



NEW YORK CITY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF ENVIRONMENTAL ENGINEERING

## **New York City's Combined Sewer Overflow Program**

### **1st Quarterly Report - Year 2002**



**April 2002**

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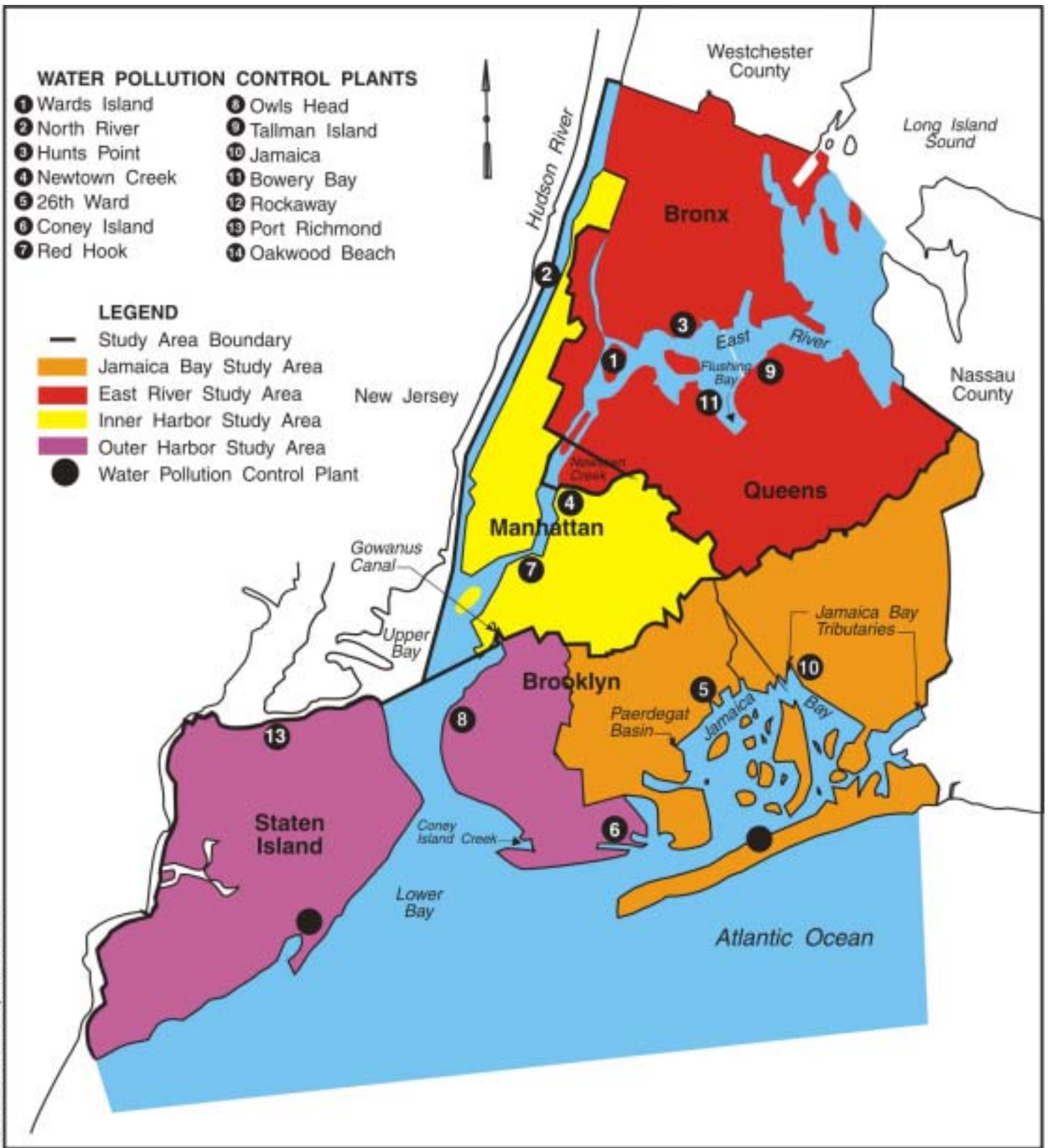
## **I. Introduction**

The City of New York is primarily served by a combined sewer system. Approximately 70% of the City is comprised of combined sewers with 4,800 miles of combined sewers within the five boroughs. The sewer system drains some 200,000 acres and serves a population of about 7 million. Approximately 450 outfalls are permitted to discharge during wet-weather through combined-sewer overflows (CSOs) to the receiving waters of the New York Harbor. Although these discharges do not represent a major source of pollution to the harbor on a long-term basis, they can result in local water-quality problems such as periodically high levels of coliform bacteria, nuisance levels of floatables, depressed dissolved oxygen, and, in some cases, sediment mounds and unpleasant odors.

The NYC Department of Environmental Protection (DEP) is committed to improving water quality and achieving the maximum potential uses of the region's waters, and to maintaining compliance with the applicable regulations. The City has committed billions of dollars for improved pollution-control facilities, water-quality monitoring programs, and scientific and engineering investigations of innovative and cost-effective pollution-control alternatives. As a result, water quality has improved dramatically over the past 10 years.

One of the City's major initiatives to improving local receiving water quality is the \$1.8 billion Citywide CSO Program. For this program the City has been divided into eight (8) areas, which together cover the entire harbor area. Four (4) area-wide project areas were developed (East River, Jamaica Bay, Inner Harbor, and Outer Harbor) and four (4) tributary projects areas were defined (Flushing Bay, Paerdegat Basin, Newtown Creek, and the Jamaica Tributaries) as shown in Figure 1.

This quarterly report summarizes recent progress by the City in its efforts to plan and construct the recommended CSO facilities under the Citywide CSO Program. This report covers the period from October 1, 2002 through December 31, 2002.



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## CSO Study Area Locations

## II. Project Progress for Comprehensive Citywide CSO Project

### A.) Flushing Bay

- **Flushing Bay CSO Retention Facility**

The Flushing Bay CSO Retention Facility is an underground storage tank, which will have a storage capacity of 43 million gallons, 28 MG in the tank and 15 MG in the upstream sewers. The facility collects flow from the system tributary to the “CS-4” outfall, which discharges to the head of Flushing Creek. The elements of the facility include:

- Relocation of ball fields in Kissena Corridor
- Rerouting of Park Drive East CSO line inside the construction site and construction of the effluent channel
- Phase 1 construction of the underground structural elements of the tank
- Phase 2 construction of the mechanical and above-ground portion of the facility
- Construction of tide gates on the tank outfall sewer and construction of ball field

On August 8, 2002 NYCDEP transmitted to NYSDEC the modified facility plan for the Flushing Bay Water Quality Facility Planning Project. This modified facility plan report was submitted to document the changes to the originally approved facility plan, pursuant to requirements of the CSO Consent Order.

#### *Design*

Design has been completed for all elements.

#### *Construction*

Construction has been completed for the relocation of ball fields and the rerouting of sewers. Phase 1 construction (Contract CS4-3) for the tank was substantially completed as of August 17, 2001. The Notice to Proceed for the Phase 2 construction contracts was issued on April 11, 2002. Construction is progressing on schedule toward the projected milestone date for beneficial use of the storage facility in July 2004. Final completion of the Phase 2 construction is projected for July 2005.

- **Corona Avenue Vortex Facility**

The Corona Avenue Vortex Facility includes three vortex units operating in parallel in an underground facility in Corona Avenue, Queens. The three units treat flow diverted from the lower deck of the “CS-3” outfall (permitted CSO outfall BB-006 in the Bowery Bay WPCP system). The overflow from the facility is returned to the CSO outfall, and the underflow (foul waste) is carried to the 108<sup>th</sup> Street Pumping Station that pumps the flow to the high level interceptor.

### *Construction*

Construction is complete. The facility has been on-line since November 1997.

### *Monitoring Program*

The sampling and evaluation program began in March 2000. Four interim reports have been submitted reporting on progress to September 2002. Field sampling was completed in September 2002. A final report on the evaluation of the data will be prepared after peer review of the data collection program and completion of data evaluation.

### *Additional Swirl Concentrators*

Work on additional swirl concentrators was deferred until the completion of testing of the effectiveness of the Corona Avenue facility. The need for the additional vortex facilities originally proposed for floatables control will be re-evaluated as part of the Comprehensive Floatables and Settleables Plan to determine if other alternatives are either more cost effective, faster to implement or result in better floatables capture. An engineering assessment of the additional proposed swirl concentrators is underway, based on hydraulic data from the Corona Vortex Facility evaluation.

**Table 1**

*Flushing Bay CSO Project*

Plan Elements:	Corona Avenue Vortex Facility	Flushing Bay CSO Retention Facility
Location:	Corona Avenue, Queens	Intersection of College Point Boulevard and Avery Avenue, Queens
Actions:	Design and construction of three underground vortex units to treat CSO diverted from the lower deck of the "CS-3" outfall.	Design and construction of a 43 MG storage facility which includes a 28 MG underground storage tank and 15 MG in-line storage in upstream sewers. The facility collects flow from the system tributary to the "CS-4" outfall.
Cost:	\$33,000,000	\$291,000,000
Status:	Construction complete	Phase 2 construction started April 2002. Milestone for beneficial use July 2004
Other Issues:	Monitoring program – ongoing; contracts for final design of an odor treatment system at the facility and for final design of modifications at the facility are completed and are awaiting final Department review then bidding.	Contract change orders for additional work are in progress.



## **B.) Paerdegat Basin**

The Paerdegat Basin CSO Retention Facility is located in southeastern Brooklyn, at the intersection of Flatlands and Ralph Avenues. The facility will receive combined sewer overflows from a drainage area of approximately 6,000 acres. Once constructed, it will consist of a four (4) bay underground storage tank and operations buildings. The stored CSO will be pumped back to the Coney Island WPCP for treatment after each rain event.

The elements of the originally approved facility plan included:

1. 20 MG of in-line storage.

The CSO tank effluent weir will be set at an elevation of +2.00 ft (approximately the elevation of high tide), which will allow for the storage of 20 MG of CSO within the existing combined sewer network upstream of the facility.

2. 30 MG of off-line storage.

The below grade retention tank will have a storage capacity of 20 MG and the influent channels, that redirect the existing outfalls to the CSO facility site on the western shore of Paerdegat Basin, have a storage capacity of 10 MG. The total storage of the new facility is 30 MG.

3. Dredging of the mouth of the basin.

The dredging plan for Paerdegat Basin entails the removal of 20,000 yd<sup>3</sup> of material from the mouth of the basin and about 38,000 yd<sup>3</sup> of sediment from the head end. A dredging permit from NYSDEC has been obtained to implement this element.

On August 8, 2002 NYCDEP transmitted to NYSDEC the modified facility plan for the Paerdegat Basin Water Quality Facility Planning Project. This modified facility plan report was submitted to document the changes to the originally approved facility plan, pursuant to requirements of the CSO Consent Order. The implementation of the facility plan elements will take place during the following phases of design and construction:

- Phase IA – Influent Channels

This phase includes construction of a major portion of the influent channels and the relief weir.

Status:

Construction of the influent channels to the CSO facility was substantially completed in February 2002. A few punch list items remain to be completed.

- Phase II – Foundations and Substructures

This phase includes construction of the CSO tank and dredging of the mouth of the basin.

Status:

The Notice to Proceed was issued on June 24, 2002. The construction is underway. The contract completion date is December 25, 2005.

- Phase III – Structures and Equipment

This phase includes installation of the CSO tank equipment, construction of the aboveground buildings, and construction of the remaining Influent Channels. The CSO facility will be put on line during construction of this phase.

Status:

Final design is 90 % complete. The construction of this phase cannot be scheduled until the CSO tanks and building foundations are substantially constructed under the Phase II.

- Phase IV – Natural Area Park Restoration

This phase includes restoration and clean up of the Natural Area Park and construction of the park perimeter treatment such as fencing, curbing and lighting.

Status:

This phase will be designed in the future.

**Table 2***Paerdegat Basin CSO Project*

	<i>Phase IA</i>	<i>Phase II</i>	<i>Phase III</i>	<i>Phase IV</i>
Construction Phase:	Influent Channels	Foundations and Substructures	Structures and Equipment	Natural Area Park Restoration
Location:	Flatlands and Ralph Avenues, Brooklyn, NY	West Shore of Paerdegat Basin	West Shore of Paerdegat Basin	Both sides of Paerdegat Basin
Actions:	Construction of the influent channels to the CSO facility	Underground structural elements	Aboveground buildings and equipment	Park extending on both sides of Paerdegat Basin.
Cost:	\$9,000,000	\$119,101,386	\$130,026,844	\$8,000,000
Status:	Construction substantially completed in February 2002.	NTP issued on 6/24/02. Construction is in progress.	Final Design is 90% complete.	This phase will be designed in the future.
Other Issues:	-	-	Construction cannot be initiated until Phase II is substantially completed.	-

### C.) Inner Harbor

The Inner Harbor CSO Facility Planning area consists of the North River, Newtown Creek, and Red Hook WPCP drainage areas. The facility plan concluded that CSOs in the Inner Harbor do not contribute to dissolved oxygen and coliform problems in the open water areas of the Hudson River, Lower East River, and Upper Bay. Therefore, consistent with the EPA's Nine Minimum Controls, the recommended elements of the facility plan for the open waters consists of:

- Regulator Improvements
- Throttling Facilities
- In-Line CSO Storage

In contrast to open waters, in Gowanus Canal, CSOs have a significant impact on numerical water quality limits for dissolved oxygen. The recommended plan for Gowanus included:

- Reactivate the Flushing tunnel
- Dredge the canal

On August 8, 2002 NYCDEP transmitted to NYSDEC the modified facility plan for the Inner Harbor CSO Facility Planning Project. This modified facility plan report was submitted to document the changes to the originally approved facility plan, pursuant to requirements of the CSO Consent Order.

#### *Final Design*

In the final design contract for Inner Harbor, the following three elements have been targeted in order to achieve the goals of reducing the magnitude, frequency, and duration of CSO discharges:

- Phase I – Regulator Improvements
- Phase II – Throttling Facilities (Maximize Wet Weather Treatment)
- Phase III – In-Line CSO Storage (Inflatable Dams)

#### *Phase I*

Phase I will provide improvements to 72 regulators in Inner Harbor. Added to the 22 regulators that were recently upgraded to fixed orifices under the NYSDOT Route 9A Project, and the 29 locations where the Department will automate the regulators, a total of 123 regulators are being improved in the Inner Harbor area. The breakdown is as follows:

- In the North River drainage area, 9 regulators will be automated under the Citywide SCADA project and 33 regulators have been or will be converted to fixed orifices. Of these 33, 15 were converted under the NYSDOT's Route 9A Reconstruction Project; the other 18 will be converted to fixed orifices under the Phase I construction contract.

- In the Newtown Creek Manhattan drainage area, 12 regulators will be automated under the Citywide SCADA project, and 29 regulators have been or will be converted to fixed orifices. Of these 29, 7 were converted under the Route 9A Reconstruction Project; the other 22 will be converted to fixed orifices under the Phase I construction contract.
- In the Newtown Creek Brooklyn drainage area, 5 regulators will be automated under the Citywide SCADA project, and 14 regulators will be converted to fixed orifices. All 14 regulators will be converted to fixed orifices under the Phase I construction contract.
- In the Red Hook drainage area, 3 regulators will be automated under the Citywide SCADA project, and 18 regulators will be converted to fixed orifices. All 18 regulators will be converted to fixed orifices under the Phase I construction contract.

Improvements under Phase I include plank guide and manhole rung replacement, sluice opening enlargement to a minimum of 12", termination of all water service connections, improved/enlarged access to the regulators, and the conversion of all sluice gates to manual operation for a fixed orifice condition. Hand-held hydraulic-powered valve turners will be supplied to maintenance crews to assist in sluice gate operation.

The bid opening for the two Phase I regulator improvement contracts (Manhattan and Brooklyn) was held on October 16, 2002. The low bidder for both contracts was Kenneth J. Delaney Contracting Corp. The awarding and registration of the contracts is underway and construction is expected to begin in Summer 2003.

### *Phase II*

Phase II is intended to maximize wet weather flow treated at the plants by providing a throttling facility. New throttling facilities will be constructed at the Manhattan Pumping Station and Newtown Creek WPCP, both of which are being designed and constructed under the Newtown Creek WPCP upgrade work. The Newtown Creek throttling facility is included in Contract 30 for the Newtown Creek WPCP upgrade, and this contract is currently underway. The Manhattan Pumping Station throttling facility will be included in the construction contract for the pumping station. Currently final design is at 90% completion. Preliminary design for throttling facility improvements at Red Hook WPCP is complete.

Design on the North River Throttling Facility was suspended in April 2002 due to operational and maintenance concerns. A wet weather operating plan (WWOP) is currently being developed in lieu of the throttling facility. The WWOP will serve the same purpose as the throttling facility, namely to maximize flow treated at the plant during wet weather.

### *Phase III*

Final design of Phase III has not yet been initiated. Results of the Hunts Point in-line storage demonstration facility are being awaited to determine if this technology should be implemented. Under this phase, two inflatable dams will be designed – one for Regulator B-6 in

the Newtown Creek-Brooklyn drainage area which will store up to 2.0 MG, and the other for Regulator R-20 in the Red Hook drainage area that will have the capacity to store up to 2.2 MG.

*Gowanus Canal*

Dredging of Gowanus Canal, along with reactivation of the Flushing Tunnel, was completed in March 1999.

**Table 3***Inner Harbor CSO Project**OPEN WATERS*

	<i>Phase I</i>	<i>Phase II</i>	<i>Phase III</i>
Plan Elements:	Regulator Improvements	Throttling Facilities	In-Line Storage
Location:	72 regulator sites in Manhattan and Brooklyn	North River WPCP, Manhattan Pumping Station, Newtown Creek WPCP	Upstream of regulators B-6 and R-20 in Brooklyn
Actions:	Conversion to fixed orifices	Installation of sluice gates and actuator in interceptor sewer	Installation of two inflatable dams in the combined sewer systems
Construction Cost:	\$9,500,000	\$10,000,000	\$3,000,000
Status:	Contracts to be Awarded – Construction to begin Summer 2003	WWOP for NR Under Development Final Design for MPS 90% Complete Construction contract at NC awarded	Final Design – Not Initiated
Other Issues:	-	-	Awaiting Hunts Point demonstration test results

## **D.) Outer Harbor**

The Outer Harbor CSO Facility Planning area consists of the drainage areas of the Port Richmond, Oakwood Beach, Owls Head and Coney Island (separately sewered area) Water Pollution Control Plants (WPCPs) and their associated sewers and pumping stations. The receiving waters of the study area include the New York limits of the Raritan Bay, Arthur Kill, Kill Van Kull, Upper New York Bay waters to the boundary of the Inner Harbor CSO Project, the Narrows, Gravesend Bay, Lower New York Bay, Richmond Creek and Lemon Creek. The facility plan concluded that CSOs have minimal impact on the dissolved oxygen and coliform concentrations in the open water areas of the Outer Harbor. Therefore, consistent with the EPA's Nine Minimum Controls, the recommended elements of the facility plan for the open waters consist of:

- Regulator Improvements
- Throttling Facilities
- In-Line CSO Storage

On August 8, 2002 NYCDEP transmitted to NYSDEC the modified facility plan for the Outer Harbor CSO Facility Planning Project. This modified facility plan report was submitted to document the changes to the originally approved facility plan, pursuant to requirements of the CSO Consent Order.

