

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 six major bureaus. The **Chief Bridge Officer** is responsible for formulating policy and providing executive direction. He oversees all aspects of the design, construction, rehabilitation and reconstruction, maintenance, operation and administration of the 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 and roadway closures and detours by reaching out to communities prior to the onset of construction. This enables the Division to proceed with its rehabilitation program with community input, and allows the Agency and its contractors to co-exist in a more harmonious manner with the community surrounding the project. Issues and problems of concern to the communities are brought to the attention of the appropriate Division personnel and addressed.

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

The **Flag Engineering** section is an engineering group that reviews, routes, and tracks hazardous or potentially hazardous safety and structural conditions ("flags") in or on the city's 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, photographs of condition, and, if necessary, a visit to the site. Subsequently, a "flag packet" describing the type of repair or response that is required is created and routed to an appropriate group, in-house or contractor, for elimination. Flags engineers supervise repair work performed by contractors. The section monitors the status of each flag, and reports on all activities on a monthly basis.

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

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

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, 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 2010 Bridge Operations effected a total of 5,583 openings, 4,704 of which allowed 8,041 vessels to pass beneath the bridges. The remaining 879 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 **East River and Movable Bridges Bureau** is responsible for all design and construction activities for all rehabilitation/reconstruction work that is planned, or currently taking place on the four East River Bridges, as well as all City-owned movable bridges and tunnels. This involves overseeing and supervising design consultants who prepare plans and specifications for bridge rehabilitation/reconstruction projects on the four East River Bridges and all Movable Bridges, as well as overseeing and supervising contractors, Resident Engineers and Inspection Consultants, and Construction Support Services Consultants during the construction phase.

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

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

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

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

In-House Design staff (comprised of the Structural, Electrical, and CADD Groups) prepare plans and specifications for bridge rehabilitation/replacement projects that enable the Division to restore bridges considered "structurally deficient," to a "very good" condition rating. This unit also handles urgent Division projects, as well as special repair projects of the **Bureau of Bridge Maintenance, Inspections and Operations**. Over the last 20 years, In-House Design has completed contract documents for over 30 major replacement/rehabilitation projects. Some of these structures were in highly environmentally sensitive areas, such as the FDR Drive from 42nd to 54th Streets, Hylan Boulevard over Lemon Creek, Chelsea Road over Sawmill Creek, Cropsey Avenue over Coney Island Creek, the Exterior Street Ramp, Belt Parkway Bridge over Paerdegat Basin, 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 unit also reviewed plans for the railing repair at the Van Name Bridge.

DIVISION OVERVIEW

The Electrical Group reviews and/or prepares contract documents for the electrical and street lighting work for all projects in the Division's capital program. They further review plans and specifications prepared by consultants and 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, microfilming, and digital media standards for the archiving of bridge records. It reviews design, as-built and shop drawings prepared by consulting firms, as well as CDs and DVDs. This unit maintains original plan files, upgrades the records database and converts original drawings into electronic media formats. It also answers requests for information regarding records of City-owned bridges.

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

The **Engineering Review Section** consists of nine units: *Structural Review, Retaining Wall, 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 (DDC) 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 *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 Eastside Access Project, and the Riverside South Project. In addition, the unit conducts other, non-bridge engineering projects, such as the annual balloon wind study for the Macy's Thanksgiving Day Parade.

The *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

DIVISION OVERVIEW

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 truck permit applications, performs load rating analyses if required, and reviews load postings for City owned bridges.

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 (ULURP). This unit also reviews Design reports and Environmental Impact Statement (EIS) of various other Agency projects with respect to their impact on City-owned bridges.

The *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, Roosevelt Island, Belt Parkway Bridge over Paerdegat Basin, Belt Parkway Bridge over Rockaway Parkway, Belt Parkway Bridge over Fresh Creek Basin, 11th Avenue Viaduct over LIRR Westside Yard, East 8th Street Access Ramp over Belt Parkway, St. George Staten Island Ferry Terminal Ramps, Northbound and Southbound Bruckner Expressway Bridges, emergency reconstruction of the west abutment and wing walls of the Borden Avenue Bridge over Dutch Kills, Annadale Road Bridge, Wards Island Pedestrian Bridge over Harlem River, Greenpoint Avenue Bridge Greenpoint Avenue Bridge over Newton Creek, 149th Street Bridge over LIRR, East 78th Street Pedestrian Bridge over FDR, and the Shore Road Circle Bridge. In addition, the Section provided services to the Component Rehabilitation Section on an as-needed basis and was actively involved in the approving materials required for the emergency repairs to the FDR Drive.

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

In addition to enforcing the lead paint removal protocols, the unit handles other environmental concerns. Typically, the unit participates in the design stage to ensure that any environmental

DIVISION OVERVIEW

issues are addressed during the construction phase of the project. These issues include, but are not limited to, asbestos abatement, soil sampling, groundwater sampling, remediation of contaminated soils and groundwater, worker exposure to environmental contaminants, management of waste oil, storage of hazardous waste, site safety, and OSHA compliance. The role of this unit in ensuring public safety has been recognized and commended by the community.

The unit continues to monitor waste water discharge for numerous projects involving the generation and disposal of waste water, such as the Willis Avenue and Roosevelt Island bridges. The unit is responsible for discharge monitoring in conjunction with the NYS SPDES Discharge Permits for discharges at the Eastern Boulevard Bridge, Hunters Point Avenue Bridge, Greenpoint Avenue Bridge, Cropsey Avenue Bridge, Manhattan Plaza Underpass, Battery Park Underpass, and the Metropolitan Avenue Bridge. The unit continues to provide environmental oversight and compliance on major capital projects such as the Willis Avenue Bridge, Roosevelt Island Bridge, Manhattan Bridge, Williamsburg Bridge, Brooklyn Bridge, Wards Island Pedestrian Bridge over Harlem River, 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. Currently, DOT is coordinating mitigation tasks in Newtown Creek with the NYSDEC to satisfy the permit mitigation requirements.

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

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

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

The **Bridge Painting** section's function is to maintain the protective coating of the City's bridges. The section is divided into two programs, the in-house (expense) program and the capital program. The capital program oversees total paint removal and repainting, performed by contractors; this is done at twelve-year intervals on bridges measuring more than 100,000 square feet of painted area, and bridges over railroads. In-house personnel provide the inspection services on East River Bridge preventive maintenance contracts for quality control purposes. The

DIVISION OVERVIEW

in-house program is responsible for full steel painting of bridges measuring less than 100,000 square feet, and bridges that are not over railroads. This includes local surface preparation of deteriorated areas and overcoating of the entire bridge. In addition, the in-house program is responsible for salt splash/spot painting.

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

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

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

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

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

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

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

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

DIVISION OVERVIEW

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

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

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

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

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 OVERVIEW

Division's Ten Year Capital Plan is worth approximately \$3.4 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.

The **Truck Permit Section** issues approximately 1,200 Annual Overweight Load Permits (renewals only), 200 Annual Self-Propelled Crane Permits, approximately 28,000 Daily Oversize/Overdimensional/Supersize Truck Permits annually; and 200 Quarterly 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 January 2010, a Permit Was Issued for The Move of the Virginia Tech Lumenhaus, an Innovative, 800 Square Foot Solar-Powered House Designed, Constructed, and Operated by Students and Faculty for the U.S. Department of Energy Solar Decathlon. It was Exhibited in Times Square from January 27 to January 31, and was Featured on January 28 on the TV Show "Good Morning America".



In Early June 2010, We Coordinated a Super-Sized Move for Con Edison, in Conjunction with Bay Crane Service, to Transport a 228,500 Pound Transformer, at a Gross Vehicle Weight of 428,280. In Early November 2010, a Permit Was Issued for the Double-Headed Crane That Lifted the Rockefeller Center Christmas Tree and the Trailer That Brought the Crane. (Tree Photo Credit: Bay Crane Service)

JANUARY

Anti-icing

Anti-icing crews were deployed on the East River bridges from 6:00 AM on January 4, 2010 until 5:00 AM on January 4; three applications of chemicals were made. Icicle patrols monitored the FDR Drive, the Brooklyn-Queens and Cross-Bronx Expressways, and the Battery Park Underpass.

Anti-icing

On January 8, 2010, .6 inches of snow fell in Central Park, and .4 inches at La Guardia and JFK Airports. Anti-icing crews were deployed on the East River bridges from 10:00 PM on January 7 until 8:00 PM on January 8; 6 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.

Hamilton Avenue Asphalt Plant (Brooklyn)

On January 16, 2010, Division ironworkers repaired the plant's grizzly screen and drum.

Brooklyn Bridge

A Notice to Proceed for Contract #6 was issued to the contractor with a start date of January 19, 2010.

Department of Transportation Bridge Inspection Facilities at Kingsland Avenue (Brooklyn)

Cleaning and painting of this structure, which began on December 30, 2009, was completed on January 19, 2010.

Department of Transportation Ironworker Shop at 372 Kent Avenue (Brooklyn)

Cleaning and painting of this structure, which began on January 13, 2010, was completed on January 22, 2010.

Hamilton Avenue Asphalt Plant (Brooklyn)

On January 23, 2010, Division ironworkers installed a new grizzly screen.

Sanitation Worker Frank Justich Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on January 27, 2010, in tribute to Sanitation Worker Frank Justich of Queens West 1 Garage, who died in the line of duty on January 26. Mr. Justich, 41, an 11 year veteran of the Department, was fatally struck by a tractor trailer truck while on duty in Astoria. Mr. Justich was the tenth sanitation worker to have fallen in the line of duty since 2002. Seven of those ten workers were struck by vehicles. The flags remained at half-mast through Monday, February 1, 2010.



Sanitation Worker Frank Justich.

Anti-Icing

On January 28, 2010, 1.3 inches of snow fell in Central Park, 1.1 inches at La Guardia Airport, and .9 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 8:00 AM until 8:00 PM on January 28; 2 applications of chemicals were made. Icicle patrols monitored the FDR Drive, Battery Park Underpass, and the Cross Bronx and Brooklyn-Queens Expressways.

Department of Transportation Bridge Repair Facilities at 390 Kent Avenue (Brooklyn)

Cleaning and painting of the boiler room, which began on January 13, 2010, was completed on January 28, 2010.

Hamilton Avenue Asphalt Plant (Brooklyn)

On January 30, 2010, Division ironworkers repaired the plant's rap bin, ladders, and scale.

Madison Avenue Bridge over Harlem River (Bronx/Manhattan)

Cleaning and painting of the bridge operator's house began and was completed in January 2010.

Third Avenue Bridge over Harlem River (Bronx/Manhattan)

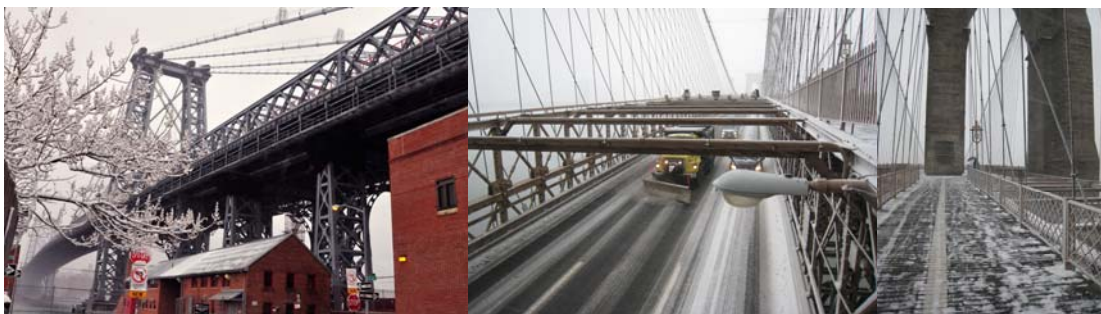
Cleaning and painting of the bridge operator's house began and was completed in January 2010.

FEBRUARY

Anti-Icing

On February 6, 2010, 1.6 inches of snow fell at JFK Airport. On February 9, .2 inches of snow fell at JFK Airport. Anti-icing crews were deployed on the East River bridges from 5:30 PM on February 5 until 5:00 PM the following day; 4 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.

On February 10, 2010, 10 inches of snow fell in Central Park, a record 10.4 inches at La Guardia Airport, and a record 11.1 inches at JFK Airport. Anti-icing crews were deployed as of 6:00 PM on February 9. On February 9, 10, and 11, Division personnel removed ice and snow from the East River Bridges and began clearing snow from priority locations. The clearing of priority locations continued over that weekend.



Williamsburg Bridge After the Storm. (Credit: Samuel Teaw) Plowing the Brooklyn Bridge Roadway. Cleared Brooklyn Bridge Bicycle/Pedestrian Path. (Credit: Russell Holcomb)

On February 15, 2010, 0.1 inches of snow fell at La Guardia Airport, and 0.5 inches at JFK Airport. On February 16, 5 inches of snow fell in Central Park, 5.2 inches at La Guardia Airport, and 4.4 inches at JFK Airport. On February 15, Division personnel again removed ice and snow from the East River Bridges and priority locations. All priority locations were cleaned by February

17. In the first storm, 7,950 gallons and 33 tons of chemicals were used on the East River Bridges. In the second storm, 3,600 gallons and 13 tons of chemicals were used.

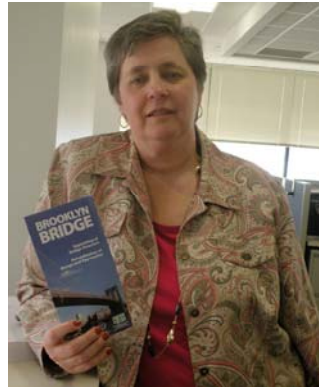
Anti-Icing

On February 25, 2010, a record 9.4 inches of snow fell in Central Park, a record 3.7 inches at La Guardia Airport, and a record 2.9 [record] inches at JFK. Airport. On February 26, a record 11.5 inches of snow fell in Central Park, a record 9.6 inches at La Guardia Airport, and a record 8.5 inches at JFK Airport. On February 27, 0.1 inches fell at JFK Airport.

In anticipation of the storm predicted to start at midnight on February 25, the night shift placed an anti-icing truck on each of the East River Bridges before 4:00 AM. The day shift began at 4:00 AM and was fully deployed before the morning rush hour. Anti-icing crews were deployed on the East River Bridges from 1:00 AM on February 25 until 5:00 AM on February 27; 10 applications of chemicals were made. Snow was removed from the priority overpasses.

Joannene Kidder

Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder was the subject of the "Staff Spotlight" feature in the February 2010 edition of "Byways," the official Agency newsletter.



Chief Staff Manager/Executive
Director of Community Affairs
Joannene Kidder Holding a
Brooklyn Bridge Project Brochure.

MARCH

Award

In March 2010, the American Council of Engineering Companies of New York selected the reconstruction of the Hamilton Avenue Bridge over the Gowanus Canal for a Gold Award in the structural systems category in its 2010 Engineering Excellence Awards. Founded in 1921, ACEC New York is the oldest continuing organization of professional consulting engineering firms in the United States. The Engineering Excellence Awards Program recognizes engineering achievements that demonstrate the highest degree of skill and ingenuity. This project was substantially completed in April 2009.



Hamilton Avenue Bridge (#2240231 and 2240232).
(Credit: NYSDOT)

Department of Transportation Coin Collection Facilities at 66-26 Metropolitan Avenue (Queens)

Cleaning and painting of this structure, which began on January 19, 2010, was completed on March 5, 2010.

Manhattan Bridge

On March 5, 2010, NYC Bridge Centennial Commission President Sam Schwartz joined Commissioner Janette Sadik-Khan and Chief Bridge Officer Henry Perahia, along with ironworkers, engineers, painters, electricians, and other bridge workers and aficionados at the bridge’s Manhattan Colonnade to bury a time capsule — to be opened on the 200th anniversary of the bridge - inside a small nook in the grand archway that crowns the entrance.

The time capsule includes: NYC Bridge Centennial Commission medallions, a Time Out NY guide, a list of the commission member, newspapers from December 31, 2009 (the 100th anniversary of the opening of the bridge), a program from the October 4, 2009 Manhattan Bridge Centennial celebration, a program for the week long events, a 2008 Bridges and Tunnels Annual Condition Report, a DOT Bridge safety vest, hard hat and ironworker gloves, a DOT 2009 Safety Calendar, a current list of Division employees, brochures from previous Manhattan Bridge capital projects, a New York City flag, a NYC MTA subway map, a flash drive and CD (to represent current electronic data saving methods), a 2009 almanac, and a 2009 NYC Green Book.



Time Capsule Contents. (Credit: Bernard Ente) Bridge Toll Rates. (Credit: Brian Gill)



Commissioner Janette Sadik-Khan. Chief Bridge Officer Henry Perahia Explaining the Ironworker Torch Compass (Invented by Joseph Antony). (Credit: Bernard Ente) Deputy Chief Engineer Russell Holcomb, Chief Bridge Officer Henry Perahia, Bridge Repairer and Riveter Joseph Antony, and NYC Bridge Centennial Commission President Sam Schwartz. (Credit: Brian Gill)



Chief Bridge Officer Henry Perahia and Commissioner Janette Sadik-Khan in Front of the Arch. Bridge Repairer and Riveter Helmet and Burning Goggles. Deputy Chief Engineer Russell Holcomb and Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse. (Credit: Mitch Waxman)



NYC Bridge Centennial Commission President Sam Schwartz, Commissioner Janette Sadik-Khan, Chief Bridge Officer Henry Perahia, Manhattan Bridge Engineer-In-Charge Brian Gill, Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, NYC Bridge Centennial Commission Recording Secretary Judy Schneider and Secretary/Treasurer Barry Schneider, Manhattan Borough Commissioner Margaret Fargione, and NYC Bridge Centennial Commission Director of Community Affairs Joshua A. Knoller. (Credit: Bernard Ente) Chief Staff Manager Joannene Kidder and Community Liaison Teresa Toro. (Credit: Brian Gill)



Capsule in its Resting Place. Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Bricklayer Vincent Sciulla (Holding Time Capsule), Deputy Chief Engineer Russell Holcomb, Supervisor Highway Repairer Joseph Flood, Bricklayer Luigi Cuffari, and Interim Director of Bridge Preventive Maintenance Paul Schwartz.

Brooklyn Bridge

On March 8, 2010, International Women's Day, Mayor Bloomberg greeted the participants of the Women for Women International "Join Me on the Bridge" event. Hundreds of women and men walked across the Brooklyn Bridge asking for peace and change for women worldwide. The walk ended in City Hall Park in a celebration featuring Women for Women International Founder and CEO Zainab Salbi, Former President of Ireland Mary Robinson, Model Naomi Campbell, and Tim Gunn from Project Runaway. A similar event was held at the Millennium Bridge in the United Kingdom.



International Women's Day on the Brooklyn Bridge: Model Naomi Campbell, Tim Gunn from Project Runaway, Mayor Michael R. Bloomberg, Women for Women International Founder and CEO Zainab Salbi, and Former President of the Republic of Ireland Mary Robinson.
(Credit: Spencer Tucker, Office of the Mayor)

163rd Street Pedestrian Bridge over Hawtree Basin (Queens)

Cleaning and painting of this bridge, which began on December 7, 2009, was completed on March 8, 2010.

Department of Transportation Traffic Operation Facilities at 28-11 Queens Plaza (Queens)

Cleaning and painting of these structures, which began on February 1, 2010, was completed on March 10, 2010.

Brooklyn Bridge Park

On March 22, 2010, Mayor Michael R. Bloomberg, Governor David A. Paterson and local officials opened the first portion (six acres) of Pier 1 at Brooklyn Bridge Park. Pier 1 includes the first of the park's waterfront promenades, lawns, a playground and the "Granite Prospect," a set of steps built from granite stones where park goers will be able to sit and enjoy the scenery. The "Granite

CHRONOLOGY

Prospect" is built from over 300 pieces of granite (over 1,900 linear feet) salvaged from the Roosevelt Island Bridge reconstruction along the western edge of the pier.



Removing the Roosevelt Island Bridge Panels. Piled Panels Awaiting Transfer to the Park.



The Granite Prospect.

Brooklyn Bridge

The necklace lights on the Brooklyn Bridge were turned off at 8:30 PM on March 27, 2010 as part of the worldwide observance of the 4th annual Earth Hour. This event, organized by the World Wildlife Fund, took place from 8:30 PM to 9:30 PM, and participating venues included the Empire State Building, the Chrysler Building, the United Nations headquarters building, and 39 Broadway theaters. Over 4,000 cities across 126 countries and territories around the world committed to participate this year. Earth Hour raises awareness about climate change and the threat from rising greenhouse gas emissions.

Department of Transportation Facilities at the Hamilton Avenue Asphalt Plant (Brooklyn)

Cleaning and painting of this structure, which began on December 22, 2009, was completed on March 29, 2010.

Department of Transportation Sign Shop at 34 Wave Street (Staten Island)

Cleaning and painting of this structure, which began on December 28, 2009, was completed on March 29, 2010.

Queensboro Bridge

March 30, 2010 marked the 101st anniversary of the opening of the bridge.

APRIL

Hamilton Avenue Asphalt Plant (Brooklyn)

On April 3, 2010, Division ironworkers repaired the plant's main drum and silo.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens)

A Notice to Proceed for the component rehabilitation of this bridge was issued to the contractor with a start date of April 5, 2010.

Carroll Street and Hamilton Avenue Bridges over the Gowanus Canal (Brooklyn)

On April 7, 2010, Administrative Superintendent of Bridge Operations George Kern, Supervisor Bridge Operator Mohamed Adel Tork, and Administrative Engineer Frank Kodah escorted a contingent of officials from Copenhagen, Denmark on a tour of several movable bridges. The group learned about NYCDOT’s maintenance methods and operational safety precautions.



Administrative Superintendent of Bridge Operations George Kern, Supervisor Bridge Operator Mohamed Adel Tork, and Administrative Engineer Frank Kodah With the Copenhagen Officials.

Hamilton Avenue Asphalt Plant (Brooklyn)

On April 17, 2010, Division ironworkers repaired the plant’s chutes and scales.

Ninth Annual “Take Our Children to Work Day”

On April 22, 2010, as part of the Agency’s ninth annual “Take Our Children to Work Day,” Division personnel explained and illustrated the activities necessary to maintain bridges. This year’s theme was “1 Youth, 1 Dream, 2Morrow’s Leader” in order to shape the future for a new generation at work.



Supervisor Carpenter Joseph Vaccaro, and Carpenter Michael Short III. (Credit: Ghanshyam Patel). Bridge Repairer and Riveters Peter Sciandra and Gonzalo Montano Demonstrating Welding. (Credit: Earlene Powell)



Personnel With The Children at the Shops: Bridge Repairer and Riveters Peter Sciandra, James Manning, William Dolan, Gonzalo Montano, Supervising Bridge Repairer and Riveter Steve Havemann, Electricians Thomas Cipriano and Robert Stackpole, and Supervisor Electrician Ben Cipriano. (Credit: Ghanshyam Patel) Engineer-in-Charge of East River Bridges Bridge Repair Bala Nair. Electrician Thomas Cipriano Modeling Safety Gear. (Credit: Earlene Powell)



Future Electrician. Machinist Ivan Yelusich Demonstrating Equipment. (Credit: Earlene Powell)
Machinists Mark Blokh and Ivan Yelusich With the Children. (Credit: Ghanshyam Patel)



Deputy Director of In-House Painting Earlene Powell With the Children on the Williamsburg Bridge. (Credit: Ghanshyam Patel) Cadets From the United States Military Academy at West Point on the Brooklyn Bridge With Assistant Civil Engineer Clara Medina, Chief Staff Manager Joannene Kidder, Supervisor Highway Repairer Joseph Flood and his Daughter, and Deputy Chief Engineer Russell Holcomb. Director of East River Bridges Hasan Ahmed With College Students at the Manhattan Tower of the Brooklyn Bridge.

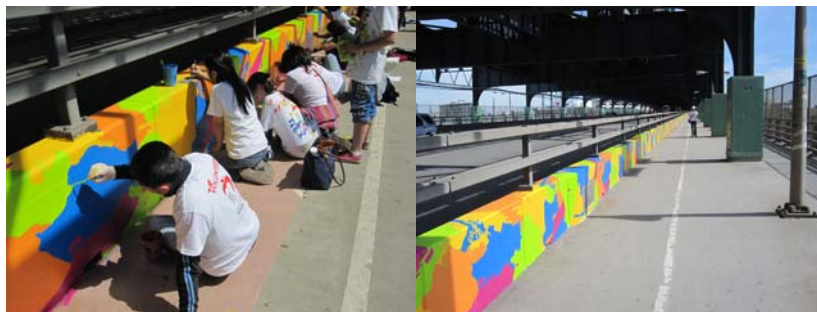
Hamilton Avenue Asphalt Plant (Brooklyn)

On April 24, 2010, Division ironworkers repaired the flights inside the drum.

