

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 four 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 789 bridges (including 5 tunnels), and 53 culverts presently under the jurisdiction of the New York City Department of Transportation (NYCDOT). In addition to broad supervision, the Chief Bridge Officer also provides overall executive and administrative direction for the Division of Bridges, and ensures that all contractors are promptly paid.

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

The **Bureau of Bridge Maintenance, Inspections and Operations** employs almost 500 engineering, professional, administrative, and skilled trades employees in the maintenance and smooth operation of New York City's elevated infrastructure, and in specialized skilled trades and contract supervision functions. It is composed of six 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 789 bridges (including 5 tunnels). The Flags staff is on call 24 hours a day to respond to bridge emergencies. The section can be alerted to flag conditions by city and state inspectors and other sources, such as the Communications Center. All conditions undergo an evaluation involving review of the flag report and photographs of the condition, and, if necessary, a visit to the site. Subsequently, a "flag packet" describing the type of repair or response that is required is created and routed to an appropriate group, in-house or contractor, for elimination. The section monitors the status of each flag, reporting on all activities on a monthly basis.

The **Bridge Repair and Preventive Maintenance** section is composed of three major units. *Bridge Repair* performs repairs to resolve 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-four 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.

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.

The *East River and Movable Bridges Preventive Maintenance* unit administers federal funds for selected preventive maintenance activities on the East River and movable bridges. Work is performed with a combination of in-house and contracted personnel.

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

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

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

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

Bridge and Tunnel Operations is responsible for operating the 24 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 2014, Bridge Operations effected a total of 5,031 openings, 4,389 of which allowed 7,760 vessels to pass beneath the bridges. The remaining 642 openings were for operational and maintenance testing. The section also operates the city's five mechanically-ventilated tunnels, performing electrical maintenance and arranging for roadway cleaning.

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

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

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

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

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

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

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

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

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

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

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

This Bureau covers two major geographic areas; ***Brooklyn and Manhattan Bridges***, and ***Bronx, Queens and Staten Island Bridges***. In each geographic area, the workload is divided by

Community Board. Engineers-In-Charge report to the Directors of each major area, who, in turn, report to the Deputy Chief Engineer of the Bureau.

Component Rehabilitation is the revamping or replacement of damaged, worn or defective bridge components. This type of work is performed primarily on those structures not classified as being “deficient,” but which contain specific components that have low condition ratings. By rehabilitating these components, the Division can ensure that these bridges remain in “good” or “very good” condition; usually extending the bridge’s useful life by up to 10 years. Section Heads or Engineers-in-Charge report to the Director of Component Rehabilitation. Each is assigned a specific bridge, or bridges, for which they are responsible for all component rehabilitation activities. The Component Rehabilitation Program is an ongoing program with cumulative effects. Each Fiscal Year, a number of bridges are selected for inclusion in the program and construction is completed on others. For the ten year period ending fiscal year 2018, the program will obligate approximately \$152.1 million.

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

The **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 projects were in highly environmentally sensitive areas, such as the FDR Drive from 42nd to 54th Streets, Hylan Boulevard Bridge over Lemon Creek, Chelsea Road Bridge over Sawmill Creek, Cropsey Avenue Bridge 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, the Yankee Stadium Ferry Access, the concrete barrier at Cross Bay Boulevard, the fencing at Navy Street Pedestrian Bridge, and the bridge railing at Van Name Street Bridge. In-House Design staff also managed and provided guidance in the use of the Bidscope program for various projects in the Division’s capital program.

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, Survey, Records Management, and Special Projects*.

The *Specifications Unit* prepares and reviews contract bid documents and 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, after ensuring that they

comply with the City, New York State and Federal standards, prepares, reviews, and transmits addenda, maintains and updates City-let bridge construction boiler plates in compliance with FHWA and NYSDOT Engineering bulletins and instructions, and updates and maintains an inventory of all NYC and NYS special specifications used in bridge and other construction projects. This Unit approves and 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, and reviews contract drawings for compliance with contract bid proposal books.

The *Survey Unit* performs field surveys and visual inspections of bridges and retaining walls, monitorings of cracks and longitudinal and transverse movements in bridge structures as well as foundation settlement. This unit surveys bridge girder alignments and twisted movements in steel girders and floor beams due to damage by oversized trucks or fires. It also prepares and verifies elevations in the field to find existing vertical clearances of bridge structures.

The *Records Management and Electronic Media Unit* establishes drafting guidelines for contract plans 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 containing pdf and CAD files. This unit maintains original plan files, upgrades the records database and converts original drawings into electronic media in retrievable formats. It also responds to requests received from private, public and other agencies for information regarding records of City-owned bridges.

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

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

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

The *Retaining Wall Unit* is responsible for inspecting City-owned retaining walls, identifying walls in poor condition, and creating an inventory of all City-owned retaining walls. Retaining walls in poor condition requiring immediate attention are referred to in-house repair staff or When and Where contractors. Data on poorly rated retaining walls are developed into scope packages and forwarded to the New York City Department of Design and Construction for permanent rehabilitation with DOT funding. Walls of questionable ownership are researched for ownership and jurisdiction. A consultant has been assisting the unit in the inspection, condition assessment, temporary repair design, inventorying and budgeting for the permanent rehabilitation of the retaining walls.

The *Bridge Hold Unit* was established in February 2011, based on OCMC requests to review construction permit applications for any proposed work located within 100 feet of any City-owned bridge structure. The permit applications may also originate from other City agencies, private developers, and utility companies. The Unit reviews the proposed work to ensure that it does not compromise the integrity of the structure and that it is in compliance with Agency requirements. Based on the review's recommendations, the hold will be released or rejected.

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, the Riverside South Project, the Amtrak Gateway Tunnel project passing under the 11th Avenue viaduct, the Empire Outlet Project in Staten Island, the Hudson Park and Boulevard Project, the Hudson Yards Development Corporation Projects (Related

between 10th Avenue and 11th Avenue and 30th Street and 33rd Street, and the Extell Temporary Access Road. In addition, the unit conducts non-bridge engineering projects, such as the review of large character balloons for the Macy's Thanksgiving Day Parade, and art work installations proposed for bridge structures.

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

The *Overweight Truck Permit Unit*, in coordination with the Division's Truck Permit Unit, reviews the engineering aspects of overweight and over-dimensional truck and self-propelled crane permit applications, to ensure the safety of City owned bridges. Reviews routes proposed by the truck permit applicants, determines the number of City-owned bridges to be crossed over/under on the route, and determines if the proposed route is acceptable or not, considering the bridges' condition. Recommends alternate routes if needed. Reviews and recommends load posting signs for City owned bridges. The Unit also reviews resurfacing, snow removal and other heavy equipment permit requests from within the Agency and from other agencies.

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

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

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

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

Off-site Quality Assurance services relative to a wide variety of basic and manufactured construction materials including concrete, asphalt, soils, reinforcing steel, bridge bearings, timber, structural steel and precast/prestressed structural components for all bridge projects, irrespective of the funding source, are handled by this section. Through its engineers at bridge construction sites, Quality Assurance ensures that only acceptable materials are incorporated into rehabilitation/reconstruction work in strict accordance with plans, specifications and acceptable construction practice. Current major projects include the Brooklyn Bridge, Belt Parkway Bridge over Gerritsen Basin, Belt Parkway Bridge over Bay Ridge Avenue, Belt Parkway Bridge over Mill Basin, Protection Against Marine Borers, Ocean Avenue Bridge over NY Atlantic Railroad, City Island Bridge over Eastchester Bay, Bryant Avenue Bridge over Amtrak and CSXT, and the Harlem River Bridge over East 127th Street. In addition, the Section provides services to the Component Rehabilitation Section on an as-needed basis.

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

DIVISION OVERVIEW

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

In addition to enforcing the lead paint removal protocols, the unit manages other environmental concerns. These issues include, but are not limited to, asbestos abatement, soil sampling, groundwater sampling, remediation of contaminated soils and groundwater, worker exposure to environmental contaminants, management of waste oil, storage of hazardous waste, management of storm water runoff, soil erosion controls, management of concrete washout wastewater, site safety, and OSHA compliance. Typically, the unit participates in the design stage to ensure that any environmental issues are addressed during the construction phase of the project. During construction, the unit provides on-site quality assurance oversight and environmental management to ensure compliance with environmental regulations and contract documents. The role of this unit in ensuring public safety has been recognized and commended by the community.

The unit continues to monitor impacts to the City's waterways for numerous projects. This includes dredging and dewatering activities, such as the Belt Parkway Bridges project and the reconstruction of the City Island Bridge. This work often includes dewatering of cofferdams and drill casings, dredge spoil dewatering, and treatment of water for discharge to recharge basins or to surface waters. Potential contaminants such as turbidity, pH, and suspended solids are monitored for compliance with regulatory standards.

The unit is responsible for site-specific 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 Manhattan Bridge, Williamsburg Bridge, Brooklyn Bridge, and Belt Parkway Bridges, 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 is currently coordinating mitigation projects such as the Floyd Bennett Field Wetland Mitigation and the Wetland Mitigation at Bergen Beach, which were initiated to compensate for disturbance of wetlands during construction activities such as at the Belt Parkway bridges.

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' litigation claims, 311 Siebel complaints, Bridges' Engineering Service Agreements, space allocation, and special projects, the ***Executive Director*** oversees, on an executive level, the following areas and functions:

The ***Senior Director of the Administration and Finance Section*** oversees and administers all administrative/personnel-related functions for the Division, acting as a liaison with the Central Personnel Coordinator in NYCDOT Personnel including, but not limited to, recruiting for

vacancies (this includes reviewing for completeness and submitting the necessary paperwork, and reviewing and distributing candidates' resumes); maintaining all Managerial Position Descriptions; maintaining all Division organization charts; scheduling training; confidential investigations; maintaining records of IFA-funded positions; initiating and assisting in resolving disciplinary/grievance actions; serving as Conflicts of Interest and Financial Disclosure Officer; collecting and reviewing managerial and non-managerial performance evaluations; absence control; providing interpretive advice to Division management regarding City and Agency policy and procedures; and overseeing telephone and facility-related issues for personnel located at 55 Water Street and 59 Maiden Lane in Manhattan.

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

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

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

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

The ***Capital Procurement Section*** serves as a liaison between the Division of Bridges and the Office of the Agency Chief Contracting Officer, other Agency Divisions, the public and private railroads, and the various consulting firms involved with the procurement process. The duties of this unit include: overseeing the Division's capital consultant contract procurement from scope to registration; preparing status reports; processing of the Division's change orders through registration, and coordinating Railroad Force Account Agreements and railroad invoice payments for Division construction projects.

Railroad Force Account Agreements are a vital component in the rehabilitation/reconstruction program since train traffic affects 327 (41.4%) 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's Ten Year Capital Plan is worth approximately \$4.5 billion. This plan is designed to rehabilitate the City's bridges. Responsibilities include: administering and participating in the development and implementation of planning capital projects; acting as liaison with oversight agencies, DOT Administration and all responsibility centers within Bridges; reviewing and processing transfer of fund requests in an attempt to resolve funding issues; and maintaining the Division's registration report for all current year capital contracts. In addition, this section coordinates the Division's submission of Initial Financial Plans, Annual Financial Plan and Construction Management Plans prepared by Project Managers that must be submitted to the Office of Finance, Contracts & Program Management.

The **Truck Permit Section** issues approximately 1000 Annual Overweight Load Permits (mostly renewals), and approximately 40,350 other permits, including Annual Self-Propelled Crane Permits, Daily Oversize/Overdimensional/Supersize Truck Permits, and Bulk Milk Permits; all in accordance with the New York City Department of Transportation Policy and Procedures and the New York City Traffic Rules and Regulations section 4-15.



In March 2014, Seven Large Sculptures ("Park Avenue Paper Chase") by Alice Aycock, in Aluminum and Fiberglass, Were Installed Along Park Avenue From 52nd Street to 66th Street - This is a Piece of One of the Sculptures on a Trailer. One of the Sculptures on Park Avenue. (Park Avenue Credit: Eugene D. Parker). Consolidated Edison Transformer Delivered Avenue A.



June 2014: The McDonald's Fiesta Tour is a 53-Foot Long Traveling Mobile Unit That Pays Tribute to Latin Grammy Winners Through a Series of Interactive Engagement Areas. Consolidated Edison Transformer Delivered to the East 13th Street Substation. November 2014: 53 Foot Long Soldier's Wish Truck was Part of the Veteran's Day Parade. Soldier's Wish is a Non-Profit Organization That Grants Wishes to Active Duty Military and Veterans.

JANUARY

Anti-Icing

On January 2, 2014, 3.1 inches of snow fell in Central Park, a record 3.4 inches at La Guardia Airport, and a record 2.4 inches at JFK Airport. On January 3, 2014, 3.3 inches of snow fell in Central Park, a record 4.5 inches at La Guardia Airport, and a record 4.5 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 12:30 AM on January 2 until 4:00 AM on January 4; 11,200 gallons of liquid chemical and 41 tons of solid were applied. Crews were again deployed on January 10 from 6:00 AM until 10:30 AM; 300 gallons of liquid chemical were applied. Priority overpasses were cleared and icicle patrols were active on the FDR Drive, Battery Park Underpass, and the Brooklyn-Queens and Cross Bronx Expressways.



Removing Snow on the Brooklyn and Manhattan Bridges on January 3, 2014.

East Tremont Avenue Bridge over Hutchinson River Parkway, 236th Street Pedestrian Bridge over Henry Hudson Parkway, Henry Hudson Parkway Bridge over Broadway, Grand Concourse Bridge over Burnside Avenue, and Grand Concourse Bridge over East 204th Street (Bronx)

A Notice to Proceed for the painting of these bridges was issued to the contractor with a start date of January 13, 2014.



East Tremont Avenue Bridge over Hutchinson River Parkway, 236th Street Pedestrian Bridge over Henry Hudson Parkway, Henry Hudson Parkway Bridge over Broadway, Grand Concourse Bridge over Burnside Avenue, and Grand Concourse Bridge over East 204th Street.

Anti-Icing

On January 21, 2014, a record 11 inches of snow fell in Central Park, and a record 6.8 inches at JFK Airport. On January 22, 0.5 inches of snow fell in Central Park and 0.3 inches at JFK Airport. On January 25, 1 inch of snow fell in Central Park, 0.2 inches at La Guardia Airport, and 0.8 at JFK Airport. On January 26, 0.1 inches of snow fell at La Guardia Airport. On January 29, 0.8 inches of snow fell in Central Park, 0.3 inches at La Guardia Airport, and a record 1 inch at JFK

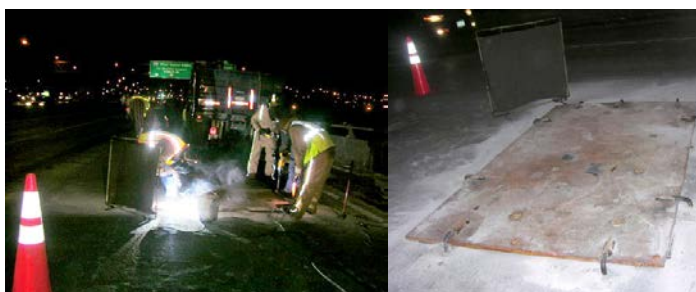
Airport. Anti-icing crews were deployed on the East River bridges from 9:00 AM on January 21 until 6:00 AM on January 22; 15,600 gallons of liquid chemical and 34 tons of solid chemical were applied. Crews were deployed again from 8:00 AM on January 25 until 5:00 AM on January 26; 4,000 gallons of liquid chemical were applied. Anti-icing crews worked again on the East River Bridges from 9:00 PM on January 28 until 7:00 AM on January 29; 5,550 gallons of liquid chemical were applied. Priority overpasses were cleared and icicle patrols were active on the FDR Drive, Cross Bronx and Brooklyn-Queens Expressways, and the Battery Park Underpass.



Below the Fresh Creek Bridge on January 21, 2014. Contractor Laborers Using Shovels to Remove Snow on the Pedestrian/Bicycle Path at the Gerritsen Inlet Bridge. The Path is too Narrow to Accommodate the use of Heavy Equipment. Hundreds of Ducks Gathered Near the Turbidity Curtain at the Gerritsen Inlet Bridge Project on January 29, 2014.

Kosciuszko Bridge over Newtown Creek (Brooklyn/Queens)

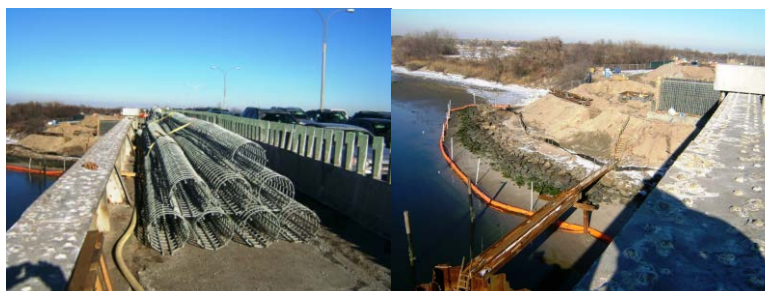
On January 28, 2014, Division ironworkers performed emergency repairs at the base of this State-owned bridge to make it safe. Permanent repairs were later made by State personnel.



Ironworkers Setting a Steel Plate on Top of a Through-Hole on the Brooklyn-Queens Expressway. (Credit: Clara Medina)

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In January 2014, the contractor continued the installation of forms and spiral rebar at both abutments.



January 2014: Rebar Cages for Cast-in-Place Piles Temporarily Stored on the North Side of the Gerritsen Bridge. Northeast Abutment Wall Formwork and Rebars. Turbidity Curtain in Place at Work Site. Existing Bridge at Right.

FEBRUARY**Anti-Icing**

On February 3, 2014, a record 8 inches of snow fell in Central Park, a record 7.7 inches at La Guardia Airport, and a record 6.7 inches at JFK Airport. On February 5, 4 inches of snow fell in Central Park, 3.3 inches at La Guardia Airport, and 2.2 inches at JFK Airport. On February 9, 1.2 inches of snow fell in Central Park, and 1.2 inches at La Guardia Airport. Anti-icing crews were deployed on the East River bridges from 11:00 AM on February 2 until 7:00 PM on February 3; 7,100 gallons of liquid chemical and 6 tons of solid chemical were applied. Crews were deployed again from 9:30 PM on February 4 until noon the following day; 11,700 gallons of liquid chemical and 21 tons of solid were applied. Anti-icing crews worked again on the East River Bridges from 1:00 PM on February 9 until 6:00 AM the following day; 5,700 gallons of liquid chemical and 1 ton of solid were applied. Snow was cleared from priority overpasses, and icicle patrols were active on the FDR Drive, Battery Park Underpass, and the Cross-Bronx and Brooklyn-Queens Expressways. Hundreds of potholes were filled on the Unionport, Mill Basin, Gerritsen Inlet, Broadway, Ed Koch - Queensboro, Hamilton Avenue, and Manhattan Bridges, and on sections of the Brooklyn-Queens Expressway and Harlem River Drive.



February 3, 2014: Cement Mason Luigi Mula Operating Snow Clearing Equipment on the Williamsburg Bridge. Bridge Operator Shoveling Snow on the Greenpoint Avenue Bridge. (Credit: Paul Schwartz)

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

On February 8, 2014, Division ironworkers repaired the catwalk, crusher, and scrap bins.

Anti-Icing

On February 13, 2014, 9.5 inches of snow fell in Central Park, a record 7.7 inches at La Guardia Airport, and a record 5.5 inches at JFK Airport. On February 14, 3 inches of snow fell in Central Park, a record 3.2 inches at La Guardia Airport, and 1.4 inches at JFK Airport. On February 15, 1.6 inches of snow fell in Central Park, 3 inches at La Guardia Airport, and 1.6 inches at JFK Airport. On February 18, 1.5 inches of snow fell in Central Park, 1.5 inches at La Guardia Airport, and 1.6 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 12:00 AM on February 13 until 7:00 AM on February 14; 13,650 gallons of liquid chemical and 23 tons of solid chemical were applied. Crews were deployed again from 6:00 AM on February 15 until 2:00 AM the following morning; 2,300 gallons of liquid chemical were applied. Anti-icing crews worked again on the East River Bridges from 2:00 AM to 10:30 AM on February 18; 3,000 gallons of liquid chemical and 2 tons of solid were applied. Snow was cleared from priority overpasses, and icicle patrols were active on the Battery Park Underpass, and the Cross-Bronx and Brooklyn-Queens Expressways. Hundreds of potholes were filled on the Unionport, Mill Basin, Ed Koch - Queensboro, Roosevelt Avenue, Williamsburg, Third Avenue, Madison Avenue, 181st Street, and Manhattan Bridges, and on sections of the Brooklyn-Queens Expressway and the Harlem River Drive.



February 13, 2014: Brooklyn, Manhattan, and Williamsburg Bridges. Loading Solid Chemical for Spot Applications on the Williamsburg Bridge Walkway/Bicycle Path. February 14: Sanding at East 153rd Street and Grand Concourse. (Credit: Paul Schwartz)

Henry D. Perahia

On February 21, 2014, friends, family, and associates gathered to recognize and celebrate the 30-plus years of public service retired Chief Bridge Officer Henry D. Perahia gave to the people of the City of New York.



Commissioner Polly Trottenberg, Retired Chief Bridge Officer Henry D. Perahia, and Former Commissioner Janette Sadik-Khan. Former First Deputy Commissioner Sam Schwartz, Henry D. Perahia, and Naomi Perahia. Former Commissioner Lucius J. Riccio and Henry D. Perahia. First Deputy Commissioner Lori A. Ardito and Henry D. Perahia. Former Traffic Deputy Commissioner Dr. Michael Horodniceanu and Henry D. Perahia.

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

On February 15 and 22, 2014, Division ironworkers repaired the cold-feed bin and drier drum, and began installation of pipe supports and catwalks.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In February 2014, the contractor dewatered the Pier #1 cofferdam and made pothole repairs.



Workers Preparing to Dewater Cofferdam at Pier No. 1. . Steel Wheel Roller Compacting Hot Mix Asphalt During Nighttime Operation on Eastbound Belt Parkway West Side.

MARCH

Award

In March 2014, the American Council of Engineering Companies of New York selected the St. George Ferry Terminal Ramps Rehabilitation for a Gold Award in the structural systems category in its 2014 Engineering Excellence Awards. The Belt Parkway Bridge over Fresh Creek Basin reconstruction and the St. George Ferry Terminal Ramps Rehabilitation projects were selected for Platinum Awards in the transportation category, and the Bruckner Expressway Bridges over Amtrak project received a Gold Award in this category.

Anti-Icing

On March 3, 2014, 0.1 inches of snow fell in Central Park, 0.4 inches at La Guardia Airport, and 0.6 inches at JFK Airport. Anti-icing crews were deployed on the East River bridges from 11:00 PM. on March 2 until 7:00 the following morning; 3,500 gallons of liquid chemical and no tons of solid were applied. Snow was cleared from priority overpasses, and icicle patrols were active on the FDR Drive, Battery Park Underpass, and the Cross-Bronx and Brooklyn-Queens Expressways. Hundreds of potholes were filled on the Mill Basin, Ed Koch - Queensboro, Roosevelt Avenue, Third Avenue, Madison Avenue, 145th Street, Gerritsen Inlet, Union Street, Metropolitan Avenue, Hamilton Avenue, 181st Street, and Manhattan Bridges.



Huge Icicle (Caused by a Broken Water Pipe) Between the South Outer Roadway and the Inner Roadway at the Queens Approach of the Ed Koch – Queensboro Bridge. Icing on the South Outer Roadway. Division Engineers Closed Parts of the Roadway Until NYCTA Crews Completed the Removal of the Icicle and All of the Ice From the Roadway Surface and Barrier. Salt was Placed on the Remaining Ice on the Roadway. (Credit: Artemio Angeles)

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

On March 1 and 8, 2014, Division ironworkers repaired the mixing unit, and continued installation of pipe supports and catwalks.

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

On March 15 and 22, 2014, Division ironworkers repaired the conveyor belt and silo, and continued installation of pipe supports and catwalks.

Anti-Icing

Anti-icing crews were deployed on the East River bridges from 11:00 PM on March 16 until 6:30 the following morning; no applications of chemicals were necessary. Crews were again deployed from 5:00 PM on March 25 until 4:30 the following morning; no applications of chemicals were necessary. Icicle patrols were active on the FDR Drive, Battery Park Underpass, and the Cross-Bronx and Brooklyn-Queens Expressways.

Water Street Arch

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.

Brooklyn-based design studio Young Projects' "Match-Maker," in partnership with the DUMBO Improvement District, cosmically connected people through zodiac signs at twelve viewing points around the heart shaped sculpture. Peering through the colorful intertwined periscopes provided glimpses of each viewer's four most ideal astrological mates. The form of the sculpture was complex, symmetrical and changed as viewers experienced it from different vantage points. From many angles, the installation looked like a perfect heart form, but from other perspectives, the sculpture was tangled and multifaceted. The art was exhibited for two months beginning in March 2014.



"Match-Maker" Exhibit in the Water Street Arch.

Edward Alfano

Supervisor Bricklayer Edward Alfano was the subject of the "Staff Spotlight" feature in the March 2014 edition of "Byways," the official Agency newsletter.



Supervisor Bricklayer Edward Alfano,
Preparing to Lead Crews Responsible
for Snow Removal on the East River
Bridges.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In March 2014, the contractor continued installation of forms and rebar at both east and west abutments.



Galvanized Steel Pier Reinforcement Cages, set on Pier Footing Within the Cofferdam. Abutment Wingwall Reinforcement Steel, Prior to Setting Wall Forms on Previously Placed Wall Footing at Northeast Corner of the Abutment. 3/18/14 Wingwall Forms at North-West Abutment Wingwall. The existing bridge is at right.

APRIL

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

On March 29 and April 5, 2014, Division ironworkers repaired the mixer drum, bins, and chutes, and continued installation of pipe supports and catwalks.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was performed from 11:59 PM April 4 to 6:00 AM April 7. Among other operations, this full weekend closure enabled the contractor to complete demolition and install a temporary deck unit on the Manhattan-bound roadway of the York Street structure in Brooklyn.



April 2014: Saw Cutting of the York Street Deck.

Police Officer Dennis Guerra Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on April 9, 2014, in tribute to Police Officer Dennis Guerra of Housing Bureau Precinct PSA-1, who died in the line of duty on Wednesday, April 9, 2014. He knew there was a fire in a Coney Island public housing development on the 13th floor. He and his partner inhaled a toxic mix of smoke and carbon monoxide responding to that fire on April 6. He began serving in the NYPD as a school safety officer and worked his way up to being a corrections officer and ultimately a housing officer. Officer Guerra, 38, an eight year veteran of the department, was the first officer to die in the line of duty since the December 12, 2011, shooting of Officer Peter Figoski. The flags were raised on April 15, 2014.



Officer Dennis Guerra.

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

On April 12 and 19, 2014, Division ironworkers repaired the dryer drum, mixer drum, and silo, and constructed storage units.

Anti-Icing

Anti-icing crews were deployed on the East River bridges from midnight to 7:30 AM on April 16; 700 gallons of liquid chemical and 1.5 tons of solid were applied.

Beatriz Duran

Interim Director for Design-Build and Emergency Contracts Beatriz Duran was the subject of the “Staff Spotlight” feature in the April 2014 edition of “Byways,” the official Agency newsletter.



Interim Director for Design-Build and Emergency Contracts Beatriz Duran.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In April 2014, the contractor completed demolition of center median and removal of the structural deck concrete and asphalt wearing courses during Stage I.



April 2014: Laborers Removing the Bridge Deck to Facilitate Removal of the Existing Concrete Median Barrier at Right Side of Trench During Stage I MPT. Stage I MPT Work Area After Removal of Structural Deck Concrete and Asphalt Wearing Courses, Exposing Deck Rebars and Structural Beams. Workers Cleaning out Catch Basins Using a High Pressure Water Hose and Vacuum Pipe for Debris Removal.

MAY

37th Annual Five Borough Bike Tour

In preparation for the 42-mile Five Borough Bike Tour on May 4, 2014, Division personnel swept the Ed Koch – Queensboro, Pulaski, Madison Avenue, and Third Avenue Bridges along the route and patrolled them for potholes. Carpenters installed temporary plywood covers over the finger joints of the Pulaski Bridge, which were removed after the tour concluded that day.

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

On April 26 and May 3, 2014, Division ironworkers repaired the mixer drum, shaker, crusher, and silo.

Peace Officers Memorial Day Tribute

The Brooklyn Bridge American flags flew at half-mast on May 15, 2014, to commemorate Peace Officers Memorial Day.

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

On May 10 and 17, 2014, Division ironworkers repaired the hopper, crusher, and elevator.

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

On May 24, 2014, Division ironworkers repaired the staircase and storage units, and masons constructed a new concrete wall.

Memorial Day Tribute

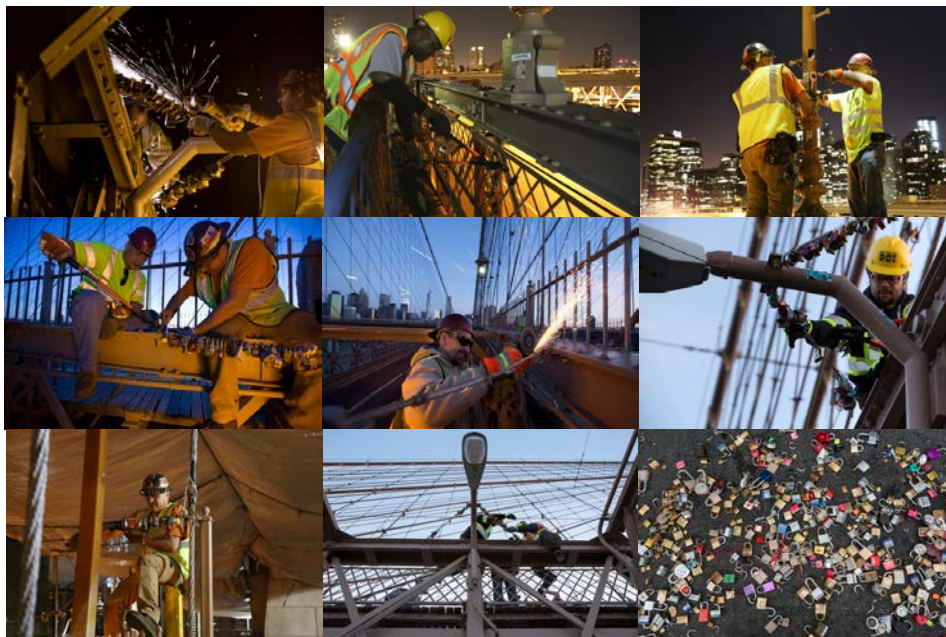
The Brooklyn Bridge American flags flew at half-mast until noon on May 26, 2014, to commemorate those who died serving the nation during war.

West 176th Street Pedestrian Bridge over Approach to George Washington Bridge (Manhattan)

Cleaning and painting of the bridge, which began on October 23, 2013, was completed on May 28, 2014.

Brooklyn Bridge

Over the Memorial Day weekend, Division staff removed over 4,000 “love locks” from the bridge. The number of locks on the Brooklyn Bridge significantly increases expenses and diverts crews that would otherwise be assigned to other maintenance operations. The locks also potentially pose a safety risk for workers or motorists on the lower deck and periodic maintenance efforts that also occasionally require the temporary closure of traffic lanes.



Removing the “Love Locks” From the Brooklyn Bridge. (Credit: Stephen Mallon)

82nd Avenue Bridge over LIRR Main Line (Queens)

John Chadwell’s “Eastbound, Westbound,” part of the Agency’s Urban Art Program, was a mural along the 82nd Avenue Bridge at Grenfell and Austin Streets in Kew Gardens. The eastbound side of the mural was a scenic view of the Montauk/Orient Point Long Island shoreline while the westbound side of the mural depicted the Manhattan skyline. The project aimed to beautify, activate and enliven a pedestrian walkway. The exhibit opened in May 2014.



"Eastbound, Westbound" Exhibit on the 82nd Avenue Bridge.

Ed Koch – Queensboro Bridge

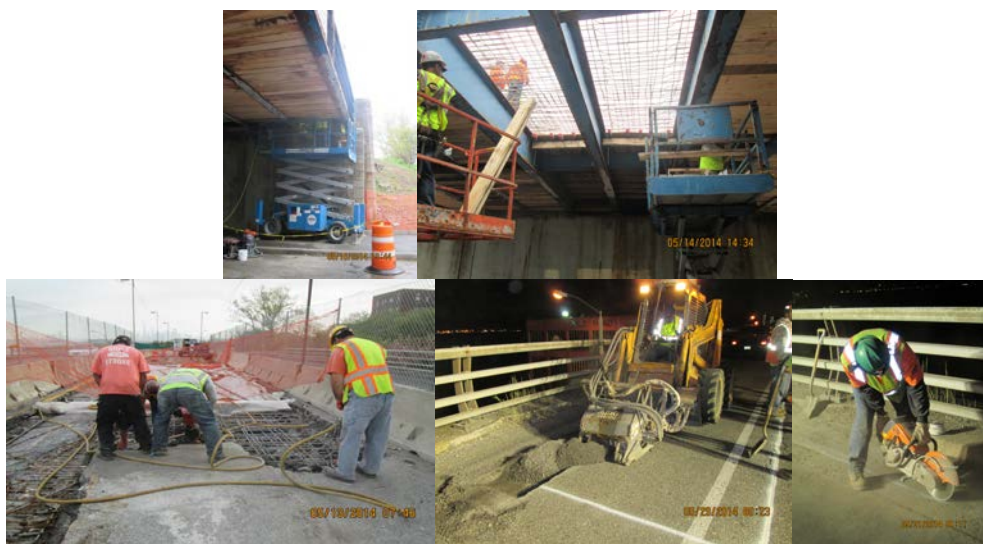
New York-based design firm Pure+Applied's "Guastavino Tile Pattern # 8," part of the Agency's Urban Art Program, and in partnership with New York Cares and the Midtown Community Court System, was installed along the barriers underneath the Ed Koch - Queensboro Bridge at 1st Avenue between 59th and 58th Streets. The herringbone pattern of the design was based on the Guastavino & Sons signature vaulted design from the Queensboro Bridge's Bridge market which was built in 1909. The pattern was also incorporated in numerous landmarks throughout midtown such as, Grand Central Terminal's Oyster Bar and St. Bartholomew's Church. The blue color within the barrier design was inspired by the flower tiles located on the side of the bridge. The artwork, installed in May 2014, aimed to enliven the bike/pedestrian pathway and the vehicular experience underneath the bridge.



Applying the Artwork to the Barriers.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In May 2014, the contractor demolished more of the superstructure deck.



May 2014: Installing Wood Under Deck Shielding to Prevent Debris from Falling Onto the Sidewalk and Roadway at Southwest Abutment During Deck Demolition. Demolishing Bridge Deck With Pavement Breakers on Westbound Roadway. Temporary Deck Repair of Eastbound Roadway.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In May 2014, the contractor completed installation of concrete at the Pier 1 plinth.



Pier 1 Plinth and Footing Inside the Cofferdam in May 2014. Commissioner Polly Trottenberg (in Red Jacket) and Chief Bridge Officer Robert O. Collyer Inspecting the Gerritsen Inlet Bridge Project in May 2014.
(Credit: Moshin Rizvi)

JUNE

Award

In June 2014, in recognition of his outstanding contributions to the status of the civil engineering profession, Chief Bridge Officer Robert O. Collyer was presented the Herbert Howard Government Civil Engineer of the Year award by the Metropolitan Section of the American Society of Civil Engineers.



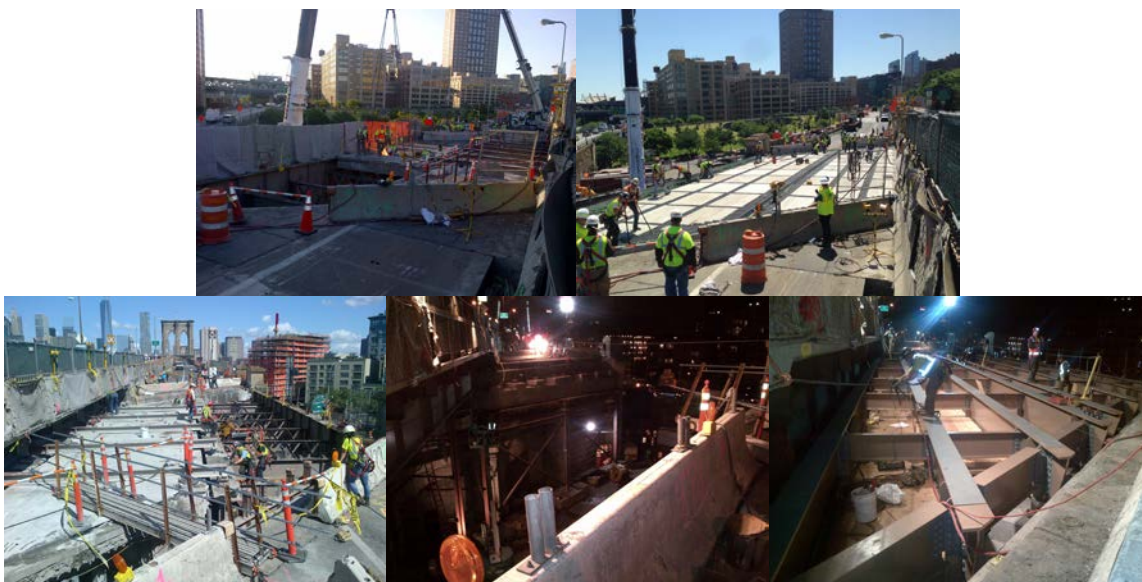
Civil Engineer Jagtar Khinda and Chief Bridge Officer Robert O. Collyer.