### **• Open Waters**

#### *Preliminary Design*

A preliminary design report was completed. This report includes the following recommended elements:

- Regulator Improvements
- Throttling Facility
- In-Line Storage

As-built and record drawings, for the regulators selected for improvement, were collected and will be used for developing final design drawings. Detailed site location plans have been developed for the final design drawings.

#### *Final Design*

An engineering contract for final design has been developed and a pre-solicitation review (PSR) and CP request have been drafted as part of the engineering contract procurement process. The final design contract consists of three phases:

- Phase I – Regulator Improvements
- Phase II – Throttling Facility
- Phase III – In-line CSO Storage



### *Phase I – Regulator Improvements*

Phase I will provide improvements to 32 regulators in the Outer Harbor. Added to the 6 locations where the Department will automate the regulators, a total of 38 regulators will be improved in the Outer Harbor area. The breakdown is as follows:

- In the Owls Head drainage area, 3 regulators will be automated under the Citywide SCADA project and 4 regulators will be converted to fixed orifices under the Phase I construction contract.
- In the Port Richmond drainage area, 3 regulators will be automated under the Citywide SCADA project and 28 regulators will be converted to fixed orifices under the Phase I construction contract.

### *Phase II – Throttling Facility*

A throttling facility to store up to 5 MG in the Port Richmond WPCP east interceptor sewer has been recommended and preliminary design has been completed.

### *Phase III – In-line CSO Storage*

Preliminary design of two inflatable dam locations for the Outer Harbor has been completed – One at Port Richmond (PR-6W, 1.4 MG) and the other at Owls Head (OH-6C, 2.2 MG).

**Table 4**Outer Harbor CSO Project

	<i>Phase I</i>	<i>Phase II</i>	<i>Phase III</i>
Plan Elements:	Regulator Improvements	Throttling Facility	In-Line Storage
Location:	32 regulator sites throughout Brooklyn and Staten Island	Port Richmond WPCP	Owls Head: OH-6C P. Richmond: PR-6W
Actions:	Conversion to manually operated sluice gates, replacement of stop plank guides, termination of water supply	Installation of sluice gate in Port Richmond east interceptor sewer	Installation of two inflatable dams in the combined sewer system
Project Cost:	\$4,800,000	\$1,300,000	\$3,100,000
Status:	Preliminary Design – 100% Complete	Preliminary Design – 100% Complete	Preliminary Design – 100% Complete
Other Issues:	-	-	-

## **E.) Jamaica Bay**

The Jamaica Bay CSO Abatement Facilities Plan submitted in November 1993 recommended retention of 34 million gallons of CSO from Fresh Creek (27 million gallons) and Hendrix Creek (7 million gallons). The retention facility was to be located beneath the Bruekelen Houses Park, a 12-acre site north of the head end of Fresh Creek, and adjacent to the major CSO sewer in Williams Avenue.

### *34 MG off-line storage for Fresh Creek CSO and Hendrix Creek*

These elements are no longer under consideration for the on-going work for revision of the original facility plan. An alternate plan is being developed.

Two issues negatively impacted the feasibility of constructing the off-line storage facility at the proposed location. These issues were: 1) the need to provide five interim ball fields off-site, but within the immediate neighborhood, to replace the five ball fields that would be eliminated during the construction, and 2) the subsequent sale of the only large available land in the immediate neighborhood that could accommodate five interim ball fields. The loss of the alternate ball fields site effectively made construction of the offline storage tank unfeasible.

At this time, an examination of alternate concepts for abating CSO to Fresh Creek and Hendrix St. Canal are being examined as part of new facility planning efforts. Strategies that appear promising include sewer system changes increasing wet weather flow from the Hendrix regulator to the 26<sup>th</sup> Ward WPCP by 50 MGD, and a tunnel storage conduit.

Investigations of sewer system conditions indicate that remedial work within the complex drainage system could have significant impacts on CSO discharges. The routing of CSO to high and low side systems in the 26<sup>th</sup> Ward drainage area are affected by the impact of “grit” in several sewers and subsequent impact on several “structural flow diversions”. Sewer system modeling is proceeding on several scenarios to ascertain the impact to CSO volumes and the ability to drive 50 MGD more flow to the 26<sup>th</sup> Ward WPCP from the High Side (Hendrix) system.

Several sewer system/offline-storage scenarios/flow management schemes are under evaluation. Both sewer system modeling and water quality modeling are presently being undertaken to ascertain the feasibility and practicality (constructability and water quality) of each scenario and flow management scheme currently under evaluation.

Another alternative abatement strategy being examined involves the use of a CSO storage tunnel. Geotechnical work (both landside and waterside borings) has been completed for examination by the tunnel consultant. New ortho-photogrammetric mapping has also been completed. Examination of a riser shaft and TBM launch site at the southern end of the 26<sup>th</sup> Ward WPCP is underway.

Coordination with the 26<sup>th</sup> Ward WPCP upgrade design has been on going for both sewer system and tunneling alternatives.

At this time the consultant has completed the alternatives analysis for 15 off-line storage concepts of various storage capacities. The consultant developed 'knee of the curve' cost-benefit analyses for various water quality benefits. Off-line storage concepts include tankage and tunnel options.

#### *Upgrade Spring Creek AWPCP*

The original facility plan recommended that no additional storage was required at the Spring Creek Auxiliary WPCP, however modifications to provide around-the-clock disinfection of facility overflows, improved discharge and baffling, and pump-back of stored volume following rain events be provided.

A separate project was underway at the same time the Jamaica Bay CSO project was underway, specifically focusing on operational improvements to the Spring Creek Auxiliary WPCP. The efforts of both projects were coordinated. This resulted in water quality related recommendations from the Jamaica Bay CSO facility plan being incorporated into the work for the Spring Creek facility. The key water quality recommendation was that no additional storage was required.

A construction contract for the upgrade to the Spring Creek AWPCP has been advertised, and bids were received during the second quarter of 2002.

#### *Sewer Separation for Far Rockaway*

The original facility plan recommended that in order to provide a 90 percent reduction of coliform bacteria levels in the open waters of Jamaica Bay that (1) the proposed CSO facility at Paerdegat Basin be constructed and with the ability to provided for disinfection of facility overflows, that (2) the sewer correction program on Rockaway be completed, that (3) the proposed CSO facility at Fresh Creek be constructed and that (4) reduction of coliform bacteria loading from Bergen and Thurston Basins be provided. The original facility plan also recommended proceeding with the Jamaica Tributaries Water Quality Facilities Plan.

The NYCDEP's sewer correction program in the Rockaway's is an on-going long-term program. For status of Paerdegat Basin and the Jamaica Tributaries, please refer to other sections of the quarterly report.

#### *Non-structural (Floatables Control) Options*

The original facilities recommended that a public education program be undertaken to focus on the relationship between street litter, improper disposal of trash into the sewers and the floatable materials found on beaches, shorelines and in the open waters.

Other derivative studies from Jamaica Bay CSO Facility Planning Project are the Jamaica Bay Eutrophication Study and Jamaica Bay Chlorine Residual Study.

### *Meetings*

No meeting conducted this period.

### *Preliminary Examinations*

Further work on CSO planning and preliminary design is underway. A draft final Eutrophication Study report was submitted to the Department on October 19, 2000 and to the NYSDEC on November 3, 2000. A report on the Chlorine Residual Study was reviewed and the consultant is addressing the Department's comments.

**Table 5**

*Jamaica Bay CSO Project*

Plan Elements:	CSO Storage Tank	Dredging
Location:	Fresh Creek, Brooklyn	Head Ends of Fresh, Hendrix and Spring Creeks
Actions:	Facility Plan and conceptual/preliminary design to be revised	No additional actions regarding dredging have been taken on this project at this time
Project Cost:	To be determined	\$3 million (estimate from 1993 Facility Plan)
Status:	Evaluating alternatives for storage tunnel, sewer system modifications, and increased wet weather plant capacity	-
Other Issues:	ULURP, SEQR to be revised	-

## **F.) East River**

The facility planning and design services for this project are being performed under East River CSO Project Contracts II, III and IV. In early September 2002, the final version of Change Order X-1 to East River Contract III to cover the additional engineering costs associated with additional planning and re-design of the Hutchinson River CSO Storage Conduit was submitted to the New York City Department of Environmental Protection (NYCDEP) for review. This change order is currently being processed with registration anticipated in the Summer of 2003. In early December 2002, the initial version of Change Order X-2 to East River Contract III was submitted to the NYCDEP. This change order covers the additional engineering costs associated with planning, design and construction of the ecological restoration/wetlands construction within Alley Park. The change order is currently under review by the NYCDEP.

### **▪ Bronx River**

#### *Project Summary*

The Bronx River CSO Storage Conduit Project will include construction of a storage conduit to effect 4 MG of off-line CSO storage capacity to provide CSO abatement at Outfall HP-23 on the Bronx River. The storage conduit, which will be approximately 500' L x 50' W x 35' H, will be located along the east shore of the Bronx River in an area immediately south of the intersection of East 177<sup>th</sup> Street, DeVoe Avenue and the Sheridan Expressway. This project will also include relocating Outfall HP-23 approximately 400 feet downstream of the outfall's existing location. At the request of the New York State Department of Transportation (NYSDOT), the NYCDEP changed the new site of Outfall HP-23 from 600 feet to 400 feet downstream of the outfall's existing location. The existing Outfall HP-23 will be abandoned. In addition, NYSDOT requested that the NYCDEP move the proposed above ground building away from the westbound Cross Bronx Expressway. As a result of these changes, the dimensions of the storage conduit were modified from 500' L x 60' W x 40' H to 500' L x 50' W x 35' H. Other principal facilities to be constructed as part of this project include a pumping station with a rated capacity of 2,800 gpm with an accompanying 16-inch diameter force main for pumpback purposes, air treatment facilities, and mechanical screening facilities.

#### *Meetings*

Principal meetings held during this report period are as follows:

- Project Progress Meetings on October 1, 2002, October 9, 2002, November 6, 2002, November 13, 2002, December 3, 2002 and December 11, 2002 at the NYCDEP offices, between representatives of the NYCDEP, New York City Department of Parks and Recreation (NYCDPR), New York City Department of City Planning (NYCDCP), URS Lawler, Matusky and Skelly Engineers (LMS), and Chu and Gassman Consulting Engineers, to discuss and review the overall progress of the East River CSO Abatement Project.
- Meeting on October 9, 2002 at the Metropolitan Transit Authority (MTA) Bus Depot adjacent to the Bronx River CSO Storage Conduit site, between representatives of the

NYCDEP, New York State Department of Transportation (NYSDOT), MTA, NYCDPR and URS, to coordinate and address issues between the NYCDEP, NYSDOT and MTA projects, including project schedules, to allow the respective projects to continue to proceed.

- Meeting on November 1, 2002 at the NYCDCP offices in Manhattan, between representatives of the NYCDEP, NYCDCP and URS, to review the proposed mapping actions related to the Bronx River CSO Storage Conduit Project, to discuss NYCDCP comments on the draft application map submitted by URS to the NYCDCP in March 2002, and to determine the scope of mapping work yet to be completed.
- Meeting on November 25, 2002 at the NYCDCP offices in Manhattan, between representatives of the NYCDEP, NYCDCP and URS, to continue to review the proposed mapping actions related to the Bronx River CSO Storage Conduit Project, and to discuss NYCDCP comments on the draft application map.

### *Field Investigations*

Principal field investigations conducted during this report period are as follows:

- The NYCDEP continued to review the Phase IA Archaeological Survey Report for the CSO storage conduit site.
- In-house review by URS of the Phase IB Archaeological Survey Report, documenting the findings at the two selected locations on the CSO storage conduit site (an area in proximity to the new outfall, and an area near the north entrance to the storage facility site), was re-commenced.
- The NYCDEP continued to review the subsurface geotechnical investigation reports (Subsurface Investigation and Geotechnical Evaluations) for the CSO storage conduit site.

### *Environmental Review*

In late December 2002, URS submitted a draft EAS for the Bronx River CSO Storage Conduit/Greenway Project to the NYCDEP for review. Air dispersion modeling for the EAS, to determine if the air treatment facilities need to be a two-stage or one-stage system, was performed as part of the EAS. A one-stage treatment system is recommended.

### *ULURP*

URS continued preparation of the ULURP Application for the Bronx River CSO Storage Conduit Project, including work associated with the required mapping actions as a result of the land swaps between the NYCDEP, NYSDOT, NYCDPR and MTA. A draft ULURP Application will be submitted to the NYCDEP for review in early January 2003. Following submittal of the draft ULURP Application, the NYCDCP will schedule an All-Agency Conference to discuss the ULURP Application and the accompanying application map, which was determined to be suitable for submission to Central Intake by the NYCDCP. This



conference will likely consist of representatives from the NYCDEP, NYSDOT, NYCDOT, NYCDPR and MTA.

### *Facility Planning/Preliminary and Final Designs*

Principal work performed during this report period includes:

- The Regional Director of the NYSDOT sent a letter to the NYCDEP, dated August 22, 2002, indicating that the Bronx River CSO Storage Conduit Project can proceed in conjunction with the re-construction of the ramp from the northbound Sheridan Expressway to the westbound Cross Bronx Expressway; however, coordination will be required between the two projects. In early October 2002, the NYCDEP sent a letter to the NYSDOT responding to the August 22<sup>nd</sup> letter. In their letter, the NYCDEP informed the NYSDOT that planning work associated with the Bronx River CSO Storage Conduit Project had resumed. In addition, in their letter, the NYCDEP stated that it is anticipated that the CSO storage conduit will be constructed over a 5-year period beginning in February 2007; however, this construction schedule is based on the NYSDOT's assurances that structural supports for the selected alternative for the Sheridan Expressway Ramp Replacement Project will not encroach upon the NYCDEP's easements or facilities, and anything to the contrary will affect the construction schedule.
- URS completed an evaluation of the specific requirements/revisions to be incorporated in the Bronx River CSO Storage Conduit Project, as requested by the NYSDOT, including a revised layout of the storage conduit and operations building. The results of this evaluation in the form of revised preliminary drawings were submitted to the NYCDEP in early November 2002. In this submittal, URS requested that the NYCDEP forward copies of the preliminary drawings to the NYSDOT for review. Additional copies of the drawings were provided for this submittal to the NYSDOT. Following approval of these preliminary drawings by the NYCDEP and NYSDOT, preliminary design of the project will be able to be continued. The NYCDEP has indicated that these preliminary drawings will be submitted to the NYSDOT in early January 2003.
- URS continued preparation of the Bronx River CSO Abatement Facilities Plan. It is anticipated that a draft of this facilities plan will be submitted to the NYCDEP for review in late January 2003.
- Design of the CSO storage conduit remained on hold until the issues with the NYSDOT are resolved.
- The NYCDEP continued to review the report submitted by URS that provides results of the investigation into alternatives for installing the diversion conduit underneath the ramp to the Sheridan Expressway, and details of the selected installation method, the New Austrian Tunneling Method (NATM).
- The NYCDEP continued to review the detailed hydraulic calculations for the CSO storage conduit and detailed hydrologic calculations for existing Outfall HP-23 that were submitted by URS.

- Approval by the NYCDEP remains pending for URS to utilize the services of Simco Engineering to prepare Maintenance and Protection of Traffic (MPT) Plan drawings for the Bronx River CSO Storage Conduit Project.
- As a result of the delay in proceeding with the project because of the issues with the NYSDOT, it is anticipated that the 30 percent Value Engineering Review will be delayed until the third quarter of 2003.

**Table 6**

Bronx River CSO Project

Plan Elements:	Bronx River CSO Storage Conduit
Location:	Property adjacent to intersection of East 177 <sup>th</sup> Street, DeVoe Ave., and Sheridan Expressway
Actions:	Design and construction of a 4 MG storage conduit, with new outfall, including screenings facility, air treatment system, and pumping station to pump stored CSO flow back into the interceptor system for conveyance to the Hunts Point WPCP for treatment; abandonment of existing Outfall HP-23
Cost:	\$45,047,000
Status:	Design of project on hold until issues between the NYCDEP and NYSDOT are resolved
Other Issues:	EAS needs to be approved and Negative Declaration issued for project; ULURP Application needs to be reviewed, certified and approved; mapping for land transfers needs to be completed prior to ULURP Application certification; CSO abatement facilities plan needs to be prepared and submitted to the NYSDEC for approval

## ▪ Hutchinson River

### *Project Summary*

The Hutchinson River CSO Storage Conduit Project will include the construction of a storage conduit to effect 7 MG of off-line storage in order to provide CSO abatement at Outfalls HP-14 and HP-15 on the Hutchinson River. As a result of public opposition to locating the southern reach of the storage conduit within the right-of-way of CO-OP City Boulevard, the NYCDEP has agreed to relocate this southern reach of the conduit into land located between CO-OP City Boulevard and the Hutchinson River, which is owned by the Riverbay Corporation. However, relocation of the southern reach of the storage conduit will require major revisions to the design of the conduit.

Most of the design revisions will involve the southern reach; however, some revisions will be required to the design of the northern reach. Although the southern reach will be relocated out of the roadway right-of-way, the majority of the northern reach of the conduit will remain within roadway rights-of-way, extending approximately 3,600 linear feet southward from near where Boston Road crosses over the Hutchinson River to the Conner Street Pumping Station. Under the re-design of the storage conduit, the northern reach may have a storage volume of less than 4.7 MG as presently designed with the southern reach having a storage volume of greater than 2.3 MG as presently designed. Other principal facilities to be constructed as part of this project include four large chambers for connection of the storage conduit to the existing sewer system, modifications to the existing Conner Street Pumping Station and possibly to the existing CO-OP City North Pumping Station, air treatment facilities, rehabilitation of existing Outfalls HP-14 and HP-15, and possibly construction of a new outfall at the southern terminus of the southern reach. In addition, a public recreational area will be constructed over top of the southern reach of the storage conduit within the property adjacent to the Hutchinson River. This recreational area will consist of paved walkways for walking and cycling, grass areas and shrubs.

### *Meetings*

Principal meetings held during this report period are as follows:

- Project Progress Meetings on October 1, 2002, October 9, 2002, November 6, 2002, November 13, 2002, December 3, 2002 and December 11, 2002 at the NYCDEP offices, between representatives of the NYCDEP, NYCDPR, NYCDGP, URS, Lawler, Matusky and Skelly Engineers (LMS), and Chu and Gassman Consulting Engineers, to discuss and review the overall progress of the East River CSO Abatement Project.
- Meeting on November 12, 2002 at the NYCDEP offices, between representatives of the NYCDEP and URS, to discuss issues with regard to the project, including ownership of the property adjacent to the Hutchinson River between CO-OP City Boulevard and the river, use of Public Place Site for construction of the southern segment of the conduit, and use of the New York Bus Service Company (NYBSC) property at the southeast corner of the intersection of Tillotson Avenue and Conner Street for relocation of the northern segment of the conduit out of the intersection.