Queens Boulevard Bridge over Amtrak and LIRR Yard

The Agency’s Urban Art Program enhances public space through art and improved street design and streetscapes. Launched in October 2008, the program brings the vision of the Agency’s World Class Streets initiative to life by partnering with community organizations to install murals, sculptures and other art forms in plazas and on medians, triangles, sidewalks, Jersey barriers and construction fences for up to 11 months on NYCDOT properties.

The final installation of “NYCamo,” a stenciled and painted brightly colored camouflage pattern by Niko Courtelis, based on the shapes of the five boroughs of New York City, was completed on April 24, 2010. The artwork, installed with the assistance the High School for Arts and Business, Corona, and 150 NY Cares volunteers, is located on the Jersey barriers along the walkway and bicycle path on Queens Boulevard between Jackson and Skillman Avenues.



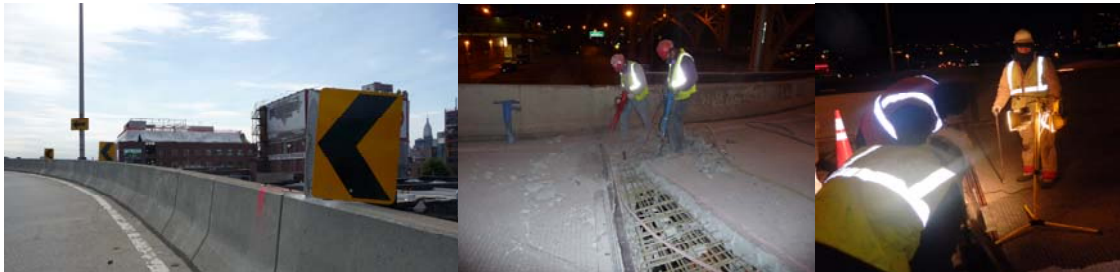
Queens Boulevard Bridge Stencils. (Credit: Emily Colasacco)

Queensboro Bridge Ramps F and G (Queens)

The component rehabilitation of these bridge ramps was substantially completed on April 27, 2010.



Working on Ramp F in August 2009. Completed Ramp in April 2010.



Ramp G: Performing Component Rehabilitation of Ramp G of the Queensboro Bridge in June 2009 and January 2010.

Promenade over FDR Drive from East 79th to East 91st Streets (Manhattan)

At about 5:00 AM on April 29, 2010, the Communications Center reported that a car carrier traveling south had become wedged underneath the park and promenade. The responding engineer found loose wire mesh and metal strip retainer. Division repair crews removed the loose material, and traffic was restored about 8:30 AM.



Division Ironworkers Removing Loose Metal Strips Under the Promenade.

MAY

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

May 1, 2010 marked the 115th anniversary of the opening of the bridge.



Macombs Dam Bridge (Elevation Credit: NYSDOT).

33rd Annual Five Borough Bike Tour

In preparation for the 42-mile Five Borough Bike Tour on May 2, 2010, Division personnel swept the Queensboro, Pulaski, Third Avenue, and Madison Avenue Bridges. Carpenters installed temporary plywood covers over the finger joints of the Pulaski Bridge, which were removed after the tour concluded that day.

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

Kane Street Bridge over Brooklyn – Queens Expressway (Brooklyn)

Contractor cleaning and painting of the bridge, which began on September 24, 2009, was completed on May 4, 2010.

Union Street and Sackett Street Bridges over Brooklyn – Queens Expressway (Brooklyn)

Contractor cleaning and painting of these bridges, which began on September 29, 2009, was completed on May 4, 2010.

Belt Parkway Bridge over Bay Parkway (Brooklyn)

Cleaning and painting of this bridge, which began on April 5, 2010, was completed on May 5, 2010.

Queensboro Bridge

On May 5 through 8, 2010, Division electricians assisted a film crew from the upcoming movie “The Son of No One” at the Queensboro Bridge.

Carroll Street Bridge over the Gowanus Canal (Brooklyn)

On May 6, 2010, Bridge Operations personnel hosted first grade children on a class trip to the bridge. Students, teachers, and parents enjoyed their visit.



Supervisor Bridge Operator Mohamed Adel Tork Explaining the Machinery at the Carroll Street Bridge. Children Drawing the Bridge. (Credit: Samuel Teaw)

East 174th Street Pedestrian Bridges over Sheridan Expressway (NB & SB) (Bronx), 37th Street Bridge over Brooklyn-Queens Expressway (Queens), Superior Road Bridge over Cross Island Parkway (Queens), 15th Avenue Bridge over LIRR Bay Ridge (Brooklyn), 13th Avenue Bridge over LIRR & Sea Beach (Brooklyn), East Drive Bridge over East Wood Arch (Brooklyn), West 148th Street Pedestrian Bridge over Amtrak 30th Street Branch (Manhattan), Inwood Hill Park Footbridge over Amtrak 30th Street Branch (Manhattan), West 181st Street over ramp to Washington Bridge (Manhattan), Jackie Robinson Parkway & Union Turnpike over Austin Street (Queens), and Albee Avenue Bridge over SIRT South Shore (Staten Island).

A Notice to Proceed for the component rehabilitation of these bridges was issued to the contractor with a start date of May 10, 2010.



East 174th Street Pedestrian Bridges over Sheridan Expressway (NB & SB), 37th Street Bridge over Brooklyn-Queens Expressway.



Superior Road Bridge over Cross Island Parkway, 15th Avenue Bridge over LIRR Bay Ridge, 13th Avenue Bridge over LIRR & Sea Beach.



East Drive Bridge over East Wood Arch, West 148th Street Pedestrian Bridge over Amtrak 30th Street Branch, Inwood Hill Park Footbridge over Amtrak 30th Street Branch.



West 181st Street over Ramp to Washington Bridge, Jackie Robinson Parkway & Union Turnpike over Austin Street, Albee Avenue Bridge over SIRT South Shore.

Madison Avenue Bridge over Harlem River (Bronx/Manhattan)

The 100th anniversary of the bridge was commemorated by the New York City Bridge Centennial Commission on May 12, 2010. Bronx Borough President Ruben Diaz Jr. was joined by Manhattan Borough President Scott M. Stringer and New York City Bridge Centennial Commission Sam Schwartz. Division personnel provided electricity and ensured that tents were in place to shield the dignitaries and speakers from the inclement weather.



Highway Repairer Steven Borowik, Electrician Kevin Costello, Bridge Operator Jose Rincon, Supervisor Bridge Operator Mohamed Adel Tork, Bridge Operator, and Interim Director of Bridge Preventive Maintenance Paul Schwartz. The Anniversary Cake. Manhattan Borough President Scott M. Stringer, Bronx Borough President Ruben Diaz Jr., and New York City Bridge Centennial Commission Sam Schwartz. Harry S. Truman High School Marching Band at the Parade. (Credit: Mitch Waxman)

Summit Street Pedestrian Bridge over Brooklyn – Queens Expressway (Brooklyn)

Contractor cleaning and painting of the bridge, which began on April 7, 2010, was completed on May 22, 2010.

Brooklyn Bridge

May 24, 2010 marked the 217th birthday of the bridge.



Brooklyn Bridge Flag.
(Credit: Peter Basich)

Brooklyn-Queens Expressway Bridge over 34th Avenue (Queens)

Cleaning and painting of this bridge, which began on May 3, 2010, was completed on May 25, 2010.

Memorial Day Tribute

The Brooklyn Bridge American flags flew at half-mast until noon on May 31, 2010, to commemorate those who died serving the nation during war.

JUNE

Brooklyn Bridge

On June 2, 2010, Vice President Joseph Biden visited a worksite adjacent to the Brooklyn Bridge to discuss how Recovery Act investments are creating jobs and improving infrastructure in New York and across the country. New York City has received funding to repair and upgrade key components of the Brooklyn Bridge to improve its efficiency and extend its useful life. Part of the funding for this \$508 million project was awarded through a \$30 million American Recovery and Reinvestment Act grant from the U.S. Department of Transportation. The project starts the four-year process to replace bridge decks on the ramp and approach structures, expand the numbers of lanes on ramps and repaint of all the bridge's steel components. This investment is creating jobs, generating local economic activity, and allowing New York City to address other critical infrastructure needs. The Vice President was joined by Deputy Secretary of Transportation John Porcari, Representative Jerrold Nadler, Mayor Michael R. Bloomberg, Commissioner Janette Sadik-Khan, and Managing Director of the General Contractors Association of New York Denise Richardson.

The project will reconstruct the roadway surface over the bridge's masonry arch blocks, install a waterproofing seal and a new drainage system on the bridge, and rehabilitate and seismically retrofit steel support structures, including the Franklin Square Arch. The vehicle entrance ramp from the southbound FDR Drive and the Brooklyn-side exit ramp to Cadman Plaza will both be expanded from one to two lanes to improve traffic flow and reduce backups and illegal lane-changing. Repainting the bridge's steel will prevent corrosion of bridge components and will keep components from prematurely aging, avoiding more maintenance work in the future that could result in more frequent lane closures. In addition to the ARRA funding, the project is being paid for using \$286 million in City capital funds and \$192 million in other federal funding.

CHRONOLOGY



Chief Bridge Officer Henry Perahia, Commissioner Janette Sadik-Khan, Vice President Joseph Biden, Brooklyn Borough President Marty Markowitz, Mayor Michael R. Bloomberg, and Deputy Secretary of Transportation John Porcari. Chief Bridge Officer Henry Perahia and Mayor Michael R. Bloomberg. (Credit: Spencer Tucker, Office of the Mayor) Vice President Joseph Biden and Commissioner Janette Sadik-Khan.



Representative Jerrold Nadler, Mayor Michael R. Bloomberg, Deputy Secretary of Transportation John Porcari, and Vice President Joseph Biden. (Credit: Spencer Tucker, Office of the Mayor) Vice President Joseph Biden Accepting a Model of the Brooklyn Bridge From Brooklyn Borough President Marty Markowitz.



Vice President Joseph Biden, Brooklyn Bridge Engineer-in-Charge Ohene Duodu, and Chief Bridge Officer Henry Perahia. (Credit: Douglas Reese) Brooklyn Bridge Engineer-in-Charge Ohene Duodu and Mayor Michael R. Bloomberg. Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse and Vice President Joseph Biden. (Whitehouse Credit: Christopher Sabbagh)



Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Interim Director of Bridge Preventive Maintenance Paul Schwartz, Bridge Repairer and Riveter Ignazio Trapani, and Vice President Joseph Biden. (Credit: Douglas Reese)



Deputy Chief Engineer Russell Holcomb and Vice President Joseph Biden. (Credit: Douglas Reese) Interim Director of Bridge Preventive Maintenance Paul Schwartz, Deputy Chief Engineer Russell Holcomb, Bridge Repairer and Riveter Ignazio Trapani, and Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse.

Wards Island Pedestrian Bridge over Harlem River (Manhattan)

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of June 14, 2010.

125th Street at Park Avenue (Manhattan)

On June 16, 2010, at the request of the Roadway Repair and Maintenance Division, Bridge Division crews responded to a through-hole in the sidewalk behind a bus shelter and installed six steel plates. This sidewalk collapse over a vaulted area occurred in front of the landmark Corn Exchange Bank. No one was injured.



Bridge Repairer and Riveter Joseph Hickey Operating a Boom Truck Hoisting a Plate, While Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse (in the Background) Dumps Bags of Cold Patch. The Exposed Vault. Bridge Repairer and Riveter Chris Mauldin Atop the Bus Shelter Guiding the Placement of the Steel Plate; Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse and Bridge Repairer and Riveter Scott Mahaffey (Behind the Shelter); Bridge Repairer and Riveter James Wright III and Supervisor Bridge Repairer and Riveter Gean Pilipiak; and Bridge Repairer and Riveter Joseph Hickey (Obscured). EDC Representatives (Back Row); EDC's Emergency When and Where Contractor Laborer and Supervisor (Front Left); Supervisor Bridge Repairer and Riveter Gean Pilipiak (Middle); and Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse Leveling the Cold Patch to Set the Steel Plate. (Credit: Reza Taheri)

Metropolitan Avenue over English Kills (Brooklyn)

Due to heat expansion, the bridge was closed to marine traffic beginning at 3:26 PM on June 18, 2010. It was returned to service at 9:15 PM.

Harper Street Asphalt Plant (Queens)

On June 19, 2010, Division ironworkers installed catwalks, handrails, and chute plates, and reinforced the stairway.

Hunters Point Avenue Bridge over Dutch Kills (Queens)

Cleaning and painting of the bridge, which began on May 26, 2010, was completed on June 24, 2010.

Award

In June 2010, *New York Construction Magazine* selected the Brooklyn Bridge renovation project (Contract #6) and the Staten Island Ferry ramp project as two of the top 25 project starts in the Tri-State Region in 2009.

JULY

9th Street Bridge over Gowanus Canal (Brooklyn)

Due to heat expansion, the bridge was closed to marine traffic beginning at 5:02 PM on July 5, 2010. It was returned to service at 8:00 AM the next day.

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

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of July 12, 2010.

Queensboro Bridge

A Notice to Proceed for the replacement of the aviation lights of this bridge was issued to the contractor with a start date of July 12, 2010.

Manhattan Bridge

On July 13, 2010, Mayor Michael R. Bloomberg and Small Business Services Commissioner Robert W. Walsh presented the 2010 New York City Neighborhood Achievement Awards to 17 recipients from all five boroughs. Established in 2002, the awards honor organizations, businesses and individuals that have demonstrated excellence in enhancing New York City neighborhoods by fostering economic opportunity.

The Development Award was presented to the DUMBO Improvement District for The Archway. The Water Street Archway is a 7,000 square foot tunnel under the Manhattan Bridge, paved with historic Belgian block. The Archway, which was closed for 17 years and used as a Division bridge metal storage space, was recently reclaimed by the DUMBO Improvement District in an effort to better serve the local community. With Rogers Marvel Architects, PLLC and the approval of the Landmarks Preservation Commission, the space was repurposed for more sustainable uses revolving around public art and cultural programming. Since the construction was completed in April 2009, the DUMBO Improvement District has brought an eclectic mix of cultural and artistic events to the Archway, including the Brooklyn Flea, DUMBO Fight Night, and live viewings of the 2010 FIFA World Cup South Africa. This new public space has brought a wealth of social and cultural benefits to the neighborhood.



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

Queensboro Bridge Facilities (Manhattan)

On July 13, 2010, the Agency's summer interns visited the bridge operations, bridge painting, ironworker shop, and Agency traffic sign shop facilities at the Queensboro Bridge plant.



Agency Summer Interns Learning From Bridge Painters Frank Duic (on Chair) and Frank Hollen (in Green Shirt) About the Use of a Boatswain Chair and Other Equipment in Painting Operations. (Credit: George Kern)



Administrative Superintendent of Bridge Operations George Kern, and Director of Bridge Repair Pinakin Patel, with the Agency Summer Interns at the Queensboro Bridge on July 13 (in alphabetical order): Lana Alkhatib (OCMC), Angela Betancur (Traffic Planning), Matthew Brill (Planning & Sustainability), Sheena Diaz (Special Events), Kyle Gebhart (Planning & Sustainability), Hector Gonzalez, Jennifer Harris-Hernandez (Bridges), Sujana Khan (FCPM), Ali Khan, Michael Lenore (Policy Office), Kathy Li (HR/Facilities Management), Shuzuan Li (Traffic Planning), Jane Lin (Lower Manhattan Borough Commissioner's Office), Christina Milone (HR/Facilities Management), Kristen Morith (Traffic Planning), Digna Restrepo (Traffic Planning), Daniel Scorse ((Planning & Sustainability), Ho Chul Shin (Facilities Management), Kavita Singh (FCPM), Johanna Urena (SIM).

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

The new swing span was moved from the assembly area at Coeymans in upstate New York to the twin barges on July 11 and 12, 2010. It was then delivered by barge to the contractor facility in Jersey City, New Jersey on July 14.



Preparing to Move the New Willis Avenue Span. Passing Under the Poughkeepsie Railroad Bridge, now a Pedestrian Bridge and State Park.

Harper Street Asphalt Plant (Queens)

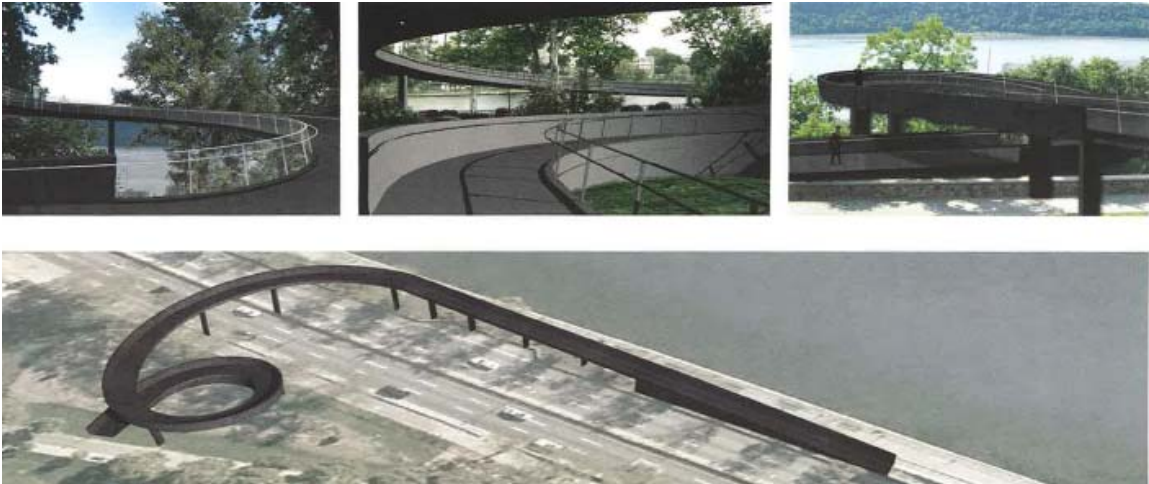
On July 20 and 24, 2010, Division ironworkers repaired the silo and staircase.

Award

On July 21, 2010, the Public Design Commission presented the Department of Design and Construction, the Department of Transportation and the Department of Parks & Recreation with a Design Award for the construction of the East 111th Street Pedestrian Bridge over the FDR Drive and the West 181st Street Pedestrian Bridge over the northbound lanes of the Henry Hudson Parkway, in its 28th annual Excellence in Design Awards.



East 111th Street and West 181st Street Bridges in 2008.



East 111th Street and West 181st Street Bridge Design Renderings.

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

The new swing span was moved from the contractor's facility in Jersey City, New Jersey up the East River and moored at the work site on July 26, 2010.



Voyage up the East River on July 26, 2010. New Willis Avenue Bridge Span Between the Manhattan and Brooklyn Bridges. (Credit: Bojidar Yanev)



New Willis Avenue Span Passing Under the Brooklyn Bridge. Passing Under the Williamsburg Bridge. (Williamsburg Credit: Ronald Rauch)



After Passing Under the Wards Island Bridge. (Credit: Nicholas Whitaker)

Belt Parkway over Bedford Avenue (Brooklyn)

Contractor cleaning and painting of the bridge, which began on June 3, 2010, was completed on July 30, 2010.

Harper Street Asphalt Plant (Queens)

On July 31 2010, Division ironworkers repaired the silo and shaker.

Third Street Bridge over Gowanus Canal (Brooklyn)

In July 2010, the Mayor's Office of Film, Theatre, and Broadcasting named this bridge as a "Location of the Month."



3rd Street Bridge in 2009. (Credit: NYSDOT)

Riverside Drive Viaduct at West 158th Street (Manhattan)

Cleaning and painting of the bridge, which began on December 1, 2009, was completed in July 2010.

AUGUST

Belt Parkway Bridge over Mill Basin (Brooklyn)

On July 13, 2009, the Division began a significant resurfacing project on the Belt Parkway's approaches to the Mill Basin Bridge. The work included subsurface repairs and installation of new asphalt and pavement markings. The pedestrian/bike path remained open at all times. Work on the eastbound roadway was completed on October 25, 2009. Division crews repaired in excess of 14,000 square feet of roadway pavement, using 345 tons of asphalt. Work on the westbound lanes began the night of October 26, 2009 and was suspended for the winter season in December. Resurfacing of the westbound lanes resumed the night of April 5, 2010, and the project was completed on August 4, 2010. A grand total of 36,019 square feet of roadway were repaired, using 947 tons of asphalt.

Brooklyn and Manhattan Bridges

On August 6 and 7, 2010, Division electricians assisted a film crew from the upcoming movie "Friends with Benefits" at the Brooklyn and Manhattan Bridges.

Hamilton Avenue Asphalt Plant (Brooklyn)

On August 8, 2010, Division ironworkers repaired the drum ring.

Harper Street Asphalt Plant (Queens)

On August 8, 2010, Division ironworkers installed a diverter plate for the overflow chutes and began installation of a platform on the plant's silo.

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

On August 9, 2010, the new 2,400 ton swing span was floated into place onto the new center pier. Mayor Michael R. Bloomberg blew the air horn to initiate the float-in process.



The New and Old Spans. (Credit: Russell Holcomb) Deputy Chief Engineer Russell Holcomb and Resident Engineer Abdi Hedayati.



August 9 Float-In. (Credit: Javier Beteta) Robin Lester Kenton, Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder, and Deputy Chief Engineer Jay Patel.



Bronx Deputy Borough President Aurelia Greene, Representative José Serrano, Commissioner Janette Sadik-Khan, Representative Charles Rangel, and Mayor Michael R. Bloomberg. Assistant Civil Engineer Reza Taheri, Construction Project Manager Vasily Avadiev, Assistant Civil Engineers Syed Naqvi and Salomon Gulamov, Administrative Engineer Muhammad Afzal, Assistant Civil Engineer Khalid Mohammed, Mechanical Engineer Nazmul Ahsan, Administrative Engineer Viswanath Ravindra, Commissioner Janette Sadik-Khan, Mayor Michael R. Bloomberg, and Representative José Serrano. (Credit: Robin Lester Kenton)



Engineer-In-Charge James Cusack, Deputy Chief Engineer Jay Patel and Mayor Michael R. Bloomberg. Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Mayor Michael R. Bloomberg, Deputy Chief Engineer Jay Patel, and Deputy Chief Engineer Russell Holcomb. Mayor Michael R. Bloomberg Blowing the Air Horn. Mayor Michael R. Bloomberg and Assistant Civil Engineer Syed Naqvi. (Credit: Robin Lester Kenton)

Harper Street Asphalt Plant (Queens)

On August 21, 2010, Division ironworkers repaired the silo and conveyor belt.

Brooklyn Bridge Park

On August 24, 2010, five additional acres of Brooklyn Bridge Park were opened to the public, including a recently established tidal salt marsh with riprap composed of granite blocks (3,200 cubic yards) salvaged from the old Willis Avenue Bridge. Planted with smooth cord grass, the tidal marsh will be a home to marine and aquatic bird life and allow park visitors to witness up close the tidal movements of the East River.

City Council Member Thomas White Jr. Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on August 27, 2010, in tribute to City Council Member Thomas White Jr., who died that day. Mr. White, 71, represented the 28th District in southeast Queens, which includes Jamaica, South Jamaica and Richmond Hill. Beginning in 1991, he spent 15 years in office under three different mayors. Mr. White was just one of two Council members elected a second time to the job after the City's since-repealed term limits law forced them out in 2001. He was the chair of the council's economic development committee, and the executive director of J-CAP, one of the largest substance abuse centers in the State. The flags returned to full-staff on Friday, September 3, 2010.



City Council Member Thomas White Jr.

Bay 8th Street over Belt Parkway (Brooklyn)

Contractor cleaning and painting of the bridge, which began on July 22, 2010, was completed on August 31, 2010.

SEPTEMBER

9th Street Bridge over Gowanus Canal (Brooklyn)

Due to heat expansion, the bridge was closed to marine traffic beginning at 3:03 PM on September 2, 2010. It was returned to service at 8:50 PM.

