

## **January 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

Initial work has focused on project mobilization and site preparation (Staten Island), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines in advance of construction, and application for permits. Construction began in August 2011 with the start of work on the shaft in Staten Island, where the TBM will begin tunneling operations; work on the Brooklyn shaft is scheduled to begin in late January 2012.

#### **Work Completed in December**

- Completion of construction of the slurry wall for the Staten Island shaft, including excavation, assembly and installation of slurry wall panels and concrete placement.
- Installation of dewatering wells within the starter trench for the TBM
- Collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Completion of the TBM. The TBM is being disassembled and packaged for delivery to the site in January and February 2012
- Continuation of design work related to construction of the slurry wall for the Brooklyn shaft, which will be located within Shore Road Park (just south of 83<sup>rd</sup> Street opposite Fort Hamilton High School), including coordination with the New York City Department of Parks and Recreation
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn. This includes coordination with National Grid and ConEd regarding utility work in Staten Island.
- Continuation of land piping activities in Staten Island, including work related to:
  - relocation of two (2) small sections of a gas line in Victory Boulevard, between Bay Street and Murray Hulbert Avenue, to accommodate construction of the jacking pits. Work on the section of pipe between Bay Street and the SIRR has been completed.

- placement of test piles along Victory Boulevard, between Murray Hulbert Avenue and the SIRR, in advance of replacement of the existing 72" sewer
- preparation for installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks at Victory Boulevard, including digging of test pits
- guniting (spraying concrete) sections of an existing 72" sewer beneath Victory Boulevard, between Bay Street and Murray Hulbert Avenue, to strengthen a portion of the existing pipe; another section of pipe will be replaced (work anticipated to be done in January)
- Community outreach activities, including meeting with residents of Bay Street Landing (BSL); distribution of informational materials; coordination with Staten Island Community Board #1 and Brooklyn Community Board #10; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for January**

- Transport of portions of TBM to the site
- Initiation of starter trench excavation in preparation for launch of the TBM
- Completion of design work related to construction of the slurry wall for the Brooklyn shaft and start of mobilization (fencing of site, tree pruning and removal, as required, etc.)
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of relocation of section of gas line in Victory Boulevard, east of the SIRR
  - construction of two (2) jacking pits and initiation of microtunneling activities in advance of installation of a new water main beneath the SIRR tracks at Victory Boulevard
- Relocation of Front Street (in vicinity of starter trench/work site)
- Continuation of community outreach program, including meetings with Staten Island Community Board #1's Waterfront Committee and residents of BSL; preparation and distribution of informational materials (Project Update, construction notices, web site, etc.); coordination with Staten Island Community Board #1 and Brooklyn Community Board #10; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

For additional information concerning these activities or other aspects of the Siphon construction project, please contact:

Anita Wright  
 Community Liaison  
 Helen Neuhaus & Associates Inc.  
 355 Front Street  
 Staten Island, NY 10304  
 (516) 712-5864 [cell phone]

Or visit the project website at:

<http://www.nycedc.com/ProjectsOpportunities/CurrentProjects/Citywide/Siphon/Pages/Siphon.aspx>

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### **NOTE:**

Recent construction photos follow.



Relocation of gas line (entrance to Bay Street Landing complex,  
on Victory Boulevard)



Installation of pole for monitoring system along Staten Island  
Railroad at Victory Boulevard



## **February 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

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Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

Initial work has focused on project mobilization and site preparation (Staten Island), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines in advance of construction, and application for permits. Construction began in August 2011 with the start of work on the shaft in Staten Island, where the TBM will begin tunneling operations; work on the Brooklyn shaft is scheduled to begin in February 2012.

#### **Work Completed in January**

- Demobilization of equipment used for construction of the slurry wall for the Staten Island shaft
- Initiation of starter trench excavation in preparation for launch of the TBM
- Collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Transport of portions of the TBM to the site
- Continuation of design work related to construction of the slurry wall for the Brooklyn shaft, which will be located within Shore Road Park (just south of 83<sup>rd</sup> Street opposite Fort Hamilton High School), including coordination with the New York City Department of Parks and Recreation
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn. This includes coordination with National Grid and ConEdison regarding utility work in Staten Island.
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of relocation of a section of gas line in Victory Boulevard, east of the Staten Island Railroad (SIRR), to accommodate construction of the jacking pits. [NOTE: Work on the section of pipe west of the SIRR was completed in December.]
  - preparation for installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks at Victory Boulevard. This includes installation of sheeting for the pit located west of the SIRR.



- completion of guniting (spraying concrete) sections of an existing 72" sewer beneath Victory Boulevard, between Bay Street and Murray Hulbert Avenue, to strengthen a portion of the pipe
- Realignment of the Front Street curve, located just south of Hannah Street, to allow the two existing work zones to be combined, thereby eliminating the need to periodically stop traffic on Front Street to accommodate construction vehicles traveling between the two work areas. (Traffic was shifted to the new roadway on January 26<sup>th</sup>.)
- Community outreach activities, including a meeting with Staten Island Community Board #1's Waterfront Committee; distribution of informational materials; coordination with Bay Street Landing (BSL), Staten Island Community Board #1 and Brooklyn Community Board #10; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for February**

