1	S	6/2/2008	4.250	F	5900	$23,600,000	409	406	
2247600	Q	PARK LANE SOUTH	LIRR MONTAUK DIV	L		O	1	S	10/9/2008	6.983	V	3024	$12,096,000	409	482	
2230209	Q	QUEENS BLVD	JACKIE ROBINSON PKWY	T		A	5	S	7/29/2008	4.746	F	37700	$150,800,000	409		
2247220	Q	80TH ROAD	LIRR MAIN LINE	L		O	3	S	10/7/2009	4.857	F	4100	$16,400,000	409		
2247230	Q	82ND AVE	LIRR MAIN LINE	L		O	3	S	10/6/2009	5.377	G	4100	$16,400,000	409		
2247240	Q	LEFFERTS BLVD	LIRR MAIN LINE	L		O	3	S	10/8/2009	5.750	G	5460	$21,840,000	409		
2247590	Q	FOREST PARK DRIVE	LIRR MONTAUK DIV	L	P	O	5	S	9/21/2009	5.333	G	6000	$24,000,000	409		
2247660	Q	FOREST PARK DRIVE	ABANDONED LIRR		P	O	6	S	4/21/2009	5.032	G	10000	$40,000,000	409		
2248019	Q	WOODHAVEN BLVD	ATLANTIC AVE			O	3	S	4/9/2008	4.306	F	19400	$77,600,000	409		
2248340	Q	FOREST PARK DR	MYRTLE AVE		P	O	3	S	6/15/2009	4.984	F	5100	$20,400,000	409		
2231559	Q	CROSS BAY BLVD	BSHP			A	4	S	5/29/2008	5.139	G	23205	$92,820,000	410		
2231560	Q	S CONDUIT BLVD	BSOP			A	2	S	7/29/2008	5.465	G	15776	$63,104,000	410		
2231570	Q	COHANCY ST	BSOP			A	2	S	5/7/2008	4.632	F	6400	$25,600,000	410		
2231590	Q	130TH ST	BSOP			A	2	S	2/12/2008	4.659	F	6800	$27,200,000	410		
2240650	Q	163RD AVE PED BRDG	HAWTREE BASIN			WO-PED	13	C	9/30/2009	4.333	F	5000	$20,000,000	410		
2248020	Q	WHITELAW PED BRDG	CONDUIT AVE			O-PED	7	C	11/12/2009	4.775	F	5500	$22,000,000	410		
2248039	Q	CROSS BAY BLVD	NASSAU EXPWY - RTE 27			O	2	S	6/30/2009	6.417	V	16544	$66,176,000	410		
2248040	Q	RAMP TO LINDEN BLVD	SO. CONDUIT AVE			O	1	S	7/18/2008	5.267	G	3352	$13,408,000	410		
2248250	Q	102ND ST	HAWTREE BASIN			WO	3	S	8/17/2009	5.941	G	4900	$19,600,000	410		
2231860	Q	W ALLEY ROAD	BCIP			A	2	S	7/28/2009	5.263	G	7200	$28,800,000	411		
2231870	Q	NORTHERN BLVD	BCIP			A	2	S	9/22/2008	6.236	V	9400	$37,600,000	411		
2231880	Q	CROCHERON PK PED	BCIP		P	A-PED	9	C	6/8/2009	4.551	F	2300	$9,200,000	411		
2231890	Q	28TH AVE PED BRDG	BCIP		P	A-PED	24	C	6/1/2009	4.613	F	7600	$30,400,000	411		
2240440	Q	NORTHERN BLVD	ALLEY CREEK			WO	2	S	8/15/2008	4.750	F	8300	$33,200,000	411		
2247130	Q	CORPORAL KENNEDY ST	LIRR PORT WASH BR	L		O	1	S	10/30/2009	6.235	V	3379	$13,516,000	411		
2247140	Q	BELL BLVD	LIRR PORT WASH BR	L		O	1	S	9/17/2009	5.780	G	4320	$17,280,000	411		
2247170	Q	DOUGLASTON PKWY	LIRR PORT WASH BR	L		O	3	S	9/11/2008	4.712	F	6300	$25,200,000	411		
2247680	Q	221ST ST	LIRR PORT WASH BR	L		O	3	S	9/16/2009	5.941	G	6050	$24,200,000	411		
2248060	Q	MOTOR PKWY (PED)	BELL BLVD		P	O-PED	2	C	6/23/2009	4.000	F	2648	$10,592,000	411		
2248070	Q	MOTOR PKWY (PED)	SPRINGFIELD BLVD		P	O-PED	3	C	6/17/2009	4.179	F	2940	$11,760,000	411		
2266129	Q	DOUGLASTON PKWY	BCIP SB			A	1	S	4/1/2008	4.592	F	4400	$17,600,000	411		
2266139	Q	DOUGLASTON PKWY	BCIP NB			A	1	S	3/25/2008	4.551	F	6400	$25,600,000	411		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
7703720	Q	216TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	6	C	10/25/2009	3.556	F	400	$1,600,000	411		
2231610	Q	GUY R. BREWER BLVD	BSOP			A	4	S	5/12/2009	6.319	V	12342	$49,368,000	413		
2231620	Q	FARMERS BLVD	BSOP			A	2	S	6/26/2008	4.568	F	6400	$25,600,000	413		
2231630	Q	SPRINGFIELD BLVD	BSOP			A	2	S	5/20/2008	4.614	F	8500	$34,000,000	413		
2231640	Q	225TH ST	BSOP			A	2	S	6/26/2008	5.000	G	7000	$28,000,000	413		
2231650	Q	SUNRISE HWY W.B.	BLP E.B.			A	1	S	4/16/2008	4.623	F	4100	$16,400,000	413		
2231660	Q	SUNRISE HWY W.B.	BLP W.B.			A	2	S	3/10/2008	4.652	F	5350	$21,400,000	413		
2231670	Q	N CONDUIT AVE WB	BLP E.B.			A	1	S	2/7/2008	4.917	F	4000	$16,000,000	413		
2231680	Q	N CONDUIT AVE WB	BLP W.B.			A	2	S	2/12/2008	4.932	F	6500	$26,000,000	413		
2231690	Q	FRANCIS LEWIS BLVD	BLP E.B.			A	1	S	4/18/2008	5.167	G	6000	$24,000,000	413		
2231700	Q	FRANCIS LEWIS BLVD	BLP W.B.			A	1	S	4/17/2008	4.833	F	6000	$24,000,000	413		
2231710	Q	MERRICK BLVD	BLP N.B.			A	1	S	2/27/2008	4.400	F	6000	$24,000,000	413		
2231720	Q	MERRICK BLVD	BLP S.B.			A	1	S	2/27/2008	4.200	F	6000	$24,000,000	413		
2231730	Q	130TH AVE	BLP N.B.			A	1	S	1/23/2008	5.267	G	4400	$17,600,000	413		
2231740	Q	130TH AVE	BLP S.B.			A	1	S	2/8/2008	4.767	F	4400	$17,600,000	413		
2231750	Q	LINDEN BLVD	BCIP			A	2	S	3/7/2008	4.341	F	6700	$26,800,000	413		
2231760	Q	BCIP	DUTCH BROADWAY-115 AVE			A	1	S	3/7/2008	4.442	F	7300	$29,200,000	413		
2231770	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	2/14/2008	4.688	F	3200	$12,800,000	413		
2231780	Q	HEMPSTEAD AVE	BCIP			A	2	S	2/19/2008	3.903	F	14200	$56,800,000	413		
2231790	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	1/29/2008	4.563	F	3400	$13,600,000	413		
2231800	Q	SUPERIOR ROAD	BCIP			A	2	S	4/14/2008	4.136	F	7000	$28,000,000	413		
2231819	Q	JAMAICA AVE	BCIP			A	2	S	3/3/2008	4.773	F	11500	$46,000,000	413		
2231829	Q	BRADDOCK AVE	BCIP			A	2	S	5/27/2009	4.591	F	10600	$42,400,000	413		
2231840	Q	HILLSIDE AVE	BCIP			A	2	S	4/8/2008	4.184	F	9672	$38,688,000	413		
2231850	Q	UNION TPKE	BCIP			A	2	S	4/3/2008	4.409	F	13600	$54,400,000	413		
2248110	Q	MOTOR PKWY (PED)	ALLEY PK PED WALK		P	O-PED	1	C	7/16/2009	4.305	F	963	$3,852,000	413		
2248129	Q	UNION TPKE	CREEDMOORE HOSP RD			O	1	S	6/30/2009	4.867	F	3500	$14,000,000	413		
2266149	Q	HEMPSTEAD AVE	BCIP RAMP NB			A	2	S	3/10/2008	4.190	F	9500	$38,000,000	413		
Q00002	Q	BCIP	PATH OPP. 88TH RD			A	1	C	6/30/2009	4.667	F	1200	$4,800,000	413		
2248130	Q	FLUSHING MEADOW PK PED	WILLOW LK&76TH RD		P	WO-PED	4	C	4/20/2002	1.000	C	1891	$7,564,000	481		
2248140	Q	FLUSHING MEADW PK RD	STREAM N OF LIE		P	WO	5	C	7/10/2009	4.636	F	4102	$16,408,000	481		
2248260	Q	FLUSHING MDW PARK RD	MEADOW LAKE		P	WO	5	S	8/21/2009	4.745	F	4200	$16,800,000	481		
2248379	Q	FLUSHING MDW PARK RD	AQUACADE LAKE		P	WO	5	C	7/13/2009	4.041	F	6321	$25,284,000	481		
2230190	Q	MARKWOOD ROAD	JACKIE ROBINSON PKWY			A	1	S	5/5/2008	5.389	G	4400	$17,600,000	482	406	
2247620	Q	MYRTLE AVE	ABANDONED LIRR			O	3	S	1/16/2008	5.028	G	6725	$26,900,000	482	406	
2230179	Q	JACKIE ROBINSON PKWY	METROPOLITAN AVE			A	2	S	5/21/2008	5.321	G	8673	$34,692,000	482		
2230180	Q	UNION TPKE	JACKIE ROBINSON PKWY			A	1	S	2/25/2008	5.891	G	5359	$21,436,000	482		
2248369	Q	ROCKAWAY BLVD	THURSTON BASIN			WO	2	S	8/20/2009	5.158	G	6000	$24,000,000	483	413	
2248230	Q	BEACH CHANNEL DR WB	BEACH CHANNEL DR EB			O	1	S	7/15/2009	4.400	F	3600	$14,400,000	484		
2268920	R	AMBOY ROAD	LEMON CREEK			WO	1	S	4/22/2008	6.500	V	1310	$5,240,000	207		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2249040	R	TOMPKINS AVE	B&O RR (ABANDONED)			O	1	S	8/1/2008	6.047	V	5096	$20,384,000	501		
2249070	R	JOHN ST	B&O RR (ABANDONED)	O		O-PED	3	C	10/16/2009	5.648	G	5800	$23,200,000	501		
2249090	R	MORNINGSTAR ROAD	B&O RR (ABANDONED)	O		O	4	S	5/4/2009	4.593	F	7900	$31,600,000	501		
2249100	R	GRANITE AVE	B&O RR (ABANDONED)	O		O	4	S	5/13/2008	6.034	V	7300	$29,200,000	501		
2249110	R	LAKE AVE	B&O RR (ABANDONED)	O		O	3	S	4/30/2009	5.333	G	5900	$23,600,000	501		
2249120	R	SIMONSON AVE	B&O RR (ABANDONED)	O		O	3	S	4/24/2009	5.981	G	5819	$23,276,000	501		
2249130	R	VAN NAME AVE	B&O RR (ABANDONED)	O		O	3	S	4/23/2009	5.254	G	5474	$21,896,000	501		
2249140	R	VAN PELT AVE	B&O RR (ABANDONED)	O		O	3	S	4/28/2009	5.644	G	5000	$20,000,000	501		
2249160	R	DE HART AVE	B&O RR (ABANDONED)	O		O	4	S	4/27/2009	6.500	V	6700	$26,800,000	501		
2249170	R	UNION AVE	B&O RR (ABANDONED)	O		O	4	S	4/28/2009	5.426	G	6500	$26,000,000	501		
2249180	R	HARBOR ROAD	B&O RR (ABANDONED)	O		O	4	S	6/20/2009	6.322	V	5778	$23,112,000	501		
2249200	R	SOUTH AVE	B&O RR (ABANDONED)	O		O	3	S	6/20/2009	6.745	V	8322	$33,288,000	501		
2249510	R	TOMPKINS AVE	WILLOW AVE, SIRT	S		O	2	S	11/15/2008	5.567	G	5378	$21,512,000	501		
2249520	R	HANNAH ST	SIRT SOUTH SHORE	S		O	10	S	9/25/2009	4.763	F	10020	$40,080,000	501		
2249530	R	MINTHORNE ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	26	C	3/30/2009	4.755	F	1600	$6,400,000	501		
2249710	R	WEST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.568	F	899	$3,596,000	501		
2249720	R	EAST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.343	F	899	$3,596,000	501		
2249730	R	BRIDGE OVER DAM	N.END CLOVE LAKE		P	WO-PED	1	C	10/2/2009	3.784	F	972	$3,888,000	501		
2249760	R	MARTLINGS AVE	RICHMOND LAKE DAM			WO	2	S	6/2/2009	4.600	F	7000	$28,000,000	501		
2249770	R	S OF BROOKS LAKE	STREAM IN PARK		P	WO-PED	3	C	12/17/2009	5.000	G	696	$2,784,000	501		
2249780	R	FOOTBRIDGE	BROOKS LAKE DAM		P	WO-PED	1	C	11/17/2009	3.967	F	800	$3,200,000	501		
2249790	R	FB S OF FOREST AV	STREAM IN PARK		P	WO-PED	3	C	11/10/2009	4.814	F	658	$2,632,000	501		
2249800	R	FOREST AVE	CLOVE LAKES PK STREAM		P	WO	1	S	11/4/2009	4.867	F	1600	$6,400,000	501		
2249840	R	TOMPKINS AVE	GREENFIELD AVE			O	1	S	4/7/2008	5.106	G	2690	$10,760,000	501		
2269730	R	PARKING EXIT RAMP	SIRT	S	F	O	10	S	12/4/2009	4.028	F	20727	$82,908,000	501		
2269740	R	BUS STATION NORTH	SIRT	S	F	O	12	S	12/4/2009	3.980	F	64605	$258,420,000	501		
2269750	R	BUS STATION SOUTH	SIRT	S	F	O	12	S	12/10/2009	4.720	F	154688	$618,752,000	501		
2269760	R	NORTH RAMP	SIRT	S	F	O	9	S	11/16/2009	4.042	F	17589	$70,356,000	501		
2269770	R	BUS STA ENTR RAMP	SIRT	S	F	O	19	S	12/26/2008	4.181	F	39333	$157,332,000	501		
2269780	R	PARKING ENTR RAMP	SIRT	S	F	O	3	S	12/18/2008	4.986	F	8589	$34,356,000	501		
2269790	R	BUS STATION EXIT RAMP	SIRT	S	F	O	7	S	12/26/2008	4.722	F	28721	$114,884,000	501		
2270170	R	SI FERRY PED BRDG	PARKING LOT EXIT RDWY		F	O-PED	5	C	3/23/2009	3.936	F	1750	$7,000,000	501		
2270180	R	BOROUGH PLACE - RAMP A	SN ISLAND RAILWAY	S	F	O	1	S	12/29/2005	4.938	F	1250	$5,000,000	501		
2240350	R	RICHMOND AVE	RICHMOND CREEK			WO	3	S	7/8/2009	5.444	G	32589	$130,356,000	502		
2249400	R	BEACH AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.576	G	3700	$14,800,000	502		
2249410	R	ROSS AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.379	G	3800	$15,200,000	502		
2249420	R	ROSE AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.591	G	3800	$15,200,000	502		
2249430	R	NEW DORP LANE	SIRT SOUTH SHORE	S		O	2	S	11/4/2009	4.903	F	7600	$30,400,000	502		
2249440	R	BANCROFT AVE	SIRT SOUTH SHORE	S		O	3	S	11/4/2009	5.361	G	5900	$23,600,000	502		
2249450	R	FREMONT AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	4/3/2009	3.745	F	800	$3,200,000	502		

INVENTORY SORTED BY BOROUGH AND COMMUNITY BOARD DISTRICT

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2249460	R	LINCOLN AVE	SIRT SOUTH SHORE	S		O	1	S	11/4/2009	5.276	G	4500	$18,000,000	502		
2249470	R	MIDLAND AVE	SIRT SOUTH SHORE	S		O	1	S	11/25/2009	5.466	G	3000	$12,000,000	502		
2249480	R	FINGERBOARD ROAD	SIRT SOUTH SHORE	S		O	2	S	11/25/2009	6.542	V	5100	$20,400,000	502		
2249490	R	CLOVE ROAD	SIRT SOUTH SHORE	S		O	3	S	11/10/2008	6.097	V	5104	$20,416,000	502		
2249860	R	SLATER BLVD	NEW CREEK			WO	1	S	5/6/2009	5.673	G	2037	$8,148,000	502		
2249870	R	TRAVIS AVE	MAIN CREEK			WO	1	S	9/15/2009	5.733	G	1700	$6,800,000	502		
2249880	R	CHELSEA ROAD	SAWMILL CREEK			WO	1	S	5/11/2009	6.816	V	2205	$8,820,000	502		
2249210	R	MAIN ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	3/21/2009	4.164	F	400	$1,600,000	503		
2249230	R	TRACY AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	6/8/2009	3.681	F	200	$800,000	503		
2249240	R	ARTHUR KILL ROAD	SIRT SOUTH SHORE	S		O	1	S	11/13/2008	4.611	F	3650	$14,600,000	503		
2249250	R	BETHEL AV PED BRDG	SIRT SOUTH SHORE	S		O-PED	12	C	4/1/2009	3.525	F	500	$2,000,000	503		
2249269	R	PAGE AVE	SIRT SOUTH SHORE	S		O	4	S	8/25/2009	6.347	V	30710	$122,840,000	503		
2249270	R	RICHMOND VALLY ROAD	SIRT SOUTH SHORE	S		O	4	S	8/24/2009	5.284	G	9440	$37,760,000	503		
2249280	R	CHAMP COURT PED BRDG	SIRT SOUTH SHORE	S		O-PED	7	C	3/31/2009	4.393	F	200	$800,000	503		
2249290	R	SEGUINE AVE	SIRT SOUTH SHORE	S		O	1	S	10/19/2009	6.016	V	3250	$13,000,000	503		
2249300	R	HUGUENOT AVE	SIRT SOUTH SHORE	S		O	2	S	10/20/2009	4.864	F	4900	$19,600,000	503		
2249320	R	ALBEE AVE	SIRT SOUTH SHORE	S		O	3	S	10/21/2009	4.623	F	6500	$26,000,000	503		
2249330	R	ANNADALE ROAD	SIRT SOUTH SHORE	S		O	2	S	8/18/2009	4.576	F	4500	$18,000,000	503		
2249350	R	NELSON AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	3/1/2009	4.115	F	300	$1,200,000	503		
2249360	R	GIFFORDS LANE	SIRT SOUTH SHORE	S		O	1	S	11/12/2008	5.781	G	3042	$12,168,000	503		
2249370	R	GREAVES AVE	SIRT SOUTH SHORE	S		O	1	S	8/26/2009	6.750	V	2650	$10,600,000	503		
2249380	R	GUYON AVE	SIRT SOUTH SHORE	S		O	3	S	8/27/2009	4.869	F	6900	$27,600,000	503		
2249390	R	CEDARVIEW AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	2/22/2009	4.077	F	600	$2,400,000	503		
2249580	R	BELFIELD AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	4/2/2009	4.098	F	400	$1,600,000	503		
2249810	R	HYLAN BLVD	LEMON CREEK			WO	1	S	4/25/2008	6.406	V	11400	$45,600,000	503		
2249820	R	ARTHUR KILL ROAD	ARTHUR KILL STREAM			WO	1	S	5/8/2009	4.286	F	2000	$8,000,000	503		
		785 OPEN BRIDGES				OPEN SPANS 4,446				OPEN SF		14,420,919	$57,691,240,000			