## *Field Investigations*

Principal field investigations conducted during this report period are as follows:

- Based on site visits to the CO-OP City ball fields in early June and August 2002 by representatives of the NYCDEP and URS, alternative scopes of work for restoration of the ball fields were developed by URS. A letter describing these alternative scopes of restoration work, which range from approximately \$70,000 to \$160,000, along with recommendations for performing the work, was submitted to the NYCDEP in late August 2002. This letter remained under review by the NYCDEP.
- The subsurface geotechnical investigation reports (Subsurface Investigation and Geotechnical Evaluations), summarizing the results and conclusions of the subsurface geotechnical boring investigations along the northern and southern reaches of the CSO storage conduit, within the public rights-of-way, remained under review by the NYCDEP.
- The subsurface environmental investigation report, summarizing the results and conclusions of the subsurface environmental boring investigations along the northern and southern reaches of the CSO storage conduit, within the public rights-of-way, remained under review by the NYCDEP.
- The letter report prepared by LMS in November 2001, which provides the results of the investigation into the source of the contamination detected in the sentry wells located near the Hexagon Pharmaceutical Spill Site, remained under review by the NYCDEP. The results of the investigation indicate that the contamination detected in the sentry wells is from the Hexagon Pharmaceutical Spill Site, and that the spill contamination is migrating towards the Hutchinson River, which will impact on the dewatering operations during construction of the storage conduit.
- Massand Engineering completed the topographic survey, along the proposed route of the southern segment of the storage conduit within the property adjacent to the Hutchinson River. Massand provided the electronic file for this survey to URS. Using this survey and when authorized by the NYCDEP, URS will commence some preliminary routing and sizing of the revised southern segment of the storage conduit, which will then allow the subsurface investigations to proceed prior to the change order to East River Contract III being registered for design of the revised storage conduit, or as soon as the change order is registered. This will help to advance the project as the information needed for the design of the conduit support system and groundwater removal system will be available at the time of initiation of the re-design.
- At the request of the NYCDEP, URS made a site visit to the Hutchinson River CSO Storage Conduit Project site on December 18, 2002 to investigate construction activity taking place in the vicinity of the Public Place Site. As confirmed by representatives of the NYCDOT and NYCDEP at the site, the activity consists of construction of a maintenance building by the Riverbay Corporation on the strip of land located between Public Place Site and the pedestrian right-of-way on Peartree Avenue. No construction activity was observed on the property south of the Public Place Site between CO-OP City Boulevard and the Hutchinson River. From the standpoint of affecting the re-location of

the Hutchinson River CSO Storage Conduit from within the right-of-way of CO-OP City Boulevard to the property adjacent to the Hutchinson River, the size and extent of the maintenance building do not appear to be significant.

### *Environmental Review*

Work associated with the preparation of the EAS and with any permits remained discontinued due to the decision to re-design the Hutchinson River CSO Storage Conduit. Preparation of the EAS and work on permit applications is included in Changer Order X-1 to East River Contract III. Air dispersion modeling, to determine if the air treatment facilities need to be a two-stage or one-stage system, will be performed as part of the EAS.

### *ULURP*

Work associated with the preparation of the ULURP Application remained discontinued due to the decision to re-design the Hutchinson River CSO Storage Conduit. Preparation of the ULURP Application is included in Change Order X-1 to East River Contract III.

### *Facility Planning/Preliminary and Final Designs*

Principal work performed during this report period includes:

- Work associated with preparation of the Hutchinson River CSO Abatement Facilities Plan remained discontinued due to the decision to re-design the storage conduit. Preparation of the facilities plan is included in Change Order X-1 to East River Contract III.
- Re-planning and re-design of the Hutchinson River CSO Storage Conduit will be required due to the decision to relocate the southern reach of the conduit out of CO-OP City Boulevard to the property adjacent to the Hutchinson River. This work will consist of: (1) relocating the southern reach of the storage conduit easterly out of the right-of-way of CO-OP City Boulevard into the property located between CO-OP City Boulevard and the Hutchinson River; (2) re-aligning the northern reach of the storage conduit to extend across the New York Bus Service Company property at the southeast corner of the intersection of Conner Street and Tillotson Avenue to avoid having the conduit extend directly through the intersection; (3) constructing a public recreational area over top of the southern reach of the storage conduit within the property adjacent to the Hutchinson River; and (4) upgrading Conner Street Pumping Station. In addition, the work will include a re-evaluation of both the northern and southern reaches of the storage conduit to determine whether it would be more cost-effective to maintain the design of the conduit based on the San Francisco Collector Concept, or whether it would be feasible and cost-effective to re-size and re-configure the entire storage conduit (northern and southern reaches), so that the southern reach would perform in a similar manner to a storage tank. Under such a scenario, the storage volume of the northern reach would be reduced from the current 4.7 MG and the storage volume of the southern reach would be increased from the current 2.3 MG, so that the total storage volume of the storage conduit would total 7 MG to achieve the required CSO abatement at Outfalls HP-14 and HP-15.

- The change order to East River Contract III to cover the additional engineering costs associated with re-planning and re-design of the storage conduit was reviewed and approved by the NYCDEP, Bureau of Environmental Engineering, and was submitted for further processing.
- Design of the northern and southern reaches of the storage conduit, as well as permitting activities, remained discontinued due to the decision to re-design the Hutchinson River CSO Storage Conduit. Design and permitting activities associated with the revised storage conduit are included in Change Order X-1 to East River Contract III.
- At the request of the NYCDEP, Bureau of Environmental Engineering, URS submitted information to the NYCDEP Legal Department in early November 2002, for use by the Department in determining the ownership of the property located between CO-OP City Boulevard and the Hutchinson River (Lot 440, Block 5141). This is the property where the southern segment of the storage conduit is proposed to be constructed. According to NYC Department of Finance records, this property is owned by the NYCDPR; however, the Riverbay Corporation, the corporation that manages CO-OP City, claims ownership of this property. The ownership of this property, and whether it is mapped parkland if owned by the NYCDPR, needs to be identified so that the proper ULURP actions can be identified and addressed. In mid-November 2002, the NYCDEP Legal Department submitted a memorandum to the Bureau of Environmental Engineering indicating that although the NYC Department of Finance records show that the entire Lot 440 is owned by the NYCDPR, this is not correct. The only portion of Lot 440 owned by the NYCDPR is approximately 3.4 acres, which parcel of land was deeded by the Riverbay Corporation to the NYCDPR for “park” purposes, i.e., (Little League ballfields) by deed dated December 12, 1979 and recorded on February 6, 1980 in reel 411, page 119 of the Bronx County Register’s Office. The NYCDPR is in the process of having the NYC Department of Finance records corrected to designate the 3.4 acres as new Lot 441. The balance of existing Lot 440, which is owned by the Riverbay Corporation, will maintain the designation of Lot 440. As per the NYCDEP Legal Department memorandum, the Little League ballfields (new Lot 441) was adopted by the Board of Estimate on October 2, 1975, Cal No. 77 as a mapped park.
- Based on the November 12, 2002 meeting held at the NYCDEP offices, between representatives of the NYCDEP and URS, the NYCDEP will schedule a meeting with the NYCDOT and NYCDPR Borough Commissioners to discuss the use of the Public Place Site for construction of the storage conduit. In addition, the NYCDEP will schedule a meeting with Assemblyman Kaufman to discuss the use of Lot 440 (Riverbay Corporation property), Public Place Site, and the NYBSC property at the intersection of Tillotson Avenue and Conner Street for construction of the storage conduit. The meeting with Assemblyman Kaufman will follow the meeting with the NYCDOT and NYCDPR.
- In early November 2002, URS submitted a drawing to the NYCDEP Legal Department showing the extent that R.A.M. Used Auto Parts has currently cleared the City-controlled property of junk vehicles and parts in the vicinity of Outfall HP-15. Essentially the area that has been cleared is within the easement limits for the outfall sewer for Outfall HP-15, directly above the sewer. This drawing also identifies the area that will need to be cleared of junk vehicles and parts in the future (no later than July 2008) in order to

accommodate construction of the Hutchinson River CSO Storage Conduit. The NYCDEP Legal Department will check on the status of the removal of junk vehicles and parts from the City-controlled property.

- As a result of the decision to re-design the Hutchinson River CSO Storage Conduit, it is anticipated that the 30 percent Value Engineering Review will be delayed until the fourth quarter of 2003.
- The project schedule will be included in the CSO abatement facilities plan for review and approval by the NYSDEC. Therefore, upon approval of the facilities plan by the NYSDEC, the project schedule will also be considered to be approved. The current schedule shows construction beginning in July 2008 and extending through June 2013.



**Table 7**

*Hutchinson River CSO Project*

Plan Elements:	Hutchinson River CSO Storage Conduit
Location:	Public rights-of-way from Boston Road to Conner Street Pumping Station; City-owned and privately-owned property adjacent to Hutchinson River
Actions:	Design and construction of 7 MG CSO storage conduit consisting of two segments; a northern segment and a southern segment; includes overflow chambers and conduits, dry weather flow conduits, outfalls and drainage conduits with connections to Conner Street Pumping Station for northern segment, and either Conner Street Pumping Station or CO-OP City North Pumping Station for southern segment
Cost:	\$141,942,000
Status:	To be re-planned and re-designed
Other Issues:	Change Order X-1 to East River Contract III needs to be registered for re-planning and re-design of storage conduit; EAS needs to be revised to obtain Negative Declaration for project; ULURP Application needs to be completed, certified and approved; CSO abatement facilities plan needs to be prepared and submitted to the NYSDEC for approval

- **Alley Creek**

*Project Summary*

The Alley Creek Drainage Area Improvements/CSO Abatement Facilities Project, which has been designated as Phase I of the comprehensive Alley Creek Project, will be constructed in two stages, the Alley Creek Drainage Area Improvements (Stage 1) and the Alley Creek CSO Abatement Facilities (Stage 2). The Oakland Ravine Stormwater Treatment System, which is not a part of the CSO abatement project, has been designated as Phase II of the comprehensive Alley Creek Project. The principal elements included in the project are: additional stormwater and combined sewers, a new outfall sewer, and a new combined sewer outfall to substantially eliminate street flooding and sewer surcharging, and construction of a new 5 MG CSO storage facility to abate CSO discharges into Alley Creek (Stage 1); and activation of the 5 MG CSO storage facility including upgrading the Old Douglaston Pumping Station (Stage 2). Construction of a stormwater treatment system in the form of settling basins and natural emergent wetlands will be included in the Oakland Ravine Stormwater Treatment System (Phase II). The construction contracts for Phase I, Stage 1 and Phase I, Stage 2 have been designated as ER-AC1 and ER-AC2, respectively.

The principal facilities to be provided under Phase I, Stage 1 include approximately 1,400 linear feet of an 11'-0" W x 8'-0" H combined sewer; approximately 1,200 linear feet of an 11'-0" W x 9'-0" H combined sewer; approximately 4,700 linear feet of stormwater sewers ranging from 15- through 48-inches in diameter; approximately 2,350 linear feet of a 20-inch diameter force main; a double barrel outfall sewer consisting of approximately 1,475 linear feet of two 16'-0" W x 7'-6" H barrels followed downstream by approximately 650 linear feet of two parallel 20'-0" W x 7'-9" H barrels (average height); a CSO storage facility to be constructed alongside of the 20'-0" W x 7'-9" H (average height) double barrel outfall sewer, with approximate dimensions of 120 feet wide by 600 feet long and a maximum depth of 25 feet; and an outfall structure and stilling basin on Alley Creek. The outfall sewer will discharge into Alley Creek, through the new outfall structure to be constructed under Phase I, Stage 1, which will be located north of Northern Boulevard, on the west side of Alley Creek.

The 5 MG CSO storage facility will be constructed under Phase I, Stage 1, and activated under Phase I, Stage 2. The new outfall sewer will function as part of the CSO storage facility after the construction of a fixed weir, at the downstream end of the outfall sewer, to induce CSO storage during rainstorms. The CSO storage facility will be emptied by use of 24-inch and 36-inch diameter gravity drains to the Old Douglaston Pumping Station, which is located (in Alley Park) along the south side of Northern Boulevard, west of Alley Creek. The Old Douglaston Pumping Station will be used to pump the captured CSO sewage to the Tallman Island WPCP for treatment. The CSO storage facility will be cleaned, after each storm event, through the use of ten HydroSelf Flushing Gates (five at each end of the CSO storage facility).

The design and construction of ecological restoration areas and wetlands to mitigate construction impacts within Alley Park have been separated from Phase I, Stage 1, Contract ER-AC1 and included in a separate construction contract. This contract will begin after the

completion of Contract ER-AC1. A contract number has not been issued for this construction contract at this time.

The stormwater treatment system to be provided under Phase II will consist of a wetlands treatment system to be constructed in Oakland Ravine to provide primary and secondary treatment of stormwater, with the treated effluent being discharged into Oakland Lake, and ultimately into Alley Creek through the existing 10'-0" W x 7'-6" H outfall sewer. A contract number has not been issued for this construction contract at this time.

### *Meetings*

Principal meetings held during this report period are as follows:

- Project Progress Meetings on October 1, 2002, October 9, 2002, November 6, 2002, November 13, 2002, December 3, 2002 and December 11, 2002 at the NYCDEP offices, between representatives of the NYCDEP, NYCDPR, NYCDCP, URS, Lawler, Matusky and Skelly Engineers (LMS), and Chu and Gassman Consulting Engineers, to discuss and review the overall progress of the East River CSO Abatement Project.
- Pre-construction meeting on December 11, 2002 at the NYCDEP offices, between representatives of the NYCDEP, URS and Carp Construction Corporation, to discuss contract scheduling, and required pre-construction submittals by the contractor as well as other contract matters.

### *Field Investigations*

Principal field investigations conducted during this report period are as follows:

- Massand Engineering has previously indicated that, based on their review of available records as well as discussions with the NYCDPR, defined property boundaries for the Old Douglaston Pumping Station were never established. The NYCDEP and URS agreed that a site plan drawing will be submitted to the NYCDPR for review in January 2003, showing that the proposed mechanical screenings and air treatment system facilities, as well as the upgraded pumping station, will be located within the existing fence line surrounding the station.
- The protocol for collecting and analyzing samples from the bed of Oakland Lake to determine the feasibility of dredging and removing material from the lake remained under review by the NYCDEP.

### *Environmental Review*

The NYSDEC issued the Joint Application for Permit for the Alley Creek CSO Abatement Project in mid-April 2002 contingent upon the submission of a mitigation plan for Alley Park, an erosion-monitoring plan for the shorelines of Alley Creek in the vicinity of the new CSO outfall, and information on the dewatering system requirements and soil erosion/sediment control measures for the project. In early December 2002, the NYCDEP

submitted information to the NYSDEC to allow full approval to be granted for the Joint Application for Permit. The information included a project schedule, specifications on the dewatering system requirements and soil erosion/sediment control measures, erosion monitoring plan for the shorelines of Alley Creek in the vicinity of the new outfall, and drawings presenting the conceptual design of the ecological restoration/wetlands construction proposed within Alley Park.

The air treatment calculations submitted by URS to the NYCDEP in mid-June 2002, to determine the facilities required to treat air exhausted from the Alley Creek CSO storage facility and the wet well of the Old Douglaston Pumping Station, remained under review by the NYCDEP. URS will submit updated air treatment calculations to the NYCDEP for review in January 2003. A one-stage treatment system is recommended. At the November 6, 2002 Project Progress Meeting, the NYCDEP directed URS to base the design of the air treatment facilities on a one-stage treatment system.

The NYSDEC continued to review the request for modification to the Tallman Island WPCP SPDES Permit for the new CSO outfall discharging into Alley Creek.

A decision needs to be made by the NYCDEP as to whether an EAS needs to be prepared for the Oakland Ravine Project.

#### *ULURP*

The ULURP Application for the siting action for the Alley Creek Drainage Area Improvements – Phase I, Stage 1 and Alley Creek CSO Abatement Facilities – Phase I, Stage 2 has been fully approved.

A decision needs to be made by the NYCDEP as to whether the Oakland Ravine Project requires ULURP approval.

#### *Facility Planning/Preliminary and Final Designs*

Principal work performed during this report period includes:

- The Alley Creek CSO Abatement Project has not yet been approved by the NYCDOT - OCMC Highways. To hasten the NYCDOT approval of the project, the NYCDEP submitted a letter to the NYCDOT - OCMC Highways in late October 2002 indicating that the NYCDEP has complied with all NYCDOT requirements necessary for the approval of the proposed Maintenance and Protection of Traffic (MPT) Plan for the proposed sewer crossing of the Cross Island Parkway. The letter further indicated that the construction contract was awarded to Carp Construction Corporation, and construction is expected to commence in early 2003. The NYCDOT - OCMC Highways will not provide their approval of the project until approval is provided by the NYCDPR and the NYCDOT Bureau of Bridges. Jurisdictional maintenance limits in the vicinity of the outfall sewer crossing of the Cross Island Parkway need to be agreed upon between the NYCDOT - Arterial Maintenance and NYCDPR before the NYCDPR will provide

their approval of the project. In late January 2001, URS submitted drawings and structural calculations of the outfall sewer crossing of the Cross Island Parkway to the NYCDOT Bureau of Bridges for review and approval. As of the beginning of December 2002, no response had been received from the Bureau of Bridges. Based on a request by the NYCDEP, URS made submittals in mid-December 2002 to the NYS DOT - Planning Section, NYCDOT - Division of Highway Design and NYCDOT - Bureau of Bridges to obtain approvals of the Alley Creek CSO Abatement Project from the respective agencies.

- The NYSDEC continued to review the Total Maximum Daily Load (TMDL) Program for floatables removal for Alley Creek, which was sent to the NYSDEC in mid-November 2001.
- URS revised the draft NYSDEC Form-2A for the Alley Creek CSO Abatement Project that was previously submitted to HydroQual, Inc. in early December 2002, and submitted the revised draft of the Form 2-A to HydroQual, Inc. in mid-December 2002. HydroQual, Inc. will finalize the Form 2-A and submit the finalized form to the NYCDEP for review.
- URS initiated preparation of the Wet Weather Operating Plan (WWOP) for the Alley Creek CSO Abatement Project. It is anticipated that a draft of the plan will be submitted to HydroQual, Inc. for review in late February or March 2003.
- The design of the extension of a 24-/36-inch diameter storm sewer along Cloverdale Boulevard between 46<sup>th</sup> Avenue and Birmingham Parkway is essentially complete. The extension of the existing storm sewer will result in the sewer discharging into the existing outfall sewer for Outfall TI-7 in lieu of into Oakland Lake as is the current condition. URS has recommended that this sewer extension be constructed under Contract ER-AC1, which will require that a change order be prepared to include the work under the construction contract. The NYCDEP is evaluating this recommendation.
- The NYCDEP received a request from the New York City Department of Design and Construction (NYCDDC) in late November 2002 to add the construction of a 12-inch diameter sanitary sewer along Bell Boulevard, 217<sup>th</sup> Street and 56<sup>th</sup> Avenue to Contract ER-AC1. The NYCDDC is presently designing this sanitary sewer and has indicated that the actual construction of the sewer should be under the jurisdiction of the NYCDEP. The NYCDDC will provide all the design information (drawings and specifications) for the sanitary sewer to be included in Contract ER-AC1. The NYCDEP has indicated that they concur with including the construction of the sanitary sewer under Contract ER-AC1, and requested URS to contact the NYCDDC to obtain additional information on the sewer (exact location, length, etc.). In mid-December 2002, URS contacted the NYCDDC as requested and is currently waiting on the NYCDDC to provide the additional requested information.
- In early December 2002, URS submitted to the NYCDEP the change order to East River Contract III to cover the additional engineering costs associated with planning, design and construction of the ecological restoration/wetlands construction within Alley Park. This change order is being reviewed by the NYCDEP.