- Completion of transport of the TBM to the site
- Continuation of starter trench excavation in preparation for launch of the TBM (anticipated for April)
- Mobilization (fencing of site, tree pruning and removal, as required, etc.) in preparation for construction of the slurry wall for the Brooklyn shaft
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of construction of two (2) jacking pits and initiation of microtunneling in connection with installation of a new water main beneath the SIRR tracks at Victory Boulevard [NOTE: Microtunneling beneath the SIRR tracks will proceed from west to east. Due to the nature of the tunneling operation, as well as the location beneath the SIRR, work will occur around the clock. This work is currently scheduled for the second weekend in March.]
  - replacement of a section of the 72" sewer beneath Victory Boulevard, between Bay Street and Murray Hulbert Avenue (work anticipated to begin in late February)
- Continuation of community outreach program, including meetings with Staten Island Community Board #1's Waterfront Committee, Brooklyn Community Board #10, residents of BSL and representatives of Fort Hamilton High School, as needed; preparation and distribution of informational materials (Project Update, construction notices, web site, etc.); coordination with Staten Island Community Board #1 and Brooklyn Community Board #10; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>. [NOTE: New website address as of 1/16/12.]

NOTE: Recent construction photos follow.



Relocation of gas line on Victory Boulevard, east of SIRR tracks



Installation of sheeting for jacking pit,  
Victory Boulevard just west of SIRR tracks  
(looking west towards Bay Street)

## **March 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011 with the start of work on the shaft in Staten Island, where the TBM will begin tunneling operations; initial work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012.

#### **Work Completed in February**

- Continuation of transport of the TBM to the site
- Continuation of starter trench excavation in preparation for launch of the TBM. To date, the trench has been excavated to a depth of approximately 30'; once complete, the trench will reach a depth of approximately 90'.
- Collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of design work related to construction of the slurry wall for the Brooklyn shaft, including coordination with the New York City Department of Parks and Recreation
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks at Victory Boulevard
  - installation of a 20" water main beneath Victory Boulevard (south side of street) in the vicinity of Murray Hulbert Avenue
  - preparation for installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks in the vicinity of the Van Duzer Street Extension/Swan Street/Bay Street intersection. One pit will be located east of the tracks near the starter trench; the second pit will be located on Bay Street near the Van Duzer Street Extension.



- Mobilization activities in preparation for construction of the slurry wall for the Brooklyn shaft, including fencing of the site; tree pruning and removal, as required; delivery of equipment; and preparation of the site
- Community outreach activities, including meetings with Staten Island Community Board #1's Waterfront Committee and representatives of Fort Hamilton High School; distribution of informational materials; coordination with Bay Street Landing (BSL), Staten Island Community Board #1 and Brooklyn Community Board #10; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for March**

- Continuation of starter trench excavation in preparation for launch of the TBM (anticipated for mid May)
- Completion of transport of the TBM to the site. The TBM will be partially assembled prior to being placed in the starter trench
- Initiation of construction of the slurry wall for the Brooklyn shaft, which will be 160' deep and 25' in diameter, including excavation, assembly and installation of slurry wall panels. In order to accommodate the shaft's depth, 80' rebar cages will be constructed on site and placed two deep in the shaft. The cages will then be filled with concrete prior to excavation of the shaft.
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of construction of two (2) jacking pits and initiation of microtunneling in connection with installation of a new water main beneath the SIRR tracks at Victory Boulevard [NOTE: Microtunneling beneath the SIRR tracks will proceed from west to east. Due to the nature of the tunneling operation, as well as the location beneath the SIRR, work will occur around the clock. This work is scheduled for the weekend of March 17<sup>th</sup> - 18<sup>th</sup>.]
  - installation of a 20" water main and a 24" sewer beneath Victory Boulevard (south side of street) in the vicinity of Murray Hulbert Avenue
  - installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks in the vicinity of the Van Duzer Street Extension/Swan Street/Bay Street intersection. One pit will be located east of the tracks near the starter trench; the second pit will be located on Bay Street near the Van Duzer Street Extension.
- Continuation of community outreach program, including meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, web site, etc.); coordination with Staten Island Community Board #1 and Brooklyn Community Board #10; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

For additional information concerning these activities or other aspects of the Siphon construction project, please contact:

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>.



Excavation of starter trench at Staten Island shaft site



Installation of jacking pit, Victory Boulevard just east of SIRR tracks

## **April 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

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Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011 with the start of work on the shaft in Staten Island, where the TBM will begin tunneling operations; initial work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012.

#### **Work During March**

- Completion of transport of the TBM to the site. The TBM will be partially assembled prior to being placed in the starter trench.
- Continuation of starter trench excavation in preparation for launch of the TBM. To date, the trench has been excavated to a depth of approximately 54'; once complete, the trench will reach a depth of approximately 90'.
- Collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn
- Continuation of land piping activities in Staten Island, including work related to:
  - work at the two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks at Victory Boulevard
  - completion of installation of a 20" water main beneath Victory Boulevard (south side of street) in the vicinity of Murray Hulbert Avenue



- work related to installation of a 24" sewer along Victory Boulevard (south side), from approximately the entrance to the Lyons Pool to Murray Hulbert Avenue (including drilling piles to support the pipe)
- installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks in the vicinity of Swan Street. One pit is located east of the tracks near the starter trench (off Front Street); the second pit is located on Bay Street in the vicinity of the Van Duzer Street Extension.
- Initiation of construction of the slurry wall for the Brooklyn shaft, which will be 160' deep and 25' in diameter, including excavation and assembly of slurry wall panels. In order to accommodate the shaft's depth, 50' rebar cages will be constructed on site and placed three deep in the shaft. The cages will then be filled with concrete prior to excavation of the shaft.
- Community outreach activities, including meetings with Staten Island Community Board #1's Waterfront Committee, Brooklyn Community Board #10's Parks Committee and representatives of Bay Street Landing (BSL); distribution of informational materials; coordination with BSL, Staten Island Community Board #1 and Brooklyn Community Board #10; and liaison with residents, businesses, and stakeholders in the project area