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2248250	Q	102ND ST	HAWTREE BASIN			WO	3	S	8/17/2009	5.941	G	4900	$19,600,000	410		
2245209	M	11TH AVE	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	4.471	F	15400	$61,600,000	104		
2243630	K	11TH AVE	LIRR & SEA BEACH	NT		O	5	S	12/18/2008	6.103	V	9700	$38,800,000	310		
2245010	M	11TH AVE VIADUCT	LIRR WEST SIDE YARD	AL		O	39	S	12/30/2008	4.028	F	157500	$630,000,000	104		
2231730	Q	130TH AVE	BLP N.B.			A	1	S	1/23/2008	5.267	G	4400	$17,600,000	413		
2231740	Q	130TH AVE	BLP S.B.			A	1	S	2/8/2008	4.767	F	4400	$17,600,000	413		
2231590	Q	130TH ST	BSOP			A	2	S	2/12/2008	4.659	F	6800	$27,200,000	410		
2243640	K	13TH AVE	LIRR & SEA BEACH	NT		O	5	S	9/23/2009	4.694	F	16000	$64,000,000	310		
2240089	BM	145TH ST BRIDGE	HARLEM RIVER			WMO	8	S	11/13/2009	6.403	V	56700	$226,800,000	110	204	201
2231980	Q	147TH ST	BCIP			A	2	S	3/6/2008	4.523	F	6300	$25,200,000	407		
2247070	Q	147TH ST	LIRR PORT WASH BR	L		O	1	S	9/10/2009	5.353	G	2800	$11,200,000	407		
2247090	Q	149TH PLACE	LIRR PORT WASH BR	L		O	2	S	9/9/2009	5.000	G	4300	$17,200,000	407		
2231960	Q	149TH ST	BCIP			A	2	S	2/28/2008	4.841	F	6210	$24,840,000	407		
2247080	Q	149TH ST	LIRR PORT WASH BR	L		O	1	S	9/8/2009	4.776	F	4100	$16,400,000	407		
2231970	Q	14TH AVE	BCIP			A	2	S	2/28/2008	4.614	F	8100	$32,400,000	407		
2243650	K	14TH AVE	LIRR BAY RIDGE	N		O	1	S	12/5/2008	6.967	V	4720	$18,880,000	311		
2231950	Q	150TH ST	BCIP			A	2	S	3/4/2008	4.795	F	5900	$23,600,000	407		
2247100	Q	150TH ST	LIRR PORT WASH BR	L		O	2	S	9/4/2009	6.176	V	7830	$31,320,000	407		
2243670	K	15TH AVE	BMT SEA BEACH	T		O	4	S	9/24/2009	6.386	V	16020	$64,080,000	311		
2243340	K	15TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	4.723	F	3614	$14,456,000	311		
2231920	Q	160TH ST	BCIP			A	2	S	4/24/2009	5.694	G	5550	$22,200,000	407		
2240650	Q	163RD AVE PED BRDG	HAWTREE BASIN			WO-PED	13	C	9/30/2009	4.333	F	5000	$20,000,000	410		
7705510	Q	167TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	3	C	10/9/2009	3.902	F	600	$2,400,000	407		
2243680	K	16TH AVE	BMT SEA BEACH	T		O	3	S	11/26/2008	5.370	G	6816	$27,264,000	311		
2243360	K	16TH AVE	LIRR BAY RIDGE	N		O	1	S	11/26/2008	5.350	G	4345	$17,380,000	311		
206672A	B	174TH ST-NTH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	4.875	F	1800	$7,200,000	209		
206672B	B	174TH ST-STH PED BRDG	895I - SHERIDAN EXPWY			A-PED	4	C	4/9/2009	5.209	G	1900	$7,600,000	209		
2243690	K	17TH AVE	BMT SEA BEACH	T		O	4	S	11/26/2008	6.327	V	8946	$35,784,000	311		
2243370	K	17TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.824	F	3406	$13,624,000	312		
2231300	K	17TH AVE PED BRDG	BSHP		P	A-PED	1	C	11/4/2009	3.397	F	2100	$8,400,000	311		
2243700	K	18TH AVE	BMT SEA BEACH	T		O	1	S	9/25/2009	6.632	V	5200	$20,800,000	311		
2243380	K	18TH AVE	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.656	F	6006	$24,024,000	312		
2243710	K	19TH AVE	BMT SEA BEACH	T		O	4	S	10/27/2008	4.395	F	4800	$19,200,000	311		
2241259	B	204TH ST PED BRDG	METRO NORTH RR HAR	M	P	O-PED	1	C	3/4/2009	4.034	F	4700	$18,800,000	227	207	
2243720	K	20TH AVE	BMT SEA BEACH	T		O	1	S	10/28/2008	6.673	V	12500	$50,000,000	311		
7703720	Q	216TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	6	C	10/25/2009	3.556	F	400	$1,600,000	411		
2243820	K	21ST AVE	BMT SEA BEACH	T		O	4	S	10/28/2009	3.921	F	21400	$85,600,000	311		
2247270	Q	21ST ST	LIRR N SIDE DIV	L		O	6	S	11/23/2009	5.306	G	17590	$70,360,000	402		
2247680	Q	221ST ST	LIRR PORT WASH BR	L		O	3	S	9/16/2009	5.941	G	6050	$24,200,000	411		
2231640	Q	225TH ST	BSOP			A	2	S	6/26/2008	5.000	G	7000	$28,000,000	413		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2229450	B	232ND ST	HHP			A	2	S	8/26/2009	5.026	G	4900	$19,600,000	208		
2229460	B	236TH ST PED BRDG	HHP			A-PED	3	C	6/4/2009	4.607	F	2500	$10,000,000	208		
2229470	B	239TH ST	HHP			A	2	S	5/27/2009	5.368	G	6100	$24,400,000	208		
2229490	B	246TH ST	HHP			A	2	S	5/22/2009	4.947	F	5600	$22,400,000	208		
2229500	B	252ND ST	HHP			A	2	S	2/28/2008	5.474	G	4500	$18,000,000	208		
224004J	M	25X	NYC GARAGE			OE	14	S	5/19/2008	4.537	F	22058	$88,232,000	108		
2266540	B	278I	BRUCKNER BLVD			A	2	S	7/8/2009	4.565	F	32900	$131,600,000	201		
2230679	Q	278I (B.Q.E.)	34TH AVE			A	1	S	6/11/2009	6.203	V	7793	$31,172,000	402		
2230669	Q	278I (B.Q.E.)	35TH AVE			A	1	S	8/6/2009	6.525	V	13135	$52,540,000	402		
2230470	K	278I (B.Q.E.)	JAY ST			A	1	S	3/10/2008	4.833	F	5100	$20,400,000	302		
2230510	K	278I (B.Q.E.)	NASSAU ST			A	6	S	12/4/2009	4.606	F	51200	$204,800,000	302		
2230680	Q	278I (B.Q.E.)	NORTHERN BLVD			A	1	S	11/12/2008	6.079	V	27011	$108,044,000	402	401	
2230460	K	278I (B.Q.E.)	PEARL ST			A	1	S	3/10/2008	5.333	G	4500	$18,000,000	302		
2230430	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	2/28/2008	5.000	G	1100	$4,400,000	302		
2230480	K	278I (B.Q.E.)	PROSPECT ST			A	1	S	4/24/2008	5.093	G	8400	$33,600,000	302		
2230500	K	278I (B.Q.E.)	RAMP TO BQE EB			A	1	S	3/25/2008	5.100	G	1300	$5,200,000	302		
2230490	K	278I (B.Q.E.)	SANDS ST			A	1	S	3/26/2008	5.019	G	12600	$50,400,000	302		
2230780	Q	278I (BQE EAST LEG)	30TH AVE			A	1	S	6/19/2009	6.524	V	7071	$28,284,000	403	401	
2230770	Q	278I (BQE WEST LEG)	30TH AVE			A	1	S	6/19/2009	6.695	V	6199	$24,796,000	401		
2268508	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	11	S	5/26/2009	4.034	F	20529	$82,116,000	302		
2268518	K	278I E.B. (B.Q.E.)	278I W.B. (B.Q.E.)			A	5	S	7/2/2009	4.214	F	9275	$37,100,000	302		
2268498	K	278I E.B. (B.Q.E.)	278I WB (BQE)			A	69	S	7/17/2009	3.965	F	133708	$534,832,000	302		
2230888	K	278I E.B. (B.Q.E.)	CADMAN PLAZA / 278I WB			A	2	S	8/21/2008	5.053	G	4500	$18,000,000	302		
2230450	K	278I EB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	4.933	F	2500	$10,000,000	302		
2230858	K	278I EB (B.Q.E.)	JORALEMON ST / BQE WB			A	2	S	6/29/2009	4.177	F	5900	$23,600,000	302		
2230410	K	278I EB (B.Q.E.)	WASHINGTON ST			A	1	S	7/31/2009	4.375	F	2500	$10,000,000	302		
2230760	Q	278I NB (BQE EAST LEG)	31ST AVE			A	1	S	10/6/2008	6.610	V	4161	$16,644,000	401		
2230700	Q	278I NB (BQE EAST LEG)	32ND AVE (TO BQE WEST LEG)			A	8	S	11/6/2008	6.746	V	31600	$126,400,000	401	403	
2230690	Q	278I NB (BQE WEST LEG)	32ND AVE			A	1	S	8/20/2008	6.627	V	4080	$16,320,000	401		
2230830	Q	278I NB (BQE WEST LEG)	GCP			A	2	S	5/20/2008	4.750	F	7600	$30,400,000	401		
2230720	Q	278I SB (BQE EAST LEG)	278I NB (BQE WEST LEG)			A	3	S	5/15/2009	6.364	V	20896	$83,584,000	401		
2230710	Q	278I SB (BQE WEST LEG)	32ND AVE			A	1	S	8/5/2009	6.695	V	5240	$20,960,000	401		
2230750	Q	278I SB (BQE EAST LEG)	31ST AVE			A	1	S	8/24/2009	6.508	V	4221	$16,884,000	401	403	
2230740	Q	278I SB (BQE WEST LEG)	31ST AVE			A	1	S	8/4/2009	6.217	V	5246	$20,984,000	401		
2230887	K	278I W.B. (B.Q.E.)	CADMAN PLAZA			A	2	S	8/21/2008	4.426	F	4500	$18,000,000	302		
2268497	K	278I W.B. (B.Q.E.)	FURMAN ST			A	45	S	7/14/2009	4.381	F	86406	$345,624,000	302		
2268517	K	278I W.B. (B.Q.E.)	FURMAN ST			A	7	S	6/29/2009	3.882	F	10988	$43,952,000	302		
2268507	K	278I W.B. (B.Q.E.)	YORK ST			A	6	S	5/26/2009	4.071	F	10388	$41,552,000	302		
2230440	K	278I WB (B.Q.E.)	ADAMS ST			A	1	S	1/18/2008	5.200	G	2700	$10,800,000	302		
2230857	K	278I WB (B.Q.E.)	JORALEMON ST			A	1	S	5/24/2008	5.000	G	2100	$8,400,000	302		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230420	K	278I WB (B.Q.E.)	WASHINGTON ST			A	1	S	7/23/2008	4.750	F	2500	$10,000,000	302		
2231330	K	27TH AVE PED BRDG	BSHP		P	A-PED	1	C	1/13/2009	3.927	F	2100	$8,400,000	313		
2231890	Q	28TH AVE PED BRDG	BCIP		P	A-PED	24	C	6/1/2009	4.613	F	7600	$30,400,000	411		
2243310	K	2ND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	6.444	V	17751	$71,004,000	310		
2230730	Q	31ST AVE	278I NB (BQE WEST LEG)			A	1	S	7/20/2009	6.433	V	5875	$23,500,000	401		
2230657	Q	31ST ST	278I (B.Q.E.)			A	2	S	10/24/2008	4.847	F	9500	$38,000,000	401		
2230640	Q	32ND ST	278I (B.Q.E.)			A	2	S	6/15/2009	4.903	F	8100	$32,400,000	401		
2230630	Q	35TH ST	278I (B.Q.E.)			A	4	S	4/14/2008	4.736	F	9000	$36,000,000	401		
2247370	Q	37TH AVE	CSX - HELLGATE	C		O	1	S	9/22/2009	6.447	V	6868	$27,472,000	402		
2230620	Q	37TH ST	278I (B.Q.E.)			A	2	S	3/26/2008	4.583	F	5300	$21,200,000	401		
2247330	Q	39TH ST (NORTH)	SUNNYSIDE YARD	A		O	14	S	11/3/2009	6.556	V	48200	$192,800,000	402	401	
2247640	Q	39TH ST (SOUTH)	AMTRAK & LIRR YARD	AL		O	9	S	11/11/2009	6.125	V	34100	$136,400,000	402		
2243320	K	3RD AVE	LIRR BAY RIDGE	N		O	4	S	8/31/2009	5.083	G	17230	$68,920,000	310		
2244160	K	3RD AVE	SHORE RD DRIVE			O	1	S	5/8/2009	6.727	V	4360	$17,440,000	310		
2230570	Q	41ST AVE	278I (B.Q.E.)			A	2	S	11/5/2008	6.735	V	8580	$34,320,000	402		
2247390	Q	41ST AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	4.942	F	4400	$17,600,000	402	404	
2247410	Q	43RD AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	4800	$19,200,000	402	404	
2247420	Q	44TH AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.000	G	5100	$20,400,000	402	404	
2230840	Q	44TH ST	GCP			A	2	S	5/13/2008	4.847	F	5000	$20,000,000	401		
2247430	Q	45TH AVE	CSX TRANSPORT	C		O	1	S	10/2/2009	5.306	G	2400	$9,600,000	402	404	
2230820	Q	47TH ST	GCP			A	2	S	5/20/2008	4.944	F	5700	$22,800,000	401		
2066002	Q	495I (2066000)	WOODHAVEN BLVD			A	2	S	6/26/2009	5.592	G	25200	$100,800,000	406	404	
2247290	Q	49TH AVE	LIRR,AMT,CON NE	L		O	5	S	10/2/2009	3.958	F	20400	$81,600,000	402		
2230800	Q	49TH ST	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	4900	$19,600,000	401		
2230890	Q	49TH ST	GCP			A	2	S	5/14/2008	4.667	F	6350	$25,400,000	401		
2231270	K	4TH AVE	BSHP			A	2	S	4/10/2008	4.842	F	6100	$24,400,000	310		
2243330	K	4TH AVE	LIRR BAY RIDGE	NT		O	4	S	9/9/2009	5.736	G	13668	$54,672,000	310		
2243839	K	4TH AVE	NYCTA BMT TRACKS	T		O	1	S	9/18/2009	6.267	V	4440	$17,760,000	307		
2243400	K	50TH ST	LIRR BAY RIDGE	N		O	2	S	9/4/2009	4.731	F	7100	$28,400,000	312		
1247280	Q	51 AVE PED BR (2247280)	LIRR MAIN LINE	L		O-PED	5	C	10/6/2009	3.018	F	700	$2,800,000	402		
2243390	K	52ND ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	6.250	V	3293	$13,172,000	312		
2247190	Q	55TH AVE PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/7/2009	4.309	F	13000	$52,000,000	404		
2247450	Q	57TH AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.073	V	2248	$8,992,000	405		
2066100	K	5TH AVE	27 X PROSPECT EXPWY			A	1	S	5/21/2008	5.104	G	8800	$35,200,000	307		
2244480	K	5TH AVE	GREENWOOD CEMETERY			O	1	S	9/9/2009	4.667	F	3600	$14,400,000	307		
2243580	K	5TH AVE	LIRR & SEA BEACH	NT		O	4	S	12/2/2008	4.147	F	12395	$49,580,000	310		
2247650	Q	60TH RD PED BRDG	LIRR MAIN LINE	L		O-PED	3	C	10/16/2009	5.000	G	2293	$9,172,000	405	406	
2243350	K	60TH ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.267	V	3900	$15,600,000	311		
2247540	Q	60TH ST	LIRR MONTAUK DIV	L		O	2	S	10/23/2009	5.097	G	5340	$21,360,000	405		
2230520	Q	65TH PLACE	278I (B.Q.E.)			A	2	S	2/22/2008	4.508	F	11600	$46,400,000	402		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2247160	Q	65TH PLACE	LIRR MAIN LINE	L		O	3	S	10/29/2009	6.441	V	8381	$33,524,000	402		
2243730	K	65TH ST	BMT SEA BEACH	T		O	4	S	9/24/2008	5.237	G	12000	$48,000,000	311		
2247150	Q	65TH ST	LIRR MAIN LINE	L		O	3	S	10/26/2009	6.375	V	6344	$25,376,000	402		
1247200	Q	67 AVE PED BR (2247200)	LIRR MAIN LINE	L		O-PED	3	C	10/9/2009	4.500	F	1300	$5,200,000	406		
2266160	Q	678I SB TO BCIP EB	ACCESS RD FROM 678I			A	1	S	8/26/2009	3.984	F	2300	$9,200,000	407		
2230550	Q	69TH ST	278I (B.Q.E.)			A	2	S	2/15/2008	5.123	G	12600	$50,400,000	402		
2247490	Q	69TH ST JUNPR BLVD	CSX TRANSPORT	C		O	1	S	9/22/2008	5.149	G	6175	$24,700,000	405		
2065950	Q	69TH STREET	495I (L.I.E.)			A	2	S	5/20/2009	5.361	G	10336	$41,344,000	405		
2243590	K	6TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.250	V	14382	$57,528,000	310		
2243280	K	6TH AVE	LIRR ATLANTIC AVE	L		O	9	S	11/23/2008	5.403	G	12276	$49,104,000	302		
2230560	Q	70TH ST	278I (B.Q.E.)			A	2	S	12/11/2008	6.667	V	8580	$34,320,000	402		
2248300	Q	71ST AVE	COOPER AVE			O	1	S	7/13/2009	4.373	F	2800	$11,200,000	405		
2246150	M	72 ST CROSS DR (TERRACE BRDG)	PED PATH TO FOUNTAIN		P	O	3	S	3/14/2008	6.018	V	7300	$29,200,000	164		
2246160	M	73 ST PED BRDG (BOW BRIDGE)	THE LAKE		P	WO-PED	1	C	10/30/2009	4.171	F	1655	$6,620,000	164		
2267717	M	79 ST PED PLAZA	79 ST BT BASIN GAR		P	A	10	S	5/1/2009	4.519	F	27400	$109,600,000	107		
226771B	M	79 ST RAMP TO GAR	79 ST BT BASIN GAR		P	AR	21	S	5/1/2009	4.532	F	8989	$35,956,000	107		
226771A	M	79 ST RAMP TO HHP	79 ST BT BASIN GAR		P	AR	4	S	5/11/2009	4.221	F	3131	$12,524,000	107		
2267718	M	79 ST TRAFFIC CIRC	79 ST PED PLAZA		P	A	34	S	5/8/2009	3.885	F	24130	$96,520,000	107		
2246440	M	79 TH ST PED BRDG	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	3.926	F	5900	$23,600,000	164		
2243600	K	7TH AVE	LIRR & SEA BEACH	NT		O	7	S	12/9/2008	5.028	G	18628	$74,512,000	310		
2243920	K	7TH AVE	NYCTA BMT YARD	T		O	2	S	10/16/2008	6.324	V	4700	$18,800,000	307		
2247220	Q	80TH ROAD	LIRR MAIN LINE	L		O	3	S	10/7/2009	4.857	F	4100	$16,400,000	409		
2247570	Q	80TH ST	77TH AVE - LIRR MT	L		O	5	S	12/4/2008	5.254	G	11725	$46,900,000	405		
2231250	K	81ST ST PED BR	BSHP		P	A-PED	5	C	12/23/2008	4.881	F	3100	$12,400,000	310		
2247230	Q	82ND AVE	LIRR MAIN LINE	L		O	3	S	10/6/2009	5.377	G	4100	$16,400,000	409		
2243570	K	86TH ST	BMT SEA BEACH	T		O	1	S	9/11/2008	6.078	V	12167	$48,668,000	313		
2243610	K	8TH AVE	LIRR & SEA BEACH	NT		O	2	S	10/22/2009	6.153	V	10834	$43,336,000	310		
1247010	Q	91 PLACE (2247010)	LIRR PT WASH BR	L		O	1	S	11/17/2009	6.567	V	2760	$11,040,000	404		
2231260	K	92ND ST PED BR	BSHP		P	A-PED	6	C	8/4/2009	4.113	F	3000	$12,000,000	310		
2247020	Q	94TH ST PED BRDG	LIRR PORT WASH BR	L		O-PED	5	C	10/8/2009	4.030	F	500	$2,000,000	404		
2243840	K	9TH AVE	NYCTA BMT YARD	T		O	5	S	9/18/2009	6.028	V	12440	$49,760,000	312		
2243940	K	9TH AVE	NYCTA IND SBWY	T		O	5	S	9/18/2009	4.737	F	6300	$25,200,000	312		
2246490	M	A.C. POWELL BLVD N.B.	A.C. POWELL BLVD			O	1	S	2/22/2008	4.020	F	5600	$22,400,000	110		
2249320	R	ALBEE AVE	SIRT SOUTH SHORE	S		O	3	S	10/21/2009	4.623	F	6500	$26,000,000	503		
2268920	R	AMBOY ROAD	LEMON CREEK			WO	1	S	4/22/2008	6.500	V	1310	$5,240,000	207		
2247530	Q	ANDREWS AVE	LIRR MONTAUK DIV	L		O	1	S	9/23/2009	7.000	V	1765	$7,060,000	405		
2249330	R	ANNADALE ROAD	SIRT SOUTH SHORE	S		O	2	S	8/18/2009	4.576	F	4500	$18,000,000	503		
2249820	R	ARTHUR KILL ROAD	ARTHUR KILL STREAM			WO	1	S	5/8/2009	4.286	F	2000	$8,000,000	503		
2249240	R	ARTHUR KILL ROAD	SIRT SOUTH SHORE	S		O	1	S	11/13/2008	4.611	F	3650	$14,600,000	503		
2230810	Q	ASTORIA BLVD EB	278I (BQE WEST LEG)			A	4	S	5/12/2009	4.103	F	8200	$32,800,000	401		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2243569	K	ATLANTIC AVE	LIRR ATLANTIC AVE	L		O	75	S	9/13/2008	3.789	F	135100	$540,400,000	316	305	
2244170	K	ATLNTC AV SVC RD E.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.474	G	3192	$12,768,000	305		
2244180	K	ATLNTC AV SVC RD W.B.	EAST NEW YORK AVE			O	2	S	8/13/2009	5.105	G	5600	$22,400,000	305		
2243530	K	AVENUE H	LIRR BAY RIDGE	N		O	2	S	9/10/2009	5.956	G	35100	$140,400,000	318		
2243750	K	AVENUE O	BMT SEA BEACH	T		O	1	S	10/7/2009	5.863	G	4658	$18,632,000	311		
2243760	K	AVENUE P	BMT SEA BEACH	T		O	1	S	10/7/2009	6.605	V	5544	$22,176,000	311		
2243790	K	AVENUE S	BMT SEA BEACH	T		O	1	S	10/8/2009	5.967	G	5360	$21,440,000	315		
2243800	K	AVENUE T	BMT SEA BEACH	T		O	1	S	10/8/2009	6.033	V	5360	$21,440,000	311		
2243810	K	AVENUE U	BMT SEA BEACH	T		O	1	S	10/24/2008	5.725	G	5880	$23,520,000	315		
2249440	R	BANCROFT AVE	SIRT SOUTH SHORE	S		O	3	S	11/4/2009	5.361	G	5900	$23,600,000	502		
2241180	B	BARRETTO ST	AMTRAK - CSX	AC		O	1	S	7/25/2008	6.000	G	5313	$21,252,000	202		
2232000	M	BATTERY PLACE	FDR DRIVE			AT	2	S	11/18/2009	5.318	G	142000	$568,000,000	101		
2231290	K	BAY 8TH ST	BSHP			A	1	S	5/29/2009	5.921	G	4950	$19,800,000	311		
2243740	K	BAY PKWY	BMT SEA BEACH	T		O	4	S	9/26/2008	4.921	F	16800	$67,200,000	311		
2231760	Q	BCIP	DUTCH BROADWAY-115 AVE			A	1	S	3/7/2008	4.442	F	7300	$29,200,000	413		
2266770	Q	BCIP	LAURELTON PKWY			A	1	S	3/7/2008	5.250	G	9508	$38,032,000	109		
Q00002	Q	BCIP	PATH OPP. 88TH RD			A	1	C	6/30/2009	4.667	F	1200	$4,800,000	413		
2231900	Q	BCIP	TOTTEN AVE			A	1	S	6/27/2008	4.797	F	4900	$19,600,000	407		
2076109	B	BE NB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	9/8/2009	4.632	F	7800	$31,200,000	210		
2076129	B	BE SB SERVICE RD	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	5.105	G	7100	$28,400,000	210		
2249400	R	BEACH AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.576	G	3700	$14,800,000	502		
2248230	Q	BEACH CHANNEL DR WB	BEACH CHANNEL DR EB			O	1	S	7/15/2009	4.400	F	3600	$14,400,000	484		
2243490	K	BEDFORD AVE	LIRR BAY RIDGE	N		O	6	S	12/15/2008	4.264	F	12000	$48,000,000	314		
2241840	B	BEDFORD PARK BLVD	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.594	F	6400	$25,600,000	227	207	
2241930	B	BEDFORD PARK BLVD	NYCTA IND YARDS	T		O	4	S	8/12/2008	5.681	G	46300	$185,200,000	207		
2249580	R	BELFIELD AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	4/2/2009	4.098	F	400	$1,600,000	503		
2247140	Q	BELL BLVD	LIRR PORT WASH BR	L		O	1	S	9/17/2009	5.780	G	4320	$17,280,000	411		
2231770	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	2/14/2008	4.688	F	3200	$12,800,000	413		
2231790	Q	BELMONT PARK RAMP	BCIP		P	A	1	S	1/29/2008	4.563	F	3400	$13,600,000	413		
2249250	R	BETHEL AV PED BRDG	SIRT SOUTH SHORE	S		O-PED	12	C	4/1/2009	3.525	F	500	$2,000,000	503		
2243100	K	BEVERLY ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/11/2009	3.667	F	4200	$16,800,000	314		
2243900	K	BLAKE AVE	LIRR BAY RIDGE LINE	N		O	3	S	12/17/2008	5.000	G	4912	$19,648,000	316		
2240410	Q	BORDEN AVE	DUTCH KILLS			WMO	2	S	12/8/2009	3.181	F	8400	$33,600,000	402		
2270180	R	BOROUGH PLACE - RAMP A	SN ISLAND RAILWAY	S	F	O	1	S	12/29/2005	4.938	F	1250	$5,000,000	501		
2229579	B	BOSTON POST ROAD	HUTCHINSON RIVER			WO	14	S	6/25/2009	4.194	F	95700	$382,800,000	212		
2242110	B	BOSTON ROAD	BRONX RIVER			WO	1	S	5/6/2008	4.273	F	6200	$24,800,000	227		
2242100	B	BOTANICAL GARDEN ROAD	TWIN LAKES		P	WO	1	S	5/7/2008	4.900	F	2200	$8,800,000	227		
2247050	Q	BOWNE AVE	LIRR PORT WASH BR	L		O	1	S	9/9/2008	5.490	G	4974	$19,896,000	407		
2231829	Q	BRADDOCK AVE	BCIP			A	2	S	5/27/2009	4.591	F	10600	$42,400,000	413		
2249730	R	BRIDGE OVER DAM	N.END CLOVE LAKE		P	WO-PED	1	C	10/2/2009	3.784	F	972	$3,888,000	501		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230590	Q	BROADWAY	278I (B.Q.E.)			O	2	S	12/11/2008	5.789	G	16000	$64,000,000	402		
2240137	BM	BROADWAY BRIDGE	HARLEM RIVER	TM		WMO	3	S	11/12/2009	3.972	F	46848	$187,392,000	112	207	208
2242072	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.967	F	1800	$7,200,000	212		
2242082	B	BRONX BLVD N.B.	BRONX RIVER			WO	1	S	5/19/2008	4.467	F	2800	$11,200,000	212		
2242071	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.633	F	1800	$7,200,000	212		
2242081	B	BRONX BLVD S.B.	BRONX RIVER			WO	1	S	5/20/2008	4.467	F	2800	$11,200,000	212		
2229560	B	BRONX PELHAM PKWY	AMTRAK - CSX	AC		A	3	S	11/17/2008	4.722	F	24591	$98,364,000	211		
2075849	B	BRONX PELHAM PKWY	HUTCHINSON RVR PKWY			A	2	S	6/17/2008	3.974	F	17600	$70,400,000	210	211	
2065629	B	BRONX RVR PKWY	BOSTON RD BX ZOO			A	1	S	8/28/2009	5.276	G	6300	$25,200,000	227		
2270250	B	BROOKE AVE	CSX TRANS - PT MORRIS			O	1	S	6/29/2009	3.800	F	21035	$84,140,000	201		
2243520	K	BROOKLYN AVE	LIRR BAY RIDGE	N		O	3	S	9/11/2009	6.236	V	4500	$18,000,000	318		
2267860	K	BROOKLYN BR APPROACH	STORAGE (SANDS ST)			O	1	S	7/31/2008	4.607	F	6490	$25,960,000	302		
2240019	KM	BROOKLYN BRIDGE	EAST RIVER			WEO	75	S	10/25/2008	2.944	P	503788	$2,015,152,000	103	302	101
2268350	K	BROOKLYN PROMENADE	278I EB (BQE)		P	A-PED	35	C	9/28/2008	3.643	F	46184	$184,736,000	302		
2241099	B	BRUCKNER BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	6.583	V	6700	$26,800,000	201		
1066510	B	BRUCKNER EXP.(2066510)	WESTCHESTER CREEK			WMA	17	S	11/2/2009	3.597	F	39400	$157,600,000	209		
2076929	B	BRUCKNER EXPWY	CSX - HUNTS POINT	C		A	1	S	9/30/2009	4.700	F	3800	$15,200,000	202		
2075352	B	BRUCKNER EXPWY NB	AMTRAK - CSX	AC		A	1	S	11/10/2009	2.875	P	10900	$43,600,000	202		
2066672	B	BRUCKNER EXPWY NB	BRONX RIVER			WMA	8	S	7/19/2007	4.567	F	22300	$89,200,000	202	209	
2075351	B	BRUCKNER EXPWY SB	AMTRAK - CSX	AC		A	1	S	11/25/2008	3.625	F	11600	$46,400,000	202		
2066671	B	BRUCKNER EXPWY SB	BRONX RIVER			WMA	3	S	11/3/2009	5.222	G	12400	$49,600,000	202	209	
2241210	B	BRYANT AVE	AMTRAK - CSX	AC		O	1	S	11/10/2009	3.136	F	5300	$21,200,000	202		
2231329	K	BSHP	26TH AVE			A	1	S	6/5/2008	4.867	F	6700	$26,800,000	313		
2231319	K	BSHP	BAY PKWY			A	1	S	6/24/2009	4.535	F	7200	$28,800,000	311		
2231249	K	BSHP	BAY RIDGE AVE			A	1	S	6/12/2009	3.313	F	4900	$19,600,000	310		
2231429	K	BSHP	BEDFORD AVE			A	3	S	5/3/2008	4.167	F	12000	$48,000,000	315		
2231509	K	BSHP	FRESH CREEK			WA	5	S	8/7/2009	3.250	F	23000	$92,000,000	356		
2231450	K	BSHP	GERRITSEN INLET			WA	11	S	10/2/2009	3.418	F	52000	$208,000,000	356		
2231479	K	BSHP	MILL BASIN			WMA	14	S	10/9/2009	3.284	F	73500	$294,000,000	318		
2231439	K	BSHP	NOSTRAND AVE			A	3	S	6/8/2009	4.014	F	13000	$52,000,000	315		
2231419	K	BSHP	OCEAN AVE			A	3	S	5/1/2008	4.222	F	14000	$56,000,000	315		
2231360	K	BSHP	OCEAN PKWY			A	3	S	8/20/2008	6.776	V	29637	$118,548,000	313		
2231489	K	BSHP	PAERDEGAT BASIN			WA	15	S	10/5/2009	3.222	F	58300	$233,200,000	318		
2231499	K	BSHP	ROCKAWAY PKWY			A	4	S	9/18/2009	3.917	F	11500	$46,000,000	356		
2231409	K	BSHP	SHEEPSHEAD BAY ROAD			A	1	S	4/30/2008	4.967	F	6500	$26,000,000	315		
2230790	Q	BULOVA AVE	278I (BQE WEST LEG)			A	2	S	4/25/2008	5.333	G	3300	$13,200,000	401		
2269770	R	BUS STA ENTR RAMP	SIRT	S	F	O	19	S	12/26/2008	4.181	F	39333	$157,332,000	501		
2269790	R	BUS STATION EXIT RAMP	SIRT	S	F	O	7	S	12/26/2008	4.722	F	28721	$114,884,000	501		
2269740	R	BUS STATION NORTH	SIRT	S	F	O	12	S	12/4/2009	3.980	F	64605	$258,420,000	501		
2269750	R	BUS STATION SOUTH	SIRT	S	F	O	12	S	12/10/2009	4.720	F	154688	$618,752,000	501		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2247460	Q	CALDWELL AVE	CSX TRANSPORT	C		O	1	S	9/22/2008	6.167	V	2243	$8,972,000	405		
2243290	K	CARLTON AVE	LIRR ATLANTIC AVE	L		O	7	S	12/6/2008	5.069	G	10823	$43,292,000	302		
2240260	K	CARROLL ST	GOWANUS CANAL			WMO	2	S	6/10/2009	4.803	F	3000	$12,000,000	306		
2243220	K	CARROLL ST PED BRDG	FRANKLIN SHUTTLE	T		O-PED	3	C	9/14/2009	5.268	G	600	$2,400,000	309		
2243050	K	CATON AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/13/2009	4.500	F	20800	$83,200,000	314		
2249390	R	CEDARVIEW AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	5	C	2/22/2009	4.077	F	600	$2,400,000	503		
2246050	M	CENTER DR (DRIPROCK ARCH)	PED OPP 63RD ST		P	O	1	S	1/30/2008	5.133	G	2000	$8,000,000	164		
2244050	K	CENTER DR (NETHERMEAD ARCHES)	PED PATH & STREAM		P	WO	3	S	5/1/2009	5.000	G	7400	$29,600,000	355		
2246070	M	CENTER DR (PLAYMATES ARCH)	PED PATH OPP 65TH ST		P	O	1	C	6/19/2009	4.367	F	1200	$4,800,000	164		
2246100	M	CENTER DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.467	F	6000	$24,000,000	164		
2268480	M	CHAMBERS ST PED BRDG	RTE 9A - WEST ST			O-PED	10	C	2/20/2009	5.358	G	3344	$13,376,000	101		
2249280	R	CHAMP COURT PED BRDG	SIRT SOUTH SHORE	S		O-PED	7	C	3/31/2009	4.393	F	200	$800,000	503		
2249880	R	CHELSEA ROAD	SAWMILL CREEK			WO	1	S	5/11/2009	6.816	V	2205	$8,820,000	502		
2243080	K	CHURCH AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/14/2009	4.545	F	18200	$72,800,000	314		
2240210	B	CITY ISLAND ROAD	EASTCHESTER BAY			WO	7	S	8/25/2009	3.389	F	19915	$79,660,000	228		
2241710	B	CLAREMONT PKWY	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.391	F	6300	$25,200,000	203		
2231940	Q	CLINTONVILLE ST	BCIP			A	2	S	2/19/2008	4.705	F	7400	$29,600,000	407		
2249490	R	CLOVE ROAD	SIRT SOUTH SHORE	S		O	3	S	11/10/2008	6.097	V	5104	$20,416,000	502		
2231570	Q	COHANCY ST	BSOP			A	2	S	5/7/2008	4.632	F	6400	$25,600,000	410		
2230870	K	COLUMBIA HEIGHTS	278I (B.Q.E.)			A	1	S	9/3/2008	4.550	F	16500	$66,000,000	302		
2241590	B	CONCOURSE VILL AVE	METRO NORTH RR HAR	M		O	1	S	4/14/2008	3.875	F	12077	$48,308,000	204		
2244460	K	CONDUIT BLVD NB	ATLANTIC AVE EB			O	1	S	11/15/2008	4.833	F	3800	$15,200,000	305		
2231380	K	CONEY ISLAND AVE	BSHP			A	4	S	9/21/2009	6.181	V	19866	$79,464,000	313		
2243440	K	CONEY ISLAND AVE	LIRR BAY RIDGE	N		O	1	S	12/12/2008	5.234	G	3231	$12,924,000	312		
2230390	K	CONGRESS ST	278I (B.Q.E.)			A	2	S	4/10/2008	6.382	V	5000	$20,000,000	306		
2246510	M	CORBIN PL OVERPASS	CORBIN PLACE		P	O	1	S	1/25/2008	5.000	G	2223	$8,892,000	112		
2232029	M	CORLEARS PARK ROAD	FDR DRIVE		P	A	4	S	2/24/2008	3.625	F	4100	$16,400,000	103		
2247130	Q	CORPORAL KENNEDY ST	LIRR PORT WASH BR	L		O	1	S	10/30/2009	6.235	V	3379	$13,516,000	411		
2243110	K	CORTELYOU ROAD	BMT SUBWAY, BRIGHTON	T		O	3	S	9/21/2009	6.139	V	4810	$19,240,000	314		
2231880	Q	CROCHERON PK PED	BCIP		P	A-PED	9	C	6/8/2009	4.551	F	2300	$9,200,000	411		
2243040	K	CROOKE AVE	BMT SUBWAY, BRIGHTON	T		O	4	S	8/25/2009	4.105	F	6000	$24,000,000	314		
2231340	K	CROPSEY AVE	BSHP			A	2	S	7/18/2008	4.806	F	13100	$52,400,000	313		
2240301	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/8/2009	5.225	G	9400	$37,600,000	313		
2240302	K	CROPSEY AVE	CONEY ISLAND CREEK			WO	3	S	7/28/2009	5.028	G	9400	$37,600,000	313		
2231559	Q	CROSS BAY BLVD	BSHP			A	4	S	5/29/2008	5.139	G	23205	$92,820,000	410		
2248039	Q	CROSS BAY BLVD	NASSAU EXPWY - RTE 27			O	2	S	6/30/2009	6.417	V	16544	$66,176,000	410		
2242030	B	CROTONA AVE	BRONX PELHAM PKWY			O	2	S	3/19/2008	5.447	G	7600	$30,400,000	206		
2243230	K	CROWN ST	FRANKLIN SHUTTLE	T		O	3	S	9/4/2009	5.097	G	4060	$16,240,000	309		
2230040	Q	CYPRESS HILLS ST	JACKIE ROBINSON PKWY			A	1	S	4/17/2008	5.278	G	5000	$20,000,000	405		
2249160	R	DE HART AVE	B&O RR (ABANDONED)	O		O	4	S	4/27/2009	6.500	V	6700	$26,800,000	501		