Harper Street Asphalt Plant (Queens)

On September 4, 2010, Division ironworkers installed handrails and three platforms with ladders, and made repairs to the hopper.

Harper Street Asphalt Plant (Queens)

On September 11, 2010, Division ironworkers installed handrails and installed plates on the shaker and drum.

Patriot Day Tribute

The Brooklyn Bridge flags flew at half-mast on September 11, 2010 to commemorate National Day of Service and Remembrance.



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

Harper Street Asphalt Plant (Queens)

On September 18, 2010, Division ironworkers repaired the staircases and main drum.

Jamaica Bay

A NYPD helicopter made an emergency landing in the water off Floyd Bennett Field in Brooklyn on the afternoon of September 22, 2010. The pilot, Detective Erin Nolan and her five-officer crew, were providing security for President Barack Obama's arrival at the United Nations. With only seconds to spare, the veteran pilot deployed flotation devices, enabling the crippled craft to land upright 30 yards from shore. That evening, Division ironworkers retrieved the damaged helicopter from the bay.



Division Crane and Damaged Helicopter. (Credit: Yiu Liu)

Prospect Yard (Brooklyn)

“Plastic Flowers Don’t Die,” an art installation by Simone Couto-Kaplan in partnership with the DUMBO Arts Festival, was officially opened during the 2010 festival, held from September 24 through 26, 2010. Plastic flowers were woven into wires of the industrial synthetic green fence located on Jay Street between York and Prospect Streets, transforming it into a vertical garden with passersby participating by adding flowers. The artwork is part of the Agency’s Arterventions program and remained on view until mid-December 2010.



(Credit: Simone Couto-Kaplan)

Manhattan Bridge

“The Vibration of Things,” a piece of interactive video art by Ed Purver, was projected onto the roof of the Water Street Arch, as part of the Dumbo Arts Festival 2010. The projections responded to the sound of the subway trains rolling by overhead and the voices of those inside the archway.

Harper Street Asphalt Plant (Queens)

On September 25 and October 2, 2010, Division ironworkers installed stairs and platforms.

Annadale Road Bridge over SIRT South Shore (Staten Island)

The reconstruction of the bridge was substantially completed on September 27, 2010.

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

Cleaning and painting of the bridge, which began in April 2010, was completed in September 2010.

Brooklyn Queens Expressway East Leg South Bound over 31st Avenue (Queens)

Cleaning and painting of the bridge began and was completed in September 2010.

Grand Concourse Bridge over East Tremont Avenue (Bronx)

Cleaning and painting of the bridge, which began in August 2010, was completed in September 2010.

Hunters Point Avenue Bridge over Dutch Kills (Queens)

In September 2010, the Mayor’s Office of Film, Theatre, and Broadcasting named this bridge as a “Location of the Month.”

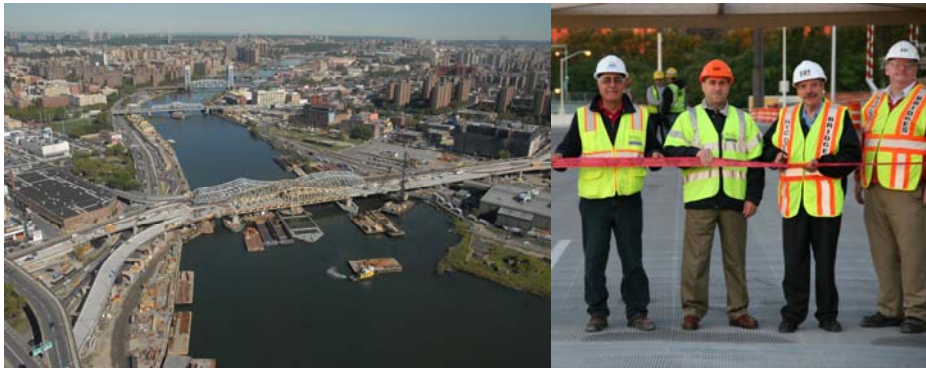


Hunters Point Bridge in 2002. (Credit: NYSDOT) Side View in 2008. (Credit: Vera Ovetskaya)

OCTOBER

Willis Avenue Bridge over Harlem River (Bronx/Manhattan)

Traffic was switched over to the new bridge at 7:05 AM on October 2, 2010.



New and Old Willis Avenue Bridges on October 2, 2010. Cutting the Ribbon: Resident Engineer Abdi Hedayati, Interim Director of Movable Bridges Hani Faouri, Chief Bridge Officer Henry Perahia, and Engineer-In-Charge James Cusack.

Harper Street Asphalt Plant (Queens)

On October 9, 2010, Division ironworkers completed the installation of the bottom landing area for the new stairs.

American Cancer Society’s “Making Strides Against Breast Cancer” Campaign

During October 2010, Division personnel and their friends and families participated in bake and book sales and other fundraisers, [and sponsored Lourdes Acevedo and the DOT Staten Island Team for the American Cancer Society’s annual “Making Strides Against Breast Cancer” walk.



Cupcake Display. Alice Todd, Farid Tadros, Lourdes Acevedo, and Jacqueline Rosa at the Sale. (Credit: Michele N. Vulcan)

Harper Street Asphalt Plant (Queens)

On October 16, 2010, Division ironworkers installed the top landing for the new stairs.

Harper Street Asphalt Plant (Queens)

On October 23, 2010, Division ironworkers installed grizzly bins and handrail, and made repairs to the silo.

Harper Street Asphalt Plant (Queens)

On October 30, 2010, Division ironworkers installed stair rails and bin plates.

Carroll Street Bridge over the Gowanus Canal (Brooklyn)

In October 2010, the Village Voice newspaper named this bridge as the “Best Small Bridge” in its 2010 Best of NYC Awards.

Williamsburg Bridge

In October 2010, the Village Voice newspaper named this bridge as the “Best Bridge to Run” in its 2010 Best of NYC Awards.

71st Avenue Bridge over Cooper Avenue Queens)

Cleaning and painting of the bridge, which began in September 2010, was completed in October 2010.

NOVEMBER

Lincoln Road Bridge over BMT Subway (Brooklyn)

“Foot Traffic,” an art installation by Crystal Gregory 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 4, 2010. The art is composed of dozens of crocheted hexagons stitched directly onto the fence. Ms. Gregory states that the piece “represents a colorful, playful and energetic geometric pattern that is inspired by the familiarity and warmth of a grandmother’s quilt.” The 11 month installation is part of the Agency’s Urban Art Program.



Lincoln Road Bridge Crocheted Artwork. (Credit: LinRoFORMA)

Harper Street Asphalt Plant (Queens)

On November 6, 2010, Division ironworkers continued the installation of catwalk and rails, and replaced broken plates on the bin.

New York City Marathon

In preparation for the Marathon on November 7, 2010, Division personnel inspected and cleaned the Queensboro, Pulaski, and Madison Avenue Bridges, and re-configured the Jersey barriers and placed hay bales at the ramps to the lower level of the Queensboro Bridge. This year’s starting line was moved 12 feet to the east, to make up for a difference in the dimensions of the new Willis Avenue Bridge.

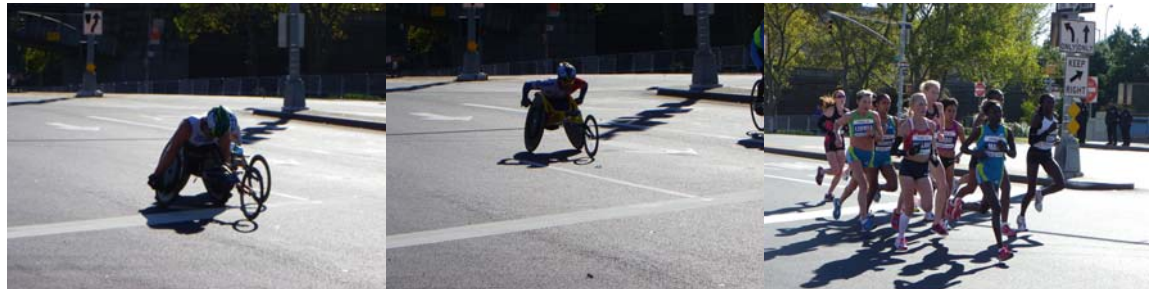
CHRONOLOGY



New Willis Avenue Bridge Ready for Runners. Supervising Bridge Operator Mohamed Adel Tork. United States' Dan Chossen (#427) of the Achilles Track Club. (Credit: Edgardo Montanez)



Runners on Willis Avenue Bridge. Members of the New York Scottish Pipes and Drums. (Credit: Edgardo Montanez)



Madison Avenue Approach and Bridge: Australia's Kurt Fearnley (#300 – 3rd Place Pushrim Wheelchair). Japan's Kota Hokinoue (#312 – 6th Place Pushrim Wheelchair). Female Racers: Russia's Ludmila Petrova (#102 – 7th Place), United States' Buzunesh Deba – United States (#118 – 10th Place), United States' Shalane Flanagan (#108 – 2nd Place), Mexico's Madai Perez (#114 – 9th Place), Kenya's Mary Keitany (#104 – 3rd Place), and Kenya's Edna Kiplagat (#117 – Winner). (Credit: Anthony Small)



Madison Avenue Approach and Bridge: Spain's Jorge Perez-De-Leza (#456 – 49th Place Hand Cycle). Kenya's Emmanuel Mutai (#6 – 2nd Place), and Ethiopia's Gebre Gebrmariam (#14 – Winner). Runners on the Bridge. (Credit: Anthony Small)



Madison Avenue Approach and Bridge: Kenya's Peter Kamais (#16 – 12th Place), Morocco's Abderrahim Goumri (#8 – 4th Place), and Brazil's Marilson Gomes Dos Santos (#10 – 7th Place). United States' Meb Keflezighi (#1 – 6th Place). United States' Tim Nelson (#18 – 13th Place). (Credit: Anthony Small)

The beginning and end of the Willis Avenue Bridge approach and ramps were closed by the NYPD Highway Patrol around 8:30 AM. The contractor installed orange safety drums at the First Avenue ramp, the B ramp split, and at 135th Street. Police officers kept the bridge closed until 7:00 PM.



Pushrim Wheelchair Racers. Deck Closeup.



Runners on New Bridge. View of Old Willis Avenue Bridge Spans.

Northbound FDR Drive at East 53rd Street (Manhattan)

The emergency repair of this section of the Drive was substantially completed on November 12, 2010.

Hamilton Avenue Asphalt Plant (Brooklyn)

On November 13, 2010, Division ironworkers repaired the plant's bin and main drum.

Harper Street Asphalt Plant (Queens)

On November 13, 2010, Division ironworkers repaired the lug chain and continued the installation of catwalk and rail.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens)

The bridge was fully re-opened to vehicular traffic on November 23, 2010.

West 207th Street/West Fordham Road over Harlem River (Bronx/Manhattan) (a.k.a. University Heights Bridge)

There are over 2,000 bridges in the five boroughs of New York City. Since October 14, 2009, Keith Nelson (Bindlestiff Family Cirkus co-founder), Rob Hickman, and a growing group of riders have been making weekly treks around the city to cross every one of them on unicycles. On November 24, 2010, the group crossed over the University Heights Bridge, the 170th bridge on their list.



Keith Nelson, Rob Hickman, and Dave Cox
Crossing the University Heights Bridge.
(Credit: NYC Uni Bridge Tour Archive)

84th 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 Kung Fu Panda and Wimpy Kid, 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 Meadowlands Racetrack in New Jersey on November 6, 2010, with NYPD and other agencies.

On November 25, 2010, wind speeds were relatively low and all 15 large balloons flew in the parade without incident. The maximum wind speed was approximately 11.8 miles per hour. Chief Bridge Officer Henry Perahia, Director of Engineering Review Abul Hossain, and George Jarvis were positioned at various locations along the parade route to observe compliance with the approved procedures. Eight anemometers were mounted on 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.



Testing the Balloons in New Jersey on November 6. New Wimpy Kid Balloon and 123 Sesame Street Float. New Kung Fu Panda Balloon. (Parade Credit: Hu Zhudong)



Snoopy Balloon, Tom Turkey Float, Kermit Balloon. (Credit: Hu Zhudong)



Civil Engineer Hu Zhudong, Administrative Engineer Udaya Dommaraju, Director of Engineering Review Abul Hossain, Commissioner Janette Sadik-Khan, Chief Bridge Officer Henry Perahia, Project Engineer George Jarvis, and Civil Engineering Intern Jana Krettova.

Udaya Dommaraju, Abul Hossain, and George Jarvis

Administrative Engineer Udaya Dommaraju, Director of Engineering Review Abul Hossain, and Project Engineer George Jarvis were the subjects of the “Staff Spotlight” feature in the November 2010 edition of “Byways,” the official Agency newsletter.



Administrative Engineer Udaya Dommaraju, Director of Engineering Review Abul Hossain, and Checking the Condition of a Portable Anemometer Used to Gauge Wind Strength at the Macy's Thanksgiving Parade.

DECEMBER

World AIDS Day

At the request of the United Nations, the necklace lights on the Brooklyn Bridge were turned off at 6:15 PM on December 1, 2010, the 23rd Annual World AIDS Day. Other participating venues turning off their lights in New York City included 40 Broadway theaters, Madison Square Garden, Carnegie Hall, the Apollo Theater, Radio City Music Hall, the Museum of Modern Art, the Plaza Hotel, the Beacon Theatre, the New York Stock Exchange, and the Washington Square Park Memorial Arch. The New York City event was part of the global “Light for Rights: Keep the Light on HIV and Human Rights Campaign” organized by amfAR, the Foundation for AIDS Research; UNAIDS - the Joint United Nations Programme on HIV/AIDS; Broadway Cares/Equity Fights AIDS; and World AIDS Campaign. In addition, the Empire State Building was lit red that night along with the Intrepid Sea Air Space Museum, the JFK Airport Control Tower, the NASDAQ Marketsite Tower in Times Square, and Brooklyn Borough Hall, as a homage to the red ribbon of HIV/AIDS awareness.

National Pearl Harbor Remembrance Day

The Brooklyn Bridge flags flew at half-mast on December 7, 2010 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.

Ocean Avenue Pedestrian Bridge over Sheepshead Bay (Brooklyn)

The project to replace the wooden deck planks, which began in mid-October 2010, was completed on December 10, 2010.



Replacing Planks on the Ocean Avenue Bridge: Carpenters John Green, Mark Pavia, Michael Short, and Andrew Myjer. (Credit: Pinakin Patel)

Harper Street Asphalt Plant (Queens)

On December 11, 2010, Division ironworkers repaired the hoppers and batch mixer.

Hunters Point Avenue Bridge over Dutch Kills (Queens)

On December 11, 2010, the New York City Bridge Centennial Commission and the Newtown Creek Alliance conducted a walking tour of the bridge in Long Island City to celebrate its 100th anniversary. The original wooden bridge was built in 1874. From 1874 to 1907 an iron bridge was in place before being replaced in 1910 by a double-leaf bascule bridge. The current version of the structure was built in the early 1980’s as a single-leaf bascule bridge.

The bridge is located between 27th and 30th streets in Long Island City and is situated four blocks east of the Borden Avenue Bridge. The span is 71.52 feet long and has two lanes, one in each direction. It has experienced higher traffic volumes over the last year and a half while the Borden Avenue Bridge has been closed for construction in this heavily industrialized area.



Hunters Point Avenue Bridge Marker and Operator House. (Credit: Michele N. Vulcan)
Bridge Closed to Traffic Prior to Opening. (Credit: Bernard Ente)



Open Hunters Point Avenue Bridge. Supervisor Bridge Operators Brian Corry, Nestor Ortiz, and Mohamed Adel Tork, Bridge Operator Patrick Williams, Supervisor Electrician Jose Done, and Electrician Parmanan Harripersaud. (Credit: Bernard Ente)

Brooklyn Bridge

New York City's bridges are for all seasons. On December 11, 2010, thousands of Santa Clauses, elves and reindeer took to New York City's streets for Santacon 2010, the annual gathering of Santas and other holiday-themed characters held in cities around the country. The tradition began in San Francisco in 1994, and is now a worldwide phenomenon that includes 178 locations in 24 countries. The New York revels included a canned food drive for charity.



Santa Clauses Crossing the Brooklyn Bridge. (Credit: Erik Jaeger)

Anti-Icing

On December 13, 2010, 0.3 inches of snow fell at La Guardia Airport, and 0.2 inches at JFK Airport. On December 14, another 0.3 inches fell at La Guardia Airport. Anti-icing crews were deployed on the East River bridges from 11:00 PM on December 13 until 6:30 AM the following day; 8 applications of chemicals were made. Priority overpasses were cleared of snow.

East 163rd Street over CSX Trans – Port Morris (Bronx)

Cleaning and painting of this bridge, which began on December 1, 2010, was completed on December 16, 2010.

Williamsburg Bridge

December 19, 2010 marked the 107th anniversary of the opening of the bridge.



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

Borden Avenue Bridge over Dutch Kills (Queens)

The bridge reopened to vehicular traffic on December 24, 2010.



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

Anti-icing

On December 26, 2010, 12 inches of snow fell in Central Park, a record 10.2 inches at La Guardia Airport, and a record 10.4 inches at JFK Airport. On December 27, 2010, a record 7.8 inches of snow fell in Central Park, 3.8 inches at La Guardia Airport, and a record 5.1 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 7:30 AM on December 26, 2010 until 7:30 PM on December 28, 2010. Thirty applications of chemicals were made: 6,650 gallons of potassium acetate and 57 tons of sodium acetate. The East River bridge walkways were also cleared, as were priority overpasses in all five boroughs.



Brooklyn Bridge Cleared After the Blizzard. Manhattan Bridge Walkway. (Credit: Russell Holcomb) Manhattan Bridge and Queensboro Bridge Roadways. (Credit: Bojidar Yanev)

Manhattan Bridge

December 31, 2010 marked the 101st anniversary of the opening of the bridge.



At the Brooklyn Bridge Manhattan Tower in November 2010: Bridge Repairer and Riveter Frederick Doyle, Chief Bridge Officer Henry Perahia, Commissioner Janette Sadik-Khan, Executive Director of Bridge Inspections and Bridge Management Dr. Bojidar Yanev, and Bridge Repairer and Riveters James Philip and Fabian Del-Tongier. (Credit: Patrick Clowe)

CHRONOLOGY

Harlem River Drive northbound ramp to the George Washington Bridge(Manhattan)

Cleaning and painting of the bridge, which began in September 2010, was completed in December 2010.

ACCOMPLISHMENTS & PLANNED PROJECTS

East River Bridges

A \$3.6 billion reconstruction program is underway to rehabilitate all four East River crossings. In 2009, these bridges carried some 485,313 vehicles per day. In 2002, working in coordination with the NYPD and other law enforcement agencies, the Division implemented enhanced security measures on these bridges. This work is ongoing.



Brooklyn Bridge Biennial Inspection in October 2010.

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

On April 9, 2010, the American Society of Civil Engineers (ASCE) dedicated the National Historic Civil Engineering Landmark plaques on the Queensboro, Williamsburg, and Manhattan Bridges. ASCE National President Blaine D. Leonard, ASCE Met Section officers, and DOT officials unveiled the bronze plaques marking the designation at each of the bridges and then formally presented them to DOT in a ceremony held at the New York City College of Technology in Brooklyn.

The plaque at the Queensboro Bridge is on the Manhattan side, along East 60th Street, just west of its intersection with First Avenue. The inscription on the plaque reads as follows: "The Queensboro Bridge was the longest cantilever span in North America (1,182 feet) from 1909 until the Quebec Bridge opened in 1917 and the longest in the United States until 1930. Many engineers, including R. S. Buck and Gustav Lindenthal, along with architect Henry Hornbostel, were involved with the design and construction of the Queensboro Bridge, which spurred the development of the Borough of Queens."



The Queensboro Bridge Plaque. The Late Robert A. Olmsted, Past ASCE Met Section President Craig Ruyle, NYC Bridge Centennial Commission President Sam Schwartz, ASCE National President Blaine D. Leonard, Chief Bridge Officer Henry Perahia, and ASCE President-Elect Andrew W. Herrmann. The Guastavino Tile Vaults in the Ceiling of the Bridgemarket are one of the Queensboro Bridge's Noted Architectural Elements. (Credit: Jagtar Khinda)

The Williamsburg Bridge plaque was unveiled at the Manhattan approach, near the intersection of Delancey Street and Clinton Street, at the entrance to the pedestrian and bicycle path. The inscription on the plaque reads as follows: "Designed by Leffert Lefferts Buck, a prolific bridge

ACCOMPLISHMENTS & PLANNED PROJECTS

engineer of the post-Civil War period, the Williamsburg Bridge's 1,600-foot main span was the longest in the world from 1903 until 1924. With 40-foot deep stiffening trusses, it was the first major suspension bridge to have steel towers. It is also an important link in New York's rail transit system."



The Williamsburg Bridge Plaque. Manhattan Bridge Engineer-In-Charge Brian Gill, Robert A. Olmsted, Past ASCE Met Section President Craig Ruyle, ASCE National President Blaine D. Leonard. Deputy Chief Engineer Russell Holcomb. (Credit: Jagtar Khinda)

The Manhattan Bridge plaque was unveiled on the plaza near the entrance to the pedestrian path, which is located on the east side of Jay Street between High and Sands Street, where ASCE President Leonard was joined by Commissioner Janette Sadik-Khan and Chief Bridge Officer Henry D. Perahia. The inscription on the plaque reads as follows: "A wire cable suspension bridge with a main span of 1,470 feet, the Manhattan Bridge was the world's third longest from 1909 to 1924. Working under Chief Engineer Othniel Foster Nichols, Leon Misseiff designed the bridge, employing the first use of deflection theory on a suspension bridge, considered to be the first modern suspension bridge. It was also the earliest to use slender "two dimensional" steel towers with shallow stiffening trusses. It is an important link in New York's rail transit system."



The Manhattan Bridge Plaque. Robert A. Olmsted and Manhattan Bridge Engineer-In-Charge Brian Gill. NYC Bridge Centennial Commission Secretary Barry Schneider. Deputy Chief Engineer Jay Patel.

ACCOMPLISHMENTS & PLANNED PROJECTS



Civil Engineer Salvatore Galletta, Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Manhattan Bridge Engineer-In-Charge Brian Gill, Commissioner Janette Sadik-Khan, ASCE Met Section President Anthony Cioffi, Past ASCE Met Section President Craig Ruyle, ASCE National President Blaine Leonard, Chief Bridge Officer Henry Perahia, Deputy Chief Engineer Jay Patel, Deputy Chief Engineer Russell Holcomb, and U.S. Army Corps of Engineers Lt. Col. Michael Clancy – Deputy Commander New York District.
(Credit: Jagtar Khinda)



Manhattan Bridge Engineer-In-Charge Brian Gill, Deputy Chief Engineer Jay Patel, Commissioner Janette Sadik-Khan, and Chief Bridge Officer Henry Perahia. (Credit: Jagtar Khinda) Division Maintenance Crew Prepared the Area Prior to the Ceremony: Highway Repairer Louie Dumeng, Assistant City Highway Repairer Victor Magagna, Supervisor Highway Repairer Thomas Cruz, Area Supervisor Highway Maintenance Michael Cumiskey, and Assistant City Highway Repairers Luciano Cardona and Jonathan Adorno.



The Dedication Ceremony. Dr. Bonne August, Provost and Vice President for Academic Affairs at New York City College of Technology (City Tech) of The City University of New York (CUNY). Robert A. Olmsted, Chair of the ASCE Met Section's History and Heritage Committee and a Transportation Engineer, Builder, Historian and Industry Mentor for More Than 60 Years. In 2006, He was the Recipient of its National Civil Engineering History and Heritage Award. Mr. Olmsted was Instrumental in Securing ASCE Historic Landmark Status in 2009 for the Manhattan, Queensboro and Williamsburg Bridges. Chief Bridge Officer Henry Perahia. ASCE National President Blaine D. Leonard, ASCE Met Section President Anthony Cioffi, and Past ASCE Met Section President Craig Ruyle. (Credit: Jagtar Khinda)

ACCOMPLISHMENTS & PLANNED PROJECTS

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.



Biennial Inspection in October 2010 – Masonry and Cables.