#### **Work Projected for April**

- Continuation of starter trench excavation in preparation for launch of the TBM (anticipated for mid June)
- Continuation of preassembly of the TBM
- Construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of slurry wall panels; and placement of concrete
- Continuation of land piping activities in Staten Island, including work related to:
  - completion of work at the two (2) jacking pits and initiation of microtunneling in connection with installation of a new water main beneath the SIRR tracks at Victory Boulevard **[NOTE: Microtunneling beneath the SIRR tracks will proceed from west to east. Due to the nature of the tunneling operation, as well as the location beneath the SIRR, work will occur around the clock. This work is scheduled for the weekend of April 28<sup>th</sup> – 29<sup>th</sup>.]**
  - continuation of installation of a 24" sewer beneath Victory Boulevard (south side of street)
  - initiation of work related to installation of approximately 175' of a 72" sewer along Victory Boulevard from approximately the entrance driveway of the BSL complex to the eastern edge of 20 BSL; remaining sections of the sewer along Victory Boulevard were previously gunited (sprayed with concrete) to strengthen the existing pipe
  - installation of two (2) jacking pits in advance of microtunneling activities to install a new water main beneath the SIRR tracks in the vicinity of Swan Street
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, web site, etc.); and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Installation of sheeting for jacking pit (in yard near starter trench, east side of SIRR tracks)



Partially preassembled TBM (personnel carrier in front)



Installation of piles for 24" sewer (along Victory Boulevard, adjacent to Lyons Pool)



## May 2012 Update

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

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Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island, where the TBM will begin tunneling operations; initial work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012.

#### **Work During April**

- Continuation of preassembly of the TBM
- Completion of excavation of the east end of the starter trench and continuation of excavation of the west end. Once the entire trench is excavated to a depth of approximately 90', a concrete slab will be poured in preparation for launch of the TBM.
- Continuation of collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn
- Land piping activities in Staten Island, including:
  - continuation of preparatory work in advance of microtunneling activities to install a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – work included grouting and excavation at the jacking pit located west of the tracks; microtunneling is scheduled for the weekend of May 4<sup>th</sup>-5<sup>th</sup>
    - Swan Street crossing – work related to installation of two (2) jacking pits. One pit is located east of the tracks near the starter trench (off Front Street); the second pit is located on Bay Street in the vicinity of Swan Street.

- continuation of work related to installation of a 24" sewer along Victory Boulevard (south side), from approximately the entrance to the Lyons Pool to Murray Hulbert Avenue, including drilling piles to support the pipe
- initiation of work related to installation of approximately 175' of a 72" sewer along Victory Boulevard from approximately the entrance driveway of the Bay Street Landing (BSL) complex to the eastern edge of 20 BSL; remaining sections of the sewer along Victory Boulevard were previously gunited (sprayed with concrete) to strengthen the existing pipe. Work included excavation of two 5' trenches on either side of the existing sewer in preparation for the drilling of piles.
- Continuation of construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of the slurry wall panels; and placement of concrete. The first of three 150' panels was installed in the shaft and concrete was poured on April 25<sup>th</sup>.
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of BSL and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

#### **Work Projected for May**

- Completion of starter trench excavation (west end) and pouring of the concrete slab in preparation for launch of the TBM
- Transfer of partially assembled TBM and support equipment, including "trailing gear" (electrical and mechanical systems), from the storage yard to the bottom of the starter trench where assembly of the machine will be completed prior to testing and launch of the TBM (anticipated for mid June)
- Continuation of construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of slurry wall panels; and placement of concrete for the final two panels
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including:
  - continuation of preparatory work in advance of microtunneling activities to install a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – completion of work at the two (2) jacking pits and microtunneling [NOTE: Microtunneling will proceed from west to east, beginning the evening of Friday, May 4<sup>th</sup>. Due to the nature of the tunneling operation, as well as the location beneath the SIRR, work will occur around the clock.] Once work under the tracks is completed, remaining microtunneling will occur during typical weekday hours.
    - Swan Street crossing – continuation of work related to installation of two (2) jacking pits.
  - completion of installation of a 24" sewer beneath Victory Boulevard (south side of street)
  - continuation of work related to installation of the 72" sewer along Victory Boulevard, including drilling of piles, excavation and removal of the existing sewer

- Preparation for initiation of land piping activities in Brooklyn, including work related to installation of water and sewer lines along Shore Road, between 86<sup>th</sup> and 83<sup>rd</sup> Streets (work expected to begin in June)
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Drilling piles for 24" sewer (Victory Boulevard, just east of SIRR tracks)





Work zone delineating section of 72" sewer to be replaced  
(Victory Boulevard, east of SIRR)



Excavated trenches in preparation for pile drilling for  
installation of 72" sewer (Victory Boulevard, east of SIRR)



Removal of excavated material from starter trench in Staten Island



Assembly of panel for Brooklyn slurry wall



Slurry wall panel being placed at Brooklyn shaft site



## **June 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

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- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island, where the TBM will begin tunneling operations; initial work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May, the project team began to move pieces of the TBM to the starter trench for final assembly and testing.

