

DIVISION OVERVIEW

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 five 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 787 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, 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 787 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 and photographs of the 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.

DIVISION OVERVIEW

The ***Bridge 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 Authority, 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 2011 Bridge Operations effected a total of 5,543 openings, 4,901 of which allowed 8,854 vessels to pass beneath the bridges. The remaining 642 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.

DIVISION OVERVIEW

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 **Bureau of Bridge Capital Design & Construction** is made up of two major sections:

The **East River and Movable Bridges Section** 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 Section 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 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 **Roadway Bridges Section** 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, 145th Street Bridge over Harlem River, and the Greenpoint Avenue Bridge over Newtown Creek. 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

DIVISION OVERVIEW

specifications prepared by consultants and review test results of electrical systems conducted by vendors 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 Federal and City-funded, private developer, City-let in-house and consultant-designed bridge and various other construction projects, processes the contracts for bidding, prepares and transmits addenda, maintains and updates City bridge construction boiler plates in compliance with federal and NYS engineering bulletins and instructions, and maintains an inventory of all NYC and NYS special specifications used in bridge construction projects. This Unit issues item numbers for newly written special specifications for the city funded projects. In addition, it prepares "Revisions to NYSDOT Standard Specifications" (R-pages), which are compiled from NYSDOT Engineering Bulletins and Engineering Instructions.

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 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 ten units: *Structural Review, Retaining Wall, Bridge Hold, Cost Estimate, Other Agency/Private Developer, Scope Development, Overweight Truck Permit, Geotechnical, Land Use Planning, and Utilities*.

The *Structural Review Unit* reviews all City-let bridge construction contract drawings, oversees seismic design requirements for City-let contracts for bridge projects, reviews analysis and design calculations and ensures that the work to be performed conforms to NYCDOT requirements. This unit establishes design standards, including seismic requirements.

The *Retaining Wall Unit* is 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. Data on poorly rated retaining walls are developed into scope packages and forwarded to the New York City Department of Design and Construction for permanent rehabilitation with DOT funding. Walls of questionable ownership are researched for ownership and jurisdiction. 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 *Bridge Hold Unit* was established in February 2011, based on OCMC requests to review construction permit applications for any proposed work located within 100 feet of any City-owned bridge structure. The permit applications may also originate from other City agencies, private developers, and utility companies. The Unit reviews the proposed work to ensure that it does not compromise the integrity of the structure and that it is in compliance with Agency requirements. Based on the review's recommendations, OCMC approves or disapproves these permit applications. The Unit receives an average of 70 permit applications per week for review.

The *Cost Estimate Unit* reviews and oversees design and construction cost estimates of City projects.

The *Other Agency/Private Developer Unit* currently provides engineering review supervision of projects from other agencies and private developers such as the Atlantic Yards Project, the

DIVISION OVERVIEW

Eastside Access Project, and the Riverside South Project. In addition, the unit conducts non-bridge engineering projects, such as the annual balloon wind study for the Macy's Thanksgiving Day Parade.

The *Scope Development Unit* reviews inspection reports, as-built drawings, and structural condition ratings, performs field inspection of bridges to develop the scope of work for the rehabilitation of deficient and poorly rated bridges, and initiates the procurement of Design Consultant contracts. The Unit is also responsible for reviewing of quarterly budgetary plans for bridge rehabilitation projects and coordinates these reviews with the Bureau of Bridge Maintenance, Inspections and Operations, and the Capital Procurement and Capital Planning Sections.

The *Overweight Truck Permit Unit* in coordination with the Division's Truck Permit Unit reviews the engineering aspects of overweight and over-dimensional truck and self-propelled crane permit applications, performs load rating analyses, and reviews load postings for City owned bridges. The Unit also reviews resurfacing, snow removal and other heavy equipment permit requests from within the Agency and from other agencies.

The *Geotechnical Engineering Unit* provides geotechnical-engineering services. This unit reviews bridge rehabilitation/reconstruction project reports, soil investigation/geotechnical foundation reports, City-let bridge construction contract drawings and other agency/private developers' geotechnical work which impacts City-owned projects.

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

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

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 Brooklyn Bridge, Manhattan Bridge, Willis Avenue Bridge, Roosevelt Island Bridge, 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, Wards Island Pedestrian Bridge over Harlem River, 149th Street Bridge over LIRR, East 78th Street Pedestrian Bridge over FDR, Shore Road Circle Bridge, Carlton Avenue Bridge over LIRR Yard, and the Claremont Parkway Bridge. In addition, the Section provides services to the Component Rehabilitation Section on an as-needed basis.

The Section is currently involved in extending its services for inspection of concrete at batching plants for the Sidewalk and Inspection Management Citywide Concrete Program via its contract with a City-contracted inspection firm.

DIVISION OVERVIEW

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, management of storm water runoff, soil erosion controls, management of concrete washout wastewater, 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 670/676 Grand Concourse Building Demolition, Willis Avenue Bridge, Manhattan Bridge, Williamsburg Bridge, Brooklyn Bridge, Wards Island Pedestrian Bridge over Harlem River, Floyd Bennett Field Wetland Mitigation, Belt Parkway Bridges, and the Borden Avenue Bridge, as well as Component Rehabilitation, Roadway Bridge, and Design/Build projects such as the reconstruction of the ramps at the St. George Ferry Terminal in Staten Island, Bruckner Expressway over the Bronx River and the Bruckner Expressway Bridges over Conrail/Amtrak.

The unit provided expertise and oversight for the cleanup of the previous significant 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 site was successfully remediated in accordance with the corrective action plan developed with the NYSDEC. DOT completed mitigation tasks in Newtown Creek and its tributaries in coordination with the NYSDEC to satisfy the permit mitigation requirements.

The **Specialty Engineering and Construction Bureau** is responsible for all ***Component Rehabilitation*** activities, ***Design-Build/Emergency Contracts***, ***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 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 Component Rehabilitation Program is an ongoing program with cumulative effects. Each Fiscal Year, a number of bridges

DIVISION OVERVIEW

are selected for inclusion in the program and construction is completed on others. Through fiscal year 2014, the program will obligate approximately \$110 million.

The ***Design-Build/Emergency Contracts 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

DIVISION OVERVIEW

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, other Agency Divisions, the public and private railroads, and the various consulting firms involved with the procurement process. The duties of this unit include: overseeing the Division's capital consultant contract procurement from scope to registration; preparing status reports; processing of the Division's change orders through registration, and coordinating Railroad Force Account Agreements and railroad invoice payments 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. Upon registration of the railroad force account contracts between the City of New York and the respective railroad, Notices to Proceed [NTPs] are issued, and invoices are generated. The invoices, once approved by the engineers for the railroad and the corresponding DOT Project Manager, are sent to the Railroad Coordinator for processing and actual payment by the New York City Comptroller's Office.

DIVISION OVERVIEW

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.

Certificates to Proceed [CPs] are a critical component for the registration of any Construction, Consultant Programs, Force Account, Change Order and Engineering Service Agreement and assigned ESA tasks. Coordinating the submission of New and Revised Certificates to Proceed for submission to the Capital Budget is overseen by the Capital Procurement Unit.

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 \$3.5 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; 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. In addition, this section coordinates the Division's submission of Initial Financial Plans, Annual Financial Plan and Construction Management Plans prepared by Project Managers that must be submitted to the Office of Finance, Contracts & Program Management.

The ***Truck Permit Section*** issues approximately 1,230 Annual Overweight Load Permits (renewals only), and approximately 30,821 other permits, including Annual Self-Propelled Crane Permits, Daily Oversize/Overdimensional/Supersize Truck Permits, and Bulk Milk Permits; 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 February 2011, a Permit was Issued for the Removal of the Sculpture "The Happy Prince" by Ryan Gander from the Doris C. Freedman Plaza in Central Park. The Sculpture was Exhibited from September 2010 – February 2011. In March 2011, a Permit was Issued for the Delivery of the Tub Girders to the Belt Parkway over Paerdegat Bridge Site.

JANUARY

Anti-Icing

On January 7, 2011, 1.7 inches of snow fell in Central Park, 1.4 inches at La Guardia Airport, and 0.8 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 11:00 PM on January 6 until 5:00 AM on January 9; 10 applications of chemicals were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

Harper Street Asphalt Plant (Queens)

On January 8, 2011, Division ironworkers replaced the paddles and performed other repairs.

Tuscon, Arizona Tribute

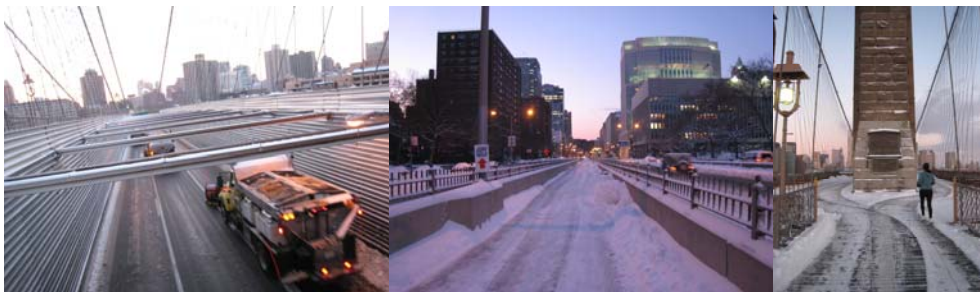
The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on January 10, 2011, as a mark of respect for the victims of the shooting violence that occurred January 8 in Tuscon, Arizona. The flags were raised on January 15, 2011.



Flag at Half-Mast in January 2011.
(Credit: Russell Holcomb)

Anti-Icing

On January 11, 2011, 3 inches of snow fell in Central Park, and 1.9 inches at La Guardia and JFK Airports. On January 12, a record 6.1 inches of snow fell in Central Park, a record 5 inches at La Guardia Airport, and a record 4.2 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges at 1:00 PM on January 11; as of 11:00 AM on January 12, nine applications of chemicals (over 5,000 gallons) had been made. Almost 90 Division staff members were engaged in these activities, as well as the clearing of snow from priority overpasses and the East River and movable bridge walkways. Commissioner Janette Sadik-Khan visited the crews on the Manhattan and Brooklyn Bridges on January 12.



Cleared Brooklyn Bridge Roadway and Walkway After the Storm. (Credit: Russell Holcomb)



Bicyclist Crossing the Bridge After the Storm. Commissioner Janette Sadik-Khan Examining a Truck. (Credit: Russell Holcomb) Chief Bridge Officer Henry Perahia, Interim Director of Bridge Preventive Maintenance Paul Schwartz, Supervisor Bricklayer Joseph Saverino, Commissioner Janette Sadik-Khan, and Supervisor Highway Repairer Richard Valles. (Credit: Russell Holcomb). Highway Repairer Gaetano Messina, Commissioner Janette Sadik-Khan, Assistant City Highway Repairers Carmine Cavitolo and Victor Magagna, and Deputy Chief Engineer Russell Holcomb. Deputy Chief Engineer Russell Holcomb, Highway Repairer Roosevelt Gee Jr., Assistant City Highway Repairer John Tammaro, Supervisor Highway Repairer Steven Borowik, Commissioner Janette Sadik-Khan, Assistant City Highway Repairer Justin Adone, Supervisor Highway Repairer Richard Valles, Chief Bridge Officer Henry Perahia, and Supervisor Highway Repairer Michael Parise.

Harper Street Asphalt Plant (Queens)

On January 15, 2011, Division ironworkers repaired the crusher, recycle bin, and conveyor.

Anti-Icing

On January 17, 2011, 1 inch of snow fell in Central Park, and 1.3 inches fell at La Guardia Airport. Anti-icing crews were deployed on the East River bridges from 11:00 PM on January 17 until 9:30 AM on January 18. 4,850 gallons of liquid anti-icer and 45 tons of solid de-icer were applied. Priority overpasses were cleared, and snow removal and icicle patrols monitored the FDR Drive, Battery Park Underpass, Brooklyn Bridge walkways, First Avenue Tunnel, and the Cross Bronx and Brooklyn-Queens Expressways.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens) (a.k.a. J.J. Byrne Memorial Bridge)

The component rehabilitation of this bridge was substantially completed on January 20, 2011.

Anti-Icing

On January 21, 2011, 4.2 inches of snow fell in Central Park, 4.3 inches at La Guardia Airport, and 3.9 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 7:00 PM on January 20 until noon the following day; 5 applications of chemicals were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

Anti-Icing

On January 25, 2011, 1 inch of snow fell in Central Park, 1.2 inches at La Guardia Airport, and 0.3 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 10:00 PM on January 24 until 3:00 PM the following day; no applications were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

On January 26, 2011, a record 12.3 inches of snow fell in Central Park, a record 9.4 inches at La Guardia Airport, and a record 6 inches at JFK Airport. On January 27, a record 6.7 inches of snow fell in Central Park, a record 7.9 inches at La Guardia Airport, and a record 4.3 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 5:00 AM on January 26 until 5:00 AM the following day; 14 applications of chemicals were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.



Inspecting and Clearing the Brooklyn Bridge Walkway on January 27. (Credit: Hayes Lord) Clearing Snow at the 11th Avenue Viaduct Project.

Hamilton Avenue Bridge over Gowanus Canal (Brooklyn)

On January 26, 2011, the bridge failed to rise due to excessive snow on the span. It was closed to marine traffic from 11:57 PM until 9:02 AM on January 27.

Harper Street Asphalt Plant (Queens)

On January 28 and 29, 2011, Division ironworkers repaired the catwalks, bin liners, plates, and shelves.

Anti-Icing

On January 29, 2011, 0.2 inches of snow fell at La Guardia Airport, and 0.3 inches at JFK Airport. Anti-icing crews were on stand-by from 6:00 AM on January 28 until 4:00 AM the following day, and from 6:00 AM on January 29 until 6:00 PM the following day; no applications of chemicals were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

Third Street Bridge over Gowanus Canal (Brooklyn)

Cleaning and painting of the bridge operator's house began and was completed in January 2011.

FEBRUARY

Anti-Icing

On February 1, 2011, 1.1 inches of snow fell in Central Park, 0.6 inches at La Guardia Airport, and 0.5 inches at JFK Airport. On February 2, 0.5 inches of snow fell in Central

Park. Anti-icing crews were deployed on the East River bridges from shortly after midnight on February 1 until 4:00 PM the following day; 13 applications of chemicals were made. Seventy-four Division staff members cleared snow from overpasses and five were on icicle patrol. On February 2, all of the movable bridges were taken out of service to marine traffic at 9:15 AM due to icy conditions. The Pulaski and Greenpoint Avenue Bridges were put back in service at 12:20 PM., followed by the remaining bridges at 3:00 PM.

The crews were again deployed from 5:00 AM until 10:30 AM on February 5; no applications of chemicals 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. The icicle patrols remained active through February 12.



Icicles on FDR Drive and the Cross-Bronx Expressway at Jerome Avenue in February 2011.
(Credit: Louis Garzia)

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

On February 12, 2011, the old flanking span was floated out from the site, down the East River, to the contractor's facility in Jersey City. The roadway was closed to vehicular traffic and pedestrians at 2:00 AM. The span was operated with the hydraulic engine, in the counterclockwise direction and by 3:00 AM was in the open position. The barge with the flanking span passed through the Willis Avenue Bridge (through the Bronx Channel) from 4:00 to 4:09 AM and through the RFK bridge from 4:17 to 4:23 AM. A total of three tug boats assisted the tow: one at the stern, one at the bow and the third on the side of the barge. The Willis Avenue Bridge opened to traffic at 5:50 AM.



Floating Out the Flanking Span on April 12, 2011.

Manhattan 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.

Carl Skelton's "Ultratope 1: Real City" featured visual projections on the Manhattan Bridge's colonnade in Lower Manhattan. Real City paid tribute to everyday New Yorkers, past and present, honoring their role in shaping the character of the city. From dusk to dawn, the frieze of the colonnade bore basic information about one of the millions of people who have settled in the area over the years: given name, year and place of birth. The piece ran from February 17 through March 31, 2011.



"Ultratope 1: Real City" Projections on the Colonnade.
(Credit: Carl Skelton)

Hamilton Avenue Asphalt Plant (Brooklyn)

On February 19, 2011, Division ironworkers repaired the screening bins, conveyor belt, and drying drum.

Anti-Icing

On February 21, 2011, 3.2 inches of snow fell in Central Park, 3.5 inches at La Guardia Airport, and 2.3 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 8:00 PM on February 20 until 11:00 the following morning; nine applications of chemicals were made. Crews were again deployed from 10:00 PM on February 21 until 5:00 the following morning; no applications were made. Priority overpasses were cleared, and icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

Ed Koch Queensboro Bridge

On the night of February 24, 2011, Division electricians and an ironworker assisted a film crew from the television series "Blue Bloods" at the Queensboro Bridge.

Harper Street Asphalt Plant (Queens)

On February 26, 2011, Division ironworkers repaired the drum, shaker, and hopper.

Department of Transportation Maintenance and Repair Facility at Flatlands Yard (Brooklyn)

Cleaning and painting of this structure, which began in January 2011, was completed in February 2011.

Department of Transportation Coin Collection Facilities on Metropolitan Avenue (Queens)

Cleaning and painting of this structure, which began in January 2011, was completed in February 2011.

Department of Transportation Sign Shop at 59th Street (Manhattan)

Cleaning and painting of this structure, which began in January 2011, was completed in February 2011.

MARCH

Harper Street Asphalt Plant (Queens)

On March 5, 2011, Division ironworkers replaced various damaged and broken machinery parts.

Tidal Wetland Mitigation Project (Brooklyn)

A Notice to Proceed for the tidal wetlands mitigation project associated with the reconstruction of the Belt Parkway Bridges was issued to the contractor with a start date of March 8, 2011.

Award

The Fund for the City of New York and the Alfred P. Sloan Foundation selected Chief Bridge Officer Henry Perahia for a 2011 Sloan Public Service Award, recognizing him as a career public servant who shows exemplary government service that goes above and beyond his assigned duties. The award recipients were honored by Mayor Michael R. Bloomberg and others at a ceremony on March 10, 2011 at The Cooper Union.



The 2011 Sloan Public Service Award Recipients: Chief Bridge Officer Henry D. Perahia, Director Susan Dalmas, Nurse Practitioner Elva Rodriguez, Mayor Michael R. Bloomberg, Senior Designer Emmanuel Thingue, Division Chief Gabriel Taussig, and Principal Ramon M. Gonzalez. (Credit: Kristen Artz, Office of the Mayor) Commissioner Janette Sadik-Khan and Mrs. Perahia. (Credit: Joannene Kidder) Commissioner Marjorie Tiven, Chief Bridge Officer Henry D. Perahia, and Mrs. Perahia.



Mayor Michael R. Bloomberg. (Credit: Dorothy Roses) Commissioner Janette Sadik-Khan, Chief Bridge Officer Henry Perahia, and Sam Schwartz. (Credit: Joannene Kidder)

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On March 12, 2011, Division ironworkers repaired machinery at both plants.

Division Years of Service Ceremony

Division personnel were honored on March 14, 2011 for their years of service to the City. The awards were presented by Chief Bridge Officer Henry D. Perahia and the Deputy Chief Engineers.

40 Years of Service

Civil Engineer Saul Basri

35 Years of Service

Highway Repairer Louie Dumeng, Supervisor Bridge Operator Wilbert Holt, and Associate Staff Analyst Vera Ribakove.

30 Years of Service

Associate Staff Analyst William Donley, Associate Staff Analyst Darlene Lucchese, Supervisor Highway Repairer Patrick Macaluso, Area Supervisor Highway Maintenance

Charles Remi, Electrician Jerry Salzman, Highway Repairer James Torain, and Civil Engineer Matthew Winchell.

25 Years of Service

Principal Administrative Associate Lourdes Acevedo, Principal Administrative Associate Michele Adimu, Highway Repairer Rudolph Bentley, Senior Director of Administration and Finance Patricia Briggs, Research Assistant Fitz-Arthur Brown, Carpenter Stephen Buckley, Highway Repairer Robert Bynes, Civil Engineer Adam Caplan, Highway Repairer Deborah Cavaliere, Supervisor Electrician Ben Cipriano, Bridge Repairer and Riveter Kenneth Cromer, Associate Staff Analyst Charlotte Davis, Bridge Operator Louie Davis, Clerical Associate Marie De Madet, Supervisor Electrician Jose Done, Principal Administrative Associate Paula Friend, Clerical Associate Loraine Fulgham, Associate Staff Analyst Susan Garcia, Area Supervisor Highway Maintenance Louis Garzia, Oiler Ronald Grady, Administrative Engineer Ken Hui, Administrative Engineer Sudhir Jariwala, Electrician James Kane, Oiler Stanley Karolewicz, City Planner Dr. Paul-Michael Kazas, Administrative Superintendent of Bridge Operations George Kern, Electrician Michael Kowalenko, Assistant Civil Engineer John Lauretta, Research Assistant Rita Lebron, Associate Staff Analyst Bryan Leys, Motor Grader Operator Robert Lovdahl, Highway Repairer Dionisio Matos, Supervisor Bridge Operator Edgardo Montanez, Supervisor Carpenter John Motylewski, Supervisor Highway Repairer Albert Nizzari, Associate Project Manager Rosa Ostrovsky, Staff Analyst Earlene Powell, Bricklayer Salvatore Romano, Bridge Repairer and Riveter Philip Rudolph, Civil Engineer Ahmed Shakir, Bridge Painter Joao Silva, Oiler Andrew Sorrentino, Bridge Operator David Stewart, Supervisor Highway Repairer Isidro Suarez, Highway Repairer Johnny Tavarez, Supervisor Highway Repairer Joseph Turchiano, Bridge Painter Willie Tyler, Administrative Staff Analyst Linda Urbanski, Clerical Associate Elena Vega, Principal Administrative Associate Delores Whitfield, and Bridge Repairer and Riveter James Wright III.

Police Officer Alain Schabberger Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on March 14, 2011, in tribute to Police Officer Alain Schabberger of the 84th Precinct, who was fatally injured in Boerum Hill, Brooklyn on March 13, 2011 while making a domestic violence arrest. Officer Schabberger, 42, a 10 year veteran of the department, was a member of the 2001 Police Academy class that was forced into early duty because of the 9/11 attacks. He was a decorated officer, having earned an Excellent Police Duty medal. He also served four years in the Navy. The flags were raised on March 19, 2011.



Police Officer Alain Schabberger

Harper Street Asphalt Plant (Queens)

On March 19 and 26, 2011, Division ironworkers repaired machinery parts.

Anti-Icing

On March 23, 2011, 0.4 inches of snow fell at La Guardia Airport, and a record 0.9 inches at JFK Airport. On March 24, 2011, 1 inch of snow fell in Central Park, a record 0.5 inches at La Guardia Airport, and 0.07 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 9:00 PM on March 23 until 8:00 the following morning; 4 applications of chemicals were made.

Brooklyn Bridge

On March 25, 2011, students from the School of Visual Arts were escorted on a tour of the Brooklyn Bridge.



Students, Resident Engineer Douglas Reese (in DOT Vest), Deputy Chief Engineer Russell Holcomb, and Sabrina Lau. (Credit: Ohene Duodu) Brooklyn Bridge Engineer-in-Charge Ohene Duodu Monitoring Pedestrian Traffic as Deputy Chief Engineer Russell Holcomb Explains Bridge Maintenance. (Credit: Douglas Reese)

Congresswoman Geraldine Anne Ferraro Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on March 28, 2011, in tribute to former Queens Congresswoman Geraldine Anne Ferraro, who died on March 26 in Massachusetts. Ms. Ferraro, 75, earned a place in history as the first woman and first Italian-American to run on a major party national ticket, serving as Walter Mondale's Vice Presidential running mate in 1984 on the Democratic Party ticket.

Her successful career in public service included time as Queens County Assistant District Attorney, where she helped create the Special Victims Bureau and the Confidential Unit, specializing in cases involving sex crimes, crimes against the elderly, family violence and child abuse. She served on the Advisory Council for the Housing Court of New York City and as president of the Queens County Women's Bar Association, before being elected to represent Queens in Congress, where she thrived. She tackled issues such as poverty, the environment and, especially, equality for women, ultimately co-sponsoring the 1981 Economic Equity Act. Her work in those areas continued long after she left Congress. After she was diagnosed with cancer, she successfully lobbied Congress for passage of the Hematological Cancer Research Investment and Education Act, which created the Geraldine Ferraro Cancer Education Program. The flags were raised on April 1, 2011.



Congresswoman Geraldine Ferraro.

Williamsburg Bridge

On the night of March 30, 2011, Division electricians and an assistant civil engineer assisted a film crew from the television series "Person of Interest" at the Williamsburg Bridge.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens)

Cleaning and painting of the bridge operator's house, which began in January 2011, was completed in March 2011.

CHRONOLOGY

Department of Transportation Facilities at the Harper Street Yard (Queens)

Cleaning and painting of these structures, which began in January 2011, was completed in March 2011.

Department of Transportation Sign Shop in Maspeth (Queens)

Cleaning and painting of this structure, which began in January 2011, was completed in March 2011.

Award

In March 2011, *New York Construction Magazine* selected the Manhattan Bridge project (Contract #14) as one of the top 25 project starts in the Tri-State Region in 2010.

Pulaski Bridge over Newtown Creek (Brooklyn/Queens)

In March 2011, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month." The bridge marks the halfway point of the NYC Marathon each year.



Pulaski Bridge in 2008. (Credit: NYSDOT)

APRIL

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On April 2, 2011, Division ironworkers repaired the drum and other machinery parts.

Claremont Parkway over Metro North RR (Bronx)

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of April 4, 2011.

National Work Zone Awareness Week

This event, held from April 4 through 8, 2011, and coordinated with the start of the construction season, raised awareness about the need to drive carefully around work zones and aimed to reduce work zone crashes nation-wide. More than 2,000 Agency men and women work in work zones to maintain and enhance our roadways, highways, bridges, sidewalks, traffic signals, street lights, and street signs. To promote work zone safety, the Agency placed orange ribbon magnets on Agency vehicles, posted special signs on City highways, distributed safety materials at several DMV locations in the City and ran work zone safety public service announcements in both New York City and Albany.



Supervisor Highway Repairer Donald Bragg, Highway Repairer Robert Bynes, and DOT Director of Occupational Safety and Health John Massey Distributing Materials at the Bronx DMV as Part of the National Work Zone Awareness Week.
(Credit: Louis Garzia)

Brooklyn-Queens Expressway over Sands Street (Brooklyn)

Contractor cleaning and painting of the bridge, which began on October 15, 2010, was completed on April 5, 2011.

Carroll Street and Union Street Bridges over Gowanus Canal (Brooklyn)

On April 6, 2011, on their annual Exploration Day, a class from St. Edmund Preparatory High School in Brooklyn visited the Carroll and Union Street bridges. Students learned about the retractile and bascule bridge structures, their functions and maintenance, and watched an opening.



Students with Their Teacher, Joan Kowkabany (at Right) and Executive Director of Bridge Preventive Maintenance and Repair Tom Whitehouse. (in Blue Helmet). Mr. Whitehouse Explaining the Maintenance of the Carroll Street Bridge.

Ed Koch Queensboro Bridge

Mayor Michael R. Bloomberg signed legislation on April 11, 2011 to rename the Queensboro Bridge as the “Ed Koch Queensboro Bridge” in honor of the 105th Mayor of the City of New York, Mayor Edward I. Koch. The Mayor proposed the legislation in December 2010, and the legislation passed the City Council on March 23, 2011.



Mayors Michael R. Bloomberg and Edward I. Koch, and City Council Speaker Christine C. Quinn at the Signing of the Legislation in April 2011. (Credit: Edward Reed, Office of the Mayor) Mayors David N. Dinkins, Edward I. Koch and Michael R. Bloomberg Celebrating the Renaming of the Bridge in May 2011. (Credit: Kristen Artz, Office of the Mayor)

Stand Alone Demolition 670 and 676 Grand Concourse (Bronx)

Originally, this project was a part of the scope of work for the construction of the East 153rd Street cable stayed bridge, which has been pushed to Fiscal Year 2022 due to budgetary constraints. To avoid future issues related to security, maintenance and safety of the buildings, the Agency decided to demolish them under a stand-alone contract.