- The NYCDEP, Bureau of Environmental Engineering (BEE) continued to review an intra-departmental memorandum, dated November 6, 2002, with the NYCDEP, Bureau of Wastewater Treatment's comments on the preliminary design of the Old Douglaston Pumping Station. The BEE indicated that they want to review the memorandum prior to any action being taken with regard to the comments, and has directed URS to delay design of the upgrade of the pumping station until direction is provided by the BEE.
- URS proceeded with design of the elements and facilities to be included in Contract ER-AC2, Alley Creek CSO Abatement Facilities - Phase I, Stage 2, that are not directly related to the upgrade of the Old Douglaston Pumping Station. The design of the pumping station will be initiated following resolution and finalization of the comments on the preliminary design by the BEE. It is anticipated that preliminary design (approximately 30 percent complete drawings and specifications) for Contract ER-AC2 will be completed in April 2003 for review by the NYCDEP.
- The issues regarding the design of the Oakland Ravine Stormwater Treatment System, that were outlined in the NYCDPR letter to the NYCDEP, dated August 12, 2002, were discussed in detail at the October 9, 2002 Project Progress Meeting. The discussions focused on the NYCDPR's design policies and priorities for the Oakland Ravine Project, with a view toward revising the initial proposed preliminary design so as to meet the objectives of the NYCDEP and NYCDPR.
- In mid-November 2002, URS prepared and submitted a memorandum to the NYCDEP, which summarizes specific issues relating to additional planning and preliminary design requirements with regard to the Oakland Ravine Stormwater Treatment System, as discussed between representatives of the NYCDEP, NYCDPR and URS at the October 9, 2002 Project Progress Meeting. A general framework for performing additional planning and revising the preliminary design for the Oakland Ravine Stormwater Treatment System to address the specific issues is provided in the memorandum. At the December 11, 2002 Project Progress Meeting, the NYCDEP and URS discussed the specific issues included in the memorandum with the NYCDPR, including requested changes to the project by the NYCDPR. In general, the NYCDEP and URS agree with the changes to the project requested by the NYCDPR, except for constructing an underground concrete equalization tank in lieu of a forebay consisting of an open body of water in the upper level of Oakland Ravine near 56<sup>th</sup> Avenue.
- In previous discussions between the NYCDEP and NYCDPR, it was agreed that the wetland forebay will be relocated from the lower level of Oakland Ravine to the upper level near 56<sup>th</sup> Avenue. However, the NYCDPR has indicated that for safety reasons they would prefer that this forebay be replaced with an underground concrete equalization tank rather than an open body of water. The NYCDEP has reservations about this change in concept for the forebay, and requested URS to prepare a conceptual construction cost comparison for the two alternatives to be located near 56<sup>th</sup> Avenue; an underground concrete equalization tank versus an open body of water. As requested by the NYCDEP, URS completed the cost comparison based on a one million gallon storage volume, and presented the results at the December 11, 2002 Project Progress Meeting. For a forebay consisting of an open body of water, the construction cost was estimated to be approximately \$200,000, and for the underground concrete tank, the construction cost

was estimated to be approximately \$1,600,000, resulting in a differential construction cost of about \$1,400,000. Due to this significant cost differential between the two alternatives, this open body of water forebay versus the underground concrete tank issue needs to be resolved prior to further work being performed on the project.

### *Facility Bidding and Construction*

Principal work performed during this report period includes:

- The NYCDEP issued the Notice to Proceed for Contract ER-AC1 to Carp Construction Corporation on December 6, 2002.
- DSDC activities were initiated for Contract ER-AC1. At the request of the NYCDEP, URS prepared a listing of required submittals and activities to be completed by Carp Construction Corporation for approval prior to the start of construction activities for Contract ER-AC1. This listing was submitted to the NYCDEP in late November 2002. In addition, based on the results of the constructability review of Contract ER-AC1 completed by Dvirka and Bartilucci Consulting Engineers (DB) in late August 2002, URS continued preparation of Field Clarifications to address some of the issues identified in the review.
- URS submitted conformed sets of specifications and drawings for Contract ER-AC1 to the NYCDEP in early September 2002 and to Carp Construction Corporation in early October 2002. In late October 2002, URS submitted conformed sets of the specifications and drawings to the NYCDEP in an electronic information disk format.

**Table 8**

*Alley Creek CSO Project*

Plan Elements:	Alley Creek Drainage Area Improvements (Phase I, Stage 1)	Alley Creek CSO Abatement Facilities (Phase I, Stage 2)	Alley Park Ecological Restoration and Wetlands Construction	Oakland Ravine Stormwater Treatment System (Phase II)
Location:	46 <sup>th</sup> Avenue, 53 <sup>rd</sup> Avenue, 56 <sup>th</sup> Avenue, Bell Boulevard, Luke Place, 214 <sup>th</sup> Street, 216 <sup>th</sup> Street, 217 <sup>th</sup> Street, Springfield Boulevard, Cross Island Parkway, Northern Boulevard and Alley Park in Bayside, Queens	Northern Boulevard and Alley Park in Bayside, Queens	Alley Park in Bayside, Queens	Oakland Ravine and Oakland Lake in Bayside, Queens; Queensborough Community College Campus in Bayside, Queens
Actions:	Construction of additional stormwater and combined sewers, catch basins, outfall sewer and outfall structure to effect improved drainage in areas upstream of Outfall TI-7 in Bayside, Queens; Construction of 5 MG CSO storage facility for CSO abatement within Alley Creek	Design and construction of modifications to the Old Douglaston Pumping Station including mechanical screenings facilities and air treatment facilities to treat air exhausted from the CSO storage facility and the pumping station; design and construction of hydraulic control structures and facilities to activate the 5 MG CSO storage facility constructed under Phase I, Stage 1	Design and construction of ecological restoration areas and wetlands to mitigate construction impacts; approximately 14 acres to be constructed	Design and construction of a wetlands stormwater treatment system in Oakland Ravine to treat stormwater prior to discharge into Oakland Lake and ultimately into Alley Creek; design and construction of upgrades to the stormwater sewer system on the Queensborough Community College Campus; and design and construction of rehabilitation measures within Oakland Ravine and Oakland Lake
Cost:	\$93,093,094	\$9,126,000	\$8,000,000	\$26,500,000
Status:	Notice to Proceed issued to Carp Construction Corporation	Preliminary design completed; final design underway	Conceptual design completed; Change Order X-2 to East River Contract III to cover additional engineering costs under review by NYCDEP	Preliminary design report under review by NYCDEP
Other Issues:	NYSDEC issued Joint Application for Permit contingent upon approval of supplemental information; ULURP Application fully approved; Negative Declaration issued for project	Address property boundary issue for Old Douglaston Pumping Station with NYCDPR	NYC Department of Parks and Recreation approved conceptual design	Determine if ULURP Actions required; determine if EAS required; NYCDPR and NYCDEP to reach agreement on elements to be incorporated into project; input from local environmental groups needed



## ▪ Westchester Creek

### *Project Summary*

The Westchester Creek CSO Storage Tank Project will include construction of a 12 MG underground CSO storage tank to be located in the southwest section of the Bronx Psychiatric Center (BPC) Campus adjacent to Waters Place, near the intersection of Eastchester Road . The proposed underground storage tank will have approximate dimensions of 410' L x 170' W x 36' H and will provide CSO abatement at Outfall HP-25 on Westchester Creek. Other principal facilities to be constructed as part of the project include: a one-story operations building to house operational units including air treatment facilities; a single-barrel supply conduit (20'-0" W x 20'-0" H) extending from the Outfall HP-25 sewer in Eastchester Road to the underground storage tank; and a pumping station with a rated capacity of approximately 10,500 gpm with an accompanying 24-inch diameter force main extending from the underground storage tank to the sewer system in Eastchester Road for pumpback purposes. In addition to the facilities required for CSO abatement at Outfall HP-25, the NYCDEP has agreed to provide, as part of this project, amenities for use by the Bronxchester and Van Nest Little Leagues that utilize the baseball fields adjacent to the site of the underground storage tank. These amenities consist of restroom facilities, a clubhouse facility, a parking lot and playground to be located on top of the underground storage tank, and fencing to separate the Little League facilities from the BPC Campus facilities and NYCDEP facilities.

### *Meetings*

Principal meetings held during this report period are as follows:

- Project Progress Meetings on October 1, 2002, October 9, 2002, November 6, 2002, November 13, 2002, December 3, 2002 and December 11, 2002 at the NYCDEP offices, between representatives of the NYCDEP, NYCDPR, NYCDCP, URS, Lawler, Matusky and Skelly Engineers (LMS), and Chu and Gassman Consulting Engineers, to discuss and review the overall progress of the East River CSO Abatement Project.
- Meeting on November 14, 2002 at the offices of Community Board No. 11 in the Borough of the Bronx, between representatives of the NYCDEP, Borough President's Office, Community Board No. 11, Senator Velella's office and URS, to review the layout of the Westchester Creek Project site with regard to the locations of the Little League restroom facilities and clubhouse facility, and the fencing to separate the Little League facilities from the BPC Campus facilities and NYCDEP facilities.
- Meeting on November 22, 2002 at Senator Velella's office in the Borough of the Bronx, between representatives of Senator Velella's office, NYCDEP and URS, to discuss implementation of the site preparation contract (restroom facilities, fencing and other miscellaneous site preparation work at the project site).

### *Field Investigations*

Principal field investigations conducted during this report period are as follows:

- In early December 2002, the NYCDEP granted approval for Savin Engineers to provide the inspection services required to inspect and document the conditions of Outfall HP-25 and the upstream outfall sewer.
- The subsurface geotechnical investigation report, summarizing the findings and results of the geotechnical borings drilled at the locations for the proposed Little League restrooms and clubhouse facility, remained under review by the NYCDEP.
- In mid-December 2002, URS submitted the Subsurface Investigation Report, summarizing the findings and results of the geotechnical borings drilled at the site of the CSO storage tank, as well as along Eastchester Road and Waters Place. Work continued on preparation of the Geotechnical Evaluations Report.
- The metes and bounds survey for the property being acquired at the BPC Campus for the CSO storage tank project remains under review by the Dormitory Authority of the State of New York (DASNY) and the BPC. Because of the easement granted by DASNY to the private development corporation along the west boundary of the BPC Campus, this survey will need to be slightly modified in the future.
- In mid-December 2002, LMS submitted protocols to the NYCDEP for review and approval for drilling the environmental borings at the Westchester Creek CSO Storage Tank site, and for taking samples and analyzing the samples from the borings. It is anticipated that the borings will be drilled during July and August 2003.

### *Environmental Review*

URS and LMS completed preparation of a revised draft EAS for the CSO storage tank project, based on a parking lot and playground for use by the Bronxchester and Van Nest Little Leagues being constructed on top of the storage tank. This draft EAS was submitted to the NYCDEP for review in early December 2002. Air dispersion modeling, to determine if the air treatment facilities for the Westchester Creek CSO Storage Tank Project need to be a two-stage system or a one-stage system, was performed as part of the EAS. A one-stage treatment system is recommended. URS will submit the air treatment calculations to the NYCDEP for review in January 2003.

### *Site Acquisition/ULURP*

There were no new developments regarding acquisition of the property at the BPC Campus by DECAS from DASNY. DECAS will re-initiate site acquisition negotiations with DASNY upon receipt of the ULURP Application.

URS completed preparation of a revised draft ULURP Application for the CSO storage tank project, based on a parking lot and playground for use by the Bronxchester and Van Nest Little Leagues being constructed on top of the storage tank. This draft ULURP Application was submitted to the NYCDEP for review in late November 2002.

## *Facility Planning/Preliminary and Final Designs*

Principal work performed during this report period includes:

- At the September 6, 2002 Project Progress Meeting, URS reported that the design of the Westchester Creek CSO Storage Tank will need to change from the previously planned flow-through tank configuration to a dead-end configuration, due to hydraulic considerations and NYCDEP sewer system design criteria. URS explained that the need for a dead-end storage facility was identified during the initial preliminary design phase for the facility. Upon further analyses performed as part of preliminary design, it was found that the hydraulic capacities and slopes of the sewers immediately upstream of the proposed CSO influent conduit and storage tank are such that given the hydraulic head losses that will likely be imposed by the storage facility (influent conduit, screens, storage tank and internal and overflow weirs), adequate hydraulic head to “drive” the storage tank to overflow could not be developed without surcharging the upstream sewers. Surcharging of the collection system sewers could cause street and basement flooding, and is against the policy and design criteria of the NYCDEP. Therefore, given the design constraints, the operation of a flow-through facility is generally unfeasible. The proposed solution is to reconfigure the tank as a dead-end facility, i.e., during a rain storm, combined sewage overflowing from Regulators CSO-29 and CSO-29A would flow into the tank until it is completely full, and then all combined sewage flows during the remainder of the rain storm would completely bypass the tank, and discharge to Westchester Creek through Outfall HP-25. The NYCDEP has indicated that planning and design of the storage tank should proceed based on the dead-end configuration.
- At the meeting held on November 14, 2002 at the offices of Community Board No. 11 in the Borough of the Bronx, between representatives of the NYCDEP, Borough President’s Office, Community Board No. 11, Senator Velella’s office, and URS, the NYCDEP noted that a letter was sent to the Italian American Soccer League of NY in early October 2002 requesting specific information that would enable the NYCDEP to assess the impacts of the loss of the use of the soccer field at the BPC Campus, both on permanent and temporary bases as part of the EAS. As of the end of December 2002, the Italian American Soccer League of NY had not fully responded to the letter. As a result of discussions at this meeting, it was decided that the soccer field, that was planned to be constructed on top of the CSO storage tank for use by the Italian American Soccer League of NY, is to be eliminated, and a parking lot and playground for use by the Bronxchester and Van Nest Little Leagues are to be constructed in lieu of the soccer field.
- URS initiated preparation of the draft NYSDEC Form 2-A for the Westchester Creek CSO Storage Tank Project. It is anticipated that the draft Form 2-A will be submitted to HydroQual, Inc. for review in late February or March 2003.
- URS initiated preparation of the Wet Weather Operating Plan (WWOP) for the Westchester Creek CSO Storage Tank Project. It is anticipated that a draft of the plan will be submitted to HydroQual, Inc. for review in late February or March 2003.

- As per direction from the NYCDEP, preparation of the TMDL Program for settleables removal for Westchester Creek remained on hold until the TMDL Program for floatables removal for Alley Creek is finalized with the NYSDEC.
- URS continued final design of the site preparation contract for the Westchester Creek CSO Abatement Project. This contract includes the women and men's restroom facilities for the Bronxchester and Van Nest Little Leagues, installation of fencing and other miscellaneous site work at the BPC Campus project site. The contract documents for the site preparation contract are based on completing the construction contract under the Wicks Law. Three separate construction contracts are involved; general, electrical and plumbing. The final drawings and specifications for the site preparation contract were submitted to the NYCDEP for review in early December 2002.
- URS continued with preliminary design of the Westchester Creek CSO Storage Tank based on a dead-end tank configuration. In late November 2002, a conceptual layout for the operations building for the CSO storage tank was submitted by URS to the NYCDEP for review. This layout consists of a single-story building with a total floor area of approximately 16,650 square feet to be located at the southern end of the storage tank. Following review of the conceptual layout of the operations building by the NYCDEP, URS will prepare more detailed preliminary drawings of the building. Preliminary design documents (drawings and specifications) are scheduled to be submitted to the NYCDEP in March 2003 for review.
- It is anticipated that the 30 percent Value Engineering Review will take place in the second quarter of 2003.

**Table 9**

Westchester Creek CSO Project

Plan Elements:	Westchester Creek CSO Storage Tank and Little League Amenities
Location:	Bronx Psychiatric Center Campus in the Bronx
Actions:	Design and construction of a 12 MG underground CSO storage tank to provide CSO abatement at Outfall HP-25 on Westchester Creek, including an influent conduit along Waters Place and Eastchester Road; design and construction of a one-story operations building; and design and construction of amenities for the Bronxchester and Van Nest Little Leagues
Cost:	\$143,505,000
Status:	Final design essentially complete and being reviewed for the site preparation contract (restrooms for Little Leagues and miscellaneous site preparation work); preliminary design underway for storage tank
Other Issues:	Site needs to be acquired by NYCDEP from the State of New York; EAS needs to be approved and Negative Declaration issued for project; ULURP Application needs to be reviewed, certified and approved; NYC Arts Commission needs to grant final approval for restrooms and clubhouse facility for Little Leagues; licensing agreement between the NYCDEP and the Little Leagues needs to be finalized

## G.) Coney Island Creek

### • Avenue V Pumping Station

The recommended plan for the Coney Island Creek CSO Facility Planning Project is to increase the wet weather pumping capacity of the Avenue V Pumping Station. The Avenue V Pumping Station tributary area encompasses 2,900 acres, of which 2,056 acres are separately sewered and 844 acres have combined sewers. The Avenue V Pumping Station capacity will be increased to capture 85 percent, by volume, of the CSO discharges to Coney Island Creek. The capacity of the pumping station will be increased from approximately 30 mgd to 80 mgd. New pumps, motors, variable frequency drives (VFDs) and controls will be installed and two new force mains will be constructed.

On August 8, 2002 NYCDEP transmitted to NYSDEC the modified facility plan for the Coney Island Creek CSO Facility Planning Project. This modified facility plan report was submitted to document the changes to the originally approved facility plan, pursuant to requirements of the CSO Consent Order.

#### *Meetings*

Principal meetings held during this report period were as follows:

- Meetings between NYCDEP and Hazen and Sawyer on October 23 and November 27.

#### *Maximize Flows: Upgrade Avenue V Pumping Station for Wet Weather Flow Conveyance Capacity and Regulator Automation at Avenue V Pumping Station*

Final design work of the pumping station upgrade, associated new force mains and modification of existing regulators has continued.

In a letter to Con Edison dated April 8, 2002, the Department stated a preference for 120/208V power supply from the electrical utility. However, following further evaluation by the City, it was decided that it is more beneficial to have: 277/480V service. A letter to Con Edison informing the utility of the decision was transmitted on July 22, 2002.

The 480V service will require construction within the site of a single story Network Protector Structure (NPS) with approximate dimensions of 45 feet long by 26 feet wide. The NPS will be located at the southwest corner of the pumping station site on West 11th Street. Zoning requirements for the Avenue V PS (map 28c, R5, corner lot) dictate that the NPS have a minimum front yard of 18 feet on West 11th Street, given that the front yard on Avenue V is 10 feet. In order to locate the facility on or close to the property line, a variance (from Board of Standards and Appeals [BSA]) is required. Because the NPS cannot be located with the required setback along West 11th Street, DOB will disapprove the submission and a submission to BSA will be required 25 days thereafter.

Preparation of documents for submission to the Department of Buildings (DOB) to initiate the process for obtaining a variance for the NPS has continued. DOB application and

drawing comments have been received from a DOB expeditor and are being incorporated. It is anticipated that submittal to DOB will occur in February 2003.

*Elimination of Dry Weather Overflows (DWOs)*

Thirteen outfalls that discharge to Coney Island Creek were identified as contributing dry weather overflows to the Creek. The following table identifies the outfall number, location, and determination date of the discharge, flow, and current status.