#### **Work During May**

- Completion of starter trench excavation (west end) and pouring of concrete slab (east and west ends) in preparation for launch of the TBM
- Continuation of preassembly of the TBM and transfer of partially assembled TBM from the storage yard to the bottom of the starter trench for assembly and testing prior to launch (anticipated for July 9<sup>th</sup>)
- Continuation of collection of baseline data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and the shaft in Brooklyn
- Land piping activities in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – completion of work at the jacking pit located west of the tracks; microtunneling beneath the tracks occurred the weekend of May 4<sup>th</sup>/5<sup>th</sup>. Due to



the nature of the tunneling operation, as well as the location beneath the SIRR, this work occurred around the clock. Once the machine passed beneath the tracks, the remaining microtunneling occurred during typical weekday hours, with the equipment “breaking through” to the pit on the east side of the tracks on May 9<sup>th</sup>.

- Swan Street crossing – continuation of work related to installation of two (2) jacking pits. One pit is located east of the tracks near the starter trench (off Front Street); the second pit is located on Bay Street in the vicinity of Swan Street.
- continuation of work related to installation of a 24” sewer along Victory Boulevard (south side), from approximately the entrance to the Lyons Pool to Murray Hulbert Avenue
- continuation of work related to installation of approximately 175’ of a 72” sewer along Victory Boulevard from approximately the entrance driveway of the Bay Street Landing (BSL) complex to the eastern edge of 20 BSL; remaining sections of the sewer along Victory Boulevard were previously gunited (sprayed with concrete) to strengthen the existing pipe. Work included drilling two rows of piles on either side of the existing sewer. Disturbed sections of the street were temporarily restored following installation of the piles.
- replacement of water main and associated valves in the vicinity of Swan and Van Duzer Streets

**NOTE:** As stipulated by the City, work on Victory Boulevard will be suspended during the summer while the Lyons Pool is in operation. Construction will resume after Labor Day.

- Continuation of construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of the slurry wall panels; and placement of concrete. The second of three 150’ panels was installed in the shaft and concrete was poured; the final panel was scheduled for installation in early June.
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of BSL and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for June**

- Completion of transfer of TBM and support equipment, including “trailing gear” (electrical and mechanical systems), from the storage yard to the bottom of the starter trench. Additional activities will include assembly and testing of the TBM, connection to ConEdison for power and installation of backup power systems. Tunnel excavation is scheduled to begin on July 9<sup>th</sup>.
- Continuation of construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of slurry wall panels; and placement of concrete. Following construction of the slurry wall, work will begin on excavation of the shaft, which will be approximately 150’ deep.
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including:
  - continuation of preparatory work in advance of microtunneling activities to install a new water main beneath the SIRR tracks:

- Victory Boulevard crossing – the two (2) jacking pits will be temporarily sealed while work on Victory Boulevard is suspended for the summer. Work west of the SIRR will resume in August (Victory Boulevard west of the SIRR is not affected by the summer embargo) and east of the SIRR after Labor Day.
- Swan Street crossing – continuation of work related to installation of two (2) jacking pits, including coordination with the SIRR.
  - completion of installation of a 24" sewer beneath Victory Boulevard (south side of street)
  - preparation for installation of a 60" water main along Murray Hulbert Avenue
  - work related to installation of a 20" water main and 24" sewer along Murray Hulbert Avenue
- Preparation for initiation of land piping activities in Brooklyn, including work related to installation of water and sewer lines along Shore Road, between 86<sup>th</sup> and 83<sup>rd</sup> Streets (work expected to begin in July)
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

For additional information concerning these activities or other aspects of the Siphon construction project, please contact:

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>.



Final microtunneling “push” on May 9, 2012 (Victory Boulevard, west of SIRR)



Microtunneling “break through” beneath SIRR tracks on May 9, 2012  
(Victory Boulevard, east of SIRR tracks)





New piles along south side of Victory Boulevard, east of SIRR, in preparation for installation of 24" sewer



Installation of piles for 72" sewer along Victory Boulevard, east of SIRR



Grout plant at starter trench in Staten Island

## July 2012 Update

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island; initial work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM is scheduled to begin tunneling operations on July 9<sup>th</sup>.

#### **Work During June**

- Continuation of activities at the Staten Island starter trench in preparation for launch of the TBM, including:
  - completion of transfer of TBM and support equipment, including "trailing gear" (electrical and mechanical systems), from the storage yard to the bottom of the starter trench
  - assembly of the TBM in preparation for its launch
  - assembly and testing: bentonite and grout plants, ventilation system
  - installation of truck wheel washer
  - initiation of testing prior to launch of the TBM
  - delivery of precast rings (to line the tunnel once excavation begins). A total of 2,380 will be needed; to date, 245 rings have been delivered to the site.
- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including:

- continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:
  - o Victory Boulevard crossing – the two (2) jacking pits were temporarily sealed while work on Victory Boulevard is suspended for the summer. Work west of the SIRR will resume in late August as this area is not affected by the summer embargo.
  - o Swan Street crossing – continuation of work related to installation of two (2) jacking pits. One pit is located east of the tracks near the starter trench (off Front Street); the second pit is located on Bay Street in the vicinity of Swan Street.
- completion of installation of a 24" sewer beneath Victory Boulevard (south side of street), from approximately the entrance to the Lyons Pool to Murray Hulbert Avenue
- completion of site cleanup and demobilization of equipment and materials from Victory Boulevard
- Continuation of construction of the slurry wall for the Brooklyn shaft, including excavation; assembly and installation of the slurry wall panels; and placement of concrete. All three 150' panels have been installed, along with two of the three secondary panels. Excavation of the shaft, which will be approximately 150' deep, is expected to begin in late July.
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of Bay Street Landing (BSL) and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for July**