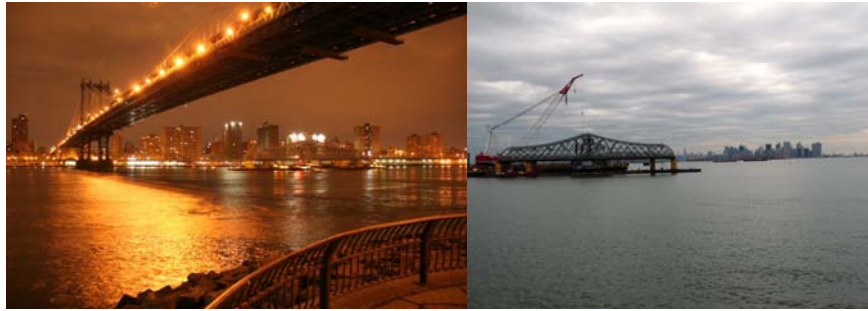
The properties 670 Grand Concourse and 676 Grand Concourse were acquired by the City under its power of Eminent Domain Law to satisfy the street widening and to accommodate the proposed alignment of the cable stay bridge as part of the right-of-way for East 153rd Street between Grand Concourse and Morris Avenue. A Notice to Proceed for the demolition of these buildings was issued to the contractor with a start date of April 11, 2011.



Grand Concourse Project Site.

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

The old swing span was floated out on April 12, 2011, to the contractor's facility in Jersey City. The Willis Ave Bridge was closed to traffic at approximately 1:00 AM. The swing span was operated in the open position at around 2:00 AM. The two tug boats were in position at approximately 3:00 AM and by 3:20 AM started moving towards south to pass through the Bronx channel of the Willis Avenue Bridge. By 3:37 AM the span passed completely through the Willis Avenue Bridge, was aligned and then passed through the RFK Bridge by approximately 4:00 AM. The Willis Avenue Bridge was moved back to the closed position at around 3:45 AM and by 4:25 AM was re-opened to traffic.



Passing Under the Manhattan Bridge. On the Way to Jersey City.
(Daylight Credit: David Rocco)

Hamilton Avenue Asphalt Plant (Brooklyn)

On April 16, 2011, Division ironworkers repaired the chutes and main drum.

Belt Parkway Bridge over Paerdegat Basin (Brooklyn)

On April 19, 2011, the first major steel erection operation started with the placement of tub girder sections from the west abutment to the temporary supports.



First Major Steel Erection at the Paerdegat Basin Bridge in April 2011. Observing the Placement of the Tub Girder Sections: Administrative Engineer Daniel Hom, Civil Engineer Edvard Jeamgocian (Obscured), Consultant Project Manager Bill Ferdinandsen, and Civil Engineers Ferdinand John and Jagdish Patel.

Riverside Drive over West 125th Street to West 134th Street (Manhattan)

On April 20 through May 6, 2011, Division engineers assisted a film crew from the upcoming movie "The Amazing Spider-Man" at Riverside Drive over West 125th Street to West 134th Street. Engineers from the Engineering Review Section had previously reviewed and approved the setup for the stunt shooting. Two 190-foot longitudinal trusses, 13 feet-5 inches apart, were connected by transverse trusses every 30 feet. These transverse trusses were attached to the existing floor beams of the Riverside Drive Viaduct between 133rd and 134th Streets with span sets, chain hoists, clamps, and wire ropes. The stunt was successfully shot without incident.



Trusses Attached to the Riverside Drive Viaduct for the Film Shoot.

Brooklyn Bridge

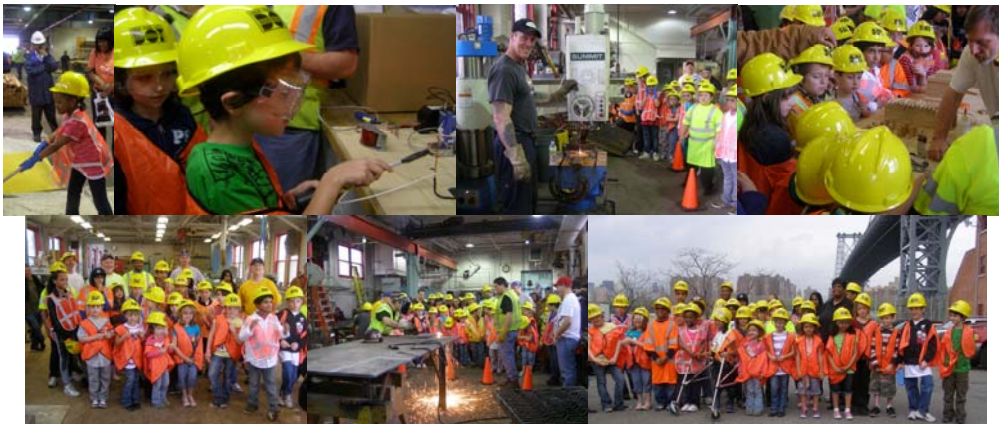
On April 21, 2011 Division personnel escorted cadets from the United States Military Academy at West Point on a tour of the Brooklyn Bridge.



Cadets on the Brooklyn Bridge With Carpenter Stephen Buckley.

Tenth Annual “Take Our Children to Work Day”

On April 28, 2011, as part of the Agency’s 10th annual “Take Our Children to Work Day,” Division bridge painters, carpenters, electricians, and ironworkers explained and illustrated the activities necessary to maintain bridges. This year’s theme was “Invent the Future” to help shape the future for a new generation at work.



Future Bridge Painter and Engineer-in-Charge of East River Bridges Bridge Repair Bala Nair. Future Electricians. Bridge Repairer and Riveter William Dolan and Carpenter Andrew Myjer Demonstrating Equipment. Carpenters Tierney Gavin (Leaning), Andrew Myjer, and Michael Short III, Bridge Repairer and Riveter John McAllister, and Carpenter Patrick Burns with Children. (Credit: Earlene Powell) Bridge Repairer and Riveters Gonzalo Montano (Left) and Peter Sciandra (Right) Conducting a Welding Demonstration. (Credit: Clara Medina). Deputy Director of In-House Painting Earlene Powell with the Children.

CHRONOLOGY

Bruckner Expressway Bridges (Northbound and Southbound) over Bronx River (Bronx)

Contractor cleaning and painting of these bridges, which began on June 10, 2010, was completed on April 29, 2011.



Painted Median Curb. Painting the Handrails.

Hamilton Avenue Asphalt Plant (Brooklyn)

On April 30, 2011, Division ironworkers repaired the chutes and main drum.

MAY

34th Annual Five Borough Bike Tour

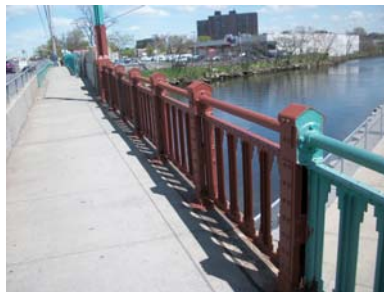
In preparation for the 42-mile Five Borough Bike Tour on May 1, 2011, Division personnel swept the bridges along the route and patrolled them for potholes. Carpenters installed temporary plywood covers over the finger joints of the Pulaski Bridge, which were removed after the tour concluded that day.



Cyclists on the Pulaski Bridge. Temporary Covers Over the Plywood Finger Joints.
(Credit: Joseph Flood) Office Machine Aide Audrey Woods Near the Ed Koch
Queensboro Bridge. Cyclists on the Bridge. (Road View Credit: Mark Feinman)

Cropsey Avenue Bridge over Coney Island Creek (Brooklyn)

Cleaning and painting of this bridge, which began on June 25, 2010, was completed on May 12, 2011.



Prime Coating on East Side Hand Rails.

Peace Officers Memorial Day Tribute

The Brooklyn Bridge American flags flew at half-mast on May 15, 2011, to commemorate Peace Officers Memorial Day.

Williamsburg Bridge

On May 16 through June 1, 2011, Division electricians assisted a film crew from the upcoming movie "Fiona's Tale" at the Williamsburg Bridge.

Highway Repairer Errol Wilson Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on May 18, 2011 in tribute to Highway Repairer Errol Wilson of the Agency's Roadway Maintenance and Repair Division, who died in the line of duty on May 17, 2011. Mr. Wilson, 59, an 18 year veteran of the department, was killed in an accident while conducting road repair work on the Cross Island Parkway near Northern Boulevard. He is survived by his wife Valerie White, his son Errol, Jr. and his daughter Tanya. The flags were raised on May 27, 2011.



Highway Repairer Errol Wilson.

West 181st Street over ramp to Washington Bridge (Manhattan)

The component rehabilitation of this bridge was substantially completed on May 19, 2011.

Borden Avenue Bridge over Dutch Kills (Queens)

The emergency construction project was substantially completed on May 20, 2011.

Roosevelt Island Avenue Bridge over Flushing Meadow Park Road (Queens)

Cleaning and painting of this bridge, which began on March 31, 2011, was completed on May 20, 2011.

Belt Parkway Bridge over Ocean Avenue (Brooklyn)

Contractor cleaning and painting of the bridge, which began on March 14, 2011, was completed on May 21, 2011.

Memorial Day Tribute

The Brooklyn Bridge American flags flew at half-mast until noon on May 30, 2011, to commemorate those who died serving the nation during war.

Belt Parkway Bridge over Mill Basin (Brooklyn)

Cleaning and painting of the bridge operator's house, which began in February 2011, was completed in May 2011.

JUNE

Division Teamwork Recognition Ceremony

On June 8, 2011, the Division acknowledged the extraordinary efforts and contributions made by the two teams involved with Over Dimensional Truck Permits. The Engineering

Review team is led by Farid Tadros and the Truck Permit Unit is led by Kevin Lobat. Their staff formed a perfect team to get the job done and protect our infrastructure and the public.



Deputy Chief Engineer Robert Collyer, Associate Project Manager Mariya Zhurakhinskaya, Administrative Manager Diana Neal, Truck Permit Unit and Special Projects Director Kevin Lobat, and Civil Engineer Farid Tadros. Associate Project Manager Mariya Zhurakhinskaya, Assistant Civil Engineer Darlyn Alvarez, Assistant Civil Engineer Jafar Haider, Assistant Civil Engineer Alexander Eliopoulos (Obscured), Executive Director of Management And Support Services Dorothy Roses, Chief Bridge Officer Henry D. Perahia, Deputy Chief Engineer Anil Vyas, and Deputy Chief Engineer Jay Patel.

Hutchinson River Parkway Bridge over Hutchinson River (Bronx)

The bridge was out of service to marine traffic from 3:35 PM to 8:00 PM on June 8, 2011 due to heat expansion.

9th Street Bridge over Gowanus Canal (Brooklyn)

The bridge was out of service to marine traffic during the afternoon and evening hours of June 9 and 12, 2011 due to heat expansion. A record high temperature of 97 degrees was recorded at La Guardia Airport.

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On June 11, 2011, Division ironworkers repaired the crusher, drum, scales, and chutes.

East 14th Street Pedestrian Bridge over Belt Parkway (Brooklyn)

Contractor cleaning and painting of the bridge, which began on March 14, 2011, was completed on June 11, 2011.

Harper Street Asphalt Plant (Queens)

On June 4, 11, and 18, Division ironworkers repaired the conveyor bin, silo, main drum, and paddles.

CityBench Demonstration on Greenwich Street (Manhattan)

The public bench program will promote walking with the installation of 1,500 benches in New York City; DOT will locate half of the benches in strategic locations, and residents, nonprofit organizations, and businesses will request the rest of the installations, also to be done by DOT. The new bench prototype was installed by Division ironworkers on June 14, 2011 on Greenwich Street between Murray Street and Chambers Street, and the backless bench prototype was installed on June 17 on Second Avenue and 13th Street.



Bridge Repairer and Riveter Ignazio Trapani Drilling the Holes for the Concrete Anchor Bolts to Hold the Bench Securely in Place. Bridge Repairer and Riveters Ignazio Trapani, Fabian Del-Tongier and Salvatore Dimuro - Final Tightening of the Bolts and Installation of the Cover Plates to Hide the Connections. (Credit: Thomas Whitehouse) Bench Prototype and Testing by Citizens.

East Tremont Avenue Bridge over Hutchinson River Parkway (Bronx)

Cleaning and painting of this bridge, which began on April 1, 2011, was completed on June 16, 2011.

Tidal Wetland Mitigation (Brooklyn)

On June 16, 2011, work stopped when ordnance was found during excavation at the mitigation site, Floyd Bennett Field. The bomb squad was on-site to inspect and remove the items, which were determined to be inert World War II era torpedoes that were buried at the site. The contractor was allowed to continue work and was told to contact the bomb squad if any other ordnance was encountered.



World War II Era Torpedoes at Floyd Bennett Field.

Manhattan 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 "Intersection" mural of painted plywood panels was installed by in-house forces on June 21, 2011 on the existing fence of the Division's Front Street Yard near the Manhattan Bridge. The mural was produced by three artists, Heidi Garay, Mikell Fine Isles and Sam Vernon, in partnership with the Dumbo Business Improvement District. This mural symbolizes the constant movement of DUMBO. The curved lines, painted in seven distinct colors, play on the straight, unwavering lines of the corrugated metal fence. The piece is meant to brighten the landscape underneath the Manhattan Bridge, while referencing the New York City Subway map as well as the cross-sections of cultures in this neighborhood.



Bridge Repairer and Riverter Yiu Liu, Supervisor Carpenter Joseph Vaccaro, and Carpenters Stephen Buckley and Joseph Moschella Installing the Mural.
(Credit: Doneliza Joaquin for DUMBO NYC)

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On June 25 and 26, 2011, Division ironworkers repaired the mixers and drums.

Water Street Arch

Mayor Michael R. Bloomberg played “Chopsticks” on a baby grand piano in the Water Street Arch on the morning of June 27, 2011 to promote Sing for Hope’s Pop-Up Piano art project. The crocheted piano cover was crafted by artist Agata Olek. The piano remained in the Arch under the Manhattan Bridge in DUMBO (between Adams Street and Anchorage Place), through July 2, 2011.



Mayor Michael R. Bloomberg Playing Piano in the Water Street Arch, Watched by the Artist. (Credit: Doneliza Joaquin for DUMBO NYC)

Harper Street Asphalt Plant (Queens)

On June 28 and 29, 2011, Division ironworkers repaired the conveyor bin and drum.

Belt Parkway Bridge Project (Brooklyn) and Kent Avenue Bridge Facilities (Brooklyn)

On June 28 and 29, 2011, the Agency’s summer interns visited the Belt Parkway project site, as well as the bridge painting, ironworking, carpentry, and electrician shops at the Kent Avenue facility in Brooklyn.



Roadway Bridges Engineers Answering Interns' Questions. Assistant Civil Engineer Svetlana Batalova (Left) with the Interns at the Belt Parkway Project Site. Supervisor Bridge Painter Cesar Pazmino and Bridge Painter Goncalo Lima Demonstrating the Boatswain's Chair.
(Credit: Earlene Powell)

Metropolitan Avenue over English Kills (Brooklyn)

Due to heat expansion, the bridge was closed to marine traffic beginning at 11:22 AM on June 29, 2011. It was returned to service at 11:50 PM.

Belt Parkway Bridge over Sheepshead Bay Road (Brooklyn)

Contractor cleaning and painting of the bridge, which began on May 16, 2011, was completed on June 30, 2011.

Brooklyn, Manhattan, and Williamsburg Bridges

On June 30 through July 2, 2011, Division electricians assisted a film crew from the upcoming movie "Men in Black 3" at the Brooklyn, Manhattan, and Williamsburg Bridges.

Roosevelt Island Bridge over East River/East Channel (Manhattan/Queens)

In June 2011, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month."



Roosevelt Island Bridge in 2010. (Credit: NYSDOT)

JULY***Netherland Avenue Retaining Wall (Bronx)***

In June 2011, in response to a complaint, an emergency inspection was performed on a retaining wall on Netherland Avenue in the Bronx, between West 227th Street and Kappock Street. Overall, the wall was in fair condition, but the consultant identified a 5 to 7 foot section of the wall that required prompt attention; it was addressed by in-house forces. The replacement of the damaged and missing stones and the resetting of the missing stones were completed on July 1, 2011.



Bricklayer Salvatore Romano, Highway Repairer Mike Biancaniello, and Cement Mason Luigi Mula. (Credit: Russell Holcomb)

Wards Island Pedestrian Bridge over Harlem River (Manhattan)

The bridge was re-opened to pedestrians on July 1, 2011.

Harper Street Asphalt Plant (Queens)

On July 2, 2011, Division ironworkers repaired the pedals and air duct.

Manhattan Bridge

On July 7, 2011, Ubifrance-USA, the French agency for international business development brought a group of bridge engineers to the Agency for presentations by Commissioner Janette Sadik-Khan, Chief Bridge Officer Henry Perahia, and Executive Director of Bridge Inspections and Bridge Management Dr. Bojidar Yanev. The visitors were then escorted on a tour of the Manhattan Bridge to view up close American techniques on inspection, maintenance and repair.



Executive Director of Bridge Inspections and Bridge Management Dr. Bojidar Yanev with the French Visitors at the Manhattan Bridge. (Credit: Brian Gill)

Cropsey Avenue Bridge over Belt Parkway (Brooklyn)

Contractor cleaning and painting of the bridge, which began on September 1, 2010, was completed on July 9, 2011.



Cleaning and Painting the Hand Rails and Sidewalk Curb.

Harper Street Asphalt Plant (Queens)

On July 9, 2011, Division ironworkers repaired the mixer and drum belt.

Ninth Street Bridge over Gowanus Canal (Brooklyn)

Due to heat expansion, the bridge was closed to marine traffic beginning at 2:33 PM on July 10, 2011. It was returned to service at 9:17 AM on July 11.

14th Avenue Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on July 5, 2011, was completed on July 11, 2011.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens), Ninth Street Bridge over Gowanus Canal (Brooklyn), and West 207th Street/West Fordham Road over Harlem River (Bronx/Manhattan) (a.k.a. University Heights Bridge)

Due to heat expansion, the Greenpoint Avenue Bridge was closed to marine traffic beginning at 5:40 PM on July 12, 2011. It was returned to service at 10:50 PM. The Ninth Street Bridge was closed to marine traffic beginning at 6:05 PM on July 12, and was returned to service at 10:55 PM. The 207th Street Bridge was closed to marine traffic beginning at 7:30 AM on July 12, and was returned to service at 4:52 PM.

Harper Street Asphalt Plant (Queens)

On July 16, 2011, Division ironworkers repaired the mixer and main drum.

Williamsburg Bridge

July 19, 2011 marked 100 years since the East River bridge tolls were lifted by Mayor William J. Gaynor. To mark this anniversary, the NYC Bridge Centennial Commission, co-founded by Sam Schwartz, erected a historic replica toll-booth at the Manhattan entrance to the Williamsburg Bridge (Delancey Street at Suffolk Street).



A Unicyclist and NYC Bridge Centennial Commission President Sam Schwartz Hand a Symbolic 1911 Dime to a "Toll Taker" on the Manhattan Side of the Williamsburg Bridge. (Credit: Brian Gill) Manhattan Bridge Engineer-In-Charge Brian Gill.

147th Street Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on July 12, 2011, was completed on July 20, 2011.



Painted Hand Rails on the Bridge.

Brooklyn Bridge

On July 22 and 23, 2011, Division electricians assisted a film crew from the television series “Blue Bloods” at the Brooklyn Bridge.

Harper Street Asphalt Plant (Queens)

On July 23, 2011, Division ironworkers repaired the plant’s vacuum system exhaust pipe.

9th Street Bridge over Gowanus Canal (Brooklyn)

The bridge was closed to marine traffic from noon on July 22, 2011 until 7:05 AM on July 25 due to heat expansion. On July 22, a record high temperature of 104 degrees was set at Central Park, with another record 100 degrees on July 23.

150th Street Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on July 14, 2011, was completed on July 26, 2011.

149th Street Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on July 21, 2011, was completed on July 27, 2011.

East 78th Street Pedestrian Bridge over FDR Drive (Manhattan)

On the night of July 31, 2011, the old bridge and the piers supporting the structure were demolished and moved onto a barge on the East River between 2 AM and 7 AM.



East 78th Street Bridge Before Demolition. Original Tile Signage. Moving the Bridge to the Barge.

Rose Avenue, New Dorp Lane, Bancroft Avenue, Lincoln Avenue, and Midland Avenue Bridges over SIRT South Shore (Staten Island)

Contractor cleaning and painting of these bridges began in July 2011.

Cesar Pazmino

Supervisor Bridge Painter Cesar Pazmino was the subject of the “Staff Spotlight” feature in the July 2011 edition of “Byways,” the official Agency newsletter.



Supervisor Bridge Painter Cesar Pazmino
Preparing to Hoist the Brooklyn Bridge Flag.

AUGUST

Union Turnpike over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on July 27, 2011, was completed on August 1, 2011.

Washington Avenue (Brooklyn)

On August 2, 2011, the Agency's Planning and Sustainability Group placed granite blocks from the old Willis Avenue Bridge on the traffic island at the five-way intersection of Washington Avenue, Park Place, and Grand Avenue to protect it from illegal parking.



Recycling Granite Blocks From the Old Willis Avenue Bridge. (Credit: Kelley Sander)

Belt Parkway Bridge over Rockaway Parkway (Brooklyn)

Steel erection for the northern section of the new bridge was completed during the overnight hours on August 3, 2011.



Completing the Steel Erection for the Northern Section in August 2011. (Credit: Daniel Hom)

Brooklyn Bridge and Division Iron Shop at 59 Adams Street (Brooklyn)

On August 5, 2011, members of the New York chapter of the Young Professionals in Transportation were escorted on a tour of the Brooklyn Bridge and the Division Iron Shop. The organization's mission is to provide career guidance, fellowship, and networking opportunities for young professionals in the transportation field.



The Iron Shop. Bridge Repairer and Riveters Patrick Clowe, Fabien Del-Tongier, and Charlie Zhao Conducting Demonstrations. (Credit: Robin Lester Kenton)

United States and Afghan Soldiers and Governor Hugh L. Carey Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on August 7, 2011, in tribute to the thirty United States and eight Afghan soldiers killed in the eastern Afghanistan Sayedabad district of Wardak province, west of the capital, Kabul, on Friday, August 5, when a rocket struck their helicopter. Twenty-two of the dead were US Navy SEALs, including members of SEAL Team 6.

The flags continued to be flown at half-staff in tribute to former New York State Governor Hugh L. Carey, 92, who died on August 7, 2011. Mr. Carey enlisted in a National Guard cavalry unit in 1939, at a time when the cavalry still rode horses, and served in World War II in the infantry's 104th Division, rising to the rank of Lieutenant Colonel, and earning the Bronze Star, the Croix de Guerre with Silver Star and the Combat Infantryman's Badge. He represented Brooklyn's 12th and 15th congressional districts in the United States Congress from 1961 to 1974, serving on the Ways and Means Committee, where he pushed for equal rights for the developmentally challenged and underserved.

He served as New York State's 51st governor from 1975 through 1982. When the City was on the brink of bankruptcy, Governor Carey created the Municipal Assistance Corporation, known as MAC, to borrow money for the city. He also set up the Emergency Financial Control Board with the power to reject city budgets and labor contracts. His governorship also included the construction of Battery Park City and the Javits Convention Center, and the initiation of the "I Love New York" campaign and the Empire State Games athletic events. Governor Carey said in 2007 that he wanted to be remembered "as a man who loved the people of New York as much as he loved his own family." The flags were raised on August 12, 2011.



Governor Hugh L. Carey

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On August 6, 2011, Division ironworkers repaired the hopper, crusher, and ducts.

Brooklyn Bridge

As part of the fourth annual Summer Streets program in August 2011, Division crews closed the Centre Street exit ramp from the Brooklyn Bridge on August 6, 13, and 20 from 6:30 AM until 1:00 PM.



Brooklyn Bridge at Noon on August 20 During the Summer Streets Event. (Credit: Trinity Abbott)

Hamilton Avenue Asphalt Plant (Brooklyn)

On August 20, 2011, Division ironworkers repaired the main drum and silo.

Earthquake

At 1:51 PM on August 23, 2011, a 5.8 earthquake, 3.7 miles deep, struck, with its epicenter in Mineral, Virginia, about 84 miles southwest of Washington. It lasted 20 to 30 seconds. United States Geological Survey officials reported two small aftershocks, of magnitude 2.8 and 2.2, within 90 minutes of the original jolt. Division personnel performed emergency inspections of critical components of 17 structures following the earthquake. While inspectors observed structural evidence of the earthquake in the form of some expansion of existing cracks, no damage requiring remedial measures was found.

White House Recovery Tour of the Staten Island Ferry Terminal Ramp Project (Staten Island)

On August 24, 2011, Frank DiGiammarino, the White House Deputy Coordinator for Recovery Implementation, was escorted around the Staten Island Ferry Terminal Ramp project. Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder, Construction Project Manager Beatriz Duran, and Associate Project Manager Reza Lotfi provided an overview of the bridge and Staten Island Ferry projects. The ARRA funding is rebuilding the St. George Ferry Terminal Ramps, the largest stimulus project in New York State.



Construction Project Manager Beatriz Duran (at Left), Associate Project Manager Reza Lotfi (2nd From Right), and Deputy Coordinator Frank DiGiammarino (at Right). The Construction Site. (Credit: Alexander Engel)



Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder, Deputy Coordinator Frank DiGiammarino, and Construction Project Manager Beatriz Duran. Safety Gear. Deputy Coordinator Frank DiGiammarino and Associate Project Manager Reza Lotfi Reviewing the Project. (Credit: Alexander Engel)

Carroll Street Bridge over Gowanus Canal (Brooklyn)

This designated New York City Landmark is a one-lane bridge carrying eastbound traffic over the Gowanus Canal, linking the Carroll Gardens and Park Slope communities in northern Brooklyn. The bridge has a 17-foot wide roadway and two 4½-foot wide pedestrian sidewalks. It is the oldest known retractile bridge in the United States and the fourth oldest bridge over a waterway in New York City. The bridge was closed to vehicular and pedestrian traffic from August 8 until August 26, 2011 for replacement of the pulling cables, reconstruction of the concrete foundation, refurbishment of sheaves and wooden rollers, and painting.



Carroll Street Bridge Pulling Cable System – Before and After. (Credit: Emily Colasacco)



Painting of the Bridge in Progress. Bridge Painter Joao Silva Applying Top Coat to Hand Rails.

Hurricane/Tropical Storm Irene

In advance of the anticipated landfall on August 28, 2011, Agency contractors secured all construction sites, and reported after the event that there was little to no damage. In-house forces moved equipment to higher ground, secured the oilers' scaffolding on the Brooklyn Bridge, secured the warning and crash gates at the movable bridges, removed the portable VMS Boards, and relocated equipment from the facilities at Port Ivory, Pulaski Bridge, Kent Avenue, Greenpoint Bridge, Kingsland Avenue and West 206th Street before the storm. The Mill Basin Bridge operations crew was relocated. Agency personnel also assisted at the City's hurricane shelters.

On August 26, the Truck Permit Unit coordinated critical crane moves with the Department of Buildings and the Metropolitan Transit Authority in anticipation of the hurricane. On August 29-31, they coordinated critical crane moves relating to the recovery with the Office of Emergency Management, the Department of Parks and Recreation, and Con Edison.