Award

The 2014 Prize Bridge Awards Competition is conducted by the National Steel Bridge Alliance. The program honors outstanding and innovative steel bridges constructed in the U.S. The Willis Avenue Bridge won the 2014 Prize Bridge Award in the Moveable Span category, and also won a commendation for accelerated bridge construction in the Moveable Span category. The awards were described in the June 2014 issue of Modern Steel Construction.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was in place from 11:59 PM May 30 to 6:00 AM June 2. Existing concrete deck sections of the Main Street structure were removed; painting of railings and main bridge overhead struts progressed, as did excavation for Manhattan approach precast slabs; new steel stringers were set; and the new grid panels were placed.



May 2014: Demolition of Main Street Structure. All Steel Removed. Installation of New Steel.

Union Turnpike Bridge over Jackie Robinson Parkway, Queens Boulevard Bridge over Jackie Robinson Parkway, Woodside Avenue Bridge over Brooklyn-Queens Expressway, Bulova Avenue Bridge over Brooklyn-Queens Expressway West Leg, Woodhaven Boulevard Bridge over Atlantic Avenue, Myrtle Avenue Bridge over Jackie Robinson Parkway, 49th Street Bridge over Brooklyn-Queens Expressway West Leg, and 69th Street Bridge over Brooklyn-Queens Expressway (Queens)

A Notice to Proceed for the painting of these bridges was issued to the contractor with a start date of June 2, 2014.





Union Turnpike Bridge over Jackie Robinson Parkway, Queens Boulevard Bridge over Jackie Robinson Parkway, Woodside Avenue Bridge over Brooklyn-Queens Expressway, Bulova Avenue Bridge over Brooklyn-Queens Expressway West Leg, Woodhaven Boulevard Bridge over Atlantic Avenue, Myrtle Avenue Bridge over Jackie Robinson Parkway, 49th Street Bridge over Brooklyn-Queens Expressway West Leg, and 69th Street Bridge over Brooklyn-Queens Expressway.

Brooklyn Bridge

The Brooklyn Bridge flags flew at half-mast on June 6, 2014, D-Day National Remembrance Day, to observe the 70th anniversary of the Allied Forces landing on the beaches of Normandy.

Labor-Management Employee Recognition Award Ceremony

Division personnel were honored on June 6, 2014 for their years of service to the City.

40 Years of Service

Associate Staff Analyst Norine Enrione.

35 Years of Service

Associate Staff Analyst Barbara Pedersen.

30 Years of Service

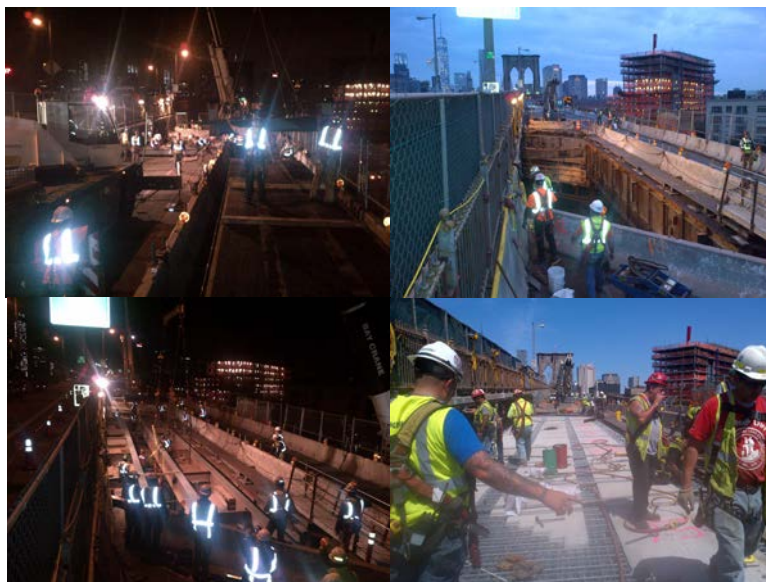
Supervisor Bridge Operator Tony Allen, Administrative Staff Analyst Victoria Bailey, Supervisor Bridge Operator William Bizaldi, Principal Administrative Associate Valerie Butler, Electrician Thomas Cipriano, Carpenter Thomas Gilmore, Supervisor Highway Repairer Anthony Gnerre, Supervisor Highway Repairer Salvatore Mazzatenda, Oiler Thomas McAuliffe, and Administrative Staff Analyst Michael Tohl.

25 Years of Service

Administrative Engineer Muhammad Afzal, Civil Engineer Ricardo Andino, Supervisor Bridge Painter Robert Avellino, Supervisor Electrician Paul Betts, Highway Repairer Andrew Bondi, Bridge Operator Desmond Brown, Bridge Repairer and Riveter Brook Budd, Oiler Paul Califano, Cement Mason Warren Chiles, Bridge Repairer and Riveter Kevin Clarkson, Bridge Repairer and Riveter Patrick Clowe, Bridge Repairer and Riveter Gregory Connors, Highway Repairer Thomas Cruz, Civil Engineer Jose Cubelo, Associate Staff Analyst Darlene Davis-Jones, Bridge Repairer and Riveter Fabian Del-Tongier, Bridge Repairer and Riveter Frederick Doyle, Assistant Electrical Engineer Raynold Fabre-Jeune, Bricklayer Louis Giarratano, Civil Engineer Ezatollah Govhari, Supervisor Electrician Gene Greve, Assistant Mechanical Engineer Nancy Guernsey, Supervisor Electrician Raymond Hanley, Supervisor Bridge Repairer and Riveter Steve Havemann, Administrative Engineer Daniel Hom, Supervisor Bridge Repairer and Riveter John Jones, Civil Engineer Jerry Shaoku Kao, Administrative Engineer Nazim Khan, Deputy Chief Engineer George Klein, Administrative Engineer Frank Kodah, Assistant Civil Engineer Syed Mahmood, Bridge Repairer and Riveter John Mohabir, Supervisor Bridge Operator Antonio Morales, Secretary Geraldine Morinia, Construction Project Manager Ali Mozaffari, Administrative Engineer Mousa Nazif, Administrative Staff Analyst Arthur Onuora, Supervisor Bridge Operator Nestor Ortiz, Supervisor Bridge Painter Albert Pappas, Administrative Engineer Pinakin Patel, Supervisor Bridge Painter Cesar Pazmino, Bridge Painter Julio Perez, Bridge Repairer and Riveter Michael Santo, Carpenter Michael Short III, Administrative Engineer Samuel Teaw, Supervisor Carpenter Joseph Vaccaro, Administrative Staff Analyst Michele Vulcan, Oiler Carl Wharton, Administrative Superintendent Highway Operations Thomas Whitehouse, and Bridge Painter Vlatko Zic.

Brooklyn Bridge

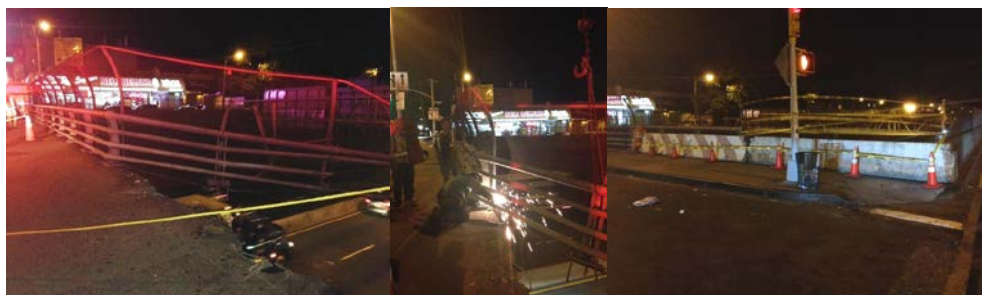
As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was in place from 11:59 PM June 13 to 6:00 AM June 16. This facilitated the rehabilitation of the Brooklyn Bridge's Main Street bridge structure in Brooklyn. Additional work included abrasive blasting and priming of Ramp A Span 4, painting of Ramp I, power-tool cleaning and painting of top struts and 2-rail safety barrier at the Brooklyn Side span, Brooklyn main and Manhattan main spans, north cantilever demolition in Manhattan and SuperSlab installation at the Brooklyn and Manhattan Approaches.



June 2014: Removing the Temporary Deck of the York Street Structure. One Half of Bridge Removed. Installing New Steel Beams. Installing Prefabricated Deck.

East Tremont Avenue Bridge over Bruckner Expressway (Bronx)

On June 21, 2014, Division ironworkers performed emergency repairs on this State-owned bridge to make it safe. A vehicle travelling west had crashed through the guard rail. An approximately 25 foot long section of bridge steel railing was bent outward at an almost 90 degree angle, and was hanging over the northbound Bruckner Expressway. Damaged parts of the rail were removed, and two Jersey barriers were placed at the site. Permanent repairs were later made by State personnel.



The Bent Steel Bridge Railing at the Southeast Corner of the East Tremont Avenue Overpass. Ironworkers Removing the Damaged Steel. Concrete Barriers and Cones Secured the Area. (Credit: Artemio Angeles)

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

On June 21 and 28, 2014, Division ironworkers repaired the mixing basin, conveyor belt, and fans. Crews built a steel wall at the Brooklyn plant as a barrier between the plant and a Department of Sanitation facility.

Sanitation Worker Steven Frosch Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on June 22, 2014, in tribute to Sanitation Worker Steven Frosch, 43, a 14 year veteran of the Department, who died in the line of duty on June 21, 2014. He was struck and pinned by a mechanical broom while repairing his street cleaner at the Queens West 5A Broom Garage in Maspeth. He was the 17th sanitation worker to die in the line of duty since 2000, and the Department's first line-of-duty fatality since 2011. Mr. Frosch was previously an NYPD officer for five years. The flags were raised on June 28, 2014. To honor Mr. Frosch for his dedication to the Department, his work garage was named after him in November 2014.



Sanitation Worker Steven Frosch.

Metropolitan Avenue Bridge over English Kills (Brooklyn)

A Letter of Intent for the emergency repairs of the bridge was issued to the contractor with a start date of June 23, 2014.

Pennsylvania Avenue Bridge over Belt Parkway (Brooklyn)

Cleaning and painting of the bridge, which began on April 9, 2014, was completed on June 25, 2014.

4th Avenue Bridge over Belt Parkway (Brooklyn)

The component rehabilitation of this bridge was substantially completed on June 27, 2014.



4th Avenue Bridge Before, During, and After Construction

Manhattan Bridge

Gilf!'s "Trust Your Vision," part of the Agency's Urban Art Program, and in partnership with the DUMBO Business Improvement District, was a mural constructed with wood, enamel and lacquer. The piece was inspired by mazes which allude to the difficulty of navigating through life especially in the competitive world of New York City. Gilf's abstract work invited the viewer to decipher the hidden messages in the abstract piece. Bright paint colors were specifically chosen to bring life to the gray fence and energize visitors and inhabitants of the neighborhood. The

mural was installed by in-house forces in June 2014 on the existing fence of the Division's Front Street Yard near the Manhattan Bridge.



Division Staff Installing the "Trust Your Vision" Exhibit on the Front Street Fence.

Ed Koch – Queensboro Bridge

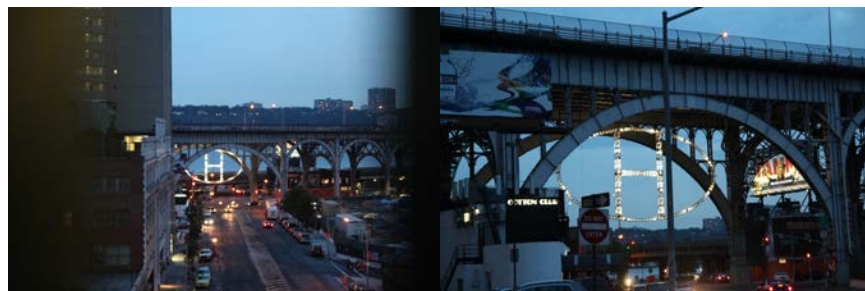
Mohamed Sharkawy's "Birds," part of the Agency's Urban Art Program, and in partnership with the International Studio and Curatorial Program, was a series of six decorative panels along the corrugated metal fence at Vernon Boulevard and Queens Plaza South. Inspired by Egyptian wall painting, the artist reduced each form into flat silhouettes in order to render recognizable images. The fanciful bird scenes referenced the lives of birds that migrate through New York annually. The birds expressed freedom and movement along with stillness and meditation. The exhibit opened in June 2014.



Division Staff Installing the "Birds" Exhibit on the Vernon Boulevard Fence.

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

Bentley Meeker's "The H in Harlem," part of the Agency's Urban Art Program, and in partnership with the West Harlem Art Fund, Community Board 9 and the 125th Street Business Improvement District, was a lighting and design project located at the Harlem Viaduct at West 125th Street and 12th Avenue. The oval was comprised of 30 white LED lights while the "H" itself was lit by white full spectrum plasma lighting fixtures. It was built to withstand hurricane force winds. The lights were weather-resistant and ran on a timer, turning on at night. The lighting structure, which hung off of the bridge, was visible from vehicles, boats and pedestrians in the surrounding area. The installation aimed to support the community's effort to attract more visitors to the local waterfront and the neighborhood. The art was exhibited for three months beginning in June 2014.



"The H in Harlem" Exhibit Under Riverside Drive.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In June 2014, the contractor completed Stage II deck demolition.



June 2014: Stage II Configuration. Bridge Deck Removed on Westbound Roadway. Panoramic View - Veteran's Pier at Right Above the Entrance to the NYCDEP Wastewater Treatment Plant. NYCDPR Bicycle/Pedestrian Promenade at Upper Right.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In June 2014, the contractor installed concrete at pier #1 columns and pier #2 plinth and columns.



Finishing and Covering Plinth Concrete at Pier #1 in June 2014. Setting Rebars and Forms for Columns at Pier #2. Jamaica Bay at Left. Construction Barges and Cranes Constructing new Piers #1 and #2. Eastbound Traffic at Bottom.

JULY**Brooklyn Bridge**

On the night of July 2, 2014, non-structural fascia stones lining the walls of the Brooklyn Bridge in the vicinity of Prospect Street and Washington Place fell onto the sidewalk. These stones are not a structural component of the bridge and are believed to have been installed approximately 60+ years ago. This area was isolated with jersey barriers and the material was removed as part of the immediate response. The scene was fully cleared and all roads reopened by 6:00 AM on July 3. After the immediate clean up, similar non-structural stones in the area were inspected. Several were determined to require removal. The contractor continued to remove the stone facade at the Washington and Prospect Streets abutment walls through the early part of August.



Removing the Stone Façade.

Lieutenant Gordon Ambelas Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on July 6, 2014, in tribute to Gordon Ambelas, a lieutenant in the New York City Fire Department who died in the line of duty on July 5, 2014. Lieutenant Ambelas, 40, a 14-year veteran of the Department, had been promoted just 10 months before to lieutenant. He led the members of Ladder Company 119 into a 19th floor apartment fire in a public housing development in Williamsburg. He became trapped in the fire, and later succumbed to his injuries. It was the Department's first line of duty death since Lieutenant Richard A. Nappi was killed fighting a Brooklyn warehouse blaze in April 2012. Lieutenant Ambelas was the 18th to die since 343 firefighters perished in the September 11, 2001, terrorist attacks. The flags were raised on July 11, 2014.



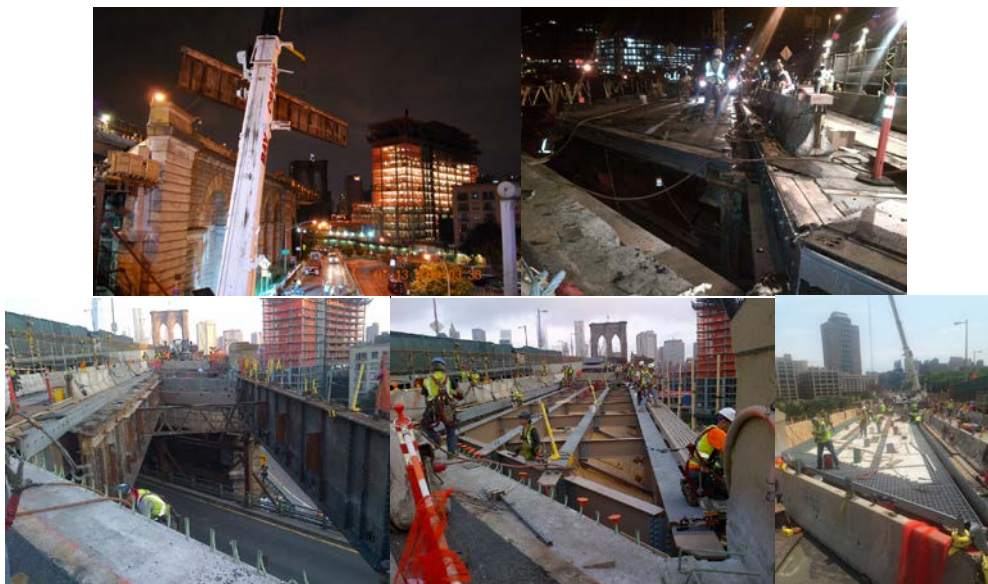
Lieutenant Gordon Ambelas.

Harper Street Asphalt Plant (Queens)

On July 12, 2014, Division ironworkers repaired the fan motor, conveyor belt, and crusher.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was in place from 11:00 PM July 11 to 5:00 AM July 14, 2014. This facilitated the replacement of the second half of the existing Manhattan-bound York Street/Brooklyn Queens Expressway bridge structure with a new steel structure and a partially-filled grid deck. This also required nighttime closures of the Brooklyn Queens Expressway. Additional work included power-tool cleaning and painting of the two-rail safety barrier at the Brooklyn main and side spans and the Manhattan approach promenade railing and super slab installation at the Manhattan approach.



July 2014: Replacing the Second Half of the York Street Structure. Removal of the Manhattan-Bound Girder. Old Deck and Most of the Steel Removed. New Steel and Prefabricated Deck in Place.

Belt Parkway Bridge over Bedford Avenue (Brooklyn)

The component rehabilitation of this bridge was substantially completed on July 15, 2014.



Bedford Avenue Bridge Before, During, and After Construction.

Brooklyn Bridge

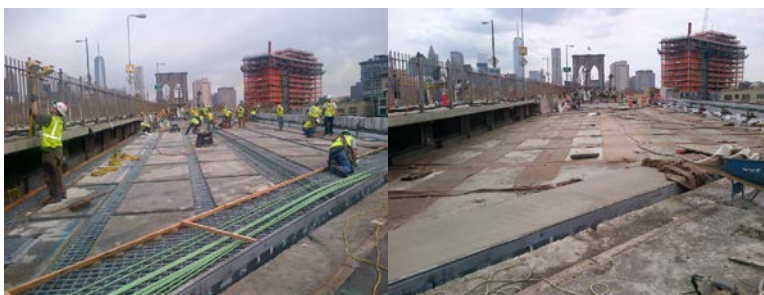
On July 18, 2014, the Agency's summer interns visited the Brooklyn Bridge. Divisional responsibilities and capabilities were discussed and questions were answered.



Assistant Civil Engineer Clara Medina (in Safety Vest) With the Interns on the Bridge.
(Credit: Michelle Kaucic)

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was in place from 11:59 PM July 18 to 6:00 AM July 21, 2014. This facilitated the concrete closure pours on the Manhattan-bound Main Street structure.



July 2014: Set up for Main Street Structure Concrete Pour. Concrete Pour Complete With Wet Burlap in Place for Cure.

Bruckner Expressway over Westchester Creek (Bronx) (a.k.a. Unionport Bridge)

Due to heat expansion, the Unionport Bridge was closed to marine traffic beginning at 5:21 AM on July 22, 2014. It was returned to service at 7:30 PM on July 23.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In July 2014, the contractor completed the installation of concrete for the Stage II upper stem wall sections of the east and west abutments.



July 2014: Placing Concrete for Northeast Abutment Using a Conveyor. Setting Rebars at the Northeast Abutment.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In July 2014, the contractor installed concrete for the east abutment and pier #1 cap beam pedestals and pavement for the east approach.

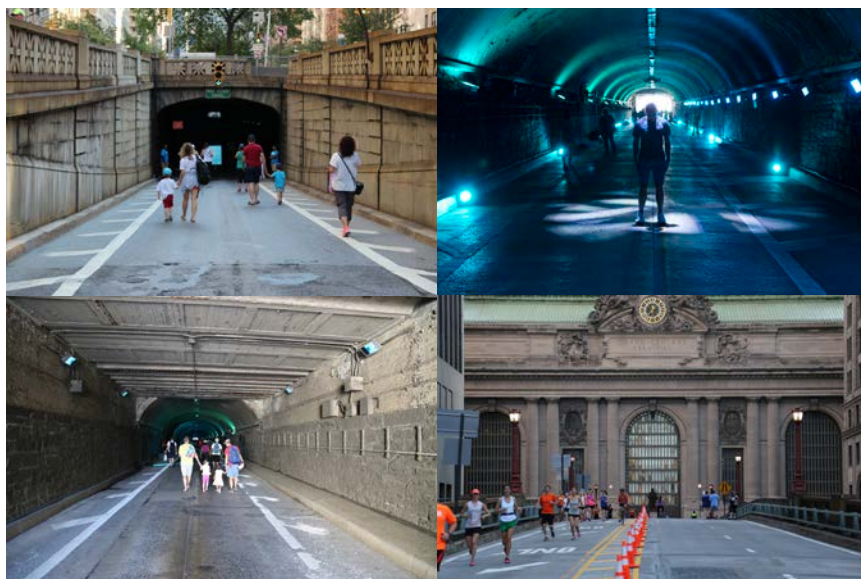


July 2014: Bottom Dump Bucket Used to Place Concrete for Pedestals at Pier #1 Cap Beam. Placing PCC Pavement at East Approach. Spreading and Compacting Hot Mix Asphalt on Belt Parkway East Side of Bridge.

AUGUST

Park Avenue Tunnel over 34th Street (Manhattan)

As part of the seventh annual Summer Streets program in August 2014, the Park Avenue Tunnel, which runs from 33rd Street to 40th Street, was open to pedestrians at the 33rd Street entrance between the hours of 7 AM and 1 PM on August 2, 9, and 16, 2014. “Dive” was an interactive sound installation by Norwegian artist Jana Winderen. She created immersive soundscapes in the tunnel using underwater recordings from around the world. As participants “dove” deeper into the tunnel, the sound environment changed, reflecting different underwater habitats. The sounds were recorded from shallow to deep underwater environments in Greenland, Iceland, Norway, Russia, Canada, United States, Thailand, and most recently around the equator in the Caribbean and the Pacific. Ms. Winderen recorded sounds made by crustaceans, fish and mammals using sensitive hydrophones.



“Dive” Exhibit in the Park Avenue Tunnel. Experiencing the Viaduct in a Whole New Way During Summer Streets 2014.

Hempstead Avenue Bridge over Cross Island Parkway (Queens)

Cleaning and painting of the bridge, which began on April 30, 2014, was completed on August 5, 2014.

Inwood Hill Park Footbridge over Amtrak 30th Street Branch (Manhattan)

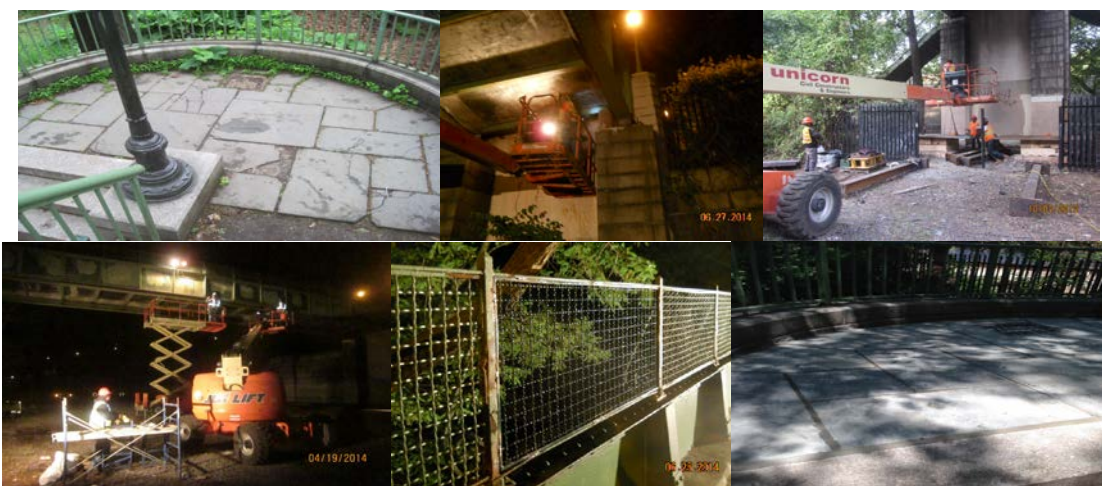
This is a six span bridge. The main bridge is constructed of steel plate girders with a reinforced concrete deck. The east-west oriented main span is over the Amtrak railroad tracks. The staircases are constructed of steel stringers and a pier along with metal steps lined with anti-slip treads and landing platforms. The bridge serves as the only access for pedestrians to walk across the Amtrak rail road, which divides the park into two halves, in order to reach the playground on the west side of the park. The scope of rehabilitation work included the following: installing and removing a containment system for paint removal; painting the steel girders, fencing, and staircases; repairing the steel girders, staircases, abutments, piers, deck and underdeck; installing and removing the temporary support; repairing and replacing bearings, and installing a bicycle railing on the staircase. The component rehabilitation of this bridge began in July 2013 and was substantially completed on August 11, 2014.



Inwood Hill Park Footbridge Before, During, and After Construction.

West 148th Street Pedestrian Bridge over Amtrak 30th Street Branch

This five span steel girder – floor beam pedestrian bridge was built in 1940. It is bounded by Riverside Drive on the East and Henry Hudson Parkway on the west. The stairway provides access to the main bridge to cross the Amtrak railway. The scope of rehabilitation work included the following: repairing the girders and the underdeck, abutments and stone masonry; installing and removing the temporary support structure; replacing and repairing bearings; repair of the staircase; applying the containment system for paint removal, and removing and replacing the fence panels. The component rehabilitation of this bridge began in July 2013 and was substantially completed on August 11, 2014.



West 148th Street Bridge Before, During, and After Construction.

Bryant Avenue Bridge over Amtrak & CSX (Bronx)

A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of August 18, 2014.



Bryant Avenue Bridge in 2011. (Credit: NYSDOT)

Crown Street Bridge over Franklin Shuttle (Brooklyn)

The component rehabilitation of this bridge was substantially completed on August 20, 2014.



Crown Street Bridge Before, During, and After Construction.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Brooklyn-bound lanes of the bridge was in place from 11:59 PM August 22 to 5:00 AM August 25, 2014. This facilitated the concrete placement of the armored joints and curbs at the Brooklyn and Manhattan approaches and the closure pour at the Sands Street structure. Additional work included painting at Ramp A, power-tool cleaning and painting of two-rail safety barrier and touchup paint application at the Manhattan main and side spans, new railing installation at the Brooklyn approaches and waterproofing membrane installation at the Franklin structure orthotropic deck joints.



August 2014: Brooklyn-Bound Sands Street Structure Curing After Closure Pour Concrete Placement.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In August 2014, the contractor installed seven precast box beams on the north side abutments.



August 2014: Unloading and Placing the Pre-cast Concrete Box Beam on the North Side Abutments. Lowering the Third Pre-cast Concrete Box Beam.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In August 2014, the contractor demolished and rebuilt the pier #2 columns and installed pavement at the west approach to the bridge.



August 2014: Pumping Concrete Into Column Cage at Pier #2. Finishing Pavement at West Approach.

SEPTEMBER

Patriot Day Tribute

The Brooklyn Bridge flags flew at half-mast on September 11, 2014 to commemorate the National Day of Service and Remembrance.



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

Officer Michael Williams Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on September 22, 2014, in tribute to Police Officer Michael Williams, 25, who died in the line of duty on September 21, 2014. He was killed in a vehicle crash on the Bruckner Expressway en route to an assignment at the United Nations. Officer Williams had served with the Department for eight months and had previously served with the Dutchess County Sheriff's Department. The flags were raised on September 26, 2014.



Officer Michael Williams.

Jackie Robinson Parkway – Union Turnpike over Austin Street (Queens)

Cleaning and painting of the bridge, which began on November 1, 2013, was completed on September 30, 2014.

Brooklyn Bridge

In September 2014, the Acting Administrator of the Federal Highway Administration and the Commissioner of the New York State Department of Transportation visited the Brooklyn Bridge project.



Administrative Staff Analyst Karin Sommer, NYSDOT Region 11 Director Sonia Pichardo, Chief Resident Engineer Anthony Grosso (Behind Director Pichardo), NYSDOT Commissioner Joan McDonald, Federal Highway Administration – New York Division Administrator Jonathan D. McDade (Behind Commissioner McDonald), Acting Administrator of the Federal Highway Administration Gregory G. Nadeau, NYCDOT Commissioner Polly Trottenberg, Deputy Commissioner for Finance, Contracting, and Program Management Joseph H. Jarrin, Chief Bridge Officer Robert O. Collyer, Resident Engineer Douglas Reese, and Director of East River Bridges Hasan Ahmed on a Tour of the Brooklyn Bridge Project.

Manhattan Bridge

“Personal Mythologies,” an art installation curated by United Photo Industries' Creative Director Sam Barzilay, and part of the Agency's Urban Art Program, showcased work by seven artists who employ, interpret, and manipulate mythological motifs as their vehicle for self-expression. Installed on a 350 foot long fence beneath the Manhattan Bridge, this photo installation took visitors on a voyage through childhood dreams and fears, unbridled imagination, and the artists' ability to see the world not as it is, but as it could—and perhaps should—be. The exhibit opened in September 2014.



“Personal Mythologies” Exhibit Under the Manhattan Bridge.

Metropolitan Avenue (Fresh Pond) Bridge over LIRR – NY & ATL (Queens)

Andrea Bergart's “Swish Swash,” part of the Agency's Urban Art Program, was created in

collaboration with the Queens Council in the Arts. The 144 foot by 6 foot banner was located along a chain link fence on Metropolitan Avenue and Fresh Pond Road in Ridgewood, Queens. Influenced by diverse visual traditions, including African textiles, urban fashion and geometric abstractions, it was a whimsical display of line and color that aimed to brighten up the corridor along Metropolitan Avenue. The exhibit opened in September 2014.



Division Staff Installing the "Swish Swash" Exhibit Along Metropolitan Avenue.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In September 2014, the contractor placed the rebars for the deck slab.



September 2014: Rebars in Place Prior to Placing Concrete Deck on Precast Concrete Beams on the North Side.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In September 2014, the contractor completed installing the pier #2 cap beam concrete.



September 2014: Finishing Concrete on Pier Cap at Pier #2. Setting Forms for Concrete Pedestals at Pier #2 Cap Beam. Work Barge and Crane in Background.

OCTOBER

Riverside Drive Viaduct over West 125th Street – West 134th Street and West 134th Street Bridge over Terrain (Manhattan)

A Notice to Proceed for the painting of these bridges was issued to the contractor with a start date of October 1, 2014. The anticipated start of blasting and painting is in early spring 2015. The first stage of the work will consist of paint removal by abrasive blasting. Since the existing

paint is expected to contain lead, the work will be performed within an entirely sealed Class 1A Containment.



Riverside Drive Viaduct and West 134th Street Bridge.

Customer Service Award

On October 3, 2014, the users of the Agency Response Tracking System were honored during the Agency's celebration of Customer Service Week. Since 2008 the City has formally observed Customer Service Week, which takes place the first week in October. The Customer Service Group of the Mayor's Office of Operations coordinates the participation of more than 20 agencies in this fun and festive week where agencies recognize the important contributions of frontline staff. The highlight of the week is the awards ceremony where each agency winner receives their Customer Service Excellence Award.



Secretary Patricia Foster at the Customer Service Week Award Ceremony.

Cross Bay Boulevard Bridge over Belt Parkway, South Conduit Boulevard Bridge over Southern Parkway, Sunrise Highway Bridge WB over Laurelton Parkway EB, Sunrise Highway Bridge WB over Laurelton Parkway WB, Cross Island Parkway Bridge over Dutch Broadway – 115th Avenue, 163rd Avenue Pedestrian Bridge over Hawtree Basin, 102nd Street Bridge over Hawtree Basin, Whitelaw Pedestrian Bridge over Conduit Avenue, and Ramp to Linden Boulevard over South Conduit Avenue (Queens)

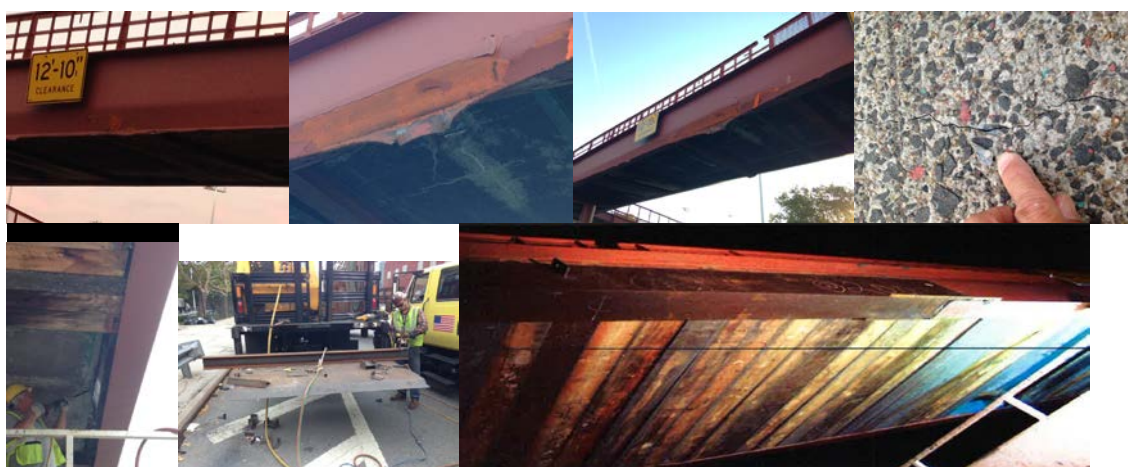
A Notice to Proceed for the painting of these bridges was issued to the contractor with a start date of October 10, 2014.



Cross Bay Boulevard Bridge over Belt Parkway, South Conduit Boulevard Bridge over Southern Parkway, Sunrise Highway Bridge WB over Laurelton Parkway EB, Sunrise Highway Bridge WB over Laurelton Parkway WB, Cross Island Parkway Bridge over Dutch Broadway – 115th Avenue, 163rd Avenue Pedestrian Bridge over Hawtree Basin, 102nd Street Bridge over Hawtree Basin, Whitelaw Pedestrian Bridge over Conduit Avenue, and Ramp to Linden Boulevard over South Conduit Avenue.

East 128th Street Pedestrian Bridge over 3rd Avenue Bridge Approach (Manhattan)

On October 9, 2014, a boom-truck travelling west struck the bridge, creating structural safety flag conditions: the middle portion of the bridge was pushed out about one and a half feet, the end girders and diaphragms were twisted, and a concrete slab was displaced. Crews made the area safe with jersey barriers and reinforcements of the girders and concrete slab. The ramp was closed from 5:00 AM until 6:00 PM the following day. Additional repairs were performed on the nights of October 15 and 16: crews installed additional diaphragms, shielding, and longitudinal supports.





East 128th Street Pedestrian Bridge Strike and Emergency Repairs. Left Elevation of Bridge. Timber Shielding Installed on Underside of Span #9 to Prevent Loose Concrete From Falling on the Road. Right Girder at Span #9 After Repair.

East 128th Street Pedestrian Bridge over 3rd Avenue Bridge Approach (Manhattan)

On October 9, 2014, the second grade students of Success Academy Harlem 2 (located on East 128th Street), asked many questions about the bridge strike and the Division's response. Each year, the second graders participate in a project based learning unit on bridges, and visit and photograph several bridges.



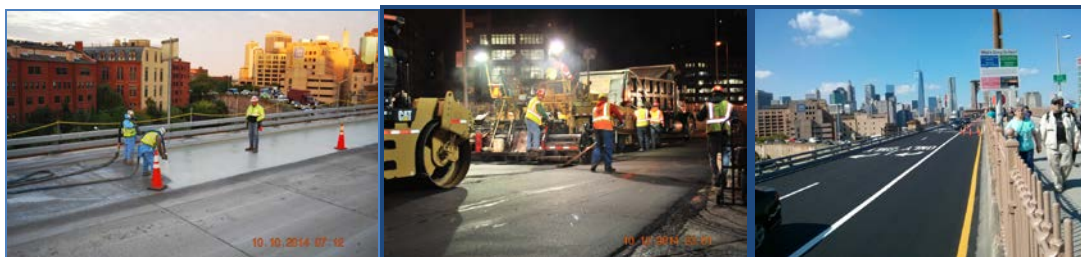
Second Grade Students (With Their Teachers Mr. Owen and Ms. Lee). Their Questions Were Answered by Supervisor Carpenter Joseph DiBlasi (in Safety Vest on Left) and Carpenter Ruben Urena (on Right).
(Credit: Jaclyn Fosso)

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

During September and October 2014, Division personnel and their friends and families participated in bake and book sales and other fundraisers, and sponsored the DOT Teams for the American Cancer Society's annual "Making Strides Against Breast Cancer" walk.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Brooklyn-bound lanes of the bridge was in place from 11:59 PM October 10 to 5:00 AM October 13, 2014.