- Continuation of activities at the Staten Island starter trench, including:
  - completion of testing of the TBM
  - launch of the TBM
  - continued testing: bentonite and grout plants, ventilation system
  - installation of truck wheel washer
  - continuation of delivery of precast segment rings to the site
- Continuation of construction of the slurry wall for the Brooklyn shaft, including installation of the final secondary panel and excavation, which is scheduled to begin in late July
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including continuation of preparatory work in advance of microtunneling activities to install a new water main beneath the SIRR tracks at the Swan Street crossing
- Initiation of land piping activities in Brooklyn, including work related to installation of water and sewer lines along Shore Road, between 86<sup>th</sup> and 83<sup>rd</sup> Streets (work scheduled to begin July 9<sup>th</sup>)
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies



For additional information concerning these activities or other aspects of the Siphon construction project, please contact:

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>.

## **August 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island; work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM began tunneling operations on July 25<sup>th</sup>; it is expected to reach the Brooklyn Shaft site in May 2013.

#### **Work During July**

- Continuation of activities at the Staten Island starter trench in preparation for launch of the TBM on July 25<sup>th</sup>, including:
  - completion of testing of the TBM
  - completion of assembly and testing: bentonite and grout plants, ventilation systems
  - completion of installation of truck wheel washer
  - installation of truck weigh scale (to confirm volume of excavated material removed from the site)
  - continuation of delivery of precast segment rings (to line the tunnel once excavation begins). A total of 2,380 will be needed; to date, 300 rings have been delivered to the site.
- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including continuation of preparatory work in advance of microtunneling activities to install a new water main beneath the Staten Island Railroad (SIRR) in the vicinity of Swan Street.

- Completion of construction of the slurry wall for the Brooklyn shaft, including installation of the final slurry wall panel. Excavation of the 25' diameter shaft, which will be approximately 160' deep, is expected to begin in late August.
- Land piping activities in Brooklyn, including installation of 8" water line and start of installation of 36" sewer line along Shore Road, between 86<sup>th</sup> Street and Shore Road Lane
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of Bay Street Landing (BSL) and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for August**

- Continuation of tunneling operations.
- Continuation of delivery of precast segment rings to the site
- Initiation of excavation of the Brooklyn Shaft
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping activities in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – the two (2) jacking pits, on either side of the SIRR tracks, were temporarily sealed when work on Victory Boulevard was suspended for the summer. Work at the pit west of the SIRR, which is not affected by the summer embargo, will resume in late August; work at the pit east of the tracks will resume after Labor Day.
    - Swan Street crossing – the traffic signal at Bay and Swan Streets will be temporarily relocated in advance of installation of the jacking pit west of the SIRR. Work related to installation of the jacking pit, east of the tracks, near the starter trench (off Front Street) continues. Microtunneling beneath the SIRR is anticipated for the fall.
- Completion of installation of the 36" sewer line along Shore Road, between 86<sup>th</sup> and 83<sup>rd</sup> Streets, followed by site cleanup. Installation of water and sewer lines along Shore Road, between 86<sup>th</sup> and 79<sup>th</sup> Streets, will continue next summer.
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>. See website for video that illustrates how the 110-ton, 300-foot long TBM will drill a distance of nearly two (2) miles, 100 feet beneath New York Harbor.



Sections of precast segment rings prior to installation in tunnel



Installation of 36" sewer along Shore Road, between 86<sup>th</sup> Street and Shore Road Lane

## **September 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island; work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM began tunneling operations on July 25<sup>th</sup>; it is expected to reach the Brooklyn Shaft site in July 2013.

#### **Work During August**

- Continuation of tunneling operations at the Staten Island starter trench, which began on July 25<sup>th</sup>.
- Continuation of manufacture and delivery of precast segment rings to line the tunnel. A total of 2,380 will be needed; to date 300 rings have been delivered to the site, and 51 rings have been installed.
- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:

- Victory Boulevard crossing – the two (2) jacking pits, on either side of the SIRR tracks, were temporarily sealed when work on Victory Boulevard was suspended for the summer. Work at the pits, including installation of pipe beneath the tracks, will resume in September.
- Swan Street crossing – the traffic signal at Bay and Swan Streets was temporarily relocated in advance of installation of the jacking pit west of the SIRR. Work related to installation of the jacking pit, east of the tracks, near the starter trench (off Front Street) continues.
- installation of a 20" water main along the western curb of Front Street, from just north of Hannah Street to the area in front of the Siphon Project work zone
- Initiation of excavation of the Brooklyn Shaft, which will be 25' in diameter and approximately 160' deep. To date, the shaft has been excavated to a depth of approximately 30'.
- Completion of installation of an 8" water line and 36" sewer line along Shore Road, between 86<sup>th</sup> Street and Shore Road Lane and temporary restoration of the area. Additional water and sewer lines along Shore Road, between 86<sup>th</sup> and 79<sup>th</sup> Streets, will be installed next summer.
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of Bay Street Landing (BSL) and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for September**

- Continuation of tunneling operations
- Completion of manufacture of precast segment rings and continuation of delivery of rings to the site
- Continuation of excavation of the Brooklyn Shaft
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – resumption of work at the pits on both sides of the SIRR, including installation of pipe beneath the tracks
    - Swan Street crossing – continuation of work related to installation of the jacking pits on both sides of the tracks. Microtunneling beneath the SIRR is currently scheduled for October 27<sup>th</sup> and 28<sup>th</sup>.
  - resumption of work related to installation of a 72" sewer beneath Victory Boulevard, from the vicinity of the BSL entrance driveway to just west of Murray Hulbert Avenue
  - installation of a 20" water main within the abandoned siphon (beneath SIRR at Victory Boulevard) to tie into the main at Minthorne Street
  - initiation of work related to installation of piles in Victory Boulevard and Murray Hulbert Avenue in advance of work on the 60" water main
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL,



representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>. See website for video that illustrates how the 110-ton, 300-foot long TBM will drill a distance of nearly two (2) miles, 100 feet beneath New York Harbor.