During the event, crews were assigned to operate the large trucks to close the bridges and to monitor conditions on the major bridges and at the Battery Park Underpass. In coordination with the TBTA, the Battery Park Underpass was closed from 9:00 PM August 27 until 11:30 AM on August 28, and the North Channel Bridge was closed from approximately 10:45 PM on August 27 until 12:45 PM on August 28.

The hurricane weakened to a tropical storm just before blowing ashore at Brooklyn's Coney Island around 9:00 AM on August 28, 2011. It was still a big storm with winds up to 65 miles per hour, but the water did not rise as high as had been feared, and it receded quickly.

Following the hurricane/tropical storm, Division crews removed tree limbs and other debris and pumped water where necessary. Emergency inspections were performed on 32 structures; no problems were found.

On September 8, 2011, the Division contributed two large trucks, with drivers, to the Greene County debris removal effort coordinated by DOT's Office of Emergency Response.



Highway Transportation Specialist Sharon Borno (at Right) and Other City Volunteers Assisting Ms. Mavis in Celebrating her 91st Birthday at the Hurricane Shelter set up at John Jay High School in Brooklyn. (Credit: Eric Callender) Removing a Tree Limb From the South Pedestrian Walkway of the Manhattan Bridge (Bridge Repairer and Riveters Patrick Clowe, Ignazio Trapani, and Kenneth Cromer), and a Tarp From a Chain Link Fence Along the South Walkway of the Williamsburg Bridge (Cement Mason Victor Porowski). (Credit: Clara Medina)

Williamsburg Bridge

"Plan Ahead," an art installation by internationally recognized knit graffiti artist Magda Sayeg in partnership with nbART (North Brooklyn Public Art Coalition), was officially unveiled on August 31, 2011. Three hundred iron rods were covered, located on Kent Avenue between South 5th and 6th Streets underneath the Williamsburg Bridge in Brooklyn. The materials produced for this project exceeded 600 square feet and took over 200 hours to knit. The 11 month installation is part of the Agency's Urban Art Program.



"Plan Ahead" Art Installation.
(Credit: Ronald Grady)

SEPTEMBER**Brooklyn Bridge**

Brooklyn Unicycle Day on September 2, 2011 featured a crossing of the Brooklyn Bridge (for all wheel sizes), and a 13 mile ride (for experienced unicyclists on large wheels) organized by Unicycle NYC Bridge Tour. The long distance ride began at City Hall in Manhattan, crossed the Brooklyn Bridge, and continued to Coney Island.



Demonstration of Unicycle Riding on the Brooklyn Bridge. (Credit: Carlos Medina)

9/11 Memorial

On September 7, 2011, six granite blocks from the old Willis Avenue Bridge were delivered by Division personnel to the World Trade Center site. The blocks will be used to secure the memorial site, while creating a warm and welcoming environment.



Old Willis Avenue Bridge Granite Blocks at Storage Site Near West 207th Street Bridge in July 2011. (Credit: Russell Holcomb) Bridge Repairer and Riveters Randall Palmenta, Mario Russo, John Mcallister and Christopher Davis (Obscured in Truck).

Harper Street Asphalt Plant (Queens)

On September 10, 2011, Division ironworkers repaired the shaker, drum, and motor.

Patriot Day Tribute

The Brooklyn Bridge flags flew at half-mast on September 11, 2011 to commemorate the National Day of Service and Remembrance.



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

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

The project to repair eight diagonal diaphragms of the steel structure, which began on June 15, 2011, was completed on September 12, 2011.

Police Officer Sherman Abrams Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on September 13, 2011, in tribute to Police Officer Sherman Abrams. Officer Abrams, 28, who had just entered the Academy in July, collapsed and died after a run with his colleagues on September 12. Prior to joining the NYPD, he was a Correction Officer for four years. The flags were raised on September 24, 2011.



Police Officer Sherman Abrams

Queens Boulevard Access Road over Brooklyn-Queens Expressway Southbound (Queens)

Cleaning and painting of the bridge, which began on September 2, 2011, was completed on September 15, 2011.

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

The reconstruction of the bridge was substantially completed on September 15, 2011.



11th Avenue Viaduct.

East 12th Street Bridge over Belt Parkway (Brooklyn)

Cleaning and painting of this bridge, which began on September 28, 2010, was completed on September 16, 2011.

Harper Street Asphalt Plant (Queens)

On September 17, 2011, Division ironworkers installed aluminum siding and repaired the plant's deck apron and vertical duct.

Manhattan Bridge

"As Above – So Below," a video mapping projection art installation by John Ensor Parker, Farkas Fulop, Johnny Moreno, Simon Anaya, Richard Jochum, and Ryan Uzilevsky, was projected onto the base of the Manhattan Bridge anchorage and the roof of the Water Street Arch, as part of the Dumbo Arts Festival 2011, from September 23 through 25. This piece was included in the "Immersive Surfaces" exhibition, which won "Best Exhibition" honors at the festival.

9th Street Bridge over Gowanus Canal (Brooklyn)

In September 2011, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month."



9th Street Bridge in 2009. (Credit: NYSDOT)

OCTOBER

Beverly Road Bridge over NYCT (Brooklyn)

On October 3, 2011, crews completed red flag repairs of column C1 and safety flag repairs of the abutment.



Flag Repairs on the Beverly Road Bridge. Bridge Repairer and Riveters Neil Dalton, Brook Budd, and Daniel Jerderlinic. (Credit: Hany Soliman)

Harper Street Asphalt Plant (Queens)

On October 8, 2011, Division ironworkers repaired the screener shed and silo transfers.

160th Street Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on May 19, 2011, was completed on October 11, 2011.

American Cancer Society's "Making Strides Against Breast Cancer" Campaign

During September and October 2011, Division personnel and their friends and families participated in bake and book sales and other fundraisers, and sponsored the DOT Teams for the American Cancer Society's annual "Making Strides Against Breast Cancer" walk.



Fundraiser Committee Members: Clerical Associate Adrienne Foster, Associate Staff Analyst Monique Joseph-Hamilton, Principal Administrative Associate Jocelyne Desroches, Associate Staff Analyst Alice Todd, and Computer Aide Dionne France (Standing), and Associate Staff Analyst Barbara Pedersen and Principal Administrative Associate Milagros Jorge (Seated). Assistant Civil Engineer Jafar Haider, Associate Staff Michael DePompo, Administrative Staff Analyst Michael Tohl at the Sale. Principal Administrative Associate Felecia Villafana Paying for Her Selections. Deputy Director of Personnel Helene Holloway Examining the Raffle Candy Container (Total of 295 Pieces). (Credit: Michele N. Vulcan)

Customer Service Award

On October 14, 2011, Truck Permit Unit and Special Projects Director Kevin Lobat was honored as the Agency's recipient of the 2011 Excellence in Customer Service Award. With his characteristic energy and initiative, Mr. Lobat managed the creation of a seamless web-based system for permitting – a system that has now been demonstrated and connected to other agencies, including the New York State DOT and the MTA. The permitting system, ODVP, has issued close to 100,000 permits in less than three years.

Since 2008 the City has formally observed Customer Service Week, which takes place the first week in October. The Customer Service Group of the Mayor's Office of Operations coordinates the participation of more than 20 agencies in this fun and festive week where agencies recognize the important contributions of frontline staff. The highlight of the week is the awards ceremony where each agency winner receives their Customer Service Excellence Award.



Chief Bridge Officer Henry Perahia, Truck Permit Unit and Special Projects Director Kevin Lobat, Executive Director of Management and Support Services Dorothy Roses, and Assistant Commissioner, Customer Service Division Catherine Messana at the Ceremony.

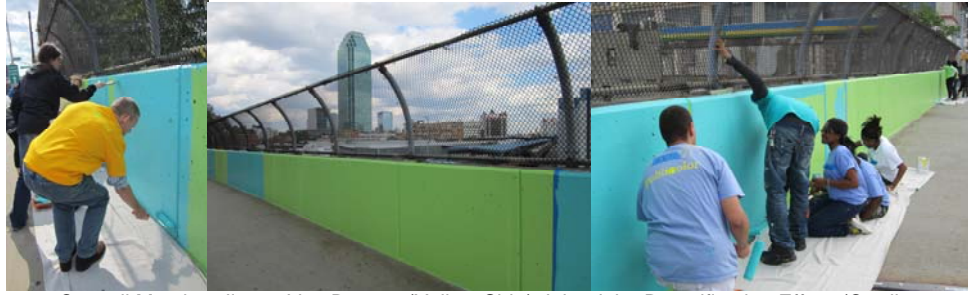
Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On October 15, 2011, Division ironworkers repaired the conveyor belts and silo transfers and installed a workbench.

21st Street Pedestrian Bridge over LIRR (Queens)

On October 15, 2011, Publicolor volunteers painted the 21st Street pedestrian bridge. Publicolor is a not-for-profit organization dedicated to engaging high-risk students in their education and teaching them, through a program continuum including academic intervention, how to be part of an educated and productive workforce. Publicolor involves students in painting warm, welcoming colors in the public spaces of their schools and nearby community facilities. The inspiration for this Publicolor project is the Fibonacci series, a math sequence in which each number is the sum

of the two preceding numbers, expressing the synergetic relationship between time and motion. The installation is part of the Agency's Urban Art Program.



Council Member Jimmy Van Bramer (Yellow Shirt) Joined the Beautification Effort. (Credit: Emily Colasacco)

Belt Parkway Bridge over Ocean Avenue (Brooklyn)

The component rehabilitation of this bridge was substantially completed on October 18, 2011.



Repairing the Belt Parkway Bridge over Ocean Avenue. The Bridge on October 18, 2011.

Award

On October 20, 2011, Deputy Chief Engineer Russell Holcomb received an Outstanding Achievement Award from the South Asian American Association.



Chief Bridge Officer Henry Perahia and Deputy Chief Engineer, Maintenance, Inspections and Operations Russell Holcomb.
(Credit: Earlene Powell)

Roosevelt Island Bridge over East River/East Channel (Manhattan/Queens)

On October 21, 2011, Division personnel assisted a film crew from the television series "30 Rock" at the Roosevelt Island Bridge.



Filming on the Bridge. (Credit: Chris George and Ryan Scatenato)

Woodhaven Boulevard Bridge over Atlantic Avenue (Queens)

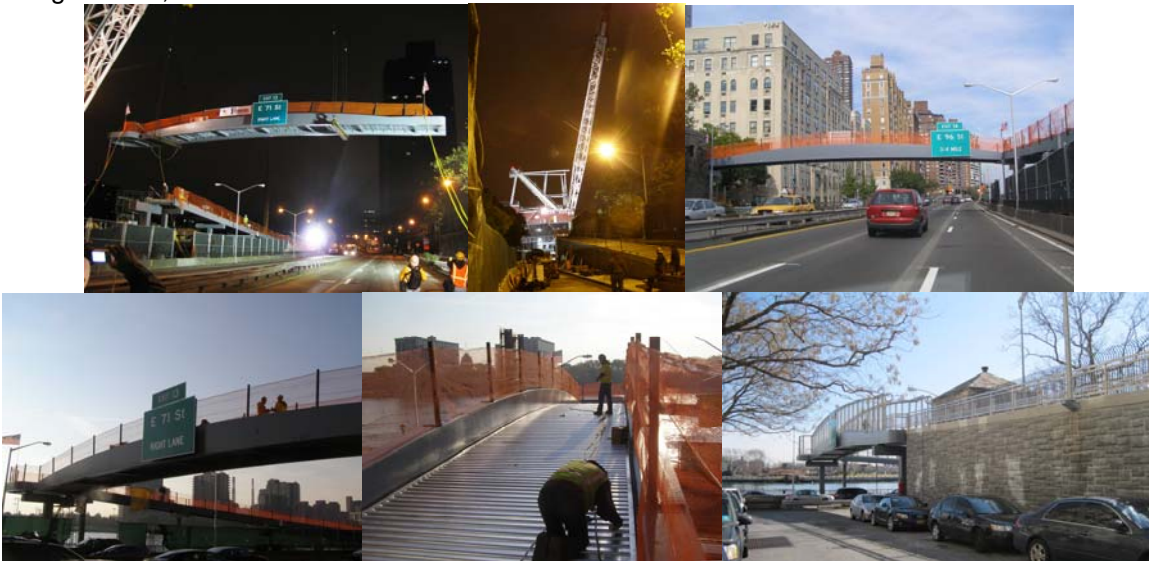
Cleaning and painting of the bridge, which began on June 13, 2011, was completed on October 21, 2011.

Hamilton Avenue Asphalt Plant (Brooklyn) and Harper Street Asphalt Plant (Queens)

On October 22, 2011, Division ironworkers repaired the silo, canopy, and cyclone.

East 78th Street Pedestrian Bridge over FDR Drive (Manhattan)

On the night of October 23, 2011, the new steel for the main span of the bridge was installed, using a crane, between 2 AM and 7 AM.



East 78th Street Bridge Main Span Installation in October 2011. (Installation Credit: Henry Perahia, Follow-up Work Credit: Bojidar Yanev) New West Ramp Masonry Wall.

Anti-Icing

On October 29, 2011, a record 2.9 inches of snow fell in Central Park, 1.7 inches at La Guardia Airport, and 1.5 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 3:00 PM on October 29 until 5:00 AM on October 30; 3,050 gallons of potassium acetate and 0.5 tons of sodium acetate were applied. The walkways and bikeways were also cleared, as were the sidewalks of the Harlem River bridges.

Wards Island Pedestrian Bridge over Harlem River (Manhattan)

The bridge was closed to pedestrians on October 30, 2011 for electrical component replacement. It is expected to re-open in May 2012.

NOVEMBER

Lincoln Road Bridge over BMT Subway (Brooklyn)

“Lincoln Road Serape,” an art installation by Katherine Daniels in partnership with LinRoFORMA (the Lincoln Road between Flatbush & Ocean Residents & Merchants Association), was officially unveiled on the chain link fencing of the Lincoln Road Bridge on November 9, 2011. The art is composed of a 70-foot weaving of plastic ribbons installed on the fence that creates a colorful swathe connecting the two neighborhoods surrounding the bridge. The installation is based on the diamond shapes and patterns woven by Navajo craftspeople. The 11 month installation is part of the Agency’s Urban Art Program.



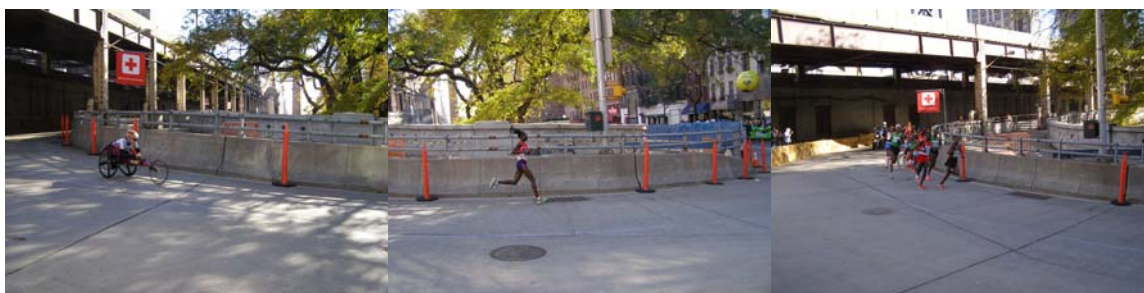
Lincoln Road Bridge Artwork.

Carroll Street Bridge over Gowanus Canal (Brooklyn)

Cleaning and painting of the bridge, which began on July 28, 2011, was completed on November 3, 2011.

New York City Marathon

In preparation for the Marathon on November 6, 2011, Division personnel mechanically swept the Madison Avenue, Pulaski, Ed Koch Queensboro (lower level) and Willis Avenue Bridges, reconfigured the Jersey barriers on the Ed Koch Queensboro Bridge’s outer roadway and 60th Street ramp, and installed hay bales.



At Mile 16 – the Ed Koch Queensboro Bridge. United States’ Amanda McGrory (#342 – Winner Female Pushrim Wheelchair). Kenya’s Mary Keitany (3rd Place). Ethiopia’s Gebre Gebremariam (4th Place – White Hat), Kenya’s Emmanuel Mutai (3rd Place – Red Top and Shorts), Kenya’s Geoffrey Mutai (Winner – 2nd From Right), and Ethiopia’s Tsegaye Kebede (3rd Place – at Right). (Credit: Paul Schwartz)

PS 5 Pedestrian Bridge over 10th Avenue (Dyckman Street) (Manhattan)

On November 9 and 10, 2011 and November 14 and 15, single lanes of 10th Avenue were closed from 9:30 AM until 7:00 PM to replace the timber decking with new material. A light was also repaired.



Repairing the PS-5 Bridge: Director of Bridge Repair Pinakin Patel and Highway Repairers Joseph Davis and George Lee. Carpenters John Horgan and Ruben Urena, and Assistant Civil Engineer Fouad Althaibani. Carpenters Adam Muhleisen, John Horgan, and Ruben Urena. Electrician Angelo Tubiolo. (Credit: Thomas Whitehouse)



Repairing the PS-5 Bridge: Carpenters Adam Muhleisen and John Horgan, and Assistant Civil Engineers Fouad Althaibani and Sohrab Hossain. Supervisor Highway Repairer Joseph Flood and Interim Director of Bridge Preventive Maintenance Paul Schwartz (at Left). Bridge Repairer and Riveter John McAllister. (Credit: Thomas Whitehouse)

Ed Koch Queensboro Bridge

On November 12 and 13, 2011, Division electricians, ironworkers and engineers assisted a film crew from “The Dark Knight Rises” at the Ed Koch Queensboro Bridge.



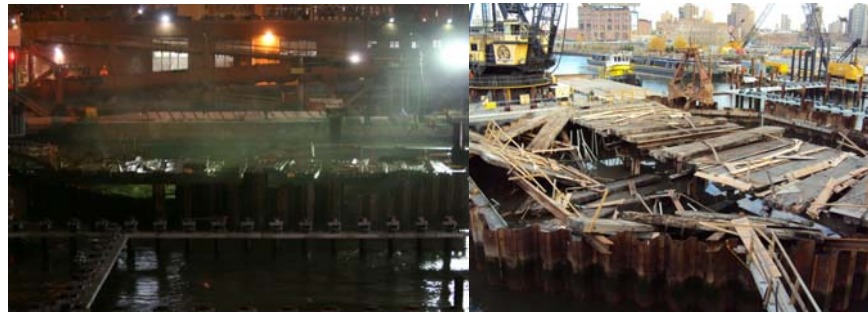
Filming Atop the Bridge. (Credit: Bojidar Yanev)

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

The blasting demolition of the old Pier 9 was performed at 4:58 AM on November 20, 2011. The contractor's preparations began at 3:00 AM with the moving of the barges away from the existing Pier 9 to alongside the Bronx bulkhead. The river was closed approximately from 4:30 AM until 6:00 AM. Prior to the traffic closure on the Harlem River Drive, the initial blasting blow was heard. Once the traffic was shut down a few minutes later, the second blast blow was heard, the fish scare was fired and it followed by the blast at 4:58 AM. There was noise, a water splash 6-8' above the platform inside the cofferdam, the two outer platforms (east and west sides) collapsed inside the cofferdam, while on the center platform only some timber mats fell inside the cofferdam. Traffic on the Harlem River Drive, the bridge, and the local streets, was opened after the inspection of the blaster.



Loading Explosives on November 17. Covering Holes on November 18. Beginning of Blast.



Just After the Blast. Starting the Cleanup.

85th Annual Macy's Thanksgiving Day Parade

Division engineers assisted the NYPD and Macy's representatives in walkthroughs of the parade route along 7th and 6th Avenues. They also reviewed and approved the design specifications of Julius and Sonic the Hedgehog, two new large balloons to be introduced in the parade. 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 Sports Complex in New Jersey on November 5, 2011, with NYPD and other agencies.

On November 24, 2011, wind speeds were relatively low and all 15 large balloons flew in the parade without incident. The maximum wind speed was approximately 13.4 miles per hour. Chief Bridge Officer Henry Perahia, Deputy Chief Engineer Anil Vyas, and Acting Director of Engineering Review Udaya Dommaraju were positioned at various locations along the parade route to observe compliance with the approved procedures. Eight anemometers were mounted on top of light poles along the route between 77th Street and 34th Street to measure the wind speed during the parade. Division and consultant engineers were assigned to the anemometer locations to monitor the wind gusts.



Acting Director of Engineering Review Udaya Dommaraju (Left) Reviewing Calculations. Testing the Balloons (Sonic the Hedgehog and Julius) in New Jersey on November 5.



Acting Director of Engineering Review Udaya Dommaraju (Left) and New Sonic the Hedgehog Balloon. New Julius Balloon. Acting Director of Engineering Review Udaya Dommaraju, Administrative Engineer Ayman Jacob, Deputy Chief Engineer Anil Vyas, Assistant Civil Engineer Jana Krettova, Chief Bridge Officer Henry D. Perahia, Assistant Civil Engineer Jafar Haider, and Civil Engineer Zhudong Hu.

Harper Street Asphalt Plant (Queens)

On November 25, 2011, Division ironworkers repaired the plant's mixing drum.

Shore Road Bridge over Hutchinson River (Bronx)

Cleaning and painting of this bridge, which began on July 5, 2011, was completed on November 28, 2011.

Commissioner Matthew P. Sapolin Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on November 30, 2011, in tribute to Commissioner Matthew P. Sapolin, 41, who died on November 29. Mayor Michael R. Bloomberg appointed Mr. Sapolin Executive Director of the Office for People With Disabilities in 2002. Four years later, Mr. Bloomberg decided to elevate the job to the level of commissioner, and Mr. Sapolin rose with it.

Commissioner Sapolin built the nation's largest Disability Mentoring Day, chaired the new Building Code Accessibility Committee that mandated strong Americans with Disabilities Act compliance, took the lead in making sure that the operators at 311 had the latest in accessibility technology for the disabled, worked with neighborhood business associations to create barrier-free shopping districts, helped lead the NYC2012 Paralympics process, and helped create the first Beep Baseball tournament in 2010 with the Parks and Recreation Department. Under his leadership, the Mayor's Office for People with Disabilities spearheaded legislation to provide a rent freeze to qualified disabled tenants, increase the number of wheelchair-accessible taxis in use, create the first accessible taxi base and require that all passenger ferries and ferry terminals be accessible. The flags were raised on December 3, 2011.



Commissioner Matthew Sapolin in 2007.

DECEMBER***East 8th Street Access Ramp (Guider Avenue Ramp to Belt Parkway) over Belt Parkway (Brooklyn)***

The new bridge was opened to vehicular traffic on December 2, 2011 with temporary pedestrian fencing in place.



Ramp Open to Traffic.

National Pearl Harbor Remembrance Day

The Brooklyn Bridge flags flew at half-mast on December 7, 2011 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.

Belt Parkway Bridge over Rockaway Parkway (Brooklyn)

The northern section of the new bridge was opened to traffic on December 8, 2011.

Harper Street Asphalt Plant (Queens)

On December 10, 2011, Division ironworkers installed a canopy and steel doors, and repaired a motor.

Police Officer Peter Figoski and Sanitation Worker Thomas Lermund Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on December 12, 2011, in tribute to Police Officer Peter Figoski of the 75th Precinct in Brooklyn, who died in the line of duty on December 12. Officer Figoski, 47, a 22 year veteran of the department, had been awarded 12 medals, including eight for exceptional police duty, and made 209 arrests during his career. His highest commendation, the Exceptional Merit medal, was for taking part in a 1996 standoff with a gun-wielding man police later determined to be New York's "Zodiac Killer." Officer Figoski was posthumously promoted (retroactive to one year before) to the rank of Detective First Grade by Police Commissioner Ray Kelly.

The flags remained at half-mast in tribute to Sanitation Worker Thomas Lermund, 48, a 16 year veteran of the Department, who died in the line of duty on December 17, 2011 while on his collection route along Nostrand Avenue in Brooklyn. Mr. Lermund was assigned to the Department's Brooklyn South District 18, which covers Canarsie and Marine Park. The flags were raised on December 24, 2011.



Police Officer Peter Figoski and Sanitation Worker Thomas Lermund.

Rust Street Bridge over Flushing Avenue (Queens)

Cleaning and painting of this bridge, which began on October 3, 2011, was completed on December 14, 2011.

Belt Parkway Bridge over Paerdegat Basin (Brooklyn)

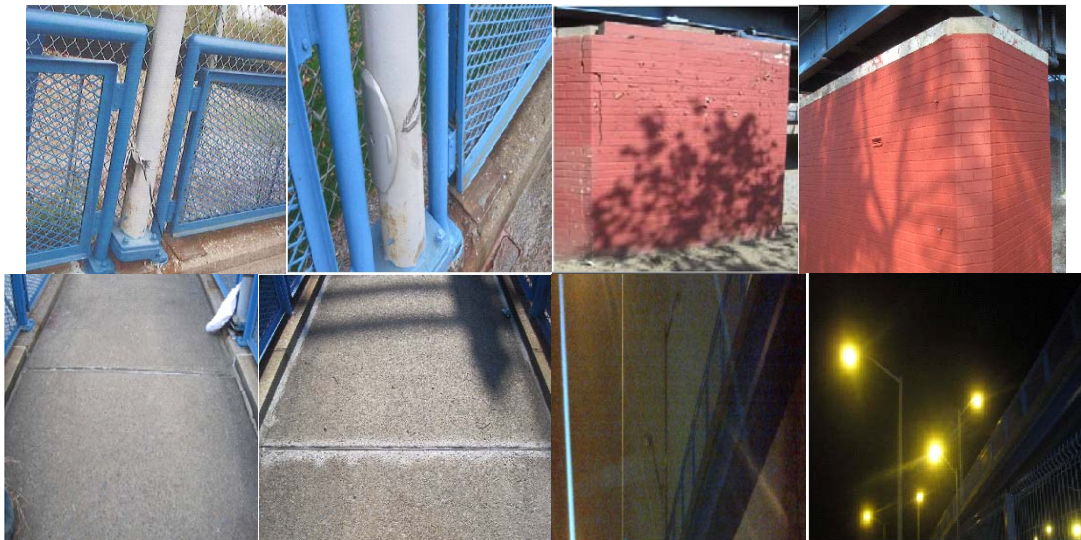
The new eastbound bridge, including the new bicycle/pedestrian path, was formally opened to traffic on December 19, 2011.

Grand Concourse over East 170th Street (Bronx)

Cleaning and painting of this bridge, which began on May 23, 2011, was completed on December 19, 2011.

East 174th Street (South and North) Pedestrian Bridges over Sheridan Expressway (Bronx)

The component rehabilitation of these bridges was substantially completed on December 28, 2011.



East 174th Street (South) Bridge: Missing and Replaced Cover Plate. Repaired and Repainted Brick Joints and Cladding Stones. East 174th Street (North) Bridge: Damaged and Replaced Deck Joint. Inoperable and Repaired Lighting.

Belt Parkway Bridge over Paerdegat Basin (Brooklyn)

Traffic was switched from the existing westbound bridge to the existing eastbound bridge on December 29, 2011 to enable construction of the new westbound bridge.

145th Street Bridge over Harlem River (Bronx/Manhattan)

The reconstruction of the bridge was substantially completed on December 29, 2011.



145th Street Bridge. (Credit: Alexander Berens) Civil Engineers Ferdinand John and Svetlana Kaganovskaya, and Assistant Civil Engineer Alexander Berens at the Walk-Through Inspection on December 29, 2011.

Broadway Bridge over Harlem River (Bronx/Manhattan)

During an attempted vessel opening at 3:00 PM on December 30, 2011, the bridge became stuck in a skewed position. The vessel went south instead, requiring the opening of all of the other Harlem River bridges. Crews replaced the southwest sitting switch. At approximately 7:00 PM, a test opening failed. Continued testing and troubleshooting, coordinated with the MTA, resulted in the replacement of a burnt-out transformer at the north tower. The bridge was closed intermittently until full service was restored at 2:30 AM on January 2, 2012.