INVENTORY SORTED BY FEATURE CARRIED

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2232030	M	DELANCEY ST PED BRDG	FDR DRIVE		P	A-PED	12	C	11/15/2009	4.174	F	2900	$11,600,000	103		
2076640	B	DEPOT PLACE	METRO NORTH RR HUD	CM		O	11	S	8/12/2009	5.083	G	26566	$106,264,000	204		
2243130	K	DITMAS AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/22/2009	5.723	G	5150	$20,600,000	314		
2243120	K	DORCHESTER ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/19/2008	5.882	G	4825	$19,300,000	314		
2266139	Q	DOUGLASTON PKWY	BCIP NB			A	1	S	3/25/2008	4.551	F	6400	$25,600,000	411		
2266129	Q	DOUGLASTON PKWY	BCIP SB			A	1	S	4/1/2008	4.592	F	4400	$17,600,000	411		
2247170	Q	DOUGLASTON PKWY	LIRR PORT WASH BR	L		O	3	S	9/11/2008	4.712	F	6300	$25,200,000	411		
2232180	M	E 103RD ST PED BRDG	FDR DRIVE			A-PED	20	C	8/23/2009	4.739	F	6000	$24,000,000	111		
2233020	M	E 10TH ST PED BRDG	FDR DRIVE		P	A-PED	25	C	9/7/2008	5.216	G	1632	$6,528,000	103		
2232190	M	E 111TH ST PED BRDG	FDR DRIVE		P	A-PED	14	C	8/3/2008	4.689	F	2600	$10,400,000	111		
2232200	M	E 120TH ST PED BRDG	FDR DRIVE		P	A-PED	21	C	8/3/2008	4.522	F	2500	$10,000,000	111		
2246990	M	E 129TH ST PED BRDG	3RD AVE BRDG RAMP			O-PED	5	C	11/2/2009	4.636	F	500	$2,000,000	111		
2231390	K	E 12TH ST	BSHP			A	4	S	7/12/2008	4.875	F	17200	$68,800,000	315		
2233080	K	E 14 ST PED BR	BSHP			A-PED	14	C	7/22/2009	3.852	F	4700	$18,800,000	315		
2241550	B	E 144TH ST	METRO NORTH RR HAR	M		O	2	S	8/5/2009	6.319	V	8290	$33,160,000	201		
2241129	B	E 149TH ST	AMTRAK - CSX	AC		O	2	S	12/12/2008	4.620	F	18258	$73,032,000	201	202	
2241560	B	E 149TH ST	METRO NORTH RR HAR	M		O	8	S	4/21/2008	4.708	F	27900	$111,600,000	201	204	
2241050	B	E 149TH ST/JACKSON AVE	CSX TRANS - PT MORRIS	C		O	1	S	6/30/2008	4.850	F	65000	$260,000,000	201		
2243450	K	E 14TH ST	LIRR BAY RIDGE	N		O	1	S	12/11/2008	4.809	F	1775	$7,100,000	314		
2270030	B	E 156TH ST	ACCESS TO HOUSING		ED	O	16	S	10/16/2009	3.821	F	49696	$198,784,000	204		
2241010	B	E 156TH STREET	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	4.556	F	2400	$9,600,000	201		
2241600	B	E 158TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	5.200	G	3400	$13,600,000	204		
2243460	K	E 15TH ST PED BRDG	LIRR BAY RIDGE	N		O-PED	3	C	9/16/2008	5.193	G	900	$3,600,000	314		
2241610	B	E 161ST ST	METRO NORTH RR HAR	M		O	1	S	12/8/2009	5.050	G	6600	$26,400,000	204	203	
2241020	B	E 161ST STREET	CSX TRANS - PT MORRIS	C		O	1	S	5/12/2008	6.700	V	12800	$51,200,000	203		
2241620	B	E 162ND ST	METRO NORTH RR HAR	M		O	1	S	4/14/2008	4.859	F	4700	$18,800,000	203		
2241030	B	E 163RD STREET	CSX TRANS - PT MORRIS	C		O	1	S	4/11/2008	4.796	F	3200	$12,800,000	203		
2241630	B	E 165TH ST	METRO NORTH RR HAR	M		O	1	S	4/21/2008	4.200	F	16400	$65,600,000	203		
2241650	B	E 167TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	5.510	G	3363	$13,452,000	203		
2241660	B	E 168TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.859	F	4800	$19,200,000	203		
2241670	B	E 169TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	4.250	F	3300	$13,200,000	203		
2241680	B	E 170TH ST	METRO NORTH RR HAR	M		O	1	S	3/24/2008	6.333	V	3150	$12,600,000	203		
2241720	B	E 173RD ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.875	F	3000	$12,000,000	203		
2066720	B	E 174TH ST	SHERIDAN EXPWY/AMTRAK	A		A	13	S	10/30/2008	4.125	F	35573	$142,292,000	209	203	
2241740	B	E 175TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.813	F	3600	$14,400,000	206		
2241269	B	E 177TH ST	AMTRAK - CSX	AC		O	3	S	11/20/2008	5.458	G	16606	$66,424,000	209		
2241770	B	E 178TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	1	C	2/11/2009	5.159	G	700	$2,800,000	206		
2241780	B	E 179TH ST PED BRDG	METRO NORTH RR HAR	M		O-PED	6	C	2/11/2009	5.797	G	700	$2,800,000	206		
2242400	B	E 180TH ST	BRONX RIVER			WO	1	S	10/6/2008	4.810	F	4500	$18,000,000	206	227	
2241790	B	E 180TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	3.906	F	5000	$20,000,000	206		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2241800	B	E 183TH ST	METRO NORTH RR HAR	M		O	1	S	3/31/2008	4.109	F	3600	$14,400,000	206		
2241820	B	E 187TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.438	F	3800	$15,200,000	206		
2241810	B	E 188TH ST	METRO NORTH RR HAR	M		O	1	S	4/7/2008	4.063	F	5300	$21,200,000	206		
2241839	B	E 189TH ST	METRO NORTH RR HAR	M		O	1	S	8/6/2009	6.467	V	43157	$172,628,000	206	207	
2242459	B	E 233RD ST	BRONX RIVER			WO	1	S	5/2/2008	4.367	F	7000	$28,000,000	212		
2242460	B	E 233RD ST	ENTR RD BNX RVR PKWY			O	1	S	2/1/2008	4.900	F	5300	$21,200,000	212		
2241870	B	E 233RD ST	METRO NORTH RR HAR	M		O	1	S	5/2/2008	4.941	F	7664	$30,656,000	212	207	
2241890	B	E 241ST ST	BRP, METRO NORTH HAR	M		WO	28	S	10/9/2009	4.444	F	49500	$198,000,000	212		
2232070	M	E 25TH ST PED BRDG	FDR DRIVE			A-PED	4	C	3/15/2009	4.525	F	1700	$6,800,000	106		
2246540	M	E 34TH ST	PARK AVE TUNNEL			OT	1	S	11/19/2008	4.117	F	36200	$144,800,000	105	106	
2243420	K	E 3RD ST	LIRR BAY RIDGE	N		O	1	S	9/4/2009	6.583	V	1840	$7,360,000	312		
2232100	M	E 51ST ST PED BRDG	FDR DRIVE		P	A-PED	10	C	3/22/2009	4.390	F	2800	$11,200,000	106		
2233040	M	E 60TH ST	FDR DRIVE			A	17	S	8/3/2009	4.806	F	24480	$97,920,000	108		
2246030	M	E 62 ST PED BRDG (GAPSTOW BRDG)	THE POND		P	O-PED	1	C	5/29/2009	4.172	F	1400	$5,600,000	164		
2232110	M	E 64TH ST PED BRDG	FDR DRIVE		P	A-PED	24	U	9/24/2009	5.931	G	2100	$8,400,000	108		
2232050	M	E 6TH ST PED BRDG	FDR DRIVE		P	A-PED	22	C	3/15/2009	4.196	F	2200	$8,800,000	103		
2232120	M	E 71ST ST PED BRDG	FDR DRIVE		P	A-PED	19	C	7/12/2009	5.000	G	1800	$7,200,000	108		
2232140	M	E 78TH ST PED BRDG	FDR DRIVE		P	A-PED	9	C	3/29/2009	2.745	P	1700	$6,800,000	108		
2269820	M	E 81 ST PED BRDG	FDR DRIVE N.B.		P	A-PED	3	C	10/26/2008	3.149	F	900	$3,600,000	108		
2245319	M	E 97TH ST	METRO NORTH MAIN LN	M		O	1	S	12/31/2008	4.647	F	3200	$12,800,000	111		
2241270	B	E TREMONT AVE	AMTRAK - CSX	AC		O	2	S	11/19/2008	5.153	G	22300	$89,200,000	209	211	
2242149	B	E TREMONT AVE	BRONX RIVER			WO	2	S	5/5/2008	4.500	F	12900	$51,600,000	206		
2075820	B	E TREMONT AVE	HUTCHINSON RVR PKWY			A	2	S	12/18/2007	4.472	F	10200	$40,800,000	210		
2241760	B	E TREMONT AVE	METRO NORTH RR HAR	M		O	1	S	7/22/2009	6.517	V	8424	$33,696,000	206		
2246570	M	E42ND ST - E47TH ST	FIRST AVE TUNNEL			OT	2	S	7/13/2008	5.078	G	95000	$380,000,000	106		
2246450	M	E77 ST PED (GLADE ARCH)	PED PATH OPP E77 ST		P	O-PED	1	C	1/27/2009	4.655	F	5000	$20,000,000	164		
2246390	M	E86 ST PED (SE RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	3	C	11/9/2009	4.263	F	1095	$4,380,000	164		
2242260	B	EAGLE AVE	E 161ST ST			O	1	S	3/17/2008	5.017	G	2800	$11,200,000	201	203	
2244040	K	EAST DR (EAST WOOD ARCH)	PED PATH NR CENTER DR		P	O	1	C	6/19/2009	4.200	F	900	$3,600,000	355		
2244010	K	EAST DR (ENDALE ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	C	5/18/2009	4.367	F	900	$3,600,000	355		
2246069	M	EAST DR (GREEN GAP ARCH)	PED BET E 63ST & E 64ST		P	O	1	S	2/6/2008	4.500	F	2700	$10,800,000	164		
2246350	M	EAST DR (GREYWACKE ARCH)	PED PATH OPP E 80TH ST		P	O	1	C	5/21/2009	4.000	F	750	$3,000,000	164		
2246470	M	EAST DR (HUDDLESTONE ARCH)	THE LOCH		P	WO	1	S	2/11/2008	4.500	F	1100	$4,400,000	164		
2246040	M	EAST DR (INSCOPE ARCH)	PED PATH OPP E 62 ST		P	O	1	C	4/13/2009	4.400	F	1200	$4,800,000	164		
2246170	M	EAST DR (TREFOIL ARCH)	PED PATH OPP E 73RD ST		P	O	1	S	2/15/2008	5.056	G	1900	$7,600,000	164		
2246130	M	EAST DR (WILLOWDELL ARCH)	PED PATH OPP E 67TH ST		P	O	1	C	5/20/2009	4.233	F	1200	$4,800,000	164		
2244030	K	EAST DRIVE	BRIDLE PATH NR ZOO		P	O	1	S	4/28/2009	4.796	F	2000	$8,000,000	355		
2246110	M	EAST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/5/2008	4.667	F	6000	$24,000,000	164		
2246230	M	EAST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.600	F	6500	$26,000,000	164		
2246250	M	EAST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.300	F	5100	$20,400,000	164		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246270	M	EAST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	3.967	F	7000	$28,000,000	164		
2249720	R	EAST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.343	F	899	$3,596,000	501		
2242010	B	EAST FORDHAM RD	BRONX RIVER			WA	1	S	5/7/2008	5.207	G	9200	$36,800,000	227		
2242350	B	EAST FORDHAM RD	GRAND CONCOURSE			O	1	S	4/8/2008	4.567	F	10300	$41,200,000	205	207	
2241900	B	EASTCHESTER ROAD	NYCTA-DYRE AVE LN	T		O	3	S	8/14/2008	4.667	F	13500	$54,000,000	212		
2243279	K	EASTERN PKWY	FRANKLIN SHUTTLE	T		O	1	S	10/14/2008	4.861	F	7700	$30,800,000	309	308	
2247470	Q	ELIOT AVE	CSX TRANSPORT	C		O	1	S	10/5/2009	5.250	G	2960	$11,840,000	405		
2247550	Q	ELIOT AVE	LIRR MONTAUK DIV	L		O	2	S	9/23/2009	5.712	G	9550	$38,200,000	405		
2248160	Q	ELLIOT AVE	QUEENS BLVD			O	2	S	9/15/2008	4.922	F	13785	$55,140,000	406		
2269600	K	ERSKINE ST	BSHP			A	1	S	11/13/2008	5.938	G	8258	$33,032,000	305		
2241200	B	FAILE ST	AMTRAK - CSX	AC		O	1	S	11/7/2008	5.672	G	6208	$24,832,000	202		
2231620	Q	FARMERS BLVD	BSOP			A	2	S	6/26/2008	4.568	F	6400	$25,600,000	413		
2249790	R	FB S OF FOREST AV	STREAM IN PARK		P	WO-PED	3	C	11/10/2009	4.814	F	658	$2,632,000	501		
223201A	M	FDR DR N.B. OFF RMP	FDR DR & SOUTH ST			AR	17	S	2/29/2008	3.716	F	23373	$93,492,000	101		
223201C	M	FDR DR S.B. OFF RMP	SOUTH ST			AR	8	S	2/20/2008	4.701	F	39150	$156,600,000	103		
2233038	M	FDR DRIVE SB	FDR NB / E 62ND ST			AT	34	S	12/19/2008	6.620	V	58700	$234,800,000	106	108	
2268650	M	FDR NB E42ND TO E49TH ST	EAST RIVER			A	119	S	10/20/2009	4.075	F	30767	$123,068,000	106		
223204A	M	FDR NB RAMP TO HOUSTON ST	RELIEF			AR	4	S	1/30/2008	4.471	F	6150	$24,600,000	103		
2229520	B	FIELDSTON ROAD	HHP			A	1	S	8/20/2009	5.500	G	6600	$26,400,000	208		
2249480	R	FINGERBOARD ROAD	SIRT SOUTH SHORE	S		O	2	S	11/25/2009	6.542	V	5100	$20,400,000	502		
2231460	K	FLATBUSH AVE	BSHP			A	2	S	10/13/2009	6.306	V	14058	$56,232,000	356		
2243260	K	FLATBUSH AVE	FRANKLIN SHUTTLE	T		O	2	S	9/2/2008	4.961	F	11300	$45,200,000	309		
2243510	K	FLATBUSH AVE	LIRR BAY RIDGE	N		O	2	S	9/16/2009	4.702	F	5900	$23,600,000	318		
2248090	Q	FLSHG MDW PK PED	COLLEGE POINT BLVD		P	O-PED	3	C	1/8/2009	4.690	F	8418	$33,672,000	407		
2248240	Q	FLUSHING AV SERVICE RD	FLUSHING AVE			O	1	S	7/15/2009	5.250	G	2940	$11,760,000	405		
2248379	Q	FLUSHING MDW PARK RD	AQUACADE LAKE		P	WO	5	C	7/13/2009	4.041	F	6321	$25,284,000	481		
2248260	Q	FLUSHING MDW PARK RD	MEADOW LAKE		P	WO	5	S	8/21/2009	4.745	F	4200	$16,800,000	481		
2248130	Q	FLUSHING MEADOW PK PED	WILLOW LK&76TH RD		P	WO-PED	4	C	4/20/2002	1.000	C	1891	$7,564,000	481		
2248140	Q	FLUSHING MEADW PK RD	STREAM N OF LIE		P	WO	5	C	7/10/2009	4.636	F	4102	$16,408,000	481		
2249780	R	FOOTBRIDGE	BROOKS LAKE DAM		P	WO-PED	1	C	11/17/2009	3.967	F	800	$3,200,000	501		
2249800	R	FOREST AVE	CLOVE LAKES PK STREAM		P	WO	1	S	11/4/2009	4.867	F	1600	$6,400,000	501		
2248340	Q	FOREST PARK DR	MYRTLE AVE		P	O	3	S	6/15/2009	4.984	F	5100	$20,400,000	409		
2247660	Q	FOREST PARK DRIVE	ABANDONED LIRR		P	O	6	S	4/21/2009	5.032	G	10000	$40,000,000	409		
2247590	Q	FOREST PARK DRIVE	LIRR MONTAUK DIV	L	P	O	5	S	9/21/2009	5.333	G	6000	$24,000,000	409		
2243620	K	FORT HAMILTON PKWY	LIRR & SEA BEACH	NT		O	3	S	12/18/2008	4.797	F	14800	$59,200,000	310		
2246500	M	FORT TRYON PLACE	ENTR FROM RIVERSIDE DR		P	O	1	S	3/3/2008	4.333	F	6600	$26,400,000	112		
2243150	K	FOSTER AVE	BMT SUBWAY, BRIGHTON	T		O	1	S	10/19/2009	4.550	F	3000	$12,000,000	314		
2231930	Q	FRANCIS LEWIS BLVD	BCIP			A	3	S	2/15/2008	4.773	F	9100	$36,400,000	407		
2231690	Q	FRANCIS LEWIS BLVD	BLP E.B.			A	1	S	4/18/2008	5.167	G	6000	$24,000,000	413		
2231700	Q	FRANCIS LEWIS BLVD	BLP W.B.			A	1	S	4/17/2008	4.833	F	6000	$24,000,000	413		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2267199	Q	FRANCIS LEWIS BLVD	CUNNINGHAM PK RD			O	1	S	4/9/2009	5.033	G	7085	$28,340,000	103		
2249450	R	FREMONT AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	4/3/2009	3.745	F	800	$3,200,000	502		
224006A	B	FROM BRUCKNER BLVD	RELIEF			OR	5	S	10/6/2009	6.817	V	14037	$56,148,000	201		
224005A	M	FROM FDR DRIVE	HARLEM RIVER DR			OR	19	S	6/6/2008	4.299	F	29900	$119,600,000	111		
2242120	B	FTBG N OF RTE 1	BRONX RIVER		P	WO-PED	1	C	12/2/2008	4.000	F	1904	$7,616,000	209		
226771C	M	GAR RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	21	S	5/13/2009	4.565	F	9095	$36,380,000	107		
2241420	B	GERARD AVE	METRO NORTH RR HUD	M		O	1	S	4/29/2008	5.922	G	5063	$20,252,000	204		
2249360	R	GIFFORDS LANE	SIRT SOUTH SHORE	S		O	1	S	11/12/2008	5.781	G	3042	$12,168,000	503		
2243860	K	GLENMORE AVE	LIRR BAY RIDGE	N		O	2	S	10/27/2008	6.559	V	5616	$22,464,000	316		
2065940	Q	GRAND AVE	495I (L.I.E.)			A	2	S	12/2/2008	4.875	F	12850	$51,400,000	405		
2247440	Q	GRAND AVE	CSX TRANSPORT	C		O	1	S	9/29/2009	6.183	V	3280	$13,120,000	405		
2247180	Q	GRAND AVE	LIRR MAIN LINE	L		O	3	S	10/8/2008	4.660	F	7415	$29,660,000	404		
2242370	B	GRAND CONCOURSE	BEDFORD PARK BLVD			O	1	S	4/23/2008	4.412	F	8418	$33,672,000	207		
2242360	B	GRAND CONCOURSE	BURNSIDE AVE			O	2	S	9/16/2008	4.441	F	8400	$33,600,000	205		
2242299	B	GRAND CONCOURSE	E 138TH ST			O	1	S	6/4/2009	4.733	F	9500	$38,000,000	201		
2242259	B	GRAND CONCOURSE	E 161ST ST			O	1	S	9/18/2008	6.533	V	27017	$108,068,000	204		
2242280	B	GRAND CONCOURSE	E 167TH ST			O	2	S	8/4/2008	4.754	F	42900	$171,600,000	204		
2242300	B	GRAND CONCOURSE	E 170TH ST			O	2	S	4/24/2008	4.789	F	39300	$157,200,000	204		
2242319	B	GRAND CONCOURSE	E 174TH ST	T		O	1	S	3/27/2008	4.067	F	14900	$59,600,000	204		
2242329	B	GRAND CONCOURSE	E 175TH ST	T		O	1	S	8/5/2008	4.867	F	11900	$47,600,000	205		
2242380	B	GRAND CONCOURSE	E 204TH ST			O	1	S	10/15/2009	5.484	G	9272	$37,088,000	207		
2242330	B	GRAND CONCOURSE	E TREMONT AVE			O	1	S	10/22/2009	5.983	G	11700	$46,800,000	205		
2242340	B	GRAND CONCOURSE	EAST KINGSBRIDGE			O	2	S	9/15/2008	4.714	F	18285	$73,140,000	207		
2241409	B	GRAND CONCOURSE	METRO NORTH RR HUD	MT		O	1	S	4/21/2008	3.859	F	14300	$57,200,000	204		
2240390	KQ	GRAND ST BRIDGE	NEWTOWN CREEK			WMO	2	S	8/28/2009	4.236	F	5100	$20,400,000	301	405	
2249100	R	GRANITE AVE	B&O RR (ABANDONED)	O		O	4	S	5/13/2008	6.034	V	7300	$29,200,000	501		
2249370	R	GREAVES AVE	SIRT SOUTH SHORE	S		O	1	S	8/26/2009	6.750	V	2650	$10,600,000	503		
2240370	KQ	GREENPOINT AVE BRIDGE	NEWTOWN CREEK	L		WMO	12	S	8/6/2009	4.861	F	76106	$304,424,000	301	402	
2231370	K	GUIDER AV RAMP TO BSHP	BSHP			A	4	S	11/6/2009	3.292	F	12800	$51,200,000	313		
2241860	B	GUN HILL RD	METRO NORTH RR HAR	M		O	1	S	5/13/2008	6.531	V	9000	$36,000,000	212		
2242430	B	GUN HILL ROAD	BRONX BLVD			O	4	S	4/29/2008	4.772	F	9400	$37,600,000	212		
2242440	B	GUN HILL ROAD	BRONX RIVER			WO	1	S	2/29/2008	4.900	F	8700	$34,800,000	212		
2241910	B	GUN HILL ROAD	NYCTA-DYRE AVE LN	T		O	1	S	8/14/2008	6.000	G	7500	$30,000,000	211	212	
2231610	Q	GUY R. BREWER BLVD	BSOP			A	4	S	5/12/2009	6.319	V	12342	$49,368,000	413		
2249380	R	GUYON AVE	SIRT SOUTH SHORE	S		O	3	S	8/27/2009	4.869	F	6900	$27,600,000	503		
2240231	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	12/2/2008	5.472	G	7300	$29,200,000	307	306	
2240232	K	HAMILTON AVE BRIDGE	GOWANUS CANAL			WMO	3	S	9/10/2009	5.306	G	7300	$29,200,000	306		
2065930	Q	HAMILTON PLACE	495I (L.I.E.)			A	2	S	3/5/2008	6.069	V	11111	$44,444,000	405		
2249520	R	HANNAH ST	SIRT SOUTH SHORE	S		O	10	S	9/25/2009	4.763	F	10020	$40,080,000	501		
2249180	R	HARBOR ROAD	B&O RR (ABANDONED)	O		O	4	S	6/20/2009	6.322	V	5778	$23,112,000	501		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2233059	M	HARLEM RIVER DRIVE	RAMP TO & FROM HRD N.B.			A	11	S	9/9/2009	3.269	F	51000	$204,000,000	111		
2231780	Q	HEMPSTEAD AVE	BCIP			A	2	S	2/19/2008	3.903	F	14200	$56,800,000	413		
2266149	Q	HEMPSTEAD AVE	BCIP RAMP NB			A	2	S	3/10/2008	4.190	F	9500	$38,000,000	413		
2267250	M	HHP	AMTRAK - W96TH ST	A		A	55	S	11/25/2008	3.710	F	40000	$160,000,000	107		
2229530	B	HHP	BROADWAY			A	1	S	8/20/2009	4.660	F	7500	$30,000,000	208		
2229440	B	HHP	KAPPOCK ST			A	1	S	8/25/2009	4.931	F	3900	$15,600,000	208		
2266229	M	HHP	PED UNDERPASS @ 148 ST			A	1	S	2/19/2008	5.476	G	1840	$7,360,000	109		
2229309	M	HHP	RIVERSIDE PARK			A	1	S	1/22/2008	5.267	G	2172	$8,688,000	107		
2229349	M	HHP	W 158 ST	A		A	44	S	12/11/2008	4.268	F	140000	$560,000,000	109	112	
2266230	M	HHP NB	PED UNDERPASS INWD PK			A	1	S	1/23/2008	5.286	G	800	$3,200,000	112		
2229322	M	HHP NB	RAMP FROM 96 ST			A	1	S	3/10/2008	5.300	G	2000	$8,000,000	107		
2229312	M	HHP NB	RAMP TO 96 ST			A	1	S	2/17/2008	4.364	F	2000	$8,000,000	107		
M00004	M	HHP ON/OFF RMP-79TH ST NO. SIDE	PED PATH NO. OF 79TH ST			A	1	C	6/2/2009	5.000	G	900	$3,600,000	107		
M00003	M	HHP ON/OFF RMP-79TH ST SO. SIDE	PED PATH SO. OF 79TH ST			A	1	C	5/27/2009	4.067	F	900	$3,600,000	107		
2266240	M	HHP SB	PED UNDERPASS INWD PK			A	1	S	1/24/2008	5.571	G	1100	$4,400,000	112		
2229321	M	HHP SB	RAMP FROM 96 ST			A	1	S	3/14/2008	5.133	G	2000	$8,000,000	107		
2229311	M	HHP SB	RAMP TO 96 ST			A	1	S	2/17/2008	4.636	F	2000	$8,000,000	107		
2229289	M	HHP VIADUCT	AMTRAK - W72 ST - W79 ST	A		A	145	S	12/23/2008	3.373	F	236100	$944,400,000	107		
2246580	BM	HIGH BRIDGE PDOVP	I87 - HARLEM RIVER	M	P	WA-PED	11	P	8/12/2002	3.759	F	34100	$136,400,000	112	204	
2230000	K	HIGHLAND BLVD E.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.600	F	4900	$19,600,000	305		
2230220	K	HIGHLAND BLVD NB	VERMONT AVE			A	1	S	6/10/2009	5.857	G	3995	$15,980,000	305		
2230010	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	1	S	5/20/2008	4.933	F	3500	$14,000,000	305		
2230020	K	HIGHLAND BLVD W.B.	JACKIE ROBINSON PKWY			A	2	S	5/20/2008	4.842	F	4700	$18,800,000	305		
2248280	Q	HIGHLAND PK PED.	PEDESTRIAN PATH		P	O-PED	1	C	11/19/2009	3.667	F	1856	$7,424,000	405		
2243780	K	HIGHLAWN AVE	BMT SEA BEACH	T		O	1	S	10/8/2009	6.440	V	6960	$27,840,000	311		
2244060	K	HILL DR (CLEFT RIDGE SPAN)	PED PATH SO OF BOATHOUSE		P	O	1	C	4/10/2009	4.767	F	900	$3,600,000	355		
2244120	K	HILL DR (TERRACE BRDG)	PROSPECT PK LAKE		P	WO	3	S	5/19/2009	2.927	P	7800	$31,200,000	355		
2231840	Q	HILLSIDE AVE	BCIP			A	2	S	4/8/2008	4.184	F	9672	$38,688,000	413		
2247320	Q	HONEYWELL ST	AMTRAK & LIRR YARD	AL		O	22	S	11/11/2009	5.903	G	99036	$396,144,000	402	401	
2232040	M	HOUSTON ST	FDR DRIVE			A	2	S	6/7/2009	3.455	F	11010	$44,040,000	103		
223204B	M	HOUSTON ST RAMP TO FDR NB	RELIEF			AR	4	S	2/1/2008	4.625	F	7125	$28,500,000	103		
2267240	M	HRD RAMP TO GWB	HARLEM RIVER DR SB			A	55	S	10/9/2009	3.431	F	122900	$491,600,000	112		
2249300	R	HUGUENOT AVE	SIRT SOUTH SHORE	S		O	2	S	10/20/2009	4.864	F	4900	$19,600,000	503		
2240450	Q	HUNTERS PT AVE	DUTCH KILLS			WMO	4	S	7/22/2008	5.083	G	12168	$48,672,000	402		
2241190	B	HUNTS POINT AVE	AMTRAK - CSX	AC		O	1	S	11/7/2008	4.984	F	10049	$40,196,000	202		
2241959	B	HUTCHINSON RVR PKWY	AMTRAK - CSX	AC		O	1	S	11/14/2008	5.915	G	15444	$61,776,000	210	211	
2075859	B	HUTCHINSON RVR PKWY	HUTCHINSON RIVER			WMA	7	S	12/18/2009	4.859	F	60500	$242,000,000	210	228	
2249810	R	HYLAN BLVD	LEMON CREEK			WO	1	S	4/25/2008	6.406	V	11400	$45,600,000	503		
2245300	M	INWOOD HILL PK FTBR	AMTRAK 30 ST BRANCH	A	P	O-PED	6	C	10/26/2008	4.100	F	700	$2,800,000	112		
2246700	M	ISHAM PK PED BRDG	HARLEM RV INLET		P	WO-PED	1	C	1/13/2009	3.828	F	285	$1,140,000	112		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246690	M	ISHAM PK VEHICULR	HARLEM RIVER INLET		P	O	1	S	7/7/2008	6.261	V	911	$3,644,000	112		
2248299	Q	J.R. PKWY-UNION TPKE	AUSTIN ST			O	1	S	6/2/2008	4.250	F	5900	$23,600,000	409	406	
2230099	Q	JACKIE ROBINSON PKWY	CYPRESS HILLS CEMETRY			A	1	S	1/18/2008	5.444	G	4200	$16,800,000	405		
2230179	Q	JACKIE ROBINSON PKWY	METROPOLITAN AVE			A	2	S	5/21/2008	5.321	G	8673	$34,692,000	482		
2247260	Q	JACKSON AVE	LIRR MONTAUK DIV	L		O	1	S	11/26/2008	6.183	V	4517	$18,068,000	402		
2231819	Q	JAMAICA AVE	BCIP			A	2	S	3/3/2008	4.773	F	11500	$46,000,000	413		
2230287	B	JEROME AVE	MOSHOLU PARKWAY	T		A	3	S	5/18/2009	4.711	F	11800	$47,200,000	207		
2249070	R	JOHN ST	B&O RR (ABANDONED)	O		O-PED	3	C	10/16/2009	5.648	G	5800	$23,200,000	501		
2247480	Q	JUNIPER BLVD SO	CSX TRANSPORT	C		O	1	S	10/6/2009	5.000	G	9000	$36,000,000	405		
2230380	K	KANE ST	278I (B.Q.E.)			A	2	S	4/11/2008	4.069	F	5000	$20,000,000	306		
2243770	K	KINGS HIGHWAY	BMT SEA BEACH	T		O	1	S	10/8/2009	6.767	V	5032	$20,128,000	311		
2231449	K	KNAPP ST	BSHP			A	1	S	6/10/2008	4.391	F	9500	$38,000,000	315		
2241169	B	LAFAYETTE AVE	AMTRAK - CSX	AC		O	1	S	12/12/2008	5.730	G	12000	$48,000,000	202		
2249110	R	LAKE AVE	B&O RR (ABANDONED)	O		O	3	S	4/30/2009	5.333	G	5900	$23,600,000	501		
2247240	Q	LEFFERTS BLVD	LIRR MAIN LINE	L		O	3	S	10/8/2009	5.750	G	5460	$21,840,000	409		
2241139	B	LEGGETT AVE	AMTRAK - CSX	AC		O	3	S	12/11/2008	4.690	F	41551	$166,204,000	202		
2243850	K	LIBERTY AVE	LIRR BAY RIDGE	N		O	3	S	10/27/2008	6.368	V	6659	$26,636,000	316		
2249460	R	LINCOLN AVE	SIRT SOUTH SHORE	S		O	1	S	11/4/2009	5.276	G	4500	$18,000,000	502		
2243190	K	LINCOLN PLACE	FRANKLIN SHUTTLE	T		O	1	S	10/15/2008	6.922	V	2460	$9,840,000	308		
2243010	K	LINCOLN ROAD	BMT SUBWAY, BRIGHTON	T		O	1	S	9/3/2008	6.722	V	6016	$24,064,000	355		
2231750	Q	LINDEN BLVD	BCIP			A	2	S	3/7/2008	4.341	F	6700	$26,800,000	413		
2243910	K	LIVONIA AVE PED BRDG	LIRR BAY RIDGE LINE	N		O-PED	6	C	2/19/2009	5.000	G	2500	$10,000,000	316		
2241159	B	LONGWOOD AVE	AMTRAK - CSX	AC		O	2	S	7/23/2008	5.306	G	10625	$42,500,000	202		
1240090	BM	MACOMBS DAM BRIDGE	HARLEM RIVER	M		WMO	52	S	12/22/2009	3.930	F	220000	$880,000,000	110	204	
2240079	BM	MADISON AVE BRIDGE	HARLEM RIVER			WMO	21	S	10/30/2008	4.833	F	80000	$320,000,000	111	201	
2249210	R	MAIN ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	3/21/2009	4.164	F	400	$1,600,000	503		
2240027	KM	MANHATTAN BRIDGE(LL)	EAST RIVER	T		WEO	23	S	11/24/2008	5.014	G	616390	$2,465,560,000	103	302	
2240028	KM	MANHATTAN BRIDGE(UL)	NYCTA TRACKS-BMT	T		WEO	43	S	11/24/2008	4.214	F	587424	$2,349,696,000	103	302	
2229480	B	MANHATTAN COLL PKWY	HHP			A	3	S	5/26/2009	5.368	G	6200	$24,800,000	208		
2245040	M	MARGARET CORBIN DR	PED PATH NEAR CAFÉ		P	O	1	C	5/14/2009	4.933	F	750	$3,000,000	112		
2245050	M	MARGARET CORBIN DR	PED PATH NR NO ENTR		P	O	1	C	5/14/2009	4.800	F	750	$3,000,000	112		
2230190	Q	MARKWOOD ROAD	JACKIE ROBINSON PKWY			A	1	S	5/5/2008	5.389	G	4400	$17,600,000	482	406	
2249760	R	MARTLINGS AVE	RICHMOND LAKE DAM			WO	2	S	6/2/2009	4.600	F	7000	$28,000,000	501		
2269030	B	MATTHEWSON ROAD	MAC CRACKEN AVE			O	15	S	12/26/2008	4.544	F	14880	$59,520,000	205		
2243410	K	MCDONALD AVE	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.047	G	2760	$11,040,000	312		
2241110	B	MELROSE AVE	CSX TRANS - PT MORRIS	C		O	8	S	8/24/2009	5.611	G	37854	$151,416,000	203		
2231710	Q	MERRICK BLVD	BLP N.B.			A	1	S	2/27/2008	4.400	F	6000	$24,000,000	413		
2231720	Q	MERRICK BLVD	BLP S.B.			A	1	S	2/27/2008	4.200	F	6000	$24,000,000	413		
2247500	Q	METROPOLITAN AVE	CSX TRANSPORT	C		O	1	S	10/6/2009	4.233	F	18650	$74,600,000	405		
2240290	K	METROPOLITAN AVE	ENGLISH KILLS			WMO	5	S	7/30/2009	6.139	V	10550	$42,200,000	301		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
1247560	Q	METROPOLITAN AVE	LIRR -NY&ATL	LN		O	2	S	10/24/2008	3.762	F	20900	$83,600,000	405		
2249470	R	MIDLAND AVE	SIRT SOUTH SHORE	S		O	1	S	11/25/2009	5.466	G	3000	$12,000,000	502		
2257569	M	MILLER HIGHWAY	TERRAIN			A	64	S	10/19/2009	4.803	F	264190	$1,056,760,000	104	107	
2249530	R	MINTHORNE ST PED BRDG	SIRT SOUTH SHORE	S		O-PED	26	C	3/30/2009	4.755	F	1600	$6,400,000	501		
2243240	K	MONTGOMERY ST	FRANKLIN SHUTTLE	T		O	1	S	9/4/2009	6.275	V	2240	$8,960,000	309		
2249090	R	MORNINGSTAR ROAD	B&O RR (ABANDONED)	O		O	4	S	5/4/2009	4.593	F	7900	$31,600,000	501		
2268930	M	MORRIS ST PED BRDG	BKLN-BATTERY TUNN PLZ			A-PED	3	C	2/17/2009	3.443	F	1200	$4,800,000	101		
2230250	B	MOSHOLU PARKWAY	BRONX RIVER			WA	5	S	1/30/2008	4.263	F	16300	$65,200,000	227		
2230300	B	MOSHOLU PARKWAY	CONRAIL (ABANDONED)	C		A	1	S	10/29/2008	4.146	F	4600	$18,400,000	226		
2230290	B	MOSHOLU PARKWAY	EQUESTRIAN PATH			A	1	S	1/23/2008	4.448	F	4300	$17,200,000	226		
2230260	B	MOSHOLU PARKWAY	METRO NORTH	M		A	1	S	4/7/2008	5.516	G	8880	$35,520,000	227	207	
2230310	B	MOSHOLU PARKWAY	SB RAMP TO HHP			A	2	S	10/8/2009	4.919	F	7400	$29,600,000	226		
2230270	B	MOSHOLU PARKWAY	WEBSTER AVE			A	1	S	6/17/2009	5.422	G	8480	$33,920,000	207		
2248100	Q	MOTOR PKWY (PED)	73RD AVE		P	O-PED	3	C	2/10/2009	4.965	F	2640	$10,560,000	408		
2248110	Q	MOTOR PKWY (PED)	ALLEY PK PED WALK		P	O-PED	1	C	7/16/2009	4.305	F	963	$3,852,000	413		
2248060	Q	MOTOR PKWY (PED)	BELL BLVD		P	O-PED	2	C	6/23/2009	4.000	F	2648	$10,592,000	411		
2248059	Q	MOTOR PKWY (PED)	FRANCIS LEWIS BLVD		P	O-PED	2	C	6/23/2009	4.194	F	2756	$11,024,000	408		
2248080	Q	MOTOR PKWY (PED)	HOLLIS COURT BLVD		P	O-PED	3	C	12/3/2008	5.000	G	2670	$10,680,000	408		
2248070	Q	MOTOR PKWY (PED)	SPRINGFIELD BLVD		P	O-PED	3	C	6/17/2009	4.179	F	2940	$11,760,000	411		
2247110	Q	MURRAY ST	LIRR PORT WASH BR	L		O	1	S	9/3/2009	5.370	G	4000	$16,000,000	407		
2247620	Q	MYRTLE AVE	ABANDONED LIRR			O	3	S	1/16/2008	5.028	G	6725	$26,900,000	482	406	
2230120	Q	MYRTLE AVE	JACKIE ROBINSON PKWY			A	1	S	5/2/2008	5.479	G	6400	$25,600,000	405	482	
2231670	Q	N CONDUIT AVE WB	BLP E.B.			A	1	S	2/7/2008	4.917	F	4000	$16,000,000	413		
2231680	Q	N CONDUIT AVE WB	BLP W.B.			A	2	S	2/12/2008	4.932	F	6500	$26,000,000	413		
205580A	Q	N.BLVD WB TO 678I SB	VACANT LAND			AR	16	S	8/28/2008	5.571	G	8600	$34,400,000	407		
2249350	R	NELSON AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	3	C	3/1/2009	4.115	F	300	$1,200,000	503		
1067150	B	NEREID AVE (2241880)	BRONX RIVER PKWY	M		O	10	S	12/16/2009	4.632	F	57750	$231,000,000	212		
2249430	R	NEW DORP LANE	SIRT SOUTH SHORE	S		O	2	S	11/4/2009	4.903	F	7600	$30,400,000	502		
2243660	K	NEW UTRECHT AVE	LIRR BAY RIDGE	N		O	1	S	12/6/2008	6.217	V	2350	$9,400,000	311		
2243140	K	NEWKIRK AVE	BMT SUBWAY, BRIGHTON	T		O	3	S	10/21/2009	4.544	F	4100	$16,400,000	314		
2240240	K	NINTH ST BRIDGE	GOWANUS CANAL			WMO	3	S	6/11/2009	6.581	V	5772	$23,088,000	306		
2269760	R	NORTH RAMP	SIRT	S	F	O	9	S	11/16/2009	4.042	F	17589	$70,356,000	501		
2240440	Q	NORTHERN BLVD	ALLEY CREEK			WO	2	S	8/15/2008	4.750	F	8300	$33,200,000	411		
2231870	Q	NORTHERN BLVD	BCIP			A	2	S	9/22/2008	6.236	V	9400	$37,600,000	411		
2055802	Q	NORTHERN BLVD EB	FLUSHING RIVER			WO	40	S	11/4/2008	4.366	F	78894	$315,576,000	407		
2055801	Q	NORTHERN BLVD WB	FLUSHING RIVER			WO	40	S	11/4/2008	4.620	F	71900	$287,600,000	407		
2243500	K	NOSTRAND AVE	LIRR BAY RIDGE	N		O	2	S	12/15/2008	4.966	F	4320	$17,280,000	314		
2240138	BM	NYCTA IRT	HARLEM RVR/BROADWAY	TM		WMO	3	S	11/17/2009	4.706	F	19520	$78,080,000	112	207	208
2243480	K	OCEAN AVE	LIRR BAY RIDGE	N		O	2	S	12/10/2008	4.912	F	5000	$20,000,000	314		
2240320	K	OCEAN AVE PED BRDG	SHEEPSHEAD BAY			WO-PED	30	C	9/29/2009	3.939	F	4000	$16,000,000	315		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2243439	K	OCEAN PKWY	LIRR BAY RIDGE	N		O	1	S	12/16/2008	5.018	G	7000	$28,000,000	312		
2249269	R	PAGE AVE	SIRT SOUTH SHORE	S		O	4	S	8/25/2009	6.347	V	30710	$122,840,000	503		
2245470	M	PARK AVE N.B	E 45TH ST			O	1	S	7/28/2009	4.865	F	2400	$9,600,000	105		
2245460	M	PARK AVE S.B.	E 45TH ST			O	1	S	7/28/2009	4.514	F	2400	$9,600,000	105		
2246550	M	PARK AVE VIADUCT	E 42ND ST			O	10	S	10/15/2009	4.537	F	22150	$88,600,000	105		
2247600	Q	PARK LANE SOUTH	LIRR MONTAUK DIV	L		O	1	S	10/9/2008	6.983	V	3024	$12,096,000	409	482	
2242099	B	PARK ROAD (204TH ST)	BRONX RIVER			WO	1	S	6/19/2008	4.793	F	4700	$18,800,000	212		
224001A	M	PARK ROW TO BKLN	WILLIAM ST N.B.			OE	4	S	5/28/2009	4.167	F	10167	$40,668,000	101		
2269780	R	PARKING ENTR RAMP	SIRT	S	F	O	3	S	12/18/2008	4.986	F	8589	$34,356,000	501		
2269730	R	PARKING EXIT RAMP	SIRT	S	F	O	10	S	12/4/2009	4.028	F	20727	$82,908,000	501		
2243020	K	PARKSIDE AVE	BMT SUBWAY, BRIGHTON	T		O	6	S	10/1/2008	4.043	F	48700	$194,800,000	314		
2247060	Q	PARSONS BLVD	LIRR PORT WASH BR	L		O	1	S	9/10/2008	4.824	F	4200	$16,800,000	407		
224001C	M	PEARL ST TO BKLN	LAND ADJ TO BRDG			OE	9	S	5/21/2009	3.814	F	6365	$25,460,000	101		
224001F	M	PEARL ST TO FDR DR	LAND ADJ TO BRDG			OE	3	S	5/21/2009	5.338	G	5200	$20,800,000	103		
222928C	M	PED BR AT 73RD ST	HHP - AMTRAK	A	P	A-PED	5	C	10/26/2008	4.145	F	3480	$13,920,000	107		
2246090	M	PED BRDG OPP 65 ST	TRANSVERSE RD #1		P	O-PED	1	C	7/8/2009	4.583	F	2300	$9,200,000	164		
2247630	Q	PED BRG NEAR UNION TPK	ABANDONED LIRR			O-PED	8	C	5/11/2009	5.359	G	900	$3,600,000	406		
2244130	K	PED NR BOATHSE (LULLWATER BRDG)	PROSPECT PK LAKE		P	WO-PED	1	C	9/10/2009	5.000	G	1260	$5,040,000	355		
2246400	M	PED PATH OPP E79 ST	TRANSVERSE RD #2		P	O-PED	1	C	7/15/2009	4.233	F	3700	$14,800,000	164		
2241380	B	PELHAM BAY PK EQUES	AMTRAK - CSX	AC	P	O-PED	1	C	3/7/2009	3.508	F	4223	$16,892,000	228		
2231519	K	PENNSYLVANIA AVE	BSHP			A	2	S	5/14/2009	5.806	G	6640	$26,560,000	356		
2243870	K	PITKIN AVE	LIRR BAY RIDGE	N		O	2	S	10/29/2008	6.515	V	5328	$21,312,000	316		
2243210	K	PRESIDENT ST	FRANKLIN SHUTTLE	T		O	2	S	10/10/2008	5.314	G	2500	$10,000,000	309		
2232167	M	PROMENADE OVER FDR	FDR - E81ST ST - E90TH ST		P	A-PED	53	S	7/9/2009	3.857	F	93000	$372,000,000	108		
2268760	M	PS-5 PED BRDG	TENTH AVE			O-PED	5	C	1/14/2009	4.735	F	1500	$6,000,000	112		
2240639	KQ	PULASKI BRIDGE	NEWTOWN CREEK			WMO	44	S	6/3/2008	4.408	F	205770	$823,080,000	301	402	
2230530	Q	QUEENS BLVD	278I (B.Q.E.)			A	2	S	12/4/2008	6.417	V	25543	$102,172,000	402		
2230869	Q	QUEENS BLVD	ACCESS RD BQE S.B.			A	1	S	12/9/2008	5.727	G	7900	$31,600,000	402		
2247310	Q	QUEENS BLVD	AMTRAK & LIRR YARD	AL		O	19	S	12/5/2008	6.408	V	92400	$369,600,000	402	401	
2230209	Q	QUEENS BLVD	JACKIE ROBINSON PKWY	T		A	5	S	7/29/2008	4.746	F	37700	$150,800,000	409		
2240047	MQ	QUEENSBORO BRIDGE (LL)	EAST RIVER	AL		WEO	53	S	12/8/2008	4.208	F	626900	$2,507,600,000	108	402	401
2240048	MQ	QUEENSBORO BRIDGE (UL)	EAST RIVER - LL			WEO	37	S	12/8/2008	4.340	F	322300	$1,289,200,000	108	402	401
2248040	Q	RAMP TO LINDEN BLVD	SO. CONDUIT AVE			O	1	S	7/18/2008	5.267	G	3352	$13,408,000	410		
223201D	M	RAMP TO N.B. FDR DRIVE	FDR & SOUTH ST.			AR	22	S	3/2/2008	4.967	F	15825	$63,300,000	101	103	
222934A	M	RAMP TO N.B. HHP	AMTRAK WEST SIDE	A		AR	26	S	11/4/2008	3.875	F	10800	$43,200,000	112		
2240350	R	RICHMOND AVE	RICHMOND CREEK			WO	3	S	7/8/2009	5.444	G	32589	$130,356,000	502		
2249270	R	RICHMOND VALLY ROAD	SIRT SOUTH SHORE	S		O	4	S	8/24/2009	5.284	G	9440	$37,760,000	503		
2244150	K	RIDGE BLVD	SHORE RD DRIVE			O	1	S	5/13/2009	6.667	V	4350	$17,400,000	310		
2240660	Q	RIKERS ISLAND BRIDGE	RIKERS ISL CHANNEL			WO	56	S	11/19/2009	4.493	F	183100	$732,400,000	401	480	
2241430	B	RIVER AVE	METRO NORTH RR HUD	M		O	1	S	8/5/2009	6.156	V	5040	$20,160,000	204		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2229510	B	RIVERDALE AVE	HHP			A	2	S	8/25/2009	4.474	F	5200	$20,800,000	208		
2246980	M	RIVERSIDE DRIVE	W 138TH ST			O	1	S	2/8/2008	4.767	F	6700	$26,800,000	109		
2267130	M	RIVERSIDE DRIVE	W 145TH ST			O	1	S	6/22/2009	4.867	F	5800	$23,200,000	109		
2246720	M	RIVERSIDE DRIVE	W 158TH ST - AMTRAK	A		O	77	S	9/30/2009	3.472	F	185658	$742,632,000	109	112	
2246970	M	RIVERSIDE DRIVE	W 96TH ST			O	3	S	7/2/2009	5.500	G	10600	$42,400,000	107		
2269240	M	RIVERSIDE DRIVE	W. 155TH ST			O	1	S	6/23/2009	4.640	F	2780	$11,120,000	109	112	
2246660	M	RIVERSIDE DRIVE	W125TH ST - W134TH ST			O	27	S	7/16/2009	4.444	F	148300	$593,200,000	109		
2300130	Q	ROCKAWAY BLVD	HOOK CREEK			WO	3	S	8/19/2009	6.271	V	18302	$73,208,000	112		
2248369	Q	ROCKAWAY BLVD	THURSTON BASIN			WO	2	S	8/20/2009	5.158	G	6000	$24,000,000	483	413	
2230587	Q	ROOSEVELT AVE	278I (B.Q.E.)			A	2	S	10/29/2009	5.917	G	11022	$44,088,000	402		
2240507	Q	ROOSEVELT AVE	678I - FLUSHING RIVER			WA	27	S	12/29/2008	3.535	F	84424	$337,696,000	407	481	
2247380	Q	ROOSEVELT AVE	CSX - HELLGATE	C		O	2	S	9/23/2009	6.389	V	7380	$29,520,000	402	403	404
2267160	Q	ROOSEVELT AVE	FLUSHING MDW PK ROAD			O	4	S	8/12/2009	4.873	F	7280	$29,120,000	408		
2240640	MQ	ROOSEVELT ISLAND BRDG	E. RIVER E. CHANNEL			WMO	8	S	11/4/2008	5.389	G	36500	$146,000,000	108	401	
2249420	R	ROSE AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.591	G	3800	$15,200,000	502		
2249410	R	ROSS AVE	SIRT SOUTH SHORE	S		O	2	S	8/6/2009	5.379	G	3800	$15,200,000	502		
2248200	Q	RUST ST	FLUSHING AVE			O	1	S	7/15/2009	5.047	G	2940	$11,760,000	405		
2231560	Q	S CONDUIT BLVD	BSOP			A	2	S	7/29/2008	5.465	G	15776	$63,104,000	410		
2242210	B	S OF ALLERTON AVE	BRONX RIVER			WO	3	S	5/27/2008	4.763	F	6200	$24,800,000	227		
2249770	R	S OF BROOKS LAKE	STREAM IN PARK		P	WO-PED	3	C	12/17/2009	5.000	G	696	$2,784,000	501		
2230370	K	SACKETT ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.500	F	5000	$20,000,000	306		
226771D	M	SB HHP RAMP TO 79 ST	79 ST BT BASIN GAR		P	AR	4	S	5/15/2009	4.516	F	2601	$10,404,000	107		
2244470	K	SEELEY ST	PROSPECT AVE			O	1	S	6/7/2007	4.100	F	8482	$33,928,000	307		
2249290	R	SEGUINE AVE	SIRT SOUTH SHORE	S		O	1	S	10/19/2009	6.016	V	3250	$13,000,000	503		
2248220	Q	SERVICE RD TURNAROUND	FLUSHING AVE			O	1	S	7/15/2009	5.125	G	2940	$11,760,000	405		
2241390	B	SHORE RD CIRCLE	AMTRAK - CSX	AC		O	2	S	12/30/2009	3.313	F	4800	$19,200,000	228		
2240200	B	SHORE ROAD	HUTCHINSON RIVER			WMO	7	S	7/9/2008	4.478	F	43576	$174,304,000	228		
2270170	R	SI FERRY PED BRDG	PARKING LOT EXIT RDWY		F	O-PED	5	C	3/23/2009	3.936	F	1750	$7,000,000	501		
2249120	R	SIMONSON AVE	B&O RR (ABANDONED)	O		O	3	S	4/24/2009	5.981	G	5819	$23,276,000	501		
2249860	R	SLATER BLVD	NEW CREEK			WO	1	S	5/6/2009	5.673	G	2037	$8,148,000	502		
2242220	B	SNUFF MILL ROAD	BRONX RIVER			WO	2	S	1/31/2008	4.395	F	4800	$19,200,000	227		
2249200	R	SOUTH AVE	B&O RR (ABANDONED)	O		O	3	S	6/20/2009	6.745	V	8322	$33,288,000	501		
2244440	K	SOUTH OF TILLARY ST	NAVY ST			O-PED	1	C	8/20/2009	4.271	F	6200	$24,800,000	302		
2241080	B	SOUTHERN BLVD	CSX TRANS - PT MORRIS	C		O	1	S	10/16/2008	4.259	F	3900	$15,600,000	201		
2242029	B	SOUTHERN BLVD	EAST FORDHAM ROAD			O	2	S	3/19/2008	4.658	F	12900	$51,600,000	227		
2231630	Q	SPRINGFIELD BLVD	BSOP			A	2	S	5/20/2008	4.614	F	8500	$34,000,000	413		
2268770	Q	SPRINGFIELD BLVD	EQUES. PATH (ABAND.)			O	1	S	4/20/2009	4.667	F	1470	$5,880,000	111		
2243180	K	ST JOHNS PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.781	V	2300	$9,200,000	308		
2241700	B	ST PAULS PL PED BRDG	METRO NORTH RR HAR	M		O-PED	2	C	2/10/2009	5.000	G	600	$2,400,000	203		
2241060	B	ST. MARYS & CONCORD	CSX TRANS - PT MORRIS	C		O	1	S	9/12/2008	5.333	G	4500	$18,000,000	201		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2230610	Q	STEINWAY ST	278I EB (BQE)			A	1	S	10/21/2008	6.581	V	5146	$20,584,000	401		
2230600	Q	STEINWAY ST	278I WB (BQE)			A	1	S	10/21/2008	6.581	V	5229	$20,916,000	401		
2243170	K	STERLING PLACE	FRANKLIN SHUTTLE	T		O	1	S	9/1/2009	6.500	V	2300	$9,200,000	308		
223201B	M	STH ST RMP TO FDR S.B.	SOUTH ST			AR	10	S	2/27/2008	3.761	F	44625	$178,500,000	101		
2240540	K	STILLWELL AVE	CONEY ISLAND CRK			WO	2	S	6/17/2009	6.292	V	17000	$68,000,000	313		
2230350	K	SUMMIT ST PED BRDG	278I (B.Q.E.)			A-PED	2	S	5/4/2008	4.500	F	1400	$5,600,000	306		
2231650	Q	SUNRISE HWY W.B.	BLP E.B.			A	1	S	4/16/2008	4.623	F	4100	$16,400,000	413		
2231660	Q	SUNRISE HWY W.B.	BLP W.B.			A	2	S	3/10/2008	4.652	F	5350	$21,400,000	413		
2231800	Q	SUPERIOR ROAD	BCIP			A	2	S	4/14/2008	4.136	F	7000	$28,000,000	413		
2243890	K	SUTTER AVE	LIRR BAY RIDGE	N		O	3	S	10/31/2008	6.542	V	5497	$21,988,000	316		
2241040	B	THIRD AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/28/2008	4.563	F	2700	$10,800,000	201	203	
2240310	K	THIRD AVE	GOWANUS CANAL			WO	1	S	6/19/2009	7.000	V	3200	$12,800,000	306		
2240069	BM	THIRD AVE BRIDGE	HARLEM RIVER			WMO	14	S	10/9/2008	6.746	V	100232	$400,928,000	111	201	
2240250	K	THIRD ST	GOWANUS CANAL			WMO	5	S	6/12/2009	4.931	F	4900	$19,600,000	306		
2247300	Q	THOMPSON AVE	AMTRAK & LIRR YARD	AL		O	14	S	11/19/2008	5.042	G	61280	$245,120,000	402		
2241170	B	TIFFANY ST	AMTRAK - CSX	AC		O	1	S	11/1/2009	5.627	G	7267	$29,068,000	202		
224004H	Q	TO 21ST ST FROM NY	22ND ST			OE	43	S	12/4/2008	4.324	F	48100	$192,400,000	402		
224001B	M	TO BKLN FRM FDR	FRANKFRT & CITY			OE	31	S	12/20/2008	4.074	F	51400	$205,600,000	101	103	
224005B	B	TO BRUCKNER BLVD	RELIEF			OR	5	S	11/4/2009	4.028	F	12100	$48,400,000	201		
224004A	M	TO E 60TH ST FROM QNS	FIRST AVE			OE	13	S	5/9/2008	5.254	G	14800	$59,200,000	108		
224004C	M	TO E 62ND ST FROM QNS	E 60TH ST			OE	10	S	10/2/2008	4.985	F	16720	$66,880,000	108		
224001D	M	TO FDR DR N.B.	PEARL STREET			OE	30	S	6/8/2009	4.868	F	49600	$198,400,000	101	103	
2245480	M	TO GWB OPP W 171ST ST	RIVERSIDE DRIVE			O	1	S	4/11/2008	5.048	G	10800	$43,200,000	112		
224007A	M	TO MADISON AVENUE	E 138TH ST			OR	7	S	4/18/2008	5.225	G	19880	$79,520,000	111		
224004E	Q	TO NY FR THOMSON AVE	JACKSON AVE	L		OE	94	S	12/24/2008	4.642	F	104600	$418,400,000	402		
224004G	Q	TO NY FROM 11TH ST	TERRAIN (CHAMBER)			OE	36	S	11/20/2008	4.390	F	8360	$33,440,000	401	402	
224004F	Q	TO NY FROM 21ST ST	21ST ST			OE	63	S	12/12/2008	4.833	F	63310	$253,240,000	402	401	
224001G	M	TO PARK ROW	ROSE ST			OE	11	S	6/8/2009	4.606	F	16551	$66,204,000	101		
224001E	M	TO PEARL ST	LAND ADJ TO BRDG			OE	3	S	6/1/2009	5.141	G	5300	$21,200,000	101		
224004B	M	TO QNS FRM E 59TH ST	FIRST AVE			OE	13	S	5/9/2008	5.708	G	14800	$59,200,000	108		
224004D	M	TO QNS FROM E 58TH ST	E 59TH ST			OE	12	S	7/10/2008	4.547	F	11781	$47,124,000	106	108	
224004I	Q	TO THOMSON AVE FROM NY	JACKSON AVE	L		OE	39	S	12/20/2008	4.951	F	59100	$236,400,000	402		
2249040	R	TOMPKINS AVE	B&O RR (ABANDONED)			O	1	S	8/1/2008	6.047	V	5096	$20,384,000	501		
2249840	R	TOMPKINS AVE	GREENFIELD AVE			O	1	S	4/7/2008	5.106	G	2690	$10,760,000	501		
2249510	R	TOMPKINS AVE	WILLOW AVE, SIRT	S		O	2	S	11/15/2008	5.567	G	5378	$21,512,000	501		
2249230	R	TRACY AVE PED BRDG	SIRT SOUTH SHORE	S		O-PED	9	C	6/8/2009	3.681	F	200	$800,000	503		
2245380	M	TRANSVERSE RD #1 WB	PED PATH OPP E 66TH ST		P	O	1	S	1/23/2008	5.000	G	1500	$6,000,000	164		
2249870	R	TRAVIS AVE	MAIN CREEK			WO	1	S	9/15/2009	5.733	G	1700	$6,800,000	502		
2246410	M	TRNSVRS RD 1 EB (DENESMOUTH ARCH)	PED PATH OPP E 65TH ST		P	O	1	S	2/8/2008	4.182	F	1739	$6,956,000	164		
2246560	M	TUDOR CITY PLACE	E 42ND ST			O	1	S	2/14/2008	5.133	G	6600	$26,400,000	106		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2249170	R	UNION AVE	B&O RR (ABANDONED)	O		O	4	S	4/28/2009	5.426	G	6500	$26,000,000	501		
2230360	K	UNION ST	278I (B.Q.E.)			A	2	S	4/23/2008	4.375	F	5000	$20,000,000	306		
2243200	K	UNION ST	FRANKLIN SHUTTLE	T		O	2	S	10/13/2008	5.043	G	4100	$16,400,000	309		
2240270	K	UNION ST	GOWANUS CANAL			WMO	5	S	10/14/2008	4.014	F	4900	$19,600,000	306		
2247040	Q	UNION ST	LIRR PORT WASH BR	L		O	1	S	9/15/2009	6.328	V	3313	$13,252,000	407		
2231850	Q	UNION TPKE	BCIP			A	2	S	4/3/2008	4.409	F	13600	$54,400,000	413		
2248129	Q	UNION TPKE	CREEDMOORE HOSP RD			O	1	S	6/30/2009	4.867	F	3500	$14,000,000	413		
2230180	Q	UNION TPKE	JACKIE ROBINSON PKWY			A	1	S	2/25/2008	5.891	G	5359	$21,436,000	482		
2241330	B	UNIONPORT ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.781	F	7631	$30,524,000	211		
2231910	Q	UTOPIA PKWY	BCIP			A	2	S	3/14/2008	5.114	G	7200	$28,800,000	407		
2229550	B	VAN CRTLDT EQUES	HHP		P	A-PED	2	C	7/15/2009	4.556	F	2100	$8,400,000	226		
2229540	B	VAN CRTLDT PARK	HHP		P	A-PED	2	C	7/15/2009	4.306	F	3900	$15,600,000	226		
2249130	R	VAN NAME AVE	B&O RR (ABANDONED)	O		O	3	S	4/23/2009	5.254	G	5474	$21,896,000	501		
2249140	R	VAN PELT AVE	B&O RR (ABANDONED)	O		O	3	S	4/28/2009	5.644	G	5000	$20,000,000	501		
2246620	M	W 128TH ST PED BRDG	3RD AVE BRDG APPR			O-PED	18	C	8/5/2009	4.000	F	2300	$9,200,000	111		
2246670	M	W 134 ST	TERRAIN			O	4	S	7/13/2009	4.870	F	7500	$30,000,000	109		
2245230	M	W 148TH ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	3	C	10/25/2008	4.033	F	1100	$4,400,000	109		
2246710	M	W 153 ST	A.C. POWELL BLVD			O	1	S	2/22/2008	4.370	F	3082	$12,328,000	110		
2245290	M	W 155TH ST PED BRDG	AMTRAK 30 ST BRANCH	A		O-PED	3	C	10/25/2008	3.292	F	800	$3,200,000	109	112	
2245250	M	W 158TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	11/14/2009	6.319	V	29170	$116,680,000	112		
2245260	M	W 173RD ST PED BRDG	AMTRAK 30 ST BRANCH	A	P	O-PED	2	C	10/25/2008	4.446	F	1500	$6,000,000	112		
2246600	M	W 176TH ST PED BRDG	APPROACH TO G.W.B.			O-PED	1	C	2/6/2009	3.897	F	1200	$4,800,000	112		
2246489	M	W 181 ST	RAMP TO WASH BR			O	1	S	2/17/2008	4.500	F	8200	$32,800,000	112		
2229400	M	W 181ST ST PED BRDG	HHP N.B.		P	A-PED	7	C	2/11/2009	4.400	F	1500	$6,000,000	112		
2241940	B	W 205TH ST	NYCTA IND YARDS	T		O	4	S	8/14/2008	5.625	G	32508	$130,032,000	207		
2240120	BM	W 207TH/W FORDHAM RD	HARLEM RIVER			WMO	5	S	9/22/2008	5.333	G	31784	$127,136,000	112	207	
2241489	B	W 225TH ST	CSX TRASP - PUTNAM	C		O	2	S	5/2/2008	5.149	G	10900	$43,600,000	207	208	
2241490	B	W 230TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/10/2009	5.625	G	5600	$22,400,000	208		
2241509	B	W 231ST ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	10/29/2008	4.745	F	4723	$18,892,000	208		
2241510	B	W 233RD ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.275	G	3760	$15,040,000	208		
2241520	B	W 234TH ST	CONRAIL (ABANDONED) PUTNAM			O	1	S	4/7/2009	5.176	G	3770	$15,080,000	208		
226672A	M	W 31ST ST	AMTRAK LAYUP TRACKS	A		O	9	S	12/29/2008	3.619	F	8800	$35,200,000	104		
224501B	M	W 33RD ST	AMTRAK 30 ST BRANCH	A		O	8	S	3/21/2008	4.611	F	16500	$66,000,000	104		
224501C	M	W 33RD ST	LAND ADJ TO AMTRAK	A		O	2	S	6/25/2009	4.417	F	4620	$18,480,000	104		
224501D	M	W 34TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	6/26/2009	4.514	F	11800	$47,200,000	104		
224501E	M	W 35TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.141	F	6500	$26,000,000	104		
224501F	M	W 36TH ST	AMTRAK 30 ST BRANCH	A		O	7	S	12/15/2008	4.015	F	16400	$65,600,000	104		
2245060	M	W 37TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	11/20/2009	6.190	V	7505	$30,020,000	104		
2245070	M	W 38TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/2/2008	4.154	F	6200	$24,800,000	104		
2245080	M	W 39TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/5/2008	4.196	F	6300	$25,200,000	104		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2245440	M	W 40TH ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/2/2009	4.125	F	9400	$37,600,000	104		
2245330	M	W 41ST ST	AMTRAK 30 ST BRANCH	A		O	3	S	12/29/2008	4.388	F	6200	$24,800,000	104		
2245210	M	W 42ND ST	AMTRAK 30 ST BRANCH	A		O	4	S	12/22/2008	4.619	F	9155	$36,620,000	104		
2245090	M	W 43RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4100	$16,400,000	104		
2245100	M	W 44TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/18/2008	4.662	F	4300	$17,200,000	104		
2245110	M	W 45TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	5.662	G	4100	$16,400,000	104		
2245120	M	W 46TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/19/2008	4.412	F	4100	$16,400,000	104		
2245130	M	W 47TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/21/2008	4.721	F	4100	$16,400,000	104		
2245140	M	W 48TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	3/24/2008	4.618	F	4100	$16,400,000	104		
2245150	M	W 49TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/2/2008	4.426	F	4100	$16,400,000	104		
2245340	M	W 50TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/4/2008	4.574	F	4100	$16,400,000	104		
2245160	M	W 51ST ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.868	F	4300	$17,200,000	104		
2245170	M	W 52ND ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.015	G	4300	$17,200,000	104		
2245180	M	W 53RD ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/7/2008	5.029	G	5100	$20,400,000	104		
2245350	M	W 54TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/8/2008	5.476	G	4700	$18,800,000	104		
2245360	M	W 55TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.382	G	4300	$17,200,000	104		
2245370	M	W 56TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/10/2008	5.618	G	4400	$17,600,000	104		
2245220	M	W 57TH ST	AMTRAK 30 ST BRANCH	A		O	3	S	4/11/2008	4.765	F	9100	$36,400,000	104		
2245190	M	W 58TH ST	AMTRAK 30 ST BRANCH	A		O	2	S	4/11/2008	4.706	F	4100	$16,400,000	104		
2246010	M	W 62 ST PED BRDG (PINEBANK ARCH)	BRIDLE PATH		P	O-PED	1	C	7/7/2009	4.723	F	1026	$4,104,000	164		
2245420	M	W 65TH ST ENTR EB	BRIDLE PATH W END		P	O	1	S	2/5/2008	4.900	F	1600	$6,400,000	164		
2269210	M	W 68TH ST	AMTRAK	A		O	3	S	11/24/2009	6.780	V	5382	$21,528,000	107		
2269190	M	W 70TH ST	AMTRAK	A		O	3	S	11/19/2009	5.806	G	17258	$69,032,000	107		
2246140	M	W 72 ST ENTR (RIFTSTONE ARCH)	BRIDLE PATH		P	O	1	S	1/25/2008	4.633	F	3600	$14,400,000	164		
2229290	M	W 79 ST	AMTRAK	A		A	1	S	12/7/2009	4.220	F	4500	$18,000,000	107		
2231860	Q	W ALLEY ROAD	BCIP			A	2	S	7/28/2009	5.263	G	7200	$28,800,000	411		
2241470	B	W FORDHAM RD	METRO NORTH RR HUD	M		O	4	S	8/6/2009	5.694	G	16052	$64,208,000	207		
2241460	B	W TREMONT AVE	METRO NORTH RR HUD	M		O	8	S	5/9/2008	4.194	F	12900	$51,600,000	205		
2269260	K	W. 8TH ST PED BRDG	SURF AVE.		P	O-PED	39	C	3/11/2009	3.130	F	14742	$58,968,000	313		
2246430	M	W110 ST ENTR (MOUNTCLIFF ARCH)	PED PATH OPP W109 ST		P	O	1	S	4/25/2008	4.383	F	1200	$4,800,000	164		
M00001	M	W191ST ST PED TNL	BROADWAY - IRT #1 SUBWAY			O-PED	1	C	1/20/2009	4.556	F	2000	$8,000,000	112		
2246460	M	W77 ST ENTR (EAGLEVALE ARCH)	PED PATH OPP W77 ST		P	O	2	S	1/29/2008	4.263	F	5800	$23,200,000	164		
2246340	M	W77 ST PED (LADIES POND BRDG)	STREAM TO THE LAKE		P	WO-PED	3	C	11/19/2009	4.032	F	455	$1,820,000	164		
2246380	M	W86 ST PED (SW RESERVOIR BRDG)	BRIDLE PATH		P	O-PED	1	C	11/10/2009	4.347	F	714	$2,856,000	164		
2241070	B	WALES AVE	CSX TRANS - PT MORRIS	C		O	1	S	10/17/2008	6.567	V	2535	$10,140,000	201		
2241410	B	WALTON AVE	METRO NORTH RR HUD	M		O	1	S	4/22/2008	5.297	G	3600	$14,400,000	204		
2240620	M	WARDS ISLAND PED BRDG	HARLEM RIVER			WMO-PED	10	C	11/1/2008	4.367	F	12600	$50,400,000	111		
2243250	K	WASHINGTON AVE	FRANKLIN SHUTTLE	T		O	1	S	10/6/2008	6.344	V	3657	$14,628,000	309	355	
2066919	BM	WASHINGTON BRIDGE	HARLEM RIVER	M		WO	9	S	10/8/2008	4.642	F	128339	$513,356,000	112	205	204
2246330	M	WEST DR (BALCONY BRDG)	STREAM TO THE LAKE		P	WO	1	S	2/7/2008	5.000	G	2019	$8,076,000	164		