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 125,021 vehicles per day in 2009. The \$832 million reconstruction commenced in 1980 with Contract #1, and continues with Contract #6, scheduled for completion in 2014. This contract includes the rehabilitation of both approaches and ramps, the painting of the entire bridge, as well as the seismic retrofitting of the structural elements that are within the Contract #6 project limits.



Brooklyn Bridge Ramps and Arches in November 2008. (Credit: Maria Mikolajczyk)

ACCOMPLISHMENTS & PLANNED PROJECTS

Seismic retrofitting of the remaining bridge elements requiring strengthening will be carried out under a separate contract. 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 Manhattan will be rehabilitated and widened and the entire bridge will be repainted to prevent steel corrosion on the structure.



Ramps A , C, and F Will be Widened.

The approach roadway to the Brooklyn Bridge is aging, with a failed membrane system and deteriorated closure walls. The existing roadway pavement above the historic arch blocks and masonry structures will be rehabilitated. A precast concrete roadway slab will be installed in segments, over sprayed-on waterproofing membrane. Rusted historic railings at Franklin Square, York, and Main Street structures, some from the original bridge construction, will be refurbished and reinstalled. The existing ramp from the FDR southbound roadway will be widened from one to two lanes to reduce bottlenecks and pinch points in traffic flow. All steel structures, including the ramp structures and the main span, will be painted, restoring them to their original 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.

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

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.



Red Brick Park – Brooklyn Banks.



July 2010: Installation of the Platform for the Abrasive Blasting Operation at Franklin Square and the Containment Rigging at Pearl Street.



The Abrasive Blasting Operation at Franklin Square Began on August 26, 2010. Pearl Street Abrasive Blasting. Installing the Platform Under the Main Span.

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

ACCOMPLISHMENTS & PLANNED PROJECTS



Franklin Square Arch. Inspection of Blasting Surfaces Inside the Containment in September 2010. Containment Installed at Arch in October 2010.

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

In 2010, after mobilization, the contractor started work on the ramp foundation and set up the containment for the lead paint removal. Other activities included detailed surveying, installation of super slabs and the fabrication of precast members.



May 2010: Test Pit on Brooklyn-Bound Manhattan Approach. June and July 2010: Excavation and Concrete Placement for Pile Cap at Ramp A Bent 7A.



June 2010: Brooklyn Tower – Facing Manhattan. July 2010: Preconstruction Lightning Protection Inspection on the Manhattan Main Tower Top Looking South - Jeff Hu, Doug Reese, and Civil Engineer Sudhakar Pallaki. Vertical Containment Installed at Main Bridge Span – Facing South – in October 2010. Close-up of Containment System in November 2010 – Looking North From Brooklyn Bridge Park.

ACCOMPLISHMENTS & PLANNED PROJECTS



Bicycle/Pedestrian Path with Protective Shielding and Containment in November 2010. Roadway Shielding in October 2010. Main Span View in June and November 2010. (June Span Credit: Thomas Whitehouse. November Span Credit: Bojidar Yanev)

In the fall of 2008, to compare options for energy efficiency, we replaced 20 100-watt mercury vapor lamps of the necklace lights on the Brooklyn and Manhattan Bridges with 10 LED fixtures and 10 induction fixtures. The test was completed in spring 2009; we chose an LED fixture in a dish style and will obtain them for the Queensborough, Williamsburg and Brooklyn Bridges. The test fixtures were removed on April 24, 2009. The replacement of the existing mercury vapor lights on the Queensboro and Williamsburg bridges will take place in 2011. The replacement of the Brooklyn Bridge necklace lights will not be scheduled until the completion of Contract #6.

In October 2010, the contractor for the Manhattan Bridge installed the new LED prototype with opal glass globe at PP 50 on the Brooklyn Main Span, Cable D (North cable) of the Manhattan Bridge. The adjacent necklace light at PP 52 is an existing mercury vapor and the adjacent light at PP 48 is induction with frosted globe. The replacement of the existing lights with the new LED' will begin in the spring of 2011 and be completed in the spring of 2013.



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

ACCOMPLISHMENTS & PLANNED PROJECTS

MANHATTAN BRIDGE

The youngest of the three NYCDOT suspension bridges that traverse the East River, the Manhattan Bridge carries some 397,436 commuters – 71,936 vehicles and 325,500 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 completed 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.



Bridge Detail and Coleman Playground at Monroe Street Under the Bridge. (Credit: Bernard Ente)
Construction Plaque. (Credit: Jagtar Khinda) Bridge in July 2009. (Credit: Bernard Ente)

The \$901 million reconstruction commenced in 1982 with Contract #1, and continues with Contract #14 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.



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

ACCOMPLISHMENTS & PLANNED PROJECTS

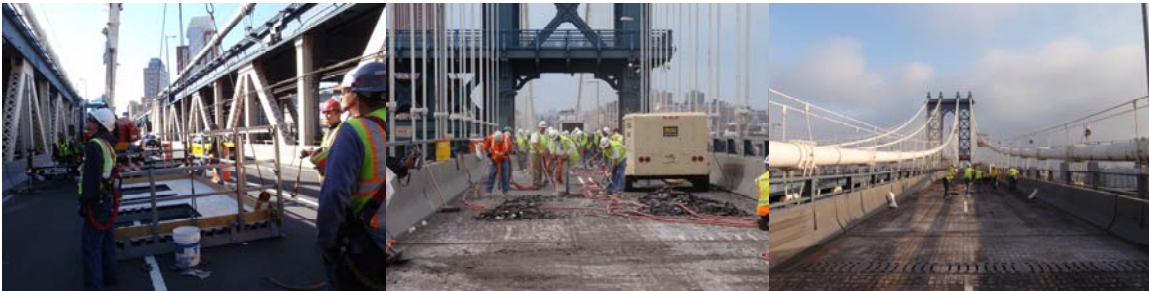


"The Spirit of Commerce" Sculpture and the Underside of the Arch. Part of the Colonnades. (Credit: Peter Basich) The Historic Arch. (Credit: Earlene Powell) The "Native American Buffalo Hunt" Sculpture Panel. (Credit: Peter Basich) Bridge Detail. (Credit: Jagtar Khinda)

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 \$149 million 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 rewinding, suspender replacement, and continuity plate replacement.



April 2010: Erection of Upper Chord Platform for Cable C Truss. June 2010: Demolition of North Upper Roadway Micro-Surfacing Layer.



June 2010: Placement of Micro-Surfacing Layer on North Upper Roadway. July 2010: Main Cable Work Platform for Cable C.

ACCOMPLISHMENTS & PLANNED PROJECTS



August 2010: Main Cable Work Platform With Containment Tarps. September 2010: View of Cable C With Wrapping Machine. October and November 2010: New Cable Guard Installed on Cable C.



October and November 2010: New Cable Guard Installed on Cable C. November 2010: New Suspender Installed on Main Cable C.

QUEENSBORO BRIDGE

At the time of its completion in March 1909, the Queensboro Bridge (popularly referred to as the 59th Street Bridge), was the longest continuous cantilever-truss bridge in the world. While its starring role in the hierarchy of bridges has since been eclipsed by longer and larger structures, the Queensboro Bridge's importance to the mobility and unity of New York City remains undimmed. The bridge was designated as a national landmark on November 23, 1973. The \$807 million reconstruction commenced in April 1981 with Contract #1, continues 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 Queensboro Bridge carried 180,162 vehicles per day in 2009.

ACCOMPLISHMENTS & PLANNED PROJECTS



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

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. It is scheduled for completion by spring 2011.



September 2008: Looking West From Tower 1. (Credit: Russell Holcomb) Bridge Details in 2008 and 2009. (Credit: Bernard Ente) DEP Sludge Boat "Red Hook" Passing Under the Queensboro Bridge in June 2009. (Credit: Bernard Ente)

WILLIAMSBURG BRIDGE

The largest of the three suspension bridges that traverse the East River, the Williamsburg Bridge carries some 208,194 daily commuters –108,194 in vehicles and 100,000 via mass transit - on eight traffic lanes, two heavy rail transit tracks, and a pedestrian footwalk, between Manhattan and Brooklyn. The bridge supports a subway transit line upon which three different train lines operate (J, M, and Z). The \$1.2 billion reconstruction commenced in 1983 with Contract #1, and continues with Contract #8, which began in March 2003 and is scheduled for completion by summer 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



Williamsburg Bridge in February 2010. (Credit: Samuel Teaw). October 2010: FDNY Boats at Bridge Tower Bases During Testing.

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.

Contract #8

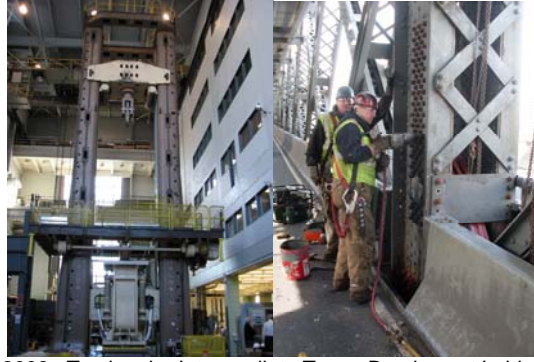
Contract #8 began on March 3, 2003, and is scheduled to finish by summer 2011. This \$280 million project will see the rehabilitation of the tower bearings, the truss system, the steel structure of the two main towers and six intermediate towers, the north comfort stations, the replacement and/or adjustment 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 will include the restoration of decorative lights on the main towers and in the Manhattan Plaza. Work inside the anchorage houses on both the Manhattan and Brooklyn sides will include the construction of new stairs, two hoisting systems, a ventilation system, additional lighting, and maintenance/oiling platforms. The project will also include the installation of several Intelligent Transportation System components, including variable message signs and closed circuit television cameras.

The seismic retrofitting of the steel portions of the intermediate towers was completed on July 20, 2007. The Brooklyn and Manhattan maintenance travelers were delivered on barges and raised into position in August and October 2007. The Manhattan anchorage hoist and new staircases for both anchorages were also completed in 2007. The maintenance travelers are currently undergoing pre-operational testing and final inspection and are expected to be completed in 2011. Installation of the top chord roller bearings at the main towers was completed in October 2007. Installation of the Brooklyn and Manhattan anchorage maintenance platforms will be completed in 2011.

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

Work completed in 2008 included the installation of the Brooklyn anchorage hoist, the bridge identification system, the removal of the main bridge flexible shield system, the top chord transverse truss bearings, the erection of the new Manhattan entry electroliers and the rehabilitation of the main tower electroliers, and the seismic retrofit of the intermediate tower bases.

ACCOMPLISHMENTS & PLANNED PROJECTS



2009: Testing the Intermediate Tower Bearings at Lehigh University in January 2009. March 2009: Looking East at the Bolting up of the Truss Reinforcement at PP10W in Preparation for Bearing Replacement.



May 2009: Looking West at the Repair of the North Footwalk Overlay between PP10W and PP11W. August 2009: Looking North at Installation of the Fender System at the Manhattan Main Tower.



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

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



January 2010: Looking West at the Modular Joint Try-Out on the Manhattan Approach. March 2010: Looking West at the Replacement of Damaged Sand Drums at the Brooklyn Plaza. May 2010: Looking North at the Concrete Placement at the Manhattan North Comfort Station for the Wall Enclosure. March 2010: Looking East - Repairing Damaged Impact Attenuator at the Manhattan Anchorage.

ACCOMPLISHMENTS & PLANNED PROJECTS



May 2010: Looking East at the Application of the Intermediate Coat on the South Outer Roadway Downspout Between PP50W and PP51W. June 2010: Looking East at the Replacement of the One Rail Bridge Rail at the Manhattan End Span. June 2010: Looking West at the Touch-Up Painting of North Truss at Brooklyn End Span.



July 2010: Looking West From the North Outer Roadway at Painting on Cable A. Looking East From the North Outer Roadway at the Painting of Cable D. Looking West at the Concrete Placement at the Brooklyn North Comfort Station for the Wall Enclosure.



July 2010: Looking East at Damaged Brooklyn Tower (South Outer Roadway) Strut Replacement. October 2010: Looking East at the Lane 8 Precast Barrier Concrete Foundation Placement at Manhattan Plaza.

Work anticipated to be completed in 2011 includes the rehabilitation of the Kent Avenue yard voids, wind tongue pin rehabilitation, 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 precast barriers in lane 8 at the Manhattan Plaza, removal of all temporary barriers, installation of a safeguard gate at the Brooklyn Plaza, installation of the lane control panel awning at the Manhattan plaza, 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 2010, the number of openings declined further to a total of only 197 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2009, the Mill Basin Bridge carried 144,536 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 2010, on a New York State-mandated scale from 1 to 7, this bridge had a condition rating of 3.463, 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

ACCOMPLISHMENTS & PLANNED PROJECTS

vessels. The new design of the bridge will result in increased sight distances, an increase in lane width from 11-feet 4-inches to 12-feet, and the inclusion of safety shoulders in both directions. The channel will remain navigable during construction, and the clear channel width will remain the same after the new structure is in place. A new fender system will be installed to protect the bridge substructure from marine traffic. Currently in its final design phase, the reconstruction of the Mill Basin Bridge (part of the second Belt Parkway Group) is scheduled to start in May 2012, 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

ACCOMPLISHMENTS & PLANNED PROJECTS

was reopened to vehicular traffic on December 24, 2010. Construction is expected to be complete by May 2011.



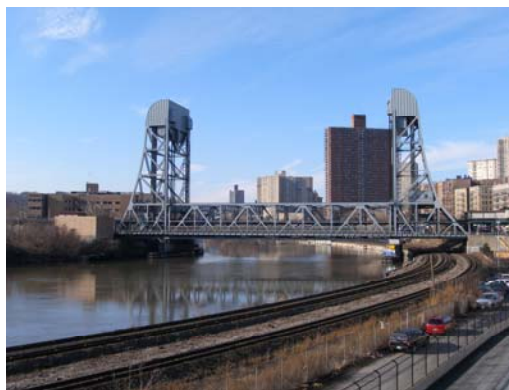
Diver Preparing to Inspect the Borden Avenue Bridge in April 2009. (Credit: Bernard Ente) Late December 2010: Bridge Open to Vehicular Traffic. (Credit: Mitch Waxman)

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

BROADWAY BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

Broadway extends from the southern tip of Manhattan, through the Bronx and terminates in Westchester County. The Broadway Bridge, a lift type movable bridge crossing the Harlem River, is located between West 220th Street in Manhattan and West 225th Street in the Bronx. In 2009, the bridge carried 35,566 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

ACCOMPLISHMENTS & PLANNED PROJECTS

approximately \$8.7 million.

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

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

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

This double leaf bascule bridge opened in 1953. In 2009, the bridge carried 61,700 vehicles per day. The 17 span structure (three waterway and fourteen concrete approach) carries five lanes of the Bruckner Boulevard Expressway service road traffic over Westchester Creek. 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. The design is in the preliminary stage, however, reconstruction is scheduled to start in July 2014. The estimated construction duration will be a total of 60 months.

ACCOMPLISHMENTS & PLANNED PROJECTS



Unionport Bridge in 1953 and 2009.



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 design life. Moreover, the bridge does not have any back-up operating system which will make the bridge inoperable in case of failure of any component of the Interim Drive System. The preliminary design phase of this project is expected to begin in early 2011. In 2009, the bridge carried 43,480 vehicles per day.



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

ACCOMPLISHMENTS & PLANNED PROJECTS

PARK AVENUE TUNNEL OVER 34TH STREET (MANHATTAN)

The Park Avenue Tunnel was originally built as an open cut in 1836 to accommodate horse drawn trolley cars between East 33rd Street and East 42nd Street. In 1854, a five course brick arch roof was constructed and the underground tunnel was used by the New York and Harlem River Railroad steam engine trains from East 42nd Street to its terminal then located at East 30th Street and Park Avenue. In 1870 the rail road was converted to electric powered trolleys.

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

Some rehabilitation work was completed on the tunnel in November 2005. That contract included the rehabilitation of the fans and the ventilation system. The new project is currently in its 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 2016 and be complete in January 2019.



Park Avenue Tunnel in 2003. (Credit: NYSDOT)

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

This lift bridge opened in 1955, when it was known as the Welfare Island Bridge. In 2009, the bridge carried 9,454 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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.



Open Queens Approach Roadway of the Roosevelt Island Bridge in December 2008. September 2009: Preparation for Tower Roof Dismantling. Nets, Tarps and Fences were Installed to Catch any Debris.

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 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.



December 2008: East Approach Sidewalk. : Lift Span Open Grid Deck. Lift Span South Elevation

ACCOMPLISHMENTS & PLANNED PROJECTS



January 2010: Delivering Machinery Components to the East and West Machinery Rooms. February 2010: Removing Railing From the Roosevelt Island Side of the Bridge. July 2010: Cleaning and Dismantling of the Platform Under the Main Span.

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. Construction is expected to be completed in March 2011.



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

SHORE ROAD BRIDGE OVER THE HUTCHINSON RIVER (BRONX)

This bridge, built in 1908, was originally called the Pelham Parkway Bridge over Eastchester Bay. In 2009, the bridge carried 17,521 vehicles per day. The \$5 million interim rehabilitation of the existing bridge superstructure and substructure enables the Department to keep it operational while a new bridge is being designed and built adjacent to the existing bridge. The existing bridge will be demolished once the new bridge is in service. The rehabilitation project began in

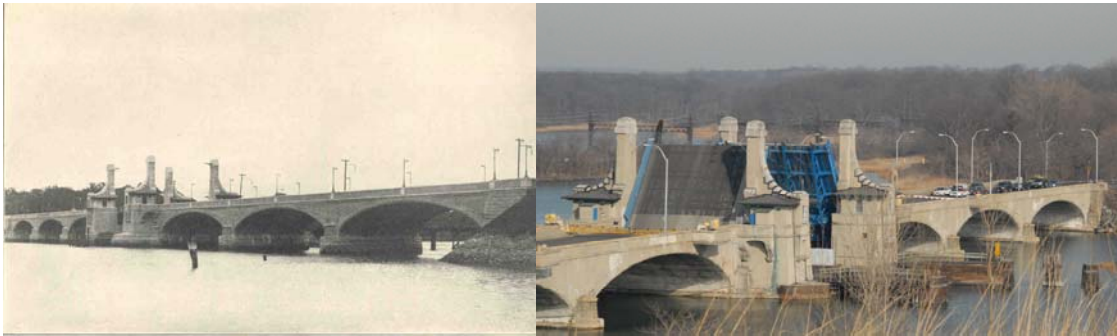
ACCOMPLISHMENTS & PLANNED PROJECTS

April 2001, and all traffic lanes were reopened to traffic on April 24, 2002, three days earlier than scheduled. The interim rehabilitation of this bridge was substantially completed on June 17, 2002.



Shore Bridge in 2007. (Credit: Peter Basich)

As of the end of 2009, a mid-level, single leaf bascule movable bridge was in design. It will be constructed to the south of and parallel to the existing bridge, with a wider navigation channel. An environmental impact study, co-sponsored by the Federal Highway Administration, is underway. The project to construct a new Shore Road Bridge is scheduled for construction between October 2019 and January 2024.



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

WARDS ISLAND PEDESTRIAN BRIDGE OVER HARLEM RIVER (MANHATTAN)

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

ACCOMPLISHMENTS & PLANNED PROJECTS



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

The bridge was built by the U.S. Army Corps of Engineers in 1951 and was designed by Othmar Hermann Ammann.

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. Construction is expected to be completed in August 2012.



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



Existing Concrete Deck.

ACCOMPLISHMENTS & PLANNED PROJECTS



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

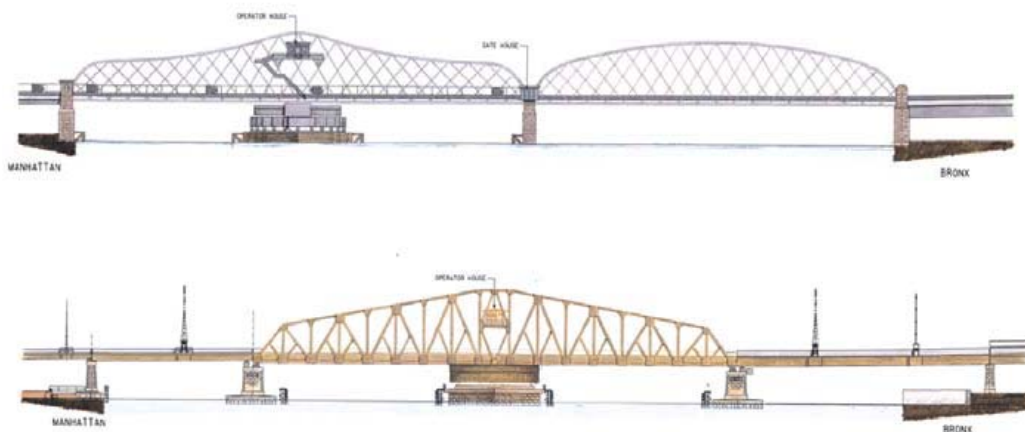
WILLIS AVENUE BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

Measuring 3,212 feet in length and opened to traffic on August 23, 1901, the 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 132nd Street 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 Expressway in the Bronx, the Willis Avenue Bridge carried approximately 58,548 vehicles per day in 2009. 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 is replacing the existing bowstring truss swing bridge with a new swing span bridge constructed just to the south of the existing bridge. Elimination of the center median on the main span will greatly improve the traffic flow on the bridge.



Old and New Willis Avenue Bridge Span.

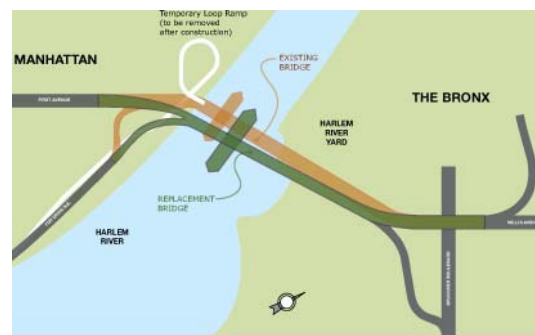
ACCOMPLISHMENTS & PLANNED PROJECTS

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. A symbolic portion of the historic original Willis Avenue Bridge will be retained in place as a monument to the bridge in Harlem River Park.



Willis Avenue Bridge Project Map.

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

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

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 in June 2011.



Pier 9 Drilled Shaft Footing in November 2008. The First River Pier in November 2008.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

were more than 50 percent complete, and work had begun on the footings for the new Bruckner Boulevard Ramp.

In 2009, the project continued to focus on foundation construction work, with the installation of footings and piers for the new ramp from the FDR Drive as well as the one-half of the 1st Avenue Approach. The precast concrete pier box for River Pier 5 was transported in February 2009 by oceangoing tug and barge from the fabrication yard in Virginia to the contractor's yard in Jersey City, New Jersey. Over 30 automobiles were removed from the Manhattan channel in spring 2009. At the end of 2009 the contractor began the installation of the steel superstructure over the FDR Drive. The work in the river consisted of the installation of the drilled shafts for the four river piers and the installation of three of the four precast pier boxes in the river. The assembly of the new swing span began in Coeymans, near Albany, New York, and was completed in May 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.



2009: The Primary Equipment Utilized During Caisson Installation was an Augering System Driven Into the River Bottom. Water From the Harlem River was Pumped Into the Augering System. All Augered Waste was Pumped out of the Caisson Into a Weir Barge. All of the Water Within the Weir Barge was Filtered Through a Fabric Medium and Pumped Back into the Harlem River. This System Effectively Removed all of the Solids From the Wastewater. April 2009: Willis Avenue Bridge Pier 9 Rebar Columns.



October 2009: Assembling the Willis Avenue Bridge Swing Span near Albany, New York. Willis Avenue Bridge
August 2009: Installation of Tub Girders on Temporary Supports. September 2009: Existing and New Ramps to Bruckner Boulevard.

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.

ACCOMPLISHMENTS & PLANNED PROJECTS



January 2010: Installing Caissons at the First Avenue On-Ramp. April 2010: Roadway and Steel Structure Demolition. Removal of Lead Based Paint From Structural Steel Cutline Locations Within a Class 3P Containment.



Late March 2010: Assembling the Willis Avenue Bridge Swing Span near Albany, New York. (Credit: Bernard Ente)



April 2010: Pier 7 Construction. At Pier 4: FHWA Area Engineer David Hart, Engineer-in-Charge James Cusack, FHWA Structural Engineer Earl Dubin, Resident Engineer Abdi Hedayati, and Interim Director of Movable Bridges Hani Faouri.