Kevin Lobat

Truck Permit Unit and Special Projects Director Kevin Lobat was the subject of the “Staff Spotlight” feature in the December 2011 edition of “Byways,” the official Agency newsletter.



Kevin Lobat Assisting a Truck Permit Customer.

ACCOMPLISHMENTS & PLANNED PROJECTS

Bridge Capital Design & Construction

East River Bridges

Movable Bridges

Roadway Bridges

Brooklyn and Manhattan Roadway Bridges

Bronx, Queens, and Staten Island Roadway Bridges

Specialty Engineering & Construction

Design-Build/Emergency Contracts

Component Rehabilitation

When and Where

Bridge Painting

Engineering Review & Support

In-House Design

Engineering Support

Engineering Review

Quality Assurance

Bridge Maintenance, Inspections & Operations

ACCOMPLISHMENTS & PLANNED PROJECTS

East River Bridges

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.



Brooklyn Bridge. (Credit: Bojidar Yanev and Russell Holcomb)



Brooklyn Bridge Plaques: Engineering Landmark. (Credit: Michele N. Vulcan) 1899 - 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. Historic Landmark. 1954 Reconstruction, Two Cities, and Roebling Memorial Plaques. (Credit: Michele N. Vulcan)

The Brooklyn Bridge carried some 123,640 vehicles per day in 2010, and 2,322 commuter bicyclists per day in 2011. 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.

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 and the four travelers.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

Manhattan will be rehabilitated and widened and the entire bridge will be repainted to prevent steel corrosion on the structure.

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 Brooklyn Bridge 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.



Cliff Street and Franklin Square Arches (on Right).

Main Street Structure (on Left). Park Row Structure and Ramp A (on Right).



Ramp F. Rose Street Structure. Vandewater Street Arch. York Street over Brooklyn-Queens Expressway.

Painting work, to prevent steel corrosion and improve aesthetics, 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.

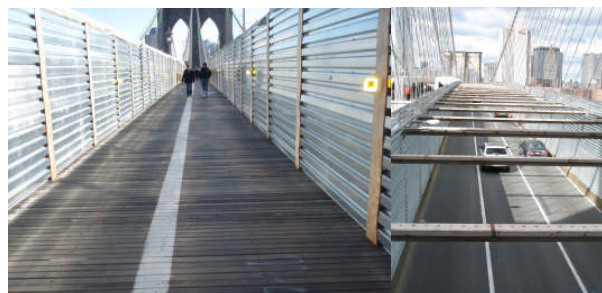
ACCOMPLISHMENTS & PLANNED PROJECTS

In order to facilitate the reconstruction and associated painting work, the contractor began to mobilize in the area known as the Brooklyn Banks and Red Brick Park, between Pearl Street and Park Row on the north side of the Manhattan approach of the Brooklyn Bridge. The area was closed to the public starting June 2, 2010. The security plan for this area requires that the Red Brick area be completely closed to the public for the duration of this phase of work. Pedestrian access between Pearl Street and the Rose Street/City Hall area is maintained through a walkway adjacent to the banks along Avenue of the Finest.

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, 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 full weekend closures over the duration of the contract; 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 2010, after mobilization, the contractor started work on the ramp foundation; installed protective shielding under the Brooklyn main and Brooklyn side spans, the Franklin Square structure, and some of the Manhattan ramps; installed vertical walls at both sides of the Brooklyn and Manhattan-bound roadways at the Brooklyn main and Brooklyn side spans; began the set-up of the containment for the lead paint removal at all of these locations; and proceeded with blasting and painting activities. Other activities included detailed surveying, installation of super slabs and the fabrication of precast members.



Bicycle/Pedestrian Path with Protective Shielding in November 2010. Roadway Shielding in October 2010.

In 2011, painting was completed at the Franklin Square structure and is currently in progress at the Manhattan ramps and Brooklyn main and Brooklyn side spans with continuous installation of protective shielding and containment. Painting of the truss top struts was also started, and is currently in progress at the Brooklyn-bound Manhattan side span. The following construction work was started in 2011 and is currently in progress: on the Manhattan approach, activities include Brooklyn-bound roadway removal, waterproofing and super slab installation, Franklin Square floor beam replacement, south cantilever beam excavation and repair, and arch block strengthening. On the Manhattan ramps, work includes bearing replacement, widening, and deck replacement, and fascia removal. Asbestos abatement work is taking place in the Brooklyn maintenance shop. Electrical work is also in progress with activities that include light pole and abandoned equipment removal, temporary lightning installation, and temporary power provisions. Other activities include detailed surveying, testing and repairing of dry-standpipe system, fabrication of precast and steel members.

ACCOMPLISHMENTS & PLANNED PROJECTS



May 2011: Sound Dampening Fence Used as Sections of Roadway Around the Manhattan Approach Outside Pace University Are Saw Cut and Removed. Brooklyn Bridge Manhattan Approach Deck Replacement. Southbound FDR Drive Ramp - April 2011 Steel Erection. December 2011: Painted Top Struts of the Brooklyn-Bound Manhattan Side Span.



Summer 2011: Manhattan Approach - Ramps A and C Deck Replacement. November 2011: Ramp A and Working Near Arch. (Arch Credit: Jagtar Khinda)



December 2011: Ramp C.

NECKLACE LIGHTS

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 Ed Koch Queensboro, Williamsburg and Brooklyn Bridges. The test fixtures were removed on April 24, 2009. The replacement of the existing mercury vapor lights on the Ed Koch Queensboro and Williamsburg bridges will take place in early 2012. The replacement of the Brooklyn Bridge necklace lights will not be scheduled until the completion of Contract #6. The replacement of the existing lights on the Manhattan Bridge with the new LED's will begin in the winter of 2011 and be completed in the spring of 2013.

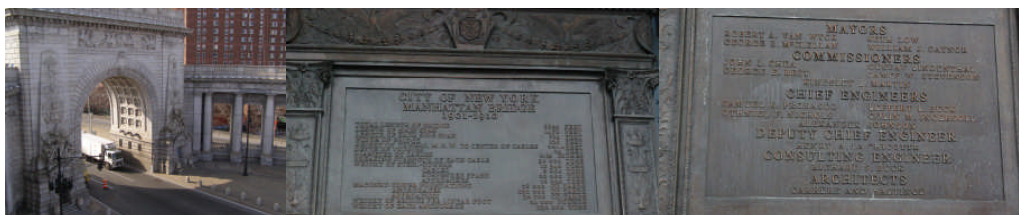


Necklace Light on Williamsburg Bridge Main Cable in September 2010. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

MANHATTAN BRIDGE

The youngest of the three NYCDOT suspension bridges that traverse the East River, the Manhattan Bridge carries some 440,000 commuters – 74,777 vehicles, 3,617 bicyclists, and 361,606 mass transit riders - between Manhattan and Brooklyn daily. The bridge's total length is 5,780 feet long abutment to abutment at the lower level, and 6,090 feet on the upper roadways portal to portal; its main span length is 1,470 feet and each of its four cables is 3,224 feet. It was designed by Leon Moisseiff and first opened in 1909. The bridge supports seven lanes of vehicular traffic, a bikeway and walkway, as well as four transit tracks upon which four different train lines operate.



Manhattan Bridge Arch and Part of the Colonnades in March 2011. (Credit: Bojidar Yanev) Construction Plaque. (Credit: Jagtar Khinda)



Bridge in July 2009. (Credit: Bernard Ente) July 2011: Rainbow After a Storm. (Credit: Valentin Shakhnovich)

The \$918.6 million reconstruction program commenced in 1982 with Contract #1, and continues with Contract #14 (currently in progress) to rewrap the cables and replace the suspenders and 166 necklace lights. Completion is expected in summer 2013. The reconstruction will end with a future seismic retrofit contract. 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.

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 main cables will be rehabilitated with new wire wrapping and a neoprene barrier to insulate from weather. In addition, all vertical suspenders will be replaced. A Notice to Proceed for this \$153.4 million construction project was issued to the contractor with a start date of December 28, 2009.

Major activities undertaken during 2010 included the modifications to the approach span subway stringers (to repair flagged cracks), microsurfacing of the North upper roadway, truss vertical rehabilitation, beginning of the main cable rewrapping, suspender replacement, and continuity plate replacement.

ACCOMPLISHMENTS & PLANNED PROJECTS

Major activities undertaken during 2011 included the replacement of all suspenders along two of the four cables, replacement of the wire wrapping with new wire and neoprene wrapping along two of the four cables, and replacement of the cable band bolts along two of the cables.



July 2010: Installation of Under Deck Work Platform at Manhattan Tower. January 2011: Bikeway Protection Shed on North Path. March 2011: Removal of Existing Suspender, 'C' Truss. April 2011: Installation of New Hand Ropes for 'C' Cable.



April 2011: Checking Bolt Tension in New Cable Band Bolts. New Suspender Assembly on 'C' Truss. May 2011: Painting Main Band Cables. June 2011: Reviewing the Bikeway Detour – Assistant Commissioner of Traffic Management Ryan Russo, Director of Bicycle and Pedestrian Programs Joshua Benson (Back Turned), Manhattan Bridge Engineer-in-Charge Brian Gill, Bicycle Program Coordinator Hayes Lord, First Deputy Commissioner Lori Ardito (Orange Top), Deputy Commissioner Gerard Soffian, and Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder (at Right).



August 2011: Repairing Gusset Plates, Checking Bolt Tension. Checking Suspender Loads With an Accelerometer. Installing Containment on Cable D. October 2011: Installation of Transit Platforms.



November 2011: New Suspender Assemblies Along 'C' and 'D' Trusses (Temporary Platforms Shown Above). Main Cable Wrapped With Walking Surface. Power Tool Cleaning Cable Circumferences and Grooves.

ED KOCH 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,

ACCOMPLISHMENTS & PLANNED PROJECTS

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 \$807 million reconstruction commenced in April 1981 with Contract #1, continued with a contract for the installation of aviation lights, and will end with a future seismic retrofit contract. Work completed on the bridge to date includes the rehabilitation of the lower inner roadways, the lower outer roadways, the restoration of the Guastavino arches and the Bridgemarket area, 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), the geometric improvement of Crescent Street, bikeway and walkway improvement, 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, as well as the rehabilitation of the Sanitation Department area's arch infill, modifications to the maintenance facility beneath the Manhattan approach plaza, and the restoration of the kiosk in the plaza on the Manhattan side of the bridge. This small historical structure was in an advanced state of disrepair and had been damaged by repeated vehicular impacts. 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 Ed Koch Queensboro Bridge carried 177,695 vehicles per day in 2010, and 2,904 commuter bicyclists per day in 2011.



Ed Koch Queensboro Bridge in 2009. (Credit: Bernard Ente) Close-up of the 1909 Dedication Plaque. (Credit: Peter Basich) Bridge in February 2011. (Credit: Brian Gill) The Granite Fountain, Built in 1918 for a Farmers' Market Beneath the Bridge, was Rededicated in June 2003 After Restoration. Evangeline Blasfield was the Model for the Fountain's Glass Mosaic of a Woman With a Cornucopia. Her Husband, Artist Edwin Blasfield, Designed the Work. (Description: Greater Astoria Historical Society, Roosevelt Island Historical Society. Credit: Bernard Ente)

A Notice to Proceed for the replacement of the bridge aviation lights was issued to the contractor with a start date of July 12, 2010. The project was substantially completed on December 23, 2010.

Mayor Michael R. Bloomberg signed legislation on April 11, 2011 to rename the Queensboro Bridge as the "Ed Koch Queensboro Bridge" in honor of the 105th Mayor of the City of New York, Mayor Edward I. Koch. The Mayor proposed the legislation in December 2010, and the legislation passed the City Council on March 23, 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



Mayors Michael R. Bloomberg and Edward I. Koch, and City Council Speaker Christine C. Quinn at the Signing of the Legislation in April 2011. (Credit: Edward Reed, Office of the Mayor)



Bridge Details. (Credit: Bernard Ente) DEP Sludge Boat "Red Hook" Passing Under the Ed Koch Queensboro Bridge. (Credit: Bernard Ente) Queensboro Bridge at Dusk. (Credit: Chris George and Ryan Scatenato)

WILLIAMSBURG BRIDGE

The largest of the three suspension bridges that traverse the East River, the Williamsburg Bridge carries some 211,189 daily commuters –111,189 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. It also carried 4,515 commuter bicyclists in 2011. 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 was substantially completed on September 24, 2010.



Williamsburg Bridge in February 2010. (Credit: Samuel Teaw). Looking West at the Overhead Trusses in November 2010. (Credit: NYSDOT)

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.

ACCOMPLISHMENTS & PLANNED PROJECTS

Contract #8

Contract #8 began on March 3, 2003, and all work will be completed by summer 2012. This \$280 million project saw the rehabilitation of the tower bearings, the truss system, the steel structure of the two main towers and six intermediate towers, the north comfort stations, the replacement and/or adjustment of the main cable suspenders, the installation of two maintenance travelers (inspection platforms) under the main span, as well as painting of the north and south main bridge stiffening trusses. Architectural work included 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 included the construction of new stairs, two hoisting systems, a ventilation system, additional lighting, and maintenance/oiling platforms. The project also included the installation of several Intelligent Transportation System components, including variable message signs and closed circuit television cameras.

The final inspection of the maintenance travelers was performed and Division maintenance personnel took over operations in July 2011. Installation of the Brooklyn and Manhattan anchorage maintenance platforms will be completed in 2012.

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 traffic operation, additional steel flag repairs after the biennial inspection, replacement of eight intermediate tower truss bearings, the rehabilitation of the wind tongue casting assembly at the main towers, installation of precast barriers at lane 8 (south outer roadway), safety gate installation at the bus depot, Kent Avenue void rehabilitation, PP29 deck pin replacement, and precast barrier installation at the Manhattan south and Brooklyn north anchorages and approaches.

Work completed in 2010 included the installation of the eight intermediate tower truss bearings, the maintenance travelers, the main tower pier fender system, the lightning protection system for the aviation lights, and FDNY dry standpipe testing.



Manhattan and Brooklyn Approaches and Pedestrian Walkway in October 2010. (Credit: NYSDOT)

Work completed in 2011 included the installation of precast barriers on the south outer roadway at Manhattan Plaza, the installation of a safeguard gate at the bus depot at Brooklyn Plaza, the relocation of a traffic signal at Manhattan Plaza and wind tongue pin rehabilitation. During 2011, work began on rehabilitation of the Kent Avenue yard voids, the rehabilitation of PP29 north and south outer roadway orthotropic deck hinged pressure relief joints, the rehabilitation of the south roadway and anchorage modular joints, flag repairs from 2010 Biennial inspection, precast barrier installation at the north Manhattan and south Brooklyn anchorages, installation of security access doors at the main towers, and removal of all temporary barriers. Contract #8 was substantially completed on September 24, 2010. This work is scheduled to be completed by June 2012.

ACCOMPLISHMENTS & PLANNED PROJECTS



February 2011: Looking North at the Replacement of Existing Modular Joint Seals on the South Inner Roadway. April 2011: Looking North at the Replacement of Existing Modular Joint Seals on the North Outer Roadway. May 2011: Looking North at the Placement of a Temporary Barrier at the Manhattan Plaza in Preparation for the Clinton Street Traffic Signal Relocation Work. September 2011: Looking West at the Installation of the Brooklyn Approach Precast Median Barrier and Attenuator.



September 2011: Looking West at the Class GG Tremie Concrete Placement for the Kent Avenue Bulkhead Vertical Wall. October 2011: Looking East at the Placement of Concrete Footing for the New Lane 8 Precast Barrier at the Manhattan Plaza. October 2011: Looking West at the Concrete Placement for the Kent Avenue Yard Bulkhead Rehabilitation. November 2011: Looking East at the Rebar Installation for the Cast-in-Place Transition Barrier on the Brooklyn Approach.

Other work anticipated to be completed in 2012 includes the installation of the lane control panel awning at the Manhattan plaza, PP20 bearing cover installation, project traffic sign installation, and striping at the Brooklyn and Manhattan anchorages and approaches.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 2011, the number of openings declined further to a total of only 236 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2010, the Mill Basin Bridge carried 140,800 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 2011, on a New York State-mandated scale from 1 to 7, this bridge had a condition rating of 3.313, 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/bicycle 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

ACCOMPLISHMENTS & PLANNED PROJECTS

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 summer 2013, 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 in 2008. (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 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 was undermining the stability of the bridge. Due to the potentially serious danger to life, public safety and property posed by the current condition, it was 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 included 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. The bridge was reopened to vehicular traffic on December 24, 2010. Construction was substantially completed on May 20, 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



Late December 2010: Bridge Open to Vehicular Traffic.
(Credit: Mitch Waxman)

A project to rehabilitate the existing steel bridge and repair the west abutment is scheduled to begin in August 2018. The work will also include upgrades to the mechanical and electrical components of the bridge. Construction is expected to be completed in February 2020.

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 2010, the bridge carried 37,292 vehicles per day. 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

ACCOMPLISHMENTS & PLANNED PROJECTS

2016. 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, as well as replacement of the existing fender system with a new larger and stronger one. Construction is expected to be complete in July 2019.

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

This double leaf bascule bridge opened in 1953. In 2010, the bridge carried 64,098 vehicles per day. This 17-span structure (three waterway spans and fourteen concrete approach spans) carries five lanes of the Bruckner Boulevard Expressway service road traffic over Westchester Creek. The reconstruction design 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.

Subsequent to the study, concepts for two temporary movable bridges (for MPT purposes only) were developed in lieu of a complete bridge closure during construction. However, an assessment revealed a significant impact on local traffic would occur, due to the required traffic rerouting via local streets to the temporary bridges, and the location of the temporary bridges would have a severe impact on the operations of the Department of Sanitation and a Department of Environmental Protection pump station. In addition, the cost of implementing the temporary bridges for only a couple of years was very high, in the order of \$40 million. The concept of rehabilitating the bridge by constructing new temporary bridges for MPT purposes was then abandoned.

A follow-up feasibility study was conducted for completely replacing the existing bridge with a new wider bridge in phases while maintaining traffic on the existing bridge. The project's new scope of work includes: a complete replacement of the bascule, flanking, and approach substructures and superstructures, providing six 12-foot travel lanes with 10-foot shoulders on both sides of the bridge; a new 15-foot bicycle/pedestrian path on the south, separated from traffic with a barrier; 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. Construction is expected to start in fall 2016.



Unionport Bridge in 1953 and 2009.

ACCOMPLISHMENTS & PLANNED PROJECTS



Unionport Bridge in 2002. (Credit: NYSDOT) Eastbound View.

MADISON AVENUE BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN)

A project for electrical, mechanical, and miscellaneous operating system-related work is scheduled to be performed between March 2017 and September 2018. The bridge is currently operating with the very old machinery components, along with a temporary electrical system known as the “Interim Drive System” installed during the 1994 rehabilitation contract. Some of the machinery components currently in service are over 100 years old and have far exceeded their service life. Moreover, the bridge does not have any back-up operating system which renders the bridge inoperable in case of failure of any component of the Interim Drive System. The preliminary design phase of this project began in early 2011. In 2010, the bridge carried 42,966 vehicles per day.



Madison Avenue Bridge Sign in 2007. (Credit: Duane Bailey-Castro) Bridge in 2009. (Credit: Bernard Ente)

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 used to carry a single lane of traffic in each direction. On August 3, 2008, the traffic in the tunnel was restricted to only a single northbound lane.

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 final engineering design 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 2022 and be complete in December 2024.

ACCOMPLISHMENTS & PLANNED PROJECTS



Park Avenue Tunnel in 2003. (Credit: NYSDOT)

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

This lift bridge opened in 1955, when it was known as the Welfare Island Bridge. In 2010, the bridge carried 9,800 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.



American Institute of Steel Construction 1955 Award Plaque. Original Control Desk. Welfare Island 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.

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 was 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.

The cleaning and repainting of the bridge began in January 2008, and the structure painting was complete by the end of 2009. Local touch up painting followed the installation of the new lift machinery. The Department and its contractor strictly adhered to the safety requirements

ACCOMPLISHMENTS & PLANNED PROJECTS

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 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.

In 2010, the contractor completed the rehabilitation of the machinery, replacement of the bridge's power systems, installation of the bridge control systems, installation of new barrier gates, bridge railings, warning lights, new protective bollards, replacement of the sewer lines with new curbing, and the replacement of pavement. Under-deck temporary work platforms were removed and the bridge is now operational for the passage of marine traffic.

In 2011, the architectural work in the control and machinery rooms was completed. Bird screens were installed around the elevator shafts and a bird prevention system was installed at the piers. Security fences with gates were installed around the generator house and three land piers. Elevators at both east and west towers were rehabilitated and tested. Final acceptance testing of the bridge's electrical and mechanical system is in progress, which will be followed by training of the in-house bridge operators and maintenance crews. Construction is expected to be completed in the summer of 2012.



January 2011: North Sidewalk With New Pedestrian Fence. Vernon Boulevard and 36th Avenue Intersection With New Turn Lane. Recently Painted Bridge With New Traffic Control Equipment.



View of Bridge in August 2011. Sidewalk and Pedestrian Fence in October 2011. (Credit: Chris George and Ryan Scatenato) View of the Bridge in October 2011. (Credit: Rafael Lopez)

UNION STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN)

The original Union Street Bridge over the Gowanus Canal was constructed in 1870 as part of the construction of Prospect Park. A major crossing over the Gowanus Canal, this bridge is the last in a series of five eastbound crossings, and it is 885 feet from the canal's end. The

ACCOMPLISHMENTS & PLANNED PROJECTS

neighborhood, located in the Gowanus section of Brooklyn, is primarily industrial; however, public facilities such as schools, parks, and public transportation are nearby.

In its current configuration, the bridge is a double-leaf Scherzer type (rolling lift) bascule bridge, which was opened in 1905. The bridge carries two lanes of eastbound traffic, a delineated bike lane and a sidewalk.

During the preliminary design, eight alternatives were identified for the rehabilitation of the bridge. The recommended design alternative proposes a replacement of the entire bridge structure with a new single leaf fixed trunnion bascule bridge on a reinforced concrete substructure and new pile foundation. Preliminary plans have been developed. However, during the Value Engineering study in 2009, the team recommended converting the movable span into a low level fixed bridge. NYCDOT, OMB and other affected agencies are currently reviewing the feasibility of this alternative. The construction is anticipated to begin around April 2019.



Union Street Bridge in 2010. (Credit: NYSDOT)

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 on the East River, this bridge is located between exits 14 and 15 of the FDR Drive. This vertical-lift bridge has a total of twelve spans. Four spans are located on the Manhattan side of the bridge and are oriented in the south/north direction, whereas the remaining spans are oriented in the west/east direction. 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.



Wards Island Bridge in April and August 2011. (April Credit: Brian Gill, August 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

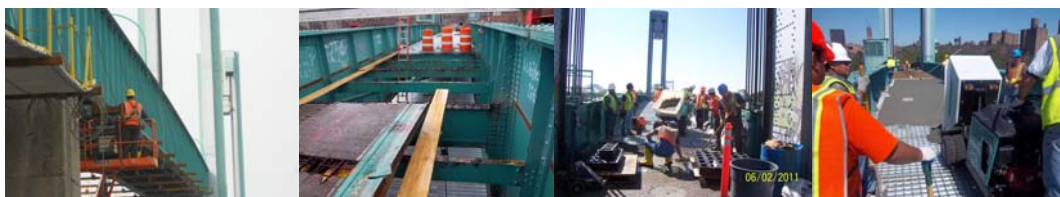
A protective coating project was completed in May 2003 at an approximate cost of \$1.2 million. A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of June 14, 2010. The project's scope of work includes the replacement of the electrical components, 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.

In 2010, the contractor mobilized and began the installation of protective containment shielding. Following training from Division Bridge Operations personnel, the contractor took over operational control of the bridge on November 12, 2010. Deck cracks were repaired, and the old bridge railing and protective fencing were removed in preparation for removal of the steel grid decking.



Existing Concrete Deck in 2010. Proposed Fencing, Lighting, Access Platform and Handrail Along the Wards Island Bridge.

In 2011, the contractor installed a new concrete-filled steel grid deck on the lift span. Concrete repairs were performed on piers over land as well as in the East River. The bridge was temporarily opened to pedestrians on June 30, 2011 for the summer months and was closed from November 21, 2011 through May 7, 2012 for remainder of the construction. Construction is expected to be completed in June 2012.



January 2011: Under-Deck Shield Installation for Manhattan Approach Span 6. April 2011: Removing Concrete Decking Material. June 2011: Pouring Concrete Decking at Span 7.



Construction in August, October, and December 2011. Installing Handrails Between Spans 7 and 9.

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

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

A major hub between the FDR Drive in Manhattan, the Major Deegan Expressway and the Bruckner Boulevard in the Bronx, the Willis Avenue Bridge carried approximately 56,934 vehicles

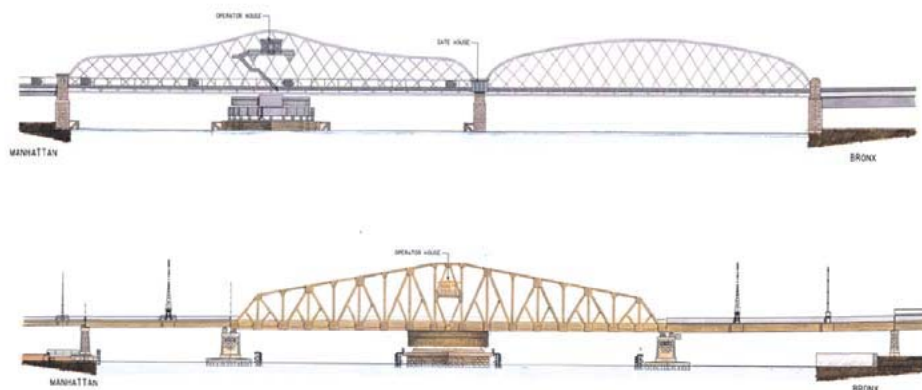
ACCOMPLISHMENTS & PLANNED PROJECTS

per day in 2010. Ten local and interstate bus lines use the bridge as a principal route from New York City to points throughout the northeastern United States.

Because of substandard curves that were present on the structure's approaches, the Willis Avenue Bridge was 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 was put out of service with traffic entering the bridge from a temporary loop ramp installed as part of the project. Under the Department's reconstruction program, these substandard curves were eliminated.

Because of the advanced age and condition of the Willis Avenue Bridge, the City of New York replaced the existing bowstring truss swing bridge with a new swing span bridge constructed just to the south of the existing bridge.

The new pivot pier for the swing bridge is located 118 feet east of the existing pier, but still provides two 109-foot wide channels, as did the old pier. The new pier was shifted to the east, closer to the center of the channel, to facilitate construction of a wider curve alignment on the FDR approach ramp to the bridge. The old swing bridge, which opened for tall vessels, had a vertical clearance of 24 feet above Mean High Water Level (MHWL) when closed. The new swing bridge when closed has a 25 foot clearance above the Mean High Water Line which makes it consistent with other bridges along the river.



Old and New Willis Avenue Bridge Span.

A direct connection to the northbound Major Deegan Expressway in the Bronx is under construction. 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 are being used, including placement of a solid riding surface on the swing span instead of the existing open grating deck. In addition, modern electrical, mechanical and communications systems are being installed.

Traffic continued to use the current bridge until the new bridge opened, resulting in limited impact to motorists and nearby communities. The NYC Marathon was not impacted: runners continued to use the old bridge each year until the new swing span was completed.

Throughout the project, little impact to marine traffic will be experienced. The new swing span was fabricated and assembled off site, and floated into place once the foundations, center pier and rest piers were ready to receive it.

The project also replaced the FDR Drive approach ramp and the ramp onto Bruckner Boulevard, and improve the alignment. 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 loop 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, all local streets are reconstructed and all remaining contract work on the exit ramp is completed. The East 125th Street exit ramp is not anticipated to reopen until the second quarter of 2012.