October 2014: Brooklyn-Bound Approach Waterproofing.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a partial closure

of the Manhattan-bound lanes of the bridge was in place from 11:59 PM October 17 to 11:00 AM October 19, 2014. This facilitated the preparation for the closure pour concrete placement at the Sands Street structure, curb installation at the Brooklyn approach, orthotropic deck installation at the Franklin Square structure, steel repairs and touch-up painting at the suspended spans, painting of the main cables and suspender ropes, and removal of abrasive-blast-related ductwork from the underside of the Manhattan side span.



October 2014: Sands Street Structure – Preparing for Closure Pour. Containment Installation at Brooklyn Approach Structures. October 2014: Franklin Square Structure – Deck Alignment and Welding. Painted Manhattan Ramp.

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

On October 25, 2014, Division ironworkers repaired the chute and mixing drum.

Brooklyn Bridge

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was in place from 11:59 PM October 24 to 6:00 AM October 27, 2014. This facilitated the completion of rehabilitation work on the Manhattan-bound Sands Street and York Street structures.



October 2014: York Street Structure – Closure Pour. Sands Street Structure – Curb Mall.

Brooklyn-Queens Expressway West Leg over Grand Central Parkway (Queens)

Cleaning and painting of the bridge, which began on August 25, 2014, was completed on October 28, 2014.

Greenpoint Avenue Bridge over Newtown Creek (Brooklyn/Queens)

Contractor cleaning and painting of the bridge, which began on February 6, 2013, was substantially completed on October 28, 2014.

47th Street Bridge over Grand Central Parkway (Queens)

Cleaning and painting of the bridge, which began on August 11, 2014, was completed on October 28, 2014.

Hurricane Sandy Tribute

The Brooklyn Bridge flags flew at half-mast on October 29, 2014, in recognition of the two year anniversary of Hurricane Sandy, and as a mark of respect for those who lost their lives in its wake.

Union Street Bridge over Gowanus Canal (Brooklyn)

Carlton Scott Sturgill's "Bridge of Flowers," part of the Agency's Urban Art Program, was created in collaboration with Arts Gowanus. The colorful installations, located on the chain link fence on either side of the Gowanus Canal on Union Street, brought a taste of the natural world to the industrial fences they were woven into. Made from secondhand Ralph Lauren Polo shirts (as a fitting symbol of a constructed persona), Sturgill created one purple and one red rose bush, each entirely from the shirts. The flowers brought a change of pace to the industrial landscape characteristically associated with Gowanus, with their striking resemblance to real roses. The exhibit opened in October 2014.



"Bridge of Flowers" Exhibit near the Union Street Bridge.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In October 2014, the contractor installed a cast-in-place concrete deck wearing surface on the new precast beams.

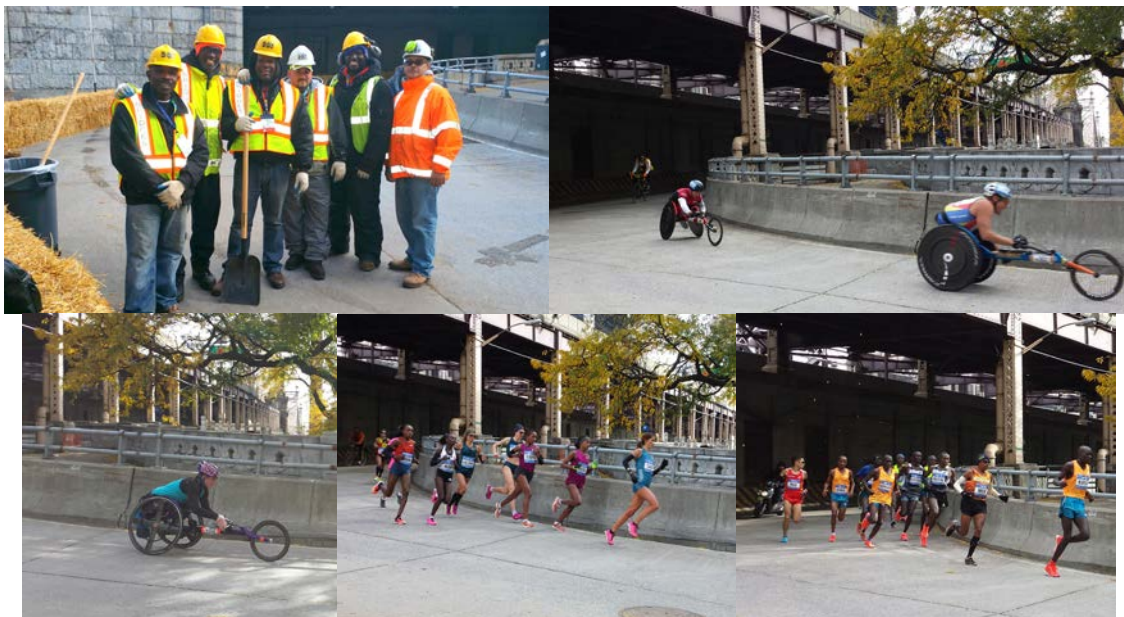


October 2014: Placing and Vibrating the Concrete Deck at the Bridge Facing West. Applying a Broom Finish Texture to the Deck Concrete.

NOVEMBER

New York City Marathon

In preparation for the Marathon on November 2, 2014, Division personnel mechanically swept the Pulaski, Ed Koch - Queensboro (lower level), Willis Avenue, and Madison Avenue bridges and patrolled for potholes. Crews reconfigured the Jersey barriers on the Ed Koch - Queensboro Bridge's outer roadway and 60th Street ramp, and installed hay bales.



Crew After Installing Straw Bales on the Ed Koch – Queensboro Bridge: Highway Repairers Ralston Myers, Robert Byrnes, Rudolph Bentley, and Gary George, Assistant City Highway Repairer Daniel Jean, and Supervisor Highway Repairer Anthony Irizarry.. (Credit: Clara Medina) At Mile 16 – the Ed Koch Queensboro Bridge, Coming Down the South Outer Roadway onto 59th Street. Men's Pushrim Wheelchair Leaders. United States' Tatyana McFadden – Winner, Women's Pushrim Wheelchair. Morocco's Rkia El Moukim (6th Place – Pink Shirt, Obscured Behind Sumgong), Kenya's Jemima Sumgong (2nd Place – 2nd From Left), Kenya's Mary Keitany (Winner – 3rd From Left), Italy's Valeria Straneo (8th Place – 4th From Left), Latvia's Jelena Prokopcuka (4th Place – 4th From Right), Ethiopia's Firehiwot Dado (7th Place – 3rd From Right), Ethiopia's Buzunesh Deba (9th Place – 2nd From Right), Portugal's Sara Moreira (3rd Place – On Right). Japan's Masato Imai (7th Place – On Left), Republic of South Africa's Lusapho April (12th Place – 2nd From Left), Uganda's S. Kiprotich (5th Place – 3rd From Left), Kenya's M. Kiprego (16th Place – 4th From Left), United States' Meb Keflezighi (4th Place – 2nd From Right), Kenya's Geoffrey Mutai (6th Place – 3rd From Right), Kenya's Wilson Kipsang (Winner – 4th From Right), Ethiopia's Lelisa Desisa (2nd Place – 5th From Right), Kenya's Peter Kirui (8th Place – On Right). (Credit: Paul Schwartz)

Moshulu Parkway Bridge over Conrail (Abandoned), Leggett Avenue Bridge over Amtrak, East 162nd Street Bridge over Metro North RR HAR, East 165th Street Bridge over Metro North RR HAR, East 187th Street Bridge over Metro North RR HAR, Southern Boulevard Bridge over East Fordham Road, Grand Concourse Bridge over East 167th Street, East 180th Street Bridge over Bronx River, Riverside Drive Bridge over West 138th Street, Riverside Drive Bridge over West 145th Street, and the Pulaski Bridge Bicycle Path (McGuinness Boulevard over Newtown Creek)

A Notice to Proceed for the component rehabilitation of these 10 bridges in the Bronx and Manhattan, as well as the creation of a protected bicycle path on the Pulaski Bridge was issued to the contractor with a start date of November 3, 2014.

Hill Drive Bridge (Cleft Ridge Span) over Pedestrian Path South of Boathouse (Brooklyn)

The component rehabilitation of this bridge was substantially completed on November 5, 2014.



Cleft Ridge Span Before, During, and After Construction.

Brooklyn Bridge

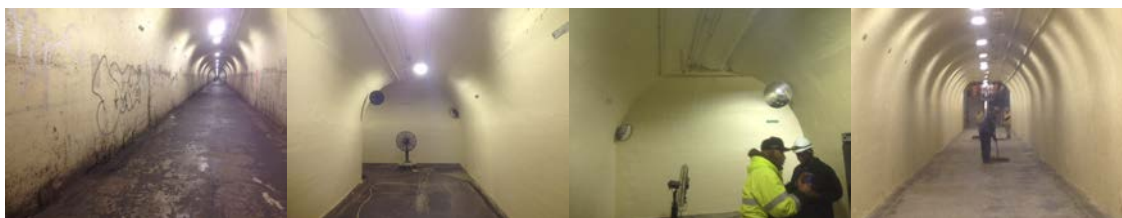
On November 5, 2014, 3rd year civil engineering students at the Rensselaer Polytechnic Institute visited the Brooklyn Bridge. Divisional responsibilities and capabilities were discussed and questions about the Brooklyn Bridge reconstruction project were answered.



The Rensselaer Polytechnic Institute Students on the Bridge.

West 191st Street Pedestrian Tunnel under Broadway – IRT #1 Subway (Manhattan)

The presence of significant areas of mold and loose lead-based paint on the inside walls of the tunnel required removal of these materials and a repainting of the entire interior surface of the tunnel. Quick action was taken when our contractor was able to mobilize to take advantage of a MTA General Order closing off the pedestrian traffic in the tunnel for one weekend. The underpass was closed the weekend of November 7-9, 2014 for mold remediation, graffiti removal, and painting. Our contractor completed the entire work ahead of schedule.



West 191st Street Tunnel - Before and After. (Credit: Thomas Leung)

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

On November 8 and 15, 2014, Division ironworkers repaired the main drum, loader bin, and conveyor pipe.

Union Street Bridge over Brooklyn-Queens Expressway (Brooklyn)

The component rehabilitation of this bridge was substantially completed on November 13, 2014.



Union Street Bridge Before, During, and After Construction.

Harlem River Drive Bridge (NB & SB) at East 127th Street (Manhattan)

A Notice to Proceed for the reconstruction of these structures was issued to the contractor with a start date of November 10, 2014.

88th Annual Macy's Thanksgiving Day Parade

Division engineers reviewed and approved the design specifications of Thomas the Tank Engine, Paddington Bear, Power Ranger, Erptor Skylander, Pikachu, and Pillsbury Dough Boy, five new and one returning large balloons to be introduced in the parade. A balloon is classified as large if it is larger than 5,000 cubic feet. However, the balloons in the parade cannot be taller than 70 feet, wider than 40 feet, or longer than 78 feet. Division representatives attended the test flights of the balloons at the Meadowlands Sports Complex in New Jersey on November 8, 2014, with NYPD and other agencies. A wireless anemometer station was set up to give real time wind speed, and cones were placed out simulating the street envelope. Macy's performed test flights on each new balloon according to the current wind gust, and flew the balloons to the required flying height.

On November 27, 2014, wind speeds were relatively low and all 16 large balloons flew in the parade without incident. The wind gusts varied between 9 to 15 miles per hour. Chief Bridge Officer Robert O. Collyer, Deputy Chief Engineer Anil Vyas, Director of Engineering Review Udaya Dommaraju, Construction Project Manager George Jarvis, Civil Engineer Ashok Chintakunta, Assistant Civil Engineer Jafar Haider, and three consultant engineers were positioned at various locations along the parade route to observe compliance with the approved procedures. Seven 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 Paddington Bear and Pikachu Balloons in New Jersey on November 8. (Credit: George Jarvis)



Parade 2014: Executive Director of Operations, Office of Special Events Matthew Cavallino, First Deputy Commissioner Lori A. Ardito, Chief Bridge Officer Robert O. Collyer, Assistant Commissioner Special Events Brenda Rivera, and Director of Engineering Review Uday Dommaraju. Thomas the Tank Engine. Paddington Bear. (Bear Credit: George Jarvis)

Atlantic Avenue Service Road Eastbound and Westbound over East New York Avenue (Brooklyn)

Cleaning and painting of these bridges, which began on April 4, 2014, was completed on November 26, 2014.

Harper Street Asphalt Plant (Queens)

On November 29, 2014, Division ironworkers repaired the staircase around the scale, patched a hole inside the main drum, and replaced a damaged paddle in the main drum feeder.

West 45th Street Bridge over Amtrak 30th Street Branch (Manhattan)

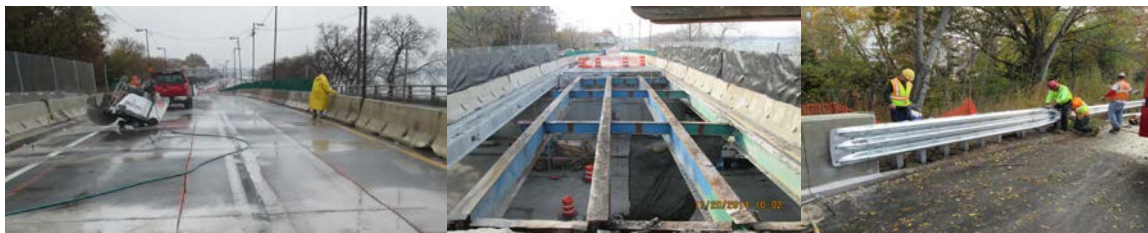
Asae Soya's mural, "Ringing Waves," part of the Agency's Urban Art Program, was created in collaboration with the International Studio and Curatorial Program. The piece served as a metaphor for the sound waves that flow within New York City and create energy among the vast variety of people and places. Abstract expressions of sound waves in the forms of voices, traffic, music and more coexisted together in this multicolored mural on the 45th Street Bridge. The exhibit opened in November 2014.



"Ringing Waves" Exhibit on the 45th Street Bridge.

Belt Parkway Bridge over Bay Ridge Avenue (Brooklyn)

In November 2014, the contractor saw cut and removed the existing Stage II reinforced concrete bridge deck.



November 2014: Saw Cutting the Old Westbound Bridge Deck Being at the Start of Stage III. Exposed Stringers After Removal of the Concrete Bridge Deck During Stage III. Facing East. Setting Tri-Beam Corrugated Guide Rail Connection to the Concrete Parapet on the New Westbound Bridge.

Belt Parkway Bridge over Gerritsen Inlet (Brooklyn)

In November 2014, the contractor drove steel sheeting for temporary access road at the east approach.



November 2014: Driving Steel Sheetting at East Approach for the Future Temporary Access Roadway.

DECEMBER

Deputy Commissioner Ronald Cohen Tribute

The Brooklyn Bridge flags flew at half-mast on December 1, 2014, in tribute to former Deputy Commissioner Ronald Cohen, 47, who died on November 25, 2014. A City employee for 26 years, Mr. Cohen helped lead the rescue and recovery efforts following the attacks on September 11, 2001. He served as a deputy commissioner and senior advisor in the areas of criminal justice coordination, special enforcement and citywide event coordination for the New York City Criminal Justice Coordinator's Office and the Mayor's Office of Citywide Event Coordination and Management. Earlier in his career he served in the Sanitation Department and the Business Integrity Commission (formerly known as the New York City Trade Waste Commission). Among his numerous awards were the Isaac Lieberman Public Service Award – an award given to career public servants who demonstrate dedication beyond their job performance and have improved the efficiency and quality of services rendered to the people of the City of New York, and the United States Department of Justice Public Service Award for Meritorious Service – an award given to civil servants who have made material contributions to raising the standards of cooperative Law Enforcement.

Congressman Herman Badillo Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on December 3, 2014, in tribute to four term Congressman Herman Badillo, 85, who died on December 3. Mr. Badillo was the first Congressman of Puerto Rican origin in the history of the nation (New York's 21st District in the Bronx). He was also the First Puerto Rican to be elected Bronx Borough President. He served as Deputy Mayor in the Koch administration and was special counsel for the Fiscal Oversight of Education during Mayor Giuliani's administration. Mr. Badillo was also Chairman of the Board of the City University of New York. Among his many other "firsts", he was a co-founder of the Puerto Rican Bar Association, and of the Puerto Rican Legal Defense and Education Fund. He was a champion of civil rights, jobs, housing and education reforms. The flags were raised on December 14, 2014.



Herman Badillo.

Harper Street Asphalt Plant (Queens)

On December 6 and 13, 2014, Division ironworkers repaired the shaker, hatch doors, and rap bin.

Macombs Dam Bridge over Harlem River (Bronx/Manhattan), 145th Street Bridge over Harlem River (Bronx/Manhattan), Third Avenue Bridge over Harlem River (Bronx/Manhattan), Madison Avenue Bridge over Harlem River (Bronx/Manhattan), Hunters Point Avenue Bridge over Dutch Kills (Queens), Carroll Street Bridge over Gowanus Canal (Brooklyn), Ninth Street Bridge over Gowanus Canal (Brooklyn), Third Street Bridge over Gowanus Canal (Brooklyn), Union Street Bridge over Gowanus Canal (Brooklyn), West 207th Street/West Fordham Road Bridge over Harlem River (Bronx/Manhattan), Borden Avenue Bridge over Dutch Kills (Queens), and Grand Street Bridge over Newtown Creek (Brooklyn/Queens)

A Letter of Intent for the emergency repairs of these bridges was issued to the contractor with a start date of December 15, 2014.

Hamilton Avenue Asphalt Plant (Brooklyn)

On December 20, 2014, Division ironworkers repaired the screener, conveyor belt, and silo.

Sergeant Ramon S. Morris Tribute

The Brooklyn Bridge flags flew at half-mast on December 22, 2014, in tribute to Army Sergeant First Class Ramon S. Morris, 37, of New York City, who was killed in action while serving in Afghanistan on December 12, 2014. Sergeant Morris died in Parwan Province, when his vehicle was attacked with an improvised explosive device. He was assigned to the Third Engineer Battalion, Third Brigade Combat Team, First Cavalry Division. His decorations included a Bronze Star Medal.



Sergeant Ramon S. Morris.

Police Officers Wenjian Liu and Rafael Ramos Tribute

The American flags on the Brooklyn Bridge were lowered to half-mast by Division painters on December 20, 2014, in tribute to Police Officers Wenjian Liu and Rafael Ramos of the 84th Precinct in Brooklyn, who were killed in the line of duty on December 20. While sitting in a marked NYPD vehicle car, in full uniform, both were ambushed and murdered in front of a public housing development in the Bedford-Stuyvesant area of Brooklyn. Both officers were posted at this location as part of a department crime reduction strategy to address complaints of violence in

the area of the housing developments in that area. Detective Ramos, 40, had served nearly three years in the department, while Detective Liu, 32, was a seven-year veteran of the force. Mr. Liu worked as an auxiliary officer before joining the NYPD. The officers were posthumously promoted to the rank of Detective First Grade by Police Commissioner William J. Bratton, who also appointed Mr. Ramos an honorary NYPD chaplain.



Officers Rafael Ramos and Wenjian Liu.

Manhattan Bridge

The bridge opened to traffic 105 years ago, on December 31, 1909.



ACCOMPLISHMENTS & PLANNED PROJECTS

Bridge Capital Design & Construction

East River Bridges

Movable Bridges

Roadway Bridges

Brooklyn and Manhattan Roadway Bridges

Bronx, Queens, and Staten Island Roadway Bridges

Design-Build/Emergency Contracts

Component Rehabilitation

Engineering Review & Support

In-House Design

Engineering Support

Engineering Review

Quality Assurance

Bridge Maintenance, Inspections & Operations

ACCOMPLISHMENTS & PLANNED PROJECTS

East River Bridges

BROOKLYN BRIDGE

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



Brooklyn Bridge. (2nd Credit: Earlene Powell)

The Brooklyn Bridge carries some 102,542 vehicles and 2,661 commuter bicyclists daily. The \$936 million reconstruction commenced in 1980 with Contract #1, and continues with Contract #6, scheduled for completion in 2015. This contract includes the rehabilitation of both approaches and ramps, the painting of the entire bridge, as well as the seismic retrofitting of the structural elements that are within the Contract #6 project limits.

Work completed on the bridge to date includes reconditioning of the main cables, replacement of the suspenders and cable stays, rehabilitation of the stiffening trusses, and the replacement of the suspended spans deck and the four travelers.

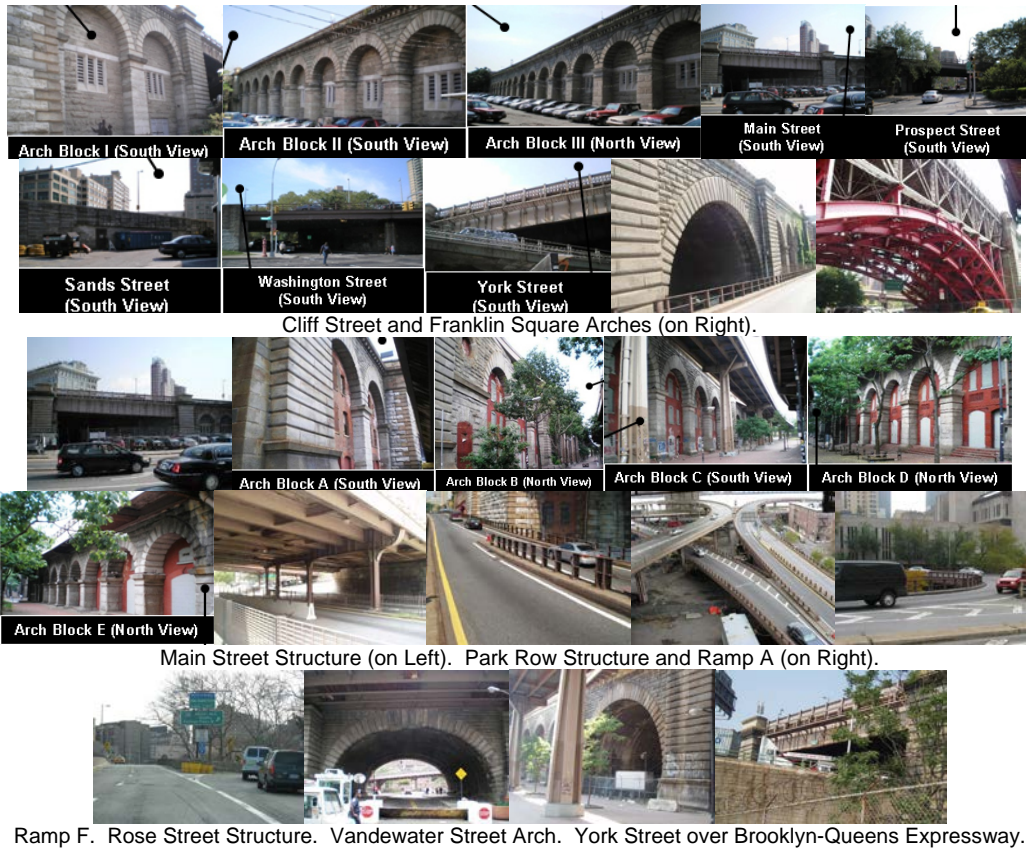
Contract #6

A Notice to Proceed for this \$508 million project was issued to the contractor with a start date of January 19, 2010. The ramps and approaches to the Brooklyn Bridge were 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 are being rehabilitated and widened and the entire bridge is being repainted to prevent steel corrosion on the structure.

The approach roadway to the Brooklyn Bridge was aging, with a failed membrane system and deteriorated closure walls. The existing roadway pavement above the historic arch blocks and masonry structures is being rehabilitated. A precast concrete roadway slab is being 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, are being refurbished and reinstalled. The existing ramp from the FDR southbound roadway was 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, are being 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 is being removed by lifting out sections and replacing them panel by panel with precast concrete-filled steel grid deck panels. This approach greatly reduces noise from drilling and jackhammers, and also increases the reliability of the start and end times of construction activities every night.

ACCOMPLISHMENTS & PLANNED PROJECTS



Painting work, to prevent steel corrosion and improve aesthetics, occurred in negative-pressure containment units that travelled along the bridge structure. All three travel lanes were maintained during the course of this work, and painting will take approximately four years to be complete. Equipment was placed underneath the FDR Drive, and on land abutting the Brooklyn tower. Dust collection, vacuum and recycle units were employed to minimize environmental air quality risks, and there has been continuous air monitoring during operations. All painting work has been conducted in accordance to the US Environmental Protection Act and NYS Department of Environmental Conservation requirements. Noise generated by these units conforms to the NYC Noise Code standards adopted in 2007.

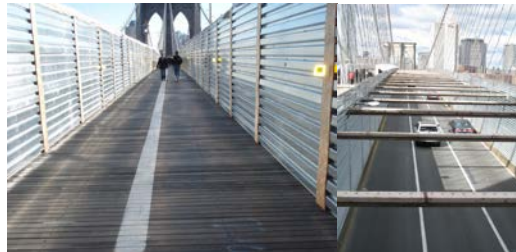
In order to facilitate the reconstruction and associated painting work, the contractor began to mobilize in the area known as the Brooklyn Banks and Red Brick Park, between Pearl Street and Park Row on the north side of the Manhattan approach of the Brooklyn Bridge. The area was closed to the public 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 access between Pearl Street and the Rose Street/City Hall area is maintained through a walkway adjacent to the banks along Avenue of the Finest.

On the Brooklyn side, two lanes of free-flowing traffic were created at the Cadman Plaza exit, and approach roadways are being rehabilitated to replace the membrane system and deteriorated closure walls. On the Manhattan side, rusted railings and safety barriers were replaced, and two lanes of free-flowing traffic were created from the southbound FDR Drive onto the Brooklyn Bridge.

The contract allowed for 24 full weekend closures over the duration of the contract; however, the contract also contains clauses that encourage fewer weekend closures with monetary compensation. Although the promenade remained open, there were sections immediately under the painting area, which were narrowed by a foot on each side to facilitate work.

ACCOMPLISHMENTS & PLANNED PROJECTS

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



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

Lead paint removal operations were conducted in a Class 1A containment unit. Rigid containment walls, HEPA filters, and negative air pressure were used to prevent material release. Ambient air quality readings were conducted during lead paint abatement work. Airborne lead levels were continuously monitored using high-volume total suspended particulate samplers at multiple locations in Brooklyn and Manhattan. Additional in-depth testing for volatile organic compounds was conducted at five locations in the summer of 2011.

In March 2012, airborne particulate samples were collected in accordance with regulatory guidelines, at locations where dust was most likely to be deposited during dust-generating activities. Additional tests were replicated in June 2012 for respirable silica, suspended particulates and asbestos. All results were acceptable according to standards set by the Occupational Safety and Health Administration, the National Institute for Occupational Safety and Health, and the American Conference of Industrial Hygienists.



Noise Reduction Along the Sound Pathway – Acoustical Barriers on the Bridge During Night Construction Activities. Acoustical Curtains Along Frankfort Street. Two Crews Work Along Frankfort Street in April 2012. Cranes (On Left) Lift Material In And Out of Walled Enclosures of Sound Blankets. Inspector Taking Noise Measurements.

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

ACCOMPLISHMENTS & PLANNED PROJECTS



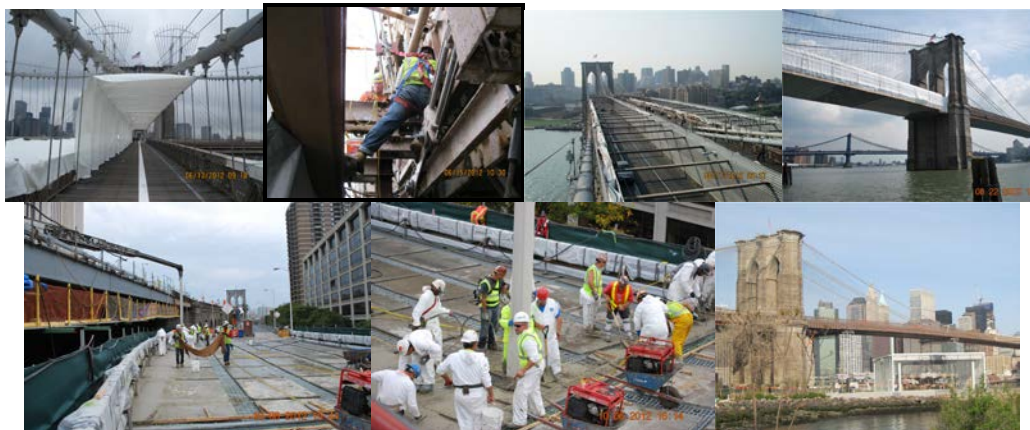
December 2011: Painted Top Struts of the Brooklyn-Bound Manhattan Side Span. Summer 2011: Manhattan Approach - Ramp C Deck Replacement.
December 2011: Ramp C.

In 2012, work continued on the Manhattan side of the bridge, including deck replacement on ramps and the south cantilever, super-slab installation and arch block strengthening. Painting under the Brooklyn main and side spans was completed, as well as the top struts along the Brooklyn-bound roadway. Painting of the Manhattan main and side spans started in 2012 and continued through 2013.

In Brooklyn, new shielding was installed under the Prospect and Washington Street structure in anticipation of deck removal. In addition, preparatory work was ongoing for superstructure replacement of the York and Main Street structures.

As part of the contract to rehabilitate the Brooklyn Bridge ramps and approaches, a full closure of the Manhattan-bound lanes of the bridge was performed on two full weekends: from 11:59 PM October 5 to 6:00 AM October 8, and again from 11:59 PM October 12 to 6:00 AM October 15. The first weekend closure was for work on Ramp A (from the southbound FDR Drive to the bridge) for concrete placement. Brooklyn-bound approach work and abrasive blasting was also progressed. The second weekend closure was for work on Ramp A (from the southbound FDR Drive to the bridge), South Cantilever closure pour concrete placement, Brooklyn-bound approaches rehabilitation work, painting of Ramp D/Span 4, Franklin Square Structure orthotropic deck welding, Ramp F (from the southbound FDR Drive to Pearl Street) Stage I grid deck removal/replacement, and preparatory work for widening the exit ramp to Cadman Plaza.

Asbestos abatement was completed in the Brooklyn maintenance shop and was in progress in the Manhattan arch blocks. By the end of 2012, 321 bearings were replaced under the Manhattan ramps and the flag repairs on the suspended spans were in progress.



June 2012: Brooklyn Side Span Netting Protection for Main Cable and Suspender Rope Painting. June 2012: Structural Steel Repairs. 2012: Manhattan Main Span Vertical Wall. August 2012: Manhattan Side Span Containment at Manhattan Tower. First Full Roadway Closure: Ramp A Concrete Placement. Second Full Roadway Closure: Brooklyn Approach. December 2012: Brooklyn Main Span in Finish Coat.

In 2013, lead-based paint removal and new coating applications were completed on the Manhattan main and side spans including all four stiffening trusses, the under-deck system, and the promenade. The main bridge vertical protective shield systems were removed. Painting of the main cables, suspender cables and overhead struts continues and was approximately 60%

ACCOMPLISHMENTS & PLANNED PROJECTS

complete. In addition to the Main Bridge painting, paint removal and coating application continues on the Manhattan side ramps and was also approximately 70% complete.



May 2013: Painter Applying Primer Stripe Coat on the Manhattan Main Span. June 2013: Painter on Sway Bracing on the Brooklyn Side Span. (View Credit: Earlene Powell) November 2013: Painting Fascia Steel on Ramp C.

2013 saw significant progress for structural rehabilitation work, which included: completion of the Brooklyn-bound orthotropic deck panel installation at the Franklin Square Structure; the installation of the new concrete-filled grid deck systems at the outbound York Street, Main Street and Park Row structures as well as Prospect Street, Washington Street and the maintenance shop deck systems for both inbound and outbound directions. Concrete-filled grid deck installation for the inbound York Street, Main Street, North Cantilever and Franklin Square structures was begun. The approach super slab installation was completed in the outbound direction and was about 20% complete inbound. The main bridge structural steel flag repairs continued to be identified by biennial and special inspections.

In 2013 three significant traffic improvements were implemented that changed exits from one-lane exit to two-lane exits, thereby reducing queuing-related congestion. In May 2013, key access ramps to and from the Brooklyn Bridge and the FDR Drive were expanded. Each of the two enhanced ramps now accommodates two traffic lanes and simplifies traffic patterns, easing notorious traffic bottlenecks for many of the 102,542 vehicles that cross the bridge daily as the bridge rehabilitation continues. The first ramp, connecting the exit from the bridge's Manhattan-bound lanes with the FDR Drive, was expanded from one to two lanes, easing backups that often extend across the bridge. The second ramp, connecting the southbound FDR Drive with the approach to the bridge's Brooklyn-bound lanes, was also expanded from one to two lanes, easing congestion and reducing the impact of cars that aggressively cut into the queue of cars at the entrance to the ramp. The work on a third ramp, connecting the bridge's Brooklyn-bound lanes to Cadman Plaza West and Old Fulton Street in Brooklyn Heights, which was also expanded to two travel lanes, was completed in September 2013.

Noise monitoring and mitigation efforts continue for all night-time project operations with ongoing community and sensitive receptor coordination.



April 2014: Installation of Temporary Deck Units at the York Street Structure Over Brooklyn-Queens Expressway. July 2013: Removal of the Existing Concrete Slab on the Eastbound Main Street Structure. August 2013: Ironworker Replacing Cable Clamp Assemblies on the Suspended Span. October 2013: Grid Deck Panel Installation at the Eastbound Park Row Structure.

ACCOMPLISHMENTS & PLANNED PROJECTS

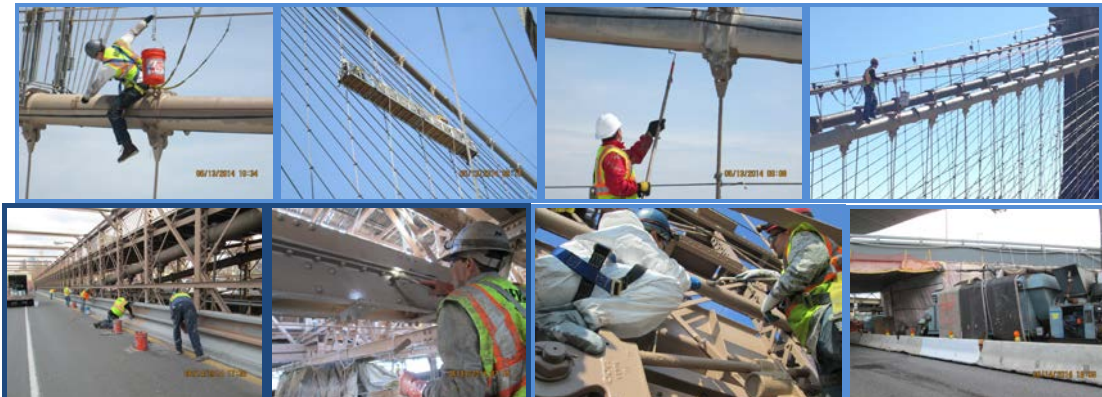


October 2013: Eastbound Brooklyn-Queens Expressway Traffic Flowing Under the Exposed Steel of the Eastbound York Street Structure. Removing the Fascia Steel From the Eastbound York Street Structure.
November 2013: Concrete Placement at the Eastbound York Street Structure.

In 2014, lead-based paint removal and new coating applications were completed at the Manhattan ramps and approach structures. Subsequently, primary protective shield removal commenced at the Manhattan ramps and is in progress. Painting of the overhead struts and promenade approach railing was completed, while painting of the main cables and suspender cables continues and is at approximately 80% complete. Additionally, abrasive blast cleaning and painting have begun at the Brooklyn approach structures, with a portion of the Prospect Street structure completed.



Spring 2014: Painting at Main Bridge – Safety Barrier and Top Struts. Painting at Manhattan Ramps. April 2014: Containment at Manhattan Ramps and Approaches.



May 2014: Painting Main Cables and Suspension Ropes. June 2014: Painting at Main Bridge – Safety Barrier and Touchup. Containment at Ramp A, Span 4.

ACCOMPLISHMENTS & PLANNED PROJECTS



August 2014: Main Bridge Touch-Up Painting, and Painting Manhattan Main Span Promenade Railing.
August 2014: Painted Manhattan Ramps. October and November 2014: Blasting and Painting – Brooklyn Approach Structures.

In response to residents' concerns about airborne silica, a type of dust that is emitted during concrete demolition operations, the project team conducted a series of tests to monitor the levels of this substance in the air in January 2014. In addition to three types of silica, the tests also monitored for general respirable dust. Monitors were placed in four locations near concrete demolition operations occurring at the Main Street and York Street structures on the Brooklyn approach. Two monitors were placed within 50 feet of the construction activities themselves, one was placed at ground level north of the activity, and another placed directly in front of a residential building just south of the work. Analysis was undertaken by the project's environmental experts using procedures established by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety & Health (NIOSH). All results were well below the permissible exposure levels as established by the NYS Department of Labor Public Employee Safety and Health and threshold limit values established by the American Conference of Governmental Industrial Hygienists.



Respirable Dust & Airborne Silica Monitoring.