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. Mayor Michael R. Bloomberg blew the air horn to initiate the float-in process and later in the day held a press conference on the newly poured adjoining span deck surface.

ACCOMPLISHMENTS & PLANNED PROJECTS



The New Swing Span was Moved From the Assembly Area at Coeymans in Upstate New York to the Twin Barges on July 11 and 12, 2010. It was Then Delivered by Barge to the Contractor Facility in Jersey City, New Jersey on July 14.



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



New Willis Avenue Bridge Span Passing Under the Manhattan Bridge. (Credit: Bojidar Yanev) Passing Under the Williamsburg Bridge. (Credit: Ronald Rauch) Passing Under the Queensboro Bridge. Passing Under the Wards Island Bridge. (Wards Island Credit: Nicholas Whitaker) New Span at the Work Site. (Credit: Bernard Ente)

ACCOMPLISHMENTS & PLANNED PROJECTS



At the August 9 Float-in. Front Row: Commissioner Janette Sadik-Khan, Deputy Chief Engineer Russell Holcomb; Chief Staff Manager/Executive Director of Community Affairs Joannene Kidder, Mayor Michael R. Bloomberg, Section Chief Inspector Gregg Stark, MPT Inspector Margaret Cwikla, Rebar Owner Patricia Burney, Deputy Chief Engineer Jay Patel, and Assistant Civil Engineer Syed Naqvi. Back Row: Resident Engineer Abdi Hedayati, Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, Project Manager Kevin Hughes, and Engineer-In-Charge James Cusack.



Representative José Serrano and Commissioner Janette Sadik-Khan. Mayor Michael R. Bloomberg and Commissioner Janette Sadik-Khan. Representative Charles Rangel and Commissioner Janette Sadik-Khan. (Credit: Robin Lester Kenton)



Administrative Engineer Samuel Teaw, Civil Engineering Intern Yi Li, Mechanical Engineering Intern Daniel MacCollum, Assistant Civil Engineer Hany Soliman, Deputy Chief Engineer Russell Holcomb, Assistant Electrical Engineer Saeb Aldogom, and Administrative Engineer Pinakin Patel. (Credit: Thomas Whitehouse) Assistant Civil Engineers Javier Beteta and Sarah-Ann Klein, Administrative Engineer Muhammad Afzal, Civil Engineer Thomas Deluca, Resident Engineer Abdi Hedayati, Civil Engineer Li Ping Chao, Civil Engineering Intern Giuseppe Sanfilippo, and Administrative Engineer Mohammad Arain.

ACCOMPLISHMENTS & PLANNED PROJECTS



Setting up the Jacking System to Temporarily Support the Bridge at the Rest Pier.
(Credit: Thomas Whitehouse)

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.



August 2010: Removal of Lead Based Paint From Structural Steel Cutline Locations Within a Class 3P Containment at the Manhattan End Span. Concrete Placement for Decks at Spans A10, A11, and 3.



August 2010: Ballasting of Barges and Transferring the Swing Span From Twin Barge to Two Single Barges.

ACCOMPLISHMENTS & PLANNED PROJECTS



August 2010: Finished Placement of High Friction Concrete for Overhead Sign Structure at Span 9. Setting and Grouting Granite Stone Facing at Pier 8. Finished Placement of Caisson Concrete to New Higher Elevation at Bronx Relieving Platform "B".



August 2010: Placing Concrete on the Northbound Left Lane. Cleaning the Drainage Structures in the Northbound and Southbound Approaches. Removed the Temporary Pedestrian Bridge, Allowing Pedestrians to Access the South Sidewalk of the New Bridge.



Personnel From the Office of Management and Budget Visited the Site on September 23, 2010. With Interim Director of Movable Bridges Hani Faouri In Alphabetical Order: Rachel Berksons, Donna Brathwaite, Illiam Carrillo, Travis Godsoe, Community Liaison Martha Holstein, Terry M., Craig O'Connor, Diane Smith, Lee Solomon, Jill Woller, and Lyna Yip.

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. Traffic on Bridge. Chief Bridge Officer Henry Perahia and Engineer-In-Charge James Cusack.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. The project is slated for completion in December 2012.



October 2010: Contractor Completed the Removal of the Concrete Deck of the Bridge over the Major Deegan Expressway. October and November 2010: Floating Out the Bridge Spans. At the Float-Out: Assistant Civil Engineer Syed Naqvi, Project Manager Ghanshyam Patel, Interim Director of Movable Bridges Hani Faouri, and Civil Engineer Simona Finkelstein. The Old Arch Span.



NYC Marathon Runners on the New Bridge in November 2010. First Test Operation of the New Span in December.

ACCOMPLISHMENTS & PLANNED PROJECTS



New Span in November 2010. (Credit: Bernard Ente) Old Willis Avenue Spans in December 2010. (Credit: Duane Bailey-Castro)

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 2009, the 145th Street Bridge carried approximately 24,364 vehicles per day. This makes it one of the most essential routes for vehicles and pedestrians traveling between Manhattan and the Bronx. Vehicles, which cross this rim bearing swing bridge each day between the two boroughs, include buses, trucks and cars.

A Notice to Proceed for the \$69.4 million reconstruction of this bridge was issued to the contractor with a start date of July 15, 2004. 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

Work performed in 2008 included installation of mechanical equipment, connection of the gate house plumbing to the city system, centering device alignment checks, pointing of the stone walls, and switching the bridge systems on to the permanent electrical feeders.

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

In 2010, significant progress was made in the electrical and mechanical bridge machinery construction tasks. Work performed included: removal of the concrete floor panel covers and installation of new lightweight concrete grating, replacement of the galvanized cover plates, permanent drilling, bolting and torquing of the bolts of the pinions, bearing, and secondary reducer brakes. Work was also completed on machinery room coupling alignments and gap measurement verification.

The contractor also completed the pulling of electrical cables, which required the removal of grout from the conduits near the southwest warning gate. In 2010, vehicle impacts damaged the southwest warning gate and the northeast barrier gate; the southwest gate was replaced and the northeast gate was repaired. The contractor continued to perform the required monthly bridge lubrication and equipment maintenance.

These upgrades have restored the structural integrity and extend the useful life of the 145th Street Bridge. The project is slated for completion in June 2011.

FLOAT OUT/FLOAT IN

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

ACCOMPLISHMENTS & PLANNED PROJECTS

Roadway Bridges

INNOVATIONS

Innovations in the design and construction of Roadway Bridges continued in 2010. Where feasible, the continued use of precast elements in bridge reconstruction reduces construction duration and the resulting negative impacts on the traveling public. In addition, the implementation of applicable Environmentally Preferable Purchasing (EPP) standards on bridge projects will ease the impact of the increased demands on resources and surrounding environment, and Best Management Practices (BMP) in all applicable projects will mitigate the impact of the project on the surrounding environment.

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

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

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



Galloway Avenue over Marianne Street, Forest Avenue over Crystal Avenue.

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.

ACCOMPLISHMENTS & PLANNED PROJECTS



Naughton Avenue over Patterson Avenue, Midland Avenue over Hylan Boulevard.

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.



Rockland Avenue over Brielle Avenue, Forest Avenue over Randall Avenue.

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.



Gregg Place over Randall Avenue, Arthur Kill Road over Muldoon Avenue.

ACCOMPLISHMENTS & PLANNED PROJECTS

The Richmond Hill Road culvert consists of a single span stone masonry arch. The rehabilitation work will include removing and re-pointing the stone masonry, removing and replacing the fill and asphalt wearing surface above the arch, and cleaning the vegetation and sedimentation. A temporary access bridge will be built over one lane so that one lane will remain open to traffic at all times.

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



Richmond Hill Road over Richmond Road, Arthur Kill Road over Ridgewood Avenue.

This project to rehabilitate and/or replace the ten culverts is currently in the final design stage, and is expected to begin in July 2014 and to be complete in 2015.

ANNADALE ROAD BRIDGE OVER SIRT SOUTH SHORE (STATEN ISLAND)

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



Annadale Road Bridge in 2001. (Credit: NYSDOT)

In May 2008 the contractor mobilized and commenced Stage-1 construction activities. Stage I construction included the demolition and reconstruction of the eastern half of the bridge. The contractor completed Stage I deck removal on November 26, 2008. In 2009, the contractor

ACCOMPLISHMENTS & PLANNED PROJECTS

completed the demolition of the super- and sub-structures of the existing eastern portion of the bridge, constructed the new east half of the north abutment, modified the top ten feet of the south abutment, erected the structural steel, placed the new concrete deck slab, installed telephone conduits, placed approach slabs, installed new bridge railings and protective fencing, completed roadway restoration work at the intersections of Annadale Road with Sneden Avenue on the south side and Posen Avenue on the north side, installed a temporary pedestrian walkway along the east fascia, and realigned the traffic configuration. The temporary pedestrian walkway was the result of a value engineering solution to address Stage II pedestrian access by eliminating a stand-alone pedestrian bridge crossing.

Stringer removal for Stage 1 was completed on February 20, 2009. Placement of concrete for the south abutment modification was completed on March 27, 2009. The joint was sealed between the new and existing concrete for the south abutment on May 6, 2009, and the area behind the south abutment was backfilled on May 7. The contractor removed and replaced the water main along Sneden Avenue on the night of June 12, 2009. Installation of the formwork and re-bars for the reconstruction of the north abutment stem wall and a portion of the wing wall was completed on July 8, 2009. From August 31, 2009 to September 4, the contractor performed the gas main work on the south side of the bridge at the intersection of Sneden Avenue and Annadale Road. Stage II construction began on December 7, 2009. The completed eastern half of the new bridge was opened to traffic in December 2009.



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



Annadale Road Bridge: Stage I Construction in February 2009. Placing a Temporary Truss to Support Utility Conduits. Removing the Eastern Bridge Railing Fence and the Stringer.



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

ACCOMPLISHMENTS & PLANNED PROJECTS



Annadale Road Bridge: Placing the Concrete Deck in October 2009.

In 2010, the contractor demolished and reconstructed the western half of the bridge. Demolition of the substructure was completed on March 3, 2010. The placement of high performance concrete for the north abutment and wing wall footing was completed on March 24, 2010. Formwork installation for the north and south abutment backwalls began on April 29 and May 5, 2010. The installation of formwork and epoxy coated steel reinforcement for bearing pedestals along the North and South Abutments was completed this task on May 11, 2010. The replacement of the Annadale Bridge was substantially completed on September 27, 2010. Access to the SIRT station house was restored in October 2010.



Annadale Road Bridge: Substructure Removal of Pier in Stage II in February 2010. Structural Steel Removal of Stringer in May 2010. Finishing Machine Used in Dry Run in June 2010.



Annadale Road Bridge Stage II: Concrete Placement of the Deck Slab in June 2010 and of the Approach Slabs in July 2010.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

A unique feature of Stage I construction was the installation of special sensor devices to monitor the corrosion of the epoxy coated steel reinforcing bars in the bridge deck slab; this was Phase I of a pilot study that is being conducted by City University to study the corrosion of reinforcing steel bars in bridge deck slabs.



Three Types of Sensors Installed During Phase I: Vetek, CPMP, and EC11 (Embedded Corrosion Instrument).

In Stage II construction, sensors similar to those used in Phase I were installed to monitor the corrosion of the stainless clad steel reinforcing bars substituted for epoxy coated steel reinforcing bars. The main goals of using and monitoring the corrosion of stainless steel clad reinforcing bars are to verify the accuracy and reliability of several advanced corrosion monitoring sensors in a field environment, and to develop an understanding of the life cycle of stainless steel clad reinforcing bars in bridge decks. This project on corrosion monitoring of the bridge deck was supported through a grant from the FHWA under the Innovative Bridge Research and Construction program.



CPMP (Corrosion Penetration Monitoring Probe) Unit Installed on Clad Reinforcing Bars. Data Box and the Solar Panel.

On October 6 and 7, 2009, the contractor installed, activated, and tested the sensors for the corrosion monitoring system. A representative from City University was present during deck slab placement to ensure the safety of their newly installed sensors. On June 30, 2010, the installation of the stainless steel clad reinforcing bars and corrosion monitoring sensors was completed. The closure pour work was completed on July 28, 2010. On November 17, 2010, City University installed latches on the data box and relocated the solar panel to improve its safety from vandalism.

Following the installation of sensors during all three phases of the project, City University tested all of the sensors. Except for six thermocouple sensors installed to monitor temperature, all of the other sensors are functioning. The data logger collects data at continuous intervals. Currently, City University is developing a computer program that will automatically analyze the collected sensor data. The monitoring and data analysis work is expected to continue until June 2014.

ACCOMPLISHMENTS & PLANNED PROJECTS

ARTHUR KILL ROAD BRIDGE OVER ARTHUR KILL STREAM (STATEN ISLAND)

The existing bridge is a one span steel-multi-stringer structure built in 1945. The project will involve the removal of the existing deck, steel superstructure and abutments, and the construction of new abutments on the pile foundation, a new superstructure with hot dipped galvanized steel stringers, and a pre-cast reinforced concrete deck. The construction will require the full closure of the bridge.

The Department of Design and Construction (DDC) is planning the widening of Arthur Kill Road. The bridge is within the envelope of the street project and will be included with it in Phase IV, currently scheduled for Fiscal Year 2016.



Arthur Kill Road Bridge in 2009. (Credit: NYSDOT)

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 2010, the Paerdegat Basin Bridge was 3.222; the Fresh Creek Bridge was 3.083; the Rockaway Parkway Bridge was 3.778; the Gerritsen Inlet Bridge was 3.463; the Mill Basin Bridge was 3.463; 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. Group 2 (Gerritsen Inlet and Mill Basin Bridges) is expected to start in May 2012, and to be complete in May 2016. Group 3 (Bay Ridge Avenue and Nostrand Avenue) is expected to start in September 2012, and to be complete in May 2015.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

adjacent to the Gateway National Recreation Area, (GNRA) a division of the National Park Service. This bridge and highway program will be 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. In addition to mitigating environmental impacts along the Belt Parkway corridor, an off-site Tidal Wetland Mitigation Plan has been approved. This 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 existing Paerdegat Basin Bridge is a 692-foot long, 13 span, multi-girder, simple supported steel superstructure, supported on reinforced concrete pier cap beams and abutments supported on reinforced concrete piles. The bridge has two 34-foot wide roadways carrying three lanes of traffic in each direction; with a 3-foot safety walk on the north side, a 4-foot wide center median/barrier, and an 8-foot wide south pedestrian/bicycle sidewalk. The existing structure and immediate approaches will be demolished and replaced by two new bridges and new approach roadways on split alignments.

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

The replacement bridges will consist of two angled trapezoidal steel box girder structures: the 825-foot, 3 span westbound bridge, north of the existing structure, and the 1,227-foot, 5 span eastbound bridge, south of the existing structure, remaining at 28 feet over the navigable channel. Both bridges will have a 36-foot wide roadway with a 12-foot wide right shoulder. The eastbound bridge will have a 4-foot wide left shoulder, while the westbound bridge will have a 10-foot wide left shoulder. The southern structure will carry eastbound traffic while the northern structure will accommodate westbound traffic. Both the horizontal and vertical alignments will change resulting in improved sight distances on the bridge and its approach roadways. The bridge carrying eastbound traffic will also have a dedicated pedestrian/ bicycle path along the south side. The pedestrian/bicycle path will be separated from traffic lanes by a concrete barrier on the bridge, and by a 15-foot wide grass mall on the approach roadways.



Paerdegat Basin Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS



Paerdegat Basin Bridge. Proposed Paerdegat Basin Bridge.

The existing Fresh Creek Bridge is a 264.5 foot, 5 span, multi-girder, simple supported steel superstructure, supported on pre-cast concrete columns founded on four reinforced concrete piers on concrete piles with concrete gravity abutment walls on timber piles. 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

The existing Rockaway Parkway Bridge is a 150-foot, 4 span, multi-stringer, simple supported steel superstructure, supported on steel cap beams on concrete filled steel pipe columns, and reinforced concrete abutment walls supported by concrete pile foundations. The bridge has two 34'-2" wide roadways, a 5-foot wide center median/barrier, and a 10-foot wide south sidewalk. The existing structure and immediate approaches will be demolished and replaced.

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



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

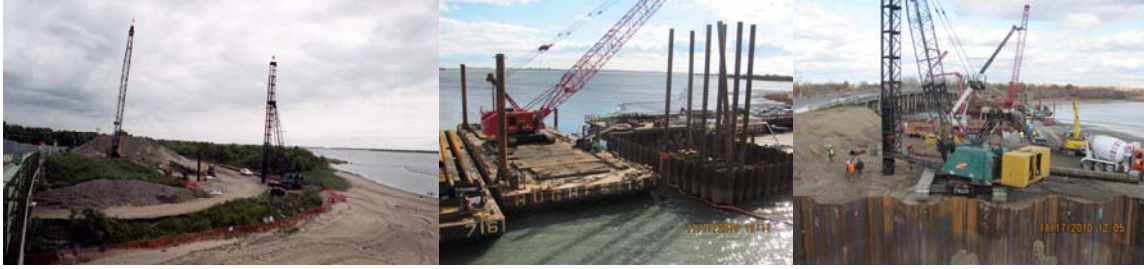
A Notice to Proceed for the reconstruction of the Group 1 bridges was issued to the contractor with a start date of October 26, 2009.

In 2010, work on the Paerdegat Basin bridges progressed on the construction of the new eastbound bridge, and the project is currently in Stage IIA 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 approach roadways; and the installation of new drainage structures and pipe. Cofferdams have been constructed, pile installation is in progress for the construction of the new eastbound bridge piers and abutment substructures, and the erection of the superstructure is projected to commence during the winter of 2011.



Paerdegat Basin Bridge in April 2010: The New Ductile Iron Sludge Force Main Being Installed in a Trench. The Placement and Rolling of Temporary Asphalt for the Temporary Pedestrian/Bicycle Path. June 2010: The Grading in Advance of the Placement of Embankment Material on the Eastern Approach to the New Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS



Paerdegat Basin Bridge in August 2010: The Installation of the New East Embankment for the Approach Roadway to the New Eastbound Bridge. November 2010: The Installation of New Piles at the New Waterway Pier Location. The New Eastbound Bridge Under Construction. The Photograph was Taken From the Future West Abutment and Shows the Pile Driving Equipment Mobilizing for the Installation of the Abutment Piles, the Placement of Concrete in the Piles at a New Pier Location, the Installation of New Piles at the New Waterway Pier Location, and the Temporary Work Trestle.



Paerdegat Basin Bridge in November 2010: The Installation of Steel Reinforcement for the New Pier Piles and Footing. The Installation of Steel Sheet Piling and Piles at the New Bridge Abutment. The New West Embankment for the Approach Roadway to the New Eastbound Bridge. (Credit: Eric Callender)

In 2010, various construction milestones were 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. Since the conceptual approval of the contractor's Value Engineering proposal to utilize a temporary bridge to facilitate the reconstruction of the existing bridge, work has progressed on the installation of earth embankments for the temporary roadway and the widening of the permanent roadway. Concrete abutments were constructed and work is currently in progress on the assembly of the temporary bridge steel superstructure and the installation of piles for the temporary bridge. Relocation of the existing sludge force main within the project area, using open cut and jacking methods, is also in progress. The contractor began installation of new permanent lighting, as well as new drainage structures and pipe. Lead abatement of the existing superstructure steel is also underway, in preparation for superstructure demolition, which is projected to commence in the early months of 2011.

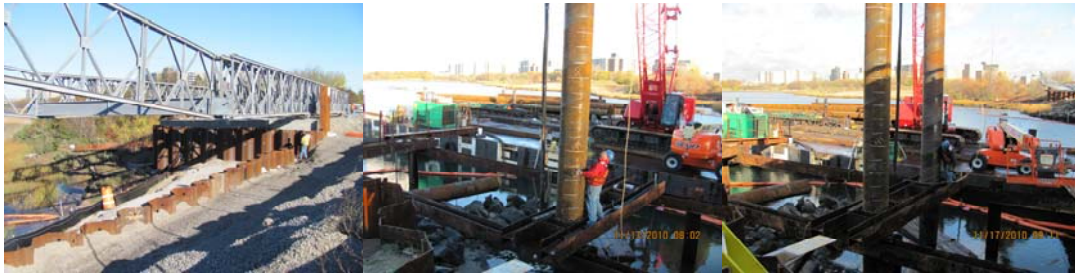


Fresh Creek Bridge in March 2010: The Temporary Lighting System Installed on the Temporary Median Barrier Leading up the Eastern Approach to the Bridge. May 2010: Turbidity Curtain Along the Shoreline. June 2010: Equipment for Driving in Sheet Metal Piling.

ACCOMPLISHMENTS & PLANNED PROJECTS



Fresh Creek Bridge in July 2010: Installing Sheathing Along the Southwest Area of the Shoreline. The Nighttime Installation of Temporary Asphalt Pavement in the Median of the Belt Parkway. November 2010: The Installation of the New Ductile Iron Sludge Force Main Being Installed Through a Jacking Sleeve that Crosses Under the Existing Roadway. (Sludge Force Main Credit: Eric Callender)



Fresh Creek Bridge in November 2010: The Temporary Bridge Superstructure Extending From the Temporary Bridge Abutment, the Temporary Steel Sheeting in the Foreground and in Front of the Abutment, and the Erosion and Sedimentation Controls Located Along the Perimeter of the Site and Water Body. Close up of the Installation of the Temporary Taper Tube Steel Piles via Barge-Mounted Crane. The Temporary Bridge can be Seen in the Background.



Fresh Creek Bridge in November 2010: The Installation of the Temporary Taper Tube Steel Piles via a Barge-Mounted Crane. The Piles are Designed and Installed to Support the Temporary Bridge. The Temporary Approach Roadway to the Temporary Bridge. (Credit: Eric Callender)



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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

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 underdeck timber shielding; the removal of lead paint from existing steel for cut lines; 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. Activities during this stage included the excavation, placement of fill, grading and placement of the new pavement along the westbound shoulder from the Fresh Creek Basin project limit to the Rockaway Parkway westbound exit ramp, and from the westbound entrance ramp to the Paerdegat Basin project limit. 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 also completed. The contractor began the excavation and removal of the existing substructure and the preparation for the installation of piles and new abutments. Work also began on the installation of new street lighting around Canarsie Circle to the south of the bridge.



Rockaway Parkway Bridge in July 2010: The Nighttime Installation of Temporary Asphalt Pavement in the Median of the Belt Parkway. September 2010: Installing Planks Along the Lower Flanges of the Stringers. November 2010: Stage II Demolition of the Existing Bridge Superstructure.



Rockaway Parkway Bridge in November 2010: Stage II Demolition of the Existing Bridge Concrete Deck. Overview of the Stage II Demolition. The Asbestos Abatement Operation is in the Foreground. The Installation of New PCC Roadway for the Westbound Off Ramp.

ACCOMPLISHMENTS & PLANNED PROJECTS



Rockaway Parkway Bridge in November 2010: The Consolidation Operation for the New PCC Roadway for the Westbound Off Ramp. The Installation of New Concrete Curbing, Catch Basin and Electrical Facilities for the New Westbound Roadway. The Installation of Formwork in Advance of the Installation of the New Westbound Roadway. (Westbound Roadway Credit: Eric Callender)

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 in each direction. The eastbound side will carry a dedicated pedestrian/bicycle path along the south fascia.



Gerritsen Inlet Bridge Aerial View and in 2002. (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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 2010, the number of openings declined further to a total of only 197 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2009, the Mill Basin Bridge carried 144,536 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.



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

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



Mill Basin Bridge Aerial View.

ACCOMPLISHMENTS & PLANNED PROJECTS



Mill Basin Bridge. Proposed Mill Basin Bridge.

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

The replacement bridge superstructure will consist of pre-stressed concrete box beams and a reinforced concrete slab. The bridge will have three 12-foot wide lanes in the eastbound direction and two 12-foot wide lanes separated by a 4-foot wide painted stripe flush median in the westbound direction. There is no pedestrian/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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

The replacement will be a single span bridge consisting of standard steel girders with a cast-in-place deck superstructure and reinforced concrete abutments on pile footings, thus eliminating the need for intermediate support piers and resulting in improved sight lines on Nostrand Avenue. The bridge will have three 12-foot wide lanes with a 12-foot wide right shoulder. The approaches will have a 10-foot wide right shoulder and a 4-foot wide left shoulder in each direction. Nostrand Avenue will be widened to 81 feet and realigned with the existing approaches. On the Belt Parkway, the bridge will be widened in order to provide new safety shoulders in both directions. New safety-shape parapets will be installed and the existing corrugated metal center guide-rails will be replaced with a reinforced concrete center median, which will result in a safer condition.