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 in June 2009, and was completed in July 2010. The span was floated down the Hudson River on July 14, 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 were completed and the first phase of the new Bruckner Boulevard exit ramp was also completed.

The contractor began 2010 with construction of the FDR Drive entrance ramp, and the First Avenue Approach on the Manhattan side of the bridge. On the Bronx side, the new Bruckner Boulevard exit ramp was opened to traffic on February 12, 2010. The work then proceeded with the demolition of the existing ramp. In the river, work was initiated on placement of the submarine power cables. All during the winter, swing span truss erection continued at Coeymans in upstate New York. This work also included installation of the bridge machinery components.

In July 2010, the swing span was towed to New York City without incident. After staying for two weeks at a contractor yard in Jersey City, on July 26, it was towed to the bridge site and on August 9, was floated into place on the new center pier.



Voyage up the East River on July 26, 2010. New Willis Avenue Bridge Span Passing Under the Brooklyn Bridge. (Credit: Douglas Reese)

ACCOMPLISHMENTS & PLANNED PROJECTS

Work continued on the new bridge span in August 2010 with the placement of a new lightweight concrete deck surface, bridge machinery and electrical utility work. Demolition of the existing Willis Avenue Overpass over the Major Deegan Expressway was completed by September.

On October 2, 2010, with the completion of the FDR Drive approach, partial First Avenue Approach, and the Willis Approach in Bronx, traffic was allowed over the new swing span and the existing bridge was closed to traffic. The old bridge was retired after 109 years of service.

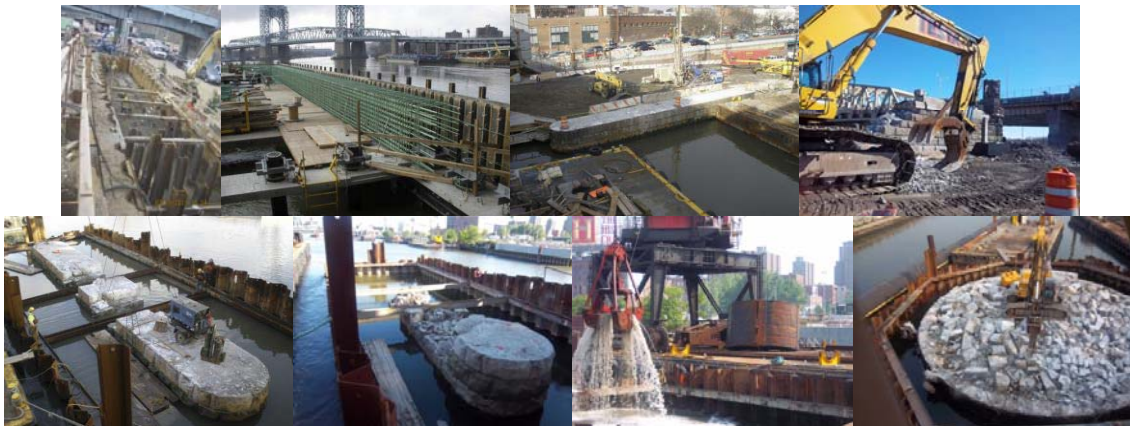


New and Old Willis Avenue Bridges on October 2, 2010. Old Willis Avenue Spans in December 2010.
(Credit: Duane Bailey-Castro) Aerial View in September 2011. (Credit: Hardesty and Hanover)

The float-out of the old existing swing span took place on October 21, 2010, and the adjacent, flanking bow-string arch span was floated out on November 3, 2010. Both spans remained on site through November for the asbestos abatement process before being floated to the contractor yard in Jersey City. The first bridge test operation of the new swing span was conducted successfully during the early morning hours of December 23.

In 2011, the contractor completed work on the existing swing and flanking spans and towed them to the recycling facility in New Jersey. In Manhattan, work continued on the remaining half of the First Avenue approach roadway and spans, the demolition of the temporary loop ramp, and the reconstruction of the 125th Street exit and local streets. In the last quarter of 2011, work also continued on the Manhattan ramp and stairs and the auxiliary bridge operator's house.

In the river, the contractor started removal of the river piers and continues work to complete the demolition of center pier and the west rest pier by blasting. They also worked on the installation of the fender system for the new piers as well as the final alignment of the bridge machinery and testing of the electrical and mechanical system. In the last quarter of 2011, the contractor completed demolition work at pier 10 and carried out blasting of pier 9. Post-blasting excavation continued at Pier 9 for removal of the pier, and fender building work continued in the river. Work also continued for the construction of bridge machinery and testing of the electrical and mechanical systems. Installation of granite continued at pier 5.



March 2011: Completed Placement of Tremie Concrete for the H Pile Footings for Panels N3 through N6 of the Retaining Wall. March 2011 River Work: Installation of the Rebars at the South Fender System at the Pier 6 South Fender. Demolition of the Old Pier at Old Pier 8. Waler Installation Along the Inside Perimeter of the Cofferdam at Old Pier 10. June 2011 River Work: Demolition of Old Pier 10. Picking Up Waste With a Clamshell Bucket. July 2011: Demolition of Old Pier 9.

ACCOMPLISHMENTS & PLANNED PROJECTS

In the Bronx, the contractor continued work on the relieving platforms, construction of the remaining superstructure and decks for the spans over the Harlem River Yard and mainline. They also worked on the construction of combined pedestrian/bicycle bridge over the Major Deegan Expressway as well as the new direct ramp to the northbound Major Deegan Expressway. The ramp to the northbound Major Deegan Expressway is expected to open in January 2012, and the pedestrian bridge work will continue through the first quarter of 2012. Work on completing the Bruckner Ramp and the local streets within project are in progress. All lanes underneath the bridge on Bruckner Boulevard are expected to open by mid-January 2012.



March 2011: Completed Excavation and Disposal of Existing Approach Slab and Roadway Pavements at B Ramp, Stage III. . Completed Excavation and Disposal of Existing Willis Avenue Abutment Footing and North Retaining Footing for Stage 5B Construction. Stage III Caisson Concrete Placement at Caisson #2 at Pier 11. Setting Granite Stone Facing at Pier 11. Finished Stage VB Removal of Steel Girder at South Bay at Existing Span 15. September 2011: Construction of Sidewalk at Bruckner Boulevard. February 2011: Pedestrian/Bicycle Bridge and Ramp to Major Deegan Expressway. September 2011: Granite Installation for Approach to Connector Ramp.

The contractor started landscaping and planting in the spring of 2011 and continued planting in the fall. Any remaining landscaping will be completed by next spring. The project is slated for completion in December 2012.



March 2011: Began Landscaping the Area Between the A Ramp Approach and the River. Bridge in November 2011. (November Credit: Hardesty and Hanover)

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 2010, the 145th Street Bridge carried approximately 28,749 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. 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. All four lanes of the bridge were opened to vehicular traffic at 7:00 AM on June 16, 2007.



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

Work completed in 2008 included the following: realignment of center lock machinery; touching up the paint on the drum girder; installation of cover plates over the sidewalk gaps at the swing span end dams; installation of retrofit brake wheel couplings; installation of the exhaust fan, damper and exhaust piping; energizing of the Manhattan approach street lighting; and completion of the street lighting inspection in Manhattan and the Bronx.

Work performed in 2009 included: touch-up painting, installation of several access platforms, new navigation lighting on the rest pier; installation of checkered plates to cover the gap in the floor of the machinery room; installation of security fence for the operator house and machinery room entrance; final alignment of the center pier rollers between the track and drum girder; continued work on rack and pinion face contact; installation of retrofit secondary reducer seal at the end lift machinery reducers; completed fabrication and witnessed factory testing of dual opposed CATRAC; removed existing CATRAC and IGUS cables on swing span and rotated the outer drum; setup generator on sidewalk for temporary electrical power to swing span; completed installation and testing of dual opposed CATRAC and IGUS cables onsite; and functional checkout for electrical distribution equipment and control system.

In 2010, work performed included: replacement of machinery room concrete floor panels over the Catrac with the lightweight grating; replacement of the galvanized plates around the perimeter of the grating; and installation of tide gauge signs. Significant progress was made in the electrical system and mechanical bridge machinery work tasks. Work completed included: the rack and pinion face contact, pinion bearing bolting, and secondary reducer bolting; installation of phenolic name plates for lubrication points on machinery items, hydraulic lines rerouted, flushed and tested; began mechanical testing and electrical functional checkout testing; replaced damaged wiring for the warning and barrier gates from the northwest gatehouse to the southwest warning and barrier gates; and removed and replaced the damaged southwest warning gate.

In 2011, work performed included: relocation of the 145th Street Bridge Field Office to the Willis Avenue Engineer's Field Office; final project video was taken; alleyway portion in the vicinity of the Bronx abutment was milled and paved; replaced damaged sidewalk panels on the north sidewalk of the Bronx alley way; small round scupper was installed in the proximity of the south east corner of the swing span to eliminate water ponding; coupling replacement work in progress at the end lift machinery; completed mechanical and electrical manuals; continued final alignment of motor brakes, continued work on electrical and mechanical punchlist items, and replaced the

ACCOMPLISHMENTS & PLANNED PROJECTS

northeast barrier gate and tested it. These upgrades have restored the structural integrity and extend the useful life of the 145th Street Bridge. The project was substantially completed on December 29, 2011.



145th Street Bridge in December 2011.



Civil Engineers Ferdinand John and Edvard Jeamgocian Examining the Sidewalk. (Span and Sidewalk Credit: Alexander Berens) At the Walk-Through Inspection on December 29, 2011: Civil Engineers Gregory Novofastovsky and Ferdinand John, Director of Quality Assurance Engineer Muhammad Afzal, Civil Engineers Svetlana Kaganovskaya and Edvard Jeamgocian, and Assistant Civil Engineer Alexander Berens.

ACCOMPLISHMENTS & PLANNED PROJECTS

Roadway Bridges

INNOVATIONS

Innovations in the design and construction of Roadway Bridges continued in 2011. 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.

BROOKLYN AND MANHATTAN BRIDGES

ATLANTIC AVENUE BRIDGE OVER LIRR – ATLANTIC BRANCH (BROOKLYN)

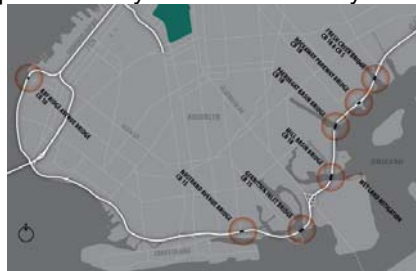
The Atlantic Avenue Bridge is a 75 span viaduct located between Eastern Parkway and Georgia Avenue in Brooklyn. The bridge carries two traffic lanes each eastbound and westbound, divided by a center median. Two LIRR tracks (of the Atlantic Branch) run under and parallel to the bridge for its entire length. The bridge was built in 1942 by the Transit Commission. The bridge superstructure consists of steel stringers and floor beams. The substructure consists of steel piers and concrete bearing walls founded on spread footings. The project will include rehabilitating the deteriorated steel members, concrete abutments and bearing walls; replacing the bridge wearing surface, drainage scuppers, and expansion joints; performing localized concrete deck repairs; and retrofitting the viaduct to meet current seismic requirements. Construction is expected to begin in August 2015.



Aerial View in 2009.

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 2011, the Paerdegat Basin Bridge was 3.222; the Fresh Creek Bridge was 3.139; the Rockaway Parkway Bridge was 3.792; the Gerritsen Inlet Bridge was 3.463; the Mill Basin Bridge was 3.313; the Bay Ridge Avenue Bridge was 3.313; and the Nostrand Avenue Bridge was 3.986. 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. Gerritsen Inlet Bridge is expected to start in summer 2012 and to be complete in fall 2016. Mill Basin Bridge is expected to start in summer 2013, and to be complete in fall 2017. Bay Ridge Avenue Bridge is expected to start in summer 2013 and to be complete in spring 2015. Nostrand Avenue Bridge is expected to start in Fiscal Year 2022.

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 vehicles 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, safety shoulders, concrete median barriers, super-elevation of the roadway around curves, and realignment of the approach roadways to improve 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 located adjacent to the Gateway National Recreation Area, (GNRA) a division of the National Park Service. This bridge and highway program is in full compliance with New York City Department of Environmental Protection 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, the New York State Department of Environmental Conservation, Gateway National Recreation Area, the US Coast Guard, and the US Army Corps of Engineers to ensure compliance with all environmental protocols.

An upland mitigation project will include the planting of replacement trees to offset the number of trees being removed during the course of the bridge replacement project. The number of trees that will be planted in will be determined in accordance with the caliper rule for tree replacement.

ACCOMPLISHMENTS & PLANNED PROJECTS

In addition to mitigating environmental impacts along the Belt Parkway corridor, an off-site Tidal Wetland Mitigation project is underway; a Notice to Proceed was issued to the contractor with a start date of March 8, 2011. The plan focuses on compensating for wetland losses at the waterway bridges by increasing and improving the quality of habitats at a nearby location. Approximately 2.3 acres of land at Floyd Bennett Field will be cleaned of rubbish and debris and converted to tidal wetland area.

The overall goal of the mitigation project is to restore selected areas of the Floyd Bennett shoreline with productive habitats, including unvegetated intertidal areas, vegetated intertidal areas restored with naturally occurring *Spartina* marsh, and high marsh habitats. A significant portion of the area involves the removal of approximately 20,000 cubic yards of previously filled areas and the restoration of the areas to productive vegetated and unvegetated wetland resources.

Restoration of the area, specifically, the removal of existing fill and debris from the Floyd Bennett Field Mitigation site will increase the functional value of the area. This area is an important contributor to primary production and breakdown of organic materials. In addition, algal communities often found in these areas are producers, and provide a food source for snails and other benthic organisms, which in turn, provide food sources for larger animals that forage along the shorelines of Jamaica Bay.

Planting at the intertidal wetland and the high marsh zones was completed in summer 2011. The installation of cabled concrete erosion control revetment was started in June 2011 and completed in July 2011. The turbidity curtain was removed from the shore line, since a new silt fence will be added as an erosion control system at the west high marsh area. The wetland mitigation project is expected to be complete in early 2017.



Tidal Wetland Mitigation Site. Looking West Towards Mill Basin Bridge – Shoreline Prior to and Post Cleanup. Turbidity Curtain Along Shoreline in Spring 2011. Summer and Fall 2011: Planted Wetland Grasses and Completed Uplands Planting.

ACCOMPLISHMENTS & PLANNED PROJECTS



Summer and Fall 2011: Installing the Revetment. An Articulating Concrete Block Revetment System is Used as Slope Protection in Front of the Existing One Story Warehouse Building. Planting Bayberry; Groudsell Trees; Beach Plum Plants, and SwitchGrass.

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.



Existing Paerdegat Basin Bridge. Proposed Paerdegat Basin Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. One navigation channel crosses under the bridge. 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 bicycle/pedestrian path on the south side. The existing structure and immediate approaches will be demolished and replaced.

The replacement bridge will be a 316-foot, 3 span structure; the new structure will have only two support piers, resulting in a wider channel. The bridge deck and approaches will be widened to 126 feet from the existing 86 feet to accommodate three 12-foot lanes in each direction, 12-foot wide shoulders, and a 12-foot wide bicycle/pedestrian path, separated from the traffic lanes by a barrier system. The profiles of the approach roadways and bridge structure accommodate stopping sight distances for a design speed of 60 miles per hour. The proposed construction will result in improved landscaping on the bridge approaches. The existing pedestrian and bicycle pathway will be maintained and open at all times during construction.



Fresh Creek Bridge Aerial View and in 2002. (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.

ACCOMPLISHMENTS & PLANNED PROJECTS



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.

In 2010 and 2011, work on the Paerdegat Basin bridges progressed on the construction of the new eastbound bridge, and the project is currently in Stage III of the proposed construction sequence. Various construction milestones have been completed to date, including the temporary relocation of the bicycle/pedestrian path which runs along the eastbound roadway; the removal of the existing median and installation of temporary roadway lighting; the replacement of the existing sludge force main within the project area using open cut and directional boring methods; the installation of earth embankments for the new eastbound and westbound approach roadways; and the installation of new drainage structures and pipe.

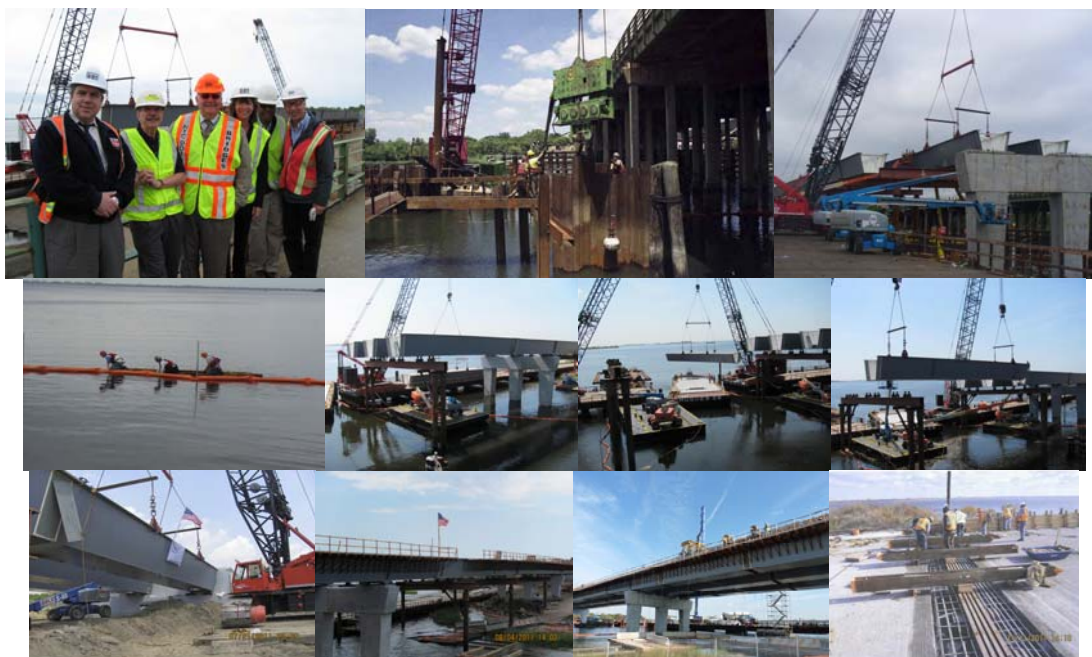
All substructure work for the new eastbound bridge, including the pier and abutment footings, pier columns, pier caps and abutments, was completed during the spring of 2011. The erection of the 51 sections of trapezoidal steel box girders was completed during the summer and was followed by nine concrete deck placements in the early fall. Installation of the concrete barrier sections and modular joints were completed during the fall, as was the construction of the eastbound approach roadway sections, drainage and electrical work. The new eastbound bridge, including the new bicycle/pedestrian path, was formally opened to traffic on December 19, 2011. Traffic was switched from the existing westbound bridge to the existing eastbound bridge on December 29 to enable construction of the new westbound bridge.

For the new westbound bridge, cofferdams have been constructed and pile installation is in progress for the construction of the new bridge piers and abutment substructures. The substructure work will continue during the winter of 2012, and the erection of the superstructure is projected to commence during the spring of 2012.



February 2011: Pumping Concrete at Paerdegat Basin Cofferdam for Pier No.3. February 2011. March 2011. April 2011: Setting Tub Girder Sections at Eastbound Bridge Between West Abutment and Pier No. 1. Civil Engineers Edvard Jeamgocian and Ferdinand John Observing the Operation. May 2011: Eastbound Bridge – New Concrete Pier No. 2 and Temporary Supports for Tub Girders.

ACCOMPLISHMENTS & PLANNED PROJECTS



Paerdegat Basin Bridge Site Visit on May 13: Director of Brooklyn and Manhattan Roadway Bridges David Dunn, Chief Bridge Officer Henry Perahia, Deputy Chief Engineer Robert Collyer, Commissioner Janette Sadik-Khan, Civil Engineer Serge Rigaud, and Administrative Engineer Daniel Hom. June 2011: Hammer Being Positioned to Drive Steel Sheet Piling for Cofferdam at Westbound Bridge – Pier # 2. New Eastbound Bridge East Abutment Prior to Tub Girder Placement. Erecting Beams at Pier 2. June 2011: Restoring Turbidity Curtain at Southeast Project Portion. Erecting the Tub Girders over the Channel in Early June. July 2011: Setting Final Tub Girder Section at East Abutment. Paerdegat Bridge in August 2011. (Credit: Daniel Hom) October 2011. Placing Concrete at Headers for Modular Joints in November 2011.



November Aerial View. December 2011: Working Inside the Northern Cofferdam. New Eastbound Bridge.

To date, various construction milestones have been completed on the Fresh Creek Bridge, including the removal of the existing median, the placement of temporary median asphalt pavement, and the installation of temporary roadway lighting. During 2011, the contractor's Value Engineering proposal to utilize a temporary bridge to facilitate the reconstruction of the existing bridge was implemented. The temporary bridge was opened to traffic in March and traffic was shifted to allow for the demolition of the south half of the bridge during the summer. As demolition was completed, deep foundation cofferdams were constructed in advance of the pile installation work, which was completed in late summer. Substructure work, including the pier and abutment footings, pier columns, pier caps and abutments, proceeded accordingly through the fall and were completed in advance of steel erection. All steel was erected during November and concrete deck placements will continue through the winter in tight adherence to the Agency's winter concrete guidelines and procedures. Relocation of the existing sludge force main within the project area, using open cut and jacking methods, was also completed during 2011, as was the installation of permanent drainage structures and outfalls. The contractor also continued the installation of new permanent lighting, and completed the lead abatement of the existing superstructure steel in advance of demolition.

ACCOMPLISHMENTS & PLANNED PROJECTS

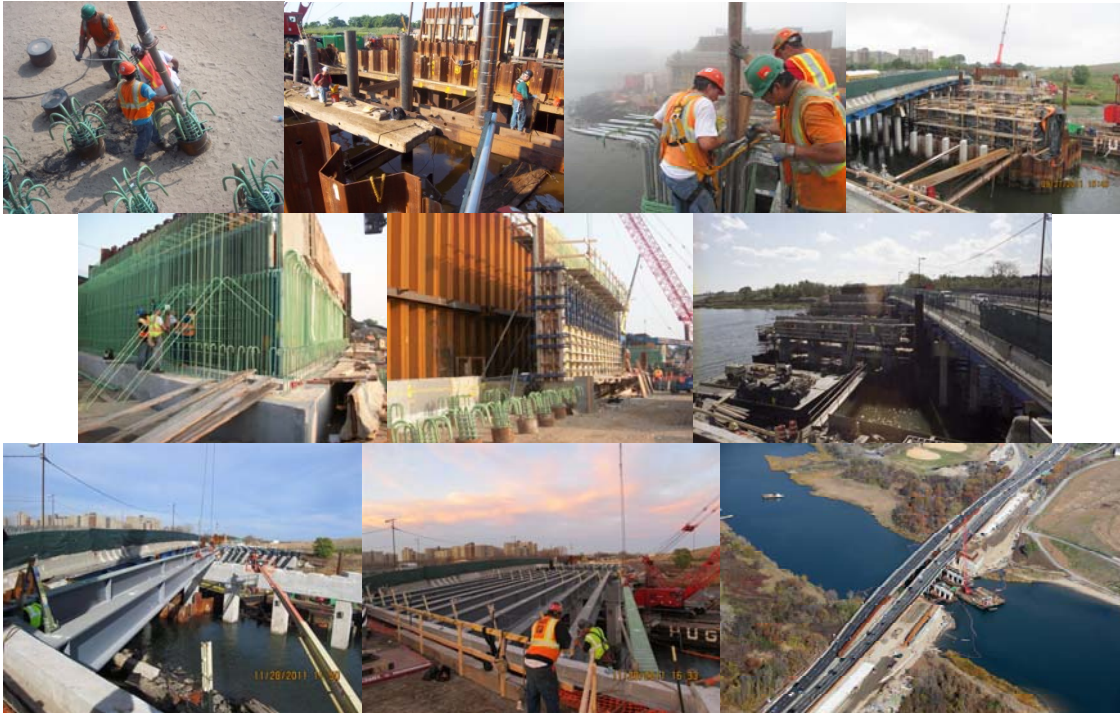


Fresh Creek Bridge in November 2010: Overview of the Existing Bridge and the Installation of the Temporary Bridge and Approaches North of the Existing Roadway. (Credit: Eric Callender)



Fresh Creek Bridge in January 2011: Installing Metal Shielding Along Westbound Lane of Belt Parkway. February 2011: Placing Under Deck Protective Shielding. March 2011: Westbound Belt Parkway Traffic Detoured onto the Temporary Bridge. Westbound Temporary Bridge at Left, Existing Bridge at Right. Removing Lead Based Paint From Steel Cut Line Locations. Westbound Lane Demolition. On March 4, 2011, Westbound Traffic was Detoured on to a Temporary Bridge over Fresh Creek Basin, and Eastbound Traffic was Detoured on to the Westbound Belt Parkway Roadway Within the Contract Limits. Demolition of the South Side of the Bridge started on March 22 and Continued into June 2011. On April 7, Demolition Work of the Deck and Stringers of the East Bound Side of the Bridge was Completed. April 2011: Installing Metal Shielding Along Belt Parkway Median. June 2011: Cofferdam on South Side of Existing Bridge Pier No. 1. Driving Piles for the Southeast Abutment.

ACCOMPLISHMENTS & PLANNED PROJECTS



Fresh Creek Bridge in July 2011: Concrete Pouring in Piles. Driving Piles Inside the Cofferdams. September 2011: Pier 1 Column Pour. Fall 2011: Cofferdams and Piers at Future Eastbound Fresh Creek Bridge. Steel Erection in November 2011. Aerial View.



December 2011: Preparing the Decking for the Concrete Pour. Concrete Pours for Southeast and Northeast Roadways. Commenced Installation of Winter Tent Enclosure for Stage IIB Concrete Bridge Deck Placement. (Tent Credits: Daniel Horn)

In 2010, significant progress was made in moving the Rockaway Parkway Bridge through Stage 1 and into Stage 2A. Stage 1 activities that were completed included the removal of the center median slab and curb; the installation of a temporary center median barrier; the paving of the center median and right shoulders to create the additional travel lanes necessary to allow for construction shifts; the installation of temporary street lighting in the center median and along the shoulders; the installation of construction fences and tree protection; the removal of existing trees as specified in the contract; and the installation of soil stabilization and erosion control measures. The existing water main along the east side of Rockaway Parkway was also relocated.

In 2011, construction moved through Stages 2A and 2B, and into Stage 3. Stage 2A began with the shift of traffic to the south side on the approaches and over the bridge to create a work zone for the removal of the north portion of the existing Rockaway Parkway Bridge. Work on the bridge and approaches included the installation of temporary support steel; and the removal of existing deck and support steel. In addition, the widths of the existing westbound entrance and exit ramps were reduced to allow for construction of the new portion of the highway along the west bound shoulder. Excavation, fill and grading to elevation for the new north section of the bridge on the northeast and northwest slopes between the main line and the two ramps was completed and approach pavement sections were placed. The contractor completed the excavation and removal of the existing substructure and the installation of piles and new

ACCOMPLISHMENTS & PLANNED PROJECTS

abutments. Steel erection was completed during overnight hours in early August 2011, and the new concrete bridge deck was placed in late September. Barrier and approach roadway construction, including drainage and electrical work, continued through the fall. The northern section of the new bridge was opened to traffic on December 8 and the traffic pattern shifted to Stage 3 to replace the center portion of the structure. The new ramps were opened in sections with the northern sides of the ramps (Stage 2A) opening in the early summer and the southern sides of the ramps (Stage 2B) opening in line with the December opening of the bridge and the shift to Stage 3. Work also continued on the installation of new street lighting around Canarsie Circle to the south of the bridge.