Outfall I.D.	Location	Determination Date	Flow (GPD)	Status
CI-214	CI Creek (N) 600' w/o Shore Pkwy	12/20/90	1,860	Abated as of 12/31/96
CI-215	CI Creek (N) 10' w/o Shore Pkwy	12/20/90	1,411	Abated as of 12/31/98
CI-602	CI Creek & W.33 <sup>rd</sup> Street	11/20/90	259	Abated as of 12/31/98
CI-639	CI Creek (SS) & W.12 <sup>th</sup> Street	02/08/95	2,938	Abated as of 12/31/96
CI-641	Head of CI Creek & Shore Pkwy	12/20/90	372,960	Abated as of 12/29/94
CI-653	CI Creek (SS) 1500' sw/o Shore Pkwy	02/08/95	1,958	Abated as of 12/31/98
CI-664	CI Creek (S) & W.15 <sup>th</sup> Street	12/12/90	3,326	Abated as of 12/31/98
CI-601	CI Creek & W.28 <sup>th</sup> Street	11/16/90	158	Capital Project to abate discharge is under design
OH-021a	CI Creek – 90" Storm Sewer	12/02/94	50,000	Abated as of 12/02/94
OH-021b	CI Creek – 108" Storm Sewer	12/02/94	150,000	Abated as of 12/02/94
OH-021c	CI Creek – Avenue X Storm Sewer	12/02/94	70,000	Abated as of 12/02/94
OH-101	CI Creek – @ Bay 50 <sup>th</sup> Street	02/08/95	800	Abated as of 02/22/95
OH-606	16 <sup>th</sup> Avenue @ Coney Island Creek	07/09/96	2,880	Abated as of 07/09/98

*Dredge the Head End of Coney Island Creek*

At this time, DEP has no specific plans for dredging the Creek. The inability to dispose of dredged materials at an ocean mud dump site and the high costs associated with land disposal of dredged sediments requires further investigation to define the extent of dredging actions. DEP has made a formal request to the Army Corps of Engineers that the Creek be dredged as part of the Hudson-Raritan Estuary Restoration Project. We will continue to work with the Corps to have this action implemented in its ongoing Feasibility Plan for the Hudson-Raritan Estuary.

**Table 10**

CONEY ISLAND CREEK CSO Project

	<i>Contracts PS-79G, H, P, E</i>	<i>Contract PS-79G</i>	<i>Contract PS-79F</i>
Plan Elements:	Upgrade Avenue V Pumping Station	Regulator Modifications	New Force Mains
Location:	Avenue V PS (Avenue V and West 11 <sup>th</sup> Street)	Reg. AV-1 at Avenue V PS site; Reg. OH-1 (Shore Pkwy. vic. Verrazano Bridge)	42-inch to SE-133 (Shore Pkwy. Vic. Verrazano Bridge); 48-inch to vic. Reg. 9A
Actions:	Comprehensive upgrade to automate and increase station capacity to 80 mgd; Lower Wet Well operating level to reduce sewer surcharges; Network Protector Structure to reliably transform utility power; Generator system to improve station reliability; Architectural restoration of Main Building to 1915 appearance	Automate Reg. AV-1 throttling gate (influent gate to Wet Well); Lower weir at Reg. OH-1 diversion chamber and at Reg. 9A to maintain existing HGL in upstream sewers	New force mains to convey DWF and WWF
Cost:	\$32,000,000	Incl. at left	\$68,000,000
Status:	Final Design – 50% Complete	Final Design – 0% Complete	Final Design – 50% Complete
Other Issues:	Relocation of station personnel during construction.	-	Routing of force main along parkland; Selective replacement of water and sewer utilities along route.



## H.) Newtown Creek

### • Phase I Aeration Facilities

This element of the plan will provide for aeration of English Kills, south of the Grand Street bridge, to raise DO concentrations to a minimum of 1.0 mg/l at all times. A compressor station will be located at 1106 Grand Street, adjacent to English Kills and will deliver air to English Kills via air headers and diffusers on the Creek bottom along its centerline. Data will be collected during the first year of operation to guide refinements in operating procedures and verify performance.

#### *Preliminary Design*

The preliminary design has been completed. Drawings, facility descriptions and construction cost estimates have been prepared for three alternatives. The Department has reviewed the alternatives.

A preliminary evaluation of an alternative utilizing perforated plastic pipe as a header/diffuser, has also been completed and was reviewed by the Department.

#### *CEQR and Permitting*

An EAS for the Phase I Aeration has been completed and sent to NYSDEC together with applications for permits for their review. OEPA issued a negative declaration on December 14, 2000 for the Phase I Aeration project. NYSDEC issued a permit on May 31, 2001. The U.S. Army Corp. of Engineers has approved the Departments request for a Nationwide Permit No. 5 concurrence for Scientific Measurement Devices. Contact has also been made with the US Coast Guard for their review of the project.

#### *ULURP*

The NYC Department of City Planning certified the ULURP application on October 22, 2001. The Community Board and the Borough President's Office reviewed it. A Public Hearing before the City Planning Commission was held on February 6, 2002 and the City Planning Commission adopted the application on March 6, 2002.

#### *Final Design*

Construction of the Phase I Aeration Facility will be performed in two stages. During the initial stage of construction, plastic perforated piping will be used and evaluated. If the perforated piping does not achieve the desired result, the piping will be replaced with stainless steel pipe with air diffusers under the second stage of the construction contract.

The 30 % design was submitted to the Department in July 2002. The 60% design submittal was submitted on December 12, 2002. The City Art Commission gave preliminary

approval of the building architecture on November 20, 2002. Final approval is contingent upon the finalized Contract Documents.

- **Phase II Aeration Facilities**

This element of the facility plan includes aeration of the Lower English Kills, the East Branch and Dutch Kills. This work will follow the performance evaluation of the Phase I facilities.

- **Maximize Flow Through Morgan Ave. Interceptor**

In-line storage in the combined systems within the Newtown Creek wet weather tributary area has been determined to be inconsistent with the City drainage plan. An alternative to installation of in-line storage dams has been proposed that would increase the capacity of Regulator B1, increase flow through the Morgan Avenue Interceptor, and provide a relief sewer from the St. Nicholas Weir to Regulator B1. Facility planning for routing of the sewer has been completed. The facility plan includes throttling of the Kent Avenue Interceptor in order to allow more flow from the Morgan Avenue Interceptor to reach the WPCP. Modeling of the interceptors was performed to determine the size and operation of the throttling gate.

Receiving water modeling to assess the benefits of this proposal has established required volume for supplementary off-line storage.

#### *Preliminary Design*

Modeling to establish a control strategy for the Kent Avenue throttling gate is complete. A meeting was held on August 14, 2002 with the Newtown Creek WPCP design team to exchange information regarding the facility, with a follow-up conference call on September 20, 2002. Additional modeling, as requested by the Department, indicated that it is not practical to utilize the existing automated regulators on the Kent Avenue Interceptor to meet CSO goals in lieu of a throttling gate. The modeling also indicated that if a throttling facility was not constructed, it would be necessary to increase the capacity of the proposed storage tank from 9 MG to 16 MG. A meeting was held on December 23, 2002 with the NYCDEP BEE, BWSO and BWT to present the proposed plan for the throttling facility.

- **Off-Line Storage Tank**

This plan element comprises the construction of an off-line storage facility to control CSO discharge into English Kills. Flow would be diverted from the combined sewers flowing west along Johnson Avenue. As described in the May 1995 facilities plan, the proposed tank was to be on property located on Varick Avenue, adjacent to English Kills. The tank was to be co-located on the site with a Department of Sanitation facility.

### *Siting*

An alternative siting proposal was developed, to construct the tank within the head end of English Kills. This proposal was sent to NYSDEC for comment on its feasibility. The Department met with NYSDEC on May 23, 2001 to review this proposal and to solicit comment from NYSDEC. The proposal was rejected because the Department had not established sufficient cause why a tank could not be constructed on existing land.

A re-evaluation of land based siting alternatives was initiated following this meeting. Six (6) alternative sites were reviewed and presented to the Department. Information presented to the Department included possible site plans, construction feasibility and risks, impacts on current occupants and neighborhood, and construction and O&M costs. The alternative sites were screened and the advantages and disadvantages were evaluated. The preferred site is located at the intersection of Johnson and Morgan Avenues. This site is preferred due to its close proximity to the interceptor, outfall and force main. A presentation was made to NYCDEP's Commissioner on September 11, 2002 describing the proposed plan and the need for the preferred site. Presentations were also made to the NYC Economic Development Corporation and Community Board No. 1 in Brooklyn. The Department has given approval to finalize the EAS and commence ULURP for the preferred site.

### *Facility Planning*

A draft Facility Plan was prepared for construction of the storage facility on the preferred site. Modeling analysis was performed to verify CSO abatement projections. Preliminary plan and profile drawings and preliminary equipment sizing was performed. An updated Facility Plan Draft Report was submitted to the Department on June 5, 2002. The Department is continuing to review the report.

### *CEQR and Permitting*

A draft EAS for the proposed storage facility was prepared. OEPA has reviewed and submitted comments to the report. A Phase I Site Assessment, including the site history and site inspection was prepared. OEPA has reviewed and accepted this report. A scope of work for the Phase II Site Assessment has been prepared. OEPA has reviewed and submitted comments to the scope of work. The phase II Site Assessment will begin once access to the site is granted.

#### • **Sediment Dredging**

A dredging feasibility study was added to the facility plan at the request of NYSDEC. The feasibility of dredging CSO sediments from the branches of Newtown Creek was investigated. The investigation included a hydrographic survey to determine locations of sediment mounds and sediment sampling to clarify sediment quality.

### *Feasibility Study*

The draft Dredging Feasibility Study Report was completed in October 2000. The Department anticipates collaboration with the Army Corps of Engineers to include the dredging of Newtown Creek with the COE Habitat Restoration Projects.

Table 11

Newtown Creek CSO Project

Plan Elements:	Maximize flow through Morgan Ave. Interceptor	Phase I Aeration Facilities	Off-line Storage Tank
Location:	Regulator B1 and WPCP throttling chamber	Head end of English Kills, south of Grand Street	Sewers tributary to CSO outfall discharging to English Kills
Actions:	Raise overflow weir in Regulator B1; increase sluice gate openings to interceptor; provide relief sewer from St. Nicholas weir to Regulator B1; provide throttling gate on Kent Avenue Interceptor.	Provide aeration of English Kills to raise DO concentrations to a minimum of 1.0 mg/l. The facility includes a landside compressor station and an air header and diffuser assembly on the Creek bottom.	Design of an off-line storage facility to control CSO discharge into English Kills. The facility would include the tank, a pumping station, and a new gravity drain to drain the tank for treatment at the Newtown Creek WPCP.
Cost:	\$4,000,000*	\$8,000,000	\$93,000,000
Status:	Facility plan elements for modifications to regulator and routing of the relief sewer have been completed and included in an Updated Facility Plan Draft Report. Modeling of the interceptors was performed to determine the size and operation of the throttling gate. Coordination with the WPCP design team is continuing.	Preliminary design & CEQR completed. Permit issued by NYSDEC. Nationwide Permit No. 5 concurrence issued by USACOE. ULURP application adopted by City Planning Commission. Final design is approximately 65% complete. The NYC Art Commission granted preliminary approval of the building architecture.	Siting within English Kills was rejected by NYSDEC. Identified preferred site at intersection of Johnson and Morgan Avenues after re-evaluation of siting alternatives and proceeding with finalization of EAS and commencing ULURP. Preliminary plan and profile drawings and preliminary equipment sizing prepared for construction of tank at preferred location. Updated Facility Plan Draft Report Submitted to DEP.
Other Issues:	Requires coordination with WPCP planning and design requirements	Phase II for the lower English Kills, the East Branch and Dutch Kills will follow.	Site approval (ULURP) and acquisition of property required.

\* Does not include cost of Kent Avenue Throttling Facility to be constructed under Newtown Creek WPCP project.

## I.) Jamaica Tributaries

The Jamaica Tributaries project area includes the Jamaica WPCP sewershed area and the tributaries, which receive the wet weather discharges from the drainage area. These tributaries include Bergen, Thurston, Shellbank, and Hawtree Basin, which are located in the northeast portion of Jamaica Bay.

A schedule for the Jamaica Tributaries CSO Facility Planning Project was transmitted to NYSDEC on August 8<sup>th</sup>.

### *Area-Wide Recommendations*

- Clean the East Interceptor.

The Jamaica WPCP East Interceptor sewer has been cleaned of accumulated sediments.

- Automate and improve the regulator system.

As part of the Department's citywide effort to provide outfall alarm capabilities at key regulators, 7 outfall alarms will be installed in the Jamaica WPCP drainage area as per Omnibus IV Consent Order requirements.

Continued the calibration of the HydroWorks model of the Jamaica WPCP drainage area. Confirming model input data including regulator drainage area and dry weather flow.

- Build-out storm sewers in Jamaica WPCP drainage area.

A drainage plan for the Jamaica WPCP drainage area must be developed. The Department is in the process of awarding an engineering contract to develop the drainage plan. Proposals in response to the Bureau of Water and Sewer Operations RFP were submitted on June 27, 2002 and negotiations with the selected consultant have been initiated.

- Jamaica WPCP stabilization.

The Jamaica WPCP stabilization project is currently under construction.

- Reconfigure forebay at JA WPCP.

The HydroWorks hydraulic model of the drainage area is being developed. This model will be used to evaluate the hydraulics of the interceptor and forebay.

- Booming and skimming at basins.

DEP continues the use of interim facilities to capture floatables with in-stream booms in Bergen and Thurston Basins, and to remove floatables with skimmer vessels.

- Nitrogen Control Action Plan

An analysis of BNR technologies for the four (4) Jamaica Bay WPCPs was performed and documented in the Nitrogen Control Feasibility Plan (December 1998).

#### *Thurston Basin Recommendations*

- Eliminate dry weather flow.

Completed fieldwork for the Phase II Site Investigation and Environmental Analysis for the abatement of Meadowmere and Warnerville dry weather discharge, as requested by the DEP. Groundwater and/or soil samples were tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs, pesticides, and metals. A draft final report was transmitted to the DEP on November 6<sup>th</sup> to summarize the findings of this field investigation and compares analytical results to NYS DEC TAGM 4046 Guidance Levels.

Schlumberger completed a preliminary field investigation for the UtiliLOG ground penetrating imaging radar (GPiR) technology. It was determined that this technology would be feasible for precisely locating utilities less than 10 feet deep along the proposed 10" gravity sewer from Meadowmere to Warnerville, and also along the proposed dual force main alignment from Warnerville to the discharge manhole on 149<sup>th</sup> Avenue. A field survey utilizing this technology is scheduled for January 30<sup>th</sup>, along the 10" gravity sewer alignment from Meadowmere to Warnerville only.

Submitted draft Wetlands Mitigation Plan in September as requested by DEP. Incorporating DEP comments into the final wetlands mitigation plan that will be transmitted this quarter.

Additional comments were received on December 17<sup>th</sup> from the DEP on the EAS and ULURP. It is anticipated that both EAS and ULURP will be finalized in the first quarter.

A pre-certification meeting for the ULURP application has been requested, and a meeting date with the Department of City Planning is anticipated this quarter.

- CSO control vs. high-level storm sewers in the Laurelton area.

As part of the build-out of storm sewers (area-wide recommendation) high-level storm sewers will be constructed in the Laurelton area as the control strategy for this area.

- Dredge basin.

At this time, DEP has no immediate plans for dredging due to the high costs associated with land disposal of dredged sediments and the inability to dispose materials at an ocean mud dumpsite.





At this time, DEP has no immediate plans for dredging due to the high costs associated with land disposal of dredged sediments and the inability to dispose materials at an ocean mud dumpsite.

- In-stream basin aeration.

In-stream aeration is being demonstrated and evaluated in the Newtown Creek waterbody. Results from this demonstration test are awaited.

- Eliminate Jamaica WPCP discharge to Bergen Basin.

The feasibility of installing a sluice gate in Jamaica WPCP outfall will be evaluated. Currently, the Jamaica WPCP has a dual outfall, one to Bergen Basin and one to Grassy Bay. Most of the effluent is discharged to Bergen Basin, but the installation of a sluice gate in the outfall would direct most of the flow to Grassy Bay.

#### *Shellbank Basin Recommendations*

- Bulkhead CSO outfall to basin.

The construction work to bulkhead the inactive CSO outfall to Shellbank Basin has been completed. Therefore, there are no CSO discharges to Shellbank Basin – only stormwater.

- Pilot destratification system for basin.

The ULURP and EAS for the review and approval of a permanent facility at Shellbank Basin are under review by DEP. The Preliminary Design Report for the permanent Destratification Facility was initiated in October and was submitted to DEP on December 5, 2002, and is also currently under review.

- Pilot chemical oxidation.

A bench scale study of the feasibility of adding calcium nitrate to significantly reduce sediment oxygen demand (SOD) was performed. Sediment cores were taken from the Jamaica Tributary basins and analyzed in a laboratory setting to determine the effectiveness of various dosages of calcium nitrate on lowering the SOD. The results indicated that chemical oxidation of SOD in a marine environment is not effective.

#### *Hawtree Basin Recommendations*

- Construct sanitary sewers in Hamilton Beach.

Construction of sanitary sewers in the area has been completed. The sanitary sewers were constructed to eliminate the failing septic tanks in this small community.

## *Meetings*

Principal meetings held during this report period were as follows: Project Progress Meetings with NYCDEP on October 15, November 19, and December 17, 2002.

**Table 12**

Jamaica Tributaries CSO Project

Plan Elements:	Chemical Oxidation, HRPCT and Destratification Demonstrations	Abatement of Meadowmere and Warnerville	Preliminary Design – Thurston/Bergen Drainage Plan
Location:	Jamaica WPCP, Jamaica WPCP, and Shellbank Basin	Meadowmere and Warnerville – Queens, New York	Jamaica WPCP Drainage Area
Actions:	Conduct demonstration testing of new technologies	Construction of 1 Pumping Station, Sewer Collection System, and Dual Force Mains	Develop drainage plan for sewer separation
Construction Cost:	HRPCT Demonstration Facility - \$15 million Permanent Destratification Facility - \$425,000	\$12.2 million	To be determined
Status:	- Initiated Preliminary Design of the HRPCT Demonstration Facility - Submitted Draft Preliminary Design of Permanent Destratification Facility	Preliminary Design Complete; ULURP and EAS Submitted	Consultant Selection Process Underway

## **J.) Citywide Floatables**

Work continued on tasks being performed for the development of the Comprehensive City-Wide Floatables Control Abatement Plan. During the period October through December 2002, progress continued on tasks related to comprehensive plan development, public outreach, in-stream controls, wet weather capacity analysis, wet weather operating plans, CSO modeling, floatables loadings, and CSO abatement demonstration projects.

### **• *Comprehensive Plan Development***

Coordinated efforts continued between the Use and Standards Attainment (USA) Project and the Comprehensive Plan Project. Joint meetings were held to review planning effort and schedules for the USA Flushing Bay water body study and the Comprehensive Plan Tallman Island WPCP study, integrate landside modeling, and integrate CSO analysis with USA studies presently being conducted.

Work continued on the Tallman Island WPCP draft comprehensive plan. The Draft Report “Alternatives Analysis and Recommended Plan to Convey 160 MGD to the Tallman Island WPCP” was completed and delivered to DEP on December 31, 2002, in accordance with the schedule established for the project. Information was collected on the combined sewer system, drainage area and shoreline characteristics. A summary of the Drainage Area Settings, describing the characteristics and functional elements associated with the Tallman Island WPCP drainage area, was completed for inclusion in the report. Work was completed on the computer hydraulic modeling of the operation of the interceptor/regulator system and on the evaluation and analysis of potential alternatives relative to their effectiveness in meeting project objectives that would respond to system flow limitations and CSO overflow avoidance. Unit costs were developed for individual components and compiled for each alternative evaluated. A Technical Memorandum was completed which presented the alternatives and findings. Information (i.e., as-built drawings and aerial photos) was compiled on the potential routes for individual components in order to assess ‘fatal flaws’ and issues associated with construction. A windshield survey of potential routes was conducted on December 6, 2002, which included still photos and video. A Technical Memorandum was completed describing the functioning of the headworks of the WPCP. A Technical Memorandum entitled “Evaluation of CSO Floatable Control Technologies for the Tallman Island WPCP Drainage Area” was completed. The technical memoranda were included as appendices to the draft report.