Significant portions of the structural rehabilitation of the bridge were completed during 2014. Orthotropic deck panels were installed at the inbound Franklin Square Structure, and are currently being aligned and welded in place. Replacement of the superstructure and installation of concrete-filled grid deck panels was completed for the inbound York Street and Main Street structures. New concrete-filled grid-deck panel installation was completed for the Sands Street structure in both directions and continues at the inbound Park Row structure. Approach SuperSlab installation continues at both inbound approaches, and is at approximately 60% complete. Asphalt paving and road striping has been completed at both outbound approaches and has commenced at the inbound Brooklyn approach (east of the Prospect Street structure). Bearing replacement continues at the Brooklyn approach structures, with 524 of 666 bearings replaced by the end of 2014. Several operations still remain in Manhattan: these include the remaining installation of super slabs on the Manhattan-bound roadway, grid deck installation at

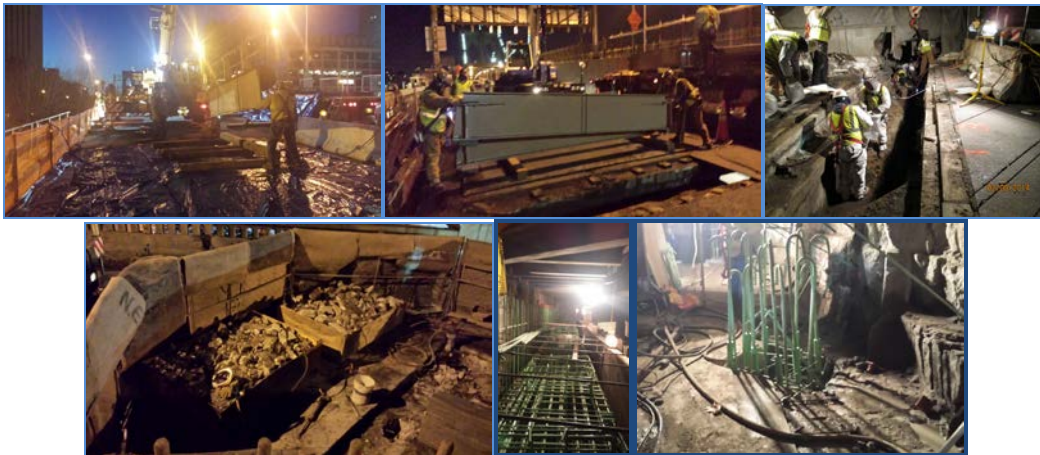
ACCOMPLISHMENTS & PLANNED PROJECTS

the Park Row structure, rehabilitation of the north cantilever, and pier replacement at Ramp C. The latter two operations may continue through the end of 2015.

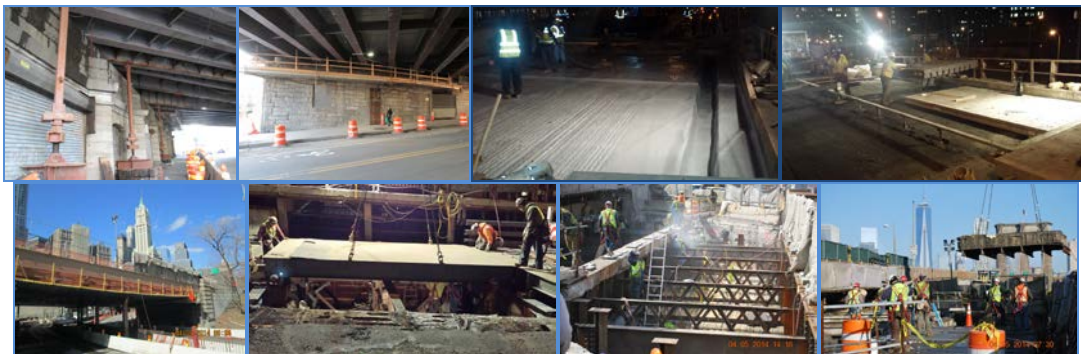
Beginning on March 26, 2015, and lasting through December, 2015 the Brooklyn Bridge promenade will be reduced in width for pedestrians and cyclists at various locations. This closure is necessary to perform steel improvements at tower locations as well as structural joint repair on the Brooklyn Approach. At the towers, the work zone will be in effect continuously during this period. On the Brooklyn Approach, work will be conducted only during overnight hours. Pedestrians and cyclists will be directed to cautiously share the narrowed pathway.



Structural repairs continue to be identified by biennial inspections and the construction consultants, and the repair work is ongoing. Over 3,900 incidental steel defects were identified that could not be anticipated prior to the removal of the existing paint. Approximately 1,000 of them have been corrected to date.

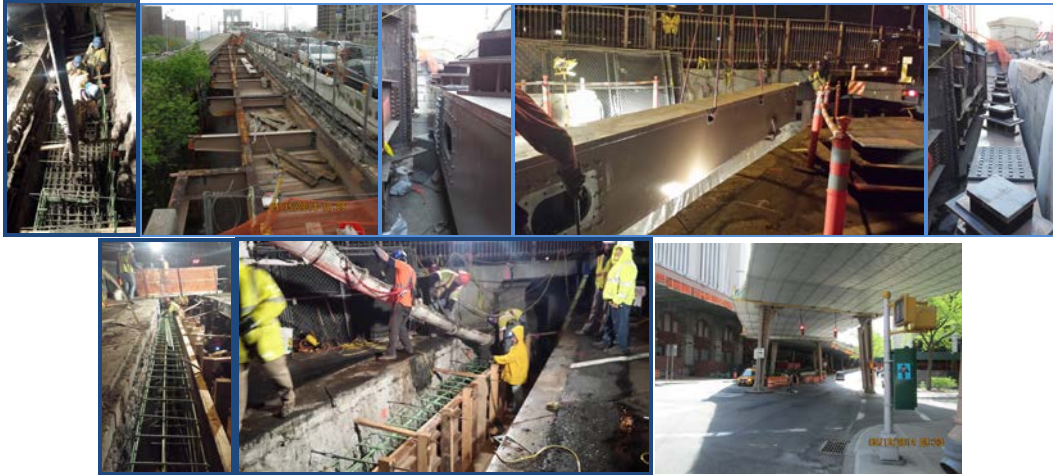


February 2014: Fascia Removal – Park Row Structure. Franklin Square Structure – Floorbeam Installation. York Street Structure – Demolition and Steel Removal. Main Street Structure – Cap Beam Installation.



February 2014: Prospect Street Structure – Temporary Steel Installation. April 2014: Superslab Installation – Manhattan-Bound Lanes. April 2014: Fascia Installation – Park Row Structure. Franklin Square Structure Deck Replacement During Full Weekend Closure. York Street Structure Deck Replacement During Full Weekend Closure.

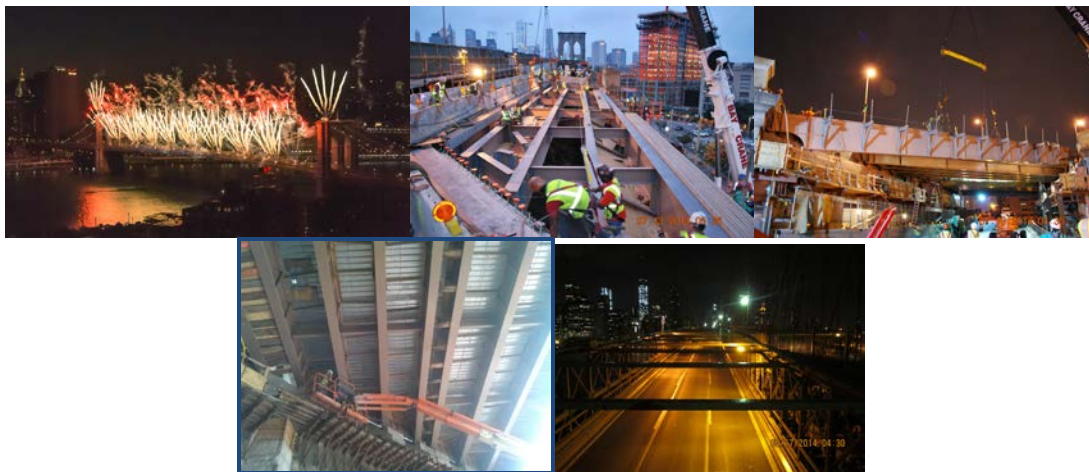
ACCOMPLISHMENTS & PLANNED PROJECTS



April 2014: Main Street Structure – Cap Beam Concrete Placement. May 2014: North Cantilever Demolition. York Street Structure – East Abutment Cap Beam. May 2014: Main Street Structure – Abutment Concrete Placement. Protective Shield and Work Platform at Manhattan Ramps and Approaches.

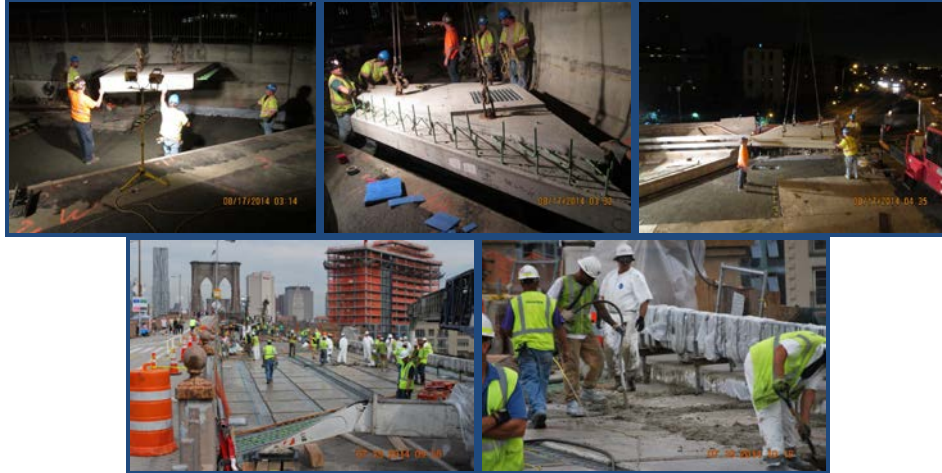


May 2014: Ascending the Cable. Installing Clamping Assemblies at the Franklin Square Structure. May 2014: Main Street Structure Westbound Overpass Replacement During Full Weekend Closure. June 2014: York Street Structure Stage II Westbound Overpass Replacement During the Full Weekend Closure.



July 2014: Fireworks. Installation of Manhattan-bound York Street Girder. Stringers Installed at Manhattan-bound York Street. Preparation for Closure Pour at Main Street Structure. Early Morning on the Bridge in August 2014.

ACCOMPLISHMENTS & PLANNED PROJECTS

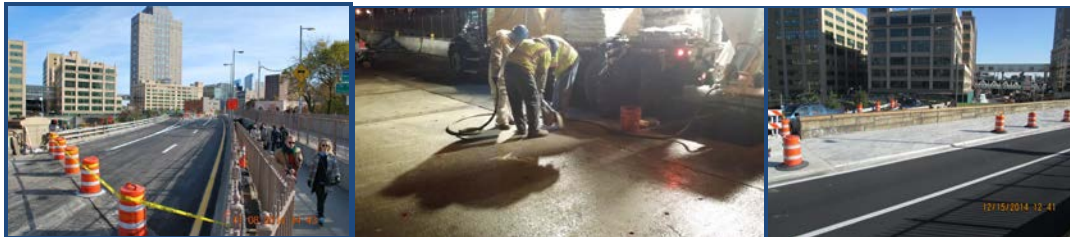


August 2014: York Street Structure – Installation of Brooklyn-Bound Approach Slabs. July 2014: Main Street Structure – Manhattan-Bound Closure Pour.

Substantial completion of the project is now expected at the end of 2015. Multiple unforeseen factors have served as major obstacles, including the discovery of additional deterioration of bridge elements, discovery of a former trolley structure thought to be removed over 50 years ago, the cancellation of full weekend closures due to additional citywide events, and the Superstorm Sandy construction embargo. There may be steel repair work that carries over into 2016 due to staging of the work over the river, as only one half of the channel can be closed.



September 2014: Franklin Square Structure – New Orthotropic Deck. October 2014: Contractor Setting Rebar for Cast-in-Place Curb at Manhattan-Bound Tillary Street Access Road/Sands Street Access Road. November 2014: Manhattan-Bound Brooklyn Approach Paving.



December 2014: Super Slab Installation in Manhattan-Bound Lanes. Sands Street Structure – Curb Mall.

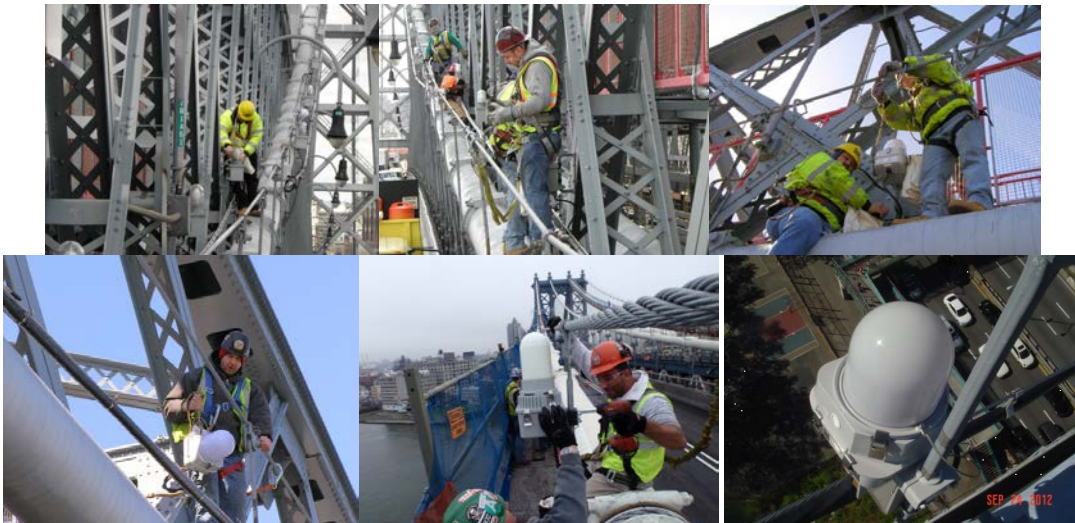
ACCOMPLISHMENTS & PLANNED PROJECTS



September 2014: Acting Administrator of the Federal Highway Administration Gregory G. Nadeau, Deputy Commissioner for Finance, Contracting, and Program Management Joseph H. Jarrin, and Director of East River Bridges Hasan Ahmed Studying the Brooklyn Bridge Project Plans. Acting Administrator of the Federal Highway Administration Gregory G. Nadeau and Commissioner Polly Trottenberg on the Brooklyn Bridge.

NECKLACE LIGHTS

In the fall of 2008, to compare options for energy efficiency, we replaced 20 100-watt mercury vapor lamps of the necklace lights on the Brooklyn and Manhattan Bridges with 10 LED fixtures and 10 induction fixtures. The test was completed in spring 2009; we chose an LED fixture in a dish style and will obtain them for the Ed Koch Queensboro, Williamsburg and Brooklyn Bridges. The test fixtures were removed on April 24, 2009. The replacement of the existing mercury vapor lights on the Williamsburg Bridge was completed in summer 2012. The replacement of those on the Ed Koch Queensboro and the Manhattan Bridges was completed in June 2013. The replacement of the Brooklyn Bridge necklace lights will not be scheduled until the completion of Contract #6. Approximately 80% of the old fixtures from the Ed Koch Queensboro and Williamsburg Bridges have been sold at auction.



Installing New LED Necklace Lights on the Williamsburg Bridge in April 2012: Electrician Thomas Cipriano, Supervisor Bridge Repairer and Riveter Gean Pilipiak (in Front). (Credit: Thomas Whitehouse) May 2012: Electricians Thomas Cipriano and Robert Stackpole on the Williamsburg Bridge. Bridge Repairer and Riveter Neil Dalton. (Credit: Hany Soliman). Installing New LED Necklace Lights Along D Cable on the Manhattan Bridge in May 2012. New LED Necklace Light on Cable D of Williamsburg Bridge. (Credit: NYSDOT)

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.

BATTERY PARK UNDERPASS AND WEST STREET UNDERPASS (MANHATTAN) – EMERGENCY CONTRACT

The Battery Park Underpass is a two-span rigid frame reinforced concrete tunnel structure connecting eastbound and westbound traffic between the FDR Drive and West Street (Route 9A) at the southern end of Manhattan. The West Street Underpass is a one-span rigid frame reinforced concrete tunnel structure connecting southbound traffic from West Street heading toward the entrance to the Brooklyn Battery Tunnel (Hugh L. Carey Tunnel).



PROJECT LOCATION MAP
Battery Park and West Street Underpasses.

On October 29, 2012, the New York Metropolitan area was impacted by Hurricane Sandy, causing flooding, loss of power and damage to many components of New York City's infrastructure. On October 30, 2012, a site inspection by the Department revealed major damage to both underpasses. Specifically, certain electrical, mechanical and structural issues with regard to the tunnels had to be addressed.

Salt water penetrated the electrical and mechanical equipment in both underpasses, including but not limited to, motors, lighting and pumps. It is therefore, necessary to solicit the services of a specialty contractor to perform all necessary repairs.

Due to the potentially serious danger to life and public safety posed by the current condition, it is critical that the repair work be performed as expeditiously as possible.

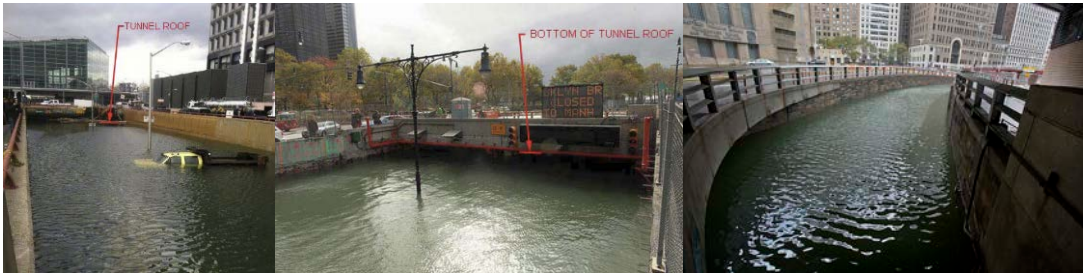
On November 7, 2012, in the interest of public safety, pursuant to Section 103(4) of the General Municipal Law and Section 315 of the New York City Charter, the Department declared that an emergency exists relative to the Battery Park Underpass and West Street Underpass on Route 9A in Manhattan.

A temporary repair of the Battery Park Underpass ventilation system which allowed normal traffic flow as opposed to single-lane traffic began in April 2013. A permanent repair of the systems in the underpass is expected to begin in early winter 2015 and to be complete in July 2017.

A Letter of Intent for the emergency repairs of these underpasses was issued to the contractor with a start date of February 17, 2015.

ACCOMPLISHMENTS & PLANNED PROJECTS

A project to mitigate future flooding at both underpasses by adding protection measures for the repaired systems in the underpasses will be undertaken in a separate contract.



October 2012 - Battery Park Underpass - View Looking West at the South Portal Entrance Near the FDR Drive. View Looking South at the North Portal Entrance Near West Street. West Street Underpass – Approach at South Portal Looking Southeast. Both Tunnels Were Flooded to Their Roofs, Which Means That all Tunnel Ventilation, Electrical, and Mechanical Systems Were Entirely Submerged in Saltwater.



October 2013 – Battery Park Underpass – Elevation Right Span 1 and Left Span 1. (Credit: NYSDOT) September 2013 - Span 2 Looking Westbound (FDR Drive to West Street) West Street Underpass - Elevation Right Span. (Credit: NYSDOT) September 2014: Project Team in the Battery Park Underpass – Mechanical Engineer Bidyut Niyogi, Construction Project Manager Beatriz Duran, Project Manager Tamara Berlyavsky and Administrative Engineer Bhaskar Gusani.

METROPOLITAN AVENUE BRIDGE OVER ENGLISH KILLS (BROOKLYN), GRAND STREET BRIDGE OVER NEWTOWN CREEK (BROOKLYN/QUEENS), GREENPOINT AVENUE BRIDGE OVER NEWTOWN CREEK (A.K.A. J. J. BYRNE MEMORIAL BRIDGE (BROOKLYN/QUEENS), PULASKI BRIDGE OVER NEWTOWN CREEK (BROOKLYN/QUEENS), BORDEN AVENUE BRIDGE OVER DUTCH KILLS (QUEENS), HUNTERS POINT AVENUE BRIDGE OVER DUTCH KILLS (QUEENS), UNION STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN), CARROLL STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN), THIRD STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN), NINTH STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN), THIRD AVENUE BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN), MADISON AVENUE BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN), 145TH STREET BRIDGE OVER HARLEM RIVER

ACCOMPLISHMENTS & PLANNED PROJECTS

(BRONX/MANHATTAN), MACOMBS DAM BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN), AND WEST 207TH STREET/WEST FORDHAM ROAD BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN) (A.K.A. UNIVERSITY HEIGHTS BRIDGE) – EMERGENCY CONTRACT

On October 29, 2012, the New York Metropolitan area was impacted by Hurricane Sandy, causing flooding, loss of power and damage to many components of New York City's infrastructure. On October 30, 2012, a site inspection by the Department revealed major damage to the operational portions of these bridges. Specifically, certain electrical and mechanical issues parts had to be repaired or replaced immediately.

Salt water penetrated the electrical and mechanical equipment in the bridges, including but not limited to, motors, electric relays, lock control devices, gates, pier lights, and pumps. It was therefore, necessary to solicit the services of a specialty contractor to perform all necessary repairs.

As the procurement proceeded, the groupings of bridges were changed. The Metropolitan Avenue Bridge was bid separately due to the number of openings. All of the other bridges were bid together.

The Metropolitan Avenue Bridge over the English Kills is located between Queens and Brooklyn and is a double-leaf trunnion bascule that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 450 to 500 times per year for marine traffic, primarily taking barges of fuel oil to a facility south of the bridge. The bridge was subject to heavy flooding.

The Grand Street Bridge over the Newtown Creek is located between Queens and Brooklyn and is a rim-bearing swing bridge that carries two lanes of vehicular traffic and two sidewalks. The bridge opens approximately 3 times per year. The bridge was subject to extreme surge tide.

The Greenpoint Avenue Bridge over Newtown Creek is located in Queens and is a double-leaf trunnion bascule that carries four lanes of vehicular traffic and two sidewalks. The bridge was subject to an extreme surge tide and minor repairs are necessary. The navigation lights on the fender system were flooded.

The Pulaski Bridge over Newtown Creek is located in Queens and is a double leaf trunnion bascule that carries four lanes of vehicular traffic and two sidewalks. The bridge was subject to heavy winds. Minor repairs are required to the warning gate arms damaged during storm.

The Borden Avenue Bridge over Newtown Creek is located in Queens and is a single-leaf retractile span that carries two lanes of vehicular traffic and two sidewalks. The bridge and its mechanical and electrical systems were subject to heavy flooding.

The Hunters Point Avenue Bridge over the Dutch Kills is located in Queens and is a single-leaf rolling bascule bridge that carries two lanes of vehicular traffic and two sidewalks. The bridge was subject to heavy flooding as well as high winds. The warning gate arm was damaged due to high winds.

The Union Street Bridge over the Gowanus Canal is located in Brooklyn and is a double leaf rolling bascule that carries two lanes of vehicular traffic and two sidewalks. The bridge opens approximately 36 times per year. The bridge was subject to heavy flooding.

The Carroll Street Bridge over the Gowanus Canal is located in Brooklyn and is a single-leaf retractile span that carries one lane of vehicular traffic and two sidewalks. The bridge opens approximately 95 times per year. The bridge and its mechanical and electrical systems were subject to heavy flooding which resulted in extensive damage.

The Third Street Bridge over the Gowanus Canal is located in Brooklyn and is a double-leaf rolling bascule that carries two lanes of vehicular traffic along with two sidewalks. The bridge and its mechanical and electrical systems were subject to heavy flooding.

The Ninth Street Bridge over Gowanus Canal is located in Brooklyn and is a tower-drive vertical lift bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens

ACCOMPLISHMENTS & PLANNED PROJECTS

approximately 600 times per year. The bridge and portions of its mechanical and electrical systems were subject to minor flooding.

The Third Avenue Bridge over the Harlem River bridge is located between Manhattan and the Bronx and is a center-bearing swing bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 4 times per year. The bridge was subject to flooding of the land on either side of bridge as well as the center pivot fender system.

The Madison Avenue Bridge over the Harlem River is located between Manhattan and the Bronx and is a rim-bearing swing bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 6 times per year. The bridge was subject to flooding of the land on either side of bridge as well as the center pivot fender system.

The 145th Street Bridge over the Harlem River is located between Manhattan and the Bronx and is a rim-bearing swing bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 6 times per year. The bridge center pivot pier was subject to an excessive high tide.

The Macombs Dam Bridge over the Harlem River is located between Manhattan and the Bronx and is a rim bearing swing bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 20 times per year. The bridge was subject to an extreme surge tide, and the center pivot pier and fender were flooded.

The West 207th Street (University Heights) Bridge over the Harlem River is located between Manhattan and the Bronx and is a rim-bearing swing bridge that carries four lanes of vehicular traffic and two sidewalks. The bridge opens approximately 23 times per year. The bridge was subject to an extreme surge tide and the center pivot pier and fender were subject to flooding. The traffic signal assembly was subject to high winds and was damaged.

The level of repair varies from bridge to bridge. In general, the work entails the rehabilitation of the mechanical and electrical systems that are used to operate the movable spans, provide navigational lighting to guide mariners in the waterway and provide vehicular traffic control when a bridge opening is necessary.

Common to all the bridges will be the need for the maintenance and protection of traffic. This shall primarily consist of daily temporary lane or shoulder closures to allow contractor access to the bridge for material delivery and equipment usage. For the structures that have extensive damage to the electrical system, full roadway closures will be performed to allow the operating systems to be tested. This will be done at night and occur over a period of evenings. On bridges that have sidewalks, at least one walkway will be maintained through the contract.

Also common to all the bridges will be the local removal of hazardous or asbestos containing materials. Areas where suspect materials that may contain lead, PCB and/or asbestos have been identified based on visual inspection. Testing will be performed as part of the contract prior to the start of work to confirm their presence. This will include PCB caulking, lead paint and/or asbestos containing material in various components. If testing proves their presence exists, abatement will be done before repairs occur to the mechanical and electrical systems.

These bridges provide a necessary service in compliance with federal law which requires that the bridges be operational for marine traffic. It is critical that the repair work be performed as expeditiously as possible.

On November 20, 2012, 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 these 15 movable bridges in the Bronx, Brooklyn, Manhattan, and Queens.

As of May 28, 2013, all Hurricane Sandy-related damages on the Pulaski Bridge and Greenpoint Avenue Bridge were repaired by the in-house bridge maintenance group. As such, these two bridges will now be eliminated from the first group of bridges, leaving only the Metropolitan Bridge in this category.

ACCOMPLISHMENTS & PLANNED PROJECTS

A Letter of Intent for the emergency repairs of the Metropolitan Avenue Bridge over English Kills (Brooklyn) was issued to the contractor with a start date of June 23, 2014.

The second group of bridges consists of Macombs Dam Bridge over Harlem River (Bronx/Manhattan), 145th Street Bridge over Harlem River (Bronx/Manhattan), Third Avenue Bridge over Harlem River (Bronx/Manhattan), Madison Avenue Bridge over Harlem River (Bronx/Manhattan), Hunters Point Avenue Bridge over Dutch Kills (Queens), Carroll Street Bridge over Gowanus Canal (Brooklyn), Ninth Street Bridge over Gowanus Canal (Brooklyn), Third Street Bridge over Gowanus Canal (Brooklyn), Union Street Bridge over Gowanus Canal (Brooklyn), West 207th Street/West Fordham Road Bridge over Harlem River (Bronx/Manhattan), Borden Avenue Bridge over Dutch Kills (Queens), and Grand Street Bridge over Newtown Creek (Brooklyn/Queens). A Letter of Intent for the emergency repairs of the second group of bridges was issued to the contractor with a start date of December 15, 2014..

As of the end of April 2015, all Hurricane Sandy-related damages on the Union Street and Third Street Bridges are expected to be repaired by the in-house bridge maintenance group. As such, contract work on these two bridges will be eliminated from the second group of bridges.

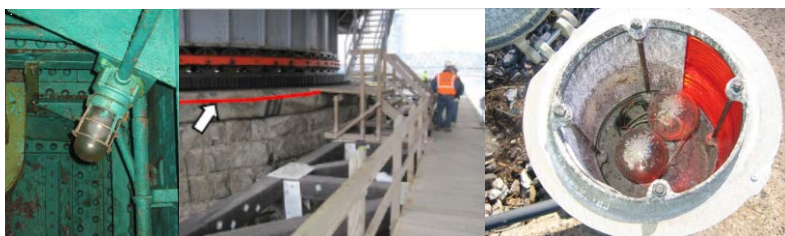
The project is being funded by the Federal Highway Administration (FHWA) and the Federal Emergency Management Agency (FEMA). The work on all twelve bridges will be performed under a single construction contract with an overall contract duration of 36 months.



Inspection in Late 2012: East End of the West 207th Street Bridge - Missing Traffic Signal was Knocked Down by the Hurricane Winds. Borden Avenue Bridge Operator's House Basement Level - Depicted Flood Line was Approximately 5 Feet Above the Floor. Third Street Bridge - Northwest Channel Light Missing. Ninth Street Bridge - Manually Pulling the Cable Reel Because the Motor Failed.



Inspection in Late 2012: Carroll Street Bridge - Navigational Fixtures on North Side of Span - Only the Center Span Fixture was Operational. Grand Street Bridge - Standing Water in the Access Light Fixture at the East Wedge Walkway. Typical impact damage to pier light.



Inspection in Late 2012: Grand Street Bridge - Standing Water in the Access Light Fixture at the East Wedge Walkway. Union Street Bridge - Standing Water in East Span Maintenance Light. Madison Avenue Bridge - General View of Fender and Center Pier—the Red Line Depicts the Approximate Water Level. Macombs Dam Bridge - Pier Lighting Fixture with Cover Removed - Silt Deposit on Lamp Tops, and Corrosion on the Fixture Frame.

ACCOMPLISHMENTS & PLANNED 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 2014, the number of openings declined further to a total of only 210 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2013, the Mill Basin Bridge carried 148,084 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 2014, on a New York State-mandated scale from 1 to 7, this bridge had a condition rating of 3.269, 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.

The replacement will be a 2,645-foot long, 17 span, 60-foot high fixed bridge. It will consist of a steel composite superstructure and reinforced concrete substructure on piled footings, and will be constructed on a new alignment set on the north side of the existing bridge and partially overlapping with the existing bridge. The new bridge and approach will have three 12-foot wide traffic lanes, a 12-foot wide right shoulder on the bridge, a 10-foot wide right shoulder on the approaches, and a minimum 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 vertical 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. The reconstruction of the Mill Basin Bridge (part of the second Belt Parkway Group) is scheduled to start in summer 2015, and to last approximately 4 years.

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 2013, the bridge carried 35,462 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

ACCOMPLISHMENTS & PLANNED PROJECTS

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 – West and East Elevations. (Credit: Bhaskar Gusani)

The bridge underwent a protective coating project to protect the steel components of the bridge against the effects of corrosion. This project was completed in October 2003 at a cost of approximately \$8.7 million.

The bridge also underwent a 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 July 2017. The project's scope of work includes a major rehabilitation of the roadway deck, superstructure steel and substructure elements of the vertical lift span, as well as the approach spans. It will also include the replacement and rehabilitation of the electrical and mechanical components of the vertical lift span, as well as replacement of the existing fender system with a new larger and stronger one. Construction is expected to be complete in July 2020.

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

A bridge has been located in this location since the late 19th century: the original swing-type bridge was built around 1872, replaced by a new double-leaf bascule bridge in 1918. The current double-leaf trunnion bascule bridge was built in 1953, and underwent major modifications in 1971, including the demolition of the north side of the bridge, to allow for the construction of the overhead Bruckner Expressway. The approach roadways, ramp structures, and south bascule span were altered accordingly to accommodate two way traffic.

The Unionport Bridge lies in the midst of the Bruckner Expressway (I-278) interchange which is comprised of the Bruckner Expressway (I-278), the Cross Bronx Expressway (I-95) and the Hutchinson River Parkway. Along with providing a connection to the Bruckner Interchange and Cross Bronx Expressway, the Unionport Bridge also connects the local streets including Brush Avenue, east of the bridge, and Zerega Avenue, west of the bridge. It is an important link between the Unionport section and Schuylerville sections of the Bronx. This 17-span structure (three waterway spans and fourteen concrete approach spans) carries five lanes of the Bruckner Boulevard Expressway service road traffic over Westchester Creek. This bridge opens for important fuel oil deliveries up to 300 times a year. The bascule span open deck grating and grating support channels were all replaced by Division staff during the late part of 1997 and early part of 1998. In 2013, the bridge carried 61,892 vehicles per day.

ACCOMPLISHMENTS & PLANNED PROJECTS



Unionport Bridge in 1953 and 2009.



Existing Bridge - Looking North. Looking South.

The project is in its final design phase for the replacement of the existing bridge with a new wider 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 shoulders on both sides of the bridge; a new 12-foot bicycle/pedestrian path and a 8-foot sidewalk, separated from traffic with a barrier; replacement of the existing mechanical and electrical systems for the bascule span; reconstruction of the bridge operator and control houses, and replacement of the existing fender system, drainage system, street lighting, traffic signal facilities, and gates. Construction is anticipated to start in fall 2016.



Proposed Twin Single Leaf Bascule (Looking North). Proposed Control House.



Looking West – Towards Current And Proposed Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS



Looking East – Towards Current And Proposed Bridge.

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

The Macombs Dam Bridge, which has one of the longest swing spans in the world, was opened in 1895, and was designated a City landmark in 1992. The bridge and the West 155th Street Viaduct carry two lanes of traffic in each direction. In 2013, the bridge carried 38,930 vehicles per day. The \$145 million reconstruction of this landmark bridge, which was completed in May 2007, included the West 155th Street viaduct, the west approach plaza over the Harlem River Drive and Seventh Avenue, the swing span over the Harlem River, the deck and camelback trusses over Metro-North Railroad and Conrail, the Major Deegan interchange (consisting of the east approach and four ramps), and the Jerome Avenue viaduct. The rehabilitation work not only strengthened the structure, it returned the bridge's appearance to its turn of the century grandeur.

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



Close-up of the 1894 Dedication Plaque. (Credit: Hani Faouri)
Bridge With View of Yankee Stadium. West Approach to Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS

A new project will rehabilitate the West 155th Street Viaduct and the fender system. The viaduct serves as the western approach to the bridge in Manhattan and provides connections to West 155th Street, Macombs Place, and Adam Clayton Powell Jr. Boulevard. The scope of work includes replacement of columns, floorbeams, girder ends, bearings, expansion deck joints above floorbeams, cross frames and lateral bracings, and the ornamental brackets. The existing swing span fender is misaligned with the swing span in open position, and the timber cribbing is under attack by marine borers which could lead to the failure of the timber cribbing and the collapse of the stone fill. The project's scope of work includes installing formwork around the perimeter of the existing fender, filling the voids in the fender sand-cement grout, bonding the existing timber and rock into one solid mass, and constructing a fender extension on the northeast corner. In addition, in connection with the fender repair, the work activities will include removal of debris located on the river bottom in the channels adjacent to the swing spans. The debris piles pose potential hazards to navigation. The rehabilitation project is currently scheduled to start in summer 2015 and end in fall 2017.



Aerial View. West 155th Street Viaduct. The Timber Fender.

MADISON AVENUE BRIDGE OVER HARLEM RIVER (BRONX/MANHATTAN)

A project for electrical, mechanical, and miscellaneous operating system-related work is scheduled to be performed between March 2017 and September 2018. The bridge is currently operating with the very old machinery components, along with a temporary electrical system known as the "Interim Drive System" installed during the 1994 rehabilitation contract. Some of the machinery components currently in service are over 100 years old and have far exceeded their service life. Moreover, the bridge does not have any back-up operating system which renders the bridge inoperable in case of failure of any component of the Interim Drive System. The preliminary design phase of this project began in early 2011. In 2013, the bridge carried 47,046 vehicles per day.

ACCOMPLISHMENTS & PLANNED PROJECTS



Madison Avenue Bridge Sign in 2007. (Credit: Duane Bailey-Castro) Bridge in 2009. (Credit: Bernard Ente) General View of Truss Swinging in 2010 and Right Elevation of Span 15 in 2012. (Credit: NYSDOT)

PARK AVENUE TUNNEL OVER 34TH STREET (MANHATTAN)

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

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

Some rehabilitation work was completed on the tunnel in November 2005. That contract included the rehabilitation of the fans and the ventilation system. The new project is currently in its final engineering design phase. The scope of work includes complete rehabilitation of civil and structural components of the tunnel. It will also include safety improvements at the East 33rd, 34th, and 39th Street intersections. Construction is expected to start in May 2016 and be complete in May 2018.

ACCOMPLISHMENTS & PLANNED PROJECTS



Two Views of Park Avenue Tunnel in 2010. Abutment Beginning. Underside of South Arch. (Credit: NYSDOT)

SHORE ROAD BRIDGE OVER THE HUTCHINSON RIVER (BRONX)

This bridge, built in 1908, was originally called the Pelham Parkway Bridge over Eastchester Bay. The existing bridge consists of a double leaf, rolling lift bascule span, flanked on each end by three earth filled concrete spandrel arch approach spans. The bridge is 864 feet in length. It carries two traffic lanes in each direction, and a sidewalk on its south side. The existing bascule leaves at mid-span consist of steel grating deck which is concrete filled over the machinery portion of the structure. In 2013, the bridge carried 18,330 vehicles per day. The \$5 million interim rehabilitation of the existing bridge superstructure and substructure enables the Department to keep it operational while a new bridge is being designed and built adjacent to the existing bridge. The existing bridge will be demolished once the new bridge is in service. The rehabilitation project began in April 2001, and all traffic lanes were reopened to traffic on April 24, 2002, three days earlier than scheduled. The interim rehabilitation of this bridge was substantially completed on June 17, 2002.