Rockaway Parkway Bridge in February 2011: Driving Steel Pile for Cast in Place Concrete Piles at East Abutment. March and April 2011.



May 2011: Preparing Rebar for Northeast Abutment Footing. June 2011: New Footing and Wing Walls at Northeast Side. July 2011: Constructing East Abutment, North Side of Belt Parkway. Completing the Steel Erection for the Northern Section in August 2011. (Credit: Daniel Hom) September 2011: Installing Reinforcement Steel for Stage 2 Westbound Lane Decking. October 2011: Pouring Concrete for Northeast Approach. Aerial View in November 2011.

Milestone A consists of all work required to complete the reconstruction of the Paerdegat Basin, Fresh Creek, and Rockaway Parkway 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 finished early, with a maximum incentive of \$14.98 million. There is a similar disincentive if the milestone date 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 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

ACCOMPLISHMENTS & PLANNED PROJECTS

in each direction. The eastbound side will carry a dedicated pedestrian/bicycle 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 2011, the number of openings declined further to a total of only 236 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2010, the Mill Basin Bridge carried 140,800 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 piers on timber piles, and abutments supported on pre-cast concrete piles. The existing structure and immediate approaches will be demolished and replaced.

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/bicycle 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.



Current and Proposed Mill Basin Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS

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/bicycle 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.



2009 Inspection: The Entire Underside of the Bay Ridge Avenue Bridge Deck is Shielded With Timber Planking and Steel Wire Mesh Netting. The Shielding was Temporary Removed to Perform the Inspection of the Deck. Shielding was Replaced After the Inspection.
(Credit: NYSDOT)



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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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, in the final design stage and currently on hold, is expected to begin in March 2016, and is expected to be completed in March 2018.



Beverly Road Bridge in 2009. (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 Parks 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-

ACCOMPLISHMENTS & PLANNED PROJECTS

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's final design phase has been suspended until such time as funding is available. Repairs requiring immediate attention are performed by the When and Where contractor. This bridge is closed to vehicular traffic.



Hill Drive Bridge in 2001. Near End Approach in May 2009: Concrete Flower Pots Close the Roadway. (Credit: NYSDOT)

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. *Teredo* Damage (Holes up to ¼" Diameter).

ACCOMPLISHMENTS & PLANNED PROJECTS

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. An updated underwater inspection was performed within the limits of the proposed contract in 2009. The final design is now complete.

The construction project will be performed almost entirely underwater and 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 in locations where the distance from underside of the platform deck to the top of the mudline 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 April 2012, and to be complete in April 2016.

RIVERSIDE DRIVE BRIDGE OVER WEST 158TH STREET (MANHATTAN)

The Riverside Drive Viaduct is located between West 153rd Street and West 161st Street. It is approximately 1,924 feet long and has 77 spans. This viaduct consists of intermittent straight portions, and six curves of different radii. The bridge carries four lanes (two each way). The superstructure is made of two types of framing. The northern part is a steel bent type structure, whereas the southern part is a steel cantilever type structure with half of the deck over Amtrak railroad tracks. The area below the entire bridge is utilized for storage of Agency vehicles and roadway maintenance materials. Construction is expected to begin in 2017.

TRANS-MANHATTAN EXPRESSWAY CONNECTOR RAMP FROM THE HARLEM RIVER DRIVE (MANHATTAN)

The Trans-Manhattan Expressway Connector Ramp is an elevated viaduct that consists of a multi-span steel superstructure supporting a concrete deck. The ramp connects the Trans-Manhattan Expressway to the Harlem River Drive and it was built in 1939. The project will rehabilitate the bridge steel and concrete components. Construction is expected to begin in summer 2013.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 2019, and is expected to be complete in June 2021.



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 at each pier, and underdeck and ramp lighting will be installed, as well as new storm drainage systems. The ramp will be closed to both vehicular and pedestrian traffic for the duration of the reconstruction. Traffic will be diverted to local streets.



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

A Notice to Proceed for the project was issued to the contractor with a start date of August 10, 2009. The bridge was closed to vehicular and pedestrian traffic on February 16, 2010. A temporary detour route was implemented, routing traffic via local streets to access the westbound Belt Parkway. The bridge deck demolition work began in March 2010 and was completed in June 2010. The north and south abutments were partially removed and were reconstructed. New pile foundations were installed at piers 1, 2, and 3. The new reinforced concrete bridge columns were completed in February 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS

The structural steel for the new bridge superstructure was fabricated off site, along with new bridge bearings. The bridge bearings were delivered to the site in March of 2011. The structural steel was delivered in June 2011, and its installation commenced immediately. This was followed by the installation of the bridge deck, which was completed in August 2011. The north and south approach roadways were completed in November 2011. The bridge opened to vehicular traffic on December 2, 2011, and is anticipated to open to pedestrian traffic in March 2012. Construction is expected to be substantially complete in May 2012.



East 8th Street Ramp in June 2011: Steel Installation for Span 1. July 2011: Installation of Steel Girders over the South Service Road and Eastbound Belt Parkway. August 2011: Concrete Deck Placement. November 2011: Completed North and South Approach Roadways. December 2, 2011: Bridge Open to Traffic.

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

This project consisted 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 also included performing repairs of the existing pier and abutment walls. The viaduct was constructed in two stages, one half of the viaduct at a time. Three south-bound travel lanes were maintained at all times. A Notice to Proceed for the project was issued to the contractor with a start date of June 1, 2009.

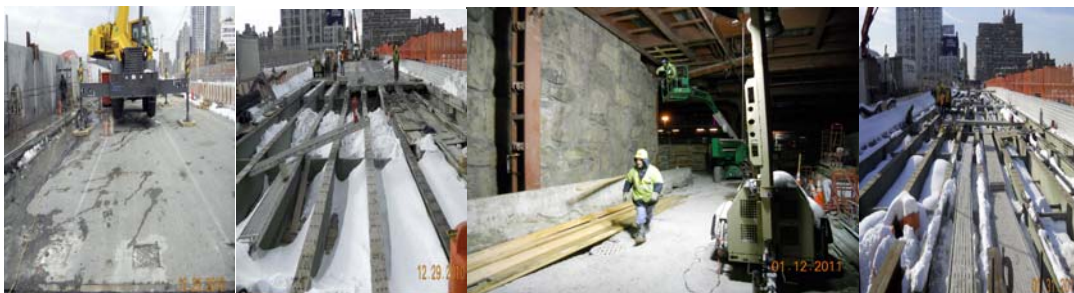


11th Avenue Viaduct Site (West 30th Street to West 33rd Street) in 2006. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

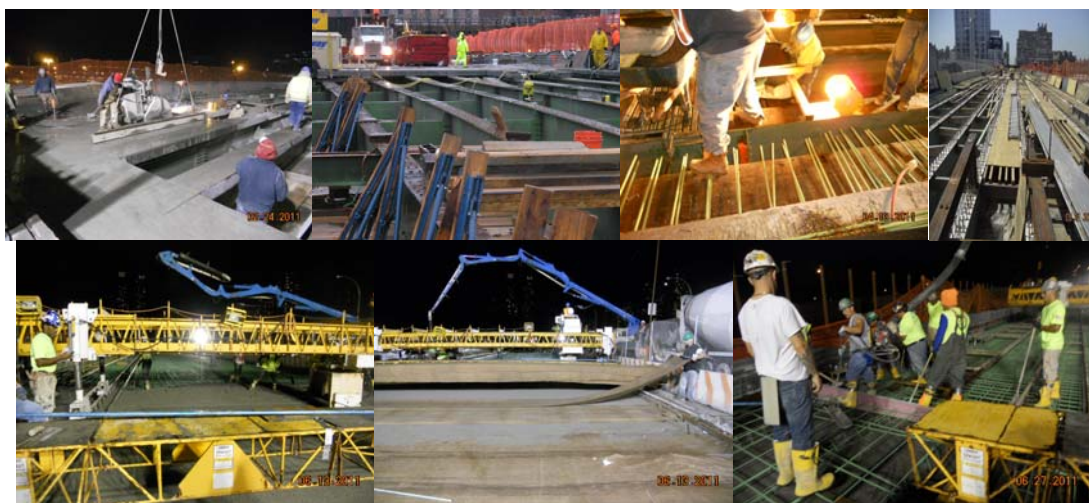
The installation of the LIRR horizontal and vertical protective shield was completed under Stage 1A. The west side sidewalk was modified for the traffic shift at Stage 1B. Demolition and reconstruction of the east half of the viaduct parapet and deck slab began under Stage 1B in December 2009.

The contractor completed Stage 1B deck and parapet removal in March 2010. In 2010, the contractor completed lifting structural steel in order to demolish the existing bearing and pedestals; constructed the new pedestals; installed seismic isolation bearings; modified and painted structural steel in select areas at pier locations in order to install seismic isolation bearing; placed the new bridge deck slab and sidewalk/safety walk; placed the approach slab; and installed the new expansion joint, bridge railings, and street lighting. The pedestrian fence was completed by December 2010 prior to shifting to Stage 2.



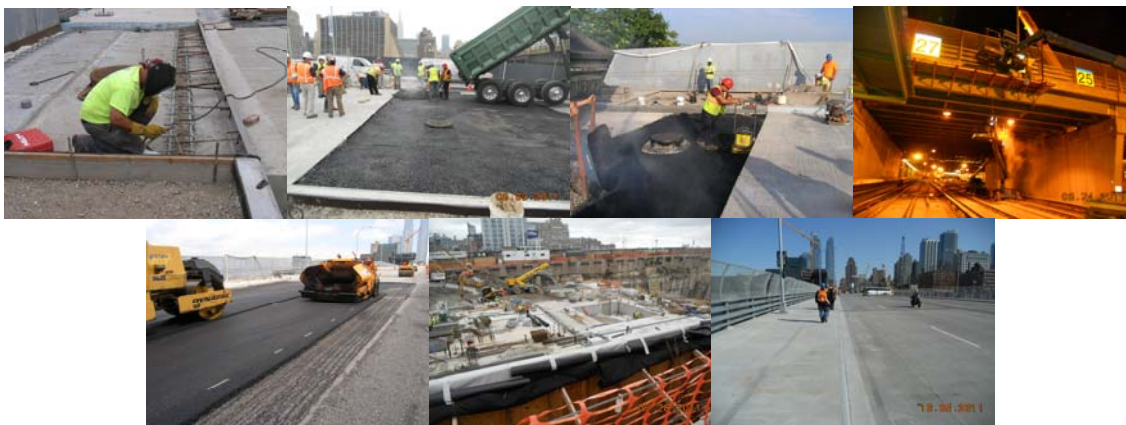
11th Avenue Viaduct at South Abutment Looking North in December 2010: Saw Cutting and Preparation for Removal of the West Parapet Wall at Span 1 in Stage 2. Looking South From Bent 32: Bridge Deck Removal at Span 8. January 2011: South Abutment Looking North: Demolition and Removal of Existing West Sidewalk at Span 2. Looking South From Bent 32: Pedestal Demolition at Pier 7.

In 2011, the contractor demolished and reconstructed the western half of the viaduct under Stage 2. Stage 2 deck removal was substantially completed in March. Installation of the overhang to facilitate Stage 2 deck was completed in April, as was demolition of the south approach slab and sidewalk. New pedestals were completed in May, and concrete deck placements were completed in June. Construction was substantially completed on September 15, 2011.



11th Avenue Viaduct Construction in February 2011. April 2011: New Bridge Deck Formwork. May 2011: Installation of Bridge Deck Formwork for Spans 5, 6, 7 & 8 in Stage 2. June 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



11th Avenue Viaduct Construction in June 2011. August 2011. September and October 2011.

11TH AVENUE VIADUCT (NORTH SECTION) (WEST 33RD STREET TO WEST 35TH STREET) OVER AMTRAK (MANHATTAN)

The 11th Avenue Viaduct (North Section), extending between West 33rd and West 35th Streets, was built in 1939. The viaduct's concrete deck slabs are supported by steel stringers, with steel pier caps and steel columns founded on concrete bases. The viaduct carries four traffic lanes (southbound only) between West 33rd and West 34th Streets. Four traffic lanes and one bus lane (southbound), and two traffic lanes and one parking Lane (northbound), are carried between West 34th and West 35th Streets.

The project will include the replacement of the entire approach and a total replacement of the viaduct up to the MTACC Vent Facility, maintaining the existing roadway profiles. The viaduct will be constructed in stages and in coordination with the five Ramp Reconstruction Projects. Construction of this project, currently in the final design stage and on-hold, is expected to begin in May 2020, and is expected to be completed in April 2022.

11TH AVENUE BRIDGE (WEST 59TH STREET) OVER AMTRAK - 30TH STREET BRANCH (MANHATTAN)

The 11th Avenue Bridge, built in 1936, is located between West 58th Street and West 60th Street. The structure is located over the LIRR tunnel. The bridge is not parallel, but skewed with respect to the 11th Avenue/West 59th Street intersection. The structure carries northbound and southbound traffic with two travel lanes and one parking lane in each direction, as well as sidewalks. The superstructure consists of two spans with multi steel stringers encased in concrete that are supported by steel column piers.

The work will include the replacement of the existing deck superstructure with new steel girders, a new bridge deck concrete slab, and wearing surface; the replacement of the existing approach slabs, curbs, sidewalks, parapets, fencing, and expansion joints; the replacement of the existing abutment substructures, elastomeric bearings; and the replacement of the existing piers, pedestals, backwalls, and expansion joints. Construction is expected to begin in December 2021.



11th Avenue Bridge in 2010. (Credit: NYSDOT)

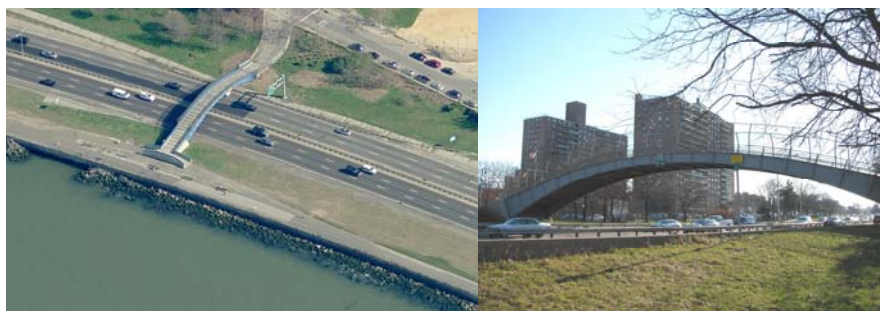
ACCOMPLISHMENTS & PLANNED PROJECTS

17TH AVENUE AND 27TH AVENUE PEDESTRIAN BRIDGES OVER BELT PARKWAY (BROOKLYN)

The 17th Avenue and 27th Avenue Bridges are three-hinged, steel arch girder bridges with granite-faced concrete abutments and Art Deco steel railings. These two pedestrian overpasses have deteriorated over time, and due to low vertical clearance, have suffered impact damage from overheight vehicle traffic on the Belt Parkway below. In addition, these structures are not in compliance with American Disability Act (ADA) requirements.

The 17th Avenue Bridge provides the only pedestrian access to the shoreline promenade from the surrounding Bath Beach and Bensonhurst communities. The 27th Avenue Bridge provides the main pedestrian access from the community to Dreier Offerman-Calvert Vaux Park.

In this project, the overpasses at 17th and 27th Avenues will be completely replaced. The structures will be designed to current codes and standards and all substandard features will be eliminated. Additionally, as the existing bridges were constructed under the Robert Moses era Master Plan for NYC, the proposed bridge designs will follow the Shore (Belt) Parkway Design Guidelines which were developed in November 2006, in order to preserve and reestablish the historic character of the parkway for drivers and pedestrians while enhancing and strengthening the visual cohesiveness of the greenspace connected to the adjacent park and recreation land. Construction is anticipated to begin in July 2013, and is expected to be complete in July 2015.



Aerial View of 17th Avenue Bridge. 27th Avenue Bridge in 2011.

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 2010. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

WEST 33RD STREET BRIDGE OVER LAND ADJACENT TO AMTRAK (MANHATTAN)

The West 33rd Street Bridge over Land Adjacent to Amtrak is a ramp attached to the 11th Avenue Viaduct. The original steel bridge was built in 1939 under the direction of the New York Central Railroad. This bridge is a two span, simply supported structure that carries three lanes of vehicular traffic (one travel lane and two parking lanes) in the westbound direction. The superstructure consists of a concrete deck supported by built-up girders and rolled stringers. The substructure consists of one gravity type abutment and intermediate steel build-up column bents. The project will involve the complete replacement of the existing bridge with a one span concrete box beam and concrete substructure. Construction of this project, currently in the final design stage and on-hold, is expected to begin in May 2020, and is expected to be completed in April 2022.



West 33rd Street Bridge in 2009. (Credit: NYSDOT)

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

The old bridge was a nine span reinforced concrete structure over the FDR Drive. The bridge provides access from East 78th Street to the East River esplanade by going over the entrance ramp to the southbound FDR Drive and six travel lanes of the 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 was supported on the ferry house structure on the Esplanade side. This project 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 includes 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 was installed. The west ramp is enclosed with a stone masonry wall to match the existing park wall. The new bridge complies with ADA regulations.



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

ACCOMPLISHMENTS & PLANNED PROJECTS



View of the Approach to the New Pedestrian Bridge
as seen from the north west corner of East 78th and the FDR Drive, looking south
Rendering of the Approach to the New Bridge.

During construction, pedestrian traffic was detoured to the 71st and 81st Street pedestrian bridges. A Notice to Proceed for the project was issued to the contractor with a start date of July 12, 2010. The bridge was closed to pedestrians on October 19, 2010.



February 2011 at the East Ramp Area: Installing Interim Steel Sheet Piling on East Side, at Pier Footings # 10 and 11. Debris Loaded out Onto Barge and Removed by Tugboat.



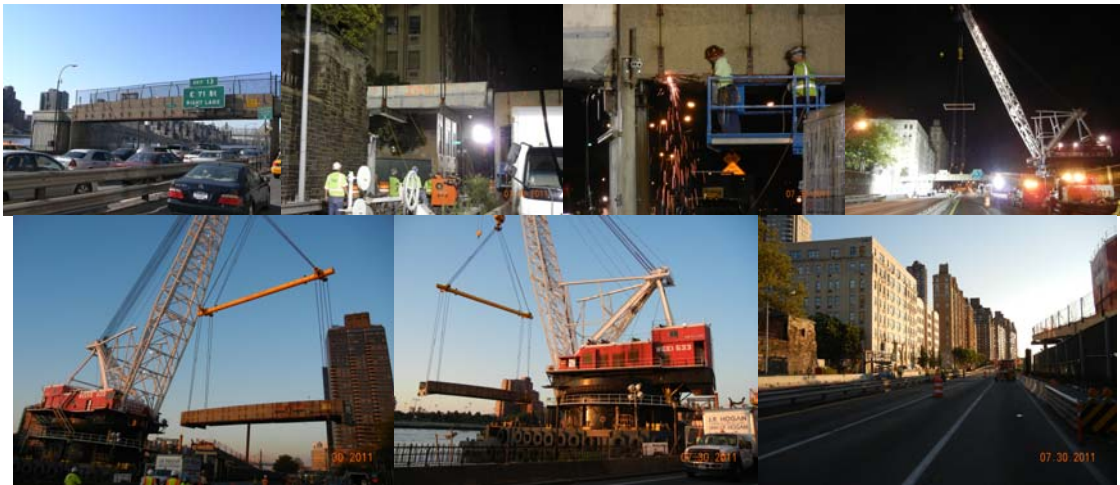
February 2011: Excavation Completed on East Abutment. The New Longer ADA-Compliant Ramp is Snug Against the FDR Drive. This Layout Improves Through Traffic Along the Esplanade. April 2011: Remove Bracing Abutment Piers and Pedestals. Continuing Excavation. May 2011.

In summer 2011, construction of the ramps was in progress. On the night of July 31, 2011, the old bridge and the piers supporting the structure were demolished and moved onto a barge on the East River between 2 AM and 7 AM. To speed the process, temporary support columns, brackets and hydraulic jacks were installed in advance, and the superstructure and pier walls were saw cut. Both the side and main spans were removed using a 500 ton crane.

ACCOMPLISHMENTS & PLANNED PROJECTS



July 2011: Steel Erection for the West Side Ramp Along the North Side of John Jacobs Park.



Removal of the Old Bridge in July 2011.

On the night of October 23, 2011, the new steel for the main span of the bridge was installed, using a crane, between 2 AM and 7 AM. It had previously been assembled in the steel fabricator's yard and transported to the site on barges. The bridge was opened to traffic on January 20, 2012. Construction is expected to be complete in early 2012.



The New Bridge Span in Transit from Just North of Philadelphia to Jersey City. It was Then Loaded on the Barge and Brought up the East River to the Site. The Span Size was 26' x 135' and Weighed Approximately 80 Tons.
New Main Span Steel Erection in October 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



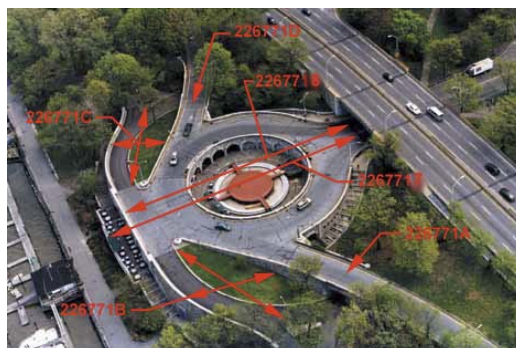
New Main Span Steel Erection in October 2011.

WEST 79TH STREET BRIDGE OVER AMTRAK, 79TH STREET PEDESTRIAN PLAZA OVER 79TH STREET BOAT BASIN GARAGE, 79TH STREET TRAFFIC CIRCLE OVER 79TH STREET PEDESTRIAN PLAZA, 79TH STREET RAMP TO HENRY HUDSON PARKWAY OVER 79TH STREET BOAT BASIN GARAGE, 79TH STREET RAMP TO GARAGE OVER 79TH STREET BOAT BASIN GARAGE, GARAGE RAMP TO 79TH STREET OVER 79TH STREET BOAT BASIN GARAGE, AND SOUTHBOUND HENRY HUDSON PARKWAY RAMP TO 79TH STREET OVER 79TH STREET BOAT BASIN GARAGE (MANHATTAN)

The West 79th Street Bridge over Amtrak, built in 1937, is a single span structure, with steel, non-composite girders and a reinforced concrete slab. The bridge carries two lanes of traffic in each direction and has a sidewalk on each side. The project work will include the removal of the existing concrete deck, sidewalks and the pedestrian safety barrier. The deck will be replaced with a 9.5 inch concrete slab with integral wearing surface, a new sidewalk and safety barriers on a rehabilitated superstructure. Construction is expected to begin in March 2017.

The West 79th Street Rotunda Complex consists of six (6) Bridges: The West 79th Street Traffic Circle consists of 34 steel spans over Pedestrian Plaza. There are two traffic lanes. The project work will include the removal of the existing roadway, concrete slab, and steel superstructure. A new steel superstructure and roadway slab will be provided along with new approach roadways, and the existing stone masonry will be rehabilitated.

The West 79th Street Pedestrian Plaza is below the Traffic Circle and over the Boat Basin Garage. It consists of ten simply supported spans. This Rotunda has landmark status and includes Gustavino type arches, a promenade, a fountain and a restaurant built in 1939 as part of the Riverside Drive Park improvements. The project work will include the structural rehabilitation and extensive architectural restoration of the plaza. This Rotunda complex also contains four ramps that will be part of the reconstruction project.



Aerial View of 79th Street Ramps. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

BRONX, QUEENS, AND STATEN ISLAND BRIDGES

TEN CULVERTS: GALLOWAY AVENUE OVER MARIANNE STREET, FOREST AVENUE OVER CRYSTAL AVENUE, NAUGHTON AVENUE OVER PATTERSON AVENUE, MIDLAND AVENUE OVER HYLAN BOULEVARD, 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)

This ten culvert reconstruction project is in the final design stage.

The Galloway Avenue culvert is a single span timber pedestrian bridge supported on a concrete abutment. The existing bridge will be removed and a new bridge will be constructed. The bridge will be closed during construction.

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 construction work is planned to be performed in four stages with proposed two traffic lanes being maintained in each direction (during rush hours) and two lanes at other times.

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 culvert 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 culvert. 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 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. The work is proposed to be completed in one stage utilizing night time hours, when the northbound lanes on Richmond Hill Road will be closed and a detour route will be offered.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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 currently in the final design stage, and is expected to begin in August 2014 and to be complete in 2015.



Galloway Avenue over Marianne Street, Forest Avenue over Crystal Avenue. Naughton Avenue over Patterson Avenue, Midland Avenue over Hylan Boulevard. 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, Arthur Kill Road over Ridgewood Avenue.

BRYANT AVENUE BRIDGE OVER AMTRAK AND CSX (BRONX)

This project will include replacing the existing superstructure with a conventional concrete reinforced 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. The Division's in-house design staff will now complete the design for this project. Construction is expected to begin in April 2013, and is expected to be complete in October 2014.

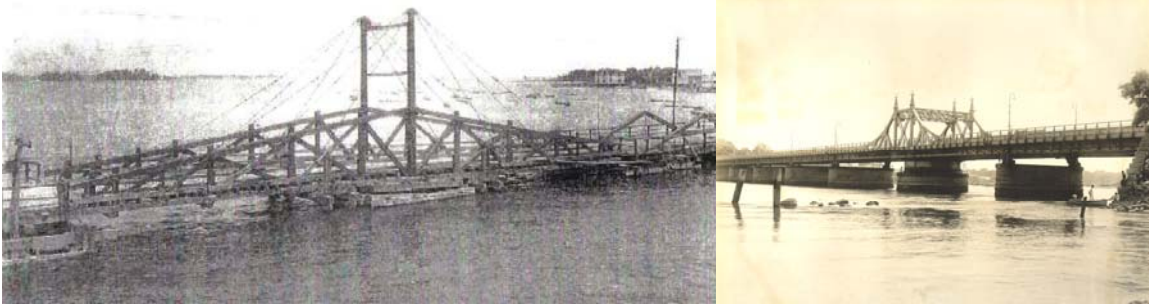


Bryant Avenue Bridge in 2011. (Credit: NYSDOT)

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 2010, the bridge carried 15,380 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.

ACCOMPLISHMENTS & PLANNED PROJECTS



Original City Island Bridge in 1873. Bridge in 1928.



Aerial View of Current Bridge. Welcome Sign.

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. It will also eliminate the vehicle height restriction caused by the existing overhead truss. 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. Marine traffic will remain undisturbed beneath the bridge during peak boating season.

At the City Island side there is a seawall along the shore which is about 500 feet in length starting from the bridge and heading in a southerly direction. This seawall will be rehabilitated and turned over to the Department of Parks and Recreation along with the esplanade which it is supporting.

Turtle Cove Culvert is located under City Island Road approximately half a mile west of the existing bridge. As part of the wetland impact mitigation activities for the project, this culvert will be replaced with a larger one that will allow for greater tidal flooding from Eastchester Bay to the upland portions of Turtle Cove.



City Island Road Bridge in 2010. (Credit: Bojidar Yanev) Vertical Clearance Posting. (Credit: NYSDOT) 9 Foot Tall Ornamental Finial.

ACCOMPLISHMENTS & PLANNED PROJECTS

The project is currently in its final design phase. The construction phase for this Federally-funded project is scheduled to begin in summer 2012 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.

The reconstruction of the bridge 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 and one sidewalk open in each direction at all times during construction. A Notice to Proceed for the project was issued to the contractor with a start date of April 4, 2011.