INVENTORY SORTED BY FEATURE CARRIED

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED	RAILROAD	OTHER OWNER	BRIDGE TYPE	SPANS	RTNGSRC	Inspection Date	Condition Rating	VRBLRTNG	DECK AREA	REPLACEMENT COST	CD	CD2	CD3
2246080	M	WEST DR (DALEHEAD ARCH)	BRIDLE OPP W 64TH ST		P	O	1	S	1/22/2008	4.667	F	2000	$8,000,000	164		
2246000	M	WEST DR (GREYSHOT ARCH)	PED BET 61ST & 62ST		P	O	1	S	1/28/2008	5.400	G	2500	$10,000,000	164		
2244020	K	WEST DR (MEADOWPORT ARCH)	PED PATH NR GRND ARMY PLZ		P	O	1	S	4/28/2009	5.321	G	2500	$10,000,000	355		
2246360	M	WEST DR (WINTERDALE ARCH)	PED PATH OPP W 82 ST		P	O	1	S	2/6/2008	5.636	G	3100	$12,400,000	164		
2246120	M	WEST DRIVE	TRANSVERSE RD #1		P	O	1	S	3/3/2008	4.967	F	7900	$31,600,000	164		
2246240	M	WEST DRIVE	TRANSVERSE RD #2		P	O	1	S	3/7/2008	4.167	F	7200	$28,800,000	164		
2246260	M	WEST DRIVE	TRANSVERSE RD #3		P	O	1	S	2/28/2008	4.800	F	5100	$20,400,000	164		
2246280	M	WEST DRIVE	TRANSVERSE RD #4		P	O	1	S	3/23/2008	4.300	F	4700	$18,800,000	164		
2249710	R	WEST FOOTBRIDGE	CLOVE LAKE		P	WO-PED	2	C	7/8/2009	4.568	F	899	$3,596,000	501		
2244100	K	WEST FOOTBRIDGE	PROSPCT PK STREAM		P	WO-PED	1	C	12/14/2009	4.875	F	308	$1,232,000	355		
2267380	M	WEST STREET	RECTOR ST			AT	1	S	11/19/2009	5.033	G	25760	$103,040,000	101		
2241230	B	WESTCHESTER AVE	AMTRAK - CSX	AC		O	3	S	11/23/2008	6.111	V	15600	$62,400,000	202	209	
2240180	B	WESTCHESTER AVE	BRONX RIVER			WO	1	S	9/18/2009	4.765	F	5476	$21,904,000	202	209	
2241000	B	WESTCHESTER AVE	CSX TRANS - PT MORRIS	C		O	1	S	7/18/2008	5.128	G	1740	$6,960,000	201		
2075837	B	WESTCHESTER AVE	HUTCHINSON RVR PKWY			A	2	S	2/20/2008	4.333	F	15858	$63,432,000	210	211	
2241329	B	WHITE PLAINS ROAD	AMTRAK - CSX	AC		O	1	S	11/26/2008	4.797	F	6900	$27,600,000	211		
2248020	Q	WHITELAW PED BRDG	CONDUIT AVE			O-PED	7	C	11/12/2009	4.775	F	5500	$22,000,000	410		
1065210	Q	WHITESTONE EXP NB	BCIP (2065210)			A	1	S	9/4/2008	4.683	F	2500	$10,000,000	407		
2241369	B	WILLIAMSBRIDGE RD	AMTRAK - CSX	AC		O	2	S	11/18/2008	4.836	F	6510	$26,040,000	211		
2240039	KM	WILLIAMSBURG BRIDGE	EAST RIVER	T		WEO	53	S	10/31/2008	4.653	F	824000	$3,296,000,000	103	301	
2240059	BM	WILLIS AVENUE	HARLEM RIVER			WMO	26	S	11/6/2009	3.292	F	94700	$378,800,000	111	201	
2248019	Q	WOODHAVEN BLVD	ATLANTIC AVE			O	3	S	4/9/2008	4.306	F	19400	$77,600,000	409		
2248159	Q	WOODHAVEN BLVD	QUEENS BLVD			O	2	S	9/15/2008	4.288	F	11500	$46,000,000	404		
2230540	Q	WOODSIDE AVE	278I (B.Q.E.)			A	1	S	1/29/2008	5.797	G	7500	$30,000,000	402		
2247400	Q	WOODSIDE AVE	CSX TRANSPORT	C		O	1	S	9/24/2009	5.033	G	8200	$32,800,000	402	404	
2247120	Q	WOODSIDE AVE	LIRR MAIN LINE	L		O	3	S	10/28/2009	4.444	F	14900	$59,600,000	402		
		785 OPEN BRIDGES				OPEN SPANS 4,446				OPEN SF		14,420,919	$57,691,240,000			

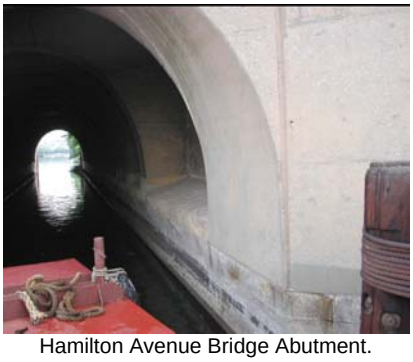
STATEN ISLAND CULVERTS

BIN	BORO	FEATURE CARRIED	FEATURE CROSSED		BRIDGE TYPE	SPANS	SOURCE
R00003	R	DELAFIELD AVE	RAYMOND PLACE		O	1	CITY
R00004	R	DICKIE AVE	NEAR COLUMBUS PLACE		O	1	CITY
R00005	R	BIDWELL AVE	COLUMBUS PLACE		O	1	CITY
R00006	R	LIVERMORE AVE	WATCHOGUE ROAD		O	1	CITY
R00010	R	GALLOWAY AVE	MARIANNE ST		O	1	CITY
R00011	R	FOREST AVE	CRYSTAL AVE		O	1	CITY
R00013	R	NAUGHTON AVE	PATTERSON AVE		O	3	CITY
R00015	R	OLYMPIA BLVD	SLATER AVE		O	1	CITY
R00016	R	GRAHAM BLVD	JAY ST		O	2	CITY
R00021	R	HUNTER AVE	IDLEASE PLACE		O	1	CITY
R00022	R	IDLEASE PLACE	HUNTER AVE		O	1	CITY
R00023	R	MIDLAND AVE	HYLAN BLVD		O	1	CITY
R00024	R	LINCOLN AVE	SANILAC ST		O	1	CITY
R00025	R	GREELEY AVE	SANILAC ST		O	1	CITY
R00027	R	ELEANOR ST	ROCKLAND AVE		O	1	CITY
R00031	R	TARLTON ST	GREAT KILLS LANE		O	1	CITY
R00032	R	SEGUINE AVE	PURDY PLACE		O	1	CITY
R00034	R	ROCKLAND AVE	BRIELLE AVE		O	1	CITY
R00035	R	BRADLEY AVE	WILLOWBROOK ROAD		O	1	CITY
R00036	R	AMBOY ROAD	ARBUTUS AVE		O	1	CITY
R00038	R	MAGUIRE AVE	DEPEW PLACE		O	1	CITY
R00039	R	MAGUIRE AVE	DEPEW PLACE		O	1	CITY
R00040	R	113 MAGUIRE AVE	DEPEW PLACE		O	1	CITY
R00041	R	93 FOSTER ROAD	AMBOY ROAD		O	1	CITY
R00042	R	LEDYARD PLACE	LACONIA AVE		O	1	CITY
R00046	R	RICHMOND TERRACE	SNUG HARBOUR		O	2	CITY
R00048	R	VAN NAME AVE	WALKER AVE		O	1	CITY
R00049	R	VAN PELT AVE	WALKER ST		O	1	CITY
R00050	R	UNION AVE	NETHERLAND AVE		O	1	CITY
R00051	R	HARBOR ROAD	DUBLIN PLACE		O	1	CITY
R00055	R	TRAVIS AVE	VICTORY BLVD		O	1	CITY
R00059	R	WESTERN AVE	RR BRIDGE		WO	1	CITY
R00060	R	SIGNS ROAD	VICTORY BLVD		O	1	CITY
R00062	R	KISSEL AVE	SNUG HARBOR ROAD		O	1	CITY
R00065	R	HENDERSON AVE	WESTBURY AVE		O	1	CITY
R00068	R	FOREST AVE	RANDALL AVE		O	1	CITY
R00069	R	GREGG PLACE	RANDALL AVE		O	1	CITY
R00076	R	ROOSEVELT AVE	HAROLD ST		O	1	CITY
R00077	R	BUCHANAN AVE	HAROLD ST		O	1	CITY
R00078	R	WILLOW BROOK ROAD	FILLMORE AVE		O	1	CITY
R00079	R	FILLMORE AVE	WILLOW BROOK ROAD		O	1	CITY
R00084	R	ARTHUR KILL ROAD	MULDOON AVE		O	1	CITY
R00085	R	ARTHUR KILL ROAD	150' N.W. ELLIS ROAD		O	1	CITY
R00086	R	ARTHUR KILL ROAD	ENGLEWOOD ST		O	1	CITY
R00095	R	MEISNER AVE	ROCKLAND AVE		O	1	CITY
R00096	R	ROCKLAND AVE	MANOR ROAD		O	1	CITY
R00097	R	RICHMOND HILL ROAD	RICHMOND ROAD		O	1	CITY
R00101	R	ST ANDREWS ROAD	LIGHTHOUSE AVE		O	1	CITY
R00103	R	AULTMAN AVE	ST GEORGE ROAD		O	2	CITY
R00106	R	ARTHUR KILL ROAD	RICHMONDTOWN ROAD		O	1	CITY
R00111	R	ELTINGVILLE BLVD	KATAN AVE		O	2	CITY
R00114	R	SWEET BROOK ROAD	RIDGEWOOD ROAD		O	1	CITY
R00115	R	VICTORY BLVD	CLOVES LAKE PARK		O	3	CITY
R00122	R	ARTHUR KILL ROAD	RIDGEWOOD AVE		O	1	CITY
R00133	R	ARDEN AVE	HALPIN AVE		O	1	CITY
R00135	R	HYLAN BLVD	CORNELIA AVE		O	1	CITY
R00136	R	SNUG HARBOR ROAD	KISSEL AVE		O	1	CITY
R00137	R	RICHMOND TERRACE	WESTERN AVE		O	2	CITY
R00138	R	HOLLAND AVE	BENJAMIN PLACE		O	1	CITY
R00139	R	DE PEW PL	MAGUIRE AVE		O	1	CITY
R00141	R	ALTER AVE	STORM&GRND FED STREAM		O	1	CITY

A brief glossary of the terms most commonly used in bridge design, construction and maintenance is presented below. Cross-references are indicated through the use of BLOCK LETTERING.

AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS)
A nonprofit, nonpartisan association representing highway and transportation departments in the fifty states, the District of Columbia, and Puerto Rico, representing all five transportation modes air — highways, public transportation, rail, and water.

ABUTMENT
Walls of reinforced concrete or masonry. Abutments support a bridge's SUPERSTRUCTURE and APPROACHES, as well as retain the embankments that are positioned at the extreme ends of a multi-span bridge.


Hamilton Avenue Bridge Abutment.
(Credit: NYSDOT)

ADA (AMERICANS WITH DISABILITIES ACT)
The Americans with Disabilities Act gives civil rights protections to individuals with disabilities, similar to those rights provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

AGGREGATE
Inert material such as sand or stone that is mixed with cement, lime and water to produce grout or mortar.

ALIGNMENT
The relative horizontal and vertical positioning between the bridge and APPROACHES.

ANCHORAGE
A solid mass, usually comprised of concrete, that encases a grillage of heavy steel bars into which the ends of a SUSPENSION BRIDGE'S main CABLES are anchored. Anchorages are designed to resist the pull of the cables.


Inspecting the Exterior of the Manhattan Bridge Anchorage. (Credit: NYSDOT)

APPROACH
Roadway at each end of a bridge, beyond the ABUTMENT, providing access to the bridge.

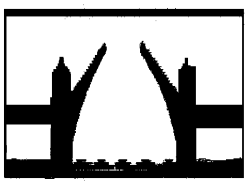
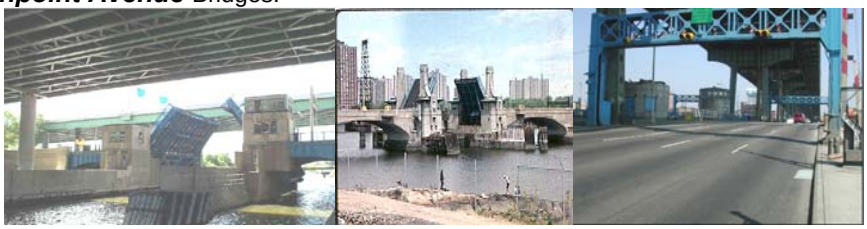
ARTERIAL BRIDGE
Any bridge upon which an arterial highway runs as it crosses streets, water, railroads, etc.

AS-BUILT DRAWINGS
Drawings that are prepared from measurements taken on-site to accurately depict the actual sizes and location of elements of the construction project. The as-built drawings indicate variations from the construction documents that occurred during construction.

ASPHALT
Black bituminous surface material made from AGGREGATE and processed petroleum.

BACKFILL
Material used to refill an excavated area.

BASCULE BRIDGES
Bascule bridges are movable bridges, typically referred to as "draw bridges" which rotate the superstructure vertically. The movable leaf of the structure - known as a *bascule* - is counterbalanced by weights of such size that minimal power is required for operation - just enough to overcome inertia, frictional resistance, wind and snow loads. Such bridges are relatively speedy to operate and provide unlimited vertical clearance. Examples of bascule bridges currently under the jurisdiction of the New York City Department of Transportation include the ***Unionport***, ***Shore Road (Pelham)***, ***Hamilton Avenue***, Third Street, ***Union Street***, and ***Greenpoint Avenue*** Bridges.

Unionport Bridge. (Credit: NYSDOT) Shore Road (Pelham) Bridge. (Credit: Peter Basich)
Hamilton Avenue Bridge. (Credit: NYSDOT)

Union Street Bridge. Greenpoint Avenue Bridge.
(Greenpoint Credit: Michele N. Vulcan)

BASE COURSE
The layer of compacted ASPHALT directly under the WEARING SURFACE.

BEAM
A linear structural member designed to span from one support to another.

BEARINGS
Designed to transmit the load from the SUPERSTRUCTURE to the SUBSTRUCTURE. Divided into two types, expansion and fixed, bearings are needed to ensure that certain elements are not forced to take more load than that for which they were designed and that the bridge can move slightly under load and temperature changes as needed.

Truss Bearing on Manhattan Bridge.
(Credit: NYSDOT)

BICYCLE LANE
A portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicycles. (New York State Vehicle and Traffic Law, Title 1, Article 1, §102–a)

BICYCLE PATH
A path physically separated from motorized vehicle traffic by an open space or barrier and either within the highway right–of–way or within an independent right–of–way and which is intended for the use of bicycles. (New York State Vehicle and Traffic Law, Title 1, Article 1, § 102–b)

BID
A contractor's formal proposal, including prices, to perform the work set out in the project SPECIFICATIONS.

BMP (BEST MANAGEMENT PRACTICES)
Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage, or leaks, sludge or waste disposal, or drainage from raw material storage.

BORING
A soil exploration technique of drilling into the ground at various locations in an attempt to construct an accurate subsurface profile.

BOX BEAM
A hollow structural beam with a square, rectangular, or trapezoidal cross-section.

BRIDGE
A structure connecting two points, greater than 20 feet in distance, which carries vehicular and/or pedestrian traffic over water, a descending slope, or another road.

BULKHEAD
A RETAINING WALL-like structure commonly composed of driven piles supporting a wall or a barrier of wooden timbers or reinforced concrete members.

CABLE
A steel rope, composed of parallel or twisted wires, used to support the road deck of SUSPENSION BRIDGES or CABLE STAYED BRIDGES.

Inspector on Manhattan Bridge Cable.
(Credit: NYSDOT)

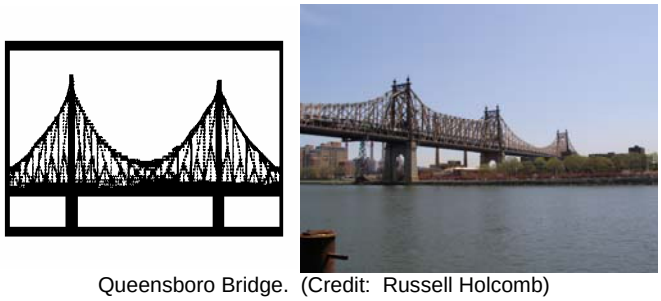
CABLE STAYED BRIDGES
Bridges in which the superstructure is directly supported by cables, or stays, passing over or attached to towers located at the main piers.

CAISSON
A rectangular or cylindrical chamber for keeping water or soft ground from flowing into an excavation.

CAMELBACK TRUSS
A TRUSS having a curved top chord and straight bottom chord meeting at each end. There is a camelback truss on the Macombs Dam Bridge.

Macombs Dam Camelback Truss.

CANTILEVER BRIDGES
A cantilever is a BEAM that is supported only on one end. In a cantilever bridge, the tree branch-like beams project toward each other, forming a span of the bridge when connected in the center. Bridges of this type are economical to build because they require less material in construction and less condemnation of property is necessary for the narrow piers which are sufficient for support. Typically, no falsework is required during construction and the bridge does not exceed 1,800 feet in length. NYCDOT's ***Queensboro Bridge*** is a notable example of this type of structure.



Queensboro Bridge. (Credit: Russell Holcomb)

CAST-IN-PLACE
Concrete that is poured and cured in its final position at the project site.

CATCH BASIN
A receptacle, commonly box shaped and fitted with a grilled inlet and a pipe outlet drain, designed to collect the rain water and floating debris from the roadway surface and retain the solid material so that it may be periodically removed.

CATWALK
A narrow walkway for access to some part of a structure.

Queensboro Bridge Lower Level Flooring System Catwalk under Lower Level Queens Approach.
Manhattan Bridge Brooklyn Tower Catwalk. (Credit: NYSDOT)

CHANGE ORDER
An approved modification of the SPECIFICATIONS or the costs in a construction contract.

CHIPPING HAMMER
A welder's compressed-air tool for cleaning steel after welding. It is also used by bridge inspectors.

CLEARANCE
The unobstructed vertical and horizontal space provided between two objects.

Woodhaven Boulevard Bridge Eastbound, United Nations – 1st Avenue Tunnel, and Macombs Dam Bridge Vertical Clearance Postings. (Credit: NYSDOT)

Retro-reflective Material Improves Visibility of These Low Vertical Clearance Bridges: 17th Avenue Pedestrian Bridge Over Belt Parkway, East 60th Street Bridge Over FDR Drive, and Westchester Avenue Bridge over Hutchinson River Parkway.

COFFERDAM
A temporary dam-like structure constructed around an excavation to exclude water.

COLONNADE
A series of regularly spaced columns.

Manhattan Bridge Colonnade.
(Credit: Peter Basich)

COMPRESSION
The stress resulting from a pushing force on a structure.

CONDITION RATING
A judgment of a structure's condition in comparison to its original as-built condition.

COPING
The material forming the top layer of a masonry unit which protects the MASONRY below from penetrating water.

CORE
A cylindrical sample of concrete removed from a bridge component for the purpose of destructive testing.

Removing a Core From 252nd Street Bridge over Henry Hudson Parkway in January 2009.
(Credit: Masroor Mahmood)

CORROSION
The general disintegration of surface metal through oxidation.

COUNTERWEIGHT
A weight which is used to balance the weight of a movable member; in bridge applications counterweights are used to balance a movable span so that it rotates or lifts with minimum resistance.

CRITICAL PATH
The set of activities that must be completed on time for the contract completion date to be met. Activities on the critical path have no slack time.

CULVERT
Any structure under the roadway with a clear opening of twenty feet or less, measured along the center of the roadway.



Idlease Place Culvert. Sweet Brook Road Culvert.

DEAD LOAD
The weight of the bridge itself without any traffic or external loads.

DECK
The supporting slab and wearing surface of a bridge.


Hamilton Avenue Bridge Deck. (Credit: NYSDOT)

DELAMINATION
The subsurface separation of concrete into layers.

DESIGN-BUILD CONTRACTS
A delivery procedure where one company is retained to perform both design and construction, thus expediting the capital bridge rehabilitation program.

DOLPHIN
A group of PILES driven close together and placed to protect portions of a bridge or other structure exposed to possible damage by collision with marine traffic.

Greenpoint Avenue Dolphin & Fender System.
(Credit: Peter Basich) Hunters Point Avenue Dolphins.
(Credit: Michele N. Vulcan)

DRAINAGE SYSTEM
A collection of surface and/or subsurface drains and pumps that are used to remove surface or ground water.

EFFLORESCENCE
White salts that water movement brings to the surface of porous construction materials.

Moderate Efflorescence on the Brooklyn Bridge
Brooklyn Tower North Gothic Arch in 2004.
(Credit: NYSDOT)

ELECTRICAL MAINTENANCE
Preventive maintenance to electrical systems on the East River bridges (e.g., travelers, lighting systems) and the movable bridges (e.g., contacts, relays, switches, controls, limit switches, and lighting systems).

EXPANSION JOINTS
Located throughout a bridge, expansion joints are located in the deck, directly above the BEARINGS. Expansion joints allow parts of the structure to expand independently and therefore relieve stresses that may otherwise cause damage.

EYEBARS
Steel bars with each end shaped like the eyes of giant needles. They provide total anchorage of the suspension cable and are buried deep within the ANCHORAGE structure.

FACE
The outer, exposed surface of a MASONRY unit.

FATIGUE
Cause of structural deficiencies due to repetitive loading over time.

FENDER
A structure that acts as a buffer to protect the portions of a bridge exposed to floating debris and water-borne traffic from collision damage.


Rikers Island Dolphin & Fender System.
(Credit: NYSDOT)

FINGER DAM
EXPANSION JOINT in which the opening is spanned by meshing steel fingers or teeth.


Manhattan Bridge Finger Dam.
(Credit: Jagtar Khinda)

FIRE HAZARD
Accumulation of debris, where the debris is of sufficient quantity, in a location where, if it caught fire, it would compromise the structural integrity of the bridge.

FIXED PRICE CONTRACT
A contract with an overall predetermined price for the project work.

FLAG CONDITIONS
A “Flag” is a hazardous or potentially hazardous condition on a bridge. A "Flag" is classified as either Red, Yellow, or Safety. A "Red Flag" requires prompt evaluation and, possibly, corrective action. A "Yellow Flag" is used to report a potentially hazardous structural condition, which if left unresolved will most likely become a danger to the soundness of the bridge and a hazard to the public. In the case of a "Safety Flag", there is no danger of partial or complete structural failure of the bridge; however, if left unattended, those conditions can present a vehicular or pedestrian hazard.

FLOORBEAMS
Horizontal members placed crosswise to the bridge’s major BEAMS, girders, or TRUSSES to support the deck.

South Transit Floorbeams, Stringers, and Bracing Members on the Manhattan Bridge. Queensboro Bridge North Outer Roadway Floorbeam. (Credit: NYSDOT)

FOOTINGS
Part of the substructure known as the bridge foundation, they are masses of reinforced concrete which can be found beneath the ABUTMENTS and PIER and which spread the load to allow the soil to support the structure above.

FORMS
The temporary molds that hold concrete in place while it is hardening; also known as form work.

FULL STEEL PAINTING
A bridge painting technique that involves cleaning of steel surfaces using approved environmentally safe paint removal techniques (blasting, power tools, or hand tools). A full primer, intermediate and finish coat are applied using combinations of brush, roller, or (if necessary) spray painting.

FUNCTIONALLY OBSOLETE
A status used to describe a bridge that, because of its geometry, is no longer functionally adequate for its task. Reasons for this status include that the bridge doesn't have enough lanes to accommodate the traffic flow, it may be a drawbridge on a congested highway, or it may not have space for emergency shoulders. “Functionally Obsolete” does not communicate anything of a structural nature. A functionally obsolete bridge may be perfectly safe and structurally sound, but may be the source of traffic jams or may not have a high enough CLEARANCE to allow an oversized vehicle.

GENERAL CONTRACTOR
has overall responsibility for a construction project. The general contractor may break down the project into smaller pieces to be handled by subcontractors.

GEOMETRIC IMPROVEMENT
Roadway improvements other than a surface treatment, such as shoulder and lane widening, curb and gutter, or roadway alignment.

GIRDER SPAN BRIDGES
are primarily employed in bridging short distances, and may be classified as either simple or continuous. The steel girders carry the roadway and roadway load to end supports. The Midtown Highway, ***Hook Creek***, Little Neck and ***Brooklyn Third Avenue Bridge***s are of this type.

Hook Creek Bridge and Brooklyn’s Third Avenue Bridge. (Credit: NYSDOT)

GRADE
The degree of inclination of the ground surface.

GRID FLOORING
A steel floor system comprising a lattice pattern which may or may not be filled with concrete.


Installation of Full Width Grid Deck Panels on the Manhattan Bridge Lower Roadway in 2006. Pouring the Concrete.

GRIZZLY
A coarse screen used to remove oversize pieces from ASPHALT or earth.


New Grizzly Under Fabrication for the
Agency Asphalt Plant.
(Credit: Russell Holcomb)

GUTTER
A paved drain commonly constructed in conjunction with the curbs of the roadway.

JACKING
The mechanical lifting or sliding of an element.

JERSEY BARRIER
A low, gradually narrowing, reinforced concrete wall used as a highway divider and as a means of preventing a vehicle from crossing a median or leaving the roadway. These barriers were first used on the New Jersey Turnpike.

LIVE LOAD
The weight of the traffic crossing a bridge and of other external loads applied to the structure (excluding the weight of the bridge itself.)

LOAD RATING
A value that indicates the LIVE LOAD capacity of a bridge.

LUBRICATION MAINTENANCE
Lubrication of mechanical parts of the East River bridges (e.g., travelers, cables, solid rod suspenders, and EYEBARS), and the movable bridges (e.g., bearings, brakes, limit switches, and gates).

MAINTENANCE AND PROTECTION OF TRAFFIC
The control plan for traffic around and through a construction site.

MARINE BORERS
Mollusks and crustaceans which live in water and destroy wood by digesting it.

MASONRY
Construction materials made of concrete, brick, tile, or stone.

Cleaning the Masonry of the North Face of the Manhattan Bridge's Brooklyn Anchorage and of the North and East Faces of the Roosevelt Island Pier of the Queensboro Bridge. Masonry of the East Drive Bridge Over Eastwood Arch.

MOVABLE BRIDGE
A type of bridge which carries vehicular or pedestrian traffic over a navigable waterway, and which opens to permit the passage of a ship, barge or boat. The 25 movable bridges currently under the jurisdiction of the New York City Department of Transportation include the Harlem River group (Broadway, West 207th/West Fordham Road, Macombs Dam, 145th Street, Madison Avenue, ***Third Avenue***, ***Willis Avenue***, and ***Wards Island***); the Bronx group (Bruckner Expressway/Bronx River, Hutchinson River Parkway, ***Shore Road***, and Bruckner Expressway/Westchester Creek); the Queens group (Borden Avenue, Grand Street, Greenpoint Avenue, Hunterspoint Avenue, Pulaski Avenue, and Roosevelt Island); and the Brooklyn group (Hamilton Avenue, Ninth Street, Third Street, Carroll Street, Union Street, ***Metropolitan Avenue***, and Mill Basin.)

Tugboat Pushing a Barge Under the Open Metropolitan Avenue Bridge. Willis Avenue Bridge. Shore Road Bridge. (Credit: George Kern) Third Avenue Bridge Over Harlem River. (Third Avenue Credit: Edgardo Montanez) Wards Island Pedestrian Bridge in 2009. (Credit: Duane Bailey-Castro)

MOVING LOAD
A LIVE LOAD that is moving, for example, vehicular traffic.

NECKLACE LIGHTS
The necklace lights are those lights on the main cables of suspension bridges which, when illuminated at night, resemble a necklace.

A Bulb of the Queensboro Bridge Necklace Lights. (Credit: Peter Basich) Repairing a Manhattan Bridge Necklace Light. (Credit: Hany Soliman)

NONDESTRUCTIVE TESTING
A method of checking the structural quality of materials that does not damage them.

NOTICE TO PROCEED
The formal document authorizing the contractor to commence work under its contract.

OPERATOR'S HOUSE
The building containing the power plant and operating machinery and devices required for the operator's (bridge tender's) work in executing the complete cycle of opening and closing a MOVABLE BRIDGE span.

Metropolitan Avenue Bridge over English Kills Operator House.

PANEL POINT
The point at which two members of a TRUSS cross.

PARAPET
A low wall along the outmost edge of the roadway of a bridge to protect vehicles and pedestrians.

PEDESTRIAN BRIDGES
Bridges designed and constructed to provide means of crossing for pedestrian traffic only.

Morris Street, West 8th Street, and Ocean Avenue Pedestrian Bridges.

PIER
Part of a bridge's substructure, piers are the intermediate supports or columns which support a multi-span bridge. Piers may be composed of steel or reinforced concrete, and can appear as columns or solid walls.

Pier 1 of Hamilton Avenue Bridge. Pier 17 of Rikers Island Bridge. Pier 15 of Madison Avenue Bridge. Pier 35 of Macombs Dam Bridge. (Credit: NYSDOT)

PILES

A concrete, steel or timber column located beneath the FOOTINGS of a bridge and embedded in the soil. Piles are employed in bridges only if the soil directly below the footing is not firm enough to support the bridge loads.

PLAZA

An area designated for use by pedestrians, which may vary in size and shape; which may abut a sidewalk and is located fully within the bed of a roadway; may be at the same level as the roadway or raised above the level of the roadway; may be physically separated from the roadway by curbing, bollards, or other separators; may be treated with special markings and materials; and may contain benches, tables, or other facilities for pedestrian use.

Manhattan Bridge Brooklyn Plaza. Evening View of the Plaza Looking Southeast With Benches, Lights, and Granite Pavers in Foreground. Arial View of the Plaza. Looking South From the Pedestrian Entrance.

PLUMB BOB

A weight hanging on a string (plumb line), used by bridge inspectors to show the direction of the vertical distance.

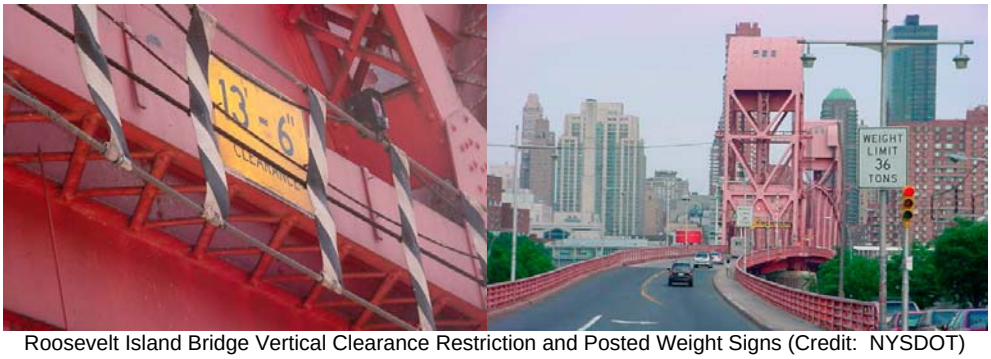
POINTING

The compacting of the mortar in the outermost portion of a joint and the troweling of its exposed surface to secure water tightness or desired architectural effect.

Pointing Joints on the East Face of the Brooklyn Anchorage of the Manhattan Bridge.

PORTLAND CEMENT CONCRETE
The most common concrete used in construction. It was patented in England in 1820, and is so named because when hard, it resembles Portland stones from Dorset.

POSTED
An announcement or sign limiting dimension, speed, or loading, indicating that larger dimensions and higher speeds and loads cannot be safely taken by the bridge.



Roosevelt Island Bridge Vertical Clearance Restriction and Posted Weight Signs (Credit: NYSDOT)

POTHOLE
A hole in a roadway or pavement, usually caused by heavy vehicular traffic or weathering.

PRECAST CONCRETE
Concrete members that are cast and cured before being placed into their final positions on the construction site.

PREVENTIVE MAINTENANCE
Preventive maintenance involves cleaning, protecting, and performing minor repairs of bridge components to prevent deterioration from becoming so extensive that major REHABILITATION or RECONSTRUCTION is needed. Specified interval maintenance, such as cleaning DRAINAGE SYSTEMS and lubrication, are done on a scheduled basis. Other maintenance is carried out when inspectors point out the need for it, such as resealing an EXPANSION JOINT or replacing the wearing surface. Preventive maintenance tasks on the bridges include: the cleaning of drainage systems, gratings, and expansion joints; the washing of the deck area and salt splash zones; full-steel, salt splash, and spot painting; the patching of sidewalks; the maintenance of electrical devices; and the oiling of mechanical components.

PRIMER
The first layer of paint used to cover the unsealed surface. This is followed by at least one more coat of paint.

PUNCH LIST
A catalogue of minor items still outstanding at the end of a construction project.

QUALITY ASSURANCE
An independent evaluation of a service (i.e., an inspection) to establish that a pre-described level of quality has been met.

RAILING
A fence-like construction built at the outermost edge of the roadway or the sidewalk portion of a bridge to protect pedestrians and vehicles.

Manhattan Bridge Railing. (Credit: Russell Holcomb) Greywacke Arch Railing.

RAILROAD FORCE ACCOUNTS
Railroad force accounts are contracts between the Agency and railroads by which the railroads supply flag personnel so the Division can perform repair work on bridges that cross over railroad tracks.

REHABILITATION
Extending the useful life of a bridge by painting, repairing or replacing the DECK or selected elements of the SUBSTRUCTURE or SUPERSTRUCTURE. This type of work is performed primarily on those structures not classified as deficient, but which contain specific components that have low condition ratings.

RETAINING WALL
A structure designed to restrain and hold back a mass of earth.

RETARDING AGENT
A chemical added to mortar to slow down the set.

RETRACTILE BRIDGES
Retractile bridges are movable bridges that are mounted on tracks that are positioned to one side of a navigational channel. To open, the bridge is withdrawn or "retracted" to shore. Although fascinating to observe and efficient to operate, retractile bridges are considered obsolete because of the expansive land areas that must be condemned in order to accommodate their tracks. The New York City Department of Transportation currently possesses two retractile bridges - the ***Borden Avenue*** and ***Carroll Street*** bridges, rare examples of the bridge builders' art.

Borden Avenue Bridge. (Credit: Peter Basich).

Borden Avenue Bridge. (Credit: Peter Basich). Carroll Street Bridge. (Credit: NYSDOT)

RETROFIT
Upgrading parts of an existing structure to meet current standards.

RIGHT-OF-WAY
A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

RIPRAP
Irregularly broken, random-sized pieces of rock used for a foundation or to prevent soil erosion.

ROADWAY
The portion of the road intended for the use of vehicular traffic.

ROCKER BEARING
A bridge support that accommodates expansion and contraction of the superstructure through a rocking action.

SADDLE
A special curved casting atop a SUSPENSION BRIDGE tower into which the cables are placed to avoid sharp bends in directional changes of the cable.

Manhattan Bridge Saddle. (Credit: Jagtar Khinda)

SALT SPLASH ZONE PAINTING
A bridge painting process that involves preparation of the area to be painted by power wash, using clean water or steam. After power washing, hand and power tools are used in areas which have started to show deterioration from accumulated de-icing agents. Solvent cleaning is done in locations where oil and grease need to be removed from the steel surface. A spot PRIMER coat and finish coat are then applied by brush or roller. Occasionally, when there is no danger of overspray, spray painting may be performed.

SCUPPER
An opening in the floor portion of a bridge to provide means for rain or other water accumulated upon the roadway surface to drain through it into the space beneath the structure.

Scuppers on the Pulaski, Madison Avenue, and Brooklyn Bridges. (Credit: NYSDOT)

SET
When the consistency of mortar changes from plastic to hard.

SHORING
Temporary bracing to support a structure.

SOFFIT
The underside of a structural component, such as a beam or arch.

SPALLING
The flaking or breaking out of concrete parallel to the main surface, caused by a blow, or by the action of weather or pressure.

SPAN
The distance between consecutive supports of a bridge.

SPECIFICATIONS OR SPECS
A detailed listing of required construction materials and methods to be used in the project. This information is a supplement to the blue prints and working drawings.

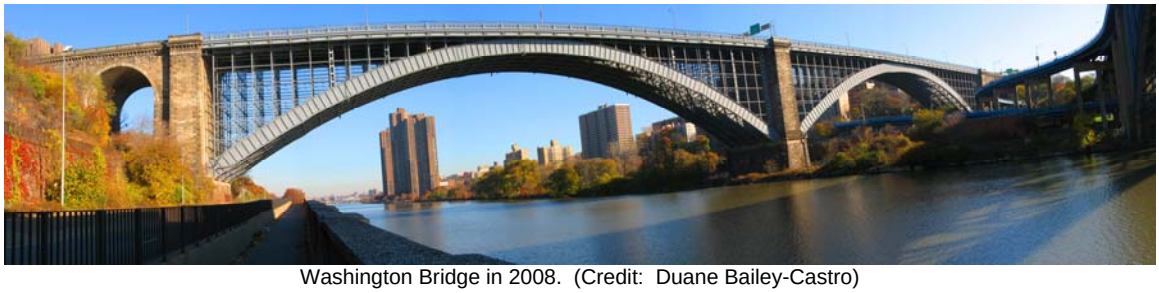
SPLAY CASTING
A steel or cast-iron collar fitted around a bridge suspension CABLE at the location where it spreads out (splays) into separate bundles of wires which are then attached to the ANCHORAGE EYEBARS. It is used to control the degree and location of the splay. These castings are usually located at the entry point of the cable into the anchorage chamber.

SPOT PAINTING
When the surface to be painted is contaminated with de-icing salts, sea salt, bird excrement, or other corrosive agents, the area is prepared by power washing, using clean water or steam. When grease or oil is present, it is removed by solvents. Mechanical cleaning with hand and/or power tools is performed in the areas containing deteriorated paint. A spot PRIMER coat and a single finish coat are applied by brush or roller. Occasionally, when there is no danger of overspray, spray painting may be performed.

STAGED CONSTRUCTION
Construction done so that traffic may be maintained on a portion of an existing bridge structure while a longitudinal section of a new structure is constructed. Traffic is then shifted over to that portion of the new structure while the existing structure is removed and the new structure is completed.

STEEL ARCH BRIDGES
Steel arch bridges consist of either a single arch or a series of arches fashioned from steel or concrete. Aesthetically one of the more attractive bridge types. Arch structures can prove economical to construct if the bridge spans between high ABUTMENTS. At present, there is only one bridge of this kind in steel under the guardianship of the NYCDOT; the twin-arched ***Washington Bridge***, positioned over the Harlem River at 181st Street. This bridge opened to traffic in December 1888 and, with its approaches, is 2,375 feet long.

Washington Bridge. (Credit: NYSDOT)



Washington Bridge in 2008. (Credit: Duane Bailey-Castro)

STEM

The vertical part of a retaining wall, usually made of concrete or masonry.

East Face of Brooklyn Bridge North Stem Wall. (Credit: NYSDOT)
West 176th Street Pedestrian Bridge Beginning Abutment Stem Wall.

STOPPING SIGHT DISTANCE

The distance required for a vehicle to stop before hitting a stationary object in its path. It is equal to the distance required for the driver to react and apply the brakes plus the distance required for the vehicle to stop once the brakes are applied.

STRAIN GAUGE TESTING

Small strips of material (imagine a small band-aid) are glued onto part of a structure to measure the stress in the material under load. Inside the small "band-aid" are tiny electrical wires. When a structure is under load it stretches (tension) or contracts (compression). When this happens, the resistance in the tiny wires in the strain gauge changes, resulting in a change in the wire's current. What is actually being measured are changes in the electrical current in the tiny wires. Knowing the physical properties of the structural member that the gauge is attached to, (such as steel), a calculation is can then be made to convert these changes in current to changes in stress. The readings are taken with special instruments that record the information over the desired period of time or loading sequences.

Division Staff Installing Strain Gauges in 1995 and 2006 on the Greenpoint Avenue Bridge. Checking the Measurements in 2006. (2006 Credit: Vera Ovetskaya)

STRAND
Comprised of hundreds of thin wires laid parallel to form a bundle, strands comprise the base element in the CABLES, or main cables, on a SUSPENSION BRIDGE or cable stayed bridge.

STRINGER
A part of a bridge's SUPERSTRUCTURE, a stringer is essentially a BEAM parallel to the span used to support the road DECK.

Stringers on the Manhattan Bridge. (Credit: NYSDOT) Bridge Repairer & Riveter Joseph Antony Repairing a Red-Flagged Stringer on the Bridge. (Credit: Hany Soliman)

STRUCTURAL DEFICIENCY
An engineering term-of-art used by the Federal government to indicate that there are elements of the bridge that need to be monitored and/or repaired. It covers a wide range of conditions and does not reflect the fundamental integrity of a structure. Any city bridge deemed unsafe would be shut to the public.

STRUCTURAL HEALTH MONITORING
The continuous or regular monitoring of the condition of a structure or system using built-in or autonomous sensory systems, and any resultant intervention to preserve structural integrity.

SUBSTRUCTURE
The name given to those elements below a bridge's road deck system, namely the ABUTMENTS, ANCHORAGES, BEARINGS, and PIERS.

SUPERSTRUCTURE
The superstructure is all that part of a structure above the bearings of simple and continuous spans, skewbacks of arches and top of footings of rigid frames; excluding backwalls, WINGWALLS and wing protection railings.