Nostrand Avenue Bridge. Proposed Nostrand Avenue Bridge.

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

BEVERLY ROAD BRIDGE OVER BMT SUBWAY (BROOKLYN)

This bridge is a three span structure and was built in 1907. The superstructure consists of two built-up through girders, floor beams and stringers. The stringers are encased in a concrete jack arch deck. The superstructure is supported by concrete gravity wall abutments and piers. The project will involve the replacement of the existing deck with a new floor system using a concrete exodermic deck, and the repair of the existing primary members. The work will also include cleaning and painting the steel, and repairing the bridge seat and deteriorated concrete abutments. The bridge will be constructed in three stages and will remain open to traffic and pedestrians at all times. This project, currently in the final design stage, is expected to begin in March 2016, and is expected to be completed in March 2018.

ACCOMPLISHMENTS & PLANNED PROJECTS



Beverly Road Bridge in 2009. (Credit: NYSDOT)

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 July 2012, and is expected to be complete in January 2014.



Bryant Avenue Bridge in 2002. (Credit: NYSDOT)

CITY ISLAND ROAD BRIDGE OVER EASTCHESTER BAY (BRONX)

The existing City Island Road Bridge was built in 1901 and is the only vehicular, bicycle and pedestrian access between the mainland Bronx and City Island. In 2009, the bridge carried 14,313 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.

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



City Island Road Bridge in 2010. (Credit: Bojidar Yanev) Vertical Clearance Posting. (Credit: NYSDOT)

The project is currently in its final design phase. The construction phase for this Federally-funded project is scheduled to begin in June 2012 with an approximate duration of 3 years.

ACCOMPLISHMENTS & PLANNED PROJECTS



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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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. Construction is expected to begin in April 2011, and is expected to be complete by July 2013.



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

CONCOURSE VILLAGE AVENUE BRIDGE OVER METRO NORTH (BRONX)

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



Concourse Village Avenue Bridge. (Credit: NYSDOT)

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

ACCOMPLISHMENTS & PLANNED PROJECTS

southbound direction as well as NYCT subway traffic underneath the Grand Concourse Boulevard and above the Metro North railroad right of way. The upper portion of the bridge carrying the roadway is now structurally supported by the lower portion carrying the subway. The two portions of the bridge are dependent upon each other for support and stability but are being maintained individually by two separate agencies, the NYC Department of Transportation, and NYC Transit Subways respectively. The subway portion of the structure, comprised of four warren trusses, is stabilized by the roadway portion floor beams and the roadway portion is supported by the subway trusses.

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



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

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

The reconstruction project will also include building new sidewalks, as well as bridge railings with protective fencing, expansion deck joints, electrical conduits and fixtures, and the relocation of the existing water main under the sidewalk. Two lanes of vehicular traffic and the pedestrian walkway will be maintained in each direction on the Grand Concourse. This project, currently in the final design phase, is expected to begin construction in February 2018, and is expected to be complete in May 2020.

ACCOMPLISHMENTS & PLANNED PROJECTS



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

HIGHLAND PARK PEDESTRIAN BRIDGE OVER PEDESTRIAN PATH (QUEENS)

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

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



Highland Park Bridge. (Credit: NYSDOT)

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

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

This project will include the replacement of the existing masonry cellular abutments with new reinforced concrete abutments clad with existing stone and new brick masonry; the removal, storage, and reinstallation of the existing stone wing walls with a new reinforced concrete core;

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

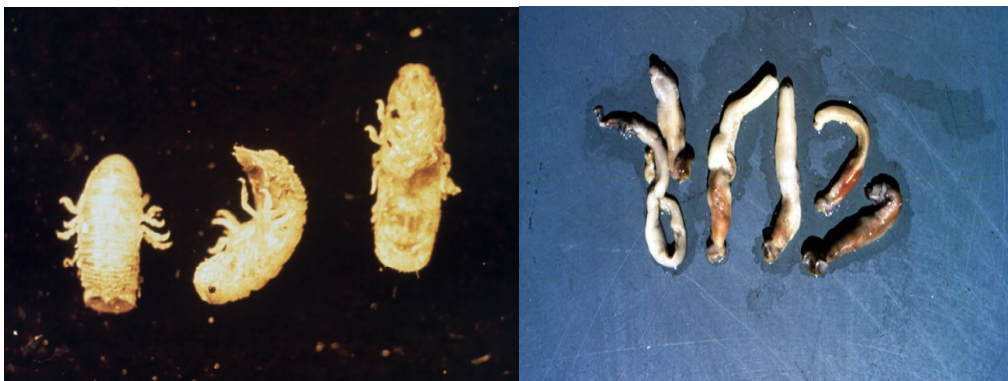
The project's final design phase has been suspended until such time as funding is available. Repairs requiring immediate attention are performed by the When and Where contractor. This bridge is closed to vehicular traffic.



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

MARINE BORER REMEDIATION (MANHATTAN & BROOKLYN)

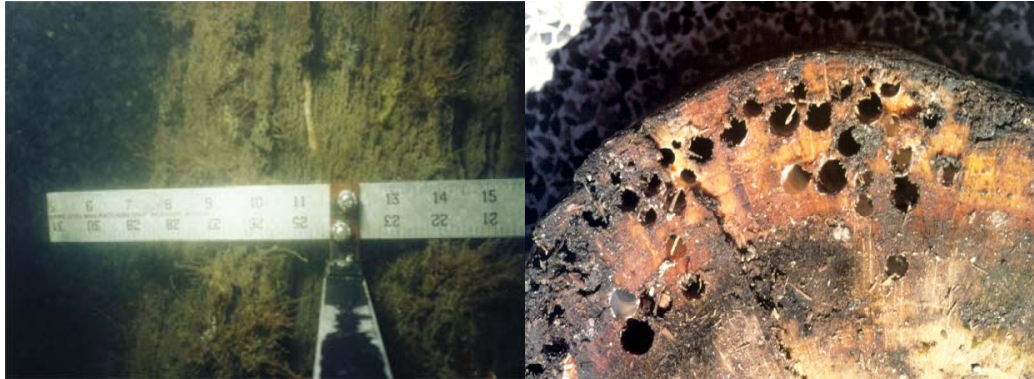
Marine borers pose an immediate and serious danger to the thousands of piles and other structures of timber built in the marine environment. In New York Harbor, as the water quality improved due to many years of clean up efforts, marine borer (limnoria, teredo, etc.) activity has increased significantly 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

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 June 2011, and to be complete in March 2015.

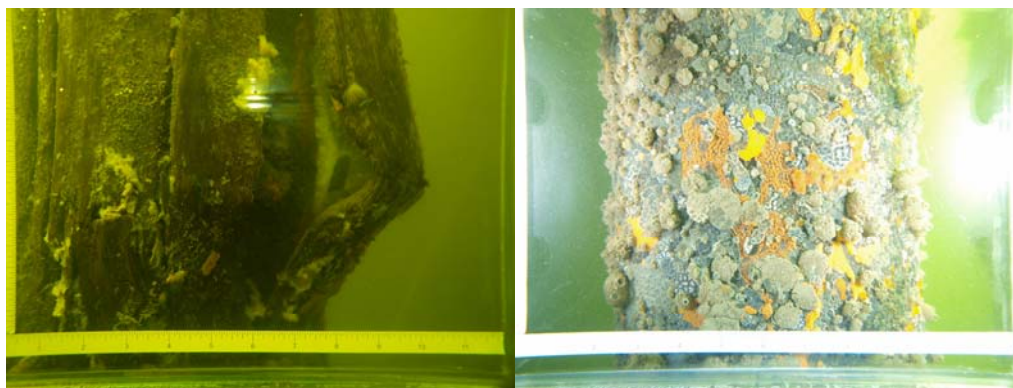
NORTHBOUND FDR DRIVE AT EAST 53RD STREET (MANHATTAN) – EMERGENCY CONTRACT

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

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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



FDR Drive Original Pile Condition. Bored-In Pile Underwater.

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

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

A Letter of Intent for the emergency repair of this bridge was issued to the contractor with a start date of December 17, 2009. The repairs included the following: the installation of epoxy jacketing on 167 timber piles; structural concrete encasements of 10 timber piles; concrete encasements of 6 pairs of plumb and batter piles; installation of 24 new steel cased bored-in piles to support the relieving platforms and esplanade along the concrete sea wall; and the placement of lightweight concrete fill in areas adjacent to the existing steel sheet pile bulkhead.

The repair for the emergency re-stabilization was designed as a two stage simultaneous repair. The first stage was to re-establish structural load bearing by installing 24 rock-socket mini-piles. The second stage of repair was to protect the remaining intact timber piles with a combination of structural concrete encasements, epoxy jacket encapsulations, and lightweight concrete fill. The challenges that the construction team faced consisted of water depths in excess of 40 feet, poor visibility, strong currents, vessel traffic and lane closure restrictions.

The emergency repair of this section of the Drive was substantially completed on November 12, 2010, and all work was completed as of November 18.

ACCOMPLISHMENTS & PLANNED PROJECTS



FDR Drive Emergency Contract in April, May, and August 2010. Aerial View.

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.

ACCOMPLISHMENTS & PLANNED PROJECTS



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 oversized 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 May 2014 and to be complete in May 2017.



Roosevelt Avenue Bridge (#2240507) in 2002 and 2004. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

SHORE ROAD CIRCLE BRIDGE OVER AMTRAK (BRONX)

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



Shore Road Circle Bridge in 2003 and June 2009. (2003 Credit: NYSDOT)

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



Shore Road Circle Bridge: Installing a Reinforcing Timber Beam Underneath the Existing Floor-Beam in Preparation for Stage 1A Construction in June 2009. Installing the Demolition Shielding Over Track #1 for Stage 1A in November 2009. Left Roadway in December 2009. (December Credit: NYSDOT)

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. Construction is expected to be complete in spring 2013.

ACCOMPLISHMENTS & PLANNED PROJECTS



Shore Road Circle Bridge: Preparation of MPT and Work Zone, Installation of Temporary Shoring Towers, and Partial Steel Removal in June 2010.



Shore Road Circle Bridge: Clearing Structural Steel for Demolition and Disassembling Steel Members in July 2010.



Shore Road Circle Bridge: Steel Demolition and Structural Steel After Paint Removal in July 2010.

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.



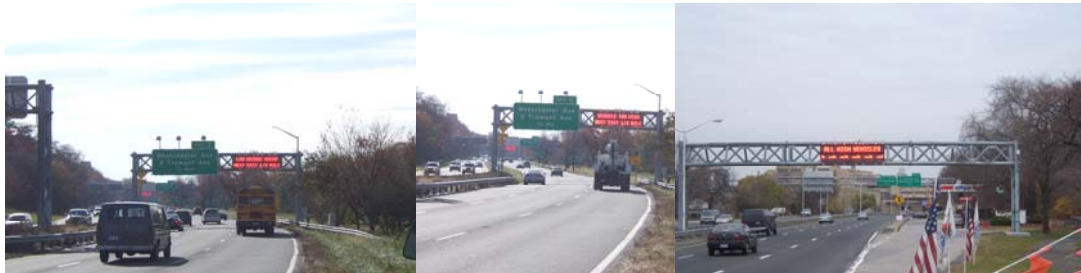
East 175th Street Bridge in 2002. (Credit: NYSDOT)

WESTCHESTER AVENUE BRIDGE OVER THE HUTCHINSON RIVER PARKWAY (BRONX)

This two span bridge supports a transit structure overhead and has substandard clearance over the highway below. A project to install an ITS solution, which includes an overheight vehicle detection system that flashes signs directing vehicles identified as being over 9' in height to exit the parkway, was substantially completed on December 3, 2004. The contractor completed extra work associated with landscaping in the spring of 2006. The underdeck at both spans is currently covered by approximately 154 square feet of timber planking. In addition, the underdeck at span 1 is covered with approximately 18 square feet of steel wire mesh netting. A separate project is underway to reconstruct the bridge and lower the Parkway.



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



Vehicle Detection System.

The Westchester Avenue Bridge's vertical clearance over the Hutchinson River Parkway is substandard. Due to the number of truck and bus vehicles that mistakenly enter the Hutchinson River Parkway, where commercial vehicles are not allowed, the fascia steel girders of the bridge have been severely impacted and damaged numerous times. The planned lowering of the

ACCOMPLISHMENTS & PLANNED PROJECTS

parkway will make it possible to increase the vertical clearance of the bridge over the parkway without adversely impacting the NYCT elevated structure and its transit train operations. The total length for the lowering of the parkway will be 1000 feet (north and south), with a maximum lowering of the parkway of 2.5 feet under the Westchester Avenue Bridge.

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

This rehabilitation project is currently in final design. Construction is expected to begin in February 2016, and is expected to be complete in October 2018.

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

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



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

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

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

ACCOMPLISHMENTS & PLANNED PROJECTS

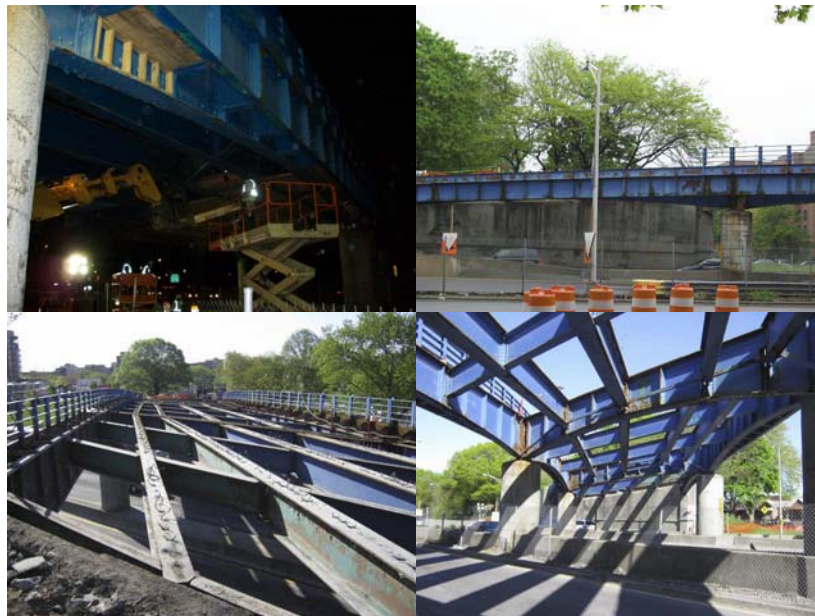


East 8th Street Bridge in 2002. (Credit: NYSDOT) Rendering of New Bridge.



September 2009: Top of Deck Along Left Shoulder. (Credit: NYSDOT) 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 April 2010. The north and south abutments were partially removed and are being reconstructed. New pile foundations were installed at piers 1, 2, and 3. The new reinforced concrete bridge columns were completed at the end of December 2010.



East 8th Street Bridge Deck Demolition in April 2010.

ACCOMPLISHMENTS & PLANNED PROJECTS



East 8th Street Bridge Rail Removal in April and May 2010.



East 8th Street Bridge Superstructure Steel Removal in June 2010. Loading a Fascia Girder on a Trailer. North View After Completion of Steel Removal.

The structural steel for the new bridge superstructure is being fabricated off site, along with new bridge bearings. These are scheduled to be delivered to the site in March of 2011. The installation of the steel girders will then commence, to be followed by construction of the new bridge deck.

Completion of the north and south approach roadways is anticipated in the summer of 2011. The bridge is anticipated to open to vehicular and pedestrian traffic in September 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

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



11th Avenue Viaduct Site Overview.



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

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



11th Avenue Viaduct Stage 1A Construction in 2009. Installed Railroad Protective Shields. Traffic Enforcement Agent on Duty During Stage 1B Construction.

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 will be completed by December 2010 prior to shifting to Stage 2.

ACCOMPLISHMENTS & PLANNED PROJECTS



11th Avenue Viaduct: Demolition of the Old Deck in February 2010. Inspecting Machine Setup Prior to Placing the New Deck Slab Concrete in October 2010. First Concrete Pour in August 2010. (Credit: Hui Yang) Working on Bridge Rail and Pedestrian Fencing in November 2010. (2nd Rail Credit: Hui Yang)

In 2011, the contractor will demolish and reconstruct the western half of the viaduct under Stage 2. Construction is expected to be completed in September 2011.

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

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.

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. Construction is anticipated to begin in July 2014.

ACCOMPLISHMENTS & PLANNED PROJECTS



92nd Street Bridge in December 2006.

WEST 31ST STREET BRIDGE OVER AMTRAK (MANHATTAN)

This bridge between Ninth Avenue and Dyer Street, is a nine simple span multi-girder jack arch encased in concrete, and was built in 1909. The superstructure is supported by the west abutment, the south retaining wall, and steel columns resting on spread footings. The project will involve installation of new floorbeams and steel stringers with a reinforced concrete deck slab, as well as the bridge seats and steel pier columns. Traffic will be maintained during the relocation of the utilities, but the bridge will be closed during the bridge replacement. This project, currently in the final design stage, is expected to begin in December 2019, and is expected to be complete in March 2023.



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

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

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

ACCOMPLISHMENTS & PLANNED PROJECTS

The new bridge will comply with ADA regulations.



East 78th Street Bridge. Aerial View.



Concrete Placement in Late 2010.

During construction, pedestrian traffic will be 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. Construction is expected to be complete in August 2011.



Proposed Bridge and Fencing – Looking West.



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

ACCOMPLISHMENTS & PLANNED PROJECTS

Specialty Engineering and Construction

Design-Build

In 2010 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. 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. 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. Repairs and Cleanup. (Credit: Bojidar Yanev)

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



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

ACCOMPLISHMENTS & PLANNED PROJECTS



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



May 2010: Removing Hollow Concrete Along the Abutment Wall. (Credit: Richard Solomon) Associate Project Manager Richard Solomon at the Bridge in October 2010.

The fire on the bridge weakened its members. While the immediate results of the fire were addressed by in-house forces, the aftereffects remain unresolved. The most recent inspection conducted on September 14, 2006 revealed that at least four girders have sagged and they are hit by CSX railroad cars below. The concrete deck has separated from the steel girder and there is a one to two inch gap between the top of the flange and the bottom of the haunches. In addition, the diaphragms between the girders have been burned and their capacity has been weakened. Repairs requiring immediate attention were handled by the When and Where contractor. The contractor installed additional timber bracing of the bridge's timber shielding in January and February 2007, performed emergency removal of loose underdeck concrete in July and August 2007, and repaired a red flag condition at the bridge stringers in September 2007. 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 was completed and the removal of deck panels began in October. 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.

HARLEM RIVER DRIVE AT EAST 127TH STREET (MANHATTAN)

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



Harlem River Drive at East 127th Street.

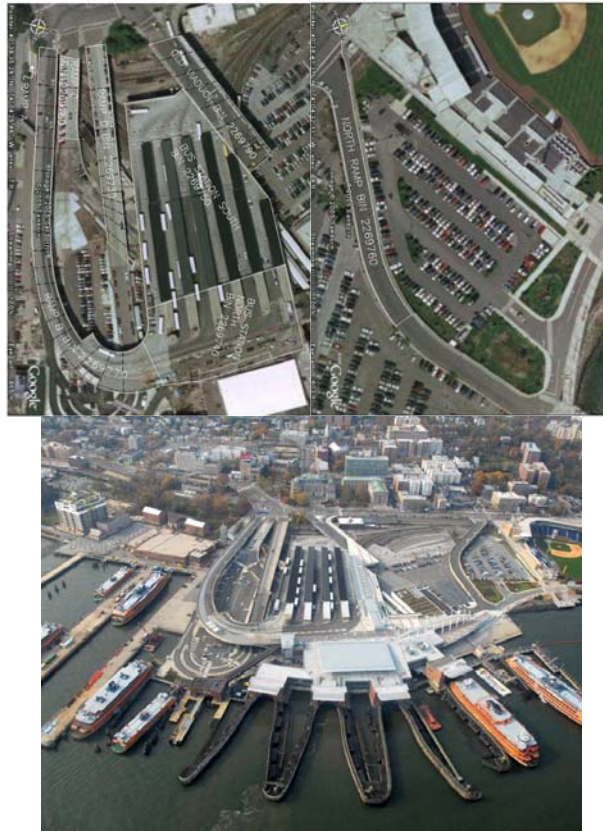


Left and Right Views of the Bridge in 2003.

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

ACCOMPLISHMENTS & PLANNED PROJECTS



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



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

ACCOMPLISHMENTS & PLANNED PROJECTS



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



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



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

ACCOMPLISHMENTS & PLANNED PROJECTS



North Municipal Parking Field.

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

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.



April 2010: Removal of Concrete Encasement Packets at the Old Viaduct.



June 2010: Ramp A and D Demolition.

ACCOMPLISHMENTS & PLANNED PROJECTS



July 2010: Removing Concrete Support Beams From Ramp A. Preparing for Power Hand-Tool Operation at Ramp D. Class 3P Containment at Ramp D.



September 2010: Ramp D Demolition and Pre-Stage Work.

Shielding installation and red flag repairs continued in 2010. Closures of Ramp D began on June 21. 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, Bus Gates A and B and the Old Viaduct were underway. Construction is expected to be complete by spring 2013.

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)

ACCOMPLISHMENTS & PLANNED PROJECTS

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 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.



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

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



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

ACCOMPLISHMENTS & PLANNED PROJECTS



Borden Avenue Bridge in March 2009. (Credit: Tamara Berlyavsky) Demolition and Disposal of West Abutment Wall. (Credit: Reza Lotfi)



Sheet Piling of Cofferdam. Closeup of Sheet Pile Driving Operation for the West Abutment. (West Abutment Credit: Reza Lotfi) Reconstruction of West Abutment of the Borden Avenue Bridge in April 2009. (Credit: Bernard Ente)



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

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

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

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

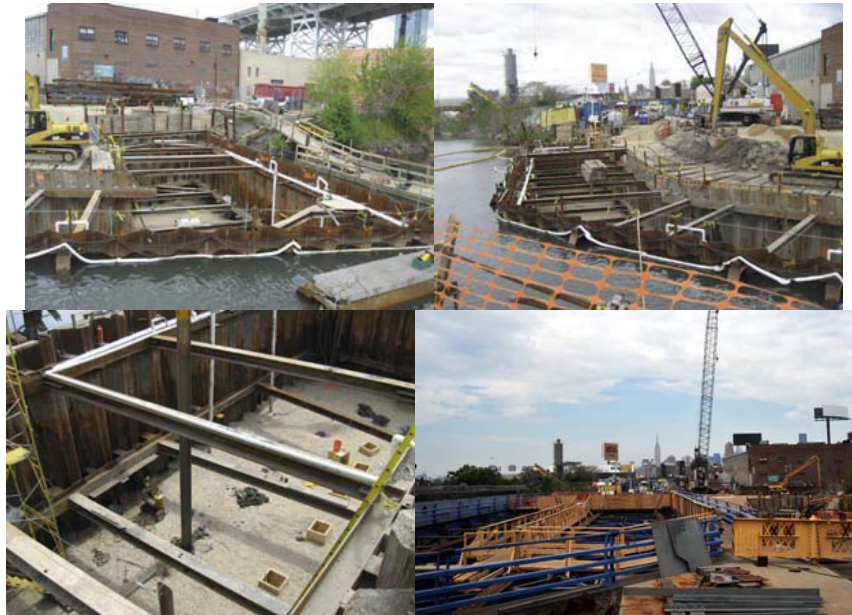
ACCOMPLISHMENTS & PLANNED PROJECTS



October and November 2009: Paint Removal with Vacuum Shrouded Power Hand Tool Under a Class 3P Containment. Ironworkers Removing Rivets and Dismantling Steel. December 2009. (Credit: NYSDOT)

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 is expected be complete by July 2011.



April 2010: Cofferdam With Filter Fabric and Gravel Placed Prior to Pile Driving. May 2010: Pile Driving. Steel Deck Removed. (Deck View Credit: Bernard Ente)

ACCOMPLISHMENTS & PLANNED PROJECTS



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) September 2010: Steel repairs and concrete placement for the west abutment wall.