The contractor began setting up the maintenance and protection of traffic for stage 1 construction on July 11, 2011. One lane of vehicular traffic continues to cross the bridge in each direction; pedestrian traffic may cross the bridge on each side of the temporary roadway. The project is currently in the Stage I construction and the contractor has removed the existing utilities and the deck stringers. All Stage 1 demolition was completed in October. The contractor completed the installation of vertical protective shielding above the existing abutment, the demolition of the existing abutment caps and forming, the placement of reinforcing bars, and the placement of concrete on each of the abutment caps. Construction is expected to be complete by May 2013.

ACCOMPLISHMENTS & PLANNED PROJECTS



Existing North Side Guardrail and Fence. Proposed Guardrail and Fence. Stage 1 in October 2011: Removal of the Existing Bridge Girders.



Installation of Pre-Cast Box Beams for Stage 1 in November 2011.

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)

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

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 bridge 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. Deterioration was discovered during a final design inspection to assess the structural condition of the bridge, and the consultant has been instructed to prepare an interim load rating to establish the structural capacity. This project, currently in the final design phase, is expected to begin construction in February 2018, and is expected to be complete in May 2020.



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 two to four 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 eighteen months.

ACCOMPLISHMENTS & PLANNED PROJECTS



Highland Park Bridge. (Credit: NYSDOT)

METROPOLITAN AVENUE (FRESH POND) BRIDGE OVER LIRR -NY&ATL (QUEENS)

This bridge is a two span structure built between 1914 and 1915. It carries parts of the intersection of Metropolitan Avenue, Fresh Pond Road and the adjoining property of the former Mobil gasoline station (which was acquired by City) over the Long Island Railroad Montauk branch. The superstructure consists of concrete encased steel beams with a concrete deck and varying depths of paved wearing surface. The substructure consists of a reinforced concrete pier and gravity type plain concrete abutments and wing walls.

This project, currently in its final design phase, will rehabilitate the bridge. The concrete substructure and steel girder superstructure will be retained and repaired. All of the surface elements, such as the concrete deck, approach slabs, sidewalks, parapet, fencing and lighting will be completely replaced. The construction will be staged to maintain traffic flow in both directions at all times. Construction is expected to begin in September 2013, and is expected to be complete by the end of 2016.



Metropolitan Avenue Bridge in 2009.
(Credit: NYSDOT)

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-

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

This federally-funded project is currently in the final design phase with construction anticipated to start in January 2014 and to be complete in October 2017.



Roosevelt Avenue Bridge (#2240507) in 2002 and 2004. (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 June 2009 and August 2010. (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 activity during 2010 included the following: High voltage overhead cables were relocated, allowing construction work to proceed at the west abutment; temporary shoring towers were erected to allow the demolition of the super structure; and soldier piles were drilled behind the abutments and excavation supporting systems installed prior to start of the removal of the existing stone abutments. In the fall of 2010, the contractor started excavating behind the abutments to prepare for the removal of the old abutments and wing walls.

ACCOMPLISHMENTS & PLANNED PROJECTS

Construction activity during 2011 included the following: Removal of existing sidewalk and steel beams for Stage-1B; installation of protective shielding for Stage-2; demolition of Stage-1A/3A and 1B/3B east and west abutments; pouring of concrete for abutments Stage-1A/3A and 1B/3B; installation of prefabricated structural drain behind Stage-1A/3A and 1B/3B abutments; backfilling behind Stage-1A/3A and 1B/3B east and west abutments; application of protective sealant for Stage-1A/3A and 1B/3B substructure; erection of steel beams for Stage-1A and Stage-1B superstructure; installation of protective shielding for Stage-1A and 1B; pouring of concrete for Stage 1A and Stage 1B superstructure slabs; installation of conduits for Street lighting, high voltage, and communications; and placement of temporary asphalt concrete pavement for stage-1A and Stage-1B east and west approaches. Construction is expected to be complete in spring 2013.



Shore Road Circle Bridge in April 2011 – July 2011. September 2011: Steel Installation. November and December 2011: Concrete Parapet and Deck Placement.

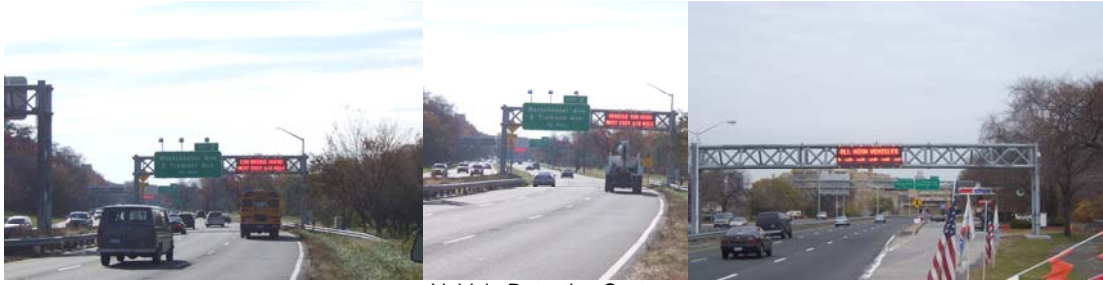
WESTCHESTER AVENUE BRIDGE OVER THE HUTCHINSON RIVER PARKWAY (BRONX)

This two span continuous multi-stringer bridge is supported by reinforced piers and abutments. The bridge spans over the Hutchinson River Parkway and it supports the NYCT elevated subway structure of the Pelham Bay Line. It was built in 1940 by the Triborough Bridge Authority. No major modifications to the bridge are recorded except for minor repairs at the south approach sidewalk and temporary flag repairs to bridge girders damaged by vehicle impacts in the southbound and northbound roadway. 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. 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.



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

ACCOMPLISHMENTS & PLANNED PROJECTS



Vehicle Detection System.

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 designer is currently studying ways to increase the vertical clearance of the bridge over the parkway without adversely impacting the NYCT elevated structure and its transit train operations. This may entail temporary support of the transit structure in order to replace the existing roadway bridge structure in stages with a thinner more efficient structure to gain additional clearance over the parkway below.



Damaged Truck After Striking the Bridge in October 2011. (Credit: Andrew Hoang)

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.

In March 2011, a value engineering study was conducted in which it was recommended that further studies of alternative options be performed to raise the bridge clearance through a shallower bridge structure and/or by raising the roadway profile above the bridge. The consultant is currently investigating the feasibility of the study's recommendations to modify the bridge superstructure in order to improve the vertical clearance under the bridge without lowering the highway.

This rehabilitation project is currently in final design. Construction is expected to begin in September 2015, and is expected to be complete in May 2018.

EAST 175TH STREET BRIDGE OVER METRO NORTH (BRONX)

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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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



East 175th Street Bridge in 2002. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

Specialty Engineering and Construction

Design-Build

In 2011 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.

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. It is a major connecting link between the Robert F. Kennedy (Triborough) Bridge and the New England Thruway. 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. The existing northbound bridge is a 124-foot single-span multi-girder steel superstructure with a cast-in-place concrete deck.

Amtrak operates their Northeast Corridor commuter rail lines on two tracks underneath the Northbound and Southbound Bridges. The tracks provide service between Penn Station in New York City and South Station in Boston. CSX operates freight trains on two tracks underneath the Northbound and Southbound Bridges. The tracks facilitate transportation of freight throughout the region.

The new bridge will consist of precast concrete deck panels supported by new steel girders. The existing southbound bridge is a 115-foot single-span steel superstructure consisting of three thru-type trusses. The floor beams hang from the truss bottom chords and steel stringers span between floor beams. The existing cast-in-place concrete deck is supported by the steel stringers. The new deck will be a precast concrete deck which spans the floor beams.

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.

ACCOMPLISHMENTS & PLANNED PROJECTS



Bruckner Expressway Bridge NB in 2002. Bruckner Expressway Bridge SB in 2008. (Credit: NYSDOT)
2005: The Tanker Truck. (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.

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 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. The replacement of the bridge's northbound superstructure and the southbound deck is being done under a Design-Build contract. The scope of work for the northbound bridge includes superstructure replacement, reconstruction of abutment back walls and bridge seats, bearing replacement, highway reconstruction 200 feet from the beginning and end abutments, and the installation of a new 20-inch diameter water main and new electrical ducts. The scope of work for the southbound bridge includes deck replacement, bearing replacement, back wall reconstruction, rehabilitation and painting of the existing steel truss superstructure, highway reconstruction 200 feet from the beginning and end abutments, and the installation of a new 12-inch diameter water main and electrical ducts.

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.

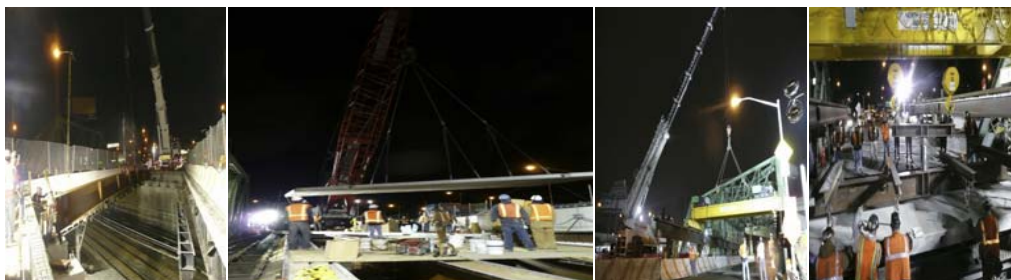
Girder removal for Stage 1 and the lead paint removal were completed in February 2010. Demolition of the northbound back wall at both the beginning and end abutments was completed in March. The precast back wall and bridge seats were installed, and bearing placement on the northbound bridge was completed in April. The southbound bridge floor beam encasement removal was completed in June, as was installation of northbound deck panels.

Stage II on the northbound bridge began in August 2010. Painting of the southbound bridge floor beams and counter weight work was completed in September. South bound bridge shielding and deck panel removal was completed. Installation of the precast back wall of the northbound bridge was completed and northbound girders were installed in November. Stage II deck panels were placed in December.

Excavation of the east approach for the new roadway alignment was completed in January 2011. Steel repairs on the southbound structure and deck panel installation were completed in April. Bridge bearing removals and replacement, lead abatement and the excavation of the west side approach on the southbound bridge were completed in May. Installation of the sidewalk on the south bound bridge was completed in June. Southbound Stage 2 saw-cutting of deck panels, northbound Stage 3 approach work, asbestos removal, water main removal, and Installation of

ACCOMPLISHMENTS & PLANNED PROJECTS

the temporary deck panels for the southbound bridge were completed in August. Installation of the Stage 3 northbound bridge formwork for the beginning abutment back wall concrete, and demolition of the southbound bridge were completed in December 2011. Other southbound and northbound Stage 3 work was in progress by the end of the year, as well. Construction is expected to be completed in October 2012.



Northbound Bridge - Using Hydraulic Crane to Remove the Existing Girders and Install New Ones. Using Crawler Cranes to Install the Precast Deck Panels. The Contractor Opted to Use Hydraulic Cranes and Crawler Cranes to Perform all Lifting Operations Because There are no Overhead Structures to Restrict the Crane Boom Length Required for the Pick. Gantry Crane Installation. Because of the Low Overhead Clearance Inside the Truss From the Lateral Bracing Members, the Contractor Opted to use a Gantry Crane for all Lifting Operations. It was Placed on Running Rails Supported by the Existing Superstructure.



Southbound Bridge Existing Deck Demolition and Deck Panel Installation. August 2011: Stage 2 Assembling and Welding Steel Packs for Southbound Bridge.

HARLEM RIVER DRIVE AT EAST 127TH STREET (MANHATTAN)

The Harlem River Drive Bridge over the ramp from East 127th Street is an eleven-span structure consisting of seven main spans of multiple steel stringers and concrete deck and four approach spans of reinforced concrete structural slabs supported by reinforced concrete girders and retaining walls. The bridge currently carries three traffic lanes in the southbound direction and two lanes plus a wide striped shoulder in the northbound direction. 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. One weave (from the Third Avenue Bridge to the Harlem River Drive mainline) is accomplished by some vehicles with no lane change, and the other weave (from the Harlem River Drive mainline to Second Avenue) requiring at least two lane changes of all weaving vehicles. The project will also allow 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 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.

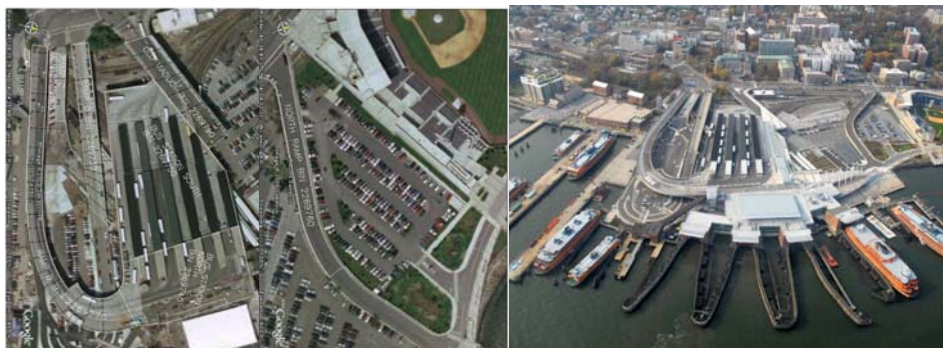
ACCOMPLISHMENTS & PLANNED PROJECTS



Harlem River Drive at East 127th Street. Left and Right Views of the Bridge in 2003.

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.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

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. Lead paint and underlying rust is being removed from all structures and non-lead paint is being reapplied. This protective coating is an essential preventive maintenance operation used to protect and extend the life of bridge infrastructure. All lead paint removal work is being performed within an entirely sealed Class 1A Containment System which prevents materials from leaving the work zone. Soil and air in the St. George area are being monitored and tested in accordance with safety requirements set forth by the United States Environmental Protection Agency and 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.



Temporary Shoring of Stringers at Ramp D East Abutment for Steel Repair Work. November 2010: New Bridge Seat and Pedestals Installed at Ramp D West Abutment.

Active construction began in early 2010 when modifications were made to the Kiss and Ride area. These modifications allowed the area to accommodate the closure of Ramp D (Kiss and Ride exit ramp) for demolition (on June 21, 2010) and the resulting two-way operation of Ramp C (Kiss and Ride entrance ramp). Ramp A and D demolition was completed in September. Bus gates A and B were relocated as of September 12, and the south half of the old viaduct was closed on September 13. The buses were relocated and pedestrians were routed to the opposite sidewalk. By the end of the year, the reconstruction of Ramp A and rehabilitation of Ramp D were underway. The pedestrian breezeway, located above the Kiss and Ride and linking the ferry terminal with the Ferry Administration building, is also being rehabilitated. Demolition was completed in March of 2011 and the structure is currently being rebuilt.

ACCOMPLISHMENTS & PLANNED PROJECTS



January 2011: Panoramic View. February 2011: Sidewalk and Decking Demolition at Bus Station North. March 2011: Ramp D South Side Fascia Repair. Kiosk Wall Demolition. Breezeway Containment and Abatement.



April 2011: Steel Replacement and Rivet Bursting at Ramp D. May 2011: Stay-in-Place Forms and Studs. Overhang Brackets. View of Pedestrian Breezeway Facing East. Ramp D East Abutment. Old Bus Gate. The Refurbished Bus Gates A and B Will Include Enhancements for Pedestrian Safety and Comfort, as Seen in this Rendering. Existing North Ramp (Foreground) and New North Ramp (Background).

Shielding installation and red flag repairs were completed in August 2011. Construction of the new north ramp's T-wall and piers was completed in September. Ramps A and D were completed in November. Ramp D opened on November 17, and Bus Ramps A and B opened on November 18. Stage 1 of the Old Viaduct was opened on November 18, as well. The North Ramp (leading into the North Municipal Parking Lot and NYCEDC Parking facilities), closed for construction on December 1, and demolition began. A new ramp is currently being constructed on a new alignment, adjacent to the Richmond County Bank Ball Park. By the end of the year, the reconstruction of Bus Gates A and B and the Old Viaduct were underway. Construction is expected to be complete by winter 2013.



August 2011: Ramp A Looking East. Ramp A West Abutment Pedestals. Ramp D Looking Southwest.

ACCOMPLISHMENTS & PLANNED PROJECTS



August 2011: Bus Ramp A Canopy. Span 1 – Looking North. North Ramp Center Pier.
December 2011: Breezeway. Bus Ramp D. Taxi Ramp. Stage II Demolition. Ramp A Open to Traffic.

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.



Borden Avenue Bridge. (Credit: Peter Basich) General and Close Up View of the Crack in the Wingwall. (2nd View Credit: NYSDOT)

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-supported 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 was undermining the stability of the bridge. Due to the

ACCOMPLISHMENTS & PLANNED PROJECTS

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 existed relative to the movable bridge carrying the Borden Ave. over the Dutch Kills in Queens. The repairs included 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. The contractor began the excavation work behind the west abutment in February 2009. Installation of the cofferdam sheeting began in March 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.

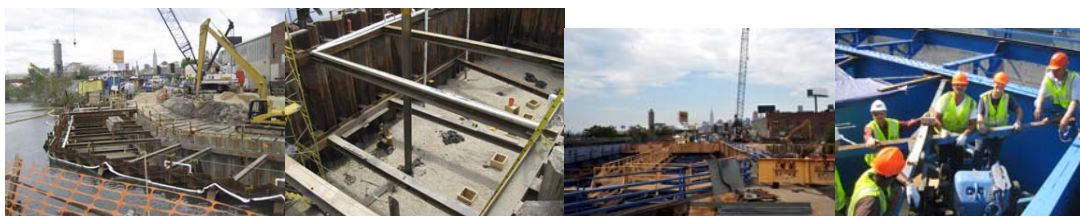
The contractor began the demolition of the concrete deck in September 2009 and the repair of the structural steel in October 2009.

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.

Cofferdam reinforcement was completed in March 2010. The driving of piles started in May and was completed in June. Steel repairs were completed in September. The grid deck concrete placement was completed in October. The bridge was reopened to vehicular traffic on December 24, 2010.

Construction was substantially completed on May 20, 2011. The mitigation work at Newtown Creek was completed in June 2011. A total of 77 cubic yards of debris was collected from the creek, which exceeded the permit requirement of 75 cubic yards.

ACCOMPLISHMENTS & PLANNED PROJECTS



May 2010: Pile Driving. Steel Deck Removed. (Deck View Credit: Bernard Ente) June 2010: Removing the Motor for Replacement and the Main Machinery Shaft for Rehabilitation. Oiler Carl Wharton, Mechanical Engineer Ibrahim Ibrahim, Oilers Tom Strommen and Richard Morreale, and Construction Project Manager Ali Mozaffari. (Credit: Vera Ovetskaya)



Late December 2010: Bridge Open to Vehicular Traffic. (Credit: Mitch Waxman) Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse and Director of Bridge Repair Pinakin Patel at the Substantial Completion Inspection in May 2011. Supervisor Electrician Jose Done and Electricians Michael Kowalenko and Gary Emmanuel. (Credit: Samuel Teaw)

Component Rehabilitation

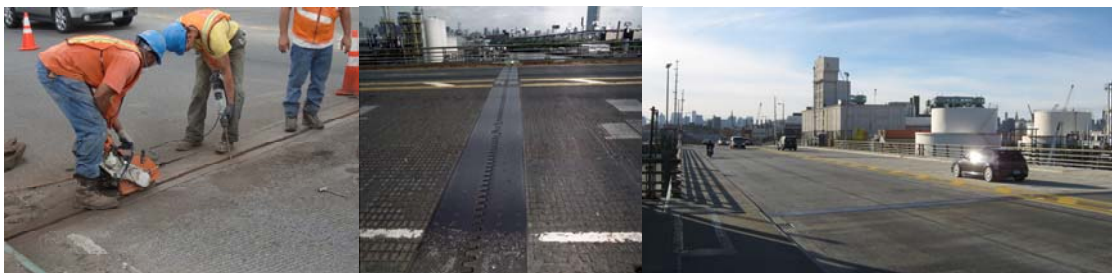
GREENPOINT AVENUE BRIDGE OVER NEWTOWN CREEK (BROOKLYN/QUEENS) (a.k.a J.J. BYRNE MEMORIAL BRIDGE)

The Greenpoint Avenue Bridge over Newtown Creek connects the boroughs of Brooklyn and Queens. It is situated between Kingsland Avenue in Greenpoint and Review Avenue in Blissville. 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, with a sidewalk on either side. The roadway is 56 feet wide and sidewalks are 7 feet wide. The bridge consists of eleven fixed spans and a bascule span. In 2009, the bridge carried approximately 22,746 vehicles per day.

The roadway surface of the movable span is a concrete-filled steel grid deck. The grid deck was severely deteriorated and required frequent maintenance. Forty-two safety flags related to this condition were closed between 2007 and the first quarter of 2009. Due to the large number of repeated safety flags, and the expected continued deterioration of the deck, an urgent and permanent solution was deemed necessary. The Department decided to replace the deck. In addition, the scope of work included replacement of all the compression seals, the roadway joints, the cracked stringers, and the resurfacing of the intersection at the Queens end. A Notice to Proceed for the American Recovery and Reinvestment Act-funded component rehabilitation of this bridge was issued to the contractor with a start date of March 26, 2010.

Construction began on April 5, 2010. Installation of temporary shielding under the movable span and deck joint repair work was completed in July 2010. The contractor began Phase I construction work on August 29, 2010. The replacement of the roadway grating continued for the next six weeks. The Queens-bound half of the bridge was closed, and the Brooklyn-bound lanes were converted to one lane in each direction.

ACCOMPLISHMENTS & PLANNED PROJECTS



Deck Joint Repair Work in June 2010. Finished Greenpoint Avenue Bridge Roadway and Sidewalk in November 2010.

Stage 1 work (Queens-bound) was completed on October 8, 2010, and Stage 2 work (Brooklyn-bound) began on October 9. The Queens-bound travel lanes were converted to one lane in each direction. The bridge was closed to marine traffic from October 25 to November 1, 2010 to facilitate the removal of the old grating and installation of the new one. The bridge was fully opened to vehicular traffic on November 23, 2010. The component rehabilitation project was substantially completed on January 20, 2011.



Greenpoint Avenue Bridge in April 2011. (Credit: Sergey Parayev)

When and Where Unit

In 2011, the following structures were worked on under the Division's When and Where contracts: Henry Hudson Parkway Viaduct over West 72nd to West 79th Street, Trans-Manhattan Expressway over Harlem River Drive, Riverside Drive over West 158th Street, Ed Koch Queensboro Bridge, West 155th Street Pedestrian Bridge over Amtrak 30 Street Branch, West 207th Street Bridge over West Fordham Road, Boston Post Road Bridge over Hutchinson River, Henry Hudson Parkway over Amtrak 30th Street Branch, Dykman Street Bridge over Henry Hudson Parkway, Morris Street Pedestrian Bridge over Brooklyn Battery Tunnel Exit, Broadway Bridge over Harlem River, Henry Hudson Parkway Northbound over Ramp to 96th Street, Williamsburg Bridge, Henry Hudson Parkway Southbound over Ramp to 96th Street, Linden Boulevard over Cross Island Parkway, Hempstead Avenue over Cross Island Parkway Ramp Northbound, 14th Avenue Bridge over Cross Island Parkway, 149th Street over Cross Island Parkway, 49th Street over Grand Central Parkway, 150th Street Bridge over Cross Island Parkway, Northern Boulevard Westbound over Flushing River, Northern Boulevard Eastbound over Flushing River, 35th Street over Brooklyn-Queens Expressway, 44th Street Bridge over Grand Central Parkway, 37th Street over Brooklyn-Queens Expressway, Morning Star Road over Railroad, 79th Street Traffic Circle over 79th Street Pedestrian Plaza, 79th Street Ramp to Garage over 79th Street Boat Basin, Corlears Park Road over FDR Drive, East 78th Street Pedestrian Bridge over FDR Drive, 79th Street Pedestrian Plaza over 79th Street Boat Basin, Pedestrian Bridge at 73rd Street over Conrail, East 6th Street Pedestrian Bridge over FDR Drive, West 181st Street Pedestrian Bridge over Henry Hudson Parkway Northbound, Delancey Street Pedestrian Bridge over FDR Drive, Fort Tryon Park over Underpass, West 173rd Street Pedestrian Bridge over Amtrak, Inwood Hill Park over Amtrak 30 Street Branch, Brooklyn Promenade over Brooklyn-Queens Expressway, 28th Avenue Pedestrian Bridge over Cross Island Parkway, Forest

ACCOMPLISHMENTS & PLANNED PROJECTS

Park Drive Bridge over Abandoned LIRR, Foot Bridge over Brooks Lake, Crocheron Park Pedestrian Bridge over Cross Island Parkway, West 8th Street Pedestrian Bridge over Surf Avenue, and Brooklyn-Queens Expressway Eastbound over Brooklyn-Queens Expressway Westbound.



Addressing a PIA Flag on the Broadway Bridge in February 2011.



Working on the 44th Street Bridge over Grand Central Parkway in March 2011. (Credit: Artemio Angeles)



73rd Street Pedestrian Bridge Over Amtrak – Red Flag Repair of the Steel Beam Grid. Span 5 – Stringer S3 Exhibited Severe Corrosion With Holes. After Repair with Bolted Web Plates. Span 5 – Floorbeam exhibited Severe Deterioration on Web and Bottom Flanges. Span 5 - New Floorbeam Under Stringers S2 & S3. (Credit: Artemio Angeles)



Working on the Ed Koch Queensboro Bridge in September and October 2011. When and Where Contract Unit Director Sudhir Jariwala (Background) Inspecting Repair Materials at the Henry Hudson Viaduct in September 2011.

Currently scheduled projects include the Harlem River Drive Northbound Ramp over Harlem River Drive.

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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. These repairs 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 licensed underwater capability 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 addressed include City Island Road Bridge over Eastchester Bay, 207th Street/West Fordham Road Bridge over the Harlem River, Shore Road (Pelham Parkway) Bridge over the Hutchinson River and additional safety flags on the Broadway Bridge over the Harlem River.

Some of these locations experience repeated damage due to heavy marine traffic and/or a narrow channel, such as the Shore Road (Pelham Parkway) Bridge over the Hutchinson River. The issuance of new flags occasionally necessitates new visits to even recently completed projects. Timber fender systems especially susceptible to recurring hits by barge traffic, and consequently require periodic restoration in relatively short time periods. 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.

Numerous barge hits at the Shore Road Bridge occurred since the Unit last made repairs to the fender system protecting the channel piers. As a result, a significant amount of timber planking and walers had to be replaced at this location. Also, in an attempt to preclude future damage from typical barge hits, a special plastic material called "UltraPoly" was installed at the top portion of the fender planking and at selected dolphin piles. So far, this material has been shown to protect against rubbing damage. In addition, cleaning off and refurbishing was performed on the safety netting previously installed beneath the bridge decks to protect the waterway from falling deteriorated concrete.



Working on the Shore Road Bridge in December 2011. (Credit: Artemio Angeles) When and Where Contract Unit Director Sudhir Jariwala at the Shore Road Site to Inspect the Fender System Repairs as well as the Safety Flags Repair Under the Arch Spans.

The Broadway Bridge over the Harlem River experienced a continuation of the deterioration of the clip angles, with deteriorated concrete falling into the waterway. At this location, it was not feasible to use safety netting for the protection of marine traffic. A previous operation had been carried out in which such suspect clip angle locations were identified by hammer-testing the entire underside of the bridge, and all those that failed were removed. Unfortunately, additional rapid deterioration occurred to such an extent, that additional angles had fallen into the waterway. At this point the decision was made to remove all of the clip angles from the underside of the bridge to ensure that this problem was eliminated.