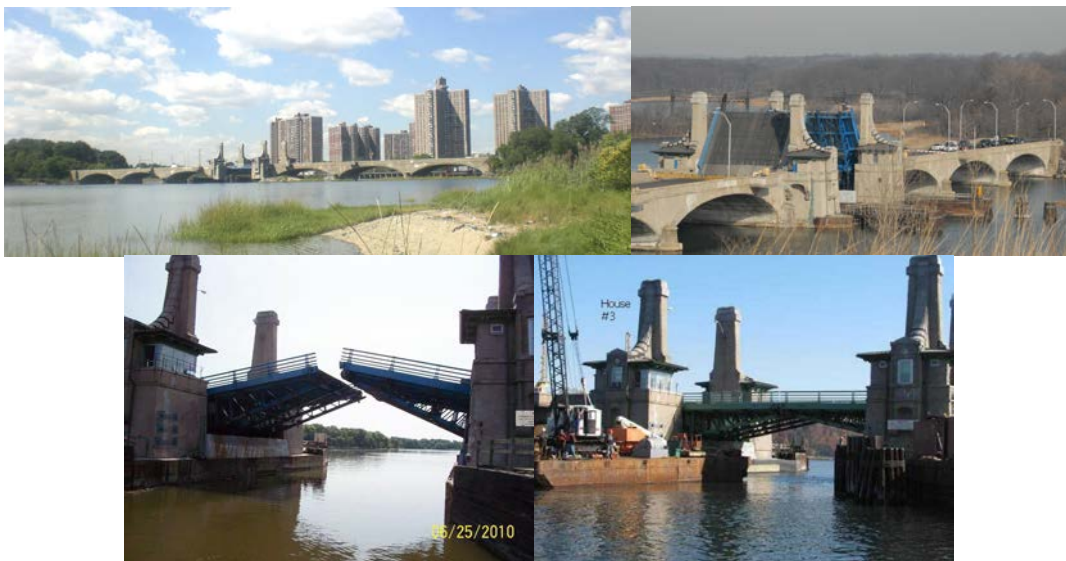


Shore Bridge in 2007. (Credit: Peter Basich)

A new mid-level movable bridge will be designed. It will be constructed on an offline alignment parallel to the existing bridge, with a wider navigation channel, and incorporate a raised profile to effectively increase the vertical clearance above the navigation channel of the main span. In its closed position, the main span will have a vertical clearance above mean high water of

ACCOMPLISHMENTS & PLANNED PROJECTS

approximately 35 feet. This clearance will accommodate 83% of marine vessels passing beneath. For taller vessels, the bridge will be drawn to its open position providing the required vertical clearance. With a longer main span than the existing structure, the mid-level bridge will offer a widened navigation channel as well as improved lateral clearance to the structure. These improvements are expected to lessen the likelihood of vessel damage to the fender system and the substructure when compared to the existing structure configuration. The increased vertical clearance above the navigation channel would also reduce wear on the bridge's mechanical and electrical components by decreasing the frequency of bascule openings and closings. The scope of work will include a complete replacement of the bascule, flanking and approach spans (superstructures and substructures) with a new widened structure that provides two lanes and standard shoulders in each direction, and a dedicated bike path and pedestrian path. There will be a new control house, new utilities, new machinery and electrical system, new fender system and dolphins, and new street lighting. The new design consultant, upon its procurement, will perform the required Environmental Study as required under NEPA. Construction of the proposed bridge is expected to begin in 2020, with the new bridge open to traffic in late 2025.



Open Bridge in 2007. (Open Credit: Peter Basich) Bridge Closing in 2010. (Credit: NYSDOT)
General View of Bridge Operator House #3 in 2011.

UNION STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN)

The original Union Street Bridge over the Gowanus Canal was constructed in 1870 as part of the construction of Prospect Park. A major crossing over the Gowanus Canal, this bridge is the last in a series of five eastbound crossings, and it is 885 feet from the canal's end. The neighborhood, located in the Gowanus section of Brooklyn, is primarily industrial; however, public facilities such as schools, parks, and public transportation are nearby.

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

During the preliminary design, eight alternatives were identified for the rehabilitation of the bridge. The recommended design alternative proposes a replacement of the entire bridge structure with a new single leaf fixed trunnion bascule bridge on a reinforced concrete substructure and new pile foundation. Preliminary plans have been developed. However, during the Value Engineering study in 2009, the team recommended converting the movable span into a low level fixed bridge. OMB in consultation with the Law Department has prepared a draft Legal Agreement "Declaration of Restrictive Covenant" – which includes milestone payments for deed restrictions for the

ACCOMPLISHMENTS & PLANNED PROJECTS

abutting property owners. In the meantime, preliminary plans and final plans will be prepared for interim structural rehab of the bridge. The construction is anticipated to begin around April 2019.



Aerial View of Union Street Bridge. Bridge in 2010. (Credit: NYSDOT)



Union Street Bridge - Schoolchildren Crossing in 2012. (Credit: NYSDOT) 2014: Eleven Steel Plates Covering the Steel Grid Deck.

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

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

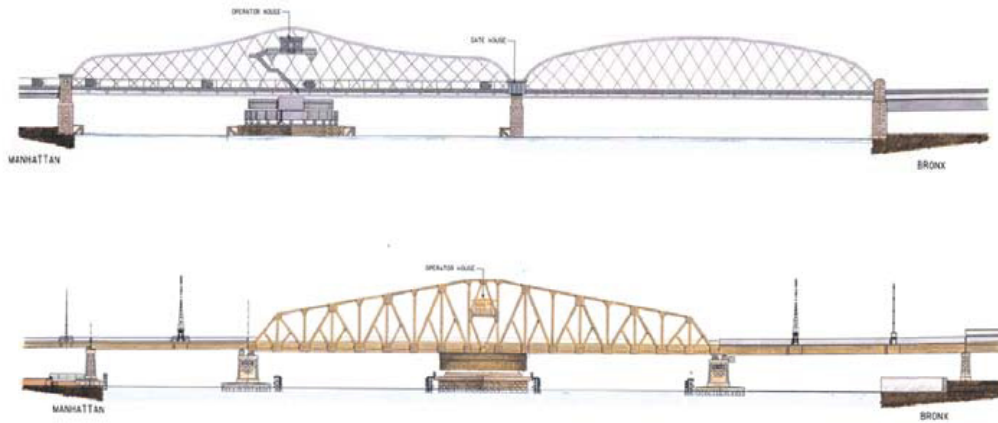
A major hub between the FDR Drive in Manhattan, the Major Deegan Expressway and the Bruckner Boulevard in the Bronx, the Willis Avenue Bridge carried approximately 65,216 vehicles per day in 2013. Ten local and interstate bus lines use the bridge as a principal route from New York City to points throughout 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.

Because of the advanced age and condition of the Willis Avenue Bridge, the City of New York decided to replace the existing bowstring truss swing bridge with a new swing span bridge constructed just to the south of the existing bridge. The project also replaced the FDR Drive approach ramp and the ramp onto Bruckner Boulevard, and improved the alignment. NYCDOT will also reconstruct Willis Avenue over the Major Deegan Expressway for the New York State Department of Transportation. It also included a direct connection to the northbound Major Deegan Expressway in the Bronx with wider travel lanes and shoulders, and a broader, combined pedestrian/bicycle pathway along the north side of the bridge.

The old swing bridge, which opened for tall vessels, had a vertical clearance of 24 feet above Mean High Water Level (MHWL) when closed. The new swing bridge when closed has a 25 foot clearance above the Mean High Water Line which makes it consistent with other bridges along the river. It also incorporated the 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.

ACCOMPLISHMENTS & PLANNED PROJECTS



Old and New Willis Avenue Bridge Span.

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.

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 was 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.

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, was reopened after its reconstruction in June 2012.

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

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

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 was completed. 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

ACCOMPLISHMENTS & PLANNED PROJECTS

the south half of the new bridge were installed. The foundations in the Harlem River Rail Yard were completed and the first phase of the new Bruckner Boulevard exit ramp was also completed.

The contractor began 2010 with construction of the FDR Drive entrance ramp, and the First Avenue Approach on the Manhattan side of the bridge. On the Bronx side, the new Bruckner Boulevard exit ramp was partially opened to traffic on February 12, 2010. The work then proceeded with the demolition of the existing ramp. Assembly of the new swing span along with new machinery and electrical system was continued.

The swing span was floated down the river and towed to the bridge site on July 26, 2010. The new swing span was floated on to the new pier on August 9, 2010.



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

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 2010.

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



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

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

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

In the river, the contractor started removal of the river piers and continues work to complete the demolition of center pier and the west rest pier by blasting. They also worked on the installation of the fender system for the new piers as well as the final alignment of the bridge machinery and

ACCOMPLISHMENTS & PLANNED PROJECTS

testing of the electrical and mechanical system. In the last quarter of 2011, the contractor completed demolition work at pier 10 and carried out blasting of pier 9. Post-blasting excavation continued at Pier 9 for removal of the pier, and fender building work continued in the river. Work also continued for the construction of bridge machinery and testing of the electrical and mechanical systems. Installation of granite continued throughout the project.

In the Bronx, the contractor continued work on the relieving platforms, construction of the remaining superstructure and decks for the spans over the Harlem River Yard and mainline. They also worked on the construction of combined pedestrian/bicycle bridge over the Major Deegan Expressway as well as the new direct ramp to the northbound Major Deegan Expressway.

2012 started with the opening of the ramp to the northbound Major Deegan Expressway as well as the complete opening of the Bruckner Ramp and Bruckner Boulevard. Ramp C, which provides a direct connection to the Major Deegan Expressway, was opened on January 10. The contractor opened the sidewalk to the North Access Road on January 30. Most of the landscaping was done in the spring with some minor work left for the fall. Reconstruction of the 125th Street exit ramp and the 127th Street work was completed and opened to traffic. In the river, fenders for the new piers were completed and testing of electrical, machinery and control system continued. Reconstruction of Willis Avenue between 132nd Street and Bruckner Boulevard was completed and was opened to traffic on September 24, 2012.

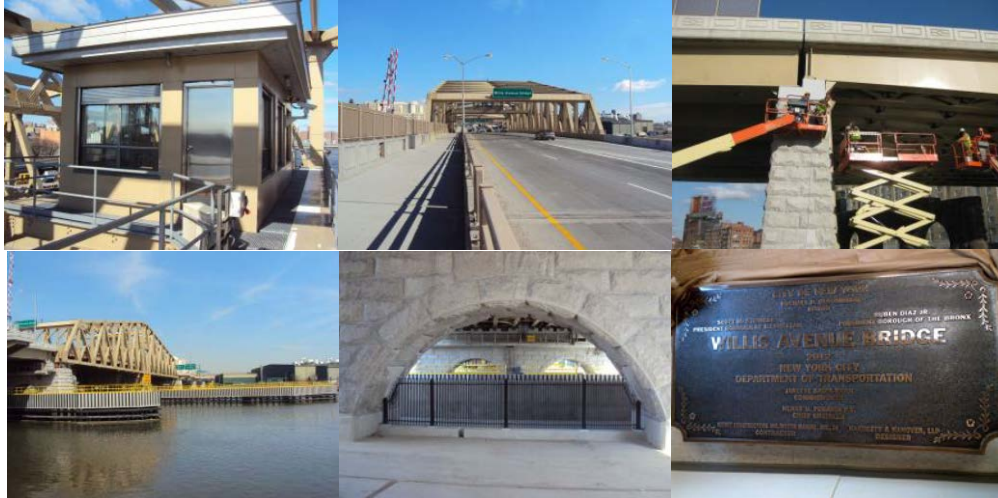
Architectural work at the bridge operator house is near completion. By October 2012, all of the traffic lanes and shoulders throughout the project were completed with final pavement markings. The pedestrian bridge over the Major Deegan Expressway and the adjacent walkway/bikeway were opened to the public on November 1, 2012.



September 2012: Bridge Fender North Elevation Looking South. Bridge South Elevation Looking North.
Pier 6 South Fender Looking South.

In 2013, the contractor completed granite masonry work in the Bronx, architectural work at the bridge, and landscaping, and began testing of the bridge's electrical and mechanical systems. In addition, all construction work on the Manhattan Ramp and stairs connecting to the waterfront area below was substantially completed in 2013, however, these structures will not be opened to the public until the waterfront area is developed for public use.

ACCOMPLISHMENTS & PLANNED PROJECTS



February 2013: Bridge Operator House. General View Taken From the West Side – Looking East. Pier 11- Continued installation of granite stone retrofit anchors. March 2013: Fenders of the River Piers. Pier 4 Picket Fence. Willis Avenue Bridge Plaque.

In 2014, the contractor continued working on the operating system of the new swing span, and successfully completed 150 test openings (5 openings per night for 30 days) in the Fall. The project is slated for substantial completion in late spring 2015.



Willis Avenue Bridge in 2014.

WILLIS AVENUE GRANITE IN PUBLIC PLAZAS

New York City has a program to encourage public plazas in neighborhoods lacking in open space. The program plays a key role in ensuring that all New Yorkers live within a 10-minute walk of quality open space, as proposed in the PlaNYC 2030. Public plazas improve the quality of life and transform the cityscape by providing spaces where people can sit, socialize, and enjoy public life. During the reconstruction of the Willis Avenue Bridge, more than 7,500 square yards of granite (approximately 5,000 blocks) were removed from the site, mostly excavated from the bridge piers, abutments and gate houses both in Manhattan and the Bronx. These granite slabs have been repurposed as seating in several of the plazas.

In 2014, the slabs were added to the Morrison Avenue Plaza in Soundview and the Douglaston Station Plaza in Queens.

ACCOMPLISHMENTS & PLANNED PROJECTS



Douglaston Station Plaza.

ACCOMPLISHMENTS & PLANNED PROJECTS

Roadway Bridges

INNOVATIONS

Innovations in the design and construction of Roadway Bridges continued in 2014. Where feasible, the continued use of accelerated bridge construction methods helped reduce construction duration and the resulting negative impacts on the traveling public. In addition, the use of Best Management Practices (BMP) in all applicable projects, most notably in stormwater drainage design, will mitigate the impact of bridge projects on the surrounding environment.

BROOKLYN AND MANHATTAN BRIDGES

ATLANTIC AVENUE BRIDGE OVER LIRR – ATLANTIC BRANCH (BROOKLYN)

The Atlantic Avenue Bridge is a 75 span viaduct located between Eastern Parkway and Georgia Avenue in Brooklyn. The bridge carries two traffic lanes each eastbound and westbound, divided by a center median. Two LIRR tracks (of the Atlantic Branch) run under and parallel to the bridge for its entire length. The bridge was built in 1942 by the Transit Commission. The bridge superstructure consists of steel stringers and floor beams. The substructure consists of steel piers and concrete bearing walls founded on spread footings. The Agency replaced the structural deck in 1985 with a new concrete deck slab overlay. Other work completed at that time included steel repairs (column and beam reinforcement), interior and exterior bridge wall repairs, and new drainage scuppers and piping to the service road street level. Between 1999 and 2002, the paint on the structural steel was removed and a spot prime and two paint coats were applied. There are no sidewalks on the bridge. The project will include rehabilitating the deteriorated steel members, concrete abutments and bearing walls; replacing the bridge wearing surface, drainage scuppers, and expansion joints; performing localized concrete deck repairs; and retrofitting the viaduct to meet current seismic requirements. In addition, the action includes the rehabilitation or replacement of the end approach slab and travel lane approach pavement milling and resurfacing as necessary, milling and resurfacing of the adjacent Atlantic Avenue service roads, concrete barrier end terminal improvements, roadway and under bridge lighting repairs, the removal of graffiti, and new reflectorized pavement markings. Construction is expected to begin in early 2017.



Aerial View in 2009. Beginning and End Approaches. Elevation Right – Spans 43 – 44. Elevation Left Spans 38 -43 and Elevation Right Spans 20 – 34. (Credit: NYSDOT) Span 43 South Arch Shows Typical Efflorescence at Mortar Joints of Ring Stones.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

The newly constructed Paerdegat Basin Bridges and the reconstructed Fresh Creek and Rockaway Parkway Bridges are now rated “very good.” On a New York State-mandated scale from 1 to 7, the remaining four of the seven bridges possess a condition rating of “fair” (3.001 – 4.999). In 2014, the Gerritsen Inlet Bridge was 3.418; the Mill Basin Bridge was 3.269; the Bay Ridge Avenue Bridge was 3.625; and the Nostrand Avenue Bridge was 4.264. All are original structures, which were built beginning in 1939. While none of the bridges are in any immediate danger of structural failure, their reconstruction is required in order to maintain mobility and public safety on this vital artery.



The Seven Belt Parkway Bridges.

Reconstruction of the seven bridges and their approaches on the Belt Parkway (over three local streets and four waterways) began in the fall of 2009. Group 1 (Paerdegat Basin, Fresh Creek, and Rockaway Parkway Bridges) were substantially completed in August 2013. Gerritsen Inlet Bridge started in February 2013 and is expected to be complete in summer 2017. Mill Basin Bridge is expected to start in summer 2015, and to be complete in winter 2021. Bay Ridge Avenue Bridge started in November 2013 and is expected to be complete in fall 2015. Nostrand Avenue Bridge is expected to start in Fiscal Year 2022.

During the past 75 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.

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.

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 is in full compliance with New York City Department of Environmental Protection requirements for the initiation of a long-term plan that will increase wetlands, decrease pollution into the bay, and decrease the highway's footprint around the rim of Jamaica Bay. NYCDOT is also working closely with New York City Department of Parks and Recreation, the New York State Department of Environmental Conservation, Gateway National Recreation Area, the US Coast Guard, and the US Army Corps of Engineers to ensure compliance with all environmental protocols.

An upland mitigation project, to be administered by the New York City Department of Parks and Recreation, will include the planting of replacement trees to offset the number of trees being removed during the course of the bridge replacement project. The number of trees that will be planted will be determined in accordance with the caliper rule for tree replacement.

In addition to mitigating environmental impacts along the Belt Parkway corridor, an off-site Tidal Wetland Mitigation project was performed. A Notice to Proceed was issued to the contractor with a start date of March 8, 2011. The plan focused 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 was cleaned of rubbish and debris and converted to tidal wetland area. The project was substantially completed during 2012.

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

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

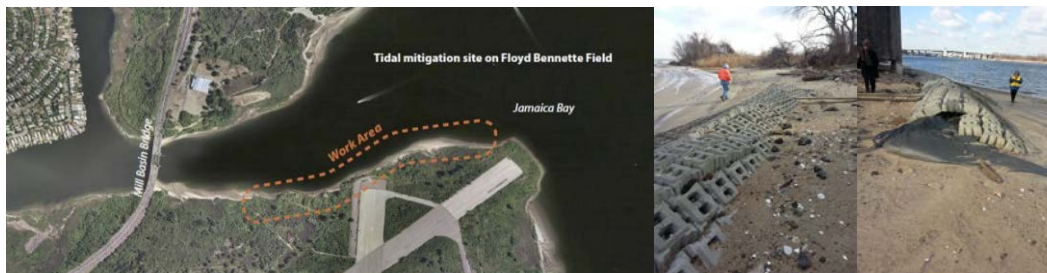
Planting at the intertidal wetland and the high marsh zones was completed in summer 2011. The installation of cabled concrete erosion control revetment was started in June 2011 and completed in July 2011. In fall 2012, all replacement and final upland tree plantings were completed. Monitoring of the wetland mitigation project, as mandated by the New York State Department of Environmental Conservation, is expected to be complete in early 2017.

On October 29, 2012, Hurricane Sandy impacted the east coast and caused major damage. A survey after the storm discovered severe plant and revetment damage at the contract site. The established site grades were overwhelmed by the storm surge, ground protection and slope stabilization measures were displaced, and the plantings were uprooted and washed away. The National Park Service put the worksite off limits while Hurricane Sandy cleanup operations were in progress. A site inspection was held in the winter of 2013, and again in the summer of 2014. The contractor was asked to furnish a cost proposal to restore the plantings within the site. It is anticipated that approximately 22,000 intertidal wetland plants (*Spartina Alterniflora*) will be re-established during the spring 2015 planting season.

In June 2011, the contractor was directed to perform Bergen Beach Wetland Mitigation of 1.4 acres for the work associated with outfalls at the Paerdegat and Rockaway bridges, the temporary trestles at Paerdegat Bridge, and the temporary bridge at Fresh Creek. Later, the Agency decided to increase the mitigated wetland area to 3.6 acres at the Bergen Beach site. The additional acreage will be used to offset future impacts on upcoming Belt Parkway bridge projects. The Bergen Beach mitigation work was completed in two phases. The first phase of 1.4 acres was started in the first week of June 2013. By the end of June 2013, grading was completed. Planting started on July 9, 2013, and was completed by the end of the month. The

ACCOMPLISHMENTS & PLANNED PROJECTS

second phase grading started in mid-September 2013, and was completed on November 13, 2013. The planting was completed in the spring and fall planting seasons of 2014, and will be monitored for five years in accordance with the requirements of the New York State Department of Environmental Conservation.



Tidal Wetland Mitigation Site. Inspecting the Hurricane Sandy Damage at the Site in January 2013.



July 2013: Phase I Planting at the Bergen Beach Mitigation Area. August 2014: Grass Plantings Protected by Waterfowl Exclusion Fence. Placing the Plantings. Fence in October 2014.

The old Paerdegat Basin Bridge was 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 had 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 were demolished and replaced by two new bridges and new approach roadways on split alignments. The existing structure was permanently closed to traffic on December 20, 2012, upon opening of the new westbound structure. Demolition of the existing structure was completed in May 2013.

The two replacement bridges consist of 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 have a 36-foot wide roadway with a 12-foot wide right shoulder. The eastbound bridge has a 4-foot wide left shoulder, while the westbound bridge has a 10-foot wide left shoulder. The southern structure carries eastbound traffic while the northern structure accommodates westbound traffic. Both the horizontal and vertical alignments changed resulting in improved sight distances on the bridge and its approach roadways. The bridge carrying eastbound traffic also has a dedicated pedestrian/ bicycle path along the south side. The pedestrian/bicycle path is separated from traffic lanes by a concrete barrier on the bridge, and by a 15-foot wide grass mall on the approach roadways.

ACCOMPLISHMENTS & PLANNED PROJECTS



Old Paerdegat Basin Bridge. New Bridges in November 2013.

The Fresh Creek Bridge was 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 crossed under the bridge. The bridge had 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 were demolished in spring 2012, and the replacement structure was fully opened in August 2013.

The replacement bridge is a 316-foot, 3 span structure; the new structure has only two support piers, resulting in a wider channel. The bridge deck and approaches were widened to 126 feet from the former 86 feet to accommodate three 12-foot lanes in each direction, 12-foot wide right 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 remainder of the construction resulted in improved landscaping on the bridge approaches. The existing pedestrian and bicycle pathway were maintained and open at all times during construction.



Old Fresh Creek Bridge. New Bridge in November 2013. (2002 Credit: NYSDOT)

The Rockaway Parkway Bridge was 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 had 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 were demolished in fall 2012, and the replacement structure was fully opened in August 2013.

ACCOMPLISHMENTS & PLANNED PROJECTS

The replacement bridge is a single span structure to improve visibility along Rockaway Parkway. The new structure was built in the same alignment as the existing bridge. The bridge deck was widened to 109 ½ feet from the former 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 on each approach is 10 feet wide (while the width of the right shoulders on the bridge structure are 12 feet), with the other dimensions the same width as those on the bridge. In addition to reconstruction of the bridge, four access ramps were also reconstructed as was Rockaway Parkway in the vicinity of the Belt Parkway.



Old Rockaway Parkway Bridge. New Bridge in November 2013. (2002 Credit: NYSDOT)

A Notice to Proceed for the reconstruction of the Group 1 bridges was issued to the contractor with a start date of October 26, 2009. Milestone A consisted 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 provided for an incentive of \$35,000 per day for each day that milestone A was finished early, with a maximum incentive of \$14.98 million. There was a similar disincentive if the milestone date were to be exceeded, with no maximum. By reaching substantial completion on August 22, 2013, the contractor earned the maximum incentive. On December 12, 2013, the project was awarded the Excellence in Partnering Award for Informal Partnering from the AGC of New York State, LLC.



August and September 2014: Erosion Control at the Eastbound Paerdegat Bridge. Placing Fabric and Hydro-Seeding Under the Bridge. November 2014: Tub Girder Touchup Painting. October 2014: Bike Symbols on the Bicycle/Pedestrian Path East of Rockaway Circle. Three Rail Wood Fence. Associate Staff Analyst Kim Mulcahy, Civil Engineering Intern Jessica Wang, and Civil Engineer Reza Sharif at the Final Landscaping Inspection in November 2014.

ACCOMPLISHMENTS & PLANNED PROJECTS



Summer 2014: Paerdegat, Fresh Creek, and Rockaway Parkway Bridges.

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. A Notice to Proceed was issued to the contractor with a start date of February 25, 2013.

Construction operations performed in spring 2013 included the installation of temporary concrete barriers as part of the Stage 1 maintenance and protection of traffic; the installation of construction fences and tree protection; clearing and grubbing along the north side of the parkway including the removal of existing trees as specified in the contract; and the installation of soil stabilization and erosion control measures. As the summer and Stage 1 progressed, the contractor installed earth embankments for the new eastbound and westbound approach roadways; installed new drainage structures and pipe; and repaired bridge flags on the existing bridge structure. In the fall, the Stage I abutment piles and footings were constructed, as were the two deep foundation cofferdams for the new water piers. The pier pile installation work was completed in December 2013, in advance of the substructure work, including the pier footings, plinths, columns and pier caps.

ACCOMPLISHMENTS & PLANNED PROJECTS

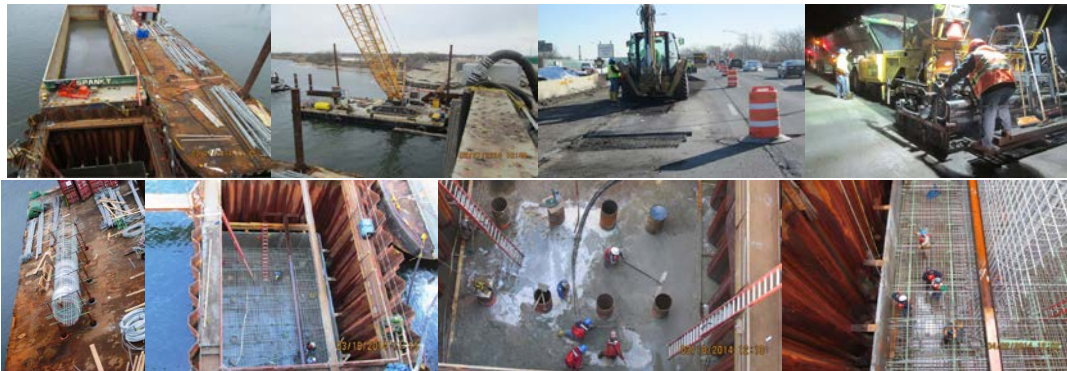


Gerritsen Inlet Bridge in 2013. Proposed Gerritsen Inlet Bridge.



June 2013: North Side of Gerritsen Bridge - Turbidity Curtains Placed on Both Sides of Navigable Channel. July 2013: Work Barges Driving Steel Sheet Piling for Pier #1 Cofferdam. September 2013: October 2013: Rebars and Form Work for Footing and Walls at the Northwest Abutment. Stage 1 Piles. November 2013: Inspecting Rebar. December 2013: Tremie Concrete Pour at Pier #2. Inspecting Spans 7 & 8 of the Existing Bridge From a Barge. (Inspection Credit: NYSDOT)

In 2014, the contractor completed all of the Stage 1 (north side) substructure work, including the placement of the concrete piers and abutments. Fabrication of structural steel is ongoing and is scheduled to be completed in early 2015, followed by the placement of the concrete bridge deck. The Stage 1 concrete approach roadways on the north side of the project were also completed in 2014, as were the temporary asphalt transition areas on the approaches. In spring 2015, it is anticipated that the contractor will transition to Stage 2 and move all traffic to the new northern section of the bridge. Stage 2 work to be completed in 2015 includes all foundation and substructure concrete operations, as well as the installation of structural steel and the concrete bridge deck.



February 2014: Dewatering Cofferdam at Pier No. 1. A Work Barge With Pile Rebar Cages is Moored at Right. Crawler Crane on Work Barge at Pier No. 2 Cofferdam on North Side. Temporary Spud Piles That Anchor Work Barges are Visible. Pavement Repair Operation on Eastbound Belt Parkway West of the Bridge – Pavement Prepared to Receive Hot Mix Asphalt. Asphalt Paving Machine Placing Hot Mix Asphalt on Eastbound Belt Parkway Right lane, West Side. March 2014: Galvanized Steel Rebar Cage in Fabrication on

ACCOMPLISHMENTS & PLANNED PROJECTS

Work Barge for Pier Reinforcement. Setting Footing Rebars Prior to Placing Pier Rebars and Concrete at Pier No. 2. Finishing the Tremie Concrete Inside Cofferdam at Pier No. 1. April 2014: Setting Rebars for Footing and Pier Inside Cofferdam at Pier #1.



May 2014: Placing and Finishing the Portland Cement Concrete Pavement on Grade at Westbound Approach to the Gerritsen Inlet Bridge. Plinth and Column Reinforcement Inside the Cofferdam for Pier 2. June 2014: Placing and Vibrating Concrete for Plinth at Pier #1. Rebars for Column in Place. West Abutment of Bridge. New Roadway Under Construction at top Next to Westbound Lanes. East Abutment of Bridge. Crane on Barge at Cofferdam for New Pier #2. July 2014: Finishing Plastic Concrete for Pedestal at Pier #1 Cap Beam. Placing PCC Pavement at East Approach. Finishing PCC Pavement Around Catch Basin at East Approach. Spreading Hot Mix Asphalt on Belt Parkway East Side of Bridge.



August 2014: Workers Inside Rebar Cage During Operation of Pumping Concrete Into Pier #2 Column. Placing and Finishing PCC Pavement at West Approach. Span 6 Right Fascia. (Span 6 Credit: NYSDOT) November 2014: Steel Sheetting in Place for the East Approach Temporary Access Roadway.

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 2014, the number of openings declined further to a total of only 210 openings.

In addition, significant and costly traffic congestion results from the operation of this outmoded drawbridge. In 2013, the Mill Basin Bridge carried 148,084 vehicles per day. The average opening and closing time for the bridge (and others like it) is ten minutes. Thus, this structure's operation has a negative and significant effect on the efficiency of New York City's vehicular traffic flow.

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

The replacement will be a 2,645-foot long, 17 span, 60-foot high fixed bridge. It will consist of a steel composite superstructure and reinforced concrete substructure on piled footings, and will be constructed on a new alignment set on the north side of the existing bridge and partially overlapping with the existing bridge. The new bridge and approach will have three 12-foot wide

ACCOMPLISHMENTS & PLANNED PROJECTS

traffic lanes, a 12-foot wide right shoulder on the bridge, a 10-foot wide right shoulder on the approaches, and a minimum 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 vertical clearance over Mean High Water, obviating the need for opening and closing the structure to accommodate tall vessels. 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. The contract will be completed in four stages of work (including two additional sub-stages) and will maintain three lanes of vehicular traffic in each direction, as well as pedestrian and bicycle traffic during all construction stages. Construction is expected to begin in the summer of 2015 and last for 4 ½ years, including demolition of the existing bridge.



Current Belt Parkway Bridge Over Mill Basin. Aerial Views. Proposed Bridge. Open Bridge.



May 2013 – Inspecting the Bridge From a Barge. Freshwater and Tidal Wetland Mitigation Sites.

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. There is pedestrian access under the bridge to both the American Veterans Memorial Pier and the Shore Parkway Seawall pedestrian and bicycle paths. The underpass is also access to the NYCDEP Owl's Head Wastewater Treatment Plant. The existing superstructure will be demolished and replaced.

The replacement bridge superstructure will consist of precast, 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 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. A Notice to Proceed was issued to the contractor with a start date of November 4, 2013. The only construction operations performed in fall 2013 were the survey and stake out of the project.

ACCOMPLISHMENTS & PLANNED PROJECTS



Bay Ridge Avenue Bridge in 2012. (Credit: NYSDOT) Proposed Bay Ridge Avenue Bridge. Current Aerial View.

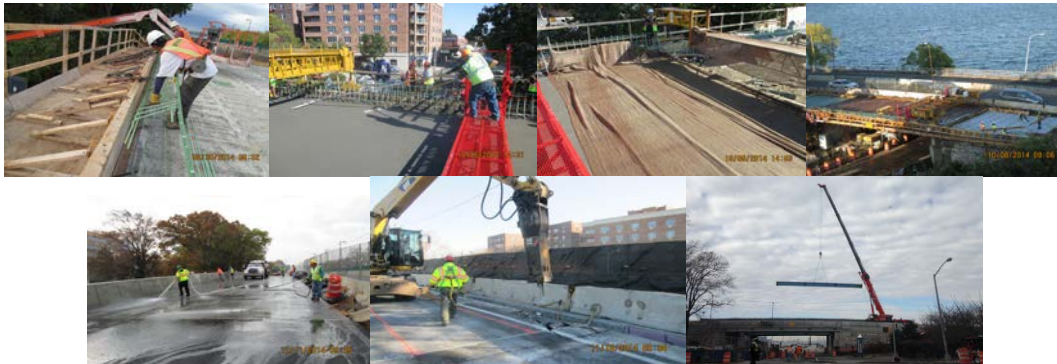
During 2014, two of the five construction stages were completed and commencement of the third stage was underway as of November. Work completed during this time included temporary deck reconstruction and flag repairs. Permanent reconstruction included the new concrete bridge barriers along the westbound roadway and new pre-stressed concrete box beams, superstructure slab, pavements, pressure relief joints, approach slabs and upper abutment stem wall reconstruction for the westbound segment of the new bridge and approaches.



March 2014: Rebar Cage. April 2014: Workers Cleaning out Catch Basins Using a High Pressure Water Hose and Vacuum Pipe for Debris Removal. Pavement Breakers used to Demolish the Existing Bridge Deck During Preparation for Stage I MPT. May 2014: Temporary Deck Repair of Eastbound Roadway Using Steel Plates. Placing and Compacting Hot Asphalt Over Steel Plate Deck Repair at Eastbound Bridge. May 2014: Core Sampling.



June 2014: Stage II Deck Removal of Westbound Bridge Deck. Veteran's Memorial Pier at Top. July 2014: Saw Cutting the Existing Northwest Abutment. Setting Rebars at the Northwest Abutment. August 2014: Lowering the Last of the Seven Pre-cast Concrete Box Beams on the North Side Abutments.



ACCOMPLISHMENTS & PLANNED PROJECTS

September 2014: Placing Rebars for the North Parapet. October 2014: Floating the Deck Concrete at the Bridge Facing North. Placing Burlap on the Concrete Deck for Wet Cure. Covering the Approach Slab Concrete at the West Side of the Bridge. The Main Bridge Deck Undergoing Wet Cure. November 2014: Washing the New Westbound Concrete Deck Prior to the Placement of the Temporary Barrier at Left Side Before Stage III Traffic Shift. Facing East. Demolition of the Saw Cut Westbound Bridge Deck During Stage III. December 2014: Removing Steel Stringer During Stage III. Facing South.

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. Reconstruction is anticipated to start in 2021. The condition rating of this bridge is better than the other remaining bridges in this program; rescheduling will not negatively impact the bridge users.



Nostrand Avenue Bridge Right Girder in November 2012. Left and Right Elevations in 2014.
(2014 Credit: NYSDOT)

HENRY HUDSON PARKWAY OVER 72ND STREET TO WEST 82ND STREET AND OVER WEST 94TH TO WEST 98TH STREET (MANHATTAN)

The viaduct was originally constructed in 1937. Since then, several rehabilitation projects were performed, including deck replacement and structural steel repair at various locations. The reconstruction project will consist of repairs of the deck and steel elements of the viaduct superstructure in ten spans from West 72nd Street to West 82nd Street, and four spans from West 94th Street to West 98th Street. The deck repairs will include top pavement replacement, concrete barrier repairs and deck joints replacement. The steel repairs will include installation of reinforcements to the deteriorated girders, columns, connections and bearings. The deck top work will be performed in stages to minimize the parkway closures. Construction is expected to begin in mid-2017.



Aerial View of the Viaduct.

ACCOMPLISHMENTS & PLANNED PROJECTS

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

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

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

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

The project to reconstruct the bridge has been suspended until such time as Parks 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 Span 2 Pier 1 End Face in 2013. View of Bridge in 2012. End Approach in May 2011: The Bridge is Closed to Vehicular Traffic. The Left Half of the Bridge is Closed to Pedestrians. (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.

ACCOMPLISHMENTS & PLANNED PROJECTS



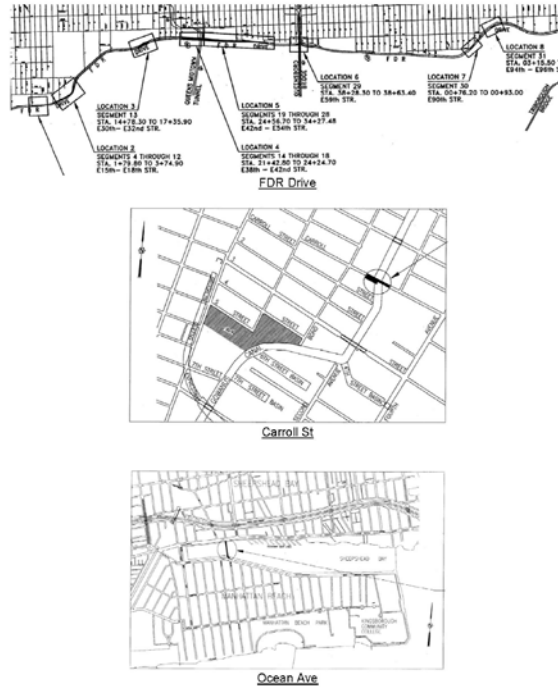
Marine Borer – Limnoria Species (the Common “Gribble,” a Genus of Crustacea Borers). Marine Borer – Teredo Species (a Genus of Molluscan Borers, Commonly Called the “Shipworm”). Teredo Damage (Holes up to ¼” Diameter).