December 2010: Concrete Work. Associate Project Manager Reza Lotfi. (Credit: Leonid Gitis)



December 2010: Concrete Work. (Credit: Leonid Gitis) Late December 2010: Bridge Open to Vehicular Traffic. (Credit: Mitch Waxman)

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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.



March 30, 2009 at the Greenpoint Avenue Bridge: Commissioner Janette Sadik-Khan, Deputy Mayor Edward Skyler, Mayor Michael R. Bloomberg, and State Assembly Member David Weprin at the announcement of the City's selections for infrastructure projects that will benefit from federal transportation funding from the American Recovery and Reinvestment Act. (Credit: Edward Reed)

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.



Installing Temporary Shielding Under the Main Span and Deck Joint Repair Work in June 2010. Before Construction. Stage I Complete in October 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.

ACCOMPLISHMENTS & PLANNED PROJECTS



Finished Greenpoint Avenue Bridge Roadway and Sidewalk in November 2010.

When and Where Unit

In 2010, 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, West 79th Street Bridge over Amtrak, Harlem River Drive NB Ramp over Harlem River Drive, West 40th Street Bridge over Amtrak 30th Street Branch, 149th Street Bridge over BCIP, West 148th Street Pedestrian Bridge over 30th Street Branch, Henry Hudson Parkway Bridge over Amtrak 30th Street Line, Hill Drive Bridge over Prospect Park Lake, West 181st Pedestrian Bridge over Henry Hudson Parkway North Bound, East 6th Street Bridge over FDR Drive, Corlears Park Road Bridge over FDR Drive, Central Drive Bridge over Transverse Road #1, Grand Concourse over 174th Street, Boston Post Road Bridge over Hutchinson River, West 79th Street Bridge over Amtrak 30th Street Line, East 156th Street/Access to Housing, West 207th/West Fordham Bridge over Harlem River, Trans-Manhattan Expressway, City Island Bridge over Eastchester Bay, 14th Avenue Bridge over BCIP, Linden Boulevard over BCIP, 28th Avenue Pedestrian Bridge over BCIP, Hempstead Avenue Bridge over BCIP, Richmond Avenue Bridge over Richmond Creek, Motor Parkway Bridge over Francis Lewis Boulevard, 49th Street Bridge over Grand Central Parkway, 150th Street over CIP, Hempstead Avenue Entrance/Exit Tunnel over Cross Island Parkway, Flushing Meadow Park Bridge over Meadow Lake, and Arthur Kill Road Bridge over SIRT South Shore.

Currently scheduled projects include the Henry Hudson Parkway Viaduct over West 72nd Street to West 79th Street, West 79th Street Bridge over Amtrak, and Hill Drive Bridge over Prospect Park Lake, and Arthur Kill Road over SIRT South Shore.

An unusually large amount of work was done to fix a PIA flag at the Harlem River Drive NB Ramp over Harlem River Drive. A through-hole had been observed in the structural deck slab, and a temporary plate was placed over the hole. After several months, it became apparent that this plate would not suffice for long. Upon this determination, a PIA flag was issued, and the When and Where contractor was immediately mobilized to address the situation. A special re-design of the entire ¼ span surrounding the through-hole was effected by a coordinated team of Division personnel from the Flag Engineering and When & Where Contract Units. The permanent repair consisted of a support system of three new stringers and the heavy reinforcement of the existing stringer. This major work was accomplished without closing the ramp, and with only minor late night intermittent disruptions of traffic on the south bound Harlem River Drive below repair area.

MARINE WHEN AND WHERE

New York State DOT conducts the underwater inspections of our waterway structures. A contract was needed to facilitate the performance of marine repairs and to maintain structures in need. The objective is to perform marine structural repairs and maintenance together with other appurtenant work, which constitutes repairs of defective and deteriorated parts of bridge structures due to and in a water environment. The Department has neither the staffing nor the

ACCOMPLISHMENTS & PLANNED PROJECTS

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



Working on the Shore Road Bridge in September 2010.

The project to replace the City Island Road Bridge had to be postponed. As a result, it became necessary to repair deficiencies in the existing structure that could have otherwise been left in place until the replacement work began. Concrete deteriorating from the underside of the bridge deck at many locations needed to be shielded with timber to protect the boat traffic in the bay. In addition, loose and cracked stones in channel piers had to be secured and patched to maintain the integrity of the substructure. A significant number of stones supporting the west abutment were cracked, and grout was missing at many others. Concrete repairs were necessary to maintain the abutment's integrity.

PAINTING

In 2010, the following bridges were painted: Belt Parkway Bridge over Bay Parkway, Brooklyn Queens Expressway East Leg North Bound Bridge over 32nd Avenue (to Brooklyn Queens Expressway West Leg), Brooklyn Queens Expressway East Leg South Bound Bridge over 31st Avenue, Brooklyn Queens Expressway Bridge over 34th Avenue, Cropsey Avenue Bridge over Coney Island Creek, East Tremont Avenue Bridge over Bronx River, Grand Concourse Bridge over East Tremont Avenue, Harlem River Drive northbound ramp to the George Washington Bridge, Hunters Point Avenue Bridge over Dutch Kills, Riverside Drive Viaduct at West 158th Street, East 12th Street Bridge over Belt Parkway, 71st Avenue Bridge over Cooper Avenue, East 163rd Street over CSX Trans – Port Morris, and 163rd Street Pedestrian Bridge over Hawtree Basin.

ACCOMPLISHMENTS & PLANNED PROJECTS



Painting a Belt Parkway Overpass in April 2010: Bridge Painters Osvaldo Lima and Julio Perez. Painting the BQE Bridges in 2010: Bridge Painters Anthony Attore, Branko Grzancic, and Supervisor Bridge Painter David Yanolatos. (Credit: Earlene Powell)



Painting the BQE Bridges in 2010: Bridge Painters Henry Bollin (Obscured), Thomas Jones (Obscured), and Michael Scotti. Bridge Painter Michael Scotti. Bridge Painters Anthony Attore and Branko Grzancic. (Credit: Earlene Powell)



Painting the BQE Bridges in 2010: Bridge Painters Thomas Jones and Anthony Attore. Operating the Lift: Bridge Painter Brian Casey, Supervisor Bridge Painter David Yanolatos, and Bridge Painter Henry Bollin (Obscured). Completed Paint Job. (Credit: Earlene Powell)



Supervisor Bridge Painter David Yanolatos. (Credit: Earlene Powell) Deputy Director of In-House Painting Earlene Powell, Bridge Painters Anthony Attore, Michael Scotti, Henry Bollin, Thomas Jones, and Brian Casey. (Credit: David Yanolatos) Bridge Painter Efrosini Katanakis at the Harlem River Drive Northbound Ramp to the Trans-Manhattan Expressway in September 2010. (Credit: Artemio Angeles)

ACCOMPLISHMENTS & PLANNED PROJECTS



Contract Painting of Bay 8th Street over Belt Parkway in August 2010. All Abrasive Blasting Activities Were Conducted During the Nightshift. Prior to the Abrasive Blasting Operation the Environmental Inspector Conducted Air Flow Measurements and Measured the Negative Pressure Inside of the Class 1A Containment System.



Contract Painting of Bruckner Expressway (Eastbound) Bridge over Bronx River in June 2010.

During 2010, the following structures were also painted: DOT Bridge Repair Facility Boiler Room at 390 Kent Avenue, DOT Coin Collection facilities at 66-26 Metropolitan Avenue, DOT Facilities at the Hamilton Avenue Asphalt Plant, DOT Harper Street Maintenance and Repair Shop, Bridge Inspection Facilities at Kingsland Avenue, DOT Ironworker's Office at 372 Kent Avenue, DOT Ironworker Shop at 59th Street, DOT Sign Shop at Maspeth, DOT Sign Shop at 34 Wave Street, DOT Traffic Operation facilities at 28-11 Queens Plaza, Madison Avenue Bridge Operator House, and Third Avenue Bridge Operator House.

ACCOMPLISHMENTS & PLANNED PROJECTS

GRAFFITI REMOVAL

In 2010, 4,115,377 square feet of graffiti were eliminated. This program focuses its primary attention on the four East River bridges, as well as the following 21 arterial highways: Clearview Expressway, Gowanus Expressway/Belt Parkway, Major Deegan Expressway, Harlem River Drive, Van Wyck Expressway/Whitestone Expressway, Brooklyn-Queens Expressway, Jackie Robinson Parkway, Sheridan Expressway, Hutchinson River Parkway, Henry Hudson Parkway, West Shore Expressway, Richmond Parkway, Martin Luther King Jr. Expressway, Staten Island Expressway, Bruckner Expressway, Prospect Expressway, Grand Central Parkway, Long Island Expressway, Cross Bronx Expressway, Nassau Expressway, and Bronx River Parkway.



Pressure Washing Machine Used for Graffiti Removal. It is Set to 2500 psi and 212° F. Bridge Painters Frank Duic and Russell Newme Feeding the Spray Pump and Preparing the Paint.



Painting the White Line on the Brooklyn Bridge Walkway/Bikeway in June 2010. Bridge Painters Frank Duic, Russell Newme, and Vlatko Zic. Bridge Painter Frank Pinheiro Painting his Last White Line Before Retiring. Supervisor Bridge Painter Cesar Pazmino Checking the Line. The Freshly Painted Line. (Credit: Earlene Powell)

During 2010, graffiti was also removed from the following structures: Baychester Avenue Pedestrian Overpass, Bay Parkway, Bruckner Expressway Service Road, Cannon Place Retaining Wall Barriers, Citi Field Vicinity, South Conduit Avenue and Linden Boulevard, Cooper Ave and 80th Street, Cropsey Avenue, Cross Island Parkway, FDR Drive at 6th Street, FDR Drive at 23rd Street, FDR Drive between East 35th Street and 125th Street, FDR Drive at East 155th Street, Five Borough Bicycle Tour Route, Flushing Avenue and Rust Street, Francis Lewis Boulevard, 21 Front Street, Grand Concourse between East 167th and East 170th Streets, Grand Concourse over East 170th Street, Grand Concourse over East 174th Street, Grand Concourse over East 204th Street, Hutchinson River Parkway, Jackie Robinson Parkway-Union Turnpike Bridge over Austin Street, Lafayette Avenue Pedestrian Overpass, Lincoln Road over Flatbush

ACCOMPLISHMENTS & PLANNED PROJECTS

Avenue, Manton Place and Main Street, Marathon Route, Penny Field Avenue Seawall, Seeley Street, Skillman Avenue and Jackson Avenue, Springfield Boulevard Overpass between Kingsbury Avenue and 76th Avenue, Webster Avenue and 181st Street, Woodhaven Boulevard at 82nd Street, Yankee Stadium Vicinity, York Avenue between 59th and 60th Streets, South 5th Street, 11th Avenue and 36th Street, 12th Avenue between 31st and 33rd Streets, East 14th Street Pedestrian Bridge over Belt Parkway, West 33rd Street at Park Avenue, 63rd Street between 6th and 7th Avenue, 78th Avenue and Woodhaven Boulevard, 90th Avenue and 102nd Street railroad overpass, 91st Avenue between 99th and 102nd Street, 94th Street between 44th and 45th Avenue, 95th Avenue and Woodhaven Boulevard, 163rd Street Pedestrian Bridge over Hawtree Basin, West 179th Street at Cedar Avenue, West 181st Street and Riverside Drive, 204th Street Yard, 208th Street and 9th Avenue, and West 238th Street and Cannon Place.



Bridge Painters Andrew Law, Frank Hollen, and Julio Perez. (Credit: Robert Avellino)

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 provided construction support services for the component rehabilitation project to replace the concrete-filled steel grid deck of the Greenpoint Avenue Bridge over Newtown Creek, which connects the boroughs of Brooklyn and Queens. Greenpoint Avenue is a key corridor that links light industry in northern Brooklyn with freight distribution hubs and Interstate highway routes in western Queens. The existing bascule span bridge was built in 1990 and carries two lanes of traffic in each direction. The bridge consists of eleven fixed spans and a bascule span. This project included the replacement of the cracked stringers and the compression seals at all of the joints, as well as the resurfacing of the approach pavement and the intersection at the Queens end, and will extend the useful life of the bridge structure by 10 years. The bridge was fully opened to vehicular traffic on November 23, 2010. The component rehabilitation project was substantially completed on January 20, 2011.



Arial View of Greenpoint Avenue Bridge. Elevation Right Span.

Other projects underway include the Union Turnpike Bridge over Cross Island Parkway (and Creedmoor Center Road), Springfield Boulevard Bridge over Belt Parkway, and Hillside Avenue Bridge over Cross Island Parkway in Queens. All three bridges are two span rigid frame concrete structures. The project is in the preliminary design phase, with construction scheduled to start in late 2016.

This unit is supervising the design of a proposed pedestrian bridge that will connect Park Row to the existing One Police Plaza overpass. The bridge will enhance the area while providing a safe pedestrian connection from Police Plaza to Park Row. The new bridge will be part of a Park Row/Chatham Square reconstruction project, which is being handled by DDC. The design work was completed and the contract documents were submitted to DDC, who will combine them with their contract documents, bid the final contract and oversee the construction.

This unit also started the design of the Bryant Avenue Bridge over Amtrak and Conrail in the Bronx. This is a one span structure constructed in 1908. This project includes replacement of the steel superstructure, bearings, approaches, and rehabilitation of both abutments. Both abutments will be rehabilitated to withstand seismic forces. The water main, electrical conduits and gas line on the existing bridge will also be replaced.

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 2010 included the Willis Avenue, Broadway, and 145th Street Bridges over the

ACCOMPLISHMENTS & PLANNED PROJECTS

Harlem River, the Wards Island Pedestrian Bridge over the Harlem River; Hamilton Avenue and Union Street Bridges over the Gowanus Canal; and Belt Parkway Bridge over Paerdegat Basin in Brooklyn; Roosevelt Island Bridge over East River Channel; Shore Road Bridge over Hutchinson River; Queensboro Bridge; and Brooklyn Bridge.

ENGINEERING SUPPORT

BRIDGE PROJECT SPECIFICATIONS

In 2010, the Specifications Unit of the Engineering Support Section prepared and/or reviewed contract proposal books and/or specifications for 22 contracts, including 15 bridge rehabilitation and new construction/reconstruction contracts and 7 non-bridge contracts, in addition to replying to specification requests for 7 on-going construction projects. Six of the above contracts totaling approximately \$70 million in construction costs were advertised for bid and were bid in 2010.

Notable among the construction contracts prepared and /or reviewed, advertised and sent for bid were: the reconstruction of Claremont Parkway Bridge over Metro North Railroad; preventive maintenance of the four East River Bridges; East 153rd Street Bridge (building demolition and site work), and off-site tidal mitigation for the Belt Parkway Bridges.

CONVERSION OF DIVISION ENGINEERING ARCHIVES

Since the first digitizing contract of engineering records began 11 years ago, we have converted over 58,000 full-size contract drawings and 20,000 construction photographs into digital formats.

The next phase of the project consisted of the digitizing of the microfilm collection. Since we began microfilming bridge drawings in the early 1980s, we accumulated more than 450 microfilm rolls (over 110,000 frames of film). Microfilming of records is rapidly becoming an obsolete technology as it cannot be used to perform rapid searches, sort records, send/ share files via the Internet, or copy electronic files to CDs/DVDs.

Under the digitizing contract completed in July 2009, these microfilms were transferred to digital media, and the records were consolidated according to their BIN (Bridge Identification Number) for future use.

In order to expand our records database we were able to acquire a complete digital set of the NYSDOT contracts from 1930. The NYC-based bridge-related records consisted of about 1,000 projects, which we were able to extract, label and incorporate into our server-based database according to their BIN and contract.

Server-based records support quality communications and enhance our public image. They ensure faster, flexible and effective delivery, improve document security, and organize, retrieve, distribute and print all documents more efficiently.

The Records Management Unit 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 30,000 drawings have been converted and about 28,000 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.

ACCOMPLISHMENTS & PLANNED PROJECTS

SURVEYING AND LOAD RATING

The 9th Street Bridge over Gowanus Canal is about 11 years old. This is a vertical lift bridge with an 85 foot bridge span. In 2010, bridge operators discovered that the bridge deck was rubbing and hitting the east abutment during the closing procedure in the summer period. Unit staff performed bi-weekly monitoring of the movement of the east abutment.

The stone masonry retaining wall at Cannon Place in the Bronx is approximately 200 feet long with a varying height of 18 to 28 feet. Overall, the wall is in poor condition, with two sections identified as visibly bulging. The sidewalk along the Cannon Place is also in a deteriorated condition. In 2010, unit staff performed monthly monitoring of the movement of the two bulging wall sections and the deteriorated side walkway, and will continue to do so until the contract is awarded.

ENGINEERING REVIEW

MACY'S THANKSGIVING DAY PARADE

As in past years, the staff of the Engineering Review Section actively participated in the 2010 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 will also include a half tunnel section in what was formerly known as the Miller Highway Tunnel. When completed, the infrastructure network will be transferred to DOT for maintenance. The Division is providing engineering review of the design drawings, as well as quality assurance inspections, to ensure the developer's compliance with DOT's construction and design standards. Construction is complete for five of the bridges (which are open for traffic), and the other two bridges are under construction. The first phase of construction for the half tunnel section is complete and phase two is in progress. The project is now in its second stage, and is 92 percent complete overall.

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 October 2010, DDC has completed or nearly completed construction of 8 retaining walls, including the retaining wall at West 181st Street. DDC has been requested to accelerate the rehabilitation of walls that are being forwarded to them. The rest of the retaining walls will be in a program for future rehabilitation.

ACCOMPLISHMENTS & PLANNED PROJECTS

OVERWEIGHT TRUCK PERMIT REVIEWS

The number of review requests for overweight truck and/or crane permits increased from an average of 15 per week in 2009 to an average of 95 per week in 2010. This necessitated the assignment of a group of engineers to the dedicated task of engineering reviews of these time-sensitive permit applications received from the Division's Truck Permit Unit.

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 Parks Department. 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 package #1 consisting of eight bridges. The remaining bridges are split into four packages and the scope preparation is in progress.

HARPER STREET ASPHALT PLANT

The Department acquired the Grace Asphalt Plant in Corona, Queens (both the real estate and the plant equipment) for its Roadway Repair and Maintenance Division. The acquisition of this private plant will help the City streamline its asphalt procurement and save costs. The Department will also be able to recycle some milled asphalt materials. The Land Use Unit coordinated the ULURP application process for this project.

The Harper Street Asphalt Plant opened in July 2010. Once the plant has been fully upgraded, it will enable us to increase the recycled content in our pavement to 40%. The second asphalt plant in Queens will allow the Agency to take the Hamilton Avenue Plant in Brooklyn offline for upgrades, allowing the Hamilton Plant to produce warm mix asphalt with up to 50% recycled content. When DOT's Hamilton Avenue asphalt plant is upgraded, it will be designed with this new production system in mind.

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

ACCOMPLISHMENTS & PLANNED PROJECTS

area for bridge projects. Thus, NYCDOT's leading role and efforts to establish ground motion standards have brought uniformity in seismic design to the New York City area.

In 2002, the consultant convened a second panel of seismologists to update the 1998 Hazard Study and associated rock motions. On June 3, 2004, after the USGS national hazard maps were adopted by NEHRP, in a meeting attended by NYCDOT, NYSDOT and FHWA, it was unanimously agreed to adopt the new hard rock ground motions recommended by the panel of seismologists.

Following the adoption of the very hard rock motions, the consultant started the preparation of a new edition of the NYCDOT Seismic Design Guidelines for Bridges. Data from geotechnical bridge studies performed within the five boroughs of NYC were compiled. A series of generalized subsurface soil and bedrock profiles were developed to be representative of the range of soil profiles, overburden thickness, and rock types found within NYC. A fully probabilistic approach, utilizing Random Vibration Theory (RVT) in conjunction with the new hard rock ground motions, (from the 2002 Hazard Study) and the generalized NYC subsurface profiles, was used to develop vertical and horizontal Uniform Hazard Spectra (UHS), which, in turn, served as the starting point to derive design rock and soil response spectra. The method allowed computation of soil UHS, while preserving the hazard level of the very hard rock UHS. It accounted, in a rigorous probabilistic manner, for variations and uncertainties in soil stiffness, stress-strain nonlinearity, and material damping; depth of soil to rock; and, stiffness of the rock under the soil.

Generic horizontal and vertical design spectra were derived using the calculated UHS as the starting point. Generic design V/H ratios to be used in site-specific studies to generate site specific vertical motions, were also produced. All the generic soil curves are presented as a function of three parameters: soil class; depth to rock; and, rock class under the soil.

The development of these parameters for the NYCDOT Guidelines represent a significant improvement to the previous guidelines and other codes, since it will result in better representation of the ground motions at a bridge site, bringing closer the generic ground motions to those that could be obtained from site-specific studies. The fact that the new guidelines better fit the specific characteristics of the NYC region, will permit the engineers to evaluate the need for retrofitting existing bridges or strengthening new ones at the right places.

Recommendations for liquefaction evaluation are also provided in the guidelines, including recommendations for earthquake magnitude and peak ground surface accelerations, which are critical parameters for evaluating liquefaction potential and which have not been included in previous guidelines. The new document also includes recommendations for site-specific studies, providing guidelines and minimum requirements that must be satisfied. These include: procedures to establish soil horizontal and vertical design motions; recommendations to evaluate the effects of the depth to the rock surface; recommendations to account for uncertainties in the soil properties; minimum requirements to establish lower bound horizontal design motions; recommendations for time history analysis of bridges; recommendations for the incorporation of spatial variation effects in the analysis; and different requirements for critical and non-critical bridges site-specific studies.

The final draft of the new NYCDOT Seismic Design Guidelines for Bridges was submitted 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 2011.

QUALITY ASSURANCE

FRESH CONCRETE INSPECTION AND TESTING PROTOCOL

Concrete is one of the major materials utilized in our bridge construction/rehabilitation projects. The Quality Assurance Section's in-place procedures to ascertain the quality of the fresh concrete

ACCOMPLISHMENTS & PLANNED PROJECTS

delivered to our bridge sites require that all of its raw ingredients be obtained from NYSDOT-approved sources. Inspections are conducted at the batching plant during the manufacture of the concrete, in accordance with the design mixes reviewed and approved by the Section. Fresh concrete brought to the project site is then tested to ensure it meets its specification requirements, and concrete cylinder specimens are made at the point of placement by our own resident engineering staff. These specimens are then tested by an inspection firm in direct contract with us, without any influence from the contractor or its supplier, to confirm that hardened concrete has met its design strength. Unit staff formally developed concrete inspection, testing, and acceptance protocol.

MASS CONCRETE PLACEMENT GUIDELINES

Large concrete bridge elements generate a high heat of hydration which can lead to thermal cracking if the concrete is not cured according to a mass placement requirement. The Quality Assurance Unit, in consultation with In-House Design, developed mass placement guidelines using ACI recommendations. These guidelines have since been implemented on current projects with favorable results, including the Willis Ave Bridge, the emergency reconstruction of the Borden Avenue Bridge, the East 8th Street Access Ramp, and the Belt Parkway Bridges.

ENVIRONMENTAL ENGINEERING

The Environmental Engineering staff of the Quality Assurance section provides environmental oversight and compliance on all capital projects, as well as in-house maintenance, in the Division. Lead paint abrasive cleaning projects underway or completed in 2010 included the Manhattan Bridge, Rikers Island Bridge, Roosevelt Island Bridge, Brooklyn Bridge, Wards Island Pedestrian Bridge, Willis Avenue Bridge, Williamsburg Bridge, the Bruckner Expressway Bridges over the Bronx River and Amtrak rail lines, and various bridges over the Brooklyn-Queens Expressway and Grand Central Parkway. In addition, the unit continued to provide emergency response related to environmental issues.

As part of the Environmental Committee for the Office of Environmental Assessment and Compliance (OEAC), the unit assisted in developing environmental procedures such as spill prevention, control and countermeasures protocols, roadway spill clean-up protocols, RCRA contingency plans and the disposal of universal waste. The unit also worked with OEAC to develop and implement training for working over water as well as the Clean Water Act.