SUSPENDER
A wire rope or a short vertical rod that enables the forces of the roadway of a SUSPENSION BRIDGE to be translated into an axial force in the supporting CABLES.

Manhattan Bridge Suspenders. (Credit: NYSDOT and Jagtar Khinda)

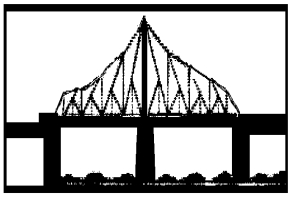
SUSPENSION BRIDGES

Suspension bridges are high level bridges with spans that usually exceed 1,500 feet in length. Supported by large wire CABLES that are anchored to masses of concrete and which pass over the tops of towers, the road DECK is suspended at regular intervals by smaller cables called suspenders. While the main cables carry the entire live and dead load, stiffening TRUSSES are required to distribute the LIVE LOAD and prevent excessive deflection at any point. The Brooklyn, ***Manhattan*** and ***Williamsburg*** Bridges are noted New York City examples of this type.

Manhattan Bridge. (Credit: Bernard Ente) Williamsburg Bridge. (Credit: Peter Basich)

SWING BRIDGES

Swing bridges are movable bridges that are supported on a center PIER in the center of a waterway, and are opened by rotating the SUPERSTRUCTURE horizontally on wheels riding on a circular track. Two channels are provided on either side of the bridge for navigational ease when the bridge is in the open position. Because swing bridges are slow to operate and restrict channel width, they are rarely constructed today. Examples of swing bridges in New York City include the ***Third Avenue***, ***Madison Avenue***, ***145th Street***, ***University Heights***, ***Grand Street*** and ***Macombs Dam*** Bridges.



Third Avenue and Madison Avenue Bridge. (Madison Avenue Credit: Peter Basich)

145th Street Bridge. (Credit: Peter Basich) University Heights Bridge. (Credit: Michele N. Vulcan)

Grand Street Bridge. (Credit: NYSDOT) Macombs Dam Bridge. (Credit: Michele N. Vulcan)

TORSION
Twisting force usually caused by unbalanced or asymmetrical loading.

TOWER
Often the most majestic element in a SUSPENSION or cable stayed bridge, the ***tower*** serves as a support for the structure's main CABLES.

Williamsburg Bridge Tower. (Credit: Peter Basich) Inspectors on Manhattan Bridge Tower. (Inspector Credit: NYSDOT) Manhattan Bridge Tower. (Credit: Michele N. Vulcan) Manhattan Bridge Tower Detail. (Credit: Russell Holcomb) Brooklyn Bridge Brooklyn Side Tower Detail. (Credit: Jagtar Khinda)

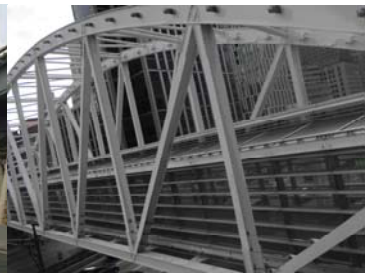
TRAVELER MAINTENANCE

The maintenance of a traveler (movable underdeck platform) that runs under the East River Bridges so maintenance, inspections and repairs can be performed to the underside of the bridge.

Manhattan Bridge Traveler. (Credit: NYSDOT)

TRUSS

A rigid framework built of interconnecting steel beams, creating a large "girder" to support the floor system and transfer loads to the substructure over a longer span.



Brooklyn Bridge Franklin Square Truss. (Credit: Andy Hoang). General view of Manhattan Bridge Trusses B and C From the Lower Roadway on the Main Span. (Credit: NYSDOT) Chambers Street Pedestrian Bridge Truss.

TRUSS BRIDGES

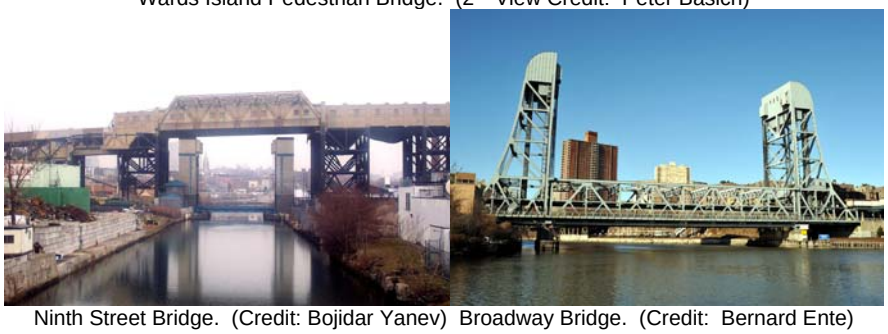
Truss bridges possess road decks that are supported by Steel TRUSSES that rest on PIERS and ABUTMENTS, and which span short distances. The 174th Street Bridge in the Bronx is an example of a truss bridge.

East 174th Street Truss Bridge over Sheridan Expressway. (Credit: NYSDOT)

VERTICAL LIFT BRIDGES

Vertical lift bridges are movable bridges which have road DECKS that operate in much the same fashion as an elevator. Comprised of supporting end CABLES that are attached at one end to the road DECK and at the other to rotating drums, these bridges are raised and lowered to allow for the safe passage of marine traffic. The ***103rd Street - Wards Island Pedestrian Bridge***, ***Ninth Street Bridge***, and *Broadway Bridge* are examples of this type of bridge.

Wards Island Pedestrian Bridge. (2nd View Credit: Peter Basich)



Ninth Street Bridge. (Credit: Bojidar Yanev) Broadway Bridge. (Credit: Bernard Ente)

VIADUCT BRIDGES

Viaduct bridges are multi-span bridges containing two end spans and any number of intermediate SPANS. The end spans are supported by an ABUTMENT on one end and a PIER on the other. The intermediate spans held aloft by piers.

Park Avenue Viaduct Bridge. Experiencing the Viaduct in a Whole New Way During Summer Streets 2009.

WEARING SURFACE

The topmost layer of material applied on the DECK or roadway that receives the traffic loads; also known as wearing course.

Brooklyn Bridge Wearing Surface. Manhattan Bridge Wearing Surface and Safety-Shaped Barriers. (Credit: NYSDOT)

WELD
To fasten together metals by bonding with molten metal.

WINGWALL
Walls of reinforced concrete or stone that prevent the soil behind the ABUTMENT from eroding away and leaving a void beneath the APPROACHES of the bridge. Also known as a retaining wall.

Broadway Bridge & Bay Ridge Avenue Bridge Wingwalls. (Credit: NYSDOT)

WINTER INSPECTION
Inspection of a site known to have a greater hazard potential during winter. This may be due to low ambient temperatures, accidental or deliberately set fires.

Timber Shoring Supporting a Failing Steel Beam – a Potential Winter Hazard.
(Credit: Bojidar Yanev)

Bridge Protection through Dirt and Water Control

Cleaning of Abutment and Pier Tops Removal of debris, dirt and vegetation from abutment and pier tops; cleaning and lubrication of bridge bearings.

Debris Removal Removal of spilled trash; removal of rocks, wood, plastic or metal objects, tires, mufflers, wheel covers, and other traffic droppings; removal of paper products, bottles, cans, accumulated dirt and other trash. Debris removal is also required for walkways and plazas. For movable bridges and bridges over water, the protective fender systems need to be cleared of debris. The removal of debris from bridges is an important and critical component of maintenance. Debris can cause safety and hazard conditions. In addition, debris traps moisture and salts on the structure and prevents proper drainage.



Manhattan Bridge Tower After Debris Removal. (Credit: Peter Basich) Hutchinson River Parkway Under Westchester Avenue. (Credit: Anthony Napolitano) 161st Street Pedestrian Bridge Over Major Deegan Expressway.

Assistant City Highway Repairer Lashawn Elam and Highway Repairer Anita Ramos Removing Vegetation and Other Debris.

Cleaning of Drainage System Removal of debris, dirt and vegetation from drainage systems, including gutter gratings, gutters and leaders, scuppers, down spouts and scupper piping systems. The cleaning of surface gratings and gutters requires hand tools, brooms and brushes. In some cases, an air compressor might be needed to blow out some gutters. Cleaning the scuppers and scupper piping systems requires specialized equipment.

Drain Truck on Brooklyn Bridge Ramp. (Credit: Peter Basich)

Cleaning Catch Basins on the Manhattan Bridge. Drain Crew: Highway Repairer Anthony Irizarry, Supervisor Highway repairer Michael Parise, and Assistant City Highway Repairer Giavonni Caballero. (Crew Credit: James Campbell)

Cleaning of Expansion Joints Removal of debris and dirt from the troughs using compressed air or water; and cleaning and resealing of the joints. Performed on all bridges. Expansion joints are located at the surface level where they are subjected to impact and vibration and are exposed not only to the elements such as water, dust, grit, ultra-violet rays and ozone, but also to the effect of chemicals such as salt solutions, cement alkalis and petroleum derivatives. In addition to regular lubrication of moving parts, penetration of water, silt and grit must be effectively prevented or provision made for their removal.

Expansion Joint Cleaning and Cleaned Joint on the Manhattan Bridge.

Manhattan Bridge Expansion Joint Cleaning in 2008: Supervisor Highway Repairer Thomas Cruz, Assistant City Highway Repairer Antonio Asaro, Highway Repairer Louie Dumeng, and Oiler Stanley Karolewicz. Assistant City Highway Repairers Jonathan Adorno and Antonio Asaro, Oilers Stanley Karolewicz and Ronald Grady, Highway Repairer Louie Dumeng, and Interim Director of Bridge Preventive Maintenance Paul Schwartz. (Credit: Thomas Whitehouse)

Cleaning of Open Grating Decks Removal of debris and dirt from open-grating decks and washing with high-pressure water jets.

Sweeping Sweeping each bridge with a mechanical sweeper along each curb.

Mechanical Sweeper – Side and Rear Views. (Credit: Peter Basich)

Washing of Decks and Salt Splash Zones Washing of decks and salt splash zones to remove remnants of de-icing salts; use of compressed air and water jets to clean tight corners.

Power Washing the Corrosive Deicing Solvents Within the Range of the Roadway Splash Zone on The Manhattan Bridge in October 2007. Particular Attention is Directed to Cleaning the Gusset Plate. (Credit: Albert Hong)

Roadway Surface Maintenance

Crack Sealing in Pavement and Curbline Sealing Cleaning of cracks and filling them with sealant; sealing with mastic material along the curb line to prevent water leakage onto bridge components. This maintenance function is sensitive to weather conditions.

Repair of Sidewalks and Curbs Sidewalk repair to restore sidewalk to original condition. Curb repair to be undertaken along with this task.

Repaired Bullnose Curb and Sidewalk at Crotona Avenue. (Credit: Joseph Saverino)

Sidewalk Repairs at East 174th Street Over The Ramp to The Cross Island Parkway. (Credit: Reza Taheri)

Replacement of Wearing Surfaces Removal of old wearing surface; preparation of exposed concrete slab or steel plate; installation of new wearing surface. The wearing surface is

a two-inch course of bituminous concrete. Also includes minor deck repair, cleaning and waterproofing of deck.

Asphalt Trailer and Tar Kettle. (Credit: Peter Basich)

2005: Masonry Crews and Highway Repairers Repairing Recurrent Potholes on the Eastbound Brooklyn-Queens Expressway, Just Past the Middagh Street Underpass. Break-Out and Removal of the Old Asphalt Roadway and Concrete Deck. Installing New Concrete With Rebar in the Cutout on the Eastbound BQE. (Credit: Anthony Napolitano)

2005: Installing New Concrete With Rebar in the Cutout on the Eastbound BQE. Rolling and Tamping the Asphalt on the Eastbound BQE. (Credit: Anthony Napolitano)

2005: Sealing the Edges of the Cutout With Asphalt Cement to Prevent Water From Seeping In. Closeup of Part of the Completed Concrete Deck Repair on the Eastbound BQE. (Credit: Anthony Napolitano)

2008: Removing the Old Micro-Surfacing on the In-Bound Brooklyn Bridge. Shot Blasting for Surface Preparation. Cleaning the Roadway Surface. (Credit: Fouad Althaibani, Emad Shaker, and Sunil Desai)

2008: Covering all the Drainage Systems Before Applying the Micro-Surfacing on the In-Bound Brooklyn Bridge. Applying the Tack Coat for the Micro-Surfacing. Applying the New Micro-Surfacing Materials. (Credit: Fouad Althaibani, Emad Shaker, and Sunil Desai)

Electrical and Mechanical Component Maintenance of the 4 East River Bridges and 25 Movable Bridges

Maintenance of Electrical Devices Checking and servicing electrical systems such as travelers, relays, auxiliary contacts, meters, overload relays, time delay relays, span and tail locks, brake systems, transmitters, transformers, fuses, wiring, resistors, etc. Also includes checking interior anchorage lighting, caution lighting, navigation lighting, and necklace lighting. During inspection, the travelers of the East River Bridges are operated to ensure proper calibration of electric motors. If motors are not calibrated properly, the travelers may rotate and jam along their guides. Many of the movable bridges are very old and replacement parts are difficult to find or may not be available any longer. When necessary, Division personnel fabricate machine parts such as shafts, and brake and warning gate components. In addition to inspection of systems, the electrical technicians replace poor condition components with electric systems before corrective maintenance is required. This preventive maintenance strategy avoids disruption of bridge service to motorists. This is important, because once corrective maintenance is necessary, it may require the bridge to be out of service for lengthy periods.

Electrician Robert Stackpole and Supervisor Electrician Ben Cipriano Atop the Queensboro Bridge. Electrician Helper Richard Parisi. (Credit: Peter Basich) Supervisor Electrician Ben Cipriano Installing an Outlet on the Brooklyn Bridge. (Credit: Hany Soliman)

Changing a Bulb on the Queensboro Bridge Necklace Lighting. (Credit: Peter Basich)

Construction Project Manager Gholamali Mozaffari, and Electricians Nelson Crooks and Gary Emmanuel Fixing Machinery in the Ninth Street Bridge Operator House in April 2008. (Credit: Vera Ovetskaya) Repairing the Navigation Lighting on the Hunterspoint Bridge. On the Bridge: Oilers Carl Wharton, Richard Morreale, and Paul Califano, Mozaffari Ali, Electrician Naum Golburt, and Highway Repairers Manny Nardiello and Kevin Donahue. In the Snooper Bucket: Harry Parmaman and Supervisor Electrician Jose Done. (Credit: Samuel Teaw)

Maintenance of Mechanical Components Cleaning and lubrication of all movable parts and bridge cables for the four East River Bridges and the twenty-five movable bridges. Cleaning and lubrication of travelers; cleaning, wedging and oiling of the main cable strands and eyebars; cleaning of truss bearings; cleaning and lubricating air and fire line valves. Cleaning and lubrication is required to keep components from corroding and becoming immobile. Allowing components to seize could cause operating failure and introduce unsafe structural stresses.

Inspecting the Eyebars in the Brooklyn Anchorage of the Manhattan Bridge. (Credit: NYSDOT) Repairing the Brooklyn Bridge Standpipe System, 130 Feet Below the Roadway. Maintenance Crew Conducting the Annual Cleaning and Lubrication of the Solid Rod Suspenders Spherical Bearings on the Brooklyn Bridge. (Credit: Anatoly Orlov)

Oiler T. McAuliffe at the 9th Street Bridge. Assistant Mechanical Engineer Vera Ovetskaya Climbing to the Brooklyn Bridge Tower in 2008. (Credit: Gennadiy Kaplun)

Cleaning and Lubricating the Broadway Bridge. (Credit: Reza Taheri)

Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse (Wearing Yellow Jacket) Inspecting the Broadway Bridge Machinery Room and Instructing the Contractor. (Credit: Albert Hong)

Steel Protection – Painting**

Total Paint Removal and Repainting Constructing negative pressure containment (Class 1A); washing and surface blasting to commercial-blast or near-white metal condition (Society for Protective Coating SP-6 or SP-10); constructing Class 3P containment; power tool cleaning to bare metal condition (Society for Protective Coating SP-11 or SP-15); lead monitoring and disposal; applying lead-free paint; primer, intermediate coat and top coat. Surface preparation is accomplished by abrasive blasting. The containment materials include tarps, plywood, scaffolding, and cables. Equipment includes blasting machines, needle guns, spray pumps, compressors, dust collectors, filters, and ductwork.

Abrasive Blasting. Platform Installed for Painting of the Queensboro Bridge (Credit: Vadim Sokolovsky)
Containment on Queensboro Bridge Manhattan Ramp. (Credit: Peter Basich)

Inside the Queensboro Bridge Containment. 2005: Roadway Containment.
(Roadway Credit: Michele N. Vulcan) 2006: Containment Above the Upper Roadway.

The Division treats all lead paint waste as hazardous waste, and stores and disposes of it according to the Resource Conservation and Recovery Act (RCRA). Waste is stored in approved leak-proof drums and containers which are, in turn stored temporarily in a fenced, secured area on-site until they are transferred to a disposal/recycling facility.

Full-Steel (Overcoating) Overcoating of the entire bridge. Solvent cleaning and cleaning of steel surfaces in areas with deteriorated paint is conducted using approved environmentally safe paint removal techniques, and either power tools, hand tools or combination hand/power tools. Power tool cleaning is performed in a Class 3P containment, and hand tool cleaning in a Class 4 containment. Combination hand/power tool cleaning is performed in a Class 3P containment. A localized primer coat and a single finish coat are then applied by brush, roller, or spray over the entire bridge.

Salt Splash/Spot Painting This is a new process that combines salt splash with spot painting. It involves preparation of the area to be painted by power wash, using clean water or steam. Solvent cleaning is done in locations where oil and grease need to be removed from the steel surface. Areas to be power washed and painted are: the superstructure (up to six feet upwards from the deck), the underdeck steel (up to three feet from each side of the center line of the expansion joints), and the outside of the bridge's steel faces. In addition to these painted areas, we now perform localized surface preparation and painting of any deteriorated locations as mentioned in our spot painting definition above. After power washing, hand and power tools are used in areas that have started to show deterioration from accumulated de-icing agents. Power tool cleaning is performed in a Class 3P containment, and hand tool cleaning in a Class 4 containment. Combination hand/power tool cleaning is performed in a Class 3P containment. A spot primer coat and finish coat are then applied by brush or roller. Occasionally, when there is no danger of overspray, spray painting may be performed.

Spot Cleaning Before Painting on the Williamsburg Bridge. Primer Coating on the Williamsburg Bridge. Salt Splash Painting on the Williamsburg Bridge. (Salt Splash Credit: Fouad Althaibani)

Containment Examples. Manhattan Bridge - Painting Containment Structures on the Cables of the Manhattan Approach Span. 2005: Queensboro Containment. (Queensboro Credit: Peter Basich)

2005: Queensboro Bridge Containment. (Credit: Peter Basich) 2005: Preventing Paint From Falling Into the Dutch Kills under the Hunters Point Avenue Bridge. (Credit: Sergiy Parayev) Working Inside the Queensboro Bridge Containment.

2007: Queensboro Bridge Lower Level and Upper Level Shielding. 2006: Erecting Scaffold to Build Painting Containment at Base of Brooklyn Tower of the Manhattan Bridge.

*COMPONENTS OF THE PREVENTIVE MAINTENANCE PROGRAM**

TASK	IMPACT*
Debris Removal	6.1%
Sweeping	5.3%
Clean Abutments & Piers	8.1%
Clean Open Grating	7.0%
Clean Expansion Joints	9.1%
Wash Deck & Splash Zones	5.1%
Paint	4.2%

TASK	IMPACT*
Spot Paint	3.7%
Drain Cleaning	10.6%
Sidewalk & Curb Repair	2.5%
Pavement & Crack Sealing	12.2%
Wash Underside	15.9%
Mechanical Device Maintenance	6.7%
Replace Wearing Surface	3.5%

*IMPACT ON BRIDGE RATING

Cleaning the Brooklyn Bridge Brooklyn Anchorage in July 2007. (Credit: Serag Saad)

*Consortium of Civil Engineering Departments of New York City Colleges and Universities. *Preventive Maintenance Management System For New York City Bridges: Update 1998. Technical Report No. 98-1*. 1999. **Descriptions modified in November 2003.

MAINTENANCE PERSONNEL RESOURCES IN 2009

Preventive maintenance, corrective repair, flag repair, and painting work on the bridges and other structures within the City is performed by mechanics and supervisors in a variety of trades. The bridge operators provide safe and expedient passage to all marine and vehicular traffic under and on movable bridges. A breakdown of this work force by trade is:

	SUPERVISORS	MECHANICS
BRICKLAYERS	2	4
BRIDGE OPERATORS (INCLUDES ASSISTANTS)	22	72
BRIDGE PAINTERS	6	29
BRIDGE REPAIRERS/RIVETERS	4	40
CARPENTERS	3	13
CEMENT MASONS	-	11
ELECTRICIANS (INCLUDES HELPERS)	5	21
HIGHWAY REPAIRERS (INCLUDES ASSISTANTS & SEASONAL WORKERS)	28	79
MACHINISTS	-	2
MOTOR GRADER OPERATORS	-	1
OILERS	-	15
TRACTOR OPERATORS	-	1
TOTALS	70 SUPERVISORS	288 MECHANICS

Bridge Operator Mary Harrigan at the Union Street Bridge. (Credit: Adal Maldonado) Bridge Repairer/Riveters Repairing the Willis Avenue Bridge Grating. (Credit: Reza Taheri) Supervisor Electrician Ben Cipriano Repairing a Damaged Electrical Cable on The Queensboro Bridge in March 2007. (Credit: Bala Nair)

Bridge Operator-in-Charge Delonda Bates-Pinkney at the Controls of the 9th Street Bridge. She has worked for the Department since 1989. (Credit: Keith Burrowes) BOIC Bates-Pinkney Preparing to Check the Bridge's Mechanisms. (Credit: Vera Ovetskaya)

Revised 9/14/09

MAINTENANCE PERSONNEL RESOURCES IN 1900

A breakdown of the Department of Bridges work force by trade in 1900:

	SUPERVISORS	MECHANICS
AXEMAN		8
BLACKSMITH	1	2
BOILERMAKER		1
BRICK MASON	1	4
BRIDGE TENDER	15	137
CARPENTER	1	23
DOCKBUILDER		1
DRIVER		11
FIREMAN		18
FITTER		3
GATEMAN		7
INSPECTOR (INCLUDING STEEL)		10
LABORER (INCLUDES HELPERS)	7	111
LEVELER		4
LINEMAN		3
MACHINIST (INCLUDING HELPERS)		13
MASONRY INSPECTOR		7
MECHANIC	1	2
PAINTER	1	16
RIGGER		11
RIVETER	1	6
RODMAN		4
SHIP CARPENTER		4
SOUNDER		4
STABLEHAND		3
STEAM ENGINEER (INCLUDES DYNAMO)		15
STONE CUTTER/STONE MASON	1	2
SUPERINTENDENT ELECTRIC LIGHT	1	
SUPERVISOR (INCLUDES ASSTS)	12	
TOOLMAN		2
TRANSITMAN		7
TRIMMER		2
TOTALS	42 SUPERVISORS	441 MECHANICS

Willis Avenue Bridge Curbing and Road Repair in the Early 1920's. Gateman J. J. McDonough (on left), Great-Grandfather of Deputy Chief Engineer Russell Holcomb

*BRIDGE INSPECTION EQUIPMENT LIST**

Inspector Equipment	Inspection Team Equipment	Inspection Van Equipment
Boots-Knee High	5 Boro Map	Tool Chest
Dust Masks (Disposable)	Binoculars	Clip Boards
Safety Goggles	Broom	Flashlight (3 “D” Cell)
Hard Hat With Liner	Digital Camera	Fire Extinguisher
Rain Hat & Jacket	Camera Card Reader	First Aid Kit
Work Gloves Long Cuff	Hand Compass	3 Safety Flags
Work Gloves Unlined	Screwdriver Set (Regular)	Step Ladder 6’ or 8’
Work Gloves Lined	Screwdriver Set (Phillips)	10 Traffic Cones
Work Boots	Dye Penetrant Kit	
Chipping Hammer	Lantern	
Clip Boards	D-Meter With Test Block	**Put In Trucks By Highway Repairers When Needed**
Deceleration Lanyards	Marking Paint Spray	
Flashlight (2 “D” Cell)	Retract Survey Rod 25’	Generator
	Portable Laser Distance Meter	
Safety Vest	Handheld Computer	Oil For Generator
Level 9” (Magnetic)	Thermometer	Extension Ladder 32’
Tool Bags (24”)	Spray Penetrating Oil	Extension Ladder 24’
Class III Body Harness	Cell Phone/Radio	Extension Ladder 16’
Lanyards	Vernier Calipers	Shovel
Bridge Inspection Manual (New York State)	Wrenches 12”	Push Broom
Technical Advisories For Inspection Manual	Tool Pouch	Dust Pan & Sweep Broom
Emergency Procedure Instructions	Lumber Crayons	Bottled Water
OSHA Approved Respirator & Filters	Spray Paint	Bolt Cutter
Belt With Two Drop Forged D-Rings	Awl	Flood Lights
Hard Hat Flashlight	Calipers	Approved Safety Gasoline Can
	Hacksaw	Sledge Hammer (8 lbs.)
	Hacksaw Blades (Extra)	Extension Cord Winder
	Paint Scraper	
	Inspection Mirror	
	Level 24”	
	Pliers 8”, Vinyl Coated	
	Plumb Bob	
	Pocket Knife	
	Ruler 25’ or 30’ (Metal)	
	Ruler 100’ (Fiberglass)	
	Scraper Blades (Extra)	
	Wire Brush	
	Folding Ruler 8’	
	Rope 5/8” With 100’ Coil	
	Digital Angle Gauge	

NYSDOT Inspector on The Brooklyn Bridge.
(Credit: Michele N. Vulcan)

Division Personnel Inspecting Paerdegat Bridge Utilizing a Barge.
(Credit: Avelino Leyco Jr.)

*New York City Department of Transportation, Division of Bridges. *Inspections and Bridge Management Section Equipment Checklist.* 2006, Revised 11/16/09.

Abdel-Sayed, George, Bakht, Baidar, and Jaegar, Leslie G. (editors). *Soil-Steel Bridges: Design and Construction*. McGraw-Hill Professional, 1994.

Adams, Dave. K. *The Structural Engineers Professional Training Manual.* McGraw-Hill Professional, 2007.

Adeli, Hojjat, and Kim, Hongjin. *Wavelet-Based Vibration Control of Smart Buildings and Bridges*. Taylor & Francis, 2009.

Akesson, Bjorn (editor). *Plate Buckling in Bridges and Other Structures*. Taylor & Francis, 2007.

Akesson, Bjorn (editor). *Understanding Bridge Collapses: From the Horizon of the Structural Engineer*. Taylor & Francis, 2008.

Azizinamini, Atorod, Yakel, Aaron, Abdelrahman, Magdy, (editors), and United Engineering Foundation. *High Performance Materials in Bridges: Proceedings of the International Conference*. American Society of Civil Engineers, August 2003.

Barker, Richard M., and Puckett, Jay A. *Design of Highway Bridges: An LRFD Approach*. John Wiley & Sons, 2nd edition, 2006.

Beard, Jeffrey L., Wundram, Edward C., and Loulakis, Michael C. *Design-Build: Planning Through Development*. McGraw-Hill Professional, 2001.

Benaim, Robert. *The Design of Concrete Bridges*. Taylor & Francis, 2007.

Bennett, David. *The Architecture of Bridge Design*. American Society of Civil Engineers, 1997.

Bennett, David. *Creation of Bridges: From Vision to Reality - the Ultimate Challenge of Architecture, Design, and Distance*. Book Sales Incorporated, 1999.

Beskos, D. E., and Anagnostopoulos, S. A. (editors). *Computer Analysis and Design of Earthquake Resistant Structures: A Handbook (Advances in Earthquake Engineering, Volume 3)*. Computational Mechanics, December 1997.

Bettigole, Neal H., and Robison, Rita. *Bridge Decks: Design, Construction, Rehabilitation, Replacement*. American Society of Civil Engineers, 1997.

Billington, David P. *Robert Maillart and the Art of Reinforced Concrete*. MIT Press, 1991.

Billington, David P. *Robert Maillart: Builder, Designer, and Artist*. Cambridge University Press, 1997.

Billington, David P. *The Tower and the Bridge: The New Art of Structural Engineering*. Princeton University Press, 1985.

Blakstad, Lucy (editor). *Bridge: The Architecture of Connection*. Birkhauser Verlag, 2002.

Branco, Fernando, A., and de Brito, Jorge. *Handbook of Concrete Bridge Management*. American Society of Civil Engineers, 2003.

Brown, David J. *Bridges*. Hungry Minds, Inc., 1993.

Brown, David J. *Bridges: Three Thousand Years of Defying Nature*. Motorbooks International, October 2001.

Burke Jr., Martin P. *Integral and Semi-Integral Bridges*. Wiley-Blackwell, 2009.

Caldarone, Michael A. *High-Strength Concrete: A Practical Guide*. Taylor & Francis, 2008.

Canel, Annie, Oldenziel, Ruth, and Zachman, Karin, (editors). *Crossing Boundaries, Building Bridges : Comparing the History of Women Engineers, 1870s-1990s*. Gordon & Breach Publishing Group, 2000.

Canter, Larry W. *Environmental Impact Assessment*. McGraw-Hill Science/Engineering/Math, 2nd edition, 1995.

Chatterjee, Suhken. *Design of Modern Steel Bridges*. Blackwell Science Inc., 2nd edition, 2003.

Chen, Wai-Fah, and Duan, Lian, (editors). *Bridge Engineering Handbook*. CRC Press, 1999.

Cheung, M. S., Li, W., and Chidiac, S. E. *Finite Strip Analysis of Bridges*. E & F N Spon, 1996.

Cho, Yoon-Ho, Tayabi, Shiraz D., Won, Moon C., and Yuan, Jianbo (editors). New Technologies in Construction and Rehabilitation of Portland Cement Concrete Pavement and Bridge Deck Pavement (GSP 196). (Proceedings of the GeoHunan International Conference: Challenges and Recent Advances in Pavement Technologies and Transportation Geotechnics). American Society of Civil Engineers, 2009.

Choi, Ying-Kit. *Principles of Applied Civil Engineering Design*. American Society of Civil Engineers, 2004.

Chotickai, Piya. *Fatigue Life of Steel Bridges: Structural Evaluation and Reliability-Based Analysis Method*. VDM Verlag, 2009.

Christy, Craig T. *Engineering with the Spreadsheet: Structural Engineering Templates Using Excel*. American Society of Civil Engineers, 2006. (With CD-ROM).

Collings, David. *Steel Concrete Composite Bridges*. Thomas Telford Ltd., 2005.

Construction Institute Committee on Specification. *Preparing Requests for Proposals and Specifications for Design-Build Projects*. American Society of Civil Engineers, 2008.

Cossons, Neil, and Trinder, Barrie. *Iron Bridge: Symbol of the Industrial Revolution*. Phillimore & Company, Limited, 2002.

Creazza, G., and Mele, M. (editors). *Advanced Problems in Bridge Construction*. Springer-Verlag New York, Incorporated, 1991.

Cruz, Paulo J. S., Frangopol, Da M., and Neves, Luis C. (editors). *Advances in Bridge Maintenance, Safety Management and Lifecycle Performance*. Taylor & Francis, 2006. (With CD-ROM).

Dawe, Peter. *Traffic Loading on Highway Bridges*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2004.

Day, Robert W. *Geotechnical Earthquake Engineering Handbook*. McGraw-Hill, 2001.

Deng, Linzhong. *Artificial Intelligence Techniques for Bridge Reliability Assessment*. VDM Verlag, 2009.

Derucher, Kenneth N., Minor, John, and White, Kenneth R. (editor). *Bridge Maintenance Inspection and Evaluation*. Marcel Dekker, 2nd edition, 1992.

Eggert, Helmut, and Kauschke, Wolfgang. *Structural Bearings*. John Wiley & Sons, 2003.

Frangopol, Dan M. *Bridge Safety and Reliability*. American Society of Civil Engineers, 1999.

Galloway, Patricia D. *The 21st-Century Engineer: A Proposal for Engineering Education Reform.* American Society of Civil Engineers, 2007.

Gere, James M. *Mechanics of Materials*. Brooks/Cole Publishing, 5th edition, 2000.

Ghosh, Uptal K. (editor). *Design and Construction of Steel Bridges.* Taylor & Francis, 2007.

Ghosh, Uptal K. *Repair & Rehabilitation of Steel Bridges*. Balkema Publishers, 2000.

Gimsing, Niels J. *Cable Supported Bridges : Concept and Design*. John Wiley & Sons, 2nd edition, 1997.

Gohler, Bernhard, and Pearson, Brian. *Incrementally Launched Bridges: Design and Construction*. John Wiley & Sons, 2000.

Gottemoeller, Frederick. *Bridgescape: The Art of Designing Bridges*. John Wiley & Sons, 2nd edition, 2004.

Gransberg, Douglas D., Koch, James E., and Molennar, Keith R. *Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors*. American Society of Civil Engineers, 2006.

Grigg, Neil S., Criswell, Marvin E, Fontane, Darrell G., and Siller, Thom. *Civil Engineering Practice in the Twenty-First Century : Knowledge and Skills for Design and Management*. American Society of Civil Engineers, 2001.

Hambly, Edmund C. *Bridge Deck Behaviour*. E & F N Spon, 2nd edition, 1990.

Hamill, Les. *Bridge Hydraulics*. E & F N Spon, 1998.

Harding, J. E., Parke, G. A. R., and Ryall, M. J. (editors). *Bridge Management: Third International Conference on Bridge Management, 1996*. E & F N Spon, 1996.

Harding, J. E., Parke, G. A. R., and Ryall, M. J. (editors). *Bridge Management: Inspection, Maintenance, Assessment, and Repair (First International Conference on Bridge Management, 1990).* Elsevier Applied Science, 1990.

Hare, Clive H. *Painting of Steel Bridges And Other Structures*. Van Nostrand Reinhold, 1990.

Hewson, Nigel R. *Prestressed Concrete Bridges: Design and Construction*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2004.

Hicks, Tyler G. *Handbook of Civil Engineering Calculations*. McGraw-Hill Professional, 2nd edition, 2007.

Huxtable, Ada Louise. *The Architecture of New York.* Doubleday, 1964.