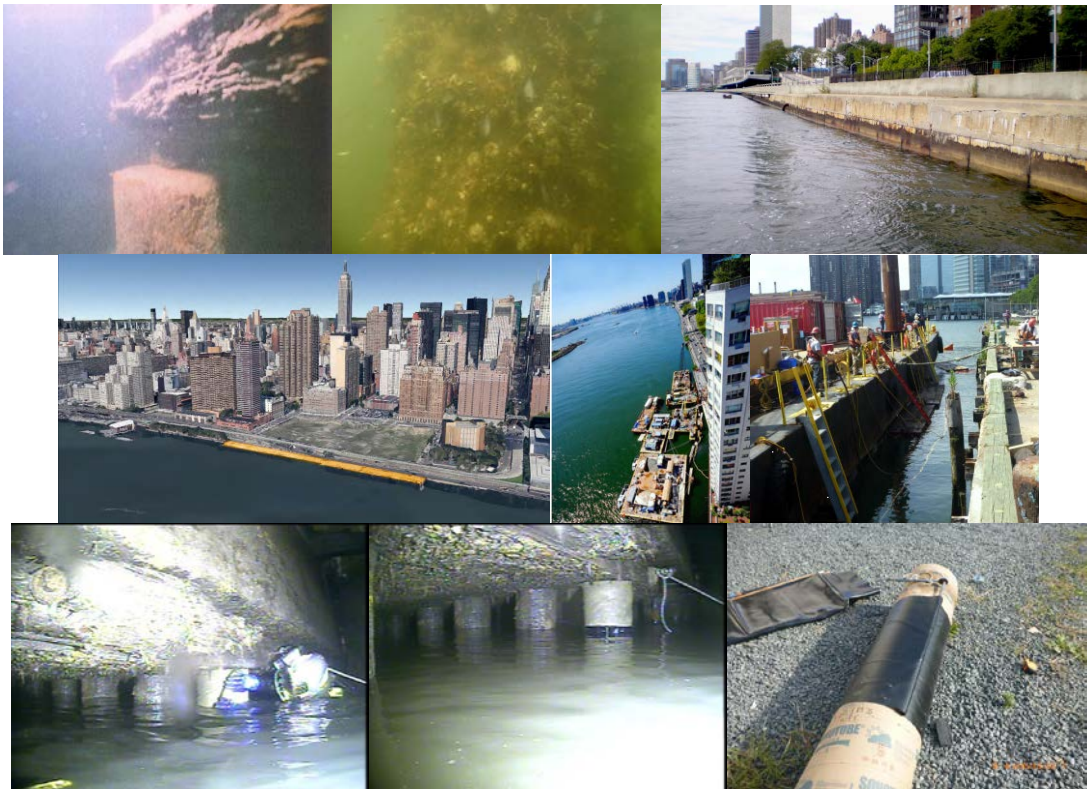
From Study of FDR Drive: Location #2 – Damaged Seawall at Segment #5. Sinkhole at Location #6 at East 59th Street. From Study of Carroll Street Bridge: General View of the Southwest Crib Wall With the Delamination of the Timber Stretchers in the Tidal Zone.

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 (from East 15th to East 96th Street) Drive, 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. Final design was completed in June 2011.

ACCOMPLISHMENTS & PLANNED PROJECTS



Project Locations.



Severe Marine Borer Infestation in Timber Cribbing of Carroll Street Bridge and Moderate Marine Growth Below Waterline on the Ocean Avenue Pedestrian Bridge in 2009. (Credit: NYSDOT) FDR Drive. Location #4 on FDR Drive. Work Barges. Diver Applying Petrolatum Tape. Lower Wrap Section Applied.

The construction project is being performed almost entirely underwater and will include barrier wrapping (placement of plastic barrier wrap around a timber pile to prevent marine borers from

ACCOMPLISHMENTS & PLANNED PROJECTS

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). A Notice to Proceed was issued to the contractor with a start date of April 2, 2012. The construction work is expected to be complete in August 2016.

RIVERSIDE DRIVE BRIDGE OVER WEST 158TH STREET (MANHATTAN)

The Riverside Drive Viaduct is located between West 153rd Street and West 161st Street. It is approximately 1,924 feet long and has 77 spans. This viaduct consists of intermittent straight portions, and six curves of different radii. It was constructed in two sections. The south cantilever section, from West 153rd Street to West 155th Street, was completed in 1908 and a portion of it spans over the Amtrak right of way. The north bent type section, from West 155th Street to south of West 161st Street, was completed in 1928. The bent type portion of the viaduct includes a windowed enclosure under the bridge that houses NYCDOT and NYPD facilities. The building structure to the north of West 158th Street is used by NYPD for a vehicle repair garage. The building structure to the south of West 158th Street is used by NYCDOT for storage of vehicles, roadway maintenance materials and is also a NYCDOT Maintenance and Repair Facility. The bridge carries four lanes (two each way).

Project work will include the repair of deteriorated structural steel members; replacement of the existing deck; abutment and retaining wall repair; repairs and replacement of concrete barriers and bridge rails; complete expansion joint replacement; approach slabs and pavement replacement; cleaning and necessary repairs of drainage system, and paint removal, lead abatement and recoating of steel. The bridge will remain open to traffic throughout field work and construction. Construction is expected to begin in 2017.

ACCOMPLISHMENTS & PLANNED PROJECTS



Riverside Drive Bridge in 2010. (Credit: NYSDOT) Vehicle Repair Facility.

TRANS-MANHATTAN EXPRESSWAY CONNECTOR RAMP FROM THE HARLEM RIVER DRIVE (HARLEM RIVER DRIVE RAMP TO GEORGE WASHINGTON BRIDGE OVER HARLEM RIVER DRIVE SOUTHBOUND) (MANHATTAN)

The Trans-Manhattan Expressway Connector Ramp is an elevated viaduct that consists of a multi-span steel superstructure supporting a concrete deck. The ramp connects the Trans-Manhattan Expressway to the Harlem River Drive and it was built in 1939. It is a 2,080 foot long and 57 foot wide structure, consisting of 14 steel spans and 41 reinforced concrete spans, carrying two lanes of traffic in each direction, northbound and southbound. In 2008, New York State DOT completed an approximately \$4.5 million “top-side” repair project of the wearing surface, joints, median, parapets, and other above-deck elements. The NYCDOT project will rehabilitate the bridge steel and concrete components. Several locations of spalls are currently protected by mesh and/or netting. Construction is expected to begin in mid-2015.



Trans-Manhattan Expressway Connector Ramp in 2009: Elevation Right Spans 1 – 25. 2010 – Elevation Right Spans 13 to 1, and 43 to 13. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

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

The 17th Avenue and 27th Avenue Bridges are three-hinged, steel arch girder bridges with granite-faced concrete abutments and Art Deco steel railings. These two pedestrian overpasses have deteriorated over time, and due to low vertical clearance, have suffered impact damage from overheight vehicle traffic on the Belt Parkway below. The 17th Avenue Bridge has a vertical clearance of 10'-8", at its lowest point, and the 27th Avenue Bridge a 12'-4" vertical clearance at its lowest point. Both bridges have an overall span length of approximately 125 feet, and a bridge deck width of 15 feet. In addition, these structures are not in compliance with American Disability Act (ADA) requirements.

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



17th Avenue Bridge – Existing Conditions. Deteriorated Left Girder.



27th Avenue Bridge – Existing Conditions.

In this project, the overpasses at 17th and 27th Avenues will be completely replaced. The structures will be designed to current codes and standards and all substandard features will be eliminated. Additionally, as the existing bridges were constructed under the Robert Moses era Master Plan for NYC, the proposed bridge designs will follow the Shore (Belt) Parkway Design Guidelines which were developed in November 2006, in order to preserve and reestablish the historic character of the parkway for drivers and pedestrians while enhancing and strengthening the visual cohesiveness of the greenspace connected to the adjacent park and recreation land. Construction is anticipated to begin in 2016, and is expected to be complete in 2018.

ACCOMPLISHMENTS & PLANNED PROJECTS



17th And 27th Avenue Bridges – Proposed Bridges.

WEST 79TH STREET BRIDGE OVER AMTRAK (MANHATTAN)

The West 79th Street Bridge over Amtrak, built in 1937, is a single span structure, with steel, non-composite girders and a reinforced concrete slab. The bridge carries two lanes of traffic in each direction and has a sidewalk on each side. The project work will include the removal of the existing concrete deck, sidewalks and the pedestrian safety barrier. The deck will be replaced with a 9.5 inch concrete slab with integral wearing surface, a new sidewalk and safety barriers on a rehabilitated superstructure. Construction is expected to begin in 2018.



West 79th Street Bridge Over Amtrak in 2010. Underside of Bay 7. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

BRONX, QUEENS, AND STATEN ISLAND BRIDGES

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

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

The Galloway Avenue culvert is a single span timber pedestrian culvert supported on a concrete abutment. It is located approximately 262.4' east of the intersection of Galloway Avenue and Crystal Avenue. The channel beneath the culvert bisects Galloway Avenue, thereby making the culvert the only means of carrying pedestrians from one side of the channel to the other. The existing culvert will be removed and a new culvert will be constructed. The culvert will be closed during construction.

The Forest Avenue culvert over Crystal Avenue is a single span reinforced concrete box culvert. It is located approximately 230' east of the intersection of Forest Avenue with Crystal Avenue. The reconstruction will consist of the demolition of the existing culvert, clearance of debris from the channel, replacement of the culvert with a concrete deck slab supported on steel beams on reinforced concrete abutment and wingwalls. The construction work is planned to be performed in four stages with proposed four traffic lanes being maintained at all times.

The Naughton Avenue culvert consists of three parallel reinforced concrete pipes at the north and south ends separated by a twin barrel box culvert. It is barricaded at the east end by guide rail and bordered at the west by a wooded area. 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 construction is planned to be performed in one stage and no lane closure is required during construction.

The Midland Avenue culvert consists of a single span reinforced concrete box, which will be replaced with a new pre-cast box culvert. It is located on Midland Avenue between Boundary Avenue and Mason Avenue. The rehabilitation will include replacing the existing concrete box structure with a new concrete box structure, new sidewalk, curb, pipe railing, chain link fence and asphalt wearing surface. The work will be performed in three stages, with one lane of traffic maintained in each direction at all times.

The Rockland Avenue reinforced concrete culvert project will include concrete repair and a lined and stabilized north embankment. It is located approximately 361' west of the intersection of Rockland and Manor Avenue. The rehabilitation work includes clearing the debris and vegetation from the channel and installing a structural lining. The construction is planned to be performed in one stage and no street closures will be required during construction.

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

The Gregg Place culvert is a single span reinforced concrete box culvert, located approximately 98.4' west of the intersection of Gregg Place and Randall Avenue. The rehabilitation includes replacing the southern portion with a new precast box culvert with new pavement. The construction is planned to be performed in one stage and 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

ACCOMPLISHMENTS & PLANNED PROJECTS

and a reinforced box culvert at south. It is located on Arthur Kill Road between Muldoon Avenue and Arden Avenue. The box culvert will be replaced with a new box culvert, and a structural lining will be installed in the pipe culvert. The construction will be performed in one stage with one lane of traffic maintained in each direction.

The Richmond Hill Road culvert consists of a single span stone masonry arch, built in 1845 according to a sign posted by the wingwall of the culvert. It is located on Richmond Hill Road between Richmond and Old Mill Roads. The rehabilitation work will include removing and re-pointing the stone masonry, removing and replacing the fill and asphalt wearing surface above the arch, and cleaning the vegetation and sedimentation. The work is proposed to be completed in one stage and no road closures will be necessary.

The Arthur Kill Road culvert over Ridgewood Avenue consists of a non-reinforced concrete pipe at south and a corrugated metal pipe at north. It is located approximately 100' west of the intersection of Arthur Kill Road and Ridgewood Avenue. 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 one stage of construction and one lane of traffic will be maintained in each direction.

This project to rehabilitate and/or replace the ten culverts is currently in the final design stage, and is expected to begin in December 2016 and to be complete in 2018.



Galloway Avenue over Marianne Street, Forest Avenue over Crystal Avenue. Naughton Avenue over Patterson Avenue, Midland Avenue over Hylan Boulevard. Rockland Avenue over Brielle Avenue, Forest Avenue over Randall Avenue. Gregg Place over Randall Avenue, Arthur Kill Road over Muldoon Avenue. Richmond Hill Road over Richmond Road, Arthur Kill Road over Ridgewood Avenue.

BRYANT AVENUE BRIDGE OVER AMTRAK AND CSX (BRONX)

The Bryant Avenue Bridge, oriented east to west between Buckner Boulevard and Garrison Avenue, is a one span structure constructed in 1908. It spans 90 feet over four railroad tracks. This project includes replacement of the steel superstructure, bearings, approaches, water mains and rehabilitation of the existing substructures by removing and replacing the top portion of the concrete abutments to accommodate the new superstructure. The abutments will be retrofitted to meet seismic criteria. The proposed superstructure will consist of a reinforced concrete deck over pre-stressed concrete adjacent box beams. The two existing water mains will be removed and replaced. Both water mains will be installed on top of the north sidewalk in a fenced-off area. The Division's in-house design staff completed the design for this project. A Notice to Proceed for the project was issued to the contractor with a start date of August 18, 2014. The bridge will be completely closed to vehicles during its construction, however, pedestrian access will be maintained. This project is expected to be complete in February 2016.

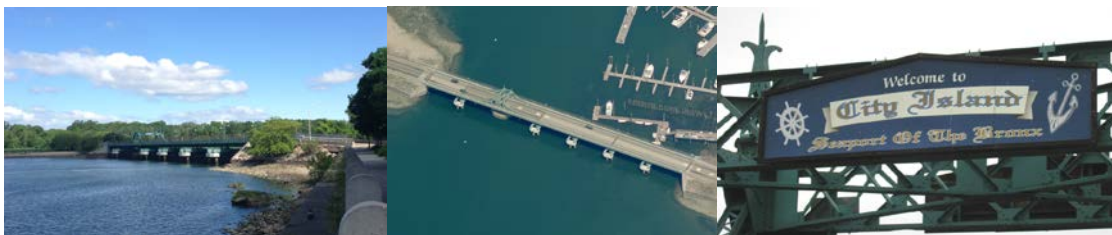
ACCOMPLISHMENTS & PLANNED PROJECTS



Bridge Views Looking North and South. Bridge View From the Pedestrian Overpass. Location Map. Rendering of the Bridge After Construction.

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 2013, the bridge carried 16,431 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. Spans two and three are supported by an overhead truss that originally functioned as a movable swing span but was permanently fixed in 1963.



View of City Island Bridge From the Esplanade. Aerial View of Current Bridge. Welcome Sign.

ACCOMPLISHMENTS & PLANNED PROJECTS

The existing bridge will be replaced along the same alignment with a new three span bridge with two piers in the water. 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 bridge will be a multi-girder continuous bridge with an integral deck. Galvanized steel stay-in-place forms will be used for the deck to both facilitate deck placement and shield the concrete from the corrosive environment of the saltwater bay below. The stainless steel rebar will also not be vulnerable to the deicing salt in the same way that epoxy coated rebar is. Therefore, the deck will have a much longer life expectancy since rebar corrosion is a primary factor in the deterioration of concrete. The new bridge will be designed to current standards and with its wider roadway width, will allow future repair and rehabilitation to be carried out while maintaining one 12-foot lane in each direction. It will also eliminate the vehicle height restriction caused by the existing overhead truss. In order to maintain traffic during the demolition of the existing bridge and construction of the new bridge, a temporary bridge will be constructed on the south side of the existing bridge. Marine traffic will remain undisturbed beneath the bridge during peak boating season.

The contractor's Value Engineering proposal was accepted to utilize a prefabricated steel bridge system for the temporary bridge with an asphalt riding surface on a steel-plated deck instead of a steel grid system and utilities located on the outside of the roadway between the riding surface and the sidewalk. Pedestrians and bicyclists will be separated with a steel truss system and fence from vehicular traffic. The temporary bridge sections will be fabricated off-site while the foundation work is being performed. Therefore, the bridge will be erected on a complete per span system rather than "stick" built. This will minimize the amount of time the contractor will be in Eastchester Bay erecting the temporary bridge. The schedule advantage will allow traffic to be shifted off the existing bridge sooner, reducing the required maintenance of the aging bridge. Removal of the bridge will be done similar to the erection reducing the time required to be in the bay.

As part of the bridge replacement project, the Legion Triangle at the intersection of City Island Avenue, City Island Road and Bridge Street will be modified.



Current Legion Triangle and Rendering. The Design is Slightly Larger Than the Existing Triangle, Features a Wide Variety of Flora, and Will Provide Ample Space for Visitors who Come to Pay Homage to the Veteran's Memorial.

At the City Island side there is a seawall along the shore which is about 500 feet in length starting from the bridge and heading in a southerly direction. This seawall will be rehabilitated and turned over to the Department of Parks and Recreation along with the esplanade which it is supporting. The rehabilitation of the existing concrete seawall will include a steel rod tieback system as a precaution against loss of stability due to overturning or sliding. In addition, all unsound concrete will be removed from the face of the wall and a new reinforced concrete facing will be cast along the entire length. The esplanade will receive landscape improvements such as a new railing above the wall, new plantings, trees, grass, and paver blocks.

ACCOMPLISHMENTS & PLANNED PROJECTS



Existing Seawall. Proposed Treatment.

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



City Island Road Bridge in 2010. (Credit: Bojidar Yanev) Span 4, Right Sidewalk Near Pier 4 in October 2013. Vertical Clearance Posting. (Credit: NYSDOT) 9 Foot Tall Ornamental Finial.

A Notice to Proceed for the project was issued to the contractor with a start date of September 30, 2013. At the end of 2013, the contractor was preparing to proceed with test pits, staging area work, building surveys, and the installation of construction signing. During 2014, the contractor surveyed the area, set up temporary work zone traffic control devices, installed temporary signals, relocated the 16 inch water main on the existing bridge, and started the foundation work for the temporary bridge.

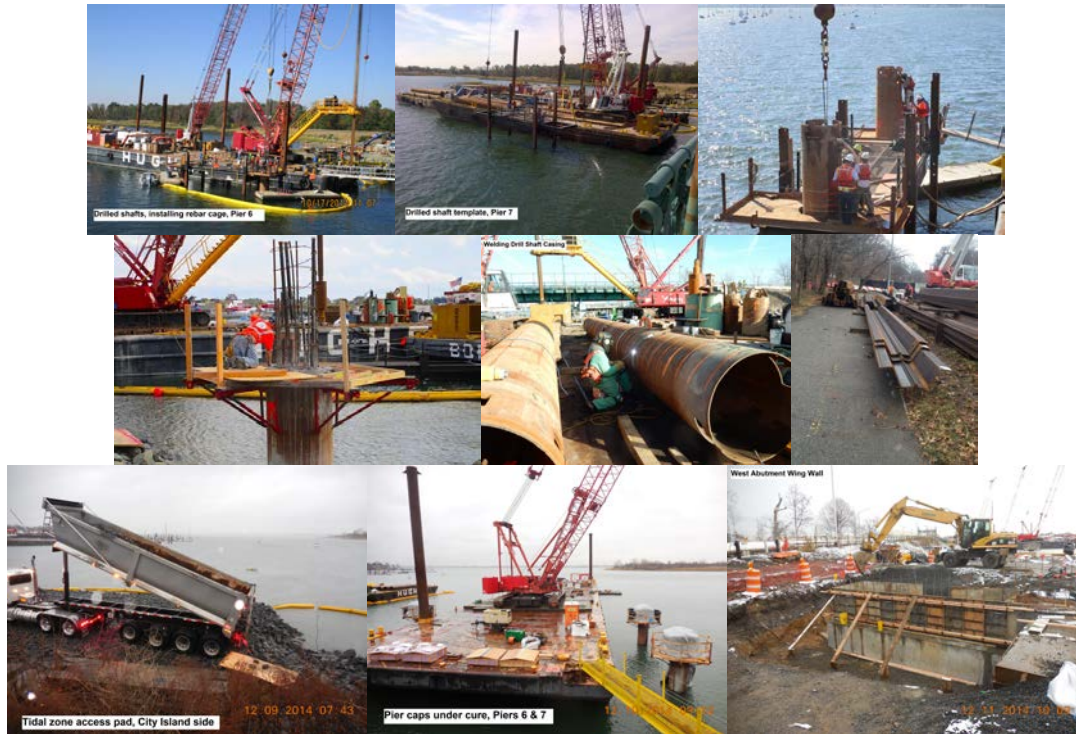


February 2014: Pothole Repair. August 2014: Contractor Constructing a 5-Foot Wide Walkway to Protect and Guide Pedestrians Around the Designated Work Zone on the Esplanade. Excavating on the West Side of the Bridge in the Presence of an Archeologist. Insulating the Temporary Water Main to Protect Against Low Temperatures and Accidental Impact.



ACCOMPLISHMENTS & PLANNED PROJECTS

Approximately 300 Linear Feet of a Turbidity Curtain was Installed on the Southwest Side of the Bridge to Protect the Shore During Construction. A Turbidity Curtain is a Floating Barrier Designed to Contain and Control the Dispersion of Sediment. Drilling in the Southwest Side of the Bridge to Install the Footings and the Piers of the Temporary Structure.



October 2014: Drilled Shafts – Installing Rebar Cage at Pier 6. Template at Pier 7. The Contractor Airlifted Drilled Shaft Casings Into Position on a Platform Constructed Beside a Construction Barge. Fresh Pier Caps Being Prepared for Installation Atop Completed Drilled Shafts. These Will Serve as the Support Structures Once the Temporary Bridge is Seated. Welding Drill Shaft Casing. Sheeting at Turtle Cove. December 2014: Tidal Zone Access Pad, City Island Side. Pier Caps Under Cure at Piers 6 and 7. West Abutment Wing Wall.

Temporary bridge foundations were installed and the superstructure was assembled in the Brooklyn Navy Yard for installation in the early part of 2015. The construction of the new bridge is expected to start shortly thereafter, and it will be completed within the original contract schedule end date of December 30, 2016.



The Contractor Assembled the Temporary Bridge Segments at the Brooklyn Navy Yard. The Pieces Were Transported to City Island by Barge.



ACCOMPLISHMENTS & PLANNED PROJECTS



Existing and Proposed City Island Road Bridge Furnishings: Lighting, Fence, and Rail. Side View Rendering of New Bridge.

GRAND CONCOURSE BRIDGE OVER METRO NORTH (BRONX)

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

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

The reconstruction project will also include building new sidewalks, as well as bridge railings with protective fencing, electrical conduits and fixtures, and the relocation of the existing water main under the sidewalk. The new roadway deck will be made of reinforced concrete with superpave type paving. A jointless deck will be installed to reduce or eliminate the corrosive effects of dripping water on both the existing steel members to remain as well as the new steel bridge members to be installed. Two lanes of vehicular traffic and the pedestrian walkway will be maintained in each direction on the Grand Concourse. Deterioration was discovered during a final design inspection to assess the structural condition of the bridge, and the consultant has been instructed to prepare an interim load rating to establish the structural capacity.

A value engineering workshop was held in August 2014 with the goal of developing recommendations to be considered by the project design team, construction and construction support personnel and the Agency to improve all aspects of the project. The resulting report is under review and discussion by the design consultant and the Agency. DOT and NYC Transit are in negotiations to resolve the jurisdictional issues arising from the separation of the existing jointly-operated bridge. This project, currently in the final design phase, is expected to begin construction in February 2018, and is expected to be complete in August 2020.

ACCOMPLISHMENTS & PLANNED PROJECTS

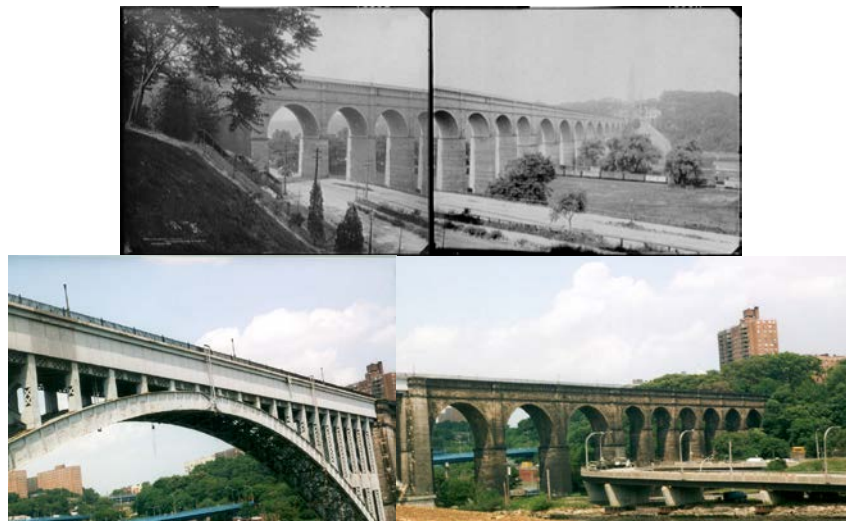


Grand Concourse Bridge over Metro North in 2010. (Credit: NYSDOT) Aerial View. Sidewalk and Top of Bridge.

HIGH BRIDGE PEDESTRIAN BRIDGE OVER THE HARLEM RIVER (BRONX/MANHATTAN)

This eleven span landmark structure is the oldest (circa 1848) bridge over the Harlem River. It is listed on the New York State and National Register of Historic Places. The bridge is under the Department of Parks and Recreation's (DPR) jurisdiction. It was erected to carry water from the Croton aqueduct, and has been closed since 1970. The bridge spans the Harlem River, connecting the neighborhoods of Highbridge in the Bronx and Washington Heights in Manhattan.

Designed on principles of Roman aqueduct architecture, the granite bridge is about 116 feet in height, with the peak of its arches 100 feet above the Harlem River. The bridge is 1,450 feet long, measured from gatehouse to gatehouse, with a 1,200-foot-long brick walkway. The High Bridge was begun in 1839 and completed in 1848. Larger water pipes were added and the walkway was built in 1861-64. In 1927-28, after many years of calls for complete demolition of the bridge, the city replaced five of the original 15 arches with a central steel span to ease the passage of large ships. The rest of the majestic stone arches still stand, the majority on the Bronx side of the river. The bridge has never carried vehicles.



ACCOMPLISHMENTS & PLANNED PROJECTS

High Bridge in 1890 (Credit: William Henry Jackson. Library of Congress Prints and Photographs Online Catalogue) <http://lcweb2.loc.gov/service/pnp/det/4a30000/4a32000/4a32600/4a32659v.jpg> and <http://lcweb2.loc.gov/service/pnp/det/4a30000/4a32000/4a32600/4a32660v.jpg> (accessed September 9, 2014). High Bridge Pedestrian Bridge in 2004. (Credit: Michele N. Vulcan)

In support of DPR, the Division prepared a detailed scope of work for the comprehensive in-depth inspection of the bridge. Engineering consultants conducted this inspection, which was completed in the summer of 2006, at an estimated cost of \$2.5 million. The Division administered and supervised this work.

The \$61.73 million restoration of the bridge is being managed by the New York City Department of Design and Construction in partnership with DPR. The reopened High Bridge will be an essential link in New York City's expanding waterfront Greenway. It will allow Bronx residents to reach the Highbridge Pool and Recreation Center, and Manhattan residents to reach the Harlem River shoreline. Planned improvements will make the bridge more accessible and safe. The rehabilitation will follow historic preservation principles to restore the architectural details of this landmarked structure for public enjoyment.

Both the central steel span and the stone arches will be cleaned and repaired; the steel span will be repainted and the masonry structure will be repointed and strengthened. Architectural lighting will be installed beneath both spans. The brick paver walkway on top of the structure will be removed and reconditioned, new waterproofing and concrete will be installed, then the historic brickwork will be reinstalled. The aqueduct running beneath the structure will be repaired and stabilized. New lampposts and safety fencing will be installed and the original iron railing will be repaired. Barrier-free access ramps will be built on both sides of the bridge to allow access for the disabled. Three viewing platforms with bench seating will be installed along the length of the bridge.



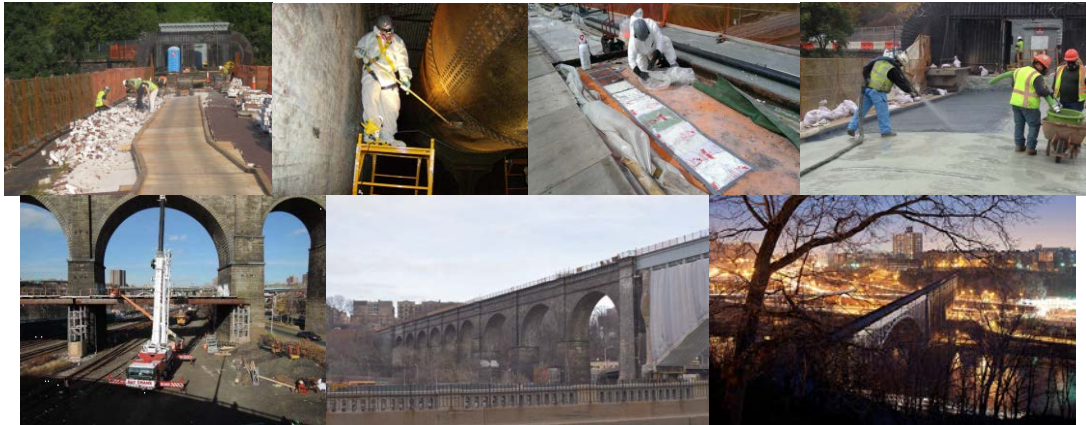
Project Overview. Rendering of the Restored High Bridge, View From the Bronx to Manhattan, View From Manhattan to the Bronx, and ADA Access Area.

The design of the restoration of the bridge was completed in December 2011. Construction began in August 2012. In March and April of 2013, the contractor began mobilization. Safety shield installation, and lead abatement and stone cleaning operations began. In May and June, brick paver removal and preservation operations and railing post restorations began. In July and August, safety fence and scaffolding installation, painting operations, and aqueduct pipe preservation were underway, along with repairing, repointing and cleaning of the masonry stone. Reconstruction of the brick walkway and ADA ramp excavation began. In September and October, installation of electrical lines and tie-rods were underway. In November and December, de-leading operations at the steep span were completed, bridge deck waterproofing operations and mast climber removal were in progress, and brick masonry work in the bridge attic began.

ACCOMPLISHMENTS & PLANNED PROJECTS



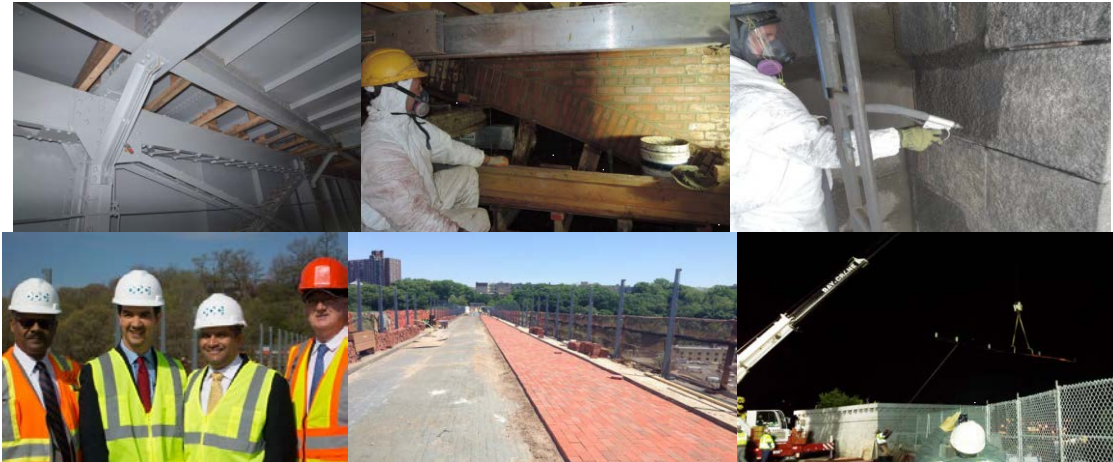
Northern and Southern Views of High Bridge in 2013. Winter 2013: Installation of Safety Shield Materials on the Walkway. Winter 2013: Safety Cables Installed on the Bridge. Early Spring 2013: Temporary Work Platform on the Bridge. Temporary Work Platform on Sedgwick And Undercliff Avenues. Spring 2013: Mast Climber and Lead Abatement Containment on the Bridge. Summer 2013: Brick Paver Removal. (Credit: NYCDDC)



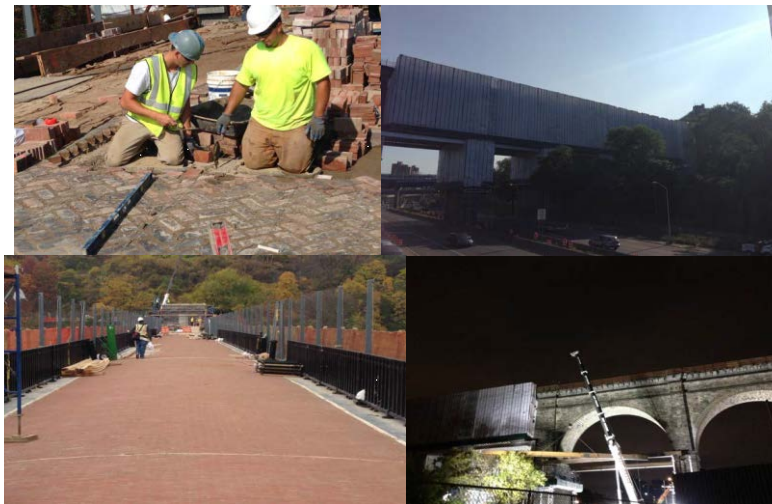
Summer 2013: Brick Paver Removal and Preservation. Fall 2013: Aqueduct Pipe Preservation. Reconstruction of the Walkway. Late Fall 2013: Water Proofing Operations on the Bridge Deck. Mast Climber Removal. Winter 2014: South View of the Bridge. (Credit: NYCDDC)

From January through April of 2014, brick and concrete spall repairs and steel repairs continued. Installation of underlayment pavers on bridge deck began in May and June, and the steel installation for the Manhattan and Bronx ADA ramps was completed. In July and August, waterproofing operations on the bridge and lead abatement and painting operations were completed. In November and December, paver installation on the bridge deck was completed. At the end of 2014, continuing work included: steel repairs, scaffold installation for masonry stone cleaning and repointing work on the bridge, Manhattan gatehouse rehabilitation, and historic railing and ADA ramp installation. Construction is expected to be complete in late May 2015, and the bridge is expected to reopen to the public in early June 2015.

ACCOMPLISHMENTS & PLANNED PROJECTS



Winter 2014: Steel Stringer Installation. Spring 2014: Brick Repairs and Stone Cleaning. (Credit: NYCDDC) Site Visit in May 2014. From left: DDC Deputy Commissioner Eric McFarlane, Councilmember Ydanis Rodriguez, DDC Commissioner Feniosky Peña-Mora, and NYCDPR First Deputy Commissioner Liam Kavanagh. (Credit: Chappell Ellison - NYCDDC) Summer 2014: Brick Installation. ADA Ramp Steel Installation. (Credit: NYCDDC)



Summer 2014: Brick Installation. Containment System. Late Fall 2014: Completing Brick Installation. Scaffold Installation. (Credit: NYCDDC)

HIGHLAND PARK PEDESTRIAN BRIDGE OVER PEDESTRIAN PATH (QUEENS)

The Highland Park Pedestrian Bridge, built in 1935, is a single span arch structure with a clear opening of 60 feet under the bridge. Unlike a conventional steel or concrete bridge structure, the main structure is a brick masonry arch, with wing walls and parapet walls consisting of stacks of random size rocks set in mortar. The height of the parapet walls from the roadway surface varies from two to four feet. The bridge, located inside Highland Park, spans a hiking trail, and carries pedestrian and bicycle traffic. The only motorized vehicles permitted on the bridge are emergency vehicles and Parks Department's maintenance vehicles. 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 final design phase, will include the rehabilitation of the existing brick masonry arch structure and the specialized wearing surface. The masonry will be cleaned and repointed in place. The asphalt roadway will be completely removed and the top of the arch will be excavated. This will allow for any necessary repairs on the top side of the arch and for the application of a reinforced

ACCOMPLISHMENTS & PLANNED PROJECTS

concrete saddle with a waterproofing membrane. The arch will then be backfilled and the roadway repaved. In addition, the existing lampposts on the bridge and approaches will be refurbished, an eight foot wide gravel path will be installed below the bridge, and the landscape will be restored with trees and shrubs. The bridge will be closed to all traffic and will be reconstructed in one stage. Construction is expected to begin in November 2015, and is expected to be complete in eighteen months.



Highland Park Bridge. Dirt Pathway Under Bridge. Under-Deck Cracks and Missing Bricks - North-East Side. Under-Deck Arch Wall Showing Efflorescence Along the Cladding Stone and Brick Arch. Inspecting the Bridge in December 2014.