## **October 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

Please find below a summary of completed and projected work related to the "Replacement of the Existing Water Siphons between Brooklyn and Staten Island" project ("Siphon Project"). The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and application for permits. Construction began in August 2011, with work on the starter trench in Staten Island; work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM began tunneling operations on July 25<sup>th</sup>; it is expected to reach the Brooklyn Shaft site in July 2013.

#### **Work During September**

- Continuation of tunneling operations at the Staten Island starter trench, which began on July 25<sup>th</sup>.
- Completion of manufacture and continuation of delivery of precast segment rings to line the tunnel. A total of 2,380 will be needed; to date 480 rings have been delivered to the Staten Island site, and 199 rings have been installed.
- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:

- Victory Boulevard crossing – the two (2) jacking pits, on either side of the SIRR tracks, were temporarily sealed when work on Victory Boulevard was suspended for the summer. Work at the pits, including installation of pipe for the 60” water main beneath the tracks, is expected to begin next month following shutdown of Siphon #1.
  - Swan Street crossing – Work related to installation of the jacking pit, east of the tracks, near the starter trench (off Front Street) continues.
  - work related to installation of the 60” water main along Murray Hulbert Avenue, including test pits
  - work related to shutdown of the existing siphon (Siphon #1), including repair of a bypass valve on Bay Street (vicinity of Victory Boulevard)
- NOTE: Resumption of work on Victory Boulevard was originally scheduled to begin on September 4<sup>th</sup>. However, the start of work was dependent on the shutdown of the existing siphon (Siphon #1). Although DEP began to prepare for the shutdown in August, it was determined that many of the siphon’s valves were not functioning, which resulted in the need for additional work. Shutdown of Siphon #1 is expected to be completed in October.
- Continuation of excavation of the Brooklyn Shaft, which will be 25’ in diameter and approximately 160’ deep. To date, the shaft has been excavated to a depth of approximately 110’.
  - Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of Bay Street Landing (BSL) and Fort Hamilton High School; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

#### **Work Projected for October**

- Continuation of tunneling operations
- Continuation of delivery of rings to the Staten Island site
- Completion of excavation of the Brooklyn Shaft and initiation of work on installation of a concrete slab at the bottom of the shaft
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the SIRR tracks:
    - Victory Boulevard crossing – resumption of work at the pits on both sides of the SIRR, including installation of pipe for the 60” water main beneath the tracks
    - Swan Street crossing – continuation of work related to installation of the jacking pits on both sides of the tracks. Microtunneling beneath the SIRR is currently scheduled for October 27<sup>th</sup> and 28<sup>th</sup>.
  - resumption of work related to installation of the 72” sewer beneath Victory Boulevard, from the vicinity of the BSL entrance driveway to just west of Murray Hulbert Avenue, which will involve excavation and installation of sheeting, installation of the remaining piles, construction of pile caps and installation of the new pipe
  - continuation of work related to installation of the 60” water main along Victory Boulevard and Murray Hulbert Avenue (including installation of piles)



- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Mouth of the tunnel



Ring segments being lifted for placement in starter trench



Foundation of new Chlorination Station, which is being used as a muck pit during tunnel excavation



Test pit, Murray Hulbert Avenue



Work related to shutdown of Siphon #1, Bay Street at Victory Boulevard

## **November 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

**NOTE: The severe impact of Superstorm Sandy on the Siphon Project limited work during this reporting period. The project team is currently assessing storm-related damage and potential delays and assisting with removal of debris from work areas.**

Please find below a summary of completed and projected work related to the Siphon Project. The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a tunnel boring machine (TBM) to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and applications for permits. Construction began in August 2011, with work on the starter trench in Staten Island; work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM began tunneling operations on July 25<sup>th</sup>. Although it is expected to reach the Brooklyn Shaft site in 2013, that date is now dependent on the extent of repairs required as a result of Superstorm Sandy.

#### **Work During October**

- Continuation of tunneling operations at the Staten Island starter trench, which began on July 25<sup>th</sup>. The first intervention (scheduled maintenance of the equipment) began on October 19<sup>th</sup>; work was completed and tunneling operations resumed on October 27<sup>th</sup>. [Tunneling operations were suspended on the evening of October 28<sup>th</sup>, in advance of Superstorm Sandy. At that time, the TBM had progressed approximately 1,600' from its starting point.]
- Continuation of delivery of precast segment rings to line the tunnel. A total of 2,380 will be needed; to date 560 rings have been delivered to the site, and 388 rings have been installed.



- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the Staten Island Railway (SIR) tracks:
    - Victory Boulevard crossing – the two (2) jacking pits, on either side of the SIR tracks, were temporarily sealed when work on Victory Boulevard was suspended for the summer. No work was done in October.
    - Swan Street crossing – completion of work related to installation of the jacking pits on both sides of the tracks. One pit is located east of the tracks near the starter trench (off Front Street); the second pit is located on Bay Street in the vicinity of Swan Street. Microtunneling beneath the tracks, scheduled for the weekend of October 27<sup>th</sup>/28<sup>th</sup>, was postponed due to the impending storm.
  - continuation of work related to installation of the 60" water main along Murray Hulbert Avenue, including drilling of piles. 23 of the approximately 100 piles to be installed along Murray Hulbert Avenue were in place prior to the storm. Work will resume following removal of storm-related debris from the area.
  - work related to shutdown of the existing siphon (Siphon #1), including repair of valves
  - completion of work related to installation of the 72" sewer beneath Victory Boulevard, from the vicinity of the BSL entrance driveway to just west of Murray Hulbert Avenue, including excavation and installation of sheeting, installation of the remaining piles, construction of pile caps, installation of the new sewer and temporary restoration of the street. This section of Victory Boulevard was repaved on Friday, October 26<sup>th</sup>. In preparation for installation of the 60" water main along the south side of the street, two-way traffic was shifted to the north side of the street.
- Continuation of excavation of the Brooklyn Shaft, which is 25' in diameter and approximately 160' deep. To date, the shaft has been excavated to a depth of approximately 137'. The remaining excavation work will be completed by divers.
- Community outreach activities, including meetings with Brooklyn Community Board #10's Environmental Committee and residents of Bay Street Landing (BSL); coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of BSL; distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for November**

**[Please note, some activities may be dependent on the progress of storm-related cleanup.]**

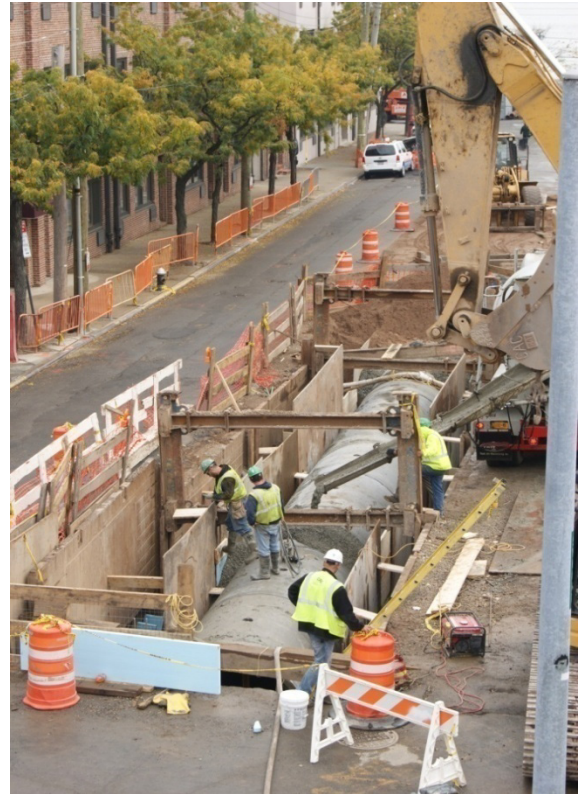
- Completion of excavation of the Brooklyn Shaft by divers who began work in early November
- Initiation of work on installation of a concrete slab at the bottom of the Brooklyn Shaft to maintain pressure
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:

- continuation of microtunneling activities related to installation of a new water main beneath the SIR tracks:
  - o Victory Boulevard crossing – resumption of work at the pits on both sides of the SIR, including installation of pipe for the 60” water main beneath the tracks. This work will begin with excavation for the pipe on the west side of the tracks, between Bay Street and the SIR; excavation east of the tracks will follow.
  - o Swan Street crossing – Microtunneling beneath the SIR is currently scheduled for the weekend of December 1<sup>st</sup>/2<sup>nd</sup>. Due to the nature of the tunneling operation, as well as the location beneath the SIR, this work will occur around the clock. Tunneling will begin on the east side of the tracks; once the machine passes beneath the tracks, the remaining microtunneling will be performed during typical weekday hours. The equipment is expected to “break through” to the pit on Bay Street in mid December.
- continuation of work related to installation of the 60” water main, including drilling of piles along Murray Hulbert Avenue and initiation of excavation on Victory Boulevard
- continuation of work related to the shutdown of Siphon #1, including draining the pipe
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

For additional information concerning these activities or other aspects of the Siphon construction project, please contact:

Anita Wright  
 Community Liaison  
 Helen Neuhaus & Associates Inc.  
 355 Front Street  
 Staten Island, NY 10304  
 (516) 712-5864 [cell phone]

Or visit the project website at: <http://www.nycedc.com/project/replacement-anchorage-channel-water-siphons>. See website for video that illustrates how the 110-ton, 300-foot long TBM will drill a distance of nearly two (2) miles, 100 feet beneath New York Harbor.



Replacement of 72" sewer beneath Victory Boulevard, east of SIR tracks  
 (photo at left: removal of existing 72" sewer) (photo at right: installation of new sewer)



Removal of muck car from trench; precast segment rings in foreground (at right)





Looking south on Murray Hulbert Avenue, between Victory Boulevard and Hannah Street, before (photo at top) and after (bottom photo) Superstorm Sandy



## **December 2012 Update**

### **Replacement of the Existing Water Siphons between Brooklyn and Staten Island "Siphon Project"**

**NOTE: October's superstorm continued to impact the Siphon Project, and work was limited during much of the reporting period. During the early part of the month, work focused on assisting with removal of debris from work areas prior to the resumption of land piping work in Staten Island. In addition, the project team continues to assess storm-related damage to equipment and expects to have a complete assessment of damage to the tunnel boring machine (TBM) in mid-December.**

Please find below a summary of completed and projected work related to the Siphon Project. The New York City Economic Development Corporation (EDC) is administering the project, which is being funded by the New York City Department of Environmental Protection (DEP) and the Port Authority of New York & New Jersey (PANYNJ).