During this period, additional analyses and modeling of CSOs from Bowery Bay WPCP outfalls BB-006 and BB-008 was conducted. Both conveyance and treatment and storage tunnel alternatives were evaluated for total overflow and percent reduction in CSO from these outfalls. A cost analysis was performed for each alternative to develop knee-of-the curve approach for determining a cost/benefit relationship. This information will be integrated with the USA’s Flushing Bay analysis.

- ***CSO Modeling and Floatables Loadings***

The hydraulic model of the Tallman Island WPCP drainage area was further refined to account for: a) updated sewershed drainage areas draining to individual manholes based on the GIS maps created by HydroQual; and b) updated pipe and regulator configurations.

- ***Public Outreach***

A short presentation is being prepared for the Commissioner on the research conducted on public education and outreach and other potential Best Management Practices. No date has been set for the meeting.

- ***In-Stream Controls***

DEP is investigating the use of inter-pier skimmer vessels for use in floatables removal where other CSO control measures are not feasible. These vessels would be completely self-contained, self-powered, and capable of operating on New York City inter-pier waterways. The RFP and PSR for the first phase, which covers the conceptual/preliminary design to meet the performance criteria for the DEP inter-pier marine trash skimmer vessels, have been finalized. A cost analysis for operation and maintenance (O&M) costs was performed on the inter-pier skimmer boats. The CP was revised to include the projected O&M costs.

- ***Wet Weather Capacity Analysis***

During this period, an evaluation of the headworks of the Tallman Island WPCP was completed to determine its ability to accept 2XDDWF. A second series of velocity and depth measurements were made during a wet weather event on October 11, 2002. A tour of the plant for staff members of DEP BEE was conducted on October 16, 2002.

WWOP presentations were made for the North River (October 7, 2002) and Red Hook (October 23, 2002) WPCPs. Meeting minutes were prepared and distributed for the North River WWOP meeting. A follow-up meeting for review of the North River WWOP scope of work was held on December 17, 2002. Camp Dresser & McKee (CDM) is preparing a WWOP for the North River plant, which is anticipated to provide the same CSO storage benefit as would have been provided by a proposed throttling facility. HydroQual is reviewing previous modeling results and will conduct additional model runs if necessary to determine if the plant will be able to induce the required level of CSO storage with the plant sluice gates. The first draft of this WWOP should be completed by the end of January 2003. The Red Hook plant plans on implementing the draft WWOP in January 2003 after all main sewage pump maintenance activities are completed. Some minor revisions to the WWOP were discussed at the meeting and will be incorporated into the plan. HydroQual also provided WPCP data analyses and WWOP electronic documents to CDM and URS for their preparation of the WWOPs for the North River and Hunts Point plants.

WWOP presentations were made in November for the BNR plants: Hunts Point (November 7, 2002), Wards Island (November 13, 2002), 26<sup>th</sup> Ward (November 19, 2002) and

Bowery Bay (November 21, 2002). The BNR plants have been asked to complete a draft WWOP by February 2003 for review. These plans are due to DEC by July 20, 2003. Meetings for the remaining plants will be scheduled in the future. The WWOPs for the remaining plants are not due until 24 months after the effective date of the SPDES permits which are currently being negotiated.

The WWOPs for Bowery Bay and 26<sup>th</sup> Ward will include WWOPs for the Corona Avenue Vortex Facility (CAVF) and Spring Creek, respectively. These plans are also required for completion of the Part 2A permit applications. CDM will prepare the WWOP for Spring Creek and HydroQual will prepare a plan for the CAVF. A meeting was held in December 2002 to discuss future Spring Creek wet weather operations relative to 26<sup>th</sup> Ward plant operations. The discussion centered on instrumentation and control issues as they relate to 26<sup>th</sup> Ward monitoring and controlling Spring Creek during wet weather. This meeting also raised a few draft SPDES permit issues, which would affect how and when any of DEP's CSO facilities are brought online during wet weather. The draft permits state that the CSO facilities should not be brought online until the WPCP reached maximum design flow. In most situations maximum design flow is achieved with the secondary bypass in operation. The CSO facility operating strategy that was discussed at the meeting was to bring the CSO facilities online before the WPCP starts the secondary bypass. This approach could maximize collection and treatment of CSO. This strategy will be discussed with NYSDEC in future SPDES negotiations.

WPCP operating data for FY2001 was received from DEP. Data will be analyzed in a similar manner as the FY 2000 data for Red Hook, North River and the BNR plants to determine if there are performance limitations or SPDES violations associated with wet weather operations.

2001 hourly flow data for all WPCPs was reviewed and the Top Ten Storm Analysis for CY2001 was completed and submitted to DEP. This information is used in analyzing wet weather capacities of the WPCPs and the amount of wet weather flow contained and treated. Work was initiated on Top Ten Storm Analysis for FY2002 and CY2002.

- ***Cryders Lane Outfall Diversion Channel Project***

*Design and Construction*

The contractor, Spearin, Preston and Burrows (SPB), continued construction activities on the Cryders Lane Diversion Channel project. During October, activities by the contractor included: installing the site fencing, setting up the field trailers, removing concrete debris and rocks from the immediate area for new culvert, transporting some of the debris by truck off-site, and excavating the area for the thrust block. HydroQual visited the site on October 23, 2002 to observe the excavation for the thrust block. A site meeting was held on October 31, 2002 between DEP, HydroQual and SPB to review project status.

During November, SPB activities included: forming and pouring the concrete for the thrust block and new beam which will sit over the new opening in the existing outfall, installing the temporary sheeting for the cofferdam for the new pre-cast concrete culvert, and installing approximately 100 feet of the permanent steel sheeting diversion channel. HydroQual visited the

site on November 15, 2002 to observe the pouring of the thrust block and to discuss progress of the project with the DEP Resident Engineer. A meeting was held at the construction site on November 25, 2002 between the DEP Design and Water Quality Construction Groups and HydroQual to discuss the contractor's proposed dredge plan and the need to discuss modifications to the permits with the NYSDEC and the Army Corps of Engineers. At the request of DEP, HydroQual will pursue these discussions with the agencies.

During December, SPB activities included: placement of the pre cast culvert section; continued installation of the steel sheeting for the bypass channel, and dredging of the bypass channel. HydroQual also attended the monthly progress meeting on December 5, 2002. The major issue discussed at the meeting involved storing the dredged material on the beach without a permit modification from NYSDEC and Corps of Engineers. Collecting dredged material on to barges was the only disposal option available without a permit modification. Eventually, the dredged material from the channel was collected and loaded on to barges for off-site storage and disposal.

The contractor continued to submit shop drawings to HydroQual during this period. As of the end of December, two shop drawings were still being reviewed; Joints for Concrete, Water stop sample and joint locations; and the Vibration Monitoring Report.

### **III. Project Progress for Use and Standards Attainment Project**

The Use and Standards Attainment (USA) Project is being conducted by the New York City Department of Environmental Protection (DEP) for waterbodies throughout New York Harbor to address compliance with water quality standards and designated uses. The goals of the USA Project are to:

- Define, through a public process, more specific and comprehensive long-term beneficial use goals for each waterbody, including habitat, recreational, wetlands and riparian uses, in addition to water quality goals, thus maximizing the overall environmental benefit;
- Develop technical, economic, public and regulatory support for prioritizing and expediting implementation of projects and actions needed to attain the defined goals; and
- Provide the technical, scientific and economic bases to support the regulatory process needed to define water quality standards for the highest reasonably attainable use and to allow water quality standards to be attained upon implementation of recommended projects.

Waterbody/Watershed assessments are being conducted for more than 23 waterbodies throughout New York Harbor. The waterbodies include major open water areas of New York Harbor and selected urban tributaries. The following is a brief description of USA Project activities for the period of October 1 to December 31, 2002.

#### **• Waterbody/Watershed Assessments**

The USA Project is conducting focused waterbody/watershed assessments on more than 23 waterbodies. Organization of the waterbodies was modified during this reporting period to recognize the City's need to develop long-term CSO control plans and more realistically reflect effective coordination between the USA Project, the Comprehensive City-Wide Floatables Control Abatement Plan project, and the City's various CSO and water quality facility planning projects. Waterbody/watershed assessments have been redistributed into nine groups. The "pilot waterbody/watershed assessments", Paerdegat Basin and the Bronx River, represent Groups 1 and 2, respectively. The Group 3 waterbodies are Bergen and Thurston Basins. Fresh, Hendrix and Spring Creeks are the Group 4 waterbodies. Jamaica Bay, Sheepshead Bay, Mill and East Mill Basins, and Shellbank Basin are the Group 5 waterbodies. Alley Creek, the East River, Flushing Creek and Bay, the Hutchinson River, and Westchester Creek are the Group 6 waterbodies. Gowanus Canal and Newtown Creek are the Group 7 waterbodies. The Arthur Kill, Harlem River, Hudson River, Arthur Kill, Lower New York Bay, Raritan Bay, and Upper New York Bay are the Group 8 waterbodies. Coney Island Creek constitutes Group 9. The waterbody/watershed assessments include various activities including existing data and information gathering/compilation, watershed/waterbody field investigations and data collection, public outreach in the form of stakeholder teams, land use and shoreline characterizations, data management, watershed and receiving water mathematical modeling, ecosystem (habitat) evaluations, waterbody use evaluations, problem identification and prioritization, engineering analyses, and waterbody/watershed planning.



### *Assessment Schedule*

The Paerdegat Basin assessment is completed and the Preliminary Paerdegat Basin Waterbody/Watershed Plan has been finalized. Follow-up regulatory actions are now proceeding with the State of New York to advance the Paerdegat Basin plan. A Preliminary Bronx River Waterbody/Watershed Plan is being finalized. Work is ongoing on assessment Groups 4, 5, 6, and 7.

### *Local Waterbody/Watershed Stakeholder Teams*

Stakeholder involvement is a critical component of the USA Project. Local stakeholder teams are being convened for each waterbody assessment. The USA Project has formed local waterbody stakeholder teams for the Bronx River and Paerdegat Basin. Efforts are currently underway to convene additional teams as assessments begin in other waterbodies.

The Paerdegat Basin Stakeholder Team has met on four occasions and has received presentations on the status of the Paerdegat Basin CSO Facility Plan; results of Paerdegat Basin related investigations of the USA Project; results of field investigations; and projections of water quality and standards compliance for the implementation of the Paerdegat Basin Preliminary Waterbody/Watershed Plan. Stakeholder team members have provided feedback on existing and desired uses for Paerdegat Basin. A final meeting is being planned to review the Preliminary Waterbody/Watershed Plan and discuss the regulatory and implementation process with the team.

The Bronx River has met on three occasions and has received presentations on the status of the Bronx River CSO Facility Plan and the Bronx River related investigations of the USA Project. Stakeholder team members have provided feedback on existing and desired uses for the Bronx River. A meeting is being planned to review assessment findings and discuss waterbody/watershed plan options with the team.

Efforts have continued for forming stakeholder teams for the Gowanus Canal, Newtown Creek, and Jamaica Bay waterbody/watershed assessments. DEP has made presentations to several New York City Community Boards to introduce the USA Project and the value of the stakeholder team process. Lists of candidates for each of the stakeholder teams are being developed from suggestions made by the Boards as well as reaching out to local community groups.

### *Field Investigations*

Field Sampling and Analysis Programs (FSAPs) are developed and executed to conduct field investigations for waterbody/watershed assessments. Specific FSAPs address biological sampling, shoreline characterizations, and other investigations necessary for collecting comprehensive information on each waterbody/watershed, where no information has previously been collected or is out of date. A Field and Laboratory Standard Operation Procedures (SOP) document for the USA Project is being used in support of FSAP execution. This document is

updated when new procedures are required for additional investigations. The SOP and all FSAPs are developed in conformance with SOP guidelines developed by the U.S. Environmental Protection Agency (EPA) and discussed with the EPA Monitoring and Assessment Branch in Edison, NJ.

Laboratory work continued on biological samples collected during the year 2002 FSAPs executed in the East River and Jamaica Bay areas. Ichthyoplankton sub-samples shipped to the University of Connecticut for RNA/DNA are being typed and identified for Quality Assurance/Quality Control (QA/QC). The project Standard Operating Procedures (SOP) document was revised to reflect the addition of zooplankton sampling to the USA Project – Revision No. 2 is the current version. Laboratory analytical work and database entry with QA/QC is ongoing.

A sampling program that was initially completed for characterizing total and fecal coliform and enterococcus in New York City's sanitary sewage has been extended to collect additional data. The program originally sampled the influent of all 14 New York City Water Pollution Control Plants (WPCP) on five occasions with a rotating schedule. Four samples were collected on an hourly basis on each sampling day that was performed following at least one full day of dry weather to assure that the samples truly represent sanitary sewage. This information is being used to reinforce the selection of sanitary pathogen concentrations for mathematical modeling purposes. A database for the sampling is being compiled and reviewed for QA/QC. The data is being compared to data collected during previous monitoring programs and the literature for ground-truthing. Issues recognized with laboratory QA/QC has necessitated collecting additional data with the same procedures and schedules. Each WPCP will be sampled at least one additional time.

The USA Project and the DEP Harbor Survey operated continuous monitoring sensors at several locations in the New York Harbor complex. Remote sensors were installed at each location to continuously monitor surface and bottom salinity, temperature, dissolved oxygen, and other parameters to better characterize water quality conditions concurrently with biological investigations. The Worlds Fair Marina in Flushing Bay and two sites in the saline reach of the Bronx River were selected in addition to the Harbor Survey's original site in the East River at Wards Island. The USA Project installed the mounting hardware and the Harbor Survey installed all the remote sensors in August 2002. The Harbor Survey serviced the sensors weekly and provided recorded data to the USA Project through the end of the USA Project's biological sampling, which was concluded in late October. The sensors and hardware were then retrieved. Based on the success and lessons learned during this investigation, similar monitoring is being planned for 2003.

Existing data is now being reviewed to draft an FSAP for Gowanus Canal investigations in 2003. This work will be coordinated with the U.S. Army Corps of Engineers (USACE) to satisfy the City's non-federal cost-share obligation on the USACE's Gowanus Canal and Bay Ecosystem Restoration Project.

### *Data Management*

Sewer system, surface water, sediment, biological, and many other categories of data are continually being compiled from a variety of sources to construct a relational database. The database consists of data from DEP's Harbor Survey, the Interstate Environmental Commission, the National Park Service, and virtually all of DEP's past and ongoing CSO and water quality facility planning projects. The relational database is integrated with a Geographic Information System (GIS) such that spatial information is maintained for analyses. Water quality, biological, and other data forms collected by the USA Project are being added to this relational database for waterbody assessments with quality assurance/control verification.

### *Land Use and Shoreline Characterizations*

Land use and shoreline characterizations described in the previous status report are continuing. The characterizations are general in nature and build upon existing data. Field verification of the analyses is being performed as existing information is compiled and interpreted. Land use and shoreline characterizations are being conducted on all USA Project waterbodies and watersheds at this time.

A shoreline development index analysis is being performed to develop a multi-metric measure of tributary habitat complexity that might be correlated with marine species abundance and diversity. Shoreline development indexes (SDI) are being calculated using GIS data for shoreline lengths and waterbody surface areas of USA Project waterbodies. Measures of wetlands and/or salt marshes in the waterbodies are also being conducted for added correlation purposes. The SDIs are then being compared to biological data to develop correlations between habitat and aquatic life. Preliminary SDI analyses have been conducted for the Hutchinson and Bronx Rivers and the analyses are being reviewed.

### *Waterbody/Watershed Mathematical Modeling*

An important component of the USA Project is assessing existing conditions in waterbodies as well as projecting the long-term benefits of the DEP's various water quality improvement projects. Mathematical modeling consists of both watershed modeling and receiving water modeling. The models are being prepared to calculate water quality conditions for a meteorologically average annual period. The annual period was selected from available rainfall statistics and available modeling abilities. Statistical and return-period analyses were performed on the fifty-year rainfall record of New York City to select the annual-average year - 1988. This simulation period is being used for all waterbody modeling of baseline, facility plan, and sewer separation scenarios. DEP's System-Wide Eutrophication Model (SWEM) is the primary model being used to assess harbor-wide conditions as well as calculating boundary conditions for tributary models. The Jamaica Bay Eutrophication Model (JEM) is being used to assess conditions in Jamaica Bay and calculate boundary conditions for Jamaica Bay tributaries. Tributary models are being used to assess near-field water quality impacts of point and non-point sources and evaluate long-term improvement alternatives.

Watershed modeling for SWEM and JEM is primarily being performed using HydroQual's RAINMAN model, which is a simplified rainfall-runoff model used to calculate watershed pollutant loadings to receiving waters. Watershed models are being modified and updated for all fourteen of New York City's WPCPs as new information is developed and water quality improvement plans evolve. The models are calibrated to the City's WPCP flow data for the years 1996 and 2000 and validated by comparing model calculations to the latest WPCP during the top-ten storms of the years. Detailed hydraulic models (SWMM) are being used for simulating combined sewer systems for tributary assessments and will replace the RAINMAN models when calibrations and validations are acceptable. SWMM models are being recalibrated for the Gowanus Canal and Newtown Creek assessments.

Mathematical modeling activities for Flushing Bay and Creek continued this reporting period. A receiving water model of these waterbodies previously developed as part of the USACE's Flushing Bay and Creek Ecosystem Restoration Study is being used to evaluate waterbody modification options that may enhance benthic habitat and species diversity while also addressing aesthetic issues.

A receiving water model for East River Tributaries Model is being developed to model the Group 6 waterbodies. Current work is focused on model calibration and integration with watershed models.

Receiving water modeling of Gowanus Canal is advancing. RAINMAN watershed models are being used while SWMM models of the Red Hook and Owls Head WPCPs are being recalibrated and validated. A model grid was developed and tested satisfactorily to satisfy the modeling requirements of the USA Project as well as the USACE's ecosystem restoration project. The hydrodynamic component of the model was calibrated using original CSO facility planning data. A hydrodynamic validation was performed using data collected after the Gowanus Canal Flushing Tunnel was reactivated. A water quality model is now being calibrated using the watershed and hydrodynamic model components. A projection case is being prepared to evaluate DEP's current planning efforts for upgrading the Gowanus Pump Station and modernizing the Gowanus Canal Flushing Tunnel.

Receiving water modeling of Newtown Creek was begun and is advancing. RAINMAN watershed models are being used while SWMM models of the Bowery Bay and Newtown Creek WPCPs are being recalibrated and validated. A model grid was developed and tested satisfactorily. The hydrodynamic component of the model is being calibrated using original CSO facility planning data. A hydrodynamic validation is being prepared using data collected during DEP's pilot aeration studies. A water quality model is being constructed using the watershed and hydrodynamic model components.

Mathematical modeling of Jamaica Bay by the USA Project is being coordinated with DEP's Jamaica Bay CSO Facility Planning Project, the Jamaica Bay Eutrophication Project, and the Long Outfall Project to assure consistency of approach. The progress of these activities influences the schedules for Jamaica Bay and back-bay tributary waterbody/watershed assessments. The Jamaica Eutrophication Model (JEM), which is being used by the USA Project, is undergoing a review by a Model Evaluation Group (MEG). Mathematical modeling

of the 26<sup>th</sup> Ward Tributaries (Fresh, Hendrix, and Spring Creeks) by the Jamaica Bay CSO Facility Planning Project is being monitored by the USA Project to assure consistency of approach. Existing conditions and long-term CSO control alternatives are being evaluated using the same approach as the USA Project.

### *Ecosystem Evaluations*

Data collected during field investigations are being used to comprehensively analyze existing ecological conditions of USA Project waterbodies. Comparisons are being made between waterbodies of similar and differing water quality and habitat conditions both within and outside New York Harbor. Information developed by mathematical modeling is also being used to assess existing benthic and water quality biological conditions and to assess future potential conditions with anticipated water quality improvements of facility plans and other pollution abatement programs. Evaluations of existing and potential dissolved oxygen conditions are being conducted for larval growth, larval survival, and juvenile growth of aquatic species for dissolved oxygen conditions. Evaluations are now focused on the Bronx River, the East River, and Jamaica Bay waters.

### *Engineering Analyses*

Engineering analyses are being conducted to identifying control alternatives that may be implemented in addition to WPCP and CSO facility plans such that water quality goals are met. CSO abatement alternatives such as outfall relocation, additional storage, floatables controls, and disinfection are being evaluated. Costs, constructability, implementation schedule, environmental impact, and other associated issues are being developed with conceptual planning of these alternatives. Floatables controls and facility plan enhancements are being identified and evaluated in coordination with the DEP's Comprehensive City-Wide Floatables Control Abatement Plan project and DEP's CSO facility planning projects. Engineering analyses were completed for the Bronx River waterbody/watershed assessment and plan development.

### *Public Opinion Survey*

A public opinion survey is being conducted to measure how various City populations feel about, use, and might use water resources in their community and elsewhere throughout New York Harbor. The survey is investigating question areas such as how people feel about their waterbodies (i.e., the importance they place on them); what waterbodies they use; existing and desired uses of the waterbodies; if not used, why not; and, reactions to potential improvements of the waterbodies. Survey activities include focus groups, a telephone survey, and a mail survey. Efforts are currently underway to develop the telephone survey of New York City residents.

### *Waterbody/Watershed Planning*

The Paerdegat Basin Preliminary Waterbody/Watershed Plan was further discussed with the NYSDEC this reporting period. NYSDEC requested that a Use Attainability Analysis (UAA) be prepared by the USA Project and submitted to NYSDEC as soon as possible. The first draft of the UAA was submitted to DEP for review this reporting period.

Planning efforts were concluded for the Bronx River Preliminary Waterbody/Watershed Plan. Project findings and the preliminary plan was presented to NYSDEC this reporting period.

- **Interagency Coordination**

#### *Harbor-Wide Government Steering Committee*

A Harbor-Wide Government Steering Committee provides guidance and coordination for conducting the USA Project. Members of the Harbor-Wide Government Steering Committee represent the U.S. Environmental Protection Agency, the National Park Service, the U.S. Army Corps of Engineers, the Interstate Environmental Commission, the New York State Department of Environmental Conservation, the New York City Departments of Environmental Protection, City Planning, and Parks & Recreation, and the New York City Citizens Advisory Committee on Water Quality. Harbor-Wide Government Steering Committee meetings are scheduled to occur on a quarterly basis. There were no Steering Committee activities this period. The next meeting has been scheduled for February 2003.

#### *U.S. Army Corps of Engineers Ecosystem Restoration Studies*

The USA Project is conducting a variety of field and engineering investigations that are similar in scope to proposed plans being developed by the U.S. Army Corps of Engineers (USACE) for New York Harbor and its tributaries. These plans are primarily focused on habitat/ecosystem restoration. USA Project efforts are continually being evaluated for identifying cost-sharing opportunities that will fulfill DEP's commitments as a local sponsor to the USACE projects. Specifically, the USA Project is coordinating its activities with the USACE's restoration work on Jamaica Bay, Gowanus Canal, Flushing Creek and Bay, and the Bronx River. The USA Project is also gathering information on these projects to identify the water quality benefits and how they can be integrated into DEP's waterbody/watershed plans.

- **Project Documentation, Reports, and Publications**

#### *Waterbody/Watershed Fact Sheets*

A waterbody/watershed fact sheet for Sheepshead Bay is being drafted for distribution to project participants, stakeholder teams, and the public.

### *Preliminary Waterbody/Watershed Characterizations*

Preliminary waterbody/watershed characterization documents are being developed for all waterbodies being assessed by the USA Project. Documents are completed for Paerdegat Basin, the Bronx River, and Jamaica Bay. Documents are being developed for all remaining USA Project waterbodies. These preliminary characterization documents are being used as a baseline for developing more comprehensive documents for each waterbody/watershed as their assessments proceed and planning is begun.

### *Preliminary Waterbody/Watershed Plan Reports*

Efforts are underway to complete a preliminary waterbody/watershed plan report for Paerdegat Basin. The draft report describes project findings, all information used to construct the preliminary plan, and a detailed description of plan components. A preliminary waterbody/watershed plan report was drafted for the Bronx River, was submitted to DEP this reporting period, and is being reviewed.

### *Project Web Site*

A project web site describing the objectives of the USA Project and the importance of public participation is now accessible to the public (<http://www.nyc.gov/depusa>). The web site has specific areas focused on each of the waterbody/watershed assessments. Dissemination of local waterbody stakeholder team documents such as meeting notes is facilitated. Federal and state regulations on designated uses and water quality standards are described with links to governmental sites for additional information. An interactive mapping tool provides spatial representations of USA Project and general DEP activities such as the Harbor Survey.

#### **IV. Demonstration Projects**

##### **A.) Destratification Demonstration at Shellbank Basin**

The purpose of this demonstration is to specifically address the poor water quality that seasonally exists in Shellbank Basin (located in the Jamaica Bay) due to natural temperature stratification of the waterbody.

###### *System Design*

In an effort to mitigate the natural temperature stratification, which results in marine kills and odor releases, a full-scale destratification demonstration system has been installed in Shellbank Basin. The destratification facility consists of a shore-side compressor station and diffused-air lines, which run along the bottom of the basin. The destratification system delivers compressed air to the basin bottom, which vertically mixes the water column of Shellbank Basin to create an isothermal condition.

###### *System Operations*

The demonstration facility remained inactive during this reporting period.

##### **B.) In-Line Storage**

The Hunts Point drainage basin comprises the eastern two thirds of the borough of the Bronx. It is bounded by Westchester County to the north and the East River estuary to the east and the south. The drainage area comprises of approximately 1,800 acres of urban terrain. The Hunts Point drainage area sewer system may be appropriate for in-line storage because of a large sewer storage capacity, shallow hydraulic grade, gravity flow, and low potential for flooding.

The Hunts Point In-line Storage project incorporates the use of three inflatable dams, installed in sewers within the Hunts Point drainage basin, to make use of the in-line storage capacity of the sewers. The purpose of this project is to demonstrate the technology and ascertain the operational and maintenance issues and concerns at actual full-scale New York City installations. The systems from two inflatable dam manufacturers, Rodney Hunt and Bridgestone, will be tested. O'Brien and Gere will be operating both systems for a period of one year.

The use of inflatable dam sewer installations is planned for use at some Track 1 CSO abatement projects and could be involved in Track 2 CSO abatement projects (floatables and settleables control).

At this time the functional testing and dry weather flow monitoring phase is underway.

Several software problems or 'bugs' have been uncovered by the consultant regarding historical data retrieval, alarms, and the auto-dialer alarms. These problems have been reviewed



by the consultant's instrumentation/programming people and the vendor has been notified. The consultant and vendor met off site to review what corrective actions need to be taken. The software 'bugs' are being corrected. Three of the eight ultrasonic level transmitters have been problematic. Plans to replace those ULTs with a newer model are being developed. The inflatable dams are in good condition and function as intended. The consultant plans to resume automatic operation shortly. None of the problems to date have involved the inflatable dams or its basic hardware.

### **C.) High Rate Physical Chemical Treatment**

The Port Richmond WPCP was selected as the best-suited site for the demonstration facility. It is envisioned that the demo facility will consist of two 6 mgd HRPCT units running side-by-side, a Krueger Actiflo unit and an IDI Densadeg unit. In addition, a 3 MGD high rate primary clarifier has been added to the HRPCT Demonstration Facility, and will be located inline between the Actiflo unit and the IDI Densadeg unit.

An internal design meeting was held at Hazen and Sawyer offices in NYC on November 26, 2002. Prepared a preliminary design report table of contents for the HRPCT Demonstration Facility. Commenced preliminary design activities such as contacting equipment manufacturers, hydraulic profile development, and compilation of equipment electrical loads.

### **D.) CSO Control Technologies**

The evaluation of a hinged baffle system as retrofit CSO control technologies was completed during this period. Alden Research Laboratory (ARL) completed hydraulic model testing of the hinged baffle system. The final report on the hydraulic model testing results was received from ARL in November. The draft technical memorandum on the CSO demonstration project is being reviewed and updated.

## V. Contracts

- New Contracts

No new contracts were reported this quarter.

- Change Orders

- *Jamaica Bay*

The NYCDEP directed OBG in to prepare Change Order X-7 to Jamaica Bay Contract I to cover the additional engineering costs associated with additional alternatives analyses for the Fresh Creek CSO facility planning. The final CO was submitted to the NYCDEP by OBG in early October 2002.

- *Hunts Point In-Line Storage*

The NYCDEP directed OBG to prepare Change Order X-1 to East River Contract I to cover the additional engineering costs associated with additional months of operation and to provide spare parts and repairs/maintenance following expiration of warranties. This change order was submitted to the NYCDEP by OBG in early October 2002 for review.

## VI. Public Participation

- **Public Outreach**

### *Citizens Advisory Committee on Water Quality*

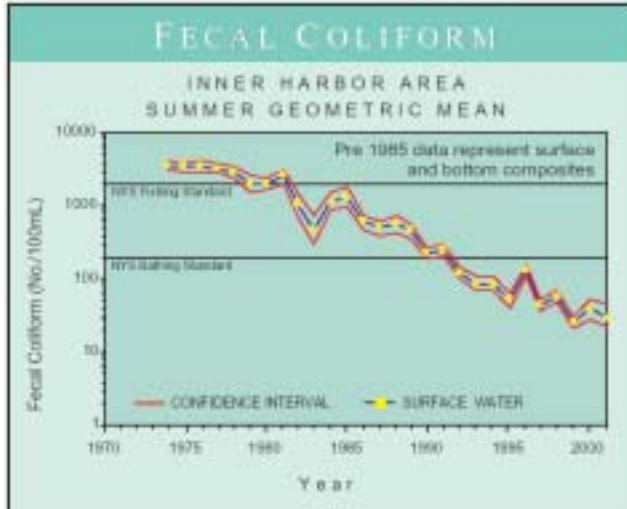
There was one *Citizens Advisory Committee on Water Quality Meeting* during the fourth quarter period, on October 16, 2002. The meeting was a follow-up to the presentations made in July 2002 to the CAC by the USEPA, NYSDOH, and NYCDEP on the filtration of the Croton water supply system. On October 16, 2002, Dr. Marian Rose, Croton Watershed Clean Water Coalition (CWCWC), Dart Westphal, Bronx Council for Environmental Quality, and Dr. Paul Mankiewicz, Gaia Institute made presentations and discussed alternatives to filtering the water from the Croton Water Supply system.

The agenda from the meeting is presented in Appendix B.

## VII. Water Quality

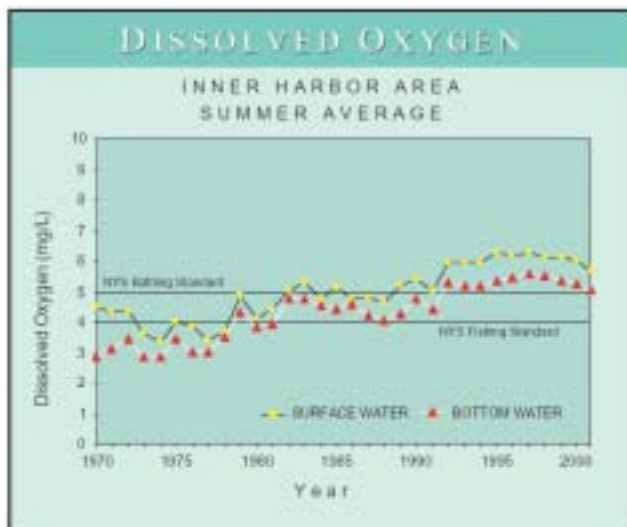
The following information was taken from the New York Harbor Water Quality Regional Summary Report for the year 2001.

- **Inner Harbor**



Sanitary water quality as estimated by fecal coliform (FC) concentrations was excellent for the Inner Harbor Area in summer 2001. All IH Area monitoring sites complied with monthly FC standards of 200 cells/ 100 mL.

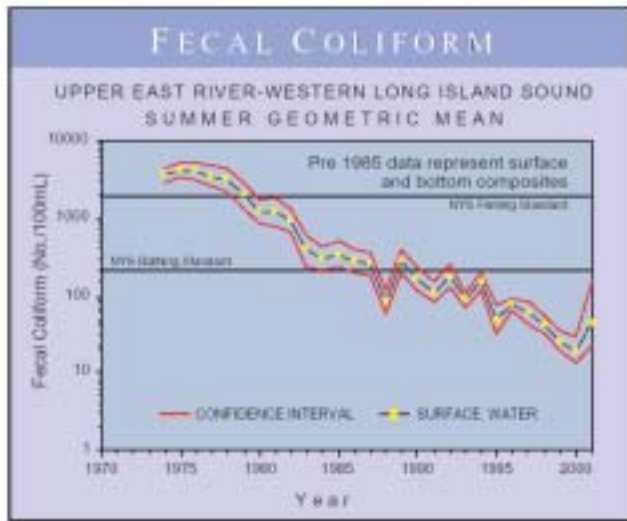
Fecal coliform concentrations for the Inner Harbor Area show a dramatic decline from the early 1970s to the present time. Today's water quality has improved to the degree that surpasses conditions deemed appropriate for most recreational activities, whereas 1970s water quality did not meet fishing standards.



Dissolved Oxygen (DO) values in the Inner Harbor area declined slightly from 2000. However, average DO values remained above the DEC standard of 4 mg/L deemed appropriate for fishing for both surface and bottom waters.

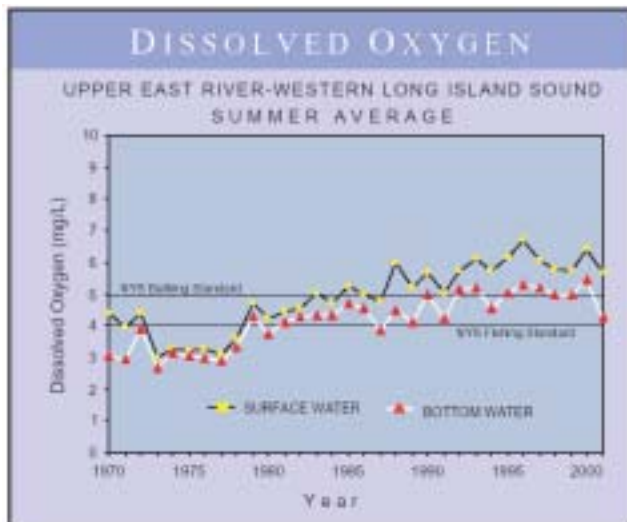
Dissolved oxygen has shown a consistent increase in the Inner Harbor Area over the past 30 years. The average DO values for bottom waters have increased from below 3mg/L in 1970 to nearly 6 mg/L in 2001.

- East River



In 2001, a slight increase in fecal coliform concentrations was observed for this area. Average levels increased from 19 cells/100 ml to 65 cells/100ml. Weather and illegal connection are suspected of causing this upturn. Corrective action is ongoing.

Fecal coliform levels in 2001 reversed the trend that has been observed in the Upper East River - Long Island Sound (UER-LIS) region for the past twenty years. A similar upturn was observed in 1989, with a downward trend following thereafter for the past two decades.

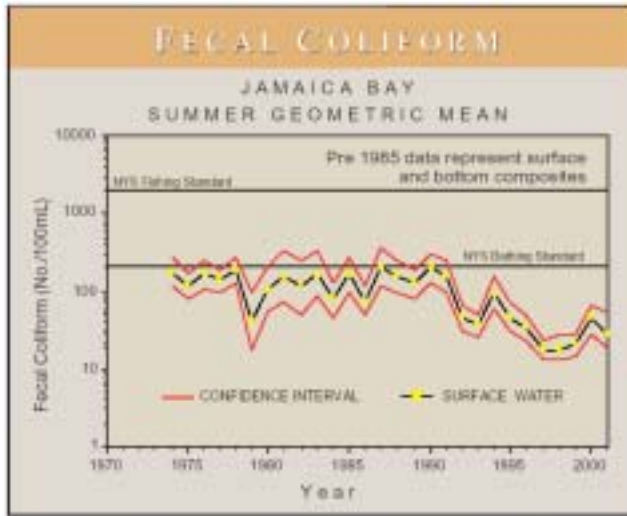


Average summer DO values for the UER-LIS vicinity showed a pattern similar to that displayed by fecal coliform values.

However, at all stations the surface waters met or exceeded state standards, and only two stations showed average levels below standards in the bottom waters (a decrease from three in 2000).

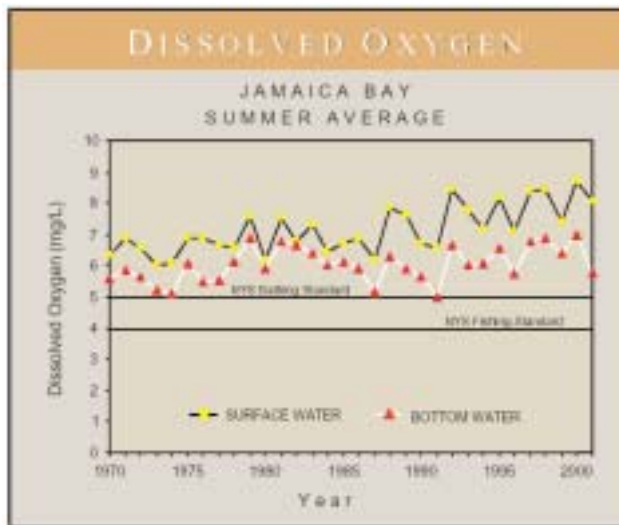
Trend analysis for the UER-WLIS area shows an increase in DO of almost 2 mg/L for top waters and almost 1.5 mg/L for bottom waters since 1970.

- **Jamaica Bay**



In 2001, sanitary water quality was superior for Jamaica Bay, with summer fecal coliform concentrations well below standards for most stations.

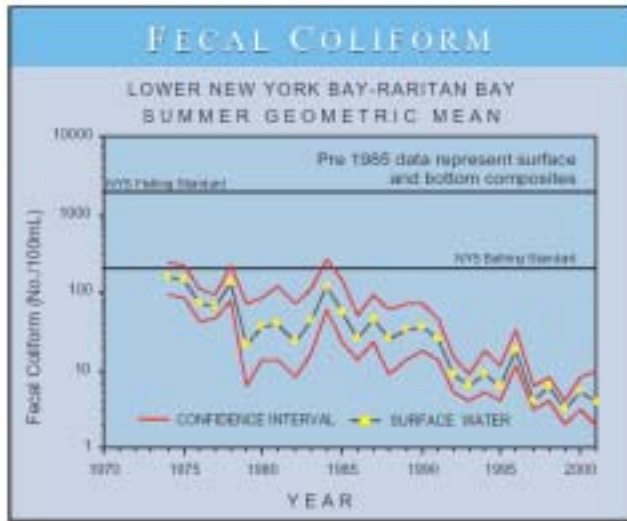
Trends for Jamaica Bay FC, from the early 1970s until 1990, show considerable variability above and below the standard. However, beginning in the 1990s, a significant improvement is apparent. From this point, and continuing through 1999, the geometric mean FC concentration decreased by an order of magnitude.



The summer averages for dissolved oxygen for surface and bottom waters surpassed the New York State standard of 5 mg/L for bathing at all Jamaica Bay sites.

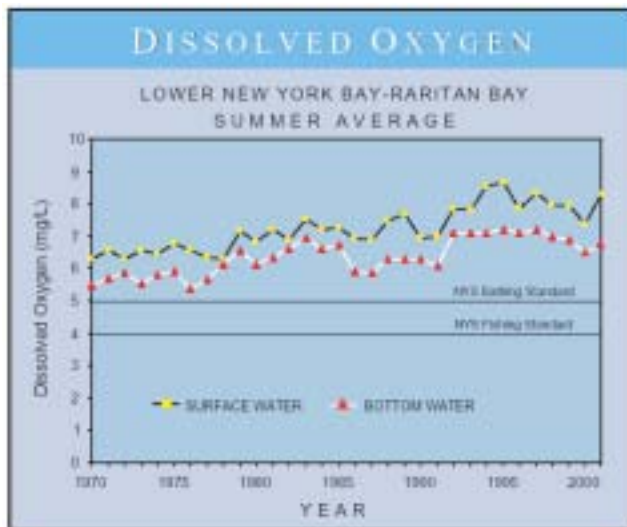
Average DO concentrations in Jamaica Bay have shown improvement over the past 30 years; with top waters often reaching DO levels over 8 mg/L since the 1990s.

- **Outer Harbor**



Fecal coliform levels in the Lower Bay / Raritan area (collectively, dubbed Outer Harbor) surpassed NYS standards, with all stations having average summer values below 20 cells/100ml.

Fecal coliform concentrations for Outer Harbor show significant declines from the early 1970s to the present time.



Dissolved Oxygen values for top and bottom waters show excellent compliance with the NYS DO standard of 5 mg/L.

Since 1970, average DO concentration have increased by 1.75 mg/L – from just over 6 mg/L to just over 8 mg/L for surface waters, and from about 5.5 mg/L to nearly 7 mg/L for bottom waters.

**APPENDIX A**

**QUARTERLY REPORT ON STATUS OF CITY-WIDE FLOATABLES PLAN**



**City of New York  
Department of Environmental Protection  
Bureau of Environmental Engineering  
Comprehensive City-Wide Floatables Control Abatement Plan**

**TECHNICAL MEMORANDUM**

**QUARTERLY REPORT ON STATUS OF  
CITY-WIDE FLOATABLES PLAN  
OCTOBER 2002 - DECEMBER 2002**

**HydroQual Environmental Engineers and Scientists, P.C.  
In Association With  
HydroQual, Inc.**

**January 2003  
Project No: NYDP4008/89**

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## **GLOSSARY OF ACRONYMS USED IN THIS REPORT**

BNR	Biological Nutrient Removal
CAC	Citizens' Advisory Committee
CB-01	Capital Program for replacement of collapsed catch basins
CP	Capital Program (NYC)
CSO	Combined (Sanitary and Stormwater) Sewer Overflow
DEC	Department of Environmental Conservation (NYS)
DEP	Department of Environmental Protection (NYC)
DWF	Dry-Weather Flow
DDWF	Design Dry-Weather Flow
DOS	Department of Sanitation (NYC)
DOT	Department of Transportation (NYC)
HI-3	Capital Program for hooding of catch basins in Phase III areas
HI-S	Capital Program for hooding of catch basins in high-speed roadways
HSV	Harbor Survey Vessel
IFCP	Interim Floatables Containment Program
MOO	Mayor's Office of Operations (NYC)
NYC	New York City
NYS	New York State
OMB	Office of Management and Budget (NYC)
SLR	Scorecard Litter Rating
PS	Pumping Station
USA	Use and Standard Attainment
WPCP	Water Pollution Control Plant
XP-SWMM	Storm Water Management Model, (proprietary version)

## OVERVIEW OF PLAN ELEMENTS

REPORTING PERIOD: OCTOBER 2002 THROUGH DECEMBER 2002

Floatables Plan Elements	New Information This Period
1. Ongoing Activities	
-Maintain Street Cleanliness	Yes
-Catch Basin Hooding in Phase I/II Areas	No
-Netting/Booming and Skimming	Yes
-Track I Facilities	*
-Maximizing Wet-Weather Flow to WPCPs	*
2. Catch Basin Hooding in Phase III Areas	No
3. City-Wide Reconstruction of Unhoodable Catch Basins	Yes
4. City-Wide Catch Basin Re-Inspection Program	Yes
5. Illegal Disposal Control	Yes
6. Public Education Program	*
7. Pilot Studies and Demonstration Projects	*

\* -Please refer to NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2002.

## 1. Ongoing Activities

Prior to the issuance in June 1997 of the City-Wide CSO Floatables Plan, the City of New York had been engaged in a number of activities that help to control floatables. Some of these ongoing activities, such as street sweeping and catch basin hooding, were not originally intended for the purpose of reducing floatables discharges. Other activities, such as the Interim Floatables Containment Program, had been instituted specifically for floatables control. This section summarizes the status of these ongoing activities. Chapters 2 through 7 address other activities that were instituted after the June 1997 City-Wide CSO Floatables Plan.

### a) Maintain Street Cleanliness

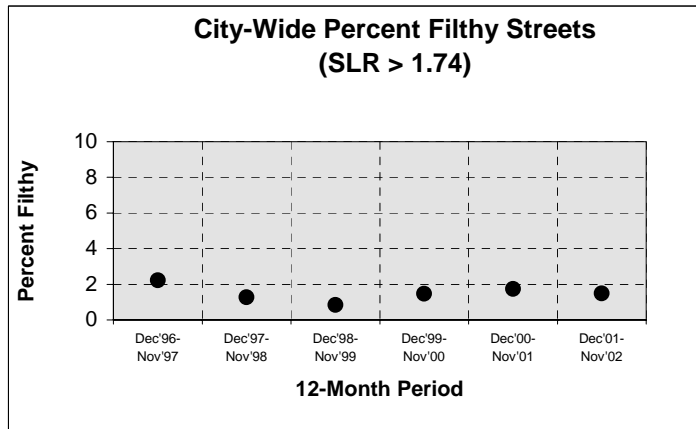
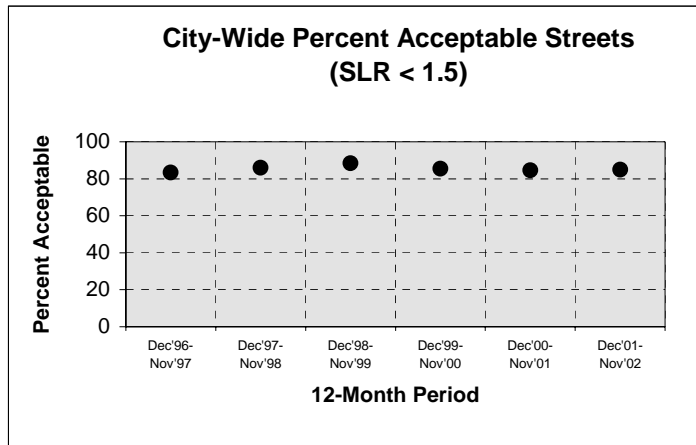
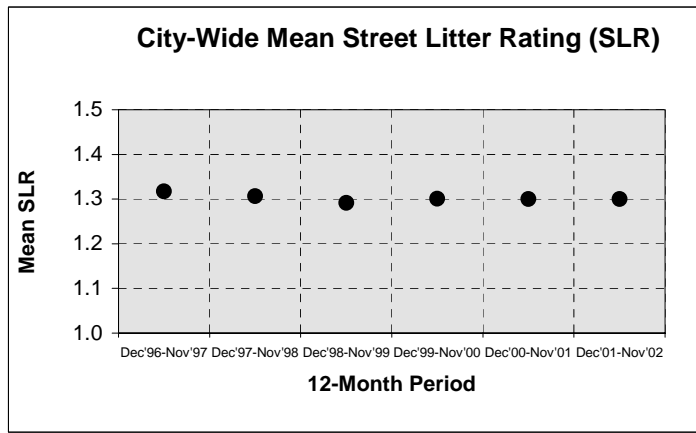
Previous studies have indicated that most floatable litter in New York Harbor can be traced to city streets (HydroQual, 1993). Although many factors can affect the amount of litter on city streets at any given time, the City of New York attempts to control litter levels through a street-sweeping program administered by the Department of Sanitation and through systematic street-litter monitoring, known as the "Scorecard Program," conducted by the Mayor's Office of Operations.

According to the Mayor's Office of Operations, city-wide street litter levels have improved substantially over the past six years. Scorecard Program results for the past six 12-month periods are summarized in the following table and on Figure 1. These results show that street cleanliness has been maintained at or better than 1996 levels.

City-Wide Street Cleanliness, 1996 - 2002

Measure of Street Cleanliness	Results of Scorecard Litter Ratings (SLR)					
	12/96-11/97	12/97-11/98	12/98-11/99	12/99-11/00	12/00-11/01	12/01-11/02
Mean SLR <sup>(1)</sup>	1.32	1.31	1.29	1.30	1.30	1.30
% Acceptable <sup>(2)</sup>	83.5	86.0	88.4	85.5	84.6	84.9
% Filthy <sup>(3)</sup>	2.23	1.28	0.84	1.48	1.74	1.48

Notes:  
<sup>(1)</sup> SLRs follow a 7-point scale from 1.0 (cleanest) to 3.0 (dirtiest).  
<sup>(2)</sup> Percentage of tested blockfaces with SLR less than 1.5.  
<sup>(3)</sup> Percentage of tested blockfaces with SLR greater than 1.74.



**Figure 1. Street Cleanliness**

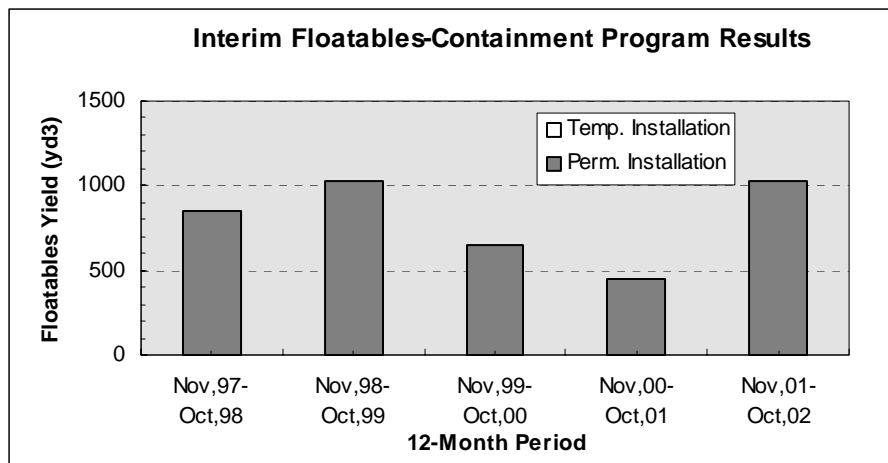


**b) Catch Basin Hooding in Phase I / II Areas**

Catch basin hooding in Phase I/II areas was completed on or ahead of schedule. A detailed description of these activities, with a summary of the results, is available in previous Quarterly Reports and will not be repeated here.

**c) Netting/Booming and Skimming (Interim Floatables Containment Program)**

As of October 31, 2002, the IFCP included 19 boomed sites and 4 netted sites draining a total of approximately 58,600 acres. As shown in the table below and on Figure 2, the total volume of floatable material retrieved annually from these sites has varied between about 450 and 1030 cubic yards. These retrievals are affected by many factors, including the number and efficiency of IFCP sites, street cleanliness, catch basin hooding, and weather. These factors will be analyzed to determine whether the overall decline in retrievals may be attributed to increased catch basin hooding in upland areas.



**Figure 2. Floatable Material Retrieved from IFCP**

As shown on Figure 2 and in the table below, the most recent 12-month period experienced higher yields than in the previous two years. In May 2002 a new IFCP contractor, Miller Marine, took over boom service, maintenance and repair responsibilities. DEP also enhanced the facility monitoring procedures and has instituted several new maintenance and repair activities. Some the significant activities are:

- Ebb tide boom inspections;
- Digital video recording of inspections;

- Boom replacements with a new type of boom that is more durable and includes a debris skirt which hangs in the water column below the boom;
- Tide slide repairs and replacements; and
- Employing a gate system at some booms to trap floatables in the corral until the skimmer vessel arrives.

These activities appear to have enhanced the capture of floatables at most boom sites as reflected in the increase in floatable yield for November 2001 through October 2002 as shown in the table below. The IFCP monitoring data will continue to be reviewed to determine if this trend continues.

### Interim Floatables Containment Program Results, 1997<sup>(1)</sup> - 2002

	9/97-8/98	9/98-8/99	9/99-8/00	9/00-8/01	9/01-8/02
No. Sites <sup>(2)</sup>					
Permanent	21	22	22	21	21
Temporary	1	1	1	2	2
Total	22	23	23	23	23
Volume [cy] <sup>(3)</sup>					
Permanent	853	1031	654	444	1026
Temporary	1	0	0	0	0
Total	854	1031	654	444	1026

Notes:

<sup>(1)</sup> Volume measurements began 7/95.

<sup>(2)</sup> Maximum number of sites operating during period.

<sup>(3)</sup> Total volume of floatables retrieved from sites during period.

<sup>(4)</sup> "Temporary-status" sites feature lower-quality equipment than "Permanent-status" sites.

In addition to the IFCP netting and booming sites, there are two additional sites from which DEP has agreed to collect material on an as-needed basis. These sites are located at Buttermilk Channel (at the intake to the water tunnel) and near Bowery Bay at the Ogden Fuel Services site. Both sites are boomed. From September and October 2002, 13.5 cubic yards of material was collected from the Buttermilk channel site (including material collected by the Transportation Section). Nothing was observed at the Ogden Fuel services site.

DEP also conducts retrievals of large floating debris using the *Cormorant* skimmer vessel throughout New York Harbor. During September and October 2002, the *Cormorant* retrieved a

total of approximately 53.9 tons of floating debris, including roughly 3.17 tons of trash, 0.5 tons of metal, 2.97 tons of plastic, and 0.80 tons of rubber. The remaining 42.08 tons of material was comprised of wood from decayed piers and derelict vessels.

No community clean-up activities were reported during this period.

**d) Track I Facilities**

Please refer to Section II of the NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2002.

**e) Maximizing Wet-Weather Flow to WPCPs**

Please refer to Section II-J of the NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2002.

**2. Catch Basin Hooding in Phase III Areas**

Non-priority ("Phase III") areas of the city are not subject to Consent Order requirements for catch basin inspections and hooding. However, DEP proceeded with catch basin inventory and hood replacement operations in Phase III areas. Catch basin hooding in Phase III areas was completed on or ahead of schedule. A detailed description of these activities, with a summary of the results, is available in the NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2001.

**3. City-Wide Reconstruction of Unhoodable Catch Basins**

Catch basin reconstruction is provided for in Capital Program CB-01, which appropriates \$6 million annually for replacement of collapsed catch basins and associated work required to make sidewalks handicapped accessible. The funding for CB-01 is above and beyond the existing levels needed to address normal repair work.

In addition to the catch basins identified for reconstruction, there are also catch basins that were not inspected or hooded during the original program because they are located in "high-speed roadways" and as such require DOT permits as well as special safety equipment. Inspection, cleaning and hooding of these basins were performed between July 26 and October 4, 2002. A total of 1320 basins were inspected in these areas. These basins will be added to the catch basin GIS.

#### 4. City-Wide Catch Basin Re-inspection Program

As a follow-up to the catch basin hooding program (discussed in Section 1b), the Consent Order also requires that all catch basins in Phase I and Phase II areas be re-inspected every two years to confirm that hoods remain in place. These two-year re-inspection cycles are to commence upon completion of the initial hooding process, for which the milestone dates were February 1998 (Phase I) and February 1999 (Phase II). DEP completed initial hooding ahead of schedule, in December 1997 (Phase I) and September 1998 (Phase II).

The Status of DEP's reinspection program is as follows:

<u>Reinspection Round</u>	<u>Phase</u>	<u>Completion</u>
1	1	December 1999
1	2	September 2000
2	1	January 2002
2	2	September 2002
3	1	Currently Ongoing

Discussions with Mr. Edward Coleman of DEP indicate that the Department completed second round of re-inspections for Phase 2 by September 2002. Mr. Coleman also confirmed that, all missing hoods are being replaced within 90 days of the inspection, as per the Consent Order.

HydroQual is assisting the Department in the reinspection program as part of a change order to the Catch Basin Inspection and Hooding Project. HydroQual's activities started in July of 2002. Initial activities were inspection of catch basins on high speed roads and Phase 3 areas. Post inspection of Phase 1 areas began in October 2002.

DEP compiled the results of the first round of Phase I re-inspections and determined that, of the 29,383 basins that had been hooded initially, just under 3.3 percent required re-hooding over the two-year re-inspection cycle. This equates to an annual hood-dislodge rate of about 1.6 percent.

## **5. Illegal Disposal Control**

In 1998, HydroQual helped DEP and DOS develop a protocol to record and report locations of suspected illegal shoreline trash-dumping. This "Illegal Dumping Notification" program has coordinated efforts between DEP's Harbor Survey Program, DEP's Sentinel Monitoring Program, and two branches of DOS, the Environmental Police and the Sanitation Police. The Environmental Police handle information related to hazardous substances (such as medical waste and asbestos), and the Sanitation Police handle information related to illegal trash dumping. The status of the "Illegal Dumping Notification" program is presently being discerned. An update will be provided when available.

## **6. Public Outreach**

Please refer to Section II-J of the NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2002.

## **7. Pilot Studies and Demonstration Projects**

Please refer to Section IV-D of the NYC's CSO Program 4<sup>th</sup> Quarterly Report – Year 2002.

**APPENDIX B**

**CITIZENS ADVISORY COMMITTEE ON WATER QUALITY – AGENDA**

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
58-17 JUNCTION BLVD., CORONA, NY 11368

AGENDA

CITIZENS ADVISORY COMMITTEE  
ON  
**WATER QUALITY**

MEETING No. 54  
Wednesday, October 16, 2002  
3:00 - 6:00 p.m.

Real Estate Board of New York  
570 Lexington Avenue, New York City  
Lower Level Classroom

- 
- |                      |   |
|----------------------|---|
| 1. Opening Remarks   | Jim Tripp, Environmental<br>Defense<br><br>Deborah Beck, REBNY  |
| 2. Greetings         | Commissioner Ward,<br>NYCDEP  |
| 3. Croton Filtration | Marian Rose, Croton<br>Watershed Clean Water<br>Coalition<br><br>Dart Wespthal, Mosholu<br>Preservation Corporation<br><br>Paul Mankiewicz, Gaia<br>Institute |
| 4. Next Meeting      |   |