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

This bridge is a two span structure built between 1914 and 1915. It spans over the Long Island Railroad (LIRR) Montauk Branch and carries the roadway that is part of the intersection of Metropolitan Avenue with Fresh Pond Road and the adjoining property of the former Mobil gasoline station which was acquired by the City. The bridge originally crossed two railroad tracks located in each span and oriented in the east-west direction. One of the southern railroad tracks was abandoned and the remaining track is used by freight trains. The two northern railroad tracks are still in service and are part of the Long Island Rail Road Montauk line. The Fresh Pond Road portion of the bridge carried two trolley tracks located in two central bays oriented in the northbound and southbound direction. The Metropolitan Avenue portion of the bridge carried two trolley tracks located 4 feet nine inches from the original bridge centerline.

The superstructure consists of concrete encased steel beams with a concrete deck and varying depths of asphalt wearing surface. The substructure consists of a reinforced concrete pier and gravity type plain concrete abutments and wing walls.

ACCOMPLISHMENTS & PLANNED PROJECTS

The existing vertical clearance over LIRR tracks is 15 feet 9 inches. Per New York State Railroad Law Section 51-a (7), a minimum clearance of 22 feet is required over a railroad whenever a structure built prior to 1959 is to be reconstructed unless a waiver is granted by NYSDOT. Since a 22 foot clearance was not achievable due to the existing grades of the bridge being restricted by adjacent buildings and the constraint from an existing sewer line under the tracks, the waiver request was not granted by NYSDOT. However, NYSDOT agreed to a clearance of 20 feet 6 inches. In May 2012, NYCDEP conceptually accepted the modification of the existing sewer to achieve the requisite clearance of 20 feet 6 inches.

One alternative to achieve the required 20 feet 6 inches clearance is to lower the railroad tracks. The primary obstruction to lowering the railroad tracks is the existing 60" diameter combined sewer which runs along the centerline of Fresh Pond Road. The sewer crosses beneath the tracks and is approximately 3 feet below the top of rail. To lower the tracks, the combined sewer must be rerouted or reconfigured (or both).

In September 2012, the LIRR and NY Atlantic Railways agreed to have 17 feet 6 inches clearance as an immediate goal and 20 feet 6 inches as a future goal. In response to the LIRR waiver request made in December 2012, NYSDOT accepted LIRR waiver request of railroad 17 feet 6 inches above the top of rail, incorporating provisions for lowering the track to a clearance of 20 feet 6 inches in the future. After NYCDOT coordination with LIRR, the existing two span bridge will be converted to a single span bridge. A new north abutment will be constructed, filling the area between the existing central pier and the south abutment, and a new south abutment will be constructed near the existing central pier. The immediate goal is to design a bridge with 17.5 feet clearance and to make provision for achieving the 20.5 feet clearance in the future by lowering the railroad tracks and modifying the existing sewer. The proposed intersection geometry will provide improvements to turning movements for buses and trucks. New roadway pavement, sidewalks, curbs, American Disability Act (ADA) complaint accessible ramps, approach slabs, drainage, and lighting will be provided. A new utility bridge will be constructed on the southeast side of the new bridge parallel to Metropolitan Avenue for the relocation of water and gas mains. All private utilities will be relocated under the new bridge deck between girders. A new traffic signal will be provided at the intersection of Metropolitan Avenue and Fresh Pond Road. Construction is expected to begin in early 2017 and expected to be complete in late 2019.



Metropolitan Avenue Bridge in 2009. (Credit: NYSDOT) 2010 Inspection - Hands-On Inspection of A Pier. Obtaining a Steel Coupon Sample From a Stringer. February 2014: View of Plates on Left Sidewalk (Fresh Pond Road). September 2014: Spans 1 and 2 Right Concrete Parapet. (Parapet Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS

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. This level carries two lanes of vehicular traffic in each direction and pedestrian sidewalks on each side. The second level of the viaduct supports and carries the overhead NYC Transit Authority's #7 – Flushing line three track subway structure. It is an essential regional facility and truck route that links communities east and west over the Grand Central Parkway and provides access to Flushing Meadows Park, the National Tennis Center, and Citifield, home of the New York Mets.

The viaduct structure consists of 22 steel bents supporting longitudinal steel girders at the roadway and track level. The length of the east viaduct is approximately 284 feet and the length of the west viaduct is 809 feet. The overall length of the bascule and viaduct structures is 1400 feet. The bridge was originally built between 1925 and 1927. The original bridge had a double leaf bascule span, which was used as a draw bridge, providing clearance for boat traffic passing beneath. When the Van Wyck Expressway was built in the late 1950's and the river was no longer navigable, the bridge was permanently set in a closed position. Subsequently, major roadway modifications were performed in the early 1980's. Concrete deck repairs were performed in July, August, and October of 2003, June and July of 2004, April, May, June, and July of 2005, and June and July of 2006. In the summer of 2005, the When and Where contractor repaired red and yellow flag conditions caused by damage by over-sized trucks using the Van Wyck Expressway. Red-flagged steel shoring and yellow-flagged cracked stringer connection angles were repaired in the spring of 2008.

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.



Roosevelt Avenue Bridge – Looking East. Existing and Proposed Bicycle/Pedestrian Path.

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 summer 2015 and to be complete in August 2019.

ACCOMPLISHMENTS & PLANNED PROJECTS



Roosevelt Avenue Bridge (#2240507) in 2002, 2004, and 2010. (Credit: NYSDOT) Aerial View.

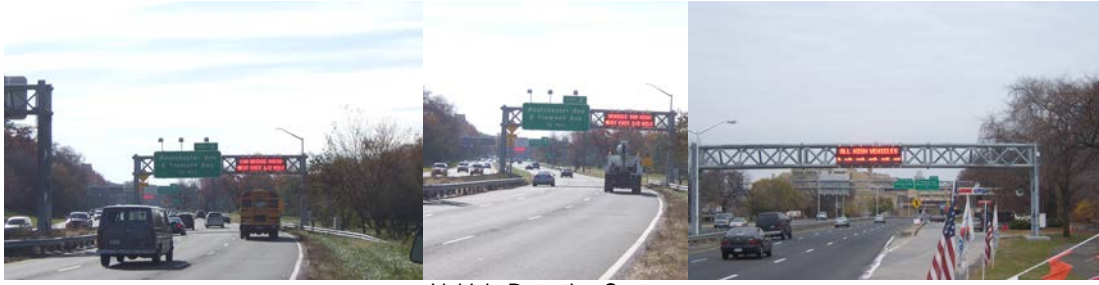
WESTCHESTER AVENUE BRIDGE OVER THE HUTCHINSON RIVER PARKWAY (BRONX)

The bridge spans over the Hutchinson River Parkway and it supports the NYCT elevated subway structure of the Pelham Bay Line. Six of the transit columns are supported by the bridge girders. The bridge is located between Waters Place and Middletown Avenue. It has four travel lanes with parking lanes and sidewalks on both sides. This two span continuous multi-stringer bridge is supported by reinforced piers and abutments. It was built in 1940 by the Triborough Bridge and Tunnel Authority in conjunction with the construction of the Bronx-Whitestone Bridge approach. No major modifications to the bridge are recorded except for minor repairs at the south approach sidewalk and temporary flag repairs to bridge girders damaged by vehicle impacts in the southbound and northbound roadway. A project to install an ITS solution, which includes an overheight vehicle detection system that flashes signs directing vehicles identified as being over 9' in height to exit the parkway, was substantially completed on December 3, 2004. This Vehicle Height System, consisting of cameras, flash boxes, conduit, and power cabinet, that was erected in the early 2000's, is still attached to the bridge piers, girders and abutments but is not in working order. The contractor completed extra work associated with landscaping in the spring of 2006. The underdeck at both spans is currently covered by approximately 154 square feet of timber planking. In addition, the underdeck at span 1 is covered with approximately 18 square feet of steel wire mesh netting.



Westchester Avenue Bridge Elevation Left and Right in 2012. (Credit: NYSDOT) April 2014: Span 2 – Deteriorated Areas Shielded With Planks. Overheight Sensor Unit on the Hutchinson River Parkway. (Sensor Credit: Roly Parroco)

ACCOMPLISHMENTS & PLANNED PROJECTS



Vehicle Detection System.

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



Damaged Bridge, Cargo Container, and Contractor Truck After An Over-Height Trailer Struck the Bridge in January 2012.

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

In March 2011, a value engineering study was conducted in which it was recommended that further studies of alternative options be performed to raise the bridge clearance through a shallower bridge structure and/or by raising the roadway profile above the bridge.

Following the recommendation of the value engineering study, a hazardous material field investigation of the bridge was conducted in May 2013 and a hazardous material report was issued in June 2013. The report included the results of asbestos, lead and other hazardous materials field investigations, including laboratory testing results.

An alternative analysis/feasibility report was prepared in August 2013 to review the recommendation options by the value engineering team. A preferred option was then selected and incorporated into the February 2014 bridge conceptual design report. NYC Transit was receptive to the preferred option in the April 3, 2014 meeting.

This rehabilitation project is proceeding with the preferred option, and is currently in final design. Construction is expected to begin in June 2016, and is expected to be complete in February 2019.

WHITESTONE EXPRESSWAY/VAN WYCK EXPRESSWAY (SB) TO CROSS ISLAND PARKWAY (EB) OVER ACCESS ROAD FROM WHITESTONE EXPRESSWAY/VAN WYCK EXPRESSWAY (QUEENS)

The bridge is a multi-girder, single span, simply supported structure with a span length of 77 feet and is 24 feet wide curb to curb. There are two lanes (one way) on the bridge. The substructure consists of two gravity type concrete abutments. The west and east abutments of the existing bridge are a continuation of the abutments of the overhead bridge. Construction is expected to begin in August 2018, and is expected to be completed in 2020.

ACCOMPLISHMENTS & PLANNED PROJECTS



Bridge (Lower Structure) in 2010. (Credit: NYSDOT) Bridge Detail. August 2013: Span 1 Underside of Deck from End Abutment, Looking Northwest - Areas of Spalled Concrete Deck Are Protected With Timber Planks. March 2014: Steel Plates on Wearing Surface.

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. Construction is expected to begin in 2019.



East 175th Street Bridge in 2002 and 2012. (Credit: NYSDOT) South Sidewalk.

Design-Build

Design-Build 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

ACCOMPLISHMENTS & PLANNED PROJECTS

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.

NYCDOT is currently progressing these projects on a Design-Bid-Build basis until the legislation is passed in Albany allowing unconstrained use of this procurement method. NYCDOT may pursue projects utilizing Design-Build if a special case determination can be justified for a specific project.

FDR DRIVE AT HOUSTON STREET OVERPASS (MANHATTAN)

The overpass consists of three bridge structures. The main bridge is a two-span reinforced concrete slab structure spanning over the FDR Drive's northbound and southbound roadways. Two approach ramp structures provide access to and from the FDR Drive northbound roadway and the main bridge. Each of these structures is also a reinforced concrete slab structure supported on longitudinal concrete walls that run adjacent to the FDR Drive's northbound roadway. These bridges were constructed circa 1953, and are thus almost 60 years old. On the main bridge, the superstructure slab is supported on bearing wall abutments continuously founded on piles, and on one pier at the center of the FDR Drive that consists of a steel cap beam supported on multi-steel columns continuously founded on piles. The structural slabs have asphalt overlays, and the main bridge has three sections of concrete sidewalks.

Project work will include the removal and replacement of the existing bridge superstructure, including deck slab, sidewalks, center median island, and parapets. The substructure (abutments and pier) will be modified at their top to support the new superstructure. Other rehabilitation work will include the removal of hollow and spalled underdeck concrete, cleaning and repair of corroded rebar, removal of asphalt overlay, installation of waterproofing membrane, installation of new signals and an ADA-compliant pedestrian ramp, and placement of new asphalt overlay over the existing deck slabs. The reconstruction of the main bridge will be performed in two main stages, with half the bridge being replaced at a time. The project is in the final design stage, and construction is expected to begin in fall 2015.



The Three Structures of the FDR Drive at Houston Street Overpass. (Credit: NYSDOT)

ACCOMPLISHMENTS & PLANNED PROJECTS



2011: Main Bridge – Top of Deck Looking West. South Approach Ramp – Top of Deck Looking South. North Approach Ramp – Top of Deck Looking North.

HARLEM RIVER DRIVE BRIDGE AT EAST 127TH STREET (MANHATTAN)

The Harlem River Drive Bridge over the ramp from East 127th Street is an eleven-span structure consisting of seven main spans of multiple steel stringers and concrete deck and four approach spans of reinforced concrete structural slabs supported by reinforced concrete girders and retaining walls. The bridge currently carries three traffic lanes in the southbound direction and two lanes plus a wide striped shoulder in the northbound direction. The parkway is not subject to truck traffic with the exception of emergency vehicles and school buses.

The existing bridge was designed and built by the Department from 1955 to 1958 as part of the Harlem River Drive Improvement Project from East 125th Street to East 132nd Street. The bridge is an eleven-span structure consisting of seven main spans of multiple steel stringers and concrete deck and four approach spans of reinforced concrete structural slabs supported by reinforced concrete girders and retaining walls. The bridge is owned and maintained by the Department; the rest of the Drive is owned by the New York State Department of Transportation.

This project includes over \$82 million in Federal funds. Construction will follow the on-line bridge replacement with auxiliary exit and entrance lanes and left-lane exit to Second Avenue. It 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. The proposed replacement structure will consist of two adjacent bridges, with the bridge located to the west dedicated to southbound traffic and the bridge located to the east dedicated to northbound traffic. The new structures will be approximately 1,027 feet long.

The viaduct currently serves approximately 79,000 vehicles per day. This area currently has 40 times the State average number of accidents. Two features of the viaduct contribute to the accidents. First, the hump as the Harlem River Drive passes over East 127th Street limits drivers' visibility; vehicles approach the hump at a higher speed only to find slow moving vehicles at the other side of the hump, and too often they are not successful in decelerating or stopping their vehicles on time to prevent an accident. Second, there are weaving movements as vehicles exiting the Third Avenue Bridge enter the southbound Harlem River Drive in the right but try to immediately pull to the left in order to continue their travel further south on the Harlem River Drive and the FDR Drive. At the same time and within the same stretch of highway, vehicles that are in the left lanes of the southbound Harlem River Drive immediately north of the Third Avenue Bridge try to pull to the right in order to exit at Second Avenue. The lack of an appropriate weaving distance is the root of many of the accidents in the area. The project will also allow at-grade access for a future Park/Promenade to be developed by the Department of Parks at 127th Street between the Harlem River Drive and the Harlem River. A Notice to Proceed for the reconstruction of this bridge was issued to the contractor with a start date of November 10, 2014. Construction is expected to be complete in fall spring 2018.

ACCOMPLISHMENTS & PLANNED PROJECTS



Harlem River Drive Bridge at East 127th Street.



Rendering of New Harlem River Drive Bridge.



Looking East at the 127th Street Off-Ramp: Current and Proposed View. Looking East at 2nd Avenue: Current and Proposed View. Looking South From 3rd Avenue Bridge: Current Harlem River Drive and 2nd Avenue Exit and Proposed Harlem River Drive With Left Lane Exit to 2nd Avenue.

Component Rehabilitation

CARROLL STREET BRIDGE OVER GOWANUS CANAL (BROOKLYN), 5TH AVENUE BRIDGE OVER GREENWOOD CEMETERY (BROOKLYN), BEDFORD AVENUE BRIDGE OVER LIRR BAY RIDGE (BROOKLYN), BROOKLYN-QUEENS EXPRESSWAY BRIDGE OVER ADAMS STREET (NB) (BROOKLYN), BROOKLYN-QUEENS EXPRESSWAY BRIDGE OVER ADAMS STREET (SB) (BROOKLYN), BELT PARKWAY BRIDGE OVER BEDFORD AVENUE (BROOKLYN), 4TH AVENUE BRIDGE OVER BELT PARKWAY (BROOKLYN), HILL DRIVE BRIDGE (CLEFT RIDGE SPAN) OVER PEDESTRIAN PATH SOUTH OF BOATHOUSE (BROOKLYN), CROWN STREET BRIDGE OVER FRANKLIN SHUTTLE (BROOKLYN), AND UNION STREET BRIDGE OVER BROOKLYN-QUEENS EXPRESSWAY (BROOKLYN)

ACCOMPLISHMENTS & PLANNED PROJECTS

A Notice to Proceed for the component rehabilitation of these bridges was issued to the contractor with a start date of July 23, 2012.

In October 2012, New York was devastated by Superstorm Sandy. During the period immediately following the storm, construction efforts across the city were focused on emergency response and storm clean-up. Work associated with this contract was stopped for an extended period of time. By the end of 2013, five of the ten bridges in the contract were substantially completed, two were underway and construction on the remaining three commenced in 2014.

The Carroll Street and 5th Avenue Bridges were substantially completed on July 9, 2013, the Bedford Avenue Bridge over LIRR on November 6, 2013, and the Brooklyn-Queens Expressway Bridges over Adams Street (northbound and southbound) on December 3, 2013.

The Belt Parkway Bridge over Bedford Avenue is a three span steel stringer structure. The bridge carries three travel lanes in each direction. There is a shoulder and a safety walk on each side of the bridge. The concrete median that divides the eastbound and westbound traffic has guide railing on both sides. The scope of rehabilitation work included the following: replace asphalt concrete over expansion joints and seal cracks in asphalt overlay; clean and paint replaced or rehabilitated steel items; replace seals at abutments; replace deteriorated structural steel; repair concrete deteriorated areas; clean masonry; apply an anti-graffiti protective coating on abutments, wingwalls and piers; and clean scuppers. The Belt Parkway Bridge over Bedford Avenue was substantially completed on July 15, 2014.



Replacing Deteriorated Fascia Brackets From the North and South Girders of the Belt Parkway Bridge Over Bedford Avenue. Temporary Supports Were Installed at the Bracket Location. Bracket was Removed. New Brackets Were Installed and Painted. (Credit: Vadim Sokolovsky)

The 4th Avenue Bridge over the Belt Parkway is a two span concrete rigid frame. The bridge carries a travel lane in each direction, divided by a concrete median. There are no parking lanes on the bridge and approaches. The west sidewalk is wide and the east sidewalk is narrow. There is a concrete parapet on each side of the bridge. The scope of rehabilitation work included the following: remove and the existing asphalt concrete on bridge and approaches; clean pressure relief joints; repair concrete deteriorated areas at sidewalks and median and apply a sealing protective coating; repair concrete deteriorated areas at abutments, pier, and underdeck; and clean masonry surfaces and apply an anti-graffiti protective coating. The 4th Avenue Bridge was substantially completed on June 27, 2014.



4th Avenue Bridge. March 2010: Right Elevation. (Credit: NYSDOT)

The Hill Drive Bridge (Cleft Ridge Span) Bridge is a one span semi-circular arch type structure. The bridge carries one travel lane in each direction. There are no parking lanes on the bridge. The scope of rehabilitation work included the following: repair the asphalt wearing surface; repair spalled and cracked concrete at the wingwalls; clean the bridge and provide an anti-graffiti

ACCOMPLISHMENTS & PLANNED PROJECTS

protective coating; and restore the under drain system behind the bridge fascias. The Hill Drive Bridge (Cleft Ridge Span) Bridge was substantially completed on November 5, 2014.



Hill Drive Bridge (Cleft Ridge Span) Bridge. May 2014: Tiles on Underside of Span 1. Top of Bridge.

The Crown Street Bridge is a 3 span bridge that carries one travel lane and one parking lane in each direction. The bridge has protective screening and a bridge railing on the south side. There is a building adjacent to the bridge north fascia. The scope of rehabilitation work included the following: seal cracks in the concrete overlay; replace seals above abutments; repair, clean, and apply an anti-graffiti protection coating to the abutments, piers, and crashwalls; and clean existing gutters. The Crown Street Bridge was substantially completed on August 20, 2014.



Crown Street Bridge. Right Elevation in 2011. (2011 Credit: NYSDOT)

The Union Street Bridge is a two span steel continuous stringer structure. The bridge carries eastbound two travel lanes. There is an unmarked parking lane on each side of the bridge. There is a sidewalk, a railing and protective screening on each side of the bridge. The scope of rehabilitation work included the following: remove and replace concrete overlay; replace seals at abutments; repair concrete deteriorated areas; replace corroded rivets; paint structural steel; clean abutments and pier walls; and restore bearings. The Union Street Bridge was substantially completed on November 13, 2014.



Union Street Bridge. March 2012: Right Elevation. Timber Shielding in Bay 2 of Span 1. (2012 Credit: NYSDOT)

MOSHULU PARKWAY BRIDGE OVER CONRAIL (ABANDONED), LEGGETT AVENUE BRIDGE OVER AMTRAK, EAST 162ND STREET BRIDGE OVER METRO NORTH RR HAR, EAST 165TH STREET BRIDGE OVER METRO NORTH RR HAR,

ACCOMPLISHMENTS & PLANNED PROJECTS

EAST 187TH STREET BRIDGE OVER METRO NORTH RR HAR, SOUTHERN BOULEVARD BRIDGE OVER EAST FORDHAM ROAD, GRAND CONCOURSE BRIDGE OVER EAST 167TH STREET, EAST 180TH STREET BRIDGE OVER BRONX RIVER, RIVERSIDE DRIVE BRIDGE OVER WEST 138TH STREET, RIVERSIDE DRIVE BRIDGE OVER WEST 145TH STREET, AND THE PULASKI BRIDGE BICYCLE PATH (MCGUINNESS BOULEVARD OVER NEWTOWN CREEK)

A Notice to Proceed for the component rehabilitation of these 10 bridges in the Bronx and Manhattan, as well as the creation of a protected bicycle path on the Pulaski Bridge was issued to the contractor with a start date of November 3, 2014.

The Mosholu Parkway Bridge over Conrail (Abandoned) was built in 1939. It is a single span concrete arch bridge. There is a concrete parapet along both the north and south fascia of the bridge. The existing bridge geometry consists of two travel lanes and a shoulder in each direction, divided by a 4'-0" wide concrete median barrier, as well as a 15'-wide asphalt path for golf carts and pedestrians on the south side of the bridge. The scope of rehabilitation work shall include the following: removing and replacing the asphalt overlay, waterproofing, pavement striping, north fascia barrier and median barrier, corrugated guide rail transition, and wingwall joint filler; removing, storing and reinstalling lighting lamp posts on north fascia barrier and replacing luminaires with new luminaires; installing a temporary lighting system; excavating, backfilling and paving the local depression in the asphalt golf cart path; repairing chain link fence section and concrete on the underdeck and abutment walls; installing weepholes in the abutments and preformed joint seal in the concrete parapet; cleaning and flushing catch basins; and removing graffiti by power wash and applying anti-graffiti protective coating. Vehicular and pedestrian access will be maintained during the estimated 5-month rehabilitation period.



Mosholu Parkway Bridge over Conrail (Abandoned).

The Leggett Avenue Bridge over Amtrak was built in 1906. It is a three span steel truss. There is a corrugated metal fence along both the east and west fascias of the bridge. The existing bridge geometry consists of two travel lanes and a sidewalk in each direction, divided by a 4'-10" wide concrete median barrier. The scope of rehabilitation work shall include the following: removing and replacing deck joint, deck joint seals and portions of the concrete sidewalk; repairing concrete on the abutment and approach slab; repairing structural steel members and existing fuse box; installing pavement striping; and cleaning and painting steel surfaces and bottom of stay-in-place form. Vehicular and pedestrian access will be maintained during the estimated 5-month rehabilitation period.

ACCOMPLISHMENTS & PLANNED PROJECTS



Leggett Avenue Bridge over Amtrak.

The East 162nd Street Bridge over Metro North was built in 1888. It is a single span steel jack arch bridge with built-up steel beams encased in concrete. There is a fence along both the north and south fascia of the bridge as well as a non-standard decorative bridge rail along the north fascia. The existing bridge geometry consists of one travel lane, a parking lane and a sidewalk in each direction. The scope of rehabilitation work shall include the following: locally removing and replacing the asphalt and concrete overlays and sidewalk; installing pavement striping; repairing guide railing, concrete on the underdeck and abutment, and cracks in the asphalt overlay and sidewalk; cleaning and painting steel surfaces locally; resealing sidewalk joints; and repointing stone masonry. Vehicular and pedestrian access will be maintained during the estimated 4-month rehabilitation period.



East 162nd Street Bridge over MNRR.

The East 165th Street Bridge over Metro North was built in 1897. It is a single span steel jack arch bridge with built-up steel beams encased in concrete. . A chain link fence runs in front of steel railing atop both the west and east fascia of the bridge. The existing bridge geometry consists of one travel lane in each direction on East 165th Street, and one travel lane, a turning lane and a sidewalk in each direction on Melrose/Webster Avenue. The scope of rehabilitation work shall include the following: locally removing and replacing the asphalt overlay and sidewalk; repairing the concrete underdeck; cleaning and painting steel surfaces; resealing sidewalk joints; installing new multi-rotational bearings at the south abutment; partially removing and replacing the bridge seat at the new bearing locations; installing a temporary support system; and performing jacking operations. Vehicular and pedestrian access will be maintained during the estimated 8-month rehabilitation period.



East 165th Street Bridge over MNRR.

ACCOMPLISHMENTS & PLANNED PROJECTS

The East 187th Street Bridge over Metro North was built in 1889. It is a single span steel jack arch bridge with built-up steel beams encased in concrete. The bridge has a chain link fence and a non-standard decorative bridge rail along both the north and south fascia. The existing bridge geometry consists of one 17' travel lane and an 11' sidewalk in each direction. The scope of rehabilitation work shall include the following: removing and replacing concrete overlay and waterproofing membrane, concrete sidewalk, corrugated guide rail, bridge railing, chain link fence wire mesh, and steel faced curb and handicap ramp at sidewalk corners; sealing the deck overlay; repairing the concrete underdeck; and cleaning and painting the steel surfaces locally. Vehicular and pedestrian access will be maintained during the estimated 5-month rehabilitation period.



East 187th Street Bridge over MNRR.

The Southern Boulevard Bridge over East Fordham Road was built in 1962. It is a two span concrete arch bridge with stone masonry facing on the abutments and spandrel walls. The bridge has a concrete parapet with stone facing topped with a non-standard decorative bridge rail at both the east and west fascia. The existing bridge geometry consists of two travel lanes, a turning lane and a sidewalk in each direction, divided by a 4'-3" wide concrete median. The scope of rehabilitation work shall include the following: removing and replacing asphalt overlay, waterproofing membrane and pavement striping; repairing bridge railing, light fixtures and concrete on the underdeck and sidewalk; resealing sidewalk joints and vertical fascia joint at abutment; repointing and repairing cracks in stone masonry; installing weep holes in the underdeck and guide railing; and cleaning fascia stone masonry and catch basins. Vehicular and pedestrian access will be maintained during the estimated 5-month rehabilitation period.



Southern Boulevard Bridge over East Fordham Road.

The Grand Concourse Bridge over East 167th Street was built in 1923. It is a two span steel girder bridge. The bridge has a concrete sidewalk and concrete parapet topped with a chain link fence at each fascia. The existing bridge geometry consists of two travel lanes and a turning lane in each direction on the Grand Concourse, and one travel lane, a parking lane and a sidewalk in each direction on the Grand Concourse service road. The overall structure extends several blocks to the north and south of the Grand Concourse where it carries a two-aisle parking area between the eastbound and westbound ramp lanes of East 167th Street. There is an NYCTA subway station under the Grand Concourse. Both the subway station and the railroad tracks are above East 167th Street. The subway station structures are not included in the scope of the bridge project. The scope of rehabilitation work shall include the following: removal and

ACCOMPLISHMENTS & PLANNED PROJECTS

replacement of asphalt overlay; repairing concrete on the underdeck, abutments, piers, wingwalls and sidewalks; repairing underdeck light fixtures and drain pipe; resealing sidewalk and parapet joints; grouting the gap below the parapet curb along the pavement; and removing graffiti by power wash and applying anti-graffiti protective coating. Vehicular and pedestrian access will be maintained during the estimated 4-month rehabilitation period.



Grand Concourse Bridge over East 167th Street.

The East 180th Street Bridge over Bronx River was built in 1925. It is a single span concrete arch bridge with stone masonry facing. The bridge has a parapet at both the north and south fascia. The existing bridge geometry consists of one travel lane, a parking lane and a sidewalk in each direction; the sidewalks on both sides are protected from the roadway by a concrete barrier. The scope of rehabilitation work shall include the following: replacing pedestrian railing; repairing concrete underdeck, crack, spall and joint seal in concrete barrier, and the retaining wall at the northwest corner of the bridge; resealing sidewalk joints; repointing stone masonry and stone coping mortar joint; cleaning drain holes in the concrete barrier; removing a tree from the south fascia and northwest retaining wall; and removing graffiti by power wash and applying anti-graffiti protective coating. Vehicular and pedestrian access will be maintained during the estimated 4-month rehabilitation period.



East 180th Street Bridge over Bronx River.

The Riverside Drive Bridge over West 138th Street was built in 1920. It is a single span concrete arch bridge with stone masonry facing on the abutments and spandrel walls. There is a stone parapet on the east and the west side of the bridge. The existing bridge geometry consists of two travel lanes and a parking lane in each direction; the bridge also contains a sidewalk on the east side and an entrance to Riverbank State Park on the west side. The scope of rehabilitation work shall include the following: removing and replacing the asphalt overlay; repairing granite and brick pavers and concrete on the underdeck and sidewalk; repointing and repairing cracks in stone masonry joints; resealing underdeck joints; installing weepholes in the concrete underdeck; installing pavement striping; removing graffiti by power wash and applying anti-graffiti protective coating; cleaning and painting steel staircase railing and bollards; and replacing lighting fixture and refurbishing existing fuse box. Vehicular and pedestrian access will be maintained during the estimated 4-month rehabilitation period.

ACCOMPLISHMENTS & PLANNED PROJECTS



Riverside Drive Bridge over West 138th Street.

The Riverside Drive Bridge over West 145th Street was built in 1930. It is a single span concrete arch bridge with stone masonry facing on the abutments and west spandrel wall. There is only one fascia on this bridge; the east side of the arch bridge is a filled backwall. There is a stone parapet on the west side of the bridge. The existing bridge geometry consists of two travel lanes and a parking lane in each direction; the bridge also contains an entrance to Riverbank State Park on the west side. The scope of rehabilitation work shall include the following: clearing and grubbing; removing and replacing the asphalt overlay, concrete overlay, waterproofing membrane and granite and brick pavers; repairing concrete on the underdeck; repointing and repairing cracks in stone masonry joints; resealing underdeck joints; installing pavement striping; removing graffiti by power wash and applying anti-graffiti protective coating; removing and resetting steel gate; and cleaning and painting bollards. Vehicular and pedestrian access will be maintained during the estimated 4-month rehabilitation period.



Riverside Drive Bridge over West 145th Street.

Bicycle use has grown at an unprecedented rate over the last five years in New York City. Currently, the Pulaski Bridge, which connects Greenpoint, Brooklyn with Long Island City, Queens, merges pedestrian and bicycle traffic into a shared travel lane creating dangerous conditions for both pedestrians and bicyclists. The Pulaski Bridge project will convert one southbound car lane (between Jackson Avenue in Queens and Eagle Street) on the bridge into a protected bicycle lane, giving more room to pedestrians on what is now a shared-use path and calming traffic headed toward McGuinness Boulevard in Brooklyn. A \$2.5 million Federal Transportation Enhancements grant awarded by the State will cover some of the \$4.2 million costs. The new pathway is expected to open in late 2015.

Opened in 1954 and rebuilt in 1994, the Pulaski Bridge is a 44 span bascule drawbridge that opens about 400 times a year, mostly during low tides between October and April for barges delivering heating oil to a facility on Newtown Creek. The opened drawbridge cannot support the weight of an additional concrete barrier, so in the middle of the bridge, the project will eliminate the barrier that separates the current bicycling and walking path from traffic. On this stretch, pedestrians and cyclists will have physical (metal) separation from traffic, but not between each other. Along other sections of the bridge, there will be two concrete barriers, separating the bikeway from both car traffic and pedestrians. The scope of work will also include installing impact attenuation devices at breaks in barrier system; replacing the finger joint at the center break of the bridge with a bicycle friendly joint; balancing the bascule leaves to accommodate the load of the new barrier; and installing pavement markings and signs for the new bicycle path.

ACCOMPLISHMENTS & PLANNED PROJECTS

The project will involve nighttime and midday car lane closures, but bicycle and pedestrian access to the bridge will be maintained at all times during construction.



Existing and Planned Condition.

ACCOMPLISHMENTS & PLANNED PROJECTS

Engineering Review and Support

IN-HOUSE DESIGN

In-House Design staff prepare 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 completed the design of the Bryant Avenue Bridge over Amtrak and CSXT in the Bronx. This bridge is currently under construction and is scheduled to be completed in early 2016. This is a one span structure constructed in 1908, with a span length of 90 feet. This project includes replacement of the steel superstructure, bearings, approaches, water mains, and rehabilitation of both abutments. The proposed superstructure will consist of a reinforced concrete deck over prestressed concrete adjacent box beams. The two existing water mains will be removed, and replaced with two new pipes. Both water mains will be installed on top of the north sidewalk in a fenced-off area. Six existing Con Edison electrical conduits will be removed from the bridge.

Design also continued for the rehabilitation of the Henry Hudson Parkway Viaduct from West 72nd Street to West 82nd Street and the Henry Hudson Parkway Viaduct from West 94th Street to West 98th Street. The rehabilitation work will include the repair or replacement of various deteriorated structural steel members, concrete deck, abutments, and the retaining walls, as well as the complete painting of the substructure and superstructure steel. Construction work on these viaducts is expected to begin in fiscal years 2016 and 2017.

The unit continued the preliminary design for the replacement of the Union Turnpike Bridge over the Cross Island Parkway in Queens. This is a two span rigid frame structure constructed in 1939. The entire bridge will be removed and replaced at the same location. Several alternatives for the new bridge are currently being investigated. Construction is expected to begin in fiscal year 2021.

The unit also started the design for the rehabilitation of the East 169th Street Bridge and the East 180th Street Bridge, both over Metro North Railroad in the Bronx. Construction for both bridges is scheduled to start in fiscal year 2019. As the designer of the Belt Parkway Bridge over Paerdegat Basin, this unit was involved in the construction support services for the entire duration of construction.



August 2014: In-House Design Engineers Inspecting the Union Turnpike Bridge over Cross Island Parkway – Assistant Civil Engineer Leonid Sagalovskiy, City Planner Ristina Sekulla-Nessel, and Civil Engineer Edvard Jeamgocian. (Credit: Paul Schwartz) In-House Design Engineers Inspecting the East 169th Street Bridge over Metro North Railroad – Civil Engineer Gregory Novofastovsky, Director of In-House Design Ferdinand John, Civil Engineers Kamran Sikandar and Lev Gold, Assistant Civil Engineer Elena Marresova, Civil Engineer Kirolos Dimian, and Assistant Civil Engineer Leonid Sagalovskiy.

This unit also handled the following emergency project that required expeditious response by the Division: the design of a collision protection beam attached to the north fascia of the park and

ACCOMPLISHMENTS & PLANNED PROJECTS

promenade bridge over the FDR Drive southbound roadway to protect the bridge's superstructure from strikes by illegal trucks on the parkway. The installation of protection beam was completed in fall 2014.

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 2014 included the Belt Parkway Bridge over Mill Basin; emergency contract for the restoration of electrical and mechanical systems of the Metropolitan Avenue Bridge over English Kills; emergency contract for the restoration of electrical and mechanical systems for 12 movable bridges; and the emergency contract for the restoration of tunnel systems at the Battery Park and West Street Underpasses.

ENGINEERING SUPPORT

BRIDGE PROJECT SPECIFICATIONS

In 2014, the Specifications Unit of the Engineering Support Section prepared and/or reviewed contract proposal books and/or specifications for 18 contracts, including 14 bridge rehabilitation and new construction/reconstruction contracts and 4 component rehabilitation contracts, in addition to replying to specification requests for 8 on-going construction projects. Five of the above contracts totaling approximately \$274 million in construction costs were approved by the Law Department and advertised for bid. 6 contracts were awarded for construction in 2014 and 3 are waiting for award.

Notable among the construction contracts prepared and /or reviewed, advertised and sent for bid were: the component rehabilitation of nine bridges citywide, Belt Parkway Bridge over Mill Basin, Harlem River Drive over Ramp at East 127th Street, the preventive maintenance of the four East River Bridges, Emergency Contract for Metropolitan Avenue Bridge over English Kills, the 10 Culverts Project in Staten Island, Emergency Contract for Battery Park Underpass and West Street Underpass, and the Emergency Contract for 12 movable bridges.

The unit also maintains the City and federal boiler plate received from DOT Legal and updates R-pages (revisions to NYSDOT Standard Specifications) as required by the Guidelines for Preparation of Bridge Construction Contract Proposal Book and advises Agency Divisions and consultants on the preparation of contract proposal books and construction contract related issues.

CONVERSION OF DIVISION ENGINEERING ARCHIVES

The Records Management Unit converted 165,429 TIFF (Tag Image File Format) drawings to PDF (Portable Document Format) format and completed the indexing of 139,944 drawings. Some 200,000 TIFF drawings will be converted to PDF format.

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.

The Records Management unit also reviewed and approved as-built drawings and contract drawings for 21 contracts in 2014, including Williamsburg Bridge, Macombs Dam Bridge, Manhattan Bridge, Harlem River Drive over Ramp at East 127th Street, Bryant Avenue Bridge over Amtrak and CSX, component rehabilitation of twelve bridges citywide, St. George Ferry Terminal Ramp Project, Wards Island Pedestrian Bridge, Shore Road Circle Bridge, Metropolitan Avenue Bridge, Claremont Parkway Bridge, and the 145th Street Bridge.