ACCOMPLISHMENTS & PLANNED PROJECTS

PAINTING

In 2011, the following bridges were painted: Carroll Street Bridge over Gowanus Canal, Cropsey Avenue Bridge over Coney Island Creek, East Tremont Avenue Bridge over Hutchinson River Parkway, Grand Concourse over East 170th Street, Queens Boulevard Access Road over Brooklyn-Queens Expressway Southbound, Roosevelt Island Avenue Bridge over Flushing Meadow Park Road, Rust Street over Flushing Avenue, Shore Road Bridge over Hutchinson River, Union Turnpike over Cross Island Parkway, Woodhaven Boulevard Bridge over Atlantic Avenue, East 12th Street Bridge over Belt Parkway, 14th Avenue over Cross Island Parkway, 147th Street Bridge over Cross Island Parkway, 149th Street Bridge over Cross Island Parkway, 150th Street Bridge over Cross Island Parkway, and 160th Street Bridge over Cross Island Parkway.



Bridge Painter Vlatko Zic and Supervisor Bridge Painter Cesar Pazmino Atop the Brooklyn Bridge Tower in July 2011, Preparing to Change the Flag. Bridge Painter Vlatko Zic and Deputy Director of In-House Painting Earlene Powell After Completing their Descent From the Brooklyn Bridge Tower in July 2011. (Credit: Alexander Engel) Shore Road Bridge After Painting. (Credit: Hughie Flood) Supervisor Bridge Painter Hughie Flood.



Bridge Painters Willie Tyler and Andrew Law at the Shore Road Bridge. Bridge Painters Brian Kavanagh, Michael Scotti, Andrew Law, Willie Tyler, and Efrosini Katanaki at a Bridge Near the Jacob Javits Convention Center. (Credit: Hughie Flood)

During 2011, the following structures were also painted: Belt Parkway Bridge over Mill Basin (Brooklyn) Bridge Operator House, Maintenance and Repair Facility at Flatlands, Department of Transportation Facilities at the Harper Street Yard, Sign Shop at the Maspeth Maintenance and Repair Facility, Department of Transportation Coin Collection Facilities at 66-26 Metropolitan Avenue, Department of Transportation Sign Shop at 59th Street, Greenpoint Avenue Bridge over Newtown Creek Bridge Operator House, and Third Street Bridge over Gowanus Canal Bridge Operator House.

GRAFFITI REMOVAL

In 2011, 3,996,213 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

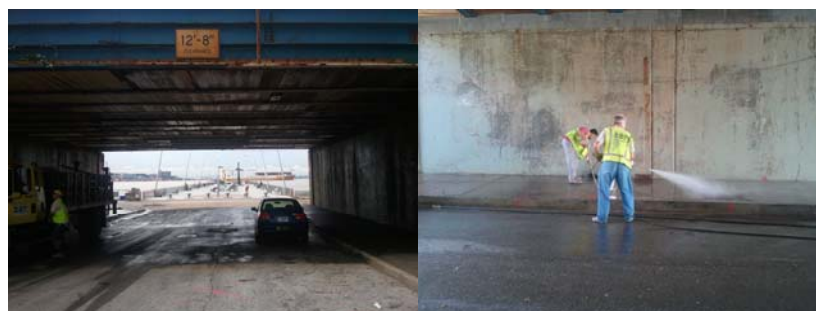
ACCOMPLISHMENTS & PLANNED PROJECTS

Expressway, Bruckner Expressway, Prospect Expressway, Grand Central Parkway, Long Island Expressway, Cross Bronx Expressway, Nassau Expressway, and Bronx River Parkway.



Before and After Graffiti Removal on the Manhattan Bridge in 2011. Bridge Painter Joao Silva Removing Graffiti. (Credit: Earlene Powell)

During 2011, graffiti was also removed from the following structures: Adams Street, Avenue S at West 7th St, Concrete Wall at Bay Ridge Avenue, Belt Parkway Bridge over Bay Ridge Avenue, Belt Parkway and North Conduit Avenue, Belt Parkway at Exit #24B, Belt Parkway at Exit #23A, Broadway Bridge over Harlem River, Bruckner Boulevard, Bruckner Expressway at Balcom Avenue, Crescent Street Yard, Cross Island Parkway, FDR Drive, Five Borough Bicycle Tour Route, Flushing Avenue, Forsythe Street and Canal Street, Francis Lewis Boulevard, Front Street, Furman Street, Grand Concourse over East Tremont Avenue, Grand Concourse over East 167th Street, Grand Concourse over East 204th Street, Hamilton Avenue at Brooklyn-Queens Expressway, Marathon Route, North Conduit Avenue and 88th Street, Park Avenue from 42nd to 46th Streets, Pearl Street, Pulaski Bridge over Newtown Creek, Queens Boulevard Bridge over Access Road Brooklyn-Queens Expressway SB, Queens Boulevard at 65th Place, Skillman Avenue at Queens Boulevard, South Street under the Brooklyn Bridge, Thomson Avenue at Queens Boulevard, Trotting Course Lane, Yankee Stadium Vicinity, 5th Avenue Bridge over LIRR and Sea Beach, South 6th Street Garage, 9th Avenue at Atlantic Avenue, 9th Street Bridge over Gowanus Canal, East 12th Street Bridge over Belt Parkway, 18th Avenue at 50th Street, 18th Avenue at 53rd Street, 59th Street and 1st Avenue, 73rd Avenue and Motor Parkway, 78th Avenue and Woodhaven Boulevard, 91st Avenue and 87th Street, 94th Street Pedestrian Bridge over LIRR Port Washington Branch, 97th Street and Atlantic Avenue, 97th Avenue and Woodhaven Boulevard, 163rd Street Pedestrian Bridge over Hawtree Basin, 167th Street and Depot Road, and 205th Street and 9th Avenue.



Bridge Painters Nicholas Krevatas and Branko Grzancic Removing Graffiti. (Credit: Earlene Powell)

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

The unit continued the design of the Bryant Avenue Bridge over Amtrak and CSX in the Bronx. This is a one span structure constructed in 1908, with a span length of 90 feet. This project includes replacement of the steel superstructure, bearings, approaches, water mains, and rehabilitation of both abutments. The proposed superstructure will consist of a reinforced concrete deck over prestressed concrete adjacent box beams. The two existing water mains will be removed, and replaced with two new pipes on the north sidewalk. Both water mains will be enclosed in a steel protective structure. Six existing Con Edison electrical conduits will be removed from the bridge. The construction of this bridge is scheduled to commence in spring 2013, and is expected to last eighteen months.



Bryant Avenue Bridge Looking North Towards the North Sidewalk. Looking South Towards the Pedestrian Overpass. Looking East Along the South Fascia of the Bridge.

In-House Design prepared the contract documents for guide rail installation at Cross Bay Boulevard southbound from the Addabbo Bridge to East 1st Road in Queens. The scope of work will include installation of approximately one mile of guide rail including transition and anchorage along the southbound roadway. The construction of guide rail is scheduled to commence in spring 2012, and is expected to last three months.



Taking Measurements at Cross Bay Boulevard in May 2011: Civil Engineers Gregory Novofastovsky and Jagdish Patel and Assistant Civil Engineer Leonid Sagalovskiy. Interim Director of In-House Design Ferdinand John.

As the designer of the ongoing contract to replace the Belt Parkway Bridge over Paerdegat Basin, this unit is currently involved in the construction support services.

This unit also handled the following emergency projects that required expeditious response by the Division: the design for installation of rumble strips at the Ed Koch Queensboro Bridge's south outer roadway near the Queens exit ramp; the design of the modification to the bridge rail at the north west corner of the Van Name Avenue Bridge to prevent errant vehicles from dropping into the area below the bridge near the railroad tracks; and the design of collision protection beams

ACCOMPLISHMENTS & PLANNED PROJECTS

adjacent to the Westchester Avenue Bridge over the Hutchinson River Parkway to protect the bridge's superstructure from strikes by illegal trucks on the parkway.

Other projects underway include the interim repair of the Henry Hudson Parkway Bridge from West 72nd Street to West 82nd Street, and the reconstruction of the Springfield Boulevard Bridge over the Belt Parkway. The Henry Hudson Parkway project was developed to the advanced design plans phase by NYSDOT, and then transferred to our Division. The In-House Design unit will now proceed with the design. Construction is scheduled to start in FY 2013. The Springfield Boulevard Bridge is a two span rigid frame concrete structure. This project is in the preliminary design phase, with construction currently scheduled to start in 2016.

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 2011 included the Willis Avenue and Broadway Bridges over the Harlem River, the Wards Island Pedestrian Bridge over the Harlem River; the Union Street Bridge over the Gowanus Canal; the Belt Parkway Bridge over Paerdegat Basin in Brooklyn; the Roosevelt Island Bridge over East River Channel; and the Manhattan Bridge.

ENGINEERING SUPPORT

BRIDGE PROJECT SPECIFICATIONS

In 2011, the Specifications Unit of the Engineering Support Section prepared and/or reviewed contract proposal books and/or specifications for 23 contracts, including 13 bridge rehabilitation and new construction/reconstruction contracts and 10 non-bridge contracts, in addition to replying to specification requests for 5 on-going construction projects. Three Six of the above contracts totaling approximately \$102 million in construction costs were advertised for bid and were bid in 2011.

Notable among the construction contracts prepared and /or reviewed, advertised and sent for bid were: preventive maintenance of 25 movable bridges, and marine borer remediation.

CONVERSION OF DIVISION ENGINEERING ARCHIVES

The Records Management Unit started the conversion of all TIFF (Tag Image File Format) drawings to PDF (Portable Document Format) format and the indexing of these drawings. Some 200,000 TIFF drawings will be converted to PDF format. To date, approximately 54,000 drawings have been converted and about 41,000 have been indexed.

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

Unit staff monitored five bridges and one retaining stone wall in 2011: Depot Place Bridge over Conrail Yard, Third Street Bridge over Gowanus Canal, Pelham Parkway Bridge, Stone Arch Bridge in Central Park, Ninth Street Bridge over Gowanus Canal, and the retaining stone wall on Cannon Place.

ACCOMPLISHMENTS & PLANNED PROJECTS

ENGINEERING REVIEW

MACY'S THANKSGIVING DAY PARADE

As in past years, the staff of the Engineering Review Section actively participated in the 2011 Macy's Thanksgiving Parade. Months before the parade, the engineers reviewed the balloon specifications and flight analyses, and were involved in walkthroughs along the parade route to ensure the adequacy of the available envelope and the removal of any obstructions. This project was coordinated with Macy's and various City agencies such as City Hall, NYPD, DOB, and OEM.

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, two relieving platforms, and connector roads along Riverside Drive as a part of the residential and commercial development over the former Penn Central Rail Yard. The project also includes 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. The bridges are substantially completed and open to traffic, except for a connection between West 71st Street and West 72nd Street. The first phase of construction for the half tunnel section is complete and phase two is in progress.

RETAINING WALLS

659 City-owned retaining walls (along major streets and highways) have been inspected and inventoried since 2005, 40 of which have been estimated to be in poor condition. Out of the 40 walls, 28 retaining walls have been scoped and forwarded to DDC with capital funding for rehabilitation. These retaining walls are now in various stages of design and construction. As of September 2011, DDC has completed or nearly completed construction of 10 retaining walls. DDC has been requested to accelerate the rehabilitation of walls that are being forwarded to them. The retaining walls which are in fair to poor condition will be in a capital program for future rehabilitation.



Riverside Drive Retaining Walls: Riverside Drive Between West 99th Street and 104th Street, and Riverside Drive Between West 158th Street and West 165th Street. Riverside Drive Retaining Walls: Left Side of Riverside Drive Northbound, Holds Ramp to George Washington Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS

OVERWEIGHT TRUCK PERMIT REVIEWS

The Overweight Truck Permit Unit receives an average of 100 permit applications per week for overweight/over-dimensional trucks, self-propelled cranes, and occasional superload moves from utility companies crossing City-owned bridges, including critical bridges such as the Manhattan and Ed Koch Queensboro Bridges. Most of the permit requests must be reviewed and approved on the same day. To meet the demand, the Unit now utilizes a comprehensive bridge rating tool developed by AASHTO, which reduces the time required for structural analysis.

PROJECT SCOPING

In 2010, the unit was requested to prepare the scopes of work for the Design Investigative Study for 43 bridges owned by the Department of Parks and Recreation (DPR). As part of this commitment, the Unit prepared the scope of work for the Request for Proposals (RFP) for the procurement of a design consultant for CPSD package #1, consisting of eight bridges. The project was awarded in April 2011. Five more bridges owned by DPR were later added to the list. Based on DPR confirmation, the Unit is currently working on CPSD Package #2, consisting of 9 bridges. The scope of work for other bridges will be planned depending upon funding availability.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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 to NYSDOT for peer review in September 2008. Upon completion of their review, 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 end of March 2012.

ENVIRONMENTAL ENGINEERING

In 2011, the Environmental Engineering staff of the Quality Assurance section provided expertise and oversight for the cleanup of the oil spill discovered during the emergency repair of the Borden Avenue Bridge. The unit extensively coordinated corrective action plans and soil remediation designs with NYSDEC to remediate the site and enable the continuation of the bridge repair operations. The site was successfully remediated in accordance with the corrective action plan developed with the NYSDEC. The NYSDEC approved the successful cleanup operations and closed the spill in their database. As part of the remedial activities, NYCDOT was required to provide mitigation in the surrounding area. This mitigation consisted of cleaning debris from the Newtown Creek and its tributaries. Approximately 75 cubic yards of debris and garbage were removed from the shoreline in the creek and tributaries.

ACCOMPLISHMENTS & PLANNED PROJECTS



Administrative Engineer Uday K Dommaraju and Assistant Civil Engineer Jana Krettova After Inspecting the Installation of Strain Gauges on the Manhattan Bridge in March 2011. Assistant Civil Engineer Zakhar Vayntrub Reviewing Conditions on the Ed Koch Queensboro Bridge Near the Exit to Queens Plaza South in May 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 2010-2011, a total of 49,950 gallons of potassium acetate and 239 tons of sodium acetate were applied on the roadways of all four East River Bridges.



Anti-Icing Trucks. Anti-Icing Truck on the Brooklyn Bridge After a Storm in January 2011. (Credit: Russell Holcomb)

INSPECTIONS

In 2011, Inspections covered 88 bridges and 574 spans. Emphasis was placed on ensuring public safety through the monitoring of potentially hazardous conditions and temporary repairs. The unit performed 580 monitoring inspections, and 208 special winter monitoring inspections of cellular structures, shorings, and potential fire hazards. In addition, 168 emergency inspections were conducted in response to hot line calls, in-house requests, or citizen complaints.

ACCOMPLISHMENTS & PLANNED PROJECTS



Emergency Inspection of the Queensboro Bridge in February 2011. (Credit: Bojidar Yanev) Inspecting Miller Highway Shielding at 72nd Street in April 2011. (Credit: Russell Holcomb)

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 updated version of the system was field tested by the contractor and the Bridge Management Unit in 2011 and is scheduled for full implementation in 2012.

A future contract is anticipated 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.

Since 2002, the Division stores all bridge inspection reports in electronic 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.

In 2011, the Bridge Management Unit developed a map of truck routes and bridges under capital contracts for the purposes of the Truck Permits Unit. This unit also provided Bridge Maintenance with estimates of the life-cycle benefits of various maintenance tasks, obtained by the software package designed for that purpose.

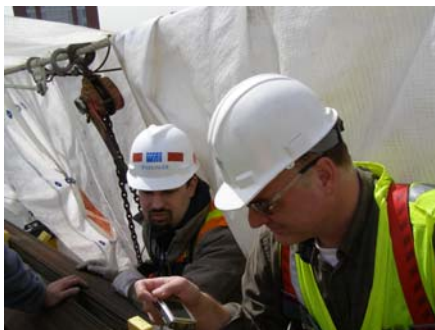
NON-DESTRUCTIVE TESTING

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. For demonstration purposes, the Manhattan Bridge was surveyed with a radar scanner. The results indicated that the stiffening of the bridge has reduced its torsional motion under subway traffic very significantly. The results matched independent measurements by Global Positioning Systems (GPS).

In November 2010, the cable research project moved to its final phase as sensors were installed on Cable "D" of the Manhattan Bridge with the help of bridge maintenance personnel. The data collection from the instruments in the cable was concluded in October 2011. The final report will recommend appropriate non-invasive technology for monitoring of suspension cables.

As part of the project, a unique magnetic flux field test was conducted on the cable. The method was developed by Japanese researchers specifically for this test. Its purpose is to estimate the amount of healthy steel in the cable without exposing the wires. The findings were presented at the Agency by the researchers in February 2011. This capability will be considered for future inspections of suspension cables.

ACCOMPLISHMENTS & PLANNED PROJECTS



Manhattan Bridge Engineer-in-Charge Brian Gill Inspecting Cable "D."

In 2011, the Bridge Management Unit selected a consultant for the design and installation of a real time on-line system monitoring of the abutments of three bridges in the Bronx identified as vulnerable to scour. The contract is expected to start in 2012.

In 2011, borescope inspections were conducted on various bridges. In October and November 2011, the bridge carrying the Belt Parkway over Ocean Parkway was inspected with the borescope in order to assist the Engineering Review Section in developing appropriate repair recommendations. Based on the findings of the borescope inspection, the approaches of the bridge were scanned with ground penetrating radar, and the results formed a basis for the overall structural assessment.

CLEANING

In 2011, 9,743 cubic yards of debris were removed from bridges and their surrounding areas, and 1,692 drains were cleaned.



Drain Crew After Hand-Tool Cleaning the Clogged Catch Basins at Night on the Eastbound Brooklyn-Queens Expressway in April 2011: Highway Repairers Linda Rose and Sharon Britt, Supervisor Highway Repairer Joseph Turchiano, and Highway Repairers John Latona and Alfred Black. (Credit: Russell Holcomb) The "SnakeCam" is a Camera that is Fed Into a Drain/Sewer to Show the Crew What is Occurring. Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Supervisor Highway Repairer Anthony Irizarry, and Assistant City Highway Repairer John Tammaro Using the Camera on a Drain on the Eastbound Brooklyn-Queens Expressway in September 2011. Supervisor Highway Repairer Anthony Irizarry, Highway Repairer Michael Cunningham, and Assistant City Highway Repairer John Tammaro Using the Scupper Truck to Clean the Drain. (Credit: Paul Schwartz)

ACCOMPLISHMENTS & PLANNED PROJECTS



Highway Repairer Ruben Sanchez Washing the Staircase at the PS-5 Pedestrian Bridge over 10th Avenue in Manhattan in November 2011. (Credit: Joseph Flood)

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, Cryptococcosis and Toxoplasmosis, when the spores are transmitted to humans who breathe in the harmful dust.

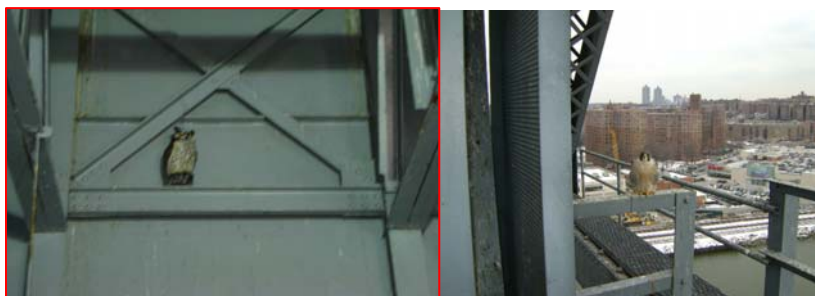
The Division utilizes a relatively low tech, and passive, approach to deterring pigeons. In 2006, the type of barrier used to cage out pigeons was changed from the drop ceiling method to netting. The netting is supported by steel cables that are clipped to the beams. This method is currently in use under 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 five 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 2011, pigeon dropping removal and/or pigeon proofing were performed at the Broadway Bridge, Pennsylvania Avenue over the Belt Parkway, along the Dyre Avenue Subway Line in the Bronx, the 59th Street Shop (Trolley Barn), and 125th Street at Marginal Street.



Nature's Pigeon Deterrent—A Falcon on the Brooklyn Bridge South Side Tower. Falcon at the Brooklyn Bridge Manhattan Tower Top in July 2010. 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)

ACCOMPLISHMENTS & PLANNED PROJECTS



"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.



Pulaski Bridge Opening in February 2010.
(Credit: Bernard Ente)

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.

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 summer 2013. 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 Shore Road Bridge over Hutchinson River will be replaced with a new bridge built with a higher clearance, thereby reducing the number of times the bridge must be opened. At that time, we can determine if advance notice is justified.

ACCOMPLISHMENTS & PLANNED PROJECTS

Summary of Vessel Openings 1997 - 2011

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Brdn Ave. (Q)	15	0	3	0	28	0	0	0	1	0	0	0	0	0	0
Brdwy (B/M)	7	2	0	6	27	83	49	16	2	18	42	58	57	15	11
Brecknr Expwy (Estrn Blvd) (B)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brecknr Expwy (Unnpnt Brdg) (B)	363	257	345	385	420	332	300	309	253	250	281	323	349	308	198
Carroll St. (K)	142	110	174	102	80	124	186	49	22	28	13	38	91	146	29
Grand St. (K/Q)	37	23	24	17	50	19	10	8	5	2	5	0	0	0	3
Grnpnt Ave. (K/Q)	626	669	787	688	641	659	738	1093	1045	905	641	485	428	388	667
Hmltn Ave. (K)	1157	996	982	933	832	946	824	757	677	1077	354	0	150	905	1060
Hntrs Point Ave. (Q)	15	0	1	0	36	0	0	0	0	0	1	0	0	0	0
Htchnsn River Pkwy (B)	32	75	46	5	120	30	5	37	10	2	51	61	170	224	169
Macombs Dam (B/M)	3	0	0	0	0	0	0	0	0	0	4	2	0	3	1
Mdsn Ave. (B/M)	0	0	0	0	0	0	0	7	0	9	35	8	0	3	1
Metrlptn Ave. (K)	423	448	513	279	366	339	342	153	0	104	329	245	240	254	413
Mill Bsn (K)	628	591	433	336	317	142	173	164	162	174	182	190	183	197	236
Pulaski (K/Q)	291	332	383	276	208	308	599	694	734	433	489	639	611	467	591
Rsvlt Islnd (M/Q)	0	4	0	58	48	125	63	669	150	54	48	0	62	0	0
Shore Rd (Pelham Pky) (B)	2158	2274	2162	2168	2222	1897	1910	2011	1683	1704	1645	1446	806	1197	811
Union St. (K)	144	103	144	85	101	62	24	21	11	9	5	10	28	32	4
Ward's Islnd Pdstrn (M)	2	1	0	0	279	0	0	7	2	8	4	6	3	5	0
Willis Ave. (B/M)	9	0	4	4	40	0	7	25	2	41	67	17	9	1	1
3 rd Ave. (B/M)	9	0	2	1	1	0	0	0	0	6	60	7	0	3	3
3 rd St. (K)	149	112	157	178	117	212	152	99	43	31	39	49	89	74	27
9th St. (K)	0	0	192	513	808	733	547	457	360	480	333	287	387	475	670
145 th St. (B/M)	3	0	0	1	6	0	0	9	0	0	0	0	0	0	1
W.207 th St. (B/M)	7	2	0	6	14	4	6	10	1	12	24	2	3	7	5
TOTAL	6220	5999	6352	6041	6761	6015	5935	6595	5163	5347	4652	3873	3666	4704	4901

ACCOMPLISHMENTS & PLANNED PROJECTS

RESEARCH AND PRESENTATIONS

In 2011, research work and/or case histories of the Division were presented in the following proceedings:

Transportation Research Board 90th Annual Meeting, Washington, D.C., 23 – 27 January 2011. Mcelwee, William. *Special Construction Techniques for Steel and Concrete Highway Bridges – Willis Avenue Bridge*.

Transportation Research Board 90th Annual Meeting, Washington, D.C., 23 – 27 January 2011. Yanev, B., and Richards, G. *Bridge Maintenance in New York City: Network- and Project-Level Interaction*.

Municipal Engineers of the City of New York, New York City, 27 January 2011. Hedayati, A., Sanghvi, S., and Faouri, H. *Willis Avenue Bridge*.

Brobyggardagen 2011 ("Swedish Builders Day"), Svenska Mässan in Göteborg, Sweden, 31 January 2011. *The Bridges over the East River, New York, USA*.

American Society of Highway Engineers, New York City, 15 February 2011. Faouri, H. *Replacement of Willis Avenue Bridge Over the Harlem River*.

28th Annual International Bridge Conference, Pittsburgh, Pennsylvania, 5 – 8 June 2011. Holman, T. P., Tuozzolo, T. J., and Pastore, J. *Micropile Construction for the Willis Avenue Bridge Replacement – Geologic Challenges meets Urban Construction Logistics*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Perahia, H. *Rehabilitation of the Brooklyn Bridge*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Raggett, J., Virlogeux, M., and Gandhi, K. *Wind Study for City Island Cable-Stayed Bridge Over Eastchester Bay in the Bronx, New York City*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Gandhi, K. *The St. Louis Bridge, the Brooklyn Bridge, and the Feud Between Eads and Roebling*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Mallick, A., Pullaro, J., and Zamiskie, G. M. *Rehabilitation of the Historic High Bridge over the Harlem River*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Patel, R., Goldberger, M., and Gandhi, K. *Replacement of the East 78th Street Bridge over FDR Drive in New York City*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Nyman, W. E. *Design of Willis Avenue Swing Bridge Replacement, New York City*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Hedayati, A. *Replacement of Willis Avenue Bridge: Highlights of Construction Challenges*.

6th New York City Bridge Conference, New York City, July 25 – 26, 2011. Buyson, M., and Shams, M. *Rehabilitation of the Northbound and Southbound Bruckner Expressway Bridges, New York City*.

4th Annual Bridges Middle East, Doha, Qatar, November 27 – 30, 2011. Yanev, B. *Determining Maintenance Strategies From the Design Stage to Ensure Integrity of Inspections*.

4th Annual Bridges Middle East, Doha, Qatar, November 27 – 30, 2011. Yanev, B. *Investigating Strategic Bridge Maintenance Systems and Processes for Bridge Structures*.

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. Bridge Maintenance provided the technical support for the installation. As part of the project, a unique magnetic flux test was performed by the Tokyo Rope company, demonstrating that the method could be used for non-destructive

ACCOMPLISHMENTS & PLANNED PROJECTS

investigations of suspension bridge main cables.

Dr. Yanev is 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 2011 included: inspection of the Manhattan Bridge Main Cable, aluminum decks, epoxy asphalt systems, bridge management systems, bascule bridge design and construction, applying spray-on waterproofing membrane, bridge health monitoring, carbon fiber and fiberglass reinforced concrete, and polyester polymer concrete.



Inspecting a Loose Concrete Safety Flag at the Abandoned West Side Highway Ramp at 72nd Street and Riverside Park in May 2011: Interim Director of Bridge Preventive Maintenance Paul Schwartz, Bridge Repairer and Riveter Liu Yiu, Supervisor Bridge Repairer and Riveter Gean Pilipiak, Director of Bridge Repair Pinakin Patel, and Engineer-in-Charge Bala Nair. (Credit: Thomas Whitehouse)



Performing Structural Repairs of the Entrance to the Cellular Structure at Joralemon Street Under the Brooklyn-Queens Expressway Triple Cantilever in June 2011. Loose Concrete was Removed and Replaced, and Rebar was Cleaned and/or Replaced. Cement Mason Victor Porowski Placing Concrete in the Forms While Standing on a Wooden Platform Raised by a Hi-Lo. He is Wearing the Appropriate Fall Protection Gear. Bridge Repairer and Riveter Brook Budd, Cement Mason Victor Porowski on Raised Platform and Lawrence Marks Operating the Hi Lo, and Carpenter Stephen Buckley. (Credit: Thomas Whitehouse)



Assembling Three Pedestrian Prototype Fence Sections (Curved, Angled, and Straight), That Were Installed Underneath the Williamsburg Bridge in East River Park In December 2011. (Credit: Thomas Whitehouse)