Imhof, Daniel. *Risk Assessment of Existing Bridge Structures: Evaluation of the Risk of Structural Collapse*. VDM Verlag, 2008.

Ito, Manabu, Fujino, Yozo, Miyata, Toshio, and Narita, Nobuyuki (editor). *Cable-Stayed Bridges*. Elsevier Science Ltd., 1991.

Jaffe, Rochelle C. *Masonry Instant Answers (Instant Answer Series)*. McGraw-Hill Professional, 2003.

Johnson, Stephen, and Leon, Roberto T. *Encyclopedia of Bridges and Tunnels*. Facts on File, 2002.

Kappos, Andreas J. (editor). *Dynamic Loading and Design of Structures*. E & F N Spon, 2001.

Kennedy-Reid, Ian L. *Concrete Bridge Strengthening and Repair*. Thomas Telford Ltd., 2009.

Klein, Lawrence A. *Sensor Technologies and Data Requirements for ITS Applications*. Artech House, 2001.

Koglin, Terry. *Movable Bridge Engineering*. John Wiley & Sons, 2004.

Koh, Hyun-Moo, and Frangpol, Dan M. (editors). *Bridge Maintenance, Safety, Management, Health Monitoring and Informatics: Proceedings of the Fourth International Conference, Seoul, Korea, 13-17 July 2008*. Taylor & Francis, 2008.

Kratkey, Richard J. (Editor). *Assessment of Performance of Vital Long-Span Bridges in the United States*. American Society of Civil Engineers, 2003.

Larsen, A., and Esdahl, S. (editors). *Bridge Aerodynamics: Proceedings of the International Symposium on Advances in Bridge Aerodynamics, Copenhagen Denmark, 10-13 May 1998*. Balkema Publishers, May 1998.

Lee, David J. *Bridge Bearings and Expansion Joints*. E & F N Spon, 2nd edition, 1994.

Leet, Kenneth M., and Uang, Chia-Ming. *Fundamentals of Structural Analysis*. McGraw-Hill Science/Engineering/Math, 2nd edition, 2004.

Leonhardt, Fritz. *Bridges: Aesthetics & Design*. Butterworth-Heinemann, 1983.

Mahmoud, Khaled M. (editor). *Innovations in Bridge Engineering Technology: Selected Papers, 3rd NYC Bridge Conference, 27-28 August 2007*. CRC, 2007.

Malhotra, V. M., and Carino, N. J. (editors). *Handbook on Nondestructive Testing of Concrete*. Auerbach Publishing, 2nd edition, 2004.

Mallett, G. P. *Repair of Concrete Bridges (State-Of-The-Art Review)*. American Society of Civil Engineers, 1994.

McLeish, Andrew. *Underwater Concreting and Repair*. John Wiley & Sons, 1994.

Measures, Raymond M. *Structural Monitoring With Fiber Optic Technology*. Academic Press, 2001.

Melaragno, Michele G. *Preliminary Design of Bridges for Architects and Engineers*. Marcel Dekker, 1998.

Miyata, T., Fijisawa, N., and Yamada, H. (editors). *Long-Span Bridges and Aerodynamics: International Seminar on Long-Span Bridge Aerodynamics Perspective 8, Kobe, Japan, March 1-3, 1998*. Springer Verlag, December 1999.

Mock, Elizabeth B. *The Architecture of Bridges*. Museum of Modern Art, 1949.

Mort, Michael. *A Bridge Worth Saving: A Community Guide to Historic Bridge Preservation*. Michigan State University Press, 2008.

Nardon, J. David. *Bridge and Structure Estimating*. McGraw-Hill Professional, 1995.

Nowak, Andrzei S. (editor). *Bridge Evaluation, Repair and Rehabilitation*. Kluwer Academic Publishers, 1990.

O'Brien, Eugene J., and Keogh, Damien L. *Bridge Deck Analysis*. E & F N Spon, 1999.

O'Connor, Colin O., and Shaw, Peter A. *Bridge Loads*. Routledge, 2000.

Ostrow, Steven A., and Burgess, Tony (editor) *Bridges*. Michael Friedman Publishing Group Incorporated, 1997.

Outerbridge, Graeme (photographer), and Outerbridge, David. *Bridges*. Harry N Abrams, 1989.

Parke, G. A. R., and Disney, P. (editors) *Bridge Management 5: Fifth International Conference on Bridge Management, 2005.* Thomas Telford, Ltd., 2005.

Parmley, Robert O. *Civil Engineer's Illustrated Sourcebook*. McGraw-Hill Professional, 2003.

Parsons Brinckerhoff, Silano, Louis G. (editor), and Deen, Tomas B. (foreword). *Bridge Inspection and Rehabilitation: A Practical Guide*. Wiley-Interscience, 1992.

Pearce, Martin, and Jobson, R. *Bridge Builders*. John Wiley & Sons, 2002.

Pennells, E. *Concrete Bridge Designer's Manual*. E & F N Spon, 2nd 1998.

Petroski, Henry, and Kastenmeier, Edward (editor). *Engineers of Dreams: Great Bridge Builders and the Spanning of America*. Vintage Books, reprint, 1996.

Petroski, Henry. *Pushing the Limits: New Adventures in Engineering*. Vintage, 2005.

Priestly, M. J. N., Calvi, Glan Michele, and Seible, F. *Seismic Design and Retrofit of Bridges*. Wiley-Interscience, 1996.

Pritchard, Brian. *Bridge Design for Economy and Durability: Concepts for New, Strengthened and Replacement Bridges*. American Society of Civil Engineers, 1992.

Pritchard, Brian (editor), and Institution of Civil Engineers. *Bridge Modification 2: Stronger & Safer Bridges*. American Society of Civil Engineers, 2nd edition, 1997.

Proske, Dirk, and van Gelder, Pieter. *Safety of Historical Stone Arch Bridges*. Springer, 2009.

Raina, V. K. *Concrete Bridges: Inspection, Repair, Strengthening, Testing and Load Capacity Evaluation*. McGraw-Hill Professional, 1996.

Ratay, Robert T. (editor). *Forensic Structural Engineering Handbook*. McGraw-Hill Professional, 2000.

Ratay, Robert T. *Structural Condition Assessment*. John Wiley & Sons, 2005.

Reece, Martin B. *Strengthening Historic Covered Bridges to Carry Modern Traffic*. Nova Science Publishers, 2009.

Richardson, Mark. *Fundamentals of Durable Reinforced Concrete*. E & F N Spon, 2002.

Rosignoli, Marco. *Launched Bridges: Prestressed Concrete Bridges Built on the Ground and Launched into Their Final Position*. American Society of Civil Engineers, June 1998.

Ruddock, Ted (editor). *Masonry Bridges, Viaducts and Aquaducts*. Ashgate Publishing Company, 2000.

Russell, Jeffrey S. (editor). *Perspectives in Civil Engineering: Commemorating the 150th Anniversary of the American Society of Civil Engineers*. American Society of Civil Engineers, 2003.

Ryall, M. J. *Bridge Management*. Butterworth-Heinemann, 2nd edition, 2009.

Ryall, M. J., Parke, G. A. R., and Harding, J. E. *Manual of Bridge Engineering*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2000.

Ryall, M. J., Parke, G. A. R., and Harding, J. E. (editors). *Bridge Management Four: Inspection, Maintenance, Assessment, and Repair. (Proceedings of the Fourth International Conference on Bridge Management)*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2000.

Schodek, Daniel L. *Landmarks in American Civil Engineering*. MIT Press, 1987.

Seward, Derek. *Understanding Structures: Analysis, Materials, Design*. MacMillan Publishing Limited, 1998.

Simiu, Emil, and Miyata, Toshio. *Design of Buildings and Bridges for Wind: A Practical Guide for ASCE-7 Standard Users and Designers of Special Structures*. John Wiley & Sons, 2006.

Sinopoli, A. (editor). *Arch Bridges: History, Analysis, Assessment, Maintenance and Repair*. A A Balkema, 1998.

Somayaji, Shan. *Civil Engineering Materials*. Prentice Hall College Division, 2nd edition, 2001.

Stahl, Frank L., and Gagnon, Christopher P. *Cable Corrosion in Bridges and Other Structures: Causes and Solutions*. American Society of Civil Engineers, 1996.

Sussman, Joseph M. *Perspectives on Intelligent Transportation Systems (ITS)*. Plenum US, 2005.

Taly, Narendra. *Design of Modern Highway Bridges*. McGraw-Hill Higher Education, 1997.

Tilly, Graham, Gifford, and Partners. *Bridge Conservation: A Guide to Good Practice*. Taylor & Francis, 2002.

Tonias, Demetrios E., Garrabrant, Richard, and Chen, Stuart. *Bridge Engineering: Design, Rehabilitation, and Maintenance of Modern Highway Bridges*. McGraw-Hill Professional, 2nd edition, 2004.

Transport Association of Canada. *Guide to Bridge Hydraulics*. American Society of Civil Engineers (Thomas Telford Ltd), 2nd edition, 2004.

Troitsky, M. S. *Orthotropic Bridges Theory and Design*. James F. Lincoln Arc Welding Foundation, 1967.

Troitsky, M. S. *Planning and Design of Bridges*. John Wiley & Sons, 1994.

Troitsky, M. S. *Prestressed Steel Bridges: Theory and Design*. Van Nostrand Reinhold, 1990.

Troyano, Leonardo Fernýýndez. *Bridge Engineering: A Global Perspective*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2004.

Walther, R., Houriet, B., Isler, W., and Mota, P. *Cable Stayed Bridges*. American Society of Civil Engineers (Thomas Telford, Ltd.), 2nd edition, 1999.

Weingardt, Richard G. *Engineering Legends: Great American Civil Engineers (32 Profiles of Inspiration and Achievement)*. American Society of Civil Engineers, 2005.

Wenzel, Helmut. *Health Monitoring of Bridges*. Wiley, 2008.

White, Kenneth R., Minor, John, and Derucher, Kenneth N. *Bridge Maintenance Inspection and Evaluation*. Marcel Dekker, 2nd edition, 1992.

White, Norval, and Willensky, Elliot, (editors). *A/A Guide to New York City, Third Edition.* Harcourt Brace Jovanovich, 1988.

Whitney, Charles S. *Bridges of the World: Their Design and Construction*. Dover Publications, 2003.

Williams, Alan. *Civil & Structural Engineering: Seismic Design of Buildings & Bridges*. Kaplan, 5th edition, 2005.

Xanthakos, Petros P. *Bridge Strengthening and Rehabilitation*. Prentice Hall, 1995.

Xanthakos, Petros P. *Bridge Substructure and Foundation Design*. Prentice Hall, 1998.

Xanthakos, Petros P. *Theory and Design of Bridges*. Wiley-Interscience, 1993.

Yanev, Bojidar. *Bridge Management*. Wiley, 2007. (Also available in Chinese and Japanese editions.)

Yeomans, David. *How Structures Work: Design and Behaviour from Bridges to Buildings*. John Wiley & Sons, 2009.

New York City Bridge Conference: A Special Issue of the Journal of Bridge Engineering: Proceedings of the 1st New York City Bridge Conference. American Society of Civil Engineers, 2001.

History and Images

Annan, Jason, and Gabriel, Pamela. *Great Cooper River Bridge*. University of South Carolina Press, 2002.

Baus, Ursula, Schlaich, Mike, Dechau, Wilfried (photographer), Rieser, C. (translator), and Toovey, Richard (translator). *Footbridges*. Birkhäuser Basel, 2007.

Berlow, Lawrence H. *The Reference Guide to the World's Famous Landmarks: Bridges, Tunnels, Dams, Roads and Other Structures*. Oryx Press, 1997.

Bottenberg, Ray. *Images of America: Bridges of Portland*. Arcadia Publishing, 2007.

Bottenberg, Ray. *Images of America: Bridges of the Oregon Coast*. Arcadia Publishing, 2006.

Burke, Kathryn W. *Images of America: Hudson River Bridges*. Arcadia Publishing, 2007.

Cleary, Richard L. *Bridges.* (Norton/Library of Congress Visual Sourcebooks in Architecture, Design & Engineering.) W. W. Norton, 2007.

Committee on History and Heritage of American Civil Engineering. *American Wooden Bridges*. American Society of Civil Engineers, 1976.

Conwill, Joseph D. *Images of America: Vermont Covered Bridges*. Arcadia Publishing, 2004.

Cook, Martin. *Medieval Bridges*. Shire Publications, 1999.

Cookson, Brian. *Crossing The River: The History of London's Thames River Bridges from Richmond to the Tower*. Mainstream Publishing, 2006.

Cooper, Alan. *Bridges, Law and Power in Medieval England, 700-1400*. Boydell Press, 2006.

Cortright, Robert S. (photographer) *Bridging: Discovering the Beauty of Bridges*. Bridge Ink, 1998.

Cortright, Robert S. (photographer), and Cortright Neff, Jeane (editor). *Bridging the World*. Bridge Ink, 2003.

Dale, Frank T. *Bridges over the Delaware River: A History of Crossings*. Rutgers University Press, 2003.

DeLony, Eric. *Landmark American Bridges*. American Society of Civil Engineers, 1993.

Dillon, Richard, Moulin, Thomas, and Denevi, Don (editors). *High Steel: Building the Bridges Across San Francisco Bay*. Celestial Arts, reissue edition, 1998.

Dupre, Judith (editor). *Bridging the Mississippi: The New I-35W Bridge*. FIGG Bridge Engineers, 2008.

Dupre, Judith, and Gehry, Frank O. (introduction). *Bridges: A History of the World's Most Famous and Important Spans*. Black Dog & Leventhal, 1997.

Dyble, Louise N. *Paying the Toll: Local Power, Regional Politics, and the Golden Gate Bridge (American Business, Politics, and Society).* University of Pennsylvania Press, 2009.

Evans, Benjamin D., and Evans, June R. *Pennsylvania's Covered Bridges: A Complete Guide*. University of Pittsburgh Press, revised and updated edition, 2001.

Evans, Benjamin D., and Evans, June R. *New England's Covered Bridges: A Complete Guide.* University Press of New England, 2004.

Fowler, John, Baker, Benjamin, Boyd Whyte, Iain (illustrator), MacDonald, Angus J., and Baxter, Colin (photographer). *John Fowler, Benjamin Baker: Forth Bridge.* Edition Axel Menges, 1998.

Frampton, Kenneth, Tischhauser, Anthony, and Webster, Anthony C. (editors). *Calatrava Bridges*. Birkhauser (Architectural), 3rd edition, 2004.

Fuller, Robert G., Lang, Charles R., and Lang, Roberta H., eds. *Twin Views of the Tacoma Narrows Bridge Collapse*. American Association of Physics Teachers, 2000.

Graf, Bernhard. *Bridges That Changed the World*. Prestel USA, 2002.

Hadlow, Robert W. *Elegant Arches, Soaring Spans: C. B. McCullough, Oregon's Master Bridge Builder*. Oregon State University Press, 2001.

Harrison, David. *The Bridges of Medieval England: Transport and Society 400-1800.* (Oxford Historical Monographs). Oxford University Press, 2007.

Hobbs, Richard, and Holstine, Craig E. *Spanning Washington: Historic Highway Bridges of The Evergreen State.* Washington State University, 2005.

Hopkins, H. J. *A Span of Bridges: An Illustrated History.* Praeger Publishers, 1970.

Horton, Tom, and Wolman, Baron (photographer). *Superspan: The Golden Gate Bridge*. Squarebooks, revised edition, 1998.

Howard, M., and Howard, M. *Images of America: The Benjamin Franklin Bridge.* Arcadia Publishing, 2009.

Hyde, Charles K. *Historic Highway Bridges of Michigan*. Wayne State University Press, 1993.

Jackson, Donald C., and McCullough, David G. (foreword). *Great American Bridges and Dams*. John Wiley & Sons, 1996.

Jackson, Robert W. *Rails Across the Mississippi: A History of the St. Louis Bridge*. University of Illinois Press, 2001.

Jamieson, Eric. *Tragedy at Second Narrows: The Story of the Ironworkers Memorial Bridge.* Harbour Publishing Company, 2008.

Kemp, Emory L. (editor). *American Bridge Patents: The First Century, 1790-1890.* West Virginia University Press, 2005.

Kidney, Walter C., and Hare, Clyde (photographer). *Pittsburgh's Bridges: Architecture and Engineering*. Landmark Store, 1999.

Knapp, Ronald G., Bol, Peter, and Ong, A. Chester. *Chinese Bridges: Living Architecture from China's Past* . Tuttle Publishing, 2008.

Kranakis, Eda. *Constructing a Bridge: An Exploration of Engineering Culture, Design, and Research in Nineteenth-Century France and America*. MIT Press, 1997.

Laughlin, Robert W. M., and Jurgensen, Melissa C. *Images of America: Kentucky's Covered Bridges.* Arcadia Publishing, 2007.

Mackaness, Caroline (editor). *Bridging Sydney*. Historic Houses Trust Of New South Wales, 2007.

Mao, Yi-sheng. *Bridges in China, Old and New: From the Ancient Chaochow Bridge to the Modern Nanking Bridge over the Yangtze*. Foreign Languages Press, 1978.

Mason, Philip P. *Ambassador Bridge: A Monument to Progress*. Wayne State University Press, 1987.

Matthews, Peter. *London's Bridges.* Shire, 2009.

McKee, Brian J., and American Society of Civil Engineers. *Historic American Covered Bridges.* Oxford University Press, April 1997.

Middleton, William D. *The Bridge at Québec*. Indiana University Press, 2001.

Middleton, William D. *Landmarks on the Iron Road: Two Centuries of North American Railroad Engineering*. Indiana University Press, 1999.

Miller, William J., and Demerast (editor). *Crossing the Delaware: The Story of the Delaware Memorial Bridge, the Longest Twin Suspension Bridge in the World*. Koen Book Distributors, 2nd edition, 1997.

Nelson, Joseph C. *Spanning Time: Vermont's Covered Bridges*. New England Press, 1997.

Nelson, Lee H. *The Colossus of 1812: An American Engineering Superlative*. American Society of Civil Engineers, 1990.

Nicholson, John. *Building the Sydney Harbour Bridge*. Allen & Unwin Pty., Limited, 2000.

O'Connor, Colin O. *Spanning Two Centuries: Historic Bridges of Australia*. University of Queensland Press, 1985.

Pay, Ian J., Waldegrave, Keith (photographer), and Lloyd, Sampson (photographer). *London's Bridges: Crossing the Royal River*. Artist's and Photographers' Press, 2009.

Plowden, David. *Bridges: The Spans of North America*. W.W. Norton & Company, reissue edition, 1984.

Pollalis, Spiro N., and Diaz-Hermidas, Alberto (illustrator). *What Is a Bridge? : The Making of Calatrava's Bridge in Seville*. MIT Press; reprint, 2002.

Reed, Robert. *Images of America: Indiana's Covered Bridges*. Arcadia Publishing, 2004.

Regan, Bob, and Fabian, Tim (photographer). *The Bridges of Pittsburgh*. The Local History Company, 2006.

Richman, Steven M. *The Bridges Of New Jersey: Portraits Of Garden State Crossings*. Rutgers University Press, 2005.

Robinson, John V. *Building the Benicia-Martinez Bridge*. Carquinez Press; 2007.

Ruddock, Ted. *Arch Bridges and their Builders 1735-1835*. Cambridge University Press, 2008.

Scott, Quinta (photographer), and Miller, Howard S. *Eads Bridge*. Missouri Historical Society Press, 1999.

Scott, R. *In the Wake of Tacoma : Suspension Bridges and the Quest for Aerodynamic Stability*. American Society of Civil Engineers, 2001.

Shank, William H. *Historic Bridges of Pennsylvania*. American Canal & Transportation Center, 1990.

Smith, Dwight A., Norman, James, and Dykman, Pieter T. *Historic Highway Bridges of Oregon*. Oregon Historical Society, 2nd edition, 2000.

Solomon, Brian. *North American Railroad Bridges*. Voyageur Press, 1st edition, 2008.

Sweetman, John. *The Artist and the Bridge: 1700-1920*. Ashgate Publishing, Limited, 2000.

Thienel, Phillip M. *Mr. Lincoln's Bridge Builders: The Right Hand of American Genius*. White Mane Publishing Company, Incorporated, 2000.

Tsipis, Yanni. *Images of America: Boston's Bridges*. Arcadia Publishing, 2004.

Van den Berg, Christa, and Nijenhuis, Gerhard. Bridging the Dutch Landscape: Design Guide for Bridges. Bis Publishers, 2009.

Van Der Zee, John. *The Gate: The True Story of the Design and Construction of the Golden Gate Bridge*. Simon & Schuster, 1987.

Watson, Bruce, Brigham, Trevor, and Dyson, Tony. *London Bridge: 2000 Years of a River Crossing*. Museum of London Archaeology Service, 2002.

Watson, Wilbur J. *Great Bridges: From Ancient Times to the Twentieth Century*. Dover Publications, 2006.

Wells, Matthew, and Pearman, Hugh (introduction). *30 Bridges*. Watson-Guptill Publications, 2002.

Wenzel, Helmut. Health Monitoring of Bridges. Wiley, 2009.

Winpenny, Thomas R. *Without Fitting, Filing, or Chipping: An Illustrated History of the Phoenix Bridge Company*. Canal History & Technology Press, 1996.

Wisely, William H., Fairweather, Virginia, and Caballeros, Harold A. *The American Civil Engineer 1852-2002: The History, Traditions, and Development of the American Society of Civil Engineers*. American Society of Civil Engineers, 2002.

Wood, Miriam. *Covered Bridges of Ohio: An Atlas and History*. Thunder Bay Press, 1994.

Wortman, Sharon Wood, Wortman, Ed, and Norman, James (photographer). *Portland Bridge Book*. Urban Adventure Press, 2nd edition, 2006.

New York City Bridges

Bascove (Editor and Illustrator), and Gordon, Mary (Introduction). *Stone and Steel: Paintings & Writings Celebrating the Bridges of New York City*. David R. Godine, 1998.

Dogancay, Burhan (photographer). *Bridge of Dreams: The Rebirth of the Brooklyn Bridge*. Hudson Hills Press, 1999.

Greater Astoria Historical Society, and Roosevelt Island Historical Society. *Images of America: The Queensboro Bridge*. Arcadia Publishing, 2008.

Brooklyn Bridge in 2009. (Credit: Jagtar Khinda) Queensboro Bridge in 2006. (Credit: Russell Holcomb)

Haw, Richard. *The Brooklyn Bridge: A Cultural History*. Rutgers University Press, 2005.

Haw, Richard. *Art of the Brooklyn Bridge: A Visual History*. Routledge, 2008.

Latimer, Margaret Webb, Hindle, Brooke, and Kranzberg, Melvin (editors). *Bridge to the Future: A Centennial Celebration of the Brooklyn Bridge*. (Annals of the New York Academy of Sciences, Volume 424.) New York Academy of Sciences, 1984.

Manbeck, John. *Historic Photos of the Brooklyn Bridge*. Turner Publishing Company, 2009.

McCullough, David G. *The Great Bridge: The Epic Story of the Building of the Brooklyn Bridge*. Simon & Schuster, reprint, 1983.

Nevins, Deborah, McCullough, David, Millstein, Barbara H., Fein, A., and Kachur, Lewis. *Great East River Bridge, 1883-1983: Celebrating The 100th Anniversary of the Brooklyn Bridge*. Brooklyn Museum (exhibition catalogue), 1983.

Rastorfer, Darl. *Six Bridges: The Legacy of Othmar H. Ammann*. Yale University Press, 2000.

Reed, Henry. *Bridges of Central Park*. Greensward Foundation, 1990.

Gapstow Bridge (East 62nd Pedestrian Bridge) During the Exhibition *The Gates, Project for Central Park, 1979-2005*. (Credit: Russell Holcomb) Center Drive Bridge (Playmates Arch) in 2008.

Reier, Sharon. *The Bridges of New York*. Dover Publications, Incorporated, 2000.

Rockland, Michael A. *The George Washington Bridge: Poetry in Steel.* Rutgers University Press, 2008.

Saunders, F. Wenderoth. *Building Brooklyn Bridge*. Little Brown, 1965.

Sayenga, Donald (editor). *Washington Roebling's Father: A Memoir of John A. Roebling*. American Society of Civil Engineers, 2008.

Shapiro, Mary J. *A Picture History of the Brooklyn Bridge*. Dover Publications, Incorporated, 1983.

Spiegler, Jennifer C., and Gaykowski, Paul M. *The Bridges of Central Park*. Arcadia Publishing, 2006.

Steinman, David B. *The Builders of the Bridge: The Story of John Roebling and His Son.* Harcourt Brace, 1945.

Sutherland, Cara. *Bridges of New York City (Portraits of America)*. Friedman/Fairfax Publishing, 2002.

Southern Boulevard, Madison Avenue, and Mosholu Parkway Bridges. (Credit: Russell Holcomb)
17th Avenue Pedestrian Bridge. (Credit: Peter Basich)

Talese, Gay, Davidson, Bruce (photographer), and Rethi, Lili (illustrator). *The Bridge: The Building of the Verrazano-Narrows Bridge*. Walker & Company, 2002.

Trachtenberg, Alan. *Brooklyn Bridge: Fact and Symbol*. University of Chicago Press, 1979.

Weigold, Marilyn E. *Silent Builder: Emily Warren Roebling and the Brooklyn Bridge.* National University Publications, 1984.

Winpenny, Thomas R. *Manhattan Bridge: The Troubled Story of a New York Monument*. Moore, Hugh Historical Park & Museums, Incorporated, 2003.

The Manhattan Bridge Brooklyn Plaza in 1916: The Statues Represent Manhattan and Brooklyn. Manhattan Bridge. (Credit: R. Smith)

For Children

Aaseng, Nathan. *Construction: Building the Impossible*. Oliver Press, Incorporated, 2000.

Adkins, Jan (illustrator). *Bridges: From My Side to Yours*. Roaring Brook, 2002.

Arnold, Caroline. *Golden Gate Bridge*. Watts Franklin, 1986.

Barter, James. *The Golden Gate Bridge*. Gale Group, 2001.

Baxter, Nicola. *Bridges*. Scholastic Library Publishing, 2000.

Browne, Lionel. *Bridges: Masterpieces of Architecture*. Walter/McBean Gallery, San Francisco Art Institute, 1996.

Carter, Polly, and Doty, Roy (illustrator). *The Bridge Book*. Simon & Schuster, 1992.

Cooper, Jason. *Bridges*. Rourke Enterprises, Incorporated, 1991. (Also available in a Spanish edition.)

Harris, David W. *Truss Fun*. BaHa Enterprises, 2nd edition, 2004.

Hill, Lee Sullivan. *Bridges Connect*. The Lerner Publishing Group, 1996.

Johmann, Carol A., Rieth, Elizabeth J., and Kilne, Michael P. (illustrator). *Bridges: Amazing Structures to Design, Build & Test*. Williamson Publishing, 1999.

Kaner, Etta, and Cupples, Pat (illustrator). *Bridges*. Kids Can Press, 1997. (Winner of the 1997 Scientific American Young Readers Book Award.)

LaFontaine, Bruce. *Bridges of the World Coloring Book*. Dover Publications, Incorporated, 1995.

Landau, Elaine. *Bridges. (True Books: Buildings and Structures).* Children's Press, 2000.

Levy, Matthys, and Panchyk, Richard. *Engineering the City: How Infrastructure Works - Projects and Principles for Beginners.* Chicago Review Press, 2000.

Macaulay, David. *Building Big.* Houghton Mifflin Company, 2000.

Maxwell, Yolonda. *Famous Bridges of The World: Measuring Length, Weight, And Volume*. PowerKids Press, revised edition, 2005.

Murray, Elaine, and Devillier, Christy (editor). *Golden Gate Bridge*. ABDO Publishing Company, 2002.

Nardo, Don. *Roman Roads and Aqueducts*. Gale Group, 2000.

Nelson, Robin. *From Cement to Bridge (Start to Finish).* Lerner Publications, 2004. (Also available in a Spanish edition.)

Oxlade, Chris. *Bridges*. Raintree Steck-Vaughn Publishers, 1997.

Parker, Janice. *Science of Structures*. Weigl Publishers, Incorporated, 2001.

Pelta, Kathy. *Bridging the Golden Gate*. Lerner Publishing Group, 1993.

Richards, Julie. *Bridges*. Smart Apple Media, 2003.

Robbins, Ken. *Bridges*. Dial Books for Young Readers, 1991.

Royston, Angela, and Shone, Rob (illustrator). *Tell Me about Buildings, Bridges and Tunnels*. Watts Franklin, 1991.

Salvadori, Mario, and Hooker, Saralinda (illustrator), and Ragus, Christopher (illustrator). *The Art of Construction: Projects and Principles for Beginning Engineers and Architects*. Chicago Review Press, 3rd edition, 1990. (Winner of the New York Academy of Sciences Children's Science Book Award and the Boston Globe-Horn Book Award for Nonfiction.)

Sheppard, Jeff, and Sorensen, Henri (illustrator). *I Know a Bridge*. Simon & Schuster Children's, 1993.

Simon, Seymour. *Bridges (Seemore Readers).* Chronicle Books, 2005. (Winner of the Oppenheim Toy Portfolio Best Book Award Gold Seal.)

Simon, Seymour, Fauteux, Nicole, and Cushman, Doug (illustrator). *Let's Try It Out with Towers and Bridges: Hands-On Early-Learning Activities*. Atheneum, 2003.

Steinman, David B., and Wiese, Kurt (illustrator). *Famous Bridges of the World*. Dover Publications, Incorporated, revised edition, 1961.

Stone, Lynn M. *Bridges*. Rourke Publishing, 2002.

Sturges, Philemon, and Laroche, Giles (illustrator). *Bridges Are to Cross*. Putnam Publishing Group Juvenile, 1998.

Vanderwarker, Peter, and Keller, John (editor). *Big Dig: Reshaping an American City*. Little, Brown Children's Books, 2001.

Willard, Keith, and Richardson, Adele. *Bridges*. The Creative Company, 2000.

Wilson, Forrest. *Bridges Go from Here to There*. Wiley, John & Sons, Incorporated, 1993.

Yuan, Margaret S. *The London Tower Bridge*. Blackbirch Press, 2004.

Yuan, Margaret S. *Royal Gorge Bridge.* Blackbirch Press, 2003.

Zaunders, Bo, and Munro, Roxie (illustrator). *The Great Bridge-Building Contest.* Harry N. Abrams, 2004.

For Children - Internet

ABCD's Bridge Design Tips for Kids. http://www.abcdpittsburgh.org/kids/kids.htm (accessed August 18, 2009).

American Institute of Steel Construction. *Student Steel Bridge Competition*. http://www.aisc.org/content.aspx?id=780 (College level) (accessed August 18, 2009).

ASCE. *Welcome to ASCEville*. http://content.asce.org/asceville/index.html (accessed November 30, 2009).

Carroll, Douglas R. *Bridge Engineering for the Elementary Grades.* Department of Basic Engineering, University of Missouri-Rolla. http://web.umr.edu/~dougc/bridge/Web_Instructions.htm (accessed November 19, 2007).

Cooper, James D., and Munley, Eric. *Bridge Research: Leading The Way to The Future*. United States Department of Transportation - Federal Highway Administration - Turner Fairbanks Highway Research Center. http://www.tfhrc.gov/pubrds/summer95/p95su23.htm (accessed November 19, 2007).

Cridlebaugh, Bruce S. *Bridge Basics - A Spotter's Guide to Bridge Design*. http://pghbridges.com/basics.htm (accessed November 19, 2008).

DeMember, Don. Discovery School.com. 2007. *Bridges: Technology Lesson Plan (Grades 6 – 8)*. http://school.discoveryeducation.com/lessonplans/programs/bridges/index.html (accessed November 19, 2007).

East Prairie School Bridge Building Unit. http://www.eps.n-cook.k12.il.us/teched/bridge/bridge.htm (accessed November 19, 2007).

Engineer Your Life Coalition. *Engineer Your Life*. http://www.engineeryourlife.org/ (accessed November 30, 2009).

González, Luis Alberto Segovia, Morsch, Inácio Benvegnu, and Masuero, João Ricardo. *Didactic Games in Engineering Teaching – Case: Spaghetti Bridges Design and Building Contest.* (Proceedings of the 18th International Congress of Mechanical Engineering, 2005.) http://www.ppgec.ufrgs.br/segovia/espaguete/arquivos/COBEM2005-1756.pdf (for college teachers). (accessed August 18, 2009)

Harris Middle School. *Building Bridges: An Internet WebQuest on The Study of Bridges*. http://volweb.utk.edu/Schools/bedford/harrisms/bridge.htm (accessed August 18, 2009).

History of Wire Rope in Suspension Bridges - The Roebling Story. http://www.inventionfactory.com/history/RHAgen/rstory/rsfound.html (accessed November 19, 2007).

Johns Hopkins Virtual Laboratory: Bridge Designer. http://www.jhu.edu/virtlab/bridge/truss.htm (accessed August 18, 2009).

Junior Engineering Technical Society. http://www.jets.org/students/index.cfm (accessed November 30, 2009).

PBS Bridge Basics. 2000 – 2001. Building Big: Bridges. http://www.pbs.org/wgbh/buildingbig/bridge/ (accessed November 19, 2007).

U.S. Department of Transportation. *DOT Women and Girls Initiative - Pilot Entrepreneurial Training and Technical Assistance - Spelman College*. http://www.dot.gov/wg/spelman.html (accessed September 25, 2009).

U. S. Military Academy at West Point. *West Point Bridge Design Contest.* http://bridgecontest.usma.edu/ (accessed November 19, 2007).

WGBH. 1997. *Nova Online - Super Bridge*. http://www.pbs.org/wgbh/nova/bridge/ (accessed November 19, 2007).

Yale-New Haven Teachers Institute. 2001, Volume V. *Bridges: Human links and innovations.* http://www.yale.edu/ynhti/curriculum/units/2001/5/ (accessed November 19, 2007).

For Children – Careers

Baine, Celeste. *Is There A Civil Engineer Inside You? A Student's Guide to Exploring Civil Engineering*. Professional Publications, Incorporated, 2004.

Camenson, Blythe. *Real People Working in Engineering. (On The Job Series.)* McGraw-Hill, 1997.