Major components of the project include the following:

- use of a TBM to install a new 72" water siphon
- installation of land piping (new water mains and sewers) in Staten Island and Brooklyn using open cut and microtunneling techniques
- construction of a new "green building" chlorination station in Staten Island
- implementation of an extensive community outreach program, including development of informational materials and ongoing liaison with residents, businesses and other stakeholders

To date, work has focused on project mobilization and site preparation (Staten Island and Brooklyn), collection of baseline data (Staten Island and Brooklyn), coordination with ConEdison and National Grid regarding relocation of gas and electric lines, and applications for permits. Construction began in August 2011, with work on the starter trench in Staten Island; work at the Brooklyn shaft site, located in Shore Road Park (just south of 83<sup>rd</sup> Street, opposite Fort Hamilton High School), began in February 2012. In May 2012, the project team began to move pieces of the TBM to the starter trench for final assembly and testing. The TBM began tunneling operations on July 25<sup>th</sup>. Although it was expected to reach the Brooklyn Shaft site in 2013, that date is now dependent on the extent of repairs required as a result of the storm.

#### **Work During November**

- Tunneling operations were suspended on the evening of October 28<sup>th</sup>, in advance of the storm. At that time, the TBM had progressed approximately 1,600' from its starting point. Following the storm, water was pumped from the starter trench, and the TBM and related equipment were inspected. A report on storm-related damage and associated impacts on the schedule is being developed.

- Delivery of precast segment rings (to line the tunnel) has been suspended pending resumption of tunneling operations. To date, 560 of the required 2,380 rings have been delivered to the site; 388 rings have been installed.
- Continuation of collection of instrumentation data (noise, vibrations, groundwater levels) in Staten Island and Brooklyn
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:
  - continuation of microtunneling activities related to installation of a new water main beneath the Staten Island Railway (SIR) tracks:
    - Victory Boulevard crossing – the two (2) jacking pits, on either side of the SIR tracks, were temporarily sealed when work on Victory Boulevard was suspended for the summer. Work on the west side of the SIR tracks, including unsealing of the jacking pit, preparation for installation of pipe beneath the tracks and excavation of Victory Boulevard in advance of installation of the 60" water main, resumed in late November. Water main work east of the tracks is expected to begin in early December.
    - Swan Street crossing – Microtunneling beneath the SIR tracks, proceeding west from the jacking pit east of the tracks near the starter trench (off Front Street), was conducted as an around-the-clock operation during the weekend of November 30<sup>th</sup> to December 2<sup>nd</sup>. Upon completion of tunneling beneath the tracks, the remaining microtunneling will occur during weekday work hours. The microtunneling equipment is expected to "break through" to the pit on Bay Street (at Swan Street) in early December.
  - work related to installation of the 60" water main along Murray Hulbert Avenue, including drilling of piles, resumed following the removal of storm-related debris from the area. To date, 63 of the approximately 100 piles to be installed along Murray Hulbert Avenue are in place.
  - continuation of work related to shutdown of the existing siphon (Siphon #1)
- Continuation of excavation of the Brooklyn Shaft, which is 25' in diameter and will be approximately 155' deep. To date, the shaft has been excavated to a depth of approximately 137'. The final 18' of excavation work is being completed by divers.
- Community outreach activities, including coordination with Staten Island Community Board #1, Brooklyn Community Board #10 and representatives of Bay Street Landing (BSL); distribution of informational materials (Project Update, construction notices, etc.); updating of the project web site; and liaison with residents, businesses, and stakeholders in the project area

### **Work Projected for December**

**[Please note, some activities remain dependent on the progress of storm-related cleanup.]**

- Completion of excavation of the Brooklyn Shaft
- Installation of a concrete slab at the bottom of the Brooklyn Shaft to maintain pressure
- Continuation of preparatory work (drawings, permit applications and other submittals) in support of land piping activities in Staten Island and Brooklyn
- Land piping work in Staten Island, including:

- continuation of microtunneling activities related to installation of a new water main beneath the SIR tracks:
  - o Victory Boulevard crossing – continuation of work on the west side of the SIR and initiation of work east of the tracks, including installation of the 60” water main beneath the tracks and excavation and installation of pipe along Victory Boulevard.
  - o Swan Street crossing – completion of microtunneling beneath the SIR. The equipment is expected to “break through” to the pit on Bay Street on December 7<sup>th</sup>.
- continuation of work related to installation of the 60” water main, including drilling of piles along Murray Hulbert Avenue and initiation of excavation on lower Victory Boulevard
- installation of 20” water main within Siphon #1 beneath SIR tracks
- Continuation of community outreach program, including coordination and meetings with Staten Island Community Board #1, Brooklyn Community Board #10, residents of BSL, representatives of Fort Hamilton High School and other groups and individuals, as needed; preparation and distribution of informational materials (Project Update, construction notices, etc.); updating of project web site; and ongoing liaison with residents, businesses and other interested stakeholders and constituencies

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Work related to installation of 60" water main beneath SIR tracks  
(Victory Boulevard, immediately west of tracks)



Excavation for 60" water main along Victory Boulevard (looking west towards Bay Street)





Pile drilling operation on Murray Hulbert Avenue,  
between Victory Boulevard and Hannah Street



Storm-related damage along Front Street, across from tunnel shaft



Recently cleared area on Hannah Street, alongside Lyons Pool  
(looking north towards Bay Street Landing)