The unit performs quarterly water discharge monitoring in compliance with the NYSDEC SPDES system for bridges that cross waterways such as the Gowanus Canal, English Kills Creek and the Newtown Creek. Environmental oversight was provided to emergency work-over-water projects on the Brooklyn Bridge, Mill Basin Bridge, Roosevelt Island Bridge, Willis Avenue Bridge, Hamilton Avenue Bridge, Gerritsen Inlet Bridge, Paerdegat Basin Bridge, Third Avenue Bridge, Borden Avenue Bridge, Grand Street Bridge, Hutchinson River Parkway Bridge, Unionport Bridge, and Greenpoint Avenue Bridge. This environmental oversight ensured that there was no environmental impact to the city's waterways during emergency repair projects.

The unit also manages hazardous waste generated by both the in-house work of the Division and the capital projects. Through the use of environmental testing laboratories, the unit has continued to identify and dispose of out-of-date and expired chemical products stored in bridge facilities. Hazardous waste such as spent paints, solvents, oils and lead-paint debris is generated during maintenance and construction projects. This waste is managed in accordance with all applicable regulations for treatment and disposal. The unit is responsible for providing reports to the NYSDEC regarding the management and disposal of this waste.

The unit ensures compliance with storm water regulations, hazardous waste management, Clean Air Act requirements, Clean Water Act requirements, asbestos regulations, lead paint removal protocols, and health and safety on NYCDOT bridge projects. This includes projects such as the

ACCOMPLISHMENTS & PLANNED PROJECTS

Willis Avenue Bridge, Belt Parkway Bridge over Paerdegat Basin, Belt Parkway Bridge over Rockaway Parkway, Belt Parkway Bridge over Fresh Creek Basin, and Roosevelt Island Bridge, where compliance with environmental concerns such as dredging and dewatering is required in conjunction with submarine cable installation, pier demolition, pier construction, and channel widening (on projects such as the Willis Avenue and Belt Parkway bridges).

The unit also continued to provide environmental oversight during the environmental remediation investigation of a gas station located over the Metropolitan Avenue Bridge. Petroleum-contaminated soil was present in the subsurface at the location of the previously removed underground storage tanks. The unit inspected the soil remediation activities performed by Exxon/Mobil in accordance with the remedial action plans. The successful remediation resulted in the NYSDEC closing out the spill at this location.

In addition, the staff continued the implementation of a new quality assurance plan for coating inspection and application on Division bridge structures. Services are implemented through the use of consultant contracts. Coating inspection services and engineering were provided on numerous projects such as the Brooklyn Bridge traveler repair project, East 78th Street Pedestrian Bridge, Roosevelt Island Bridge, Manhattan Bridge, Williamsburg Bridge, Grand Central Parkway Bridges, Brooklyn-Queens Expressway Bridges, Willis Avenue Bridge, and the Wards Island Pedestrian Bridge.

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.

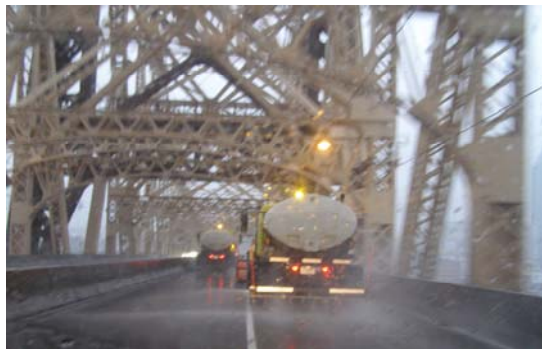
The Division's Anti-Icing Program uses the liquid chemical potassium acetate and aggregate chemical sodium acetate. The anti-icing fleet consists of twenty-two spray trucks, six plow trucks and several smaller plows. Ten of the spray trucks are combination spray/plow trucks with a 1,000 gallon tank capacity, 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 2009-2010, a total of 45,740 gallons of potassium acetate and 133 tons of sodium acetate were applied on the roadways of all four East River Bridges.



Anti-Icing Trucks. (Credit: Chris Gilbride)



Anti-Icing Trucks on the Queensboro Bridge During a Storm. (Credit: Paul Schwartz)

ACCOMPLISHMENTS & PLANNED PROJECTS

INSPECTIONS

In 2010, Inspections covered 101 bridges and 571 spans. Emphasis was placed on ensuring public safety through the monitoring of potentially hazardous conditions and temporary repairs. The unit performed 588 monitoring inspections, and 227 special winter monitoring inspections of cellular structures, shorings, and potential fire hazards. In addition, 152 emergency inspections were conducted in response to hot line calls, in-house requests, or citizen complaints.



Administrative Engineer Rajendra Pandya, Civil Engineers Tiffany Wong and Michael Galasso, and Assistant Civil Engineer Andrew Hoang Preparing to Inspect a Red Flag Condition in August 2010.

The Bridge Data System (BDS) allows inspection reports to be generated and transmitted electronically. It provides access to data from the latest inspection reports on all bridges to all Division units. In addition, when an emergency arises, our inspectors are able to send photographs and other information to the main office via a wireless connection to the internet. This feature enables bridge repair engineers to assess the condition and dispatch repair crews with the appropriate equipment in a timely manner. The test version of the system was field verified in 2006, along with the selected portable computers. The production version of the system was implemented in 2007.

Work is underway under a new contract to expand the BDS capabilities by incorporating data from capital reconstruction projects. Additional features will include in-depth inspection reports by consultants as well as GPS data.

In 2002, the Division began to receive State DOT bridge inspection reports in CD-ROM format. Flag reports are now also transmitted electronically. As of September 2003, standard inspection work is funded by a federal grant. Emergency response inspections and administrative support remain city funded.

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).

On September 17, 2007, Division representatives, along with engineers from NYS DOT, the Port Authority of New York and New Jersey, and the Metropolitan Transit Authority reported to the New York City Council on the safety of the bridges and the methods of inspection and hazard mitigation.

ACCOMPLISHMENTS & PLANNED PROJECTS

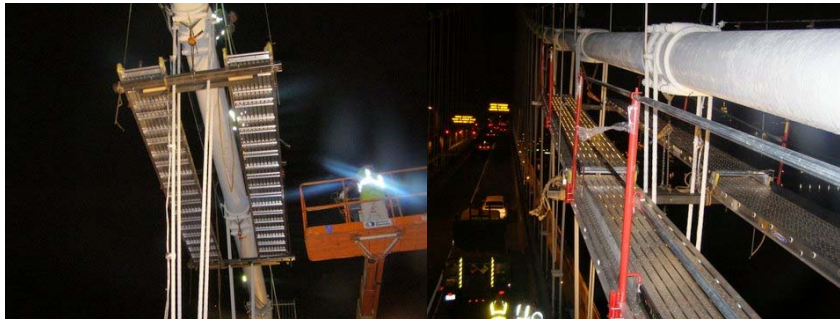
STRAIN GAUGE AND TELLTALE TESTING

In January 2009, in-house forces assisted researchers from the University of Illinois at Chicago in the installation of fiber optic sensors on the Manhattan approach of the Brooklyn Bridge, designed to monitor the condition of two brick masonry arches. The sensors monitor the behavior of existing cracks with the results transmitted electronically to the website, using a computer system capable of monitoring up to 40 channels of information on displacements, vibration, and temperature. The project is sponsored by the FHWA and contracted by NYSDOT at no cost to the City. Dr. Yanev presented its progress at the Non-Destructive Testing TRB Committee meeting in January 2010.

In 2010 the Brooklyn Bridge monitoring was concluded. Recommendations were made for the repair of the cracks in the forthcoming rehabilitation contracts. The equipment was dismantled and stored for possible future use.

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. 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 data collection from the instruments in the cable is expected to continue through 2011 and to provide conclusive information about non-invasive technology suitable for monitoring of suspension cables.

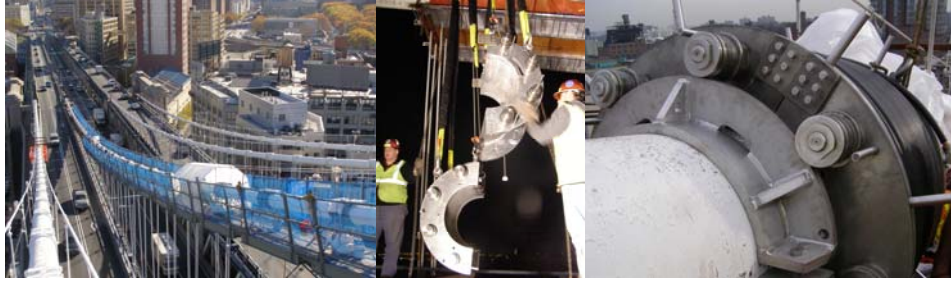


April 2010: Division Ironworkers Installed Scaffolding Along Cable "D" of the Brooklyn Side Span for the Field Test Phase of the FHWA-Sponsored Bridge Cable Corrosion Study. (Credit: Hany Soliman)



Executive Director of Bridge Inspections and Bridge Management Dr. Bojidar Yanev. (Yanev Credit: Brian Gill) Manhattan Bridge Engineer-in-Charge Brian Gill Inspecting Cable "D."

ACCOMPLISHMENTS & PLANNED PROJECTS



November 2010: Cable "D" Work Area. (Credit: Bojidar Yanev)



November 2010. Final Night of Testing on the Westbound Manhattan Bridge Upper Roadway. Bridge Repairer and Riveters Alfred Benecke and Randall Palmenta. Assistant Civil Engineer Hany Soliman, Supervisor Electrician Ben Cipriano, Executive Director of Bridge Inspections and Bridge Management Dr. Bojidar Yanev, Dr. Noriyoshi Inoue of Tokyo Rope Co., and Chief Engineer Masamichi Sugahara of Tokyo Rope Co. On Cable D in Front of the Magnetizer: Bridge Repairer and Riveters Charlie Zhao, John Mcallister, and Christopher Sabbagh, Supervisor Bridge Repairer and Riveter Gean Pilipiak, and Bridge Repairer And Riveter Daniel Jederlinic. (Credit: Thomas Whitehouse) Dr. Noriyoshi Inoue of Tokyo Rope Co., Bridge Repairer and Riveter Christopher Sabbagh, Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse, and Supervisor Electrician Ben Cipriano. (Credit: Hany Soliman)

In addition, in 2010 the Bridge Management Unit issued an RFP for the design and installation of a real time on-line system monitoring the condition of the abutments of three bridges in the Bronx identified as vulnerable to scour.

ACCOMPLISHMENTS & PLANNED PROJECTS



Snuff Mill Road Bridge is One of the Bridges Investigated for Scour Vulnerability and Found to be Structurally Sound, But it Remains Under Surveillance During Heavy Rains and Floods.

CLEANING

In 2010, 8,802 cubic yards of debris were removed from bridges and their surrounding areas, and 1,853 drains were cleaned.

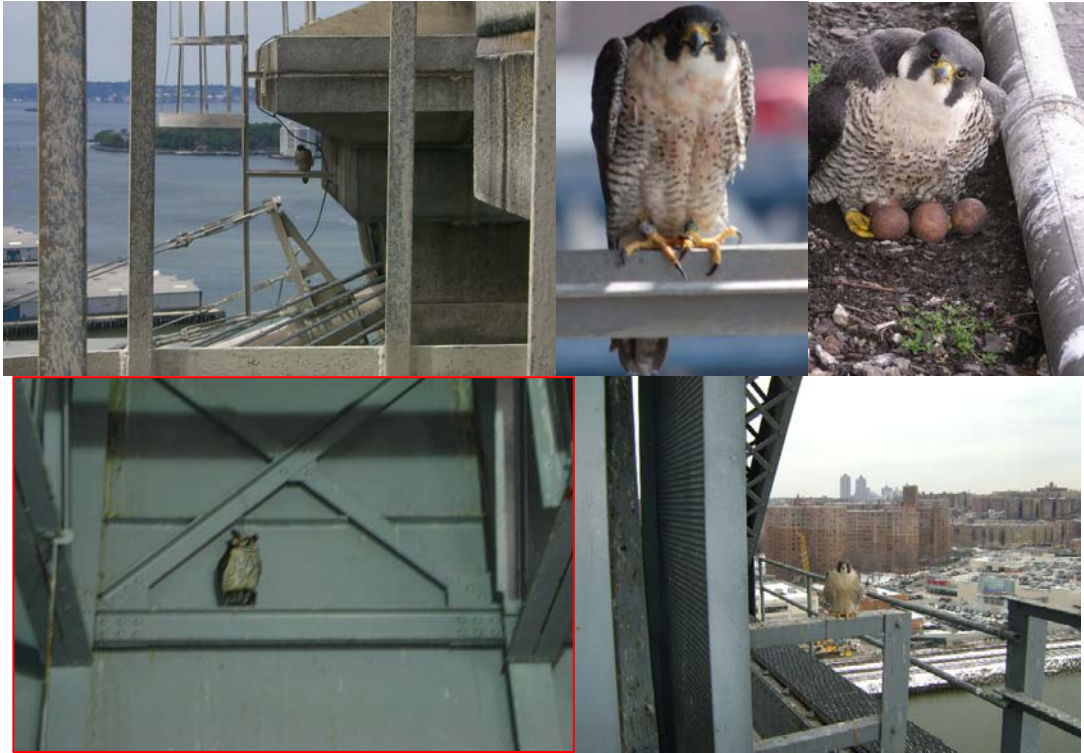
PIGEON DETERRENCE

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 four 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 2010, pigeon dropping removal and/or pigeon proofing were performed at the Manhattan anchorage of the Brooklyn Bridge; Belt Parkway Bridges over Ocean Parkway, Nostrand Avenue, and Bay Parkway; Manhattan side of the Queensboro Bridge; Brooklyn-Queens Expressway East Leg Northbound over 32nd Avenue; the 59th Street Ironworkers Shop; Bruckner Expressway over Westchester Creek (Unionport Bridge); 207th Street (University Heights) Bridge over the Harlem River; Grand Concourse at 174th Street; 175th Street and Burnside Avenue; and at Woodhaven Boulevard Bridge over Queens Boulevard.

ACCOMPLISHMENTS & PLANNED PROJECTS



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) "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)

ACCOMPLISHMENTS & PLANNED PROJECTS

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 May 2012. 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 1996 - 2010

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Brdn Ave. (Q) | 105 | 15 | 0 | 3 | 0 | 28 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Brdwy (B/M) | 24 | 7 | 2 | 0 | 6 | 27 | 83 | 49 | 16 | 2 | 18 | 42 | 58 | 57 | 15 |
| Brcknr Expwy (Estrn Blvd) (B) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brcknr Expwy (Unnprt Brdg) (B) | 386 | 363 | 257 | 345 | 385 | 420 | 332 | 300 | 309 | 253 | 250 | 281 | 323 | 349 | 308 |
| Carroll St. (K) | 245 | 142 | 110 | 174 | 102 | 80 | 124 | 186 | 49 | 22 | 28 | 13 | 38 | 91 | 146 |
| Grand St. (K/Q) | 189 | 37 | 23 | 24 | 17 | 50 | 19 | 10 | 8 | 5 | 2 | 5 | 0 | 0 | 0 |
| Grnpoint Ave. (K/Q) | 557 | 626 | 669 | 787 | 688 | 641 | 659 | 738 | 1093 | 1045 | 905 | 641 | 485 | 428 | 388 |
| Hmltn Ave. (K) | 1191 | 1157 | 996 | 982 | 933 | 832 | 946 | 824 | 757 | 677 | 1077 | 354 | 0 | 150 | 905 |
| Hntrs Point Ave. (Q) | 113 | 15 | 0 | 1 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Htchnsn River Pkwy (B) | 31 | 32 | 75 | 46 | 5 | 120 | 30 | 5 | 37 | 10 | 2 | 51 | 61 | 170 | 224 |
| Macombs Dam (B/M) | 13 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 3 |
| Mdsn Ave. (B/M) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 9 | 35 | 8 | 0 | 3 |
| Metrpltn Ave. (K) | 407 | 423 | 448 | 513 | 279 | 366 | 339 | 342 | 153 | 0 | 104 | 329 | 245 | 240 | 254 |
| Mill Bsn (K) | 903 | 628 | 591 | 433 | 336 | 317 | 142 | 173 | 164 | 162 | 174 | 182 | 190 | 183 | 197 |
| Pulaski (K/Q) | 195 | 291 | 332 | 383 | 276 | 208 | 308 | 599 | 694 | 734 | 433 | 489 | 639 | 611 | 467 |
| Rsvlt Islnd (M/Q) | 0 | 0 | 4 | 0 | 58 | 48 | 125 | 63 | 669 | 150 | 54 | 48 | 0 | 62 | 0 |
| Shore Rd (Pelham Pky) (B) | 2167 | 2158 | 2274 | 2162 | 2168 | 2222 | 1897 | 1910 | 2011 | 1683 | 1704 | 1645 | 1446 | 806 | 1197 |
| Union St. (K) | 236 | 144 | 103 | 144 | 85 | 101 | 62 | 24 | 21 | 11 | 9 | 5 | 10 | 28 | 32 |
| Ward's Islnd Pdstrn (M) | 0 | 2 | 1 | 0 | 0 | 279 | 0 | 0 | 7 | 2 | 8 | 4 | 6 | 3 | 5 |
| Willis Ave. (B/M) | 17 | 9 | 0 | 4 | 4 | 40 | 0 | 7 | 25 | 2 | 41 | 67 | 17 | 9 | 1 |
| 3 rd Ave. (B/M) | 18 | 9 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 6 | 60 | 7 | 0 | 3 |
| 3 rd St. (K) | 256 | 149 | 112 | 157 | 178 | 117 | 212 | 152 | 99 | 43 | 31 | 39 | 49 | 89 | 74 |
| 9th St. (K) | 0 | 0 | 0 | 192 | 513 | 808 | 733 | 547 | 457 | 360 | 480 | 333 | 287 | 387 | 475 |
| 145 th St. (B/M) | 24 | 3 | 0 | 0 | 1 | 6 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| W.207 th St. (B/M) | 12 | 7 | 2 | 0 | 6 | 14 | 4 | 6 | 10 | 1 | 12 | 24 | 2 | 3 | 7 |
| TOTAL | 7089 | 6220 | 5999 | 6352 | 6041 | 6761 | 6015 | 5935 | 6595 | 5163 | 5347 | 4652 | 3873 | 3666 | 4704 |

ACCOMPLISHMENTS & PLANNED PROJECTS

RESEARCH AND PRESENTATIONS

In 2010, research work and/or case histories of the Division were presented in the following proceedings:

Transportation Research Board 89th Annual Meeting, Washington, D.C., 10 – 14 January 2010. Hodge, S., Karras, J., Promisel, I., Flynn, J., and Weiss, J. S. *Bridge Strike Mitigation in New York*.

Transportation Research Board 89th Annual Meeting, Washington, D.C., 10 – 14 January 2010. Mayer, L., Yanev, B., Olson, L. D., and Smyth, A. W. *Monitoring of Manhattan Bridge for Vertical and Torsional Performance with GPS and Interferometric Radar Systems*.

Transportation Research Board 89th Annual Meeting, Washington, D.C., 10 – 14 January 2010. Talebinejad, I., Fischer, C., Ansari, F., and Yanev, B. *Structural Health Monitoring of the Masonry Arch Approach Spans in Brooklyn Bridge*.

Bruce Podwal Seminar Series in Structural, Environmental, and Transportation Engineering, New York City, 23 March 2010. King, L.S., and Gandhi, K. *Design of Woodside Avenue Bridge over LIRR Main in Queens*.

6th US – China Bridge Engineering Workshop, May 17-18, 2010, Secaucus, N.J. Yanev B., *Suspension Bridge Cables: 200 Years of Empiricism, Analysis and Management*.

7th PRC – US Bridge Engineering Workshop, Sept. 5-10, Shanghai, China. Yanev, B. *Bridge Maintenance in New York City: Network and Project Level Interaction*.

ASCE Metropolitan Section Geotechnical Group Seminar: Mega Projects of New York City, Geotechnical Aspects, New York City, 13 May 2010, Nyman, W. E., and Mankbadi, R. *Willis Avenue Swing Bridge over the Harlem River*.

27th Annual International Bridge Conference, Pittsburgh, Pennsylvania, 6 – 9 June 2010. Mele, C., and Lantigna, P. *Grand Concourse Bridge over Metro-North Railroad*.

27th Annual International Bridge Conference, Pittsburgh, Pennsylvania, 6 – 9 June 2010. Buysong, M., and Shams, M. *Rehabilitation of the Northbound and Southbound Bruckner Expressway Bridges as Easy as A, B, C (Accelerated Bridge Construction)*.

27th Annual International Bridge Conference, Pittsburgh, Pennsylvania, 6 – 9 June 2010. McMillan, C., and Rauch, R. *Red Means Go*.

IABMAS 2010 – The 5th International Conference on Bridge Maintenance, Safety and Management, Philadelphia, Pennsylvania, 11 – 15 July 2010. Kroely, B., McAnulty, K. and Daza, J. *The Bridge Management System of the NYCDOT*.

IABMAS 2010 – The 5th International Conference on Bridge Maintenance, Safety and Management, Philadelphia, Pennsylvania, 11 – 15 July 2010. Mayer, L. Yanev, B., Olson, L. D., and Smyth, A. *Monitoring of the Manhattan Bridge and Interferometric Radar Systems*.

IABMAS 2010 – The 5th International Conference on Bridge Maintenance, Safety and Management, Philadelphia, Pennsylvania, 11 – 15 July 2010. Yanev, B. - Session Chair *Implementation of Bridge Management Administration in Japan*.

NDE/NDT for Highways and Bridges: Structural Materials Technology, New York City, 16 – 20 August 2010. Agrawal, A. *Corrosion Monitoring of Annadale Road Bridge in Staten Island*.

NDE/NDT for Highways and Bridges: Structural Materials Technology, New York City, 16 – 20 August 2010. Fischer, C., Talebinejad, I., Ansari, F., and Yanev, B. *Structural Health Monitoring of the Masonry Arch Approach Spans on the Brooklyn Bridge*.

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*.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

In addition, Dr. Bojidar Yanev continued his participation on the FHWA project “Structural Safety Appraisal Guidelines for Suspension Bridge Cables” along with the principal investigator, Columbia University. He guided a team of researchers installing sensors on the Manhattan Bridge during the final phase of the project. He is a member of the expert panel reviewing the progress of the FHWA project “Long Term Health Monitoring of Bridges,” along with principal investigator Rutgers University.

Dr. Yanev is on the review panel for NCHRP Project 20-07/Task 244 *Modifications for AASHTO LRFD Bridge Design Specifications to Incorporate or Update the Guide Specifications for Design of Pedestrian Bridges.* He is also a member of the Transportation Research Board Committees on Bridge Maintenance, Management, and Seismic Design.

In addition, the Division sponsors an in-house lecture series, inviting speakers from industry and academia several times a month. Highlight topics of the presentations in 2010 included: long term bridge performance program; health monitoring of bridges; carbon fiber composite cable, new materials for concrete deck repairs, and new types of bridge deck expansion joints.



Crew Atop the Brooklyn Bridge in June 2010: Electrician Eugene Kolesnyk, Oilers Stanley Karolewicz, Thomas McAuliffe, Samuel Garcia Jr., and Daniel Cantirino, and Electrician Brian Heaney. (Credit: Thomas Whitehouse) Crew on the Cable. (Credit: Thomas Whitehouse) Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse at the Suicide Gate.



Carpenter John Green Installing a Platform for Strain Gauge Measurement at the Hamilton Avenue Bridge in March 2010. (Credit: Vera Ovetskaya)



April 2010: Repairing Spalled Asphalt (a Tripping Condition) Near a Finger Joint on the Pulaski Bridge. (Credit: Samuel Teaw)

ACCOMPLISHMENTS & PLANNED PROJECTS



Replacing Asphalt Around a Plate on the 5th Avenue Bridge in June 2010: Highway Repairer Robert Tuite, Bridge Repairer and Riveter Ignazio Trapani, and Assistant City Highway Repairers Umberto Fava and Thomas McKenzie II. (Credit: Joseph Flood)
Cement Masons Repairing the Retaining Wall at the Southern Boulevard Bridge over East Fordham Road in November 2010. (Credit: Sohrab Hossain)



Deputy Chief Engineer Jay Patel, Past ASCE Met Section President Craig Ruyle, Robert A. Olmsted, Commissioner Janette Sadik-Khan, ASCE National President Blaine Leonard, Chief Bridge Officer Henry Perahia, and Deputy Chief Engineer Russ Holcomb. (Credit: Brian Gill)