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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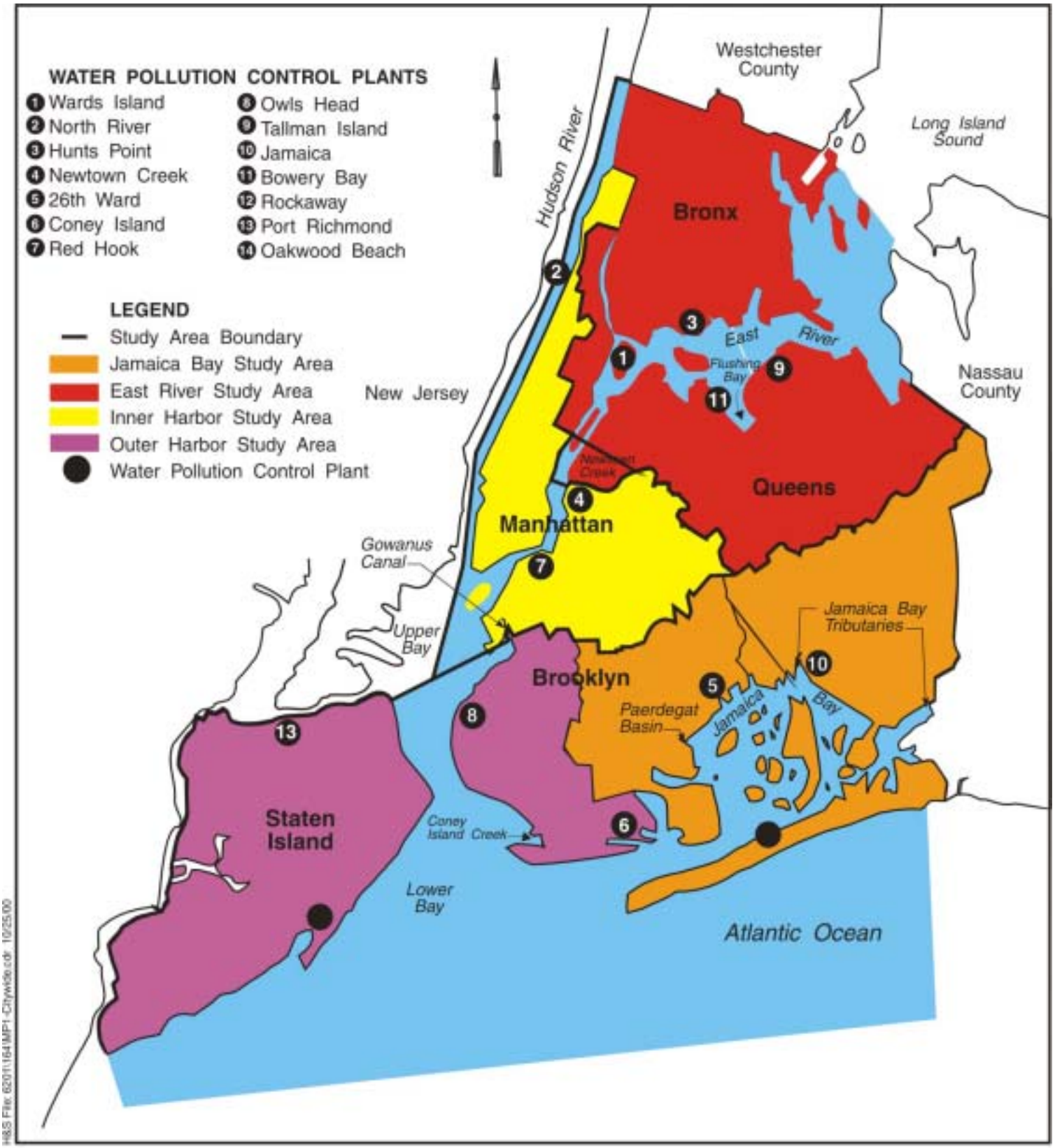
I. Introduction

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 January 1, 2002 through March 31, 2002.



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DEP

CSO Study Area Locations

City-Wide CSO Facility Planning

Figure 1

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

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. Bids were opened for the Phase 2 construction contracts. The Electrical, HVAC and Plumbing Contracts have been awarded and also registered. The contract for CS4-4G (General Contract) was awarded to E. E. Cruz on November 21, 2001. Phase 2 construction is currently underway.

- **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 108th Street Pumping Station that pumps the flow to the high level interceptor**.**

Construction

Construction is substantially complete. The facility has been on-line since November 1997. A few punch list items remain to be completed by the contractor.

Monitoring Program

The two-year sampling program began in March 2000. To date, nine water quality sampling events have been completed. The program was originally to include 15 sampling events; however, additional events are now planned to allow testing of the vortex units individually for a number of storms. To date, thirteen floatable sampling events have been completed. An interim report on the sampling and monitoring was submitted on January 17, 2001. A second interim report was submitted on July 31, 2001 and a third interim report is currently being prepared.

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.

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 – substantially complete	Bids opened for Phase 2, construction contracts E, H and P awarded, contract G awarded on November 27, 2001.
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.

Table 1A Flushing Bay Status of "Elements Approved by NYSDEC"			
"Element Approved by NYS-DEC"	**Status after Value Engineering**	**Work Progress**	**Current Status**
40 MG underground storage tank for CS4 outfall	Utilize induced storage in upstream sewer. 28 MG constructed tank and 15 MG induced in-line storage. Total storage 43 MG with equivalent water quality benefit.	Final phase under construction	Construction of storage facility underway.
Swirl Concentrator devices at several outfalls. (Task 5.2 Report).	Deferred until the testing of the effectiveness of the Corona Avenue facility	Deferred	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.
3 swirl concentrator devices constructed in sequence. (Task 22.4 Rpt.)	3 devices to be constructed in a single facility (Corona Ave Vortex Facility)	Construction completed	On line since November 1997. Monitoring program is ongoing.

B.) Paerdegat Basin

The Paerdegat Basin CSO Retention Facility is located in southeastern Brooklyn, at the intersection of Flatlands and Ralph Avenues. The facility receives 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 NYSDEC approved facility plan include:

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 Paredegat 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^3 of material from the mouth of the basin and about 38,000 yd^3 of sediment from the head end. A dredging permit from NYSDEC has been obtained to implement this element.

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 construction bids were opened on October 11, 2001. The award of the construction contract is expected in the second quarter of 2002.

  A dredging permit was obtained from NYSDEC on February 22, 2002. The permit is valid for 5 years.

- 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

	Phase IA	*Phase II*	*Phase III*	*Phase IV*
Construction Phase:	Influent Channels	Foundations and Substructures	Structures and Equipment	Natural Area Park Restoration
Facility Plan Elements:	30 MG Off-Line Storage; 20 MG In-Line Storage;	30 MG Off-Line Storage; 20 MG In-Line Storage; Dredging of the Mouth	30 MG Off-Line Storage; 20 MG In-Line Storage	
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	$145,809,424	$130,026,844	$8,000,000
Status:	Construction substantially completed in February 2002.	Bids opened on 10/11/01. Construction contract award expected in the 2nd Quarter of 2002.	Final Design is 90% complete.	This phase will be designed in the future.
Other Issues:		Dredging permit received on 2/22/02.	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

- **Open Waters**

Meetings

Three progress meetings between Hazen and Sawyer and DEP were held during this period. The meetings took place on January 8, February 26, and March 19, 2002.

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 (Interceptor Storage)
- 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 is currently installing outfall alarms, 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 have been equipped with outfall alarms, 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 under Phase I.

- In the Newtown Creek Manhattan drainage area, 12 regulators have been equipped with outfall alarms, 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 under Phase I.

- In the Newtown Creek Brooklyn drainage area, 5 regulators have been equipped with outfall alarms, and 14 regulators will be converted to fixed orifices. All 14 regulators will be converted under Phase I.

- In the Red Hook drainage area, 3 regulators have been equipped with outfall alarms, and 18 regulators will be converted to fixed orifices. All 18 regulators will be converted under Phase I.

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 100% final design submittal was delivered to DEP on March 22 as two contracts, one for Manhattan regulators and one for Brooklyn regulators. The NYC Law Department is currently reviewing it. Advertising of the two contracts will follow.

Phase II

Phase II will provide a new throttling facility for the North River WPCP. New throttling facilities are also being 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 is included in Contract 40, which is currently at 90% completion. Preliminary design for throttling facility improvements at Red Hook WPCP are complete.

60% design documents were submitted to DEP on February 12. Geotechnical investigations are underway.

Phase III

Final design of Phase III has not yet been initiated. 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

	Phase I	*Phase II*	*Phase III*
Plan Elements:	Regulator Improvements	Throttling Facilities	In-Line Storage
Location:	72 regulator sites in Manhattan and Brooklyn	North River WPCP	Upstream of regulators B-6 and R-20 in Brooklyn
Actions:	Conversion to fixed orifices	Installation of sluice gates in interceptor sewer	Installation of two inflatable dams in the combined sewer systems
Construction Cost:	$14,000,000	$3,000,000	$3,000,000
Status:	Final Design 100% Complete	Final Design 60% Complete	Final Design – Not Initiated
Other Issues:	-	-	-

Table 3A Inner Harbor Status of "Elements Approved by NYS-DEC"		
"Element Approved by NYS-DEC"	**Status after Preliminary Engineering**	**Work Progress**
Regulator Improvements *Automate 27 large regulators*	Install outfall alarms at 29 large regulators according to Omnibus IV Consent Order signed in 1998.	Outfall alarms installed.
Regulator Improvements *Install fixed orifices at 25 regulators*	Install fixed orifices at 94 regulators	Fixed orifices installed at 22 regulators. Final design for remaining 72 regulators complete.
Regulator Improvements *Install 46 vortex regulators*	Vortex valve recommendation eliminated due to hydraulic model demonstration that CSOs would actually be increased at selected regulators. Regulators instead proposed for fixed orifice installation.	-
Maximize Flow to Treatment Plants *Throttling facilities for NR, NC, and Manhattan Pumping Statiion*	No change.	Final design for NR 60% complete. Final design for Manhattan Pumping Station 90% complete. Construction contract at NC underway.
Maximize Flow to Treatment Plants *In-line storage at 17 regulators to total 13.0 MG*	In-line storage reduced to 2 regulators to total 4.2 million gallons, due to flooding concerns.	Preliminary design complete.
Maximize Flow to Treatment Plants *An additional 28 MG of in-line storage at several interceptors*	Additional interceptor storage will be provided upstream of NR (22 MG), Red Hook (4 MG), and Manhattan Pumping Station (3 MG) for a total of 29 MG.	Interceptor storage to be provided when throttling facilities are completed.
Reactivation of Gowanus Canal	No change.	Gowanus Canal reactivation completed in March 1999.