ACCOMPLISHMENTS & PLANNED PROJECTS

SURVEYING

Unit staff monitored eight bridges in 2014: Depot Place Bridge over Conrail Yard, Third Street Bridge over Gowanus Canal, Pelham Parkway Bridge, Stone Arch Bridge in Central Park, Ninth Street Bridge over Gowanus Canal, 17th Avenue Pedestrian Bridge over Belt Parkway, Footbridge over Clove Lake, City Island Bridge over Eastchester Bay, and the retaining stone wall at Douglas Road.

ENGINEERING REVIEW

MACY'S THANKSGIVING DAY PARADE

As in past years, the staff of the Engineering Review Section actively participated in the 2014 Macy's Thanksgiving Day Parade. Months before the parade, the engineers reviewed the balloon specifications and flight analyses. 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. This project was coordinated with Macy's and various City agencies such as City Hall, NYPD, DOB, and OEM.

CRP/EXTELL PARCEL H PROJECT

The CRP/Extell Parcel H, LP project (Riverside Drive between 59th and 72nd Streets) includes the construction of seven new bridges, a ramp, two relieving platforms, and connector roads along Riverside Drive as a part of the residential and commercial development over the former Penn Central Rail Yard. The project also includes a half tunnel section in what was formerly known as the Miller Highway Tunnel. When completed, the infrastructure network will be transferred to DOT for maintenance. The Division is providing engineering review of the design drawings, as well as quality assurance inspections, to ensure the developer's compliance with DOT's construction and design standards. The bridges are substantially completed and open to traffic. The first phase of construction for the half tunnel section is complete and phase two is in progress.

RETAINING WALLS

In May 2005, the Department started a program for the periodic inspection of City-owned retaining walls. The City currently owns 634 retaining walls. Those retaining walls were built during the interstate construction program between the 1940's and 1970's and are an important part of the city's street infrastructure. However, some of them are approaching the end of their service lives and are falling into poor condition due to various factors such as spalling/cracking of concrete, loosened mortar joints, broken stone masonry, falling coping stones, deteriorated joints, leakage through the walls due to improper drainage arrangements (clogged weep holes), bulging of walls due to hydrostatic pressure build-up on the back of the walls, and many other problems. In order to protect the infrastructure they support, the retaining walls require regular inspections and monitoring, and depending upon the condition of the walls, rehabilitation/replacement is required. Since 2005, 17 retaining walls have completed rehabilitation/replacement, and 18 retaining walls are in various stages of design and construction. The retaining walls which are in fair to poor condition will be in a capital program for future rehabilitation.

ACCOMPLISHMENTS & PLANNED PROJECTS



Retaining Walls: Southeast Corner of West 108th Street and Riverside Drive. Left Side of Ramp From Riverside Drive to George Washington Bridge. Irwin Avenue. Cross Island Parkway Southbound Before 100th Avenue. Cooper Avenue.

OVERWEIGHT TRUCK PERMIT REVIEWS

The Overweight Truck Permit Unit receives an average of 100 permit applications per week for overweight/over-dimensional trucks, self-propelled cranes, and occasional superload moves from utility companies crossing City-owned bridges, including critical bridges such as the Manhattan and Ed Koch Queensboro Bridges. Most of the permit requests must be reviewed and approved on the same day.

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 April 2015.

ENVIRONMENTAL ENGINEERING

In 2014, the Environmental Engineering staff of the Quality Assurance section continued to provide expertise and oversight of the various environmental issues of the reconstruction of the Paerdegat Basin Bridge, Rockaway Parkway Bridge, Fresh Creek Bridge, Gerritsen Inlet Bridge, and the Bay Ridge Avenue Bridge in the Belt Parkway Project. This includes monitoring and

ACCOMPLISHMENTS & PLANNED PROJECTS

oversight of wetland restorations, management of storm water erosion and run off controls, asbestos and lead paint abatement, hazardous waste management, spill control/management, management of waste water, and groundwater/soil management. Additionally the unit was involved with the design review of the Mill Basin Bridge to ensure that all environmental issues are included in the project specifications and contract documents. The unit also works closely with project management and resident engineering staff through periodic meetings and site visits to ensure that environmental permits, work procedures and construction operations are in compliance with NYSDEC, US EPA and NYCDEP. The unit continues to provide environmental management on the Brooklyn Bridge, Manhattan Bridge, Greenpoint Avenue Bridge, Belt Parkway bridges, City Island Bridge, Component Rehabilitation projects, and emergency work over water projects.

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.

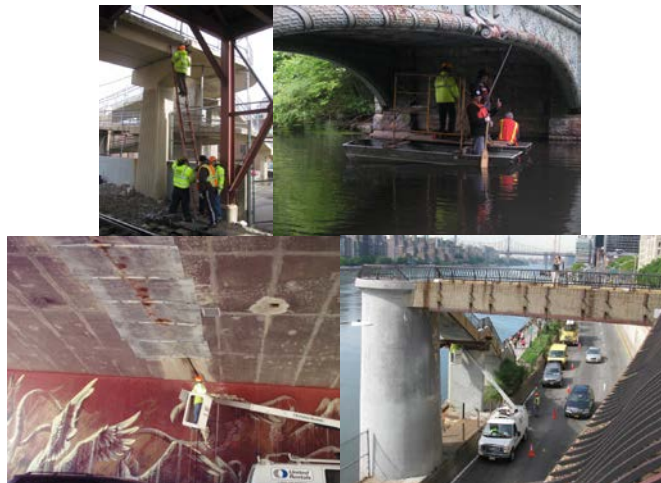
The Division's Anti-Icing Program uses the liquid chemical potassium acetate and aggregate chemical sodium acetate. The anti-icing fleet consists of twenty-two application trucks, five plow trucks and several smaller plows. Ten of the spray trucks are combination spray/plow trucks with a 1,000 gallon 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 2013-2014, a total of 107,200 gallons of potassium acetate and 182 tons of sodium acetate were applied on the roadways of all four East River Bridges.

INSPECTIONS

In 2014, Inspections covered 165 bridges and 601 spans. Emphasis was placed on ensuring public safety through the monitoring of potentially hazardous conditions and temporary repairs. The unit performed 859 monitoring inspections, including special winter monitoring inspections of cellular structures, shorings, and potential fire hazards. In addition, 132 emergency inspections were conducted in response to hot line calls, in-house requests, or citizen complaints.



Inspecting Minthorne Street Bridge in Staten Island in March 2014, Lullwater Bridge in Prospect Park (From a Boat) and Brooklyn-Queens Expressway over Pearl Street in May 2014, and East 81st Street Bridge in June 2014.

ACCOMPLISHMENTS & PLANNED PROJECTS



Winter Monitoring Locations: Manhattan, Williamsburg, Ed Koch – Queensboro Bridge, and West 155th Street Pedestrian Bridge.

The Bridge Data System (BDS) allows inspection reports to be generated and transmitted electronically. It provides access to data from the latest inspection reports on all bridges to all Division units. In addition, when an emergency arises, our inspectors are able to send photographs and other information to the main office via a wireless connection to the internet. This feature enables bridge repair engineers to assess the condition and dispatch repair crews with the appropriate equipment in a timely manner. The updated version of the system was field tested by the contractor and the Bridge Management Unit in 2012 and was fully implemented in March 2013.

A future contract is anticipated to expand the BDS capabilities by incorporating data from capital reconstruction projects. Additional features will include in-depth inspection reports by consultants as well as GPS data.

Since 2002, the Division stores all bridge inspection reports in electronic format. Flag reports are now also transmitted electronically. As of September 2003, standard inspection work is funded by a federal grant. Emergency response inspections and administrative support remain city funded.

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

STRUCTURAL HEALTH MONITORING

The Bridge Inspection and Management Units have pioneered the use of various nondestructive tests on City bridges, including X-ray diffraction, fiber optics, strain-gauging, ground penetrating radar, and ultrasonic testing. Future applications of such technologies are under consideration. For demonstration purposes, the Manhattan Bridge was surveyed with a radar scanner. The results indicated that the stiffening of the bridge has reduced its torsional motion under subway traffic very significantly. The results matched independent measurements by Global Positioning Systems (GPS).

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

ACCOMPLISHMENTS & PLANNED PROJECTS

recommend appropriate non-invasive technology for monitoring of suspension cables.

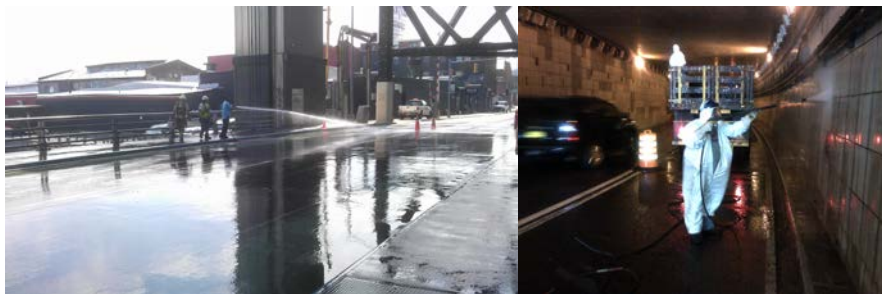
As part of the project, a unique magnetic flux field test was conducted on the cable. The method was developed by Japanese researchers specifically for this test. Its purpose is to estimate the amount of healthy steel in the cable without exposing the wires. The findings were presented at the Agency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

In 2014, an existing engineering services agreement (ESA) contract was used to install a remote monitoring system on selected spans of the Manhattan approach to the Brooklyn Bridge. Under the ESA, select locations were instrumented with fiber optic sensors that allow for real time, on-line monitoring of existing flagged conditions. The system was also designed to send out alert messages to Division personnel should certain conditions arise during the monitoring of these flags. The consultant is currently working on the migration of the web-based system from their own servers to a cloud-based storage solution under the control of the Agency's information technology department. With the delay in the upcoming rehabilitation contract, this system has taken on added importance.

In 2014, the Bridge Management Unit finalized the installation of a real-time on-line system for monitoring the abutments and piers of three bridges in the Bronx identified as vulnerable to scour. Solar panels were installed at each location to supply power to the various instruments and computers installed at each bridge. The computers then send the information that was gathered from the monitoring equipment wirelessly to a remote web server where bridges personnel can monitor conditions in real time.

CLEANING

In 2014, 7,286 cubic yards of debris were removed from bridges and their surrounding areas, and 1,146 drains were cleaned.



Water Spraying the 9th Street Bridge over Gowanus Canal in July 2012. July 2013: Power Washing the Battery Park Underpass. (Credit: Earlene Powell)

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.

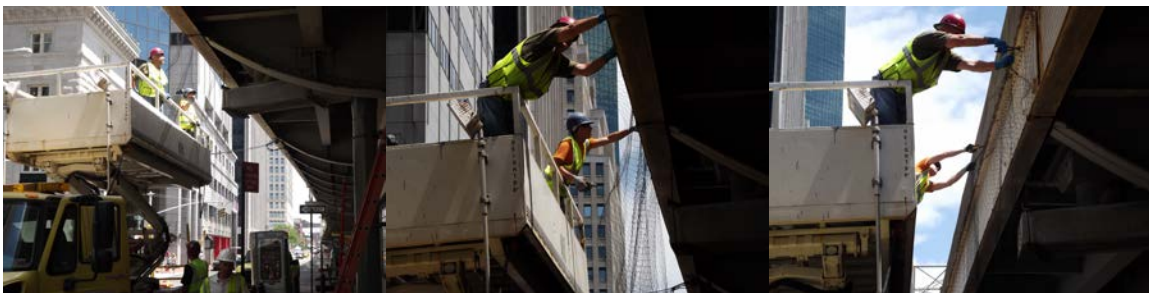
The Division utilizes a relatively low tech, and passive, approach to deterring pigeons. In 2006, the type of barrier used to cage out pigeons was changed from the drop ceiling method to netting.

ACCOMPLISHMENTS & PLANNED PROJECTS

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 eight 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 2014, we continued to experiment with a new method on the flanges over the north sidewalk at the Brooklyn-Queens Expressway over Atlantic Avenue: a gel, whose active ingredient is capsaicin, that is applied to the spots unwanted birds would normally perch. The burning sensation caused by the capsaicin irritates the birds’ feet and results in them roosting elsewhere.

In 2014, pigeon dropping removal and/or pigeon proofing were performed at the Boston Road Bridge over Hutchinson River Parkway, Brooklyn-Queens Expressway from 30th Avenue to 37th Avenue, Brooklyn-Queens Expressway at Northern Boulevard and the Grand Central Parkway, the Clearview Expressway at Union Turnpike, and on the north outer roadway of the Ed Koch – Queensboro Bridge.



Installing Pigeon Netting at Old Slip (FDR Drive at the South Street Viaduct) in June 2012: Carpenters Stephen Buckley, William Sic, and Joseph Moschella, and Supervisor Carpenter Joseph Vaccaro. (Credit: Thomas Whitehouse)



Nature’s Pigeon Deterrent—Falcons on the Brooklyn Bridge South Side Tower, Manhattan Tower Top, and Cables. Falcons Have Lived on the Brooklyn Bridge Since 1995. 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 Were 20 Active Nesting Falcon Pairs in New York City in 2013.

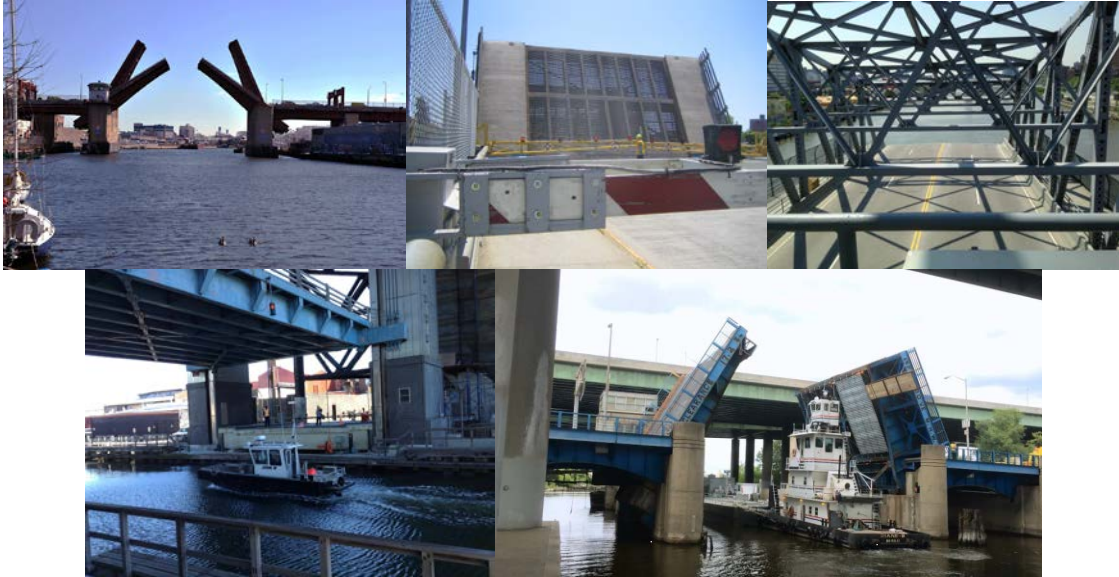


Falcon Family on the Williamsburg Bridge. (Family Credit: Russell Holcomb) “Owl” Guarding the Machinery Room of the Broadway Bridge. A Hawk on the Broadway Bridge. (Owl and Hawk Credit: Albert Hong)

ACCOMPLISHMENTS & PLANNED PROJECTS

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) Third Street Bridge Opening in June 2012. (Credit: Nikita Gupta) 145th Street Bridge Open in June 2013. (Credit: Ting Yu Huang) Ninth Street Bridge Open in September 2013. (Credit: Vera Ovetskaya) Unionport Bridge Open for Tugboat.

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 saves approximately \$1,042,480 annually. In addition, bridge operational capabilities, general maintenance, and debris and snow removal have been enhanced through the more efficient utilization of existing personnel.

Currently in its final design phase, the reconstruction of the Mill Basin Bridge (part of the second Belt Parkway Group) is scheduled to start in summer 2015. 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 2000 - 2014

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Brdn Ave. (Q)	0	28	0	0	0	1	0	0	0	0	0	0	0	0	0
Brdwy (B/M)	6	27	83	49	16	2	18	42	58	57	15	11	44	0	6
Brecknr Expwy (Unnpnt Brdg) (B)	385	420	332	300	309	253	250	281	323	349	308	198	143	143	218
Carroll St. (K)	102	80	124	186	49	22	28	13	38	91	146	29	95	2	12
Grand St. (K/Q)	17	50	19	10	8	5	2	5	0	0	0	3	3	0	0
Grnpoint Ave. (K/Q)	688	641	659	738	1093	1045	905	641	485	428	388	667	733	609	723
Hmltn Ave. (K)	933	832	946	824	757	677	1077	354	0	150	905	1060	965	651	760
Hntrs Point Ave. (Q)	0	36	0	0	0	0	0	1	0	0	0	0	0	0	0
Htchsn River PkwY (B)	5	120	30	5	37	10	2	51	61	170	224	169	197	275	204
Macombs Dam (B/M)	0	0	0	0	0	0	0	4	2	0	3	1	22	0	0
Mdsn Ave. (B/M)	0	0	0	0	7	0	9	35	8	0	3	1	6	0	0
Metrlptn Ave. (K)	279	366	339	342	153	0	104	329	245	240	254	413	468	378	360
Mill Bsn (K)	336	317	142	173	164	162	174	182	190	183	197	236	277	246	210
Pulaski (K/Q)	276	208	308	599	694	734	433	489	639	611	467	591	476	484	693
Rsvlt Islnd (M/Q)	58	48	125	63	669	150	54	48	0	62	0	0	55	55	43
Shore Rd (Pelham Pky) (B)	2168	2222	1897	1910	2011	1683	1704	1645	1446	806	1197	811	613	697	724
Union St. (K)	85	101	62	24	21	11	9	5	10	28	32	4	36	0	0
Ward's Islnd Pdstrn (M)	0	279	0	0	7	2	8	4	6	3	5	0	0	0	3
Willis Ave. (B/M)	4	40	0	7	25	2	41	67	17	9	1	1	0	0	0
3 rd Ave. (B/M)	1	1	0	0	0	0	6	60	7	0	3	3	4	2	6
3 rd St. (K)	178	117	212	152	99	43	31	39	49	89	74	27	68	0	0
9th St. (K)	513	808	733	547	457	360	480	333	287	387	475	670	585	270	427
145 th St. (B/M)	1	6	0	0	9	0	0	0	0	0	0	1	6	0	0
W.207 th St. (B/M)	6	14	4	6	10	1	12	24	2	3	7	5	23	0	0
TOTAL	6041	6761	6015	5935	6595	5163	5347	4652	3873	3666	4704	4901	4819	3812	4389

ACCOMPLISHMENTS & PLANNED PROJECTS

When and Where Unit

In 2014, the following structures were worked on under the Division's When and Where contracts:

Trans-Manhattan Expressway over Harlem River Drive Northbound Ramp, Riverside Drive over West 158th Street, FDR Drive Overpass at 90th Street – Protection Beam, Pedestrian Bridge at 73rd Street over Amtrak, West 34th Street Bridge over Amtrak 30th Street Branch, East 233rd Street Bridge over Metro North, West 34th Street Bridge over Amtrak 30th Street Branch, 179th Street Bridge over Metro-North, Williamsburg Bridge, Concourse Village Avenue Bridge over Metro-North, West 33rd Street Bridge over Land Adjacent to Amtrak, East 187th Street Bridge over Metro-North, East 25th Street Bridge over FDR Drive, Hempstead Avenue Bridge over Cross Island Parkway, East 81st Street Bridge over FDR Drive, sections of the Brooklyn-Queens Expressway, 79th Street Ramp to Garage, Corlear Park Road Bridge over FDR Drive, East 71st Street Bridge over FDR Drive, Isham Park Pedestrian Bridge over Harlem River Inlet, and Fort Tryon Park Bridge over South Cloisters.

A special protection beam was fabricated and installed for the Park and Promenade over the southbound FDR Drive at 91st Street. This protection beam is necessary because on too many occasions, errant trucks have found their way onto the southbound FDR Drive and caused damage to the underside of the overhead structure supporting the park and promenade between East 79th Street and East 91st Street. The effect of such repetitive hits is cumulative, and increases the threat to the safety of the FDR Drive traffic and the users of the promenade and park above it in this area. The beam will reduce the chances of trucks making contact with the overhead structure and thus provide an additional measure of safety for the public. Division ironworkers fabricated replacement parts for the protection beam assembly, which were then painted by Division painters. The beam was installed the weekend of October 18, 2014 with minimal disruption to traffic.



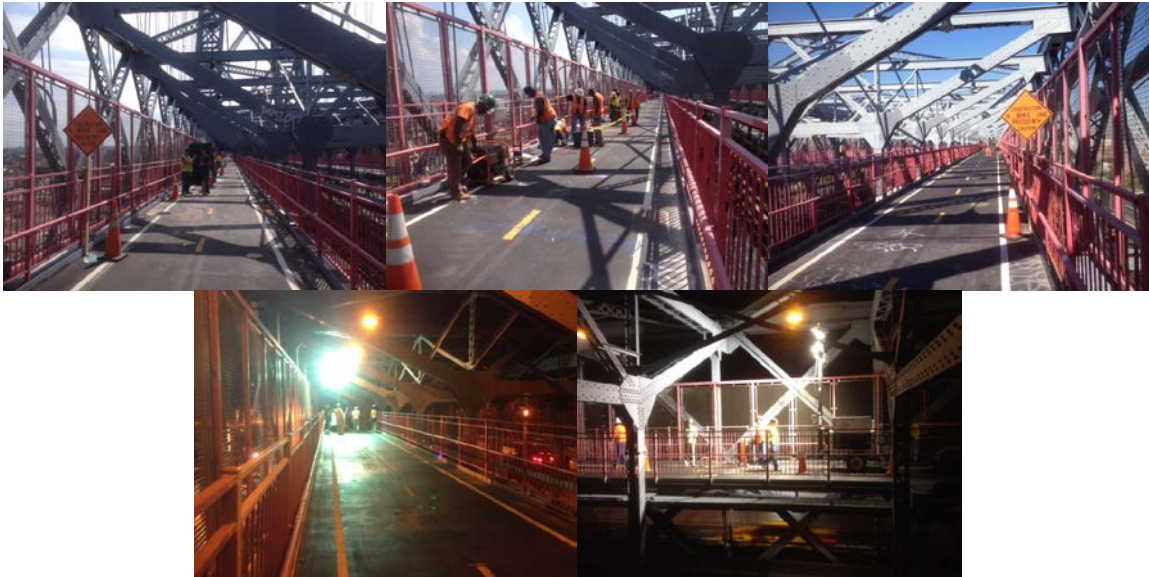
FDR Drive Structure. Installation of the Protection Beam.

The 191st Street underpass to the NYCTA IRT line was found to have areas of mold and peeling paint. On the weekend of November 7-9, 2014, the tunnel was closed while the contractor performed mold remediation and graffiti removal and repainted the entire interior surface.

ACCOMPLISHMENTS & PLANNED PROJECTS



West 191st Street Tunnel - Before and After.



Overlay Patch Repairs of the Williamsburg Bridge Bicycle and Pedestrian Path Began in July 2014 and Were Completed in October. (Credit: Thomas Leung)

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 in-house staffing nor the equipment to handle this type of special work. These repairs could not be handled under the usual time and materials When and Where contract, because the work is unique, in that it requires a consultant with licensed underwater capability to supervise and inspect the work for compliance and adequacy. Furthermore, detailed note taking is necessary by the inspectors to check and approve payments for the contractor's work.

Marine bridge repairs addressed in 2014 include 145th Street Bridge over Harlem River, Wards Island Pedestrian Bridge over Harlem River, Shore Road (Pelham Parkway) Bridge over

ACCOMPLISHMENTS & PLANNED PROJECTS

Hutchinson River, Depot Place Bridge over Conrail, Hutchinson River Parkway Bridge over Hutchinson River, West 207th Street Bridge over Harlem River, and Macombs Dam Bridge over Harlem River.

Some of these locations experience repeated damage due to heavy marine traffic and/or a narrow channel, such as the Shore Road (Pelham Parkway) Bridge over the Hutchinson River. The issuance of new flags occasionally necessitates new visits to even recently completed projects. Timber fender systems especially susceptible to recurring hits by barge traffic, and consequently require periodic restoration in relatively short time periods. In addition to damage due to impact, timber elements are also replaced because of deterioration and attack by marine borers, whose activity has vastly increased as the water quality in the New York City area has improved.

Numerous barge hits at the Shore Road Bridge occur repeatedly. As a result, a continuation and completion of previously reported work of replacing timber planking and walers took place at this location, as well as installation of a special plastic material called “UltraPoly” at the top portion of the fender planking and at selected dolphin piles. So far, this material has been shown to protect against rubbing damage.

On the heavily traveled Hutchinson River Parkway Bridge over Hutchinson River, severe deterioration of key structural steel elements supporting the steel grid deck of the southeastern quadrant of the span forced urgent measures to be taken, first, by providing immediate temporary replacements to take over part of the lost support capability, and subsequently, by installing new steel replacement “sleeper” beams and heavy local support at deteriorated stringer sections.



Hutchinson River Parkway Bridge - Installation of Sleeper Steel Beams to Directly Support the Steel Grating.

The southwest fender system of the Wards Island Pedestrian Bridge was severely battered by an impact from a large barge, leaving its timber structure dislocated, damaged and incapable of providing the designed protection from future barge hits. It was immediately necessary to temporarily provide safety measures to warn off mariners from coming too close to the debris field created as a result of that impact. Construction of a complete replacement fender system commenced in 2014 after a series of temporary measures were taken to protect the west tower of the bridge.



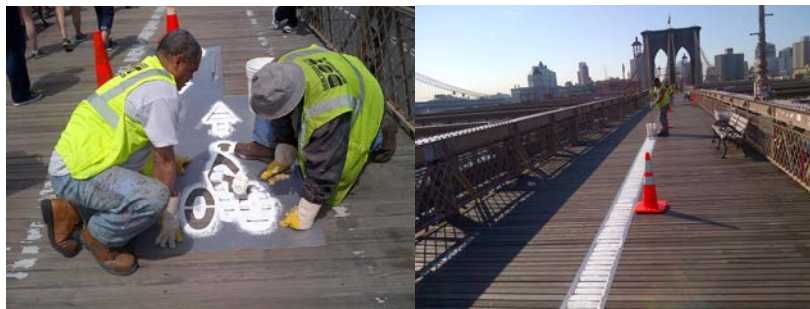
Wards Island Pedestrian Bridge – Collapsed Fender.

ACCOMPLISHMENTS & PLANNED PROJECTS

PAINTING

In 2014 the following bridges were painted as part of the in-house maintenance program: Atlantic Avenue Service Road Eastbound and Westbound over East New York Avenue, West 176th Street Pedestrian Bridge over Approach to George Washington Bridge, Pennsylvania Avenue Bridge over Belt Parkway, Hempstead Avenue Bridge over Cross Island Parkway, Jackie Robinson Parkway – Union Turnpike over Austin Street, 47th Street Bridge over Grand Central Parkway, and Brooklyn-Queens Expressway West Leg over Grand Central Parkway.

In 2014 the following bridge was painted as part of the capital program: the Greenpoint Avenue Bridge over Newtown Creek.



May 2014: Bridge Painters Jamie Andrade and Goncalo Lima Refreshing the Bicycle Path Markings. June 2014: Bridge Painter Brian Kavanagh Reapplying the Brooklyn Bridge Line Striping. (Credit: Earlene Powell)

In 2014, the following structures were also painted: Department of Transportation Oilers' yard at 21st Street, and Department of Transportation facilities at Kent Avenue and Clay Street.

During 2014, the following structures were also painted during the winter: Facilities at the Harper Street Maintenance and Repair Shop, Department of Transportation Ironworker Shop at 206th Street, and Department of Environmental Protection facilities at Oakwood, North River, and Bowery Bay.

The following locations were also worked on in support of the DOT Iron Worker Shop: Hamilton Avenue Asphalt Plant, Ed Koch – Queensboro Bridge, Westchester Avenue Bridge over Hutchinson River Parkway, Battery Park Underpass Motor Room, Mill Basin Bridge, Greenpoint Avenue Bridge, Grand Street Bridge, Roosevelt Avenue Bridge, Department of Transportation Wythe Avenue facility, Cross Island Parkway over Dutch Broadway, Borden Avenue Bridge, Manhattan Bridge, and the Department of Transportation South 6th Street facility.

GRAFFITI REMOVAL

In 2014, 4,574,830 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.

ACCOMPLISHMENTS & PLANNED PROJECTS



February 2014: Bridge Painters Michael Scotti (on Truck), Russell Newme (Operating Truck), and Willie Tyler, Supervisor Bridge Painter Cesar Pazmino, and Bridge Painter Frank Duic (in Lift Truck) Removing Graffiti on the LIRR Bridge Over the Van Wyck Expressway. (Credit: Earlene Powell)



May 2014: Bridge Painters Russell Newme and Goncalo Lima Removing Graffiti From the Manhattan Bridge. (Credit: Earlene Powell)



ACCOMPLISHMENTS & PLANNED PROJECTS



May 2014: Bridge Painter Russell Newme, Supervisor Bridge Painter Cesar Pazmino, Bridge Painters Goncalo Lima and Samuel Martinez, and Supervisor Bridge Painter Robert Avellino Removing Graffiti From the Williamsburg Bridge. September 2014: Supervisor Bridge Painter Cesar Pazmino and Bridge Painter Goncalo Lima Removing Graffiti From the Manhattan Bridge Market Place. (Credit: Earlene Powell)

During 2014, graffiti was also removed from the following structures: 181st Street and Morris Avenue, Delancey Street, Five Boro Bike Tour Route, 59th Street between 1st and 2nd Avenues, Madison Avenue Bridge, Manhattan Bridge at Forsyth Street, 60th Street in Maspeth, Cross Island Parkway over Conduit Avenue, FDR Drive, Pennyfield Avenue, Hunters Point Bridge, Greenpoint Avenue Bridge, Riverside Drive and West 155th Street, Wards Island Bridge, First Avenue Tunnel, NYC Marathon Route, 145th Street Bridge, 163rd Avenue at 99th Street, 176th Street approach to George Washington Bridge, 34th Avenue over Brooklyn-Queens Expressway, East 128th Street Pedestrian Bridge over 3rd Avenue Bridge Approach, 57th Street at Westside Highway, 60th Street and 62nd Avenue, Alley Pond under Grand Central Parkway, Atlantic Avenue and Van Wyck Expressway, Bartow Avenue, Belt Parkway over Ocean Avenue, Burnside Avenue at Grand Concourse, Dutch Broadway, 37th Street at FDR Drive, Francis Lewis Boulevard, Hempstead Avenue over Cross Island Parkway Northbound Ramp, Hempstead Turnpike, Lorimer Street at the Brooklyn-Queens Expressway, Metropolitan Avenue at the Brooklyn-Queens Expressway, Midland Parkway, Moshulu Parkway at Jerome Avenue, Park Avenue and Ryerson Street, Pelham Bay Bridge, Queens Boulevard at the Long Island Expressway, Riverdale Avenue and West 238th Street, Springfield Boulevard at Grand Central Parkway, Woodhaven Boulevard, and Wythe Avenue at the Brooklyn-Queens Expressway.

RESEARCH AND PRESENTATIONS

In 2014 research work and/or case histories of the Division were presented in the following proceedings:

Transportation Research Board 92nd Annual Meeting, Washington D.C., 12 – 16 January 2014. Yanev, B. *Deck Joints: The Weak Link in Bridge Structures and Life-Cycles*.

ASCE Metropolitan Section Infrastructure Group Seminar - Ports and Waterfront Infrastructure, New York City, 30 April 2014. Anastasio, S., and Munoz, R. *FDR Marine Borer Pile Rehabilitation Program*.

The Society for Protective Coatings, 2014 International Conference and Exhibition, Orlando, Florida, 10 - 13 February 2014. Vainblat, G., and Kolchinskiy, T. *When Size Does Matter: An In-Depth Analysis of Brooklyn Bridge Project Data to Determine the Most Efficient Size of Abrasive Blast Containment Units and the Workforce*.

Betti, R, Khazem, D., Carlos, M., Gostautas, R., and Virmani, Y. P. *Corrosion Monitoring Research for City of New York Bridges*. Federal Highway Administration Office of Infrastructure Research and Development -HRT-14-023, May 2014.

Innis, Jack. *Coatings Crew Connects With Brooklyn Bridge Rehab*. CoatingsProMag, May 2014.

31st Annual International Bridge Conference, Pittsburgh, Pennsylvania, 8 – 12 June 2014. Csogi,

ACCOMPLISHMENTS & PLANNED PROJECTS

R. IBC 14-74: *The Reconstruction of the Manhattan Bridge in New York City.*

7th International Conference on Bridge Maintenance, Safety and Management, Shanghai, China, 7 – 11 July 2014. Csogi, R. *The Reconstruction of the Manhattan Bridge in New York City.*

30th US - Japan Bridge Engineering Workshop, Washington, D.C., 21 – 23 October 2014. Yanev, B. *Joints: the Weak Link in Bridge Design and Management.*

Gong, X., and Agrawal, A. K. *Numerical Simulation of Fire Damage to a Long-Span Truss Bridge.* Journal of Bridge Engineering, October 2014.

IFSTTAR (the French institute of science and technology for transport, land, and networks), Département Matériaux et Structures, Champs-sur-Marne, France, 25 November 2014. Yanev, B. *Bridge Management.*

Dr. Yanev chairs the Subcommittee on Bridge Safety and Security, and is a member of the Transportation Research Board Committees on Bridge Maintenance, Management, Seismic Design, and Non-Destructive Testing.

In 2014 the National Science Foundation approved Dr. Yanev's proposal and funded Project NCHRP 20-05/Topic 46-11 Post-Extreme Event Assessment of Infrastructure Damage to Highway Bridges. He participates in the project review panel, and his proposal for the analytic modeling and laboratory testing of bridge deck expansion joints is under review.

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 2014 included: small movement bridge joints, examples of magnesium-alumina-liquid-phosphate concrete repair applications on transportation assets, intelligent infrastructure systems - monitoring, modeling and decision making tools and techniques, and fatigue deterioration in reinforced concrete bridge decks.



Division Staff Testing a New Patch Material on the East 25th Street Pedestrian Bridge Over the FDR Drive in March 2014.
(Credit: Bojidar Yanev)



March 2014: Bridge Repairer & Riveter Daniel Jaderlinic Welding New Steel Grating and Support Framework on the Rikers Island Bridge.
(Credit: Steve Havemann)

ACCOMPLISHMENTS & PLANNED PROJECTS



July 2014: Supervisor Bridge Repairer and Riveter Steve Havemann Fabricating a Wrench to Remove Nuts From a Seized Rocker Bearing.



June 2014: Summer Interns Nazariy Davydovich, Simona Marginean, and Neil Shah Preparing to Conduct Strain Gauge Testing on the Hamilton Avenue Bridge. July 2014: Summer Intern Nazariy Davydovich Checking the Temperature of the Valve on the 9th Street Bridge. August 2014: Summer Interns Neil Shah, Nazariy Davydovich, and Simona Marginean Preparing to Conduct Strain Gauge Testing on the Third Avenue Bridge. (Credit: Vera Ovetskaya). Assistant Mechanical Engineer Vera Ovetskaya.

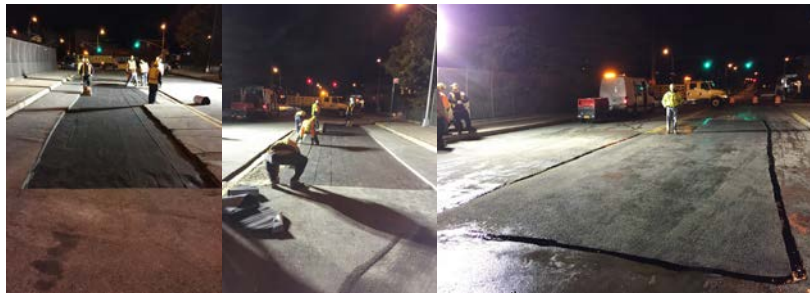


August 2014: Carpenters Stephen Buckley and William Sic, Supervisor Carpenter Joseph Vaccaro (in White Hard Hat), and Carpenters Gregory Nolan and Edward Alfano Jr. Testing the Installation of Polyvinyl Chloride Protection Boards Around the West Street Portal of the Battery Park Underpass. These Would be Placed in the Event the Coastal Storm Plan is Activated. (Credit: Paul Schwartz)

ACCOMPLISHMENTS & PLANNED PROJECTS



October 2014: Installing Trusses for a Roof to Enclose the Trailers to Create a Shop Area at Vernon Boulevard for Maintenance of Anti Icing Equipment - Carpenters Stephen Buckley, Joseph Moschella, Construction Project Manager Hany Soliman, and Carpenters Edward Alfano and Gregory Nolan. This Replaced the Pulaski Yard Which was Damaged by Hurricane Sandy. (Credit: Thomas Whitehouse) Executive Director of Bridge Preventive Maintenance and Repair Thomas Whitehouse Inspecting the Connections.



November 2014: Wearing Surface Repairs at 149th Street over the Cross Island Parkway. Applying the Waterproofing Membrane. The Finished Patch. (Credit: Steve Mezzacappa)



December 2014: Japanese Public Construction Inspector Masahide Nasu from the Kumamoto Prefecture Government Visited the Brooklyn Bridge Rehabilitation Project. Resident Engineer Douglas Reese, Chief Resident Engineer Anthony Grosso, Inspector Masahide Nasu, Resident Engineer Guerman Vainblat, and Director of East River Bridges Hasan Ahmed.