Bridge Flags Engineer Rajendra Pandya and Harlem River Bridges Engineer Reza Taheri. (Credit: Peter Basich) Deputy Chief Engineer Russell Holcomb on Queensboro Bridge.

Design-Build Engineer Leonid Gitis. Component Rehabilitation Engineer Malgorzata Banka. Assistant Civil Engineer Andrew Hoang. (Credit: Peter Basich)

Hatch, Sybil E., and Vanoni, Vito A. (Editor). *Changing Our World: True Stories of Women Engineers* (ASCE Manuals and Reports on Engineering Practice, No. 109.) American Society of Civil Engineers, 2006.

Kahn, Jetty. *Women in Engineering Careers*. Capstone Press, 1999.

Layne, Margaret Edith (editor). *Women in Engineering: Pioneers and Trailblazers*. American Society of Civil Engineers, 2009.

Layne, Margaret Edith (editor). *Women in Engineering: Professional Life*. American Society of Civil Engineers, 2009

Maze, Stephanie, O'Neill Grace, Catherine (contributor), and Menzel, Peter (illustrator). *I Want to Be... an Engineer*. Harcourt, 1997.

Pasternak, Ceel, and Thornburg, Linda. *Cool Careers for Girls in Engineering*. Impact Publications, 1999.

Pasternak, Ceel, and Thornburg, Linda. *Cool Careers for Girls in Construction*. Impact Publications, 2000.

Future Engineers on the Brooklyn Bridge. (Credit: Joseph Flood)

Williams, F. Mary, and Emerson, Carolyn J. *Becoming Leaders: A Practical Handbook for Women in Engineering, Science, and Technology.* American Society of Civil Engineers, ASME Press, and Society of Women Engineers, 2008.

For Children – Brooklyn Bridge

Bildner, Phil, and Pham, LeUyen (illustrator). *Twenty-One Elephants.* Simon & Schuster Children's Publishing, 2005.

Curlee, Lynn. *Brooklyn Bridge*. Simon & Schuster Trade, 2001.

Kent, Zachary. *The Story of the Brooklyn Bridge*. Childrens Press, 1988.

Mann, Elizabeth, and Witschonke, Alan (illustrator). *The Brooklyn Bridge: The Story of the World's Most Famous Bridge and the Remarkable Family That Built It*. Mikaya Press, 1996.

Muaddi Darraj, Susan. Brooklyn Bridge. (Building America: Now and Then Series.) Chelsea House Publishers, 2009.

Pascoe, Elaine. *The Brooklyn Bridge*. Blackbirch Press, Incorporated, 1999.

Prentzas, G. S. *The Brooklyn Bridge (Building America: Then and Now).* Chelsea House Publications, 2009.

Prince, April Jones, and Roca, Francois (illustrator). *Twenty-One Elephants and Still Standing*. Houghton Mifflin, 2005.

Ratliff, Tom, and Bergin, Mark. *You Wouldn't Want to Work on the Brooklyn Bridge!: An Enormous Project That Seemed Impossible.* (You Wouldn't Want to...Series) Scholastic Library Publishing, 2009.

Rose, Alan. *Build Your Own Brooklyn Bridge: Hours of Fun for the Ambitious Modeler*. The Putnam Publishing Group, 1980.

St. George, Judith. *The Brooklyn Bridge: They Said It Couldn't Be Built*. Putnam, 1982.

Veglahn, Nancy. *The Spider of Brooklyn Heights*. Charles Scribner's Sons, 1967.

Weiner, Vicki. *The Brooklyn Bridge: New York City's Graceful Connection*. Children's Press, 2004.

Brooklyn Bridge in 1909 and 2008. (2008 Credit: Russell Holcomb)

CD, CD-ROM, Electronic Book, and Score

Daugherty, Michael (composer). B*rooklyn Bridge: for Clarinet and Symphonic Band.* (Full Score). Boosey and Hawkes, 2007.

Harris, David W. *The Newspaper Truss and Other Newspaper Bridges: A Learning CD*. BaHa Enterprises, CD-ROM, 2004.

Hicks, Tyler Gregory. *Civil Engineering Formulas*. McGraw-Hill, Electronic Book - 2001.

McCullough, David G., and Herrmann, Edward (Narrator). *The Great Bridge: The Epic Story of the Building of the Brooklyn Bridge (Abridged)*. Audioworks, Audio CD and Audio Cassette, 2004.

Merritt, Frederick S., Loftin, M. Kent, and Ricketts, Jonathan T. (editors). *Merritt's Civil Engineers' Platinum Edition*. (includes print handbook). McGraw-Hill Professional, 1999.

Civil Engineer's Solutions Suite. McGraw-Hill Professional, 1998.

Structures 2005: Metropolis & Beyond. (Proceedings of the 2005 Structures Congress and the 2005 Forensic Engineering Symposium.) American Society of Civil Engineers, CD-ROM, April 2005.

Shorts, Video, Videodisc, and DVD

Across Brooklyn Bridge. American Mutoscope & Biograph, silent black and white, 1899.

SUGGESTED READING

Barnes, Michael. *Nova: Secrets of Lost Empires II - China Bridge*. WGBH Boston, 2000.

Burns, Ken. *Ken Burns' America: Brooklyn Bridge.* PBS Home Video, DVD-2003, Video - 1982.

Fuller, Robert G., Zollman, Dean A., and Campbell, Thomas C. *The Puzzle of the Tacoma Narrows Bridge Collapse*. John Wiley & Sons, Videodisc - 1982.

Klein, Larry. *Building Big with David Macaulay: Bridges*. WGBH Records, 2000, WGBH Boston, DVD, 2004.

Bob the Builder: On Site - Roads and Bridge. Lyons/Hit Entertainment, DVD, 2008. (For Children.)

Classic Famous Bridge Films DVD: 1930 - 1950s Golden Gate Suspension Bridge, Bridge Collapse Disaster, & Bridge Construction, Design And Engineering History Pictures Films. Quality Information Publishers Inc., DVD.

Design For Safety & Quality: The Inspection and Auditing Process of Bridges, and Some Important Lessons Learned. Cimwareukandusa.com, DVD, 2006.

Eckerson Jr., C., and Press, E. *Streetfilms: NYC Bike to Work Day, 2009.* http://www.streetsblog.org/2009/05/15/streetfilms-nyc-bike-to-work-day-2009/ (accessed December 1, 2009)

Eckerson Jr., C. *Streetfilms: The Queensboro Bridge Turns 100.* http://www.streetsblog.org/2009/06/01/streetfilms-the-queensboro-bridge-turns-100/ (accessed December 1, 2009).

Eckerson Jr., C. *Streetfilms: The Sands Street Bike Path, a New Kind of Bridge Approach.* http://www.streetsblog.org/2009/09/25/streetfilms-the-sands-street-bike-path-a-new-kind-of-bridge-approach/ (accessed December 1, 2009).

Eckerson Jr., C. *Streetfilms: Turning NYC's Oldest Bridge Into Its Newest Bike-Ped Amenity*. [High Bridge] http://www.streetsblog.org/2009/11/30/streetfilms-turning-nycs-oldest-bridge-into-its-newest-bike-ped-amenity/ (accessed December 1, 2009).

Extreme Engineering Season 2 - Episode 5: Oakland Bay Bridge. Discovery, DVD, 2006.

Extreme Engineering Season 2 - Episode 6: Cooper River Bridge. Discovery, DVD, 2006.

Maillart's Bridges a.k.a. Maillarts Brücken. 451, DVD, 2008..

Mega Movers - Massive Bridges. A&E Home Video, DVD, 2007.

Modern Marvels: Brooklyn Bridge. A&E Home Video, DVD, 2005.

Modern Marvels: The Golden Gate Bridge. A&E Entertainment, Video, 1994, A & E Home Video, DVD, 2004.

Modern Marvels: George Washington Bridge. A&E Home Video, DVD, 2006.

Modern Marvels: New York Bridges. A&E Home Video, DVD, 2006.

Modern Marvels: The World's Longest Bridge. A&E Home Video, DVD, 2006.

New Brooklyn to New York via Brooklyn Bridge, No. 1and No. 2. Edison Manufacturing Company, silent black and white, 1899.

Nova: Super Bridge. WGBH Boston Video, 1997, DVD, 2007.

The Opening of the Williamsburg Bridge. American Mutoscope & Biograph, silent black and white,1904.

Oregon Covered Bridges. Travelvideostore.com, DVD, 2005.

Panorama of Brooklyn Bridge, River Front, and Tall Buildings from the East River. Edison Manufacturing Company, silent black and white, 1901.

Passengers Descending from the Brooklyn Bridge. Lumière, silent black and white, 1896.

A Remarkable Fire (Brooklyn Bridge). American Mutoscope & Biograph, silent black and white, 1902.

View of Brooklyn Bridge from a Ferryboat. American Mutoscope & Biograph, silent black and white, 1899.

Revised 12//24/09

In Memoriam

The 2009 edition of the New York City Bridges And Tunnels Annual Condition Report is dedicated to the memory of the following employees, whose wisdom and dedication to their work will be sorely missed. Their passing reminds us that the people of the Division of Bridges are the strength of the Agency, providing a tradition of quality service to the public.

Dipak Agarwala, Civil Engineer II

September 4, 1947 – May 15, 2009 14 years, 6 months City service

Dr. Agarwala joined DOT as an assistant civil engineer in the In-House Design Section, later moving to the Engineering Review Section and serving as a senior geotechnical engineer and the engineer-in-charge of the Geotechnical Unit. He performed various specialized tasks such as reviewing the newly formulated Division seismic design criteria guidelines, reviewing the Bridge Reconstruction Project Reports, reviewing the geotechnical foundation reports, reviewing the design of foundations for both bridges and earth retaining structures, and reviewing design plans for bridges and retaining walls. Dr. Agarwala's major projects included the seismic assessment and retrofitting of the Brooklyn Bridge, the replacement of the Willis Avenue and 1145th Street Bridges over the Harlem River, the East 188th Street Bridge over Metro North, the Miller Highway Tunnel from West 64th Street to West 65th Street, and the West 61st Street Bridge over Amtrak. Prior to City employment, he served in the private sector for 22 years. He was a humble person and a brilliant engineer.

Brian Kenny, Bridge Painter

October 7, 1958 – October 4, 2009 21 years, 8 months City service

Mr. Kenny worked as a bridge painter for the Division from February 16, 1988 until his untimely death on October 4, 2009. He began his painting career with Local Union 806 Structural Steel and Bridge Painters in June 1978. In addition to working as a bridge painter, Mr. Kenny served as a shop steward for five years, and had a good working relationship with management as well as the painters. He was among the first responders to the 1993 World Trade Center bombing and he also volunteered at the 2001 World Trade Center site. Mr. Kenny served his community and others by being active in several charities such as Lots of Locks: he grew his hair long and then donated it for cancer patients. He was also an active member in the Cystic Fibrosis Foundation. His presence will be greatly missed by all who knew him.

Gloria Wyche, Clerical Associate

April 15, 1949 – November 1, 2009 20 years, 1 month City service

Ms. Wyche worked in the Bridge Repair Unit. She performed data entry, prepared reports regarding the close-out and completion of flag repairs performed by skilled tradespersons, performed complicated filing, data research and retrieval and took care of the office needs for the other clerical staff and the engineers assigned to the East River Bridge and Brooklyn Queens/ Richmond Section. Ms. Wyche was well liked and respected by all who knew her and she will be greatly missed. Her smile and friendly greeting will remain fixed in our hearts and minds forever.



Dipak Agarwala. Brian Kenny. (Credit: Earlene Powell) Gloria Wyche in 2006.

2009 INVENTORY LOCATION MAPS

On these maps, all Community Boards consist of three (3) digits. The first digit is for map plotting purposes. The next two digits identify the Community Board. In cases of certain parks and airports, the Community Board number does not correspond with any Community Board. These exceptions are:

Bronx	26=Van Cortlandt Park	**Brooklyn**	55=Prospect Park
	27=Bronx Park		56=Gateway Nat'l Rec. Area/Floyd Bennett Field
	28=Pelham Bay Park	**Queens**	80=La Guardia Airport
Manhattan	64= Central Park		81=Alley Pond Park
			82=Cunningham Park
			83=JFK Airport
			84= Gateway Nat'l Rec. Area/Fort Tilden-Jacob Riis Park

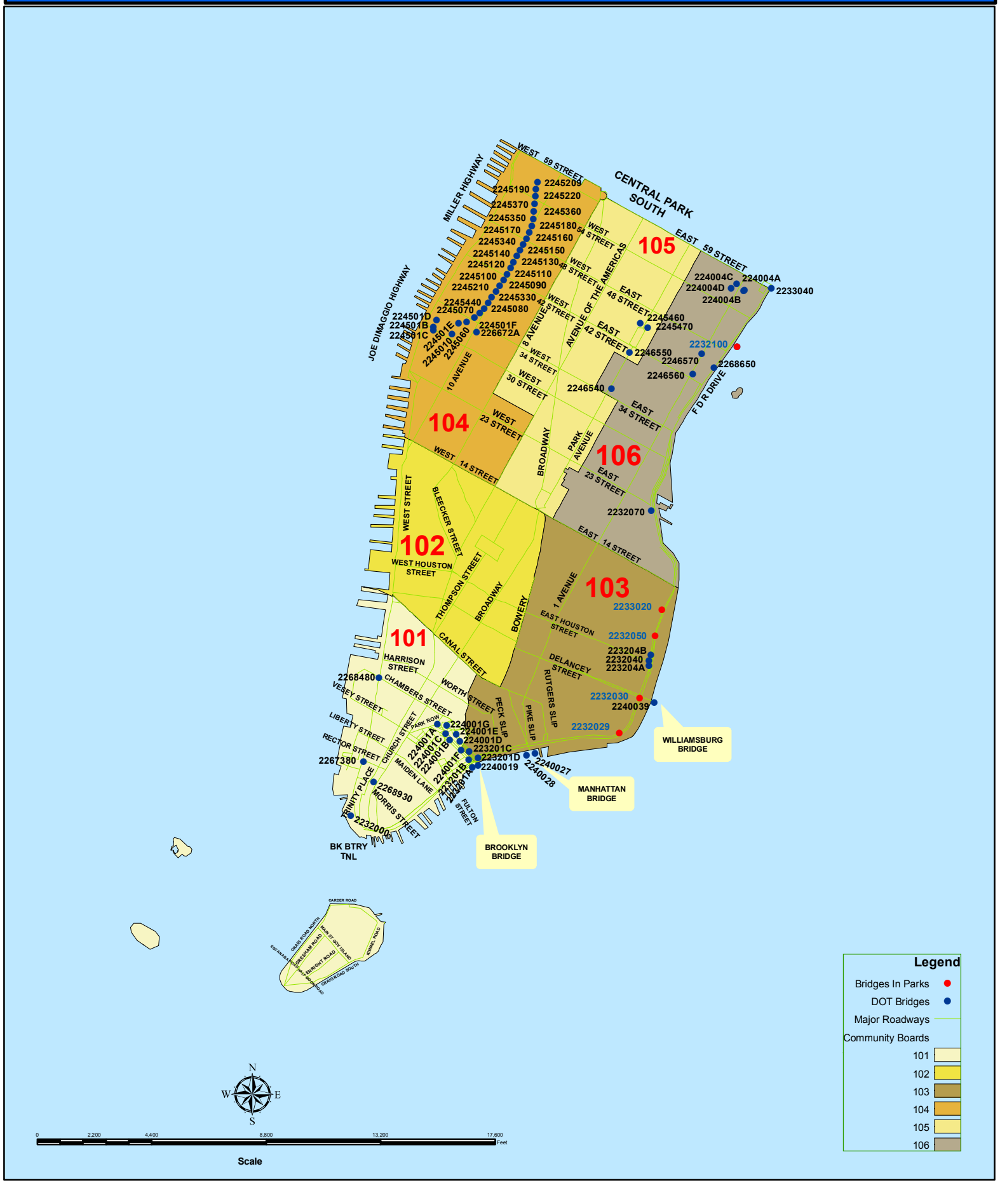
The Community Board listings correspond to those listed in the inventory, which begins on page 204.

Some structures fall on Community Board dividing lines: their additional Community Boards are identified in the inventory in columns CD2 and CD3.

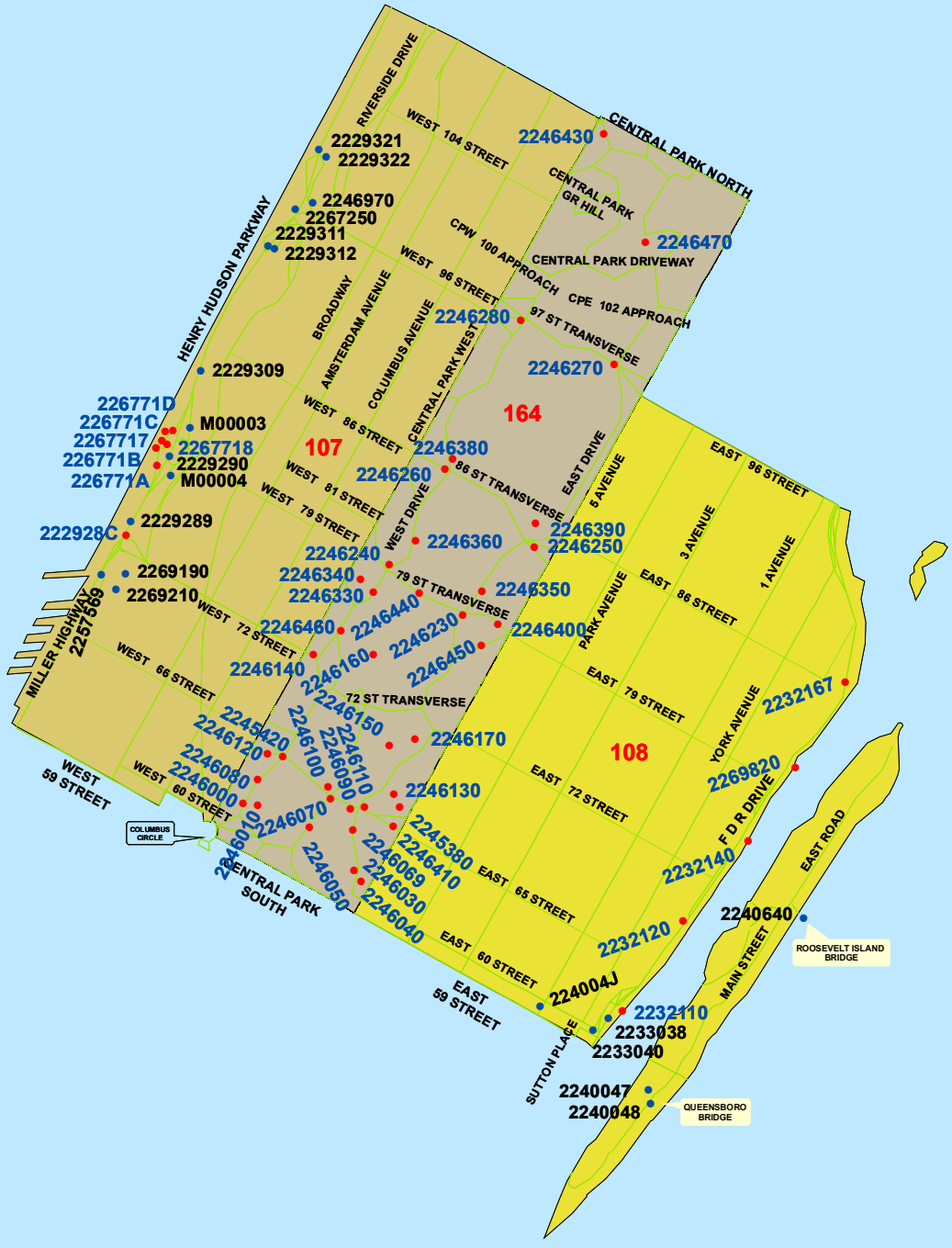
Brooklyn, Manhattan, and Williamsburg Bridges.
(Credit: Michele N. Vulcan)

ALL BOROUGHS

DOWNTOWN MANHATTAN

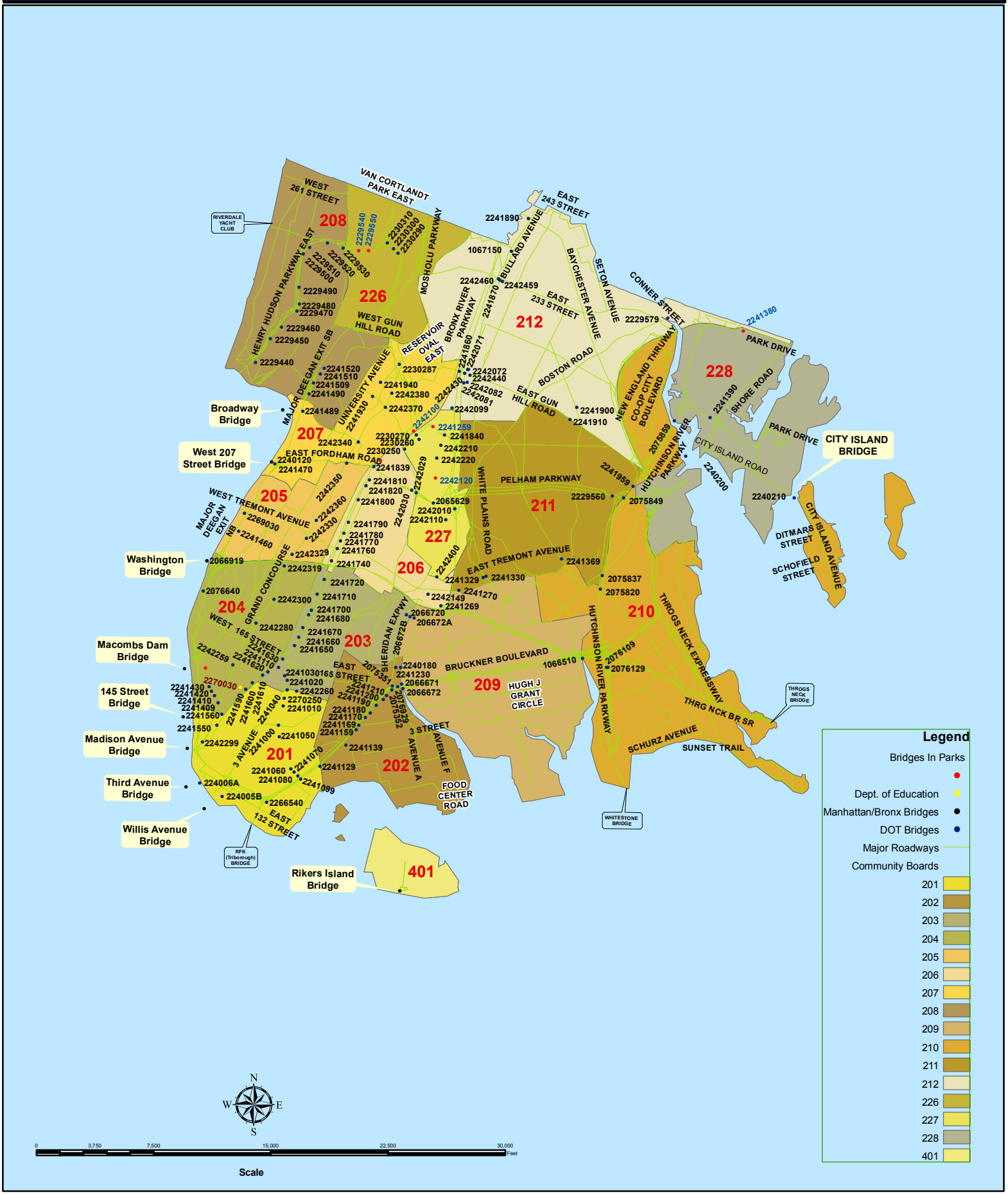


MIDTOWN MANHATTAN



UPTOWN MANHATTAN

BRONX


208
226
212
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227
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203
210
209
201
202
401
Broadway Bridge
West 207 Street Bridge
Washington Bridge
Macombs Dam Bridge
145 Street Bridge
Madison Avenue Bridge
Third Avenue Bridge
Willis Avenue Bridge
Rikers Island Bridge
CITY ISLAND BRIDGE
WHITESTONE BRIDGE
THROGS NECK BRIDGE
RFK (Triborough) BRIDGE
RIVERDALE YACHT CLUB
WEST 261 STREET
VAN CORTLANDT PARK EAST
HENRY HUDSON PARKWAY EAST
HENRY HUDSON PARKWAY SB
MOSHOLU PARKWAY
WEST GUN HILL ROAD
RESERVOIR OVAL EAST
BRONX RIVER PARKWAY
EAST 243 STREET
BULLARD AVENUE
BAYCHESTER AVENUE
SETON AVENUE
CONNER STREET
EAST 233 STREET
BOSTON ROAD
EAST GUN HILL ROAD
NEW ENGLAND THRUWAY
CO-OP CITY BOULEVARD
HUTCHINSON RIVER PARKWAY
PARK DRIVE
SHORE ROAD
CITY ISLAND ROAD
DITMARS STREET
SCHOFIELD STREET
CITY ISLAND AVENUE
MAJOR DEEGAN EXIT SB
UNIVERSITY AVENUE
EAST FORDHAM ROAD
WEST TREMONT AVENUE
MAJOR DEEGAN EXIT NB
GRAND CONCOURSE
WEST 165 STREET
EAST 165 STREET
SHERIDAN EXPWY
WHITE PLAINS ROAD
PELHAM PARKWAY
EAST TREMONT AVENUE
BRUCKNER BOULEVARD
HUGH J GRANT CIRCLE
THROGS NECK EXPRESSWAY
THRG NCK BR SR
SCHURZ AVENUE
SUNSET TRAIL
3 AVENUE
3 STREET
AVENUE A
AVENUE F
FOOD CENTER ROAD
EAST 132 STREET
Legend
Bridges In Parks
Dept. of Education
Manhattan/Bronx Bridges
DOT Bridges
Major Roadways
Community Boards
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211
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15,000
22,500
30,000
Feet
Scale

BROOKLYN


Pulaski Bridge
Williamsburg Bridge
Manhattan Bridge
Brooklyn Bridge
See Brooklyn CB 302, 308, 309 Detail Map
KOSCIUSZKO BRIDGE
MANHATTAN AVENUE
BQE
PARK AVENUE
DE KALB AVENUE
BUSHWICK AVENUE
JACKIE ROBINSON PARKWAY
SUTTER AVENUE
EASTERN PARKWAY
LINDEN BOULEVARD
FOSTER AVE
PENNSYLVANIA AVENUE
SHORE PARKWAY
REMSEN AVENUE
SEAVIEW AVENUE
UTICA AVENUE
FLATBUSH AVENUE
NOSTRAND AVENUE
OCEAN AVENUE
OCEAN PARKWAY
SHORE ROAD
86 STREET
85 STREET
VERRAZANO BRIDGE
SHORE PARKWAY SR NORTH
BAY PARKWAY
CANARSIE VETERANS CIRCLE
FLOYD BENNETT FIELD
AVIATION ROAD
MARINE PARKWAY BRIDGE
Prospect Park Southwest
301
302
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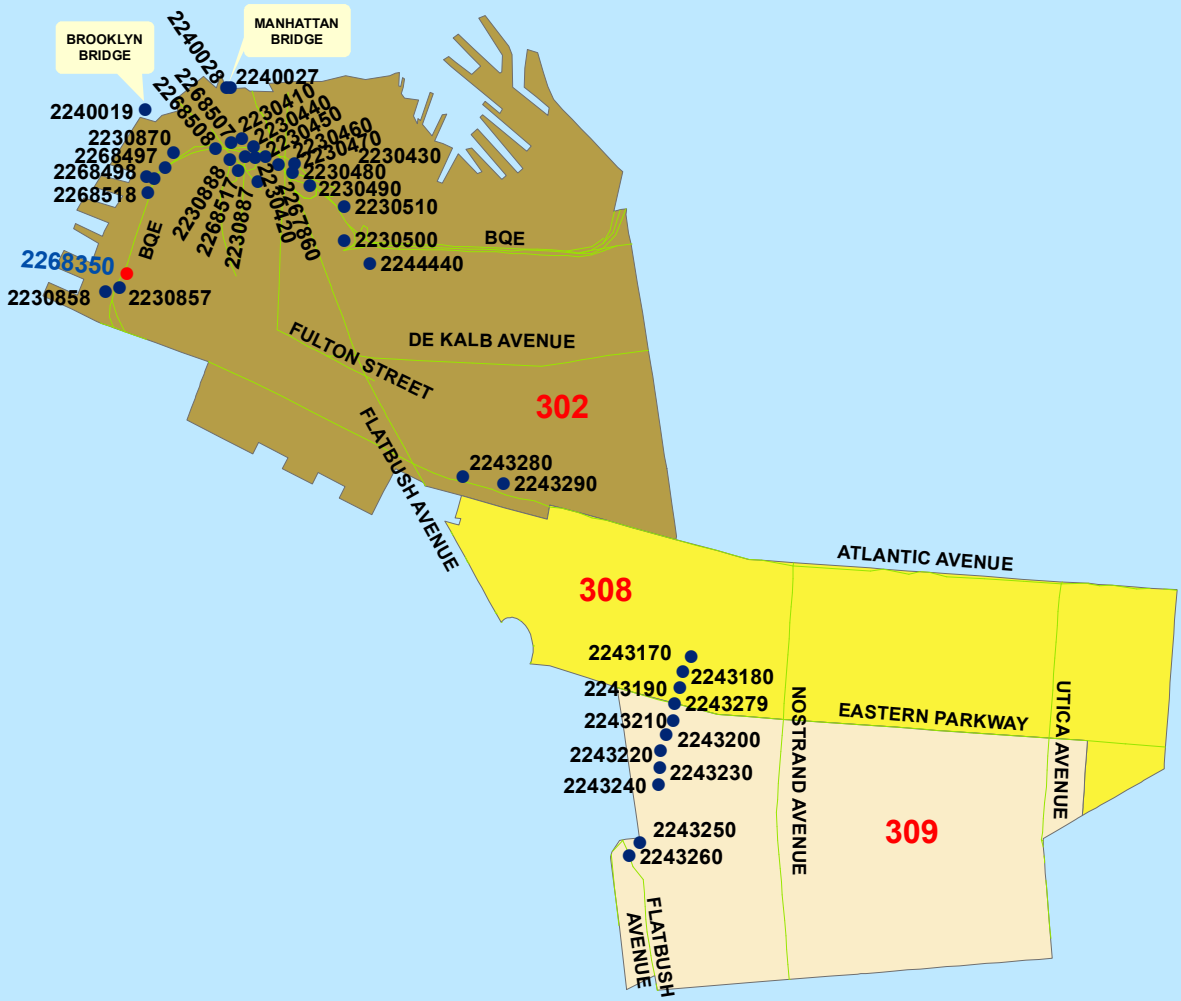
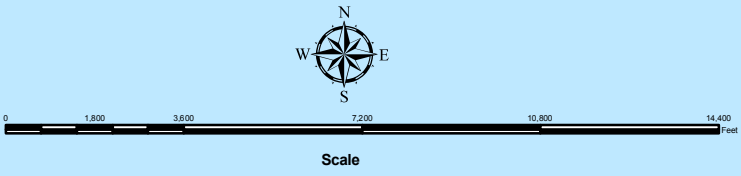
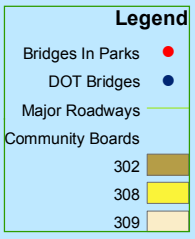
355
356
Legend
Bridges In Parks
Brooklyn/Queens Bridges
Manhattan/Brooklyn Bridges
DOT Bridges
Major Roadways
Community Boards
Scale
Feet

BROOKLYN
CB 302, 308, 309 DETAIL







QUEENS


RIKERS ISLAND BRIDGE
WHITESTONE BRIDGE
THROGS NECK BRIDGE
La Guardia Airport
RFK (Triborough) BRIDGE
ROOSEVELT ISLAND BRIDGE
QUEENSBORO BRIDGE
QUEENS MIDTOWN TUNNEL
KOSCIUSZKO BRIDGE
See Queens CB 401, 402 & 405 Detail
JFK Airport
CROSS ISLAND PARKWAY
SHORE ROAD
SHORE BOULEVARD
WHITESTONE EXPRESSWAY
ASTORIA BOULEVARD
NORTHERN BOULEVARD
VERNON BOULEVARD
QUEENS PLAZA NORTH
BQE
CLEARVIEW EXPRESSWAY
LONG ISLAND EXPRESSWAY
UNION TURNPIKE
GRAND CENTRAL PARKWAY
JACKIE ROBINSON PARKWAY
NORTH CONDUIT AVENUE
WOODHAVEN BOULEVARD
VAN WYCK EXPRESSWAY
BELT/ SOUTHERN PARKWAY
NASSAU EXPRESSWAY
BELT PARKWAY
LAURELTON PARKWAY
CROSS BAY BOULEVARD
ROCKAWAY BOULEVARD
BEACH CHANNEL DRIVE
SEAGIRT BOULEVARD
ROCKAWAY BEACH BOULEVARD
SEA BEACH COURT
CROSS BAY PARKWAY
ROCKAWAY BREEZY BOULEVARD
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Legend
Bridges In Parks
DOT Bridges
Major Roadway
Community Boards
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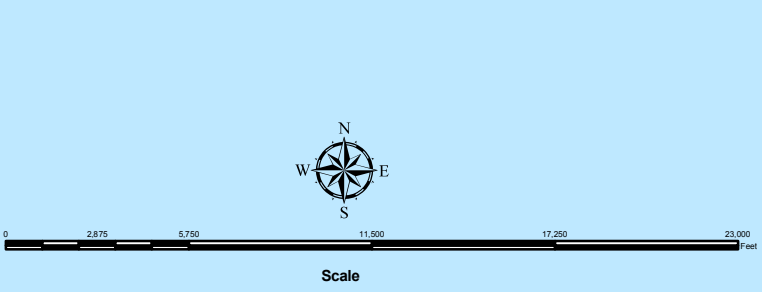
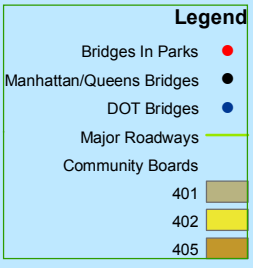
37,500
50,000
Feet
Scale

QUEENS
CB 401, 402, 405 DETAIL





STATEN ISLAND