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

- **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 are also being developed for the final design drawings.

Final Design

An engineering contract for final design has been developed. This contract will have to be reviewed and approved by NYCDEP, the NYC Law Department, the Mayor's Office, the Office of Management & Budget, and Comptroller's Office before it is registered 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. In additions, 14 regulators are currently being retrofitted with outfall alarms that will automatically report a discharge from the combined sewer system. Therefore, a total of 46 regulators are being improved.

In the Port Richmond drainage area, 4 regulators will have outfall alarm capabilities (2 are in operation, 2 additional will be installed) and 28 regulators will be converted to fixed orifices.

In the Owls Head drainage area, 7 outfall alarms are operational and 3 more will be installed. In addition, 4 regulators will be improved and converted to fixed orifices.

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

	Phase I	*Phase II*	*Phase III*
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:	-	-	-

Table 4A Outer Harbor Status of "Elements Approved by NYS-DEC"		
"Element Approved by NYS-DEC"	**Status after Preliminary Engineering**	**Work Progress**
Regulator Improvements *Automate 6 large regulators*	Install outfall alarms at 6 large regulators according to Omnibus IV Consent Order signed in 1998.	Outfall alarm installation complete.
Regulator Improvements *Install fixed orifices at 21 regulators*	Install fixed orifices at 32 regulators	Preliminary design complete.
Regulator Improvements *Install 11 vortex regulators*	Vortex valve recommendation eliminated due to hydraulic model demonstration that CSOs would actually be increased at selected regulators. Regulators instead proposed for fixed orifice installation.	-
Maximize Flow to Treatment Plants *Throttling facilities for OH,PR, and Hannah Street Pumping Station*	Throttling facility recommendation at Hannah Street Pumping Station eliminated due to findings that the existing sluice gate was capable of controlling flow with acceptable velocities.	Throttling facility at Owls Head complete and in use. Preliminary design for throttling facility at Port Richmond complete.
Maximize Flow to Treatment Plants *In-line storage at 5 regulators to total 3.8 MG*	In-line storage reduced to 2 regulators to total 4.4 million gallons, due to flooding concerns.	Preliminary design complete.
Maximize Flow to Treatment Plants *An additional 6.3 MG of in-line storage at several interceptors*	Additional interceptor storage to be provided upstream of OH (3.5 MG) and PR (5 MG).	3.5 MG of storage provided upstream of OH. Interceptor storage at PR to be provided when throttling facility is completed.

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 St. Canal

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 that utilizes a tunnel scheme in lieu of a tank.

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 ballfields off-site, but within the immediate neighborhood, to replace the five ballfields 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 ballfields. The loss of the alternate ballfields site effectively made construction of the offline storage tank unfeasible.

The estimated amount of induced in-line storage was based on an envisioned storage tank with an effluent weir conceptually set at one foot below mean tide. This was done to prevent excessive water surfaces from occurring in the sewers higher than would occur during high tide at the 5 year DEP sewer design storm. During preliminary design, certain physical hydraulic elements of the proposed tank were modeled, including the effluent weir to set design criteria. The results of this work were not imparted to the tank design, as the idea of a storage tank was prevented from moving forward due to the loss of the alternate site for temporary ball fields. The results of the hydraulic modeling work pointed to lowering the weir height, and therefore reducing the ability to make use of in-line storage induced by the weir.

Since the project is now studying the use of a tunnel storage concept, the ability to induce in-line storage by the tank's effluent weir is lost, as the tunnel system will not have effluent weirs. Therefore, all required storage volume would be accommodated inside the tunnel bore.

Over the past several years, the advent of soft ground tunneling has resulted in this type of construction to now be seen as practical for the project area. The alternate option of a storage/conveyance tunnel in lieu of retention tank involves a construction of a 23 foot diameter tunnel about 80 feet beneath the Jamaica Bay using advanced full faced Earth Pressure Balanced Tunnel Boring Machine (EPBTMB) and precast concrete segmented gasketed lining techniques. This alternate, one of several tunnel schemes under evaluation, relocates the CSO from the existing Fresh Creek outfall by the Williams Avenue regulator to a NYCDEP owned site south of the sludge dewatering facility at the 26th Ward WPCP, and from Hendrix Creek outfall at the Hendrix Street Canal near the 26th Ward WPCP to the south of sludge dewatering facility at the 26th Ward WPCP. In this scheme the proposed tunnel will store and convey about 27 million gallons (per Value Engineering revision) of CSO from Fresh Creek (22 million gallons) and

Hendrix Creek (5 million gallons), before overflowing into the Hendrix Creek just south of the 26th Ward WPCP. Preliminary estimates resulted in a tunnel length of approximately 16,000-ft. Preliminary examination has indicated that less land acquisition would be required for construction for this alternate and also, water quality computer models have resulted in improved water quality in Fresh Creek in reference to dissolved oxygen (DO) and coliform standards.

At this time, an examination of alternate concepts for abating CSO to the Hendrix St. Canal include sewer system changes and increasing wet weather flow from the Hendrix regulator to the 26th Ward WPCP by 50 MGD.

Several storage and storage/conveyance tunnels 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 tunnel scheme and flow management scheme currently under evalutation.

Geotechnical work (both landside and waterside borings have been completed for examination by our tunnel consultant.

A drop shaft at Fresh Creek is being studied at this time. A conceptual plan is under development and shows the drop shaft could be constructed within an existing sewer easement that exists at the head end of Fresh Creek.

Concepts for screening of CSO either prior to the drop shaft or at the pump-out/riser shaft have been developed.

Examination of a riser shaft and TBM launch site at the southern end of the 26th Ward WPCP is underway. Coordination with the 26th Ward WPCP upgrade design has been on-going.

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.

At this time a construction contract for the upgrade to the Spring Creek AWPCP has been advertised, and bids will be 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 for storage/conveyance tunnel	No additional actions regarding dredging have been taken on this project at this time
Project Cost:	$295 million	$3 million (estimate from 1993 Facility Plan)
Status:	Evaluating alternatives for tunnel shaft locations, sizing and boring locations	-
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. The NYCDEP directed URS in early February 2002 to prepare a change order 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.

- **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 60' W x 40' H, will be located along the east shore of the Bronx River in an area immediately south of the intersection of East 177th Street, DeVoe Avenue and the Sheridan Expressway. This project will also include relocating Outfall HP-23, approximately 600 feet downstream of the outfall's existing location, to the downstream end of the storage conduit. Existing Outfall HP-23 will be abandoned. 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 January 3, 2002, January 29, 2002, February 12, 2002, March 5, 2002, and March 13, 2002 at the NYC Department of Environmental Protection (NYCDEP) offices between representatives of the NYCDEP, URS, Lawler, Matusky and Skelly Engineers (LMS), Helen Neuhaus and Associates, and Dvirka and Bartilucci Engineers to discuss and review the overall progress of the East River CSO Project.
- Meeting on February 14, 2002 at the NYCDCP offices in Manhattan between representatives of the NYCDCP, NYCDEP and URS to discuss the early January 2002 submittal of information to the NYCDCP in early January 2002 regarding the extensive mapping revisions, as part of the preparation of the ULURP Application.
- Meeting on March 7, 2002 at the NYCDCP offices in Manhattan between representatives of the NYCDCP, NYCDEP and URS to discuss mapping issues associated with the ULURP Application.
- Meeting on March 19, 2002 at the NYCDEP offices between representatives of the NYCDEP, URS and Chu and Gassman to discuss operations and maintenance issues pertaining to the Bronx River CSO Storage Conduit.
- Meeting on March 26, 2002 at the NYCDCP offices in Manhattan between representatives of the NYCDCP, NYCDEP and URS to discuss mapping issues associated with the ULURP Application.

Field Investigations

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

- Initiated the Phase IA Archaeological Survey needed to complete the EAS for the southern section of the Bronx River Greenway.
- LMS continued to prepare a draft report summarizing the subsurface environmental investigation work performed in the southern portion of the Greenway Project under a NYSDOT contract.
- The NYCDEP continued to review the Phase 1A Archaeological Survey Report for the CSO storage conduit site.
- Continued review 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).
- Submitted to the NYCDEP in mid-February 2002 for review the subsurface geotechnical investigation reports (Subsurface Investigation and Geotechnical Evaluations) for the CSO storage conduit site.
- Received comments and recommendations in late February 2002 from the NYCDEP pertaining to the subsurface environmental investigation reports prepared by LMS for both the CSO storage conduit site and the northern segment of the Bronx River Greenway Project.

Environmental Review

URS and LMS initiated work to assist the NYSDOT in preparing the EAS for the southern section of the Bronx River Greenway.

ULURP

URS continued preparation of the ULURP Application for the Bronx River CSO Project, including the extensive mapping revisions, as a result of the multiple land transfers. Information regarding the mapping revisions was submitted to the NYCDCP in early January 2002 for review. Based on discussions at the February 14, 2002 meeting with the NYCDCP, a revised Mapping Application package was submitted to the NYCDCP on March 1, 2002.

Facility Planning/Preliminary and Final Designs

Principal work performed during this report period includes:

- Continued to prepare a document to explain that the Flushing Bay CSO drainage area, for which odor investigations were performed, is similar enough in characteristics to the CSO drainage areas for the East River CSO abatement projects, so as to avoid the need

for individual odor investigations within the East River CSO abatement projects drainage areas.

- Continued to prepare refined calculations comparing the relative design criteria and economics of single-stage and two-stage carbon adsorption air treatment systems for each of the proposed East River CSO abatement facilities.
- Continued with final design of the CSO storage conduit. The storage conduit will include facilities for screening CSO flow prior to storage in the conduit or overflow to the Bronx River. Design of the project continued to be coordinated with the construction of the MTA Coliseum Bus Depot Project, and the NYSDOT designs of the highway improvements and Greenway Project.
- Continued preparation of a follow-up memorandum for submittal to the NYCDEP which describes the approach proposed for design of the air treatment facilities at various East River CSO abatement facilities sites.
- Submitted a report to the NYCDEP in late January 2002 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).
- Submitted a revised updated project schedule to the NYCDEP for review in mid-February 2002. The NYCDEP indicated that the time periods allowed for performing some of the scheduled activities, as well as receive required approvals from other NYCDEP bureaus and regulatory agencies, were not sufficient in length. Based on guidelines provided by the NYCDEP, URS initiated revisions to the project schedule.
- Prepared and issued a request for proposals to several qualified traffic consulting firms to prepare Maintenance and Protection of Traffic (MPT) Plan drawings for the Bronx River CSO Project. Only one firm, Simco Engineering, responded to the request for proposals in mid-January 2002. The NYCDEP granted URS approval in mid-February 2002 to proceed with procurement of the services of Simco Engineering, although only one firm responded to the request. Based on this approval, URS submitted documentation to the NYCDEP in mid-February 2002 to obtain approval to utilize the services of Simco Engineering.
- The NYCDEP reported that, based on meetings with the NYSDEC, the East River CSO abatement facilities plans will be approved pending re-submittal of the water quality modeling results for each facility plan in a spatial format, and the designation of an area at each facility for the future installation of disinfection and dechlorination facilities. The NYCDEP received a letter from the NYSDEC, dated March 15, 2002, which provided further guidance for preparation and submission of final CSO abatement facilities plans. The NYCDEP, URS and LMS initiated preparation of a submittal in response to the NYSDEC letter.
- Submitted detailed hydraulic calculations for the storage conduit and detailed hydrologic calculations for existing Outfall HP-23 to the NYCDEP for review in late March 2002.

Table 6

Bronx River CSO Project

Plan Elements:	Bronx River CSO Storage Conduit
Location:	Property adjacent to intersection of East 177th 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; abandonment of existing Outfall HP-23.
Cost:	$38,500,000
Status:	Design underway.
Other Issues:	EAS needs to be completed to obtain Negative Declaration for project; ULURP Application needs to be completed and certified; mapping for land transfers needs to be completed prior to ULURP Application certification.

- **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 City-owned land located between CO-OP City Boulevard and the Hutchinson River. As a result of relocation the southern reach of the storage conduit, major revisions to the design of the conduit will be required. Most 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 right-of-way and will remain within roadway rights-of-way and will extend 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 and possibly to CO-OP City North Pumping Stations; 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.

Meetings

Principal meetings held during this report period are as follows:

- Project Progress meetings on January 3, 2002, January 29, 2002, February 12, 2002, March 5, 2002, and March 13, 2002 at the NYC Department of Environmental Protection (NYCDEP) offices between representatives of the NYCDEP, URS, Lawler, Matusky and Skelly Engineers (LMS), Helen Neuhaus and Associates, and Dvirka and Bartilucci Engineers to discuss and review the overall progress of the East River CSO Project.
- Meeting on January 18, 2002 at the offices of Alpert and Kaufman, Attorneys at Law, in Manhattan between State Assemblyman Kaufman and representatives of the NYCDEP, NYC Mayor's Office, CO-OP City and URS to discuss relocation of the southern reach of the Hutchinson River CSO Storage Conduit.
- Meeting on February 1, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to discuss the alternatives for relocating the southern reach of the storage conduit, as well as to discuss the possibility of re-aligning the northern reach of the storage conduit to avoid extending through the intersection of Conner Street and Tillotson Avenue to lessen the impacts of construction on traffic within this intersection. At this meeting, the NYCDEP directed URS to prepare a change order to East River Contract III to cover the additional engineering costs associated with re-design of the Hutchinson River CSO Storage Conduit.

- Meeting on February 7, 2002 at the offices of Alpert and Kaufman, Attorneys at Law, in Manhattan between State Assemblyman Kaufman and representatives of the NYCDEP, NYC Mayor's Office, CO-OP City and URS to discuss relocation of the northern and southern reaches of the Hutchinson River CSO Storage Conduit, as well as to discuss the construction of a public recreational area over top of the southern reach of the storage conduit within the property adjacent to the Hutchinson River.
- Press conference on February 14, 2002 at the CO-OP City Complex at which State Assemblyman Kaufman introduced the revisions to the Hutchinson River CSO Storage Conduit Project to the public, including the provision for constructing a public recreational area over top of the southern reach of the storage conduit.
- Meeting on February 22, 2002 at the offices of the auto salvage yard located at the northern end of the northern reach of the CSO storage conduit between representatives of the NYCDEP, NYC Legal Department, the auto salvage yard and URS to initiate discussions regarding removal of the salvage yard operations from City-controlled property to allow for the construction of the northern reach of the storage conduit.

Field Investigations

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

- The NYSDEC verbally advised LMS in early January 2002 that the soils classification report, which includes the analyses to determine quantities of regulated, non-regulated and hazardous soils for bidding purposes, is approved. Written confirmation that the report has been approved is expected from the NYSDEC in the near future.
- The NYCDEP continued efforts to have the owner of the auto salvage yard, located at the northern end of the northern reach of the storage conduit, remove the junk vehicles from the City-controlled property, to allow for the construction of the northern reach of the conduit.

Environmental Review

The NYCDEP provided URS with comments on the NYCDEP Dewatering Permit that was previously submitted for review. URS made the revisions to the Dewatering Permit and re-submitted the revised permit to the NYCDEP in mid-January 2002.

Work associated with the NYCDEP Dewatering Permit, the NYSDEC and Army Corps of Engineers Joint Application Permit, and the modification to the Hunts Point WPCP SPDES Permit for the new CSO outfall and modifications to existing Outfalls HP-14 and –15 was discontinued due to the decision to re-design the Hutchinson River CSO Storage Conduit.

ULURP

A ULURP Application will need to be prepared for the Hutchinson River Project, as revisions to the storage conduit will require that ULURP actions be completed.

Facility Planning/Preliminary and Final Designs

Principal work performed during this report period includes:

- Decided upon a re-design of the Hutchinson River CSO Storage Conduit as a result of meetings at the offices of Alpert and Kaufman, Attorneys at Law, in early February 2002. It was decided that the southern reach of the conduit will be extended adjacent to the river to a location north of the existing Little League ballfields, thereby avoiding disruption to the ballfields. The required CSO storage volume within this southern reach of the storage conduit, which will be shorter than the presently designed reach of conduit, will be obtained by widening the conduit. Widening the conduit is possible with the conduit not being restrained by the right-of-way of CO-OP City Boulevard. It was also decided to re-align the storage conduit to cut through a small portion of the New York Bus Service Company property at the southeast corner of the intersection of Conner Street and Tillotson Avenue, thereby avoiding extending the conduit directly through the intersection. A decision was also made to construct a public recreational area over top of the southern reach of the storage conduit within the property adjacent to the Hutchinson River. This recreational area is to consist of paved walkways for walking and cycling, grass areas and shrubs. Finally, it was decided that that Conner Street Pumping Station would be upgraded.
- Discontinued design of the northern and southern reaches of the storage conduit based on the decision to re-design the Hutchinson River CSO Storage Conduit. Design will recommence when the change order to East River Contract III is approved and registered.
- Submitted a second hydraulic calculation package to the NYCDEP for review.
- URS and LMS initiated dispersion modeling to determine if the changes in the nearest sensitive receptor (from the fence line of the pumping station to either the U.S. Post Office, located immediately north of Conner Street near the pumping station, or the CO-OP City Complex, located along CO-OP City Boulevard) will result in reducing the air treatment system to be located at the Conner Street Pumping Station from a two- to a one-staged system. To achieve the required H_2S concentration at the exhaust stack to meet the 1 ppb H_2S concentration at the nearest sensitive receptor, increased air flow through the northern reach of the storage conduit will be required. Therefore, the size of the air flow equipment will be larger, which may result in a siting problem at the pumping station site.
- Received comments on the report describing the system for operation and control of the pumpback of stored CSO from the northern and southern segments of the Hutchinson River CSO Storage Conduit from the NYCDEP in early January 2002. As the re-design of the storage conduit may impact the operation and control system, URS will revise the report as required, including addressing the NYCDEP comments, and submit copies of the report to the NYCDEP during the re-design phase of the storage conduit.
- The NYCDEP submitted the revised MPT Plan drawings for the Hutchinson River CSO Project to the NYCDOT for review and approval in early January 2002.

- Prepared and submitted to the NYCDEP a draft revised Request for Approval of Construction for the Hutchinson River CSO Storage Conduit Contract (Contract ER-HR1) in mid-January 2002, which increases the estimated construction cost for the contract to $110,000,000.
- The NYCDEP reported that, based on meetings with the NYSDEC, the East River CSO abatement facilities plans will be approved pending re-submittal of the water quality modeling results for each facility plan in a spatial format, and the designation of an area at each facility for the future installation of disinfection and dechlorination facilities. The NYCDEP received a letter from the NYSDEC, dated March 15, 2002, which provided further guidance for preparation and submission of final CSO abatement facilities plans. The NYCDEP, URS and LMS initiated preparation of a submittal in response to the NYSDEC letter.
- Submitted a revised updated project schedule to the NYCDEP for review in mid-February 2002. The NYCDEP indicated that the time periods allowed for performing some of the scheduled activities, as well as receive required approvals from other NYCDEP bureaus and regulatory agencies, were not sufficient in length. Based on guidelines provided by the NYCDEP, URS initiated revisions to the project schedule.

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 property adjacent to Hutchinson River.
Actions*:*	Design and construction of 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:	Being revised.
Status:	To be redesigned.
Other Issues:	Change Order needed for redesign; ULURP action required, EAS needs to be revised.

- **Alley Creek**

Project Summary

The Alley Creek Drainage Area Improvements/CSO Abatement Facilities Project will be constructed in two stages, the Alley Creek Drainage Area Improvements (Stage 1), the Alley Creek CSO Abatement Facilities (Stage 2), and 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, 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, which will be located north of Northern Boulevard, on the west side of Alley Creek, through a new outfall structure to be constructed under Phase I, Stage 1.

The 5 MG CSO Storage Facility will also 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, located 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 CSO Storage Facility will be cleaned, after each storm event by using 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 new contract. This new contract will begin after the completion of Contract ER-AC1. A contract number has not been issued for this new 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, 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 January 3, 2002, January 29, 2002, February 12, 2002, March 5, 2002, and March 13, 2002 at the NYC Department of Environmental Protection (NYCDEP) offices between representatives of the NYCDEP, URS, Lawler, Matusky and Skelly Engineers (LMS), Helen Neuhaus and Associates, and Dvirka and Bartilucci Engineers to discuss and review the overall progress of the East River CSO Project.
- Meeting on January 2, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to review the drawings presenting the re-design of the new 11'-0" W x 8'-0" H combined sewer along Springfield Boulevard.
- Meetings on January 4, 2002 and January 9, 2002 at the NYCDEP offices between representatives of the NYCDEP, URS and LMS to review the conceptual design of the ecological restoration and wetlands construction proposed for Alley Park.
- Meeting on January 14, 2002 at the NYCDEP offices between representatives of the NYCDEP, URS, Consolidated Edison, Time Warner Cable, Verizon and the NYC Fire Department to discuss the re-design of the sewer along Springfield Boulevard, and to discuss a request to relocate the 12-inch diameter water main in Springfield Boulevard.
- Meeting on January 29, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to review the preliminary design of the Oakland Ravine Project.
- Meeting on March 11, 2002 at the Queens Borough Hall between representatives of the Queens Borough President's Office, NYCDEP, NYCDPR, NYCDDC, NYSDEC, Queensborough Community College, Helen Neuhaus and Associates, URS, political entities and special interest groups to brief the staff of the new Queens Borough President on the status of the Alley Creek Project, including the Oakland Ravine Project.
- Meeting on March 13, 2002 at the Mayor's Office of Construction (MOC) offices in Manhattan between representatives of the MOC, NYCDEP and URS to discuss revisions to the milestone provisions included in the contract documents.
- Meeting on March 19, 2002 at the NYCDEP offices between representatives of the NYCDEP, URS and Chu and Gassman to discuss the scope of modifications to be performed at the existing Old Douglaston Pumping Station.
- Meeting on March 20, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to further review additional comments the NYCDEP had regarding the drawings presenting the re-design of the new 11'-0" W x 8'-0" H combined sewer along Springfield Boulevard, including the drawings showing the demolition and replacement of existing Chamber No. 2, located in Springfield Boulevard.

- Pre-bid conference on March 21, 2002 at the NYCDEP offices to familiarize prospective bidders with the provisions and scope of work included in Contract ER-AC1, as well as to accept questions from the prospective bidders.
- Meeting on March 26, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to discuss the Oakland Ravine Project and future visits by the Oakland Ravine Project task force to similar project sites.

Field Investigations

The NYCDEP and URS met at the Old Douglaston Pumping Station on March 25, 2002 to determine, in greater detail, the scope of modifications which will be required to be performed at the station, as part of the Alley Creek CSO Abatement Facilities - Phase I, Stage 2.

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 continues to undergo review by the NYCDEP.

Environmental Review

The NYCDEP submitted the Long Island Well Permit Application to the NYSDEC in early January 2002 with a request for conditional approval, based on the construction contractor furnishing the additional specific information required by the NYSDEC. The construction contractor will have to re-test the groundwater as the existing laboratory results will be more than one year old at the time of construction.

URS and LMS continued with preparation of the permit modification to the Tallman Island WPCP SPDES Permit for the new CSO outfall discharging into Alley Creek. In mid-January 2002, LMS submitted a draft letter to the NYCDEP for finalization and submission to the NYSDEC requesting the permit modification.

A Notice of Complete Application for the EAS was submitted by URS to the New York Daily News on behalf of the NYCDEP and NYSDEC in late December 2001. This Notice, which was published in the newspaper on January 2, 2002, indicated that any comments on the project must have been submitted to the NYSDEC by January 18, 2002. No comments were received during this period.

The NYCDEP has not yet received full approval of the Joint Application for Permit from the NYSDEC; however, this approval is expected in the near future.

ULURP

Based on information provided by the NYCDEP, 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.

URS indicated that decisions would need to be made by the NYCDEP as to whether the Oakland Ravine Project requires ULURP approval, and whether an EAS is required for the project.

Facility Planning/Preliminary and Final Designs

Principal work performed during this report period includes:

- The NYCDEP reported that, based on meetings with the NYSDEC, the East River CSO abatement facilities plans will be approved pending re-submittal of the water quality modeling results for each facility plan in a spatial format, and the designation of an area at each facility for the future installation of disinfection and dechlorination facilities. The NYCDEP received a letter from the NYSDEC, dated March 15, 2002, which provided further guidance for preparation and submission of final CSO abatement facilities plans. The NYCDEP, URS and LMS initiated preparation of a submittal in response to the NYSDEC letter.
- Revised the MPT Plan drawings as a result of the re-design of the sewer along Springfield Boulevard. The NYCDEP submitted the revised MPT Plan drawings to the NYCDOT in early January 2002 for review. The NYCDOT approved the MPT Plan drawings for the local street network in mid-February 2002, but has not yet granted approval for the Cross Island Parkway MPT Plan drawings.
- Continued revisions to the conceptual design of the ecological restoration and wetlands construction proposed for Alley Park, based on meetings held on January 4, 2002 and January 9, 2002, and a final grading plan received from the NYCDEP on February 25, 2002.
- Received comments from the NYCDOT with regard to the street lighting plans in mid-January 2002.
- PCA Engineering, Inc. completed the cathodic protection design of the new 630-foot section of 30- and 36-inch diameter water main to be installed along 56th Avenue, and submitted a design report and drawings to URS in mid-January 2002. URS submitted copies of the report and drawings to the NYCDEP in mid-January 2002 for review. Minor comments were received from the NYCDEP in late February 2002.
- Made final revisions to the drawings presenting the re-design of the new 11’-0”W x 8’-0” H combined sewer along Springfield Boulevard, including the drawings showing the demolition and replacement of existing Chamber No. 2 (in lieu of rehabilitation) in mid-January 2002. The NYCDEP sent an inter-departmental letter in early February 2002 documenting the revisions to the drawings.

- Prepared and submitted to the NYCDEP a Water Quality Improvement Projects Application for State Assistance Payments for SFY 2001/02 for the Alley Creek Drainage Area Improvements – Phase I, Stage 1 and Alley Creek CSO Abatement Facilities – Phase I, Stage 2 at the request of the NYCDEP in late January 2002.

- Initiated investigation to determine the scope of work that needs to be completed to upgrade the Old Douglaston Pumping Station to allow for the pumpback of the stored CSO to the Tallman Island WPCP in January 2002. URS received information in early January 2002 from the NYCDEP pertaining to the Old Douglaston Pumping Station that is needed to perform the investigation on the scope of work. URS initiated preparation of a preliminary design report describing the required work needed to be performed at the pumping station.

- Consolidated Edison and Time Warner Cable requested the relocation of a 12-inch diameter water main, located in Springfield Boulevard, from the west side of the boulevard to behind the sidewalk along the west side or to the east side of the boulevard, to provide a clear lane for relocating utilities. The NYCDEP indicated in mid-February 2002 that the 12-inch diameter water main is not to be relocated and is to remain in its present location as designed.

- Revised the amended drainage plan as a result of the re-design of the sewer along Springfield Boulevard, and submitted the revised plan to the NYCDEP in mid-February 2002 for review. The NYCDEP had additional comments to this revised plan, and provided a copy of the amended drainage plan with the annotated comments for further revisions at the March progress meeting for Contract III. URS reviewed the comments at the request of the NYCDEP, and indicated that the comments will not affect the design of the Alley Creek Project.

- The NYCDEP submitted letters to the NYCDPR and NYCDOT in mid-March 2002 requesting that the two Departments resolve the issue regarding maintenance jurisdictional limits in proximity to the Cross Island Parkway in Alley Park. Enclosed with these letters were landscape plans presenting the restoration within Alley Park in the vicinity of the Cross Island Parkway, and suggested maintenance jurisdictional limits. An agreement on the maintenance jurisdictional limits is required before the NYCDOT will provide their approval of the Alley Creek Project.

- Issued a memorandum to the NYCDEP for review in early March 2002 summarizing the findings and results of the investigation of the alternatives for a water supply to provide a secondary flush for the storage facility. The memorandum recommends that the stored combined sewage in the elevated outfall sewer be used to refill the reservoirs for each of the ten Hydroself Flushing Gates for a secondary flush of the storage facility.

- Continued to make minor revisions to the Contract ER-AC1 drawings at the request of the NYCDEP, and submitted copies of individual drawings with revisions to the NYCDEP for review.

- Submitted a revised updated project schedule to the NYCDEP for review in mid-February 2002. The NYCDEP indicated that the time periods allowed for performing some of the scheduled activities, as well as receive required approvals from

other NYCDEP bureaus and regulatory agencies, were not sufficient in length. Based on guidelines provided by the NYCDEP, URS initiated revisions to the project schedule.

Facility Construction

The NYCDEP advertised Contract ER-AC1 for bids on March 5, 2002. The original bid opening was scheduled for April 11, 2002; however, the bid opening has been extended to April 25, 2002. In preparation for the bid advertisement, the mylar drawings for Contract ER-AC1 were signed by the NYCDEP in mid-February 2002. URS solicited cost proposals from three qualified printing firms to print the bidding and contract documents required to solicit competitive bids for Contract ER-AC1. Based on the cost proposals received in mid-February 2002, A. Estéban and Company, Inc. was selected to provide the printing services, and the printing of the documents was performed.

URS prepared and submitted Addendum No. 1 to the contract documents to the NYCDEP for review on March 11, 2002. This addendum addresses comments by the NYCDOT that were received too late to incorporate into the contract documents prior to bid advertisement, as well as the cathodic protection design for the 30- and 36-inch diameter water main installed along 56th Avenue, and the addition of the EP-7 Standard Specifications and Drawings for the modifications to the utilities. Addendum No. 1 was issued to prospective bidders on April 2, 2002.

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:	46th Avenue, 53rd Avenue, 56th Avenue, Bell Boulevard, Luke Place, 214th Street, 216th Street, 217th 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:	Design and construction of additional stormwater and combined sewers, catch basins, outfall sewer and outfall structure to affect improved drainage in areas upstream of Outfall TI-7 in Bayside, Queens. Design and 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 air treatment facilities to treat air exhausted from the CSO storage facility; 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 8.6 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:	$124,900,000	$17,700,000	$7,000,000	$26,500,000
Status:	Contract advertised for bids; bid opening date scheduled for April 25, 2002.	Preliminary design underway.	Conceptual design underway.	Preliminary design report under review, by NYCDEP.
Other Issues:	Notice of Complete Application for EAS issued by NYSDEC; ULURP Application fully approved.	Address screenings issue. No above ground screenings building allowed in Alley Park as per ULURP Application.	Requires NYC Department of Parks and Recreation approval.	Determination needs to be made if EAS and ULURP Actions are required; requires NYC Department of Parks and Recreation approval; 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 155' W x 27' 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 two story administration/support building; an air treatment building; a single-barrel supply conduit (13'-0" W x 8'-0" H) extending from the Outfall HP-25 sewer in Eastchester Road to the underground storage tank; a double-barrel overflow conduit (each barrel 12'-0" W x 5'-0" H) extending from the underground storage tank to the Outfall HP-25 sewer in Eastchester Road; and a pumping station with a rated capacity of approximately 10,500 gpm and 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 two Little Leagues that utilize the baseball fields adjacent to the site of the underground storage tank. These amenities consist of restroom facilities, a clubhouse building, a paved parking area on top of the underground storage tank, and fencing to enclose the Little League areas so as to keep the ball fields and parking areas separated from the BPC Campus facilities and the NYCDEP facilities.

Meetings

Principal meetings held during this report period are as follows:

- Project Progress meetings on January 3, 2002, January 29, 2002, February 12, 2002, March 5, 2002, and March 13, 2002 at the NYC Department of Environmental Protection (NYCDEP) offices between representatives of the NYCDEP, URS, Lawler, Matusky and Skelly Engineers (LMS), Helen Neuhaus and Associates, and Dvirka and Bartilucci Engineers to discuss and review the overall progress of the East River CSO Project.
- Meeting on January 4, 2002 at the NYCDEP offices between representatives of the NYCDEP and URS to discuss the impacts on the project caused by the recently granted easement along the BPC's western service road, and to determine revisions that can be made to the project to minimize or eliminate any such impacts.
- Meeting on February 19, 2002 at Senator Velella's offices in the Bronx between representatives of Senator Velella's staff, the NYCDEP and URS to discuss issues with regard to the site preparation contract for the Westchester Creek CSO Project. Following this meeting a representative of Senator Velella's staff met with representatives of the two Little Leagues to brief them on the discussions at the previous meeting and to finalize any specific requests by the Little Leagues with regard to the design of the restrooms and clubhouse facility.

Field Investigations

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

- Jersey Boring and Drilling Co., Inc. provided in late December 2001 as-built locations and elevations of the boreholes for the six geotechnical borings drilled in October 2001 needed for design of the Little League restrooms and clubhouse facility.
- Submitted a request to the NYCDEP in late January 2002 for permission to retain a subconsultant to inspect and document the conditions of Outfall HP-25 and the upstream outfall sewer. The NYCDEP granted its approval in early March 2002.
- Completed preparation of a request for proposals to solicit drilling services for the geotechnical borings needed for design of the CSO storage tank project. The NYCDEP submitted a letter to the Dormitory Authority of the State of New York (DASNY) in late January 2002 requesting permission to have the drilling firm drill the geotechnical borings on the BPC Campus property. DASNY granted its approval in early March 2002. URS issued a request for proposals to qualified drilling firms for the subsurface work in mid-March 2002. URS received price quotes from the drilling firms on March 25, 2002.
- Munoz Engineering provided the completed metes and bounds survey for the property being acquired at the BPC Campus for the CSO storage tank project in early February 2002. This survey will need to be modified due to the easement granted by DASNY to the private development corporation along the west boundary of the BPC Campus.
- Finalized the subsurface geotechnical investigation report, which summarizes the findings and results of the geotechnical borings drilled at the locations for the proposed Little League restrooms and clubhouse facility. Copies of this report, which recommends that the Little League facilities be supported on piles, were submitted to the NYCDEP in mid-February 2002.
- DASNY extended the work permit which allows the NYCDEP and their consultants to perform work on the proposed site of the CSO storage tank through April 2002.

Environmental Review

URS and LMS submitted a revised draft EAS for the CSO storage tank project to the NYCDEP in mid-December 2001, which incorporates comments provided by the NYCDEP. This revised draft EAS will require further revisions to reflect the changes to the project as a result of the easement granted by DASNY to the private development corporation.

Site Acquisition/ULURP

URS prepared and submitted a draft letter to the NYCDEP for the NYCDEP to finalize and send to NYC Department of Citywide Administrative Services (DECAS) in mid-January 2002 providing the details of the easement granted by DASNY to the private development corporation along the west boundary of the BPC Campus. This letter explains that the Westchester Creek CSO Storage Tank Project has been revised to eliminate the need for the land

included within the easement boundaries, and indicates that the lack of the need for the land within the easement boundaries should be considered during property acquisition negotiations with DASNY. The NYCDEP finalized and submitted this letter to DECAS in late January 2002.

URS prepared and submitted a draft letter to the NYCDEP for the NYCDEP to finalize and send to DASNY explaining that a revised layout for the Westchester Creek CSO Storage Tank Project has been developed. This letter indicates that the need for the land included within the easement, granted by DASNY to a private development corporation, is no longer required. This letter also presents a description of the revised property boundaries required for the CSO storage tank project, and indicates that the NYCDEP is proceeding with requirements necessary for acquiring the property. In addition, the letter requests that DASNY reserve the property as now configured for the benefit of the NYCDEP until such time when the title can be transferred to the NYCDEP. The letter also requests information on future wastewater flows to be generated by the BPC that are needed for design purposes. The NYCDEP finalized and submitted this letter to DASNY in late January 2002.

URS continued with revisions to the draft ULURP Application based on discussions at the pre-application meeting held on October 11, 2001 at the NYCDCP offices in Manhattan, the meeting held at the DASNY offices on December 12, 2001 and the meeting held on February 19, 2002 at Senator Velella's offices. URS revised the ULURP Application to include an explanation of the provisions to be included in the revocable licensing agreement for submittal to the NYCDCP for review.

Facility Planning/Preliminary and Final Designs

Principal work performed during this report period includes:

- The NYCDEP reported that, based on meetings with the NYSDEC, the East River CSO abatement facilities plans will be approved pending re-submittal of the water quality modeling results for each facility plan in a spatial format, and the designation of an area at each facility for the future installation of disinfection and dechlorination facilities. The NYCDEP received a letter from the NYSDEC, dated March 15, 2002, which provided further guidance for preparation and submission of final CSO abatement facilities plans. The NYCDEP, URS and LMS initiated preparation of a submittal in response to the NYSDEC letter.
- Preparation of the TMDL Program for settleables removal for Westchester Creek remains on hold until the TMDL Program for floatables removal for Alley Creek is finalized with the NYSDEC, as per NYCDEP direction.
- Presented a revised layout at the January 4, 2002 meeting for the Westchester Creek CSO Storage Tank Project, which eliminates the need for the land included within the easement boundaries, and thereby eliminates any impacts the easement may have on the project. The NYCDEP directed URS to proceed with the design of the project using the revised layout for the CSO storage tank.

- Continued final design of the site preparation contract for the Westchester Creek CSO Project, which includes the Little League restrooms and some preliminary site work for the CSO storage tank.
- Continued preliminary design for the CSO storage tank.
- Continued hydrologic and hydraulic analyses needed for design of the CSO storage tank.
- The NYCDEP prepared and submitted to Senator Velella's offices for review and signatures by the Little Leagues a letter summarizing the likely provisions to be included in the revocable licensing agreement. The presidents of the two Little League organizations signed the letter agreement, and returned it to the NYCDEP. Senator Velella's office returned the letter with the signatures of the two Little League presidents to the NYCDEP in late February 2002.
- Submitted a revised updated project schedule to the NYCDEP for review in mid-February 2002. The NYCDEP indicated that the time periods allowed for performing some of the scheduled activities, as well as receive required approvals from other NYCDEP bureaus and regulatory agencies, were not sufficient in length. Based on guidelines provided by the NYCDEP, URS initiated revisions to the project schedule.

Table 9

Westchester Creek CSO Project

Plan Elements:	Westchester Creek CSO Storage Tank
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 influent and effluent conduits along Waters Place and Eastchester Road; design and construction of a two-story support/ operations building and an air treatment building; and design and construction of amenities for the Bronxchester and Van Nest Little Leagues.
Cost:	$203,400,000
Status:	Final design underway for the site preparation contract (restroom 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; Negative Declaration needed for project; ULURP Application needs to be completed and certified; NYC Art Commission granted Full Preliminary Approval for restrooms and clubhouse facility for Little Leagues; licensing agreement between the NYCDEP and the Little League organizations needs to be prepared.

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.

Meetings

Principal meetings held during this report period were as follows:

- Meeting with NYCDEP, Hazen and Sawyer and Con Edison on January 18.
- Meetings with NYCDEP and Hazen and Sawyer on January 25 and April 1.

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 4/8/08, the Department stated a preference for Option 1) 120/208V.

1) 120/208V Option via an underground transformer vault approximately 75’ long by 8’ wide by 8’deep. The vault would be located in the northwest corner of the site between the underground Crew Quarters and the property line at West 11th Street. In addition to the vault, Con Edison would require two property line manholes (PLMs) to transition between the utility and the pumping station. However, there is insufficient space on the site to accommodate the PLMs. Con Edison still needs to rule if the PLMs can be eliminated and their function provided in Transition Boxes located within the station. Con Edison will rule on this following receipt of the Department’s 4/8 letter and subsequent engineering. Also, H&S is pursuing obtaining test pits under the BORE-1 contract to locate the 120” combined sewer that enters the station property along West 11th Street and would be in close proximity to the underground transformer vault.

2) 265/460V Option via an aboveground Network Protector Structure (NPS) approximately 40’ long by 20’ wide, single story. The NPS would 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 or via a ULURP action) would be required.

NYCDEP and Hazen and Sawyer continue to evaluate power supply options in conjunction with Con Edison. Following confirmation by Con Edison as to the utility's acceptability of the components of the selected option, a meeting will be scheduled with Con Edison.

Elimination of Dry Weather Overflows (DWOs)

Eight 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, 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.33rd Street	11/20/90	259	Abated as of 12/31/98
CI-639	CI Creek (SS) & W.12th 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.15th Street	12/12/90	3,326	Abated as of 12/31/98
CI-601	CI Creek & W.28th Street	11/16/90	158	Capital Project to abate discharge is under design

Dredge the Head End of Coney Island Creek

At this time, DEP has no immediate plans for dredging Coney Island Creek due to the high costs associated with land disposal and the inability to dispose materials at a ocean mud site.

Table 10

CONEY ISLAND CREEK CSO Project

	Contracts PS-79G, H, P, E	*Contract PS-79G*	*Contract PS-79F*
Plan Elements:	Upgrade Avenue V Pumping Station	Regulator Modifications	New Force Mains
Location:	Avenue V PS (Avenue V and West 11th 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 to reduce sewer surcharges; Generator system to improve station reliability; Architectural restoration of Main Building to 1915 appearance	Automate Reg. AV-1 throttling gate; 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:	Con Edison Network Protector Structure at property line on West 11th Street; relocation of station personnel during construction.	-	Routing of force main along parkland; Selective replacement of water and sewer utilities along route.

H.) Newtown Creek

The ongoing progress under the Newtown Creek Water Quality plan includes elements that are different from those identified as "Elements approved by NYS-DEC". Table 11A compared the ongoing plan elements with those listed by NYS-DEC.

- **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 center-line. 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 alternatives have been reviewed by the Department.

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 ULURP application was certified by the NYC Department of City Planning on October 22, 2001. It was reviewed by the Community Board and the Borough President's Office. A Public Hearing before the City Planning Commission was held on February 6, 2002 and the application was adopted by the City Planning Commission 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 replace with stainless steel pipe with air diffusers under the second stage of the construction contract.

- **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 is being performed to determine the size and operation of the throttling gate.

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

Preliminary Design

Preliminary design will be completed after the conclusions have been reviewed and incorporated into a new facility plan. The requirements of the throttle facility will be coordinated with Hazen and Sawyer as the facility will be constructed under the Newtown Creek WPCP project.

- **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 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. The City has raised concerns regarding dislocating 4 businesses with 105-115 employees. Therefore, the City has requested that the DEC review their current decision to disallow construction of a tank within the English Kills.

Facility Planning

A draft Facility Plan is being 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 is being performed.

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.

- **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 will be investigated. The investigation includes 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 force main to drain the tank for treatment at the Newtown Creek WPCP.
Cost:	Planning not complete	$8,000,000	$73,000,000
Status:	Facility plan elements for modifications to regulator and routing of the relief sewer are being prepared.	Preliminary design & CEQR completed. Permit issued by NYSDEC. Nationwide Permit No. 5 concurrence issued by USACOE. ULURP certified and under review by Borough President's office.	Siting in English Kills was rejected by NYSDEC. Identified preferred site at intersection of Johnson and Morgan Avenues after re-evaluation of siting alternatives. Preliminary plan and profile drawings and preliminary equipment sizing is being performed for construction of tank at preferred location.
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.	Acquisition of property required.

Table 11A Newtown Creek Status of "Elements Approved by NYS-DEC"				
"Element Approved by NYS-DEC"	**Status after Value Engineering**	**Work Progress**	**Alternative Plan Element**	**Current Status**
In-line storage at 3 locations	Plan element accepted	Determined during preliminary design to be inconsistent with the requirements of the New York City drainage plans.	Construct 36" diameter relief sewer between St. Nicholas Weir chamber and Regulator B1 as a substitute for storage in Scott Avenue and St Nicholas Avenue sewers. Construct modifications to Regulator B1 and throttle Kent Avenue interceptor, and enlarge storage tank as a substitute for storage in Knickerbocker Ave sewer.[1]	Facility Plan in preparation including relief sewer, regulator modifications, and throttling facility.
Install a mixing/aeration system in major branches of Newtown Creek	Perform pilot testing	Pilot testing completed. Facility plan and preliminary design reports completed for Phase I.	Split into two phases, Phase I located in Upper English Kills. Includes performance evaluation	Final design of Phase I is underway.
		Phase II not begun	Phase II aeration in Lower English Kills, East Branch and Dutch Kills	Phase II facility planning to begin after performance evaluation of Phase I
Construct separate sanitary sewers north and south of South 5th Street	Eliminated as not cost-effective. Diversion of wet weather flow through existing South 5th Street sewer accepted.	Construction of sanitary sewers had proposed as part of flow diversion. Work was stopped after VE. Diversion was in conflict with the City Drainage Plan.	Modify Regulator B1, construct throttling facility on the Kent Avenue Interceptor and construct a larger CSO storage tank to account for CSO reduction from the diversion. .[1]	Facility Plan in preparation including regulator modifications, and throttling facility.
3.5 MG storage tank (recommended in the Addendum to the report)	Plan element accepted, with additional modeling requested to see if tank size can be reduced	Proposed site could not be acquired. Alternative siting within English Kills was not acceptable to DEC unless no feasible land-based site could be found.	Construct 9 MG storage tank to provide water quality benefits comparable to previously approved elements. .[1]	Decision from NYS-DEC on feasibility of land based sites is pending.

[1] A facility plan for these alternative plan elements has not yet been finalized or approved by NYCDEP and may be changed.

Table 11A Newtown Creek Status of "Elements Approved by NYS-DEC"				
"Element Approved by NYS-DEC"	**Status after Value Engineering**	**Work Progress**	**Alternative Plan Element**	**Current Status**
Flushing tunnel	Investigated as an alternative to aeration but not cost-effective. Not included in recommended plan	No progress. Not included in any facility plan prepared by NYCDEP.	NYCDEP determined that aeration is a more cost effective solution than a flushing tunnel for DO improvement	Eliminated from further consideration
Dredge and dispose of Creek sediments	Not included in recommended plan. Investigated in response to NYS-DEC comments on plan.	A dredging feasibility study was completed dated September 2000.	Alternative not required. Not included in recommended plan.	NYCDEP has proposed an ecosystem restoration plan to the US ACOE to include removal of sediments in the upper branches of the Creek

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.

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 JA drainage area.

  A drainage plan for the Jamaica WPCP drainage area must be developed. Currently, the Department is in the process of selecting a consultant to award an engineering contract to develop the drainage plan.

- 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 detailed field investigations of the storm sewer system tributary to Thurston Basin. The results obtained from the field investigations are currently being analyzed.

  A portion of dry weather discharge to Thurston Basin has been eliminated through the construction of a sanitary sewer along Springfield Blvd from Linden Blvd to 131st Avenue.

  Commenced revisions to the Draft Preliminary Design Report for the Abatement of Meadowmere/Warnerville Dry Weather Discharges based on comments received from the DEP. Received DEP comments on the Draft ULURP and Draft EAS, and submitted a revised ULURP and EAS for DEP review on April 2nd. Completed topographic survey and developed base mapping of the project area for final design work. Met with the EDC on January 18th. This meeting was held to discuss the location and size of the Warnerville Pumping Station and the EDC's proposed development in the vicinity of the Warnerville community. The Warnerville wastewater pumping station will be sized to meet the full buildout conditions of Meadowmere and Warnerville including the potential future EDC development.

- 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.

- In-stream basin aeration.

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

Bergen Basin Recommendations

- Reduce CSO discharges through expansion of plant capacity.

  High rate physical/chemical treatment (HRPCT) is being considered to expand the Jamaica WPCP from 200 to 250 MGD wet weather capacity. Pilot testing has been successfully completed, and preliminary design of a demonstration facility is being developed.

° Eliminate JA WPCP dry weather discharge.

The abatement process to correct the dry weather illicit sewer connections into Bergen Basin, from Outfall JAM-006, has been substantially completed. The official certification confirming abatement was submitted.

The related projects were as follows:

Baisley Boulevard = #SEQ-002381 Construction completed
(Installed new sanitary sewer fronting properties along Baisley Boulevard)

Liberty Avenue = SE-744/SEQ-200260 Construction completed
Tuckerton Street
(Corrected illegal connections at locations along Liberty Avenue)

The completion of the above Capital Sewer Projects resulted in the abatement of 65,580 GDP of flow entering Bergen Basin. The total amount of flow abated to date is 340,000 GPD with the remaining 1,500 GPD the result of the four homeowners who could not afford to make the necessary repairs due to financial hardships. These locations were forwarded to NYC's Department of Housing Preservation & Development to make the necessary repairs, and then place lines on the properties. Housing has provided no information up to this reporting period. DEP has requested an update on the status of the four hardship properties.

° Evaluate the potential for 7 MG in-line storage.

A detailed analysis of flooding complaints in DEP's database of complaint records was conducted for the area proposed for in-line storage (Regulators 3 & 14). Based on the evaluation, in-line storage was found to be unfeasible due to excessive complaints.

° 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.

° In-stream basin aeration.

In-stream aeration is being demonstrated and evaluated in the Newtown Creek water body. 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 pilot destratification facility will be reactivated again in May. A schedule for the implementation of a permanent facility at Shellbank Basin was developed. The major tasks to be undertaken to place the permanent facility on-line include: site selection, ULURP, EAS, land acquisition, design, and construction.

- 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 January 15, February 19, and March 19, 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	
Construction Cost:	Pilot HRPCT - $100,000 Destratification - $100,000	$12.2 million	To be determined
Status:	Responding to comments on the Draft Preliminary HRPCT Design Report	Draft Preliminary Design, Draft ULURP, and Draft EAS Complete	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 January through March 2002, progress continued on tasks related to comprehensive plan development, public outreach, best management practices (BMPs) analysis, wet weather capacity analysis, CSO modeling, floatables loadings, and catch basin and CSO abatement demonstration projects.

- ***Comprehensive Plan Development***

Work continued on the development of comprehensive plans for the North River WPCP, Red Hook WPCP, and Hunts Point WPCP drainage areas. Development of a draft pilot comprehensive plan for floatables and settleable solids control for the Bowery Bay WPCP drainage area was submitted to NYCDEP. The technical memorandum "Comprehensive CSO Floatables and Settleable Solids Abatement Plan for the Bowery Bay WPCP Drainage Area" was reviewed by NYCDEP and during the first quarter 2002 comments were received. These comments were reviewed and will be discussed with NYCDEP and incorporated into the final report.

For the Red Hook WPCP Comprehensive Plan, work continued on evaluating conveyance, storage and treatment control options.

Joint planning meetings were held to coordinate efforts between the Use and Standards Attainment (USA) Bronx River Plan and the Hunts Point WPCP Comprehensive Plan. CSO and floatables control options were evaluated for Bronx River outfalls.

Work was initiated on the Tallman Island WPCP comprehensive plan. A meeting was held on March 11, 2002 to discuss the scope and schedule of the Tallman Island plan. A work plan was prepared for a field program that will include flow monitoring, regulator inspection, and manhole inspection. The results of the field investigation program will be used to better define hydraulic parameters for the modeling phase of the project. A meeting was held on March 21 with Tallman Island plant personnel to discuss the existing operating capabilities of the plant.

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

During this period, work was completed to cross-calibrate the RAINMAN and InfoWorks models for the Red Hook WPCP drainage area. RAINMAN was then used to evaluate the long-term statistics of the combined sewer system such as percent capture and frequency of overflows. The potential improvement from implementing an in-line storage of 4 million gallons was estimated using this model.

Through a coordinated effort with the USA Project and the Facilities Planning Project of URS, the RAINMAN model for Hunts Point WPCP was cross-calibrated for plant flows observed in 1996 and 2000. Results from the XP-SWMM model developed by URS and Lawler, Matusky and Skelly (LMS) were used as the basis for the cross-calibration. The peak flow and

overflow volume statistics at each of the outfalls are being evaluated to determine the feasibility of different floatable control options.

- ***Public Outreach***

The Public Outreach subtask neared completion as RoperASW (formerly Audits and Surveys Worldwide) completed work on a public-relations strategy that would most effectively increase public awareness of the problem and ultimately reduce littering. A draft of the final summary report was completed in December. The summary report also includes an analysis of an effective media campaign aimed at key target groups. Internal review of the report was completed in January. A meeting was held on February 11, 2002 to present the results of the study to the Citizens Advisory Committee (CAC) Education Subcommittee. A follow-up meeting to present and discuss all ongoing programs within the City was held on April 19, 2002. Comments from these meetings will be incorporated into the final report.

- ***Catch Basin Cleaning Demonstration Project***

The objective of the catch basin demonstration project is to estimate grit and litter accumulation rates in catch basins, evaluate the impact of grit and litter accumulation on hood performance and determine optimum-cleaning intervals based on floatables retention efficiency. This is being done to address concerns that the hooding of catch basins may increase the need and frequency for catch basin cleaning. Grit and litter accumulation rates were developed from inspections of approximately 4000 catch basins distributed across different land use classes.

A full-scale pilot catch basin system was used to assess the impact of grit and litter on hood efficiency. This system was constructed at the Tallman Island WPCP. Testing was initiated in January 2001, and was completed in late May 2001. A technical memorandum presenting the results and analyses of the entire Catch Bain Cleaning Demonstration Project is being prepared.

During this period, catch basin flooding data collected from the NYCDEP Maintenance Yards was compiled into a database. The database will be used to determine the most common reasons for basin flooding and will allow the catch basin database to be used to possibly associate catch basin characteristics, such as basin type or absence of curb inlet, to flooding.

- ***In-Stream Controls***

The NYCDEP 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.

- ***Wet Weather Capacity Analysis***

As part of the effort to maximize wet weather flows to the City's WPCPs, an evaluation of wet weather capacity of each plant servicing a combined collection system was initiated during the third quarter of 2000. This is being done to define the maximum flows that can be handled by the plant's headworks, primary and secondary treatment processes, and the bypass

channels, as well as to develop a generic wet weather operating plan to establish an operating strategy for maximizing wet weather capacity.

2001 hourly flow data for all WPCPs was reviewed and the Top Ten Storm Analysis for FY2001 was completed and submitted to DEP. This information was then used in determining wet weather capacities of the WPCPs and the amount of wet weather flow contained and treated.

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

Design and Construction

Spearin, Preston and Burrows was awarded the contract for the Cryders Lane Outfall Diversion Channel Project, as the lowest bidder with a lump sum bid of $2,184,000. Due to the seasonal dredging restrictions, construction activities will not start until approximately October 2002. A meeting was held April 4, 2002 with NYCDEP, HydroQual, and Spearin, Preston and Burrows to discuss engineering responsibilities, project schedule and startup issues.

Environmental Review

The final Army Corp of Engineers (USACE) permit was received during this period and reviewed. Modifications were made to the Department of Buildings (DOB) Work Notice/Permit and resubmitted to DOB.

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 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 January 1 to March 31, 2002.

- **Waterbody/Watershed Assessments**

The USA Project is conducting focused waterbody/watershed assessments on each of the 23 waterbodies that are organized into four groups. The Group 1 waterbodies are "pilot waterbody/watershed assessments" being conducted for Paerdegat Basin and the Bronx River. Group 2 waterbodies include Jamaica Bay, Mill and East Mill Basins, Fresh Creek, and Shellbank, Bergen and Thurston Basins. The Group 3 waterbodies are the East River, Alley Creek, the Hutchinson River, Westchester Creek, Flushing Creek and Bay, Newtown Creek, and Gowanus Canal. The Group 4 waterbodies are the Harlem River, Hudson River, Upper New York Bay, Lower New York Bay, Kill van Kull, Arthur Kill, Raritan Bay, and Coney Island Creek. 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

A preliminary waterbody/watershed plan for Paerdegat Basin was developed during the last reporting period so work on this waterbody/watershed assessment is virtually completed. Work is continuing for the Bronx River as the remaining Group 1 waterbody. Work is ongoing on the Group 2 and Group 3 waterbodies. Assessment work is scheduled to start in winter 2002 on the Group 4 waterbodies.

Field Investigations

Field Sampling and Analysis Programs (FSAPs) are being 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 being 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 continues on biological samples collected during the Group 2 and 3 and harbor-wide epibenthic and ichthyoplankton investigations. FSAPs were developed and mobilization began for executing follow-up biological investigations to those conducted previously in the East River and Jamaica Bay.

A sampling program was developed during this reporting period for characterizing total and fecal coliform and enterococcus in New York City's sanitary sewage. The program includes sampling the influent of all 14 New York City Water Pollution Control Plants (WPCP). Each WPCP will be sampled five times on a rotating schedule. Several samples will be collected on an hourly basis on each sampling day. Sampling will be performed following at least one full day of dry weather to assure that the samples truly represent sanitary sewage.

The USA Project is working closely with the DEP Harbor Survey to install continuous monitoring sensors throughout the New York Harbor Complex. Locations are being selected and installation hardware was fabricated for installing at least five sensors that will continuously monitor salinity, temperature, dissolved oxygen, and other parameters to better characterize water quality conditions.

Data Management

Sewer system, surface water, sediment, biological, and many other categories of data have been 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 CSO and water quality facility planning projects. The relational database is also 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. A customized graphical user interface was developed for the database that will facilitate efficient data extractions. The interface was provided to DEP for evaluation and testing.

Compilation of data collected during the Bronx River FSAP was completed this reporting period. Data collected during the Jamaica Bay (Group 2), East River (Group 3), and the harbor-wide epibenthic and ichthyoplankton FSAPs are currently being entered into the project database.

A data summary document has been updated with additional data collected to date by the USA Project. The document was originally developed to fulfill a request by the USA Project's Harbor-Wide Government Steering Committee for a detailed summary and review of the data thus far collected. This document will expand as data is compiled. A meeting was held with the Steering Committee for April 4, 2002 when the data will be reviewed and attendees will be asked to suggest enhancements to the document.

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.

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.

Watershed modeling is primarily being performed using HydroQual's RAINMAN model, which is a simplified rainfall-runoff models to calculate watershed pollutant loadings to receiving waters. Watershed models are being modified and updated for all fourteen of New York City's WPCPs. The models are being calibrated to the City's WPCP flow data for the years 1996 and 2000. These models are also being compared to existing stormwater management models (SWMM) representing the City's WPCP service areas that were developed for CSO facility planning projects. The RAINMAN models of the Hunts Point and Coney Island WPCP service areas are currently being cross calibrated to advanced SWMM models.

The USA Project is currently updating, upgrading, and utilizing receiving water models representing the Bronx River, Jamaica Bay and its tributaries, and the East River and its tributaries, the inner and outer entire harbor, and the New York Bight. 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.

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 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.

Evaluations of CSO abatement alternatives continued in support of waterbody/watershed planning the Bronx River. 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 the East River CSO Facility Planning Project.

Waterbody/Watershed Planning

The Paerdegat Basin Preliminary Waterbody/Watershed Plan was presented specifically to the U.S. Environmental Protection Agency and subsequently to the Harbor-Wide Government Steering Committee. Planning efforts were particularly focused on the Bronx River during this reporting period. Regulatory review, data analysis/evaluation, mathematical modeling, and engineering analysis components of the USA Project provided information for developing a Bronx River Preliminary Waterbody/Watershed Plan.

- **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. A meeting was held on January 17, 2002 during which the Paerdegat Basin Preliminary Waterbody/Watershed Plan was presented. A data review meeting was held with the Steering Committee on April 4, 2002.

U.S. Army Corps of Engineers Restoration Projects

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.

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 and resulting marine kills and odor releases, a full-scale destratification demonstration system has been installed in the 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 is intended to vertically mix the water column of Shellbank Basin to create an isothermal condition.

System Operations

The second year of the demonstration was successfully completed in September. Receiving water monitoring indicated that the facility was able to maintain a vertically uniform temperature in Shellbank Basin. No odor complaints associated with past chronic stratification were received from the residents near Shellbank Basin. The facility was shutdown for the fall/winter seasons and will be reactivated in the early summer of 2002.

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 several Track 1 CSO abatement projects and could be involved in Track 2 CSO abatement projects (floatables and settleables control).

C. High Rate Physical Chemical Treatment

A preliminary design of a HRPCT demonstration facility at the 26th Ward WPCP is currently being developed. The demonstration facility is being downsized due to operational concerns of the impact the demo facility will have on plant performance during the planned upgrade. This concern is based on the quantity of ferric chloride that the demo facility will use and the re-circulation of the ferric within the plant's liquid and sludge streams.

It is envisioned that the demo facility will consist of two HRPCT units running side-by-side, a Krueger Actiflo unit and an IDI Densadeg unit.

D. CSO Control Technologies

The evaluation of a hinged baffle system as retrofit CSO control technologies continued in this period. Alden Laboratories in Holden, MA began preliminary testing of the fixed baffle system on March 21, 2002. Testing of the hinged baffle is expected to begin the week of April 15. A trip by HydroQual to observe the testing is planned for April, with DEP's trip to follow in early May.

The technical memorandum on the evaluation of CSO control technologies is being updated and reviewed. The memorandum includes discussions on the regulator screening process, control technologies evaluation, the engineering design results and the conclusions of the hydraulic analysis on the regulators and combined sewer analysis.

V. Contracts

- **New Contracts**

  No new contracts were reported this quarter.

- **Change Orders**

  - ***Citywide Floatables***

    A final draft Change Order X-6 to the City-Wide Floatables Study Contract II was submitted to NYCDEP on February 11, 2002. The scope of work for this change order includes additional work involving assessment of end-of-pipe netting systems and booming and skimming facilities and modified designs for existing systems.

  - ***Coney Island Creek***

    Change Order X-3 to the Avenue V Pumping Station Outer Harbor CSO Contract 4 will be submitted following resolution of Con Edison power supply issues. The scope of work for this change order will include additional work involving the Con Edison Network Protector Structure or underground transformer vault, force main microtunneling, Wet Well partitioning and utility replacement aspects of the project.

VI. Public Participation

- **Public Outreach**

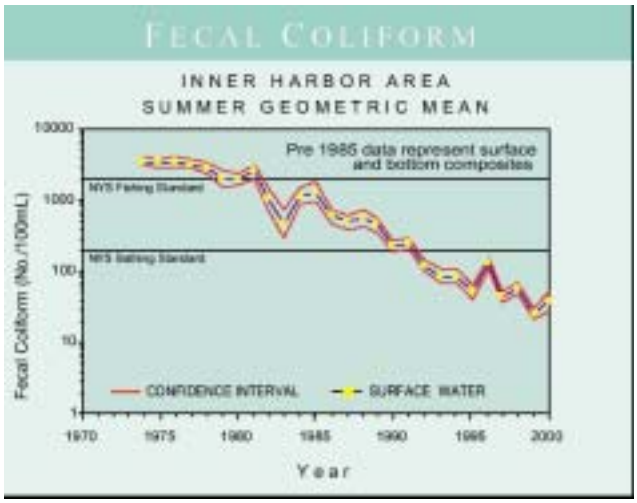
Citizens Advisory Committee on Water Quality

One *Citizens Advisory Committee on Water Quality Meeting* was held during the first quarter period, on February 13, 2002. The agenda from the meeting is presented in Appendix B.

VII. Water Quality

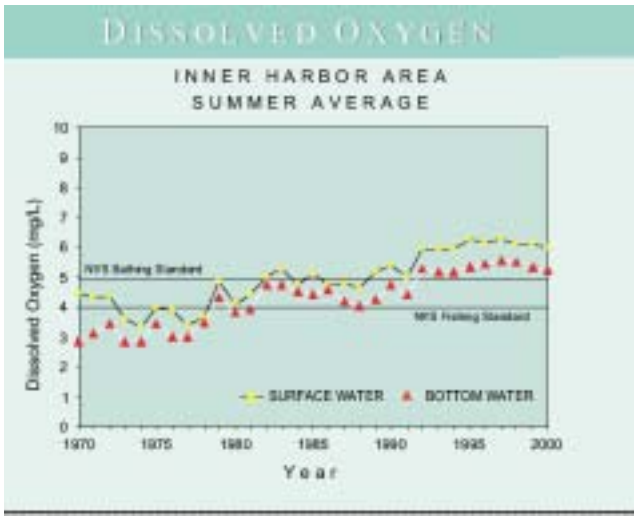
The following information was taken from the New York Harbor Water Quality Regional Summary Report for the year 2000.

- **Inner Harbor**



Sanitary water quality as estimated by fecal coliform (FC) concentrations was excellent for the Inner Harbor Area in summer 2000. All IH Area monitoring sites complied with monthly FC standards of 200 cells/ 100 mL.

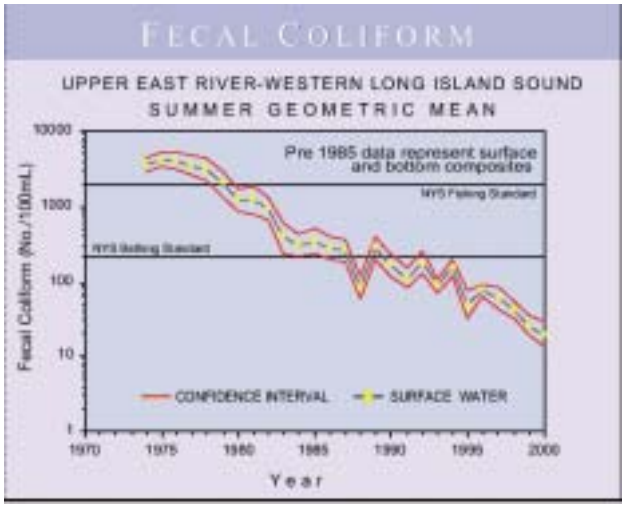
Fecal coliform concentrations for the Inner Harbor Area show a dramatic decline (over two orders of magnitude) from the early 1970s to the present time. Today's water quality has improved to the degree that surpasses conditions deemed appropriate for most recreational activities, whereas 1970s water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



Dissolved Oxygen (DO) values observed in the Inner Harbor Area for the summer of 2000 were quite favorable. Average DO values were above the DEC standard of 4 mg/L deemed appropriate for fishing for both surface and bottom waters.

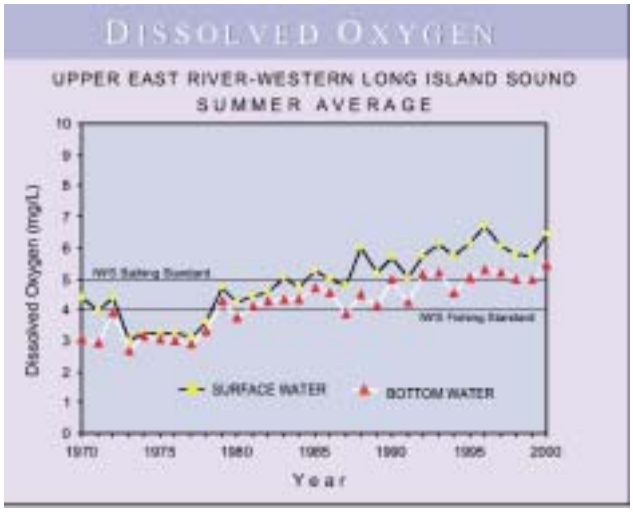
Dissolved oxygen has shown a consistent increase in the Inner Harbor Area over the past 30 years. The average DO values for bottom waters have increased from below 3mg/L in 1970 to above 5mg/L in 2000.

- **East River**



In 2000, sanitary water quality continued to be superior for this area. Fecal coliform concentrations for all monitoring sites were in compliance with their specified best use classifications for bathing and fishing.

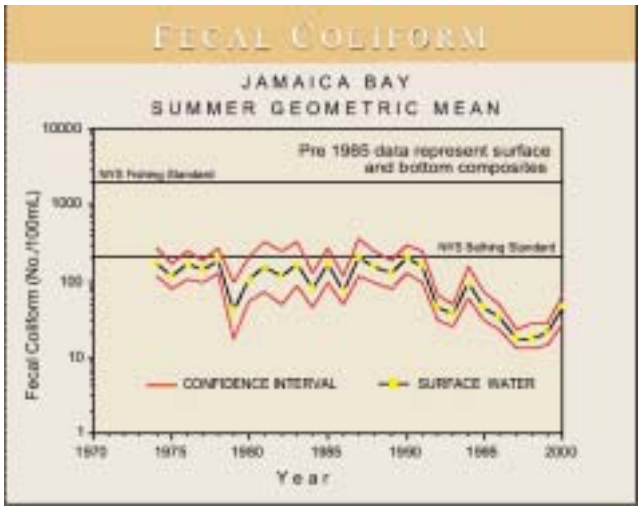
Fecal coliform concentrations continue to show a downward trend as they have for more than twenty years in the Upper East River-Western Long Island Sound (UER-WLIS) region.



Average summer DO values for the UER-WLIS vicinity met and exceeded 4 mg/L (conditions suitable for fishing). However, average bottom water values at three of the five stations designated as SB, were below the applicable 5 mg/L standard for bathing waters.

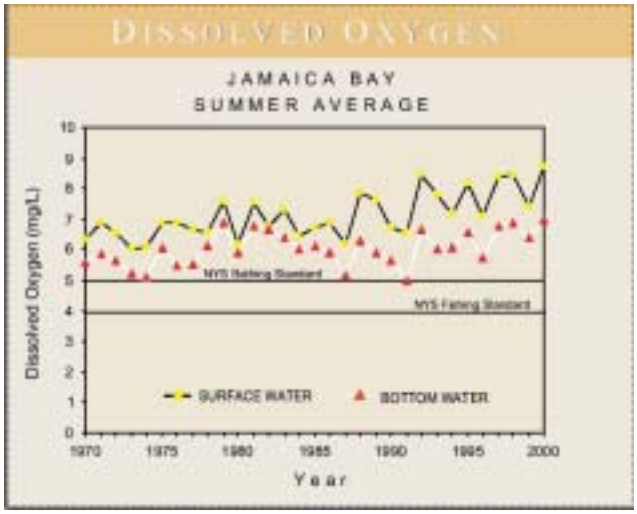
Trend analysis for the UER-WLIS area shows an increase in DO of about 1.5 mg/L for top waters and almost 2 mg/L for bottom waters since 1970.

- **Jamaica Bay**



In 2000, sanitary water quality was superior for Jamaica Bay, with summer fecal coliform concentrations well below standards for most stations.

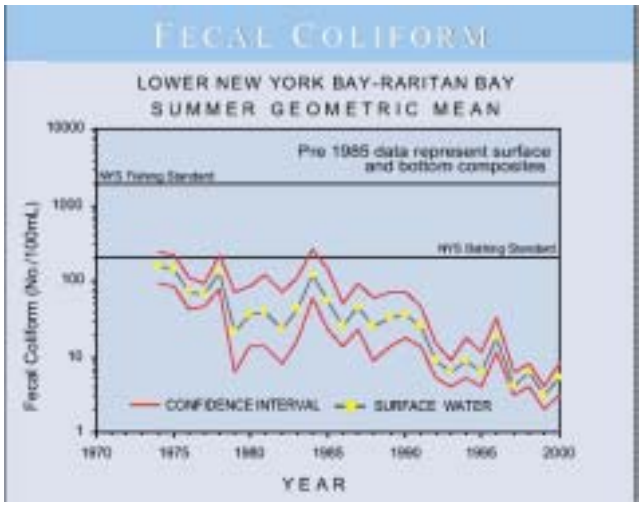
Trends for Jamaica Bay FC, from the early 1970s until 1990, show considerable variability above and below the standard. However, beginning in the 1990s, a significant improvement is apparent. From this point, and continuing through 1999, the geometric mean FC concentration decreased by an order of magnitude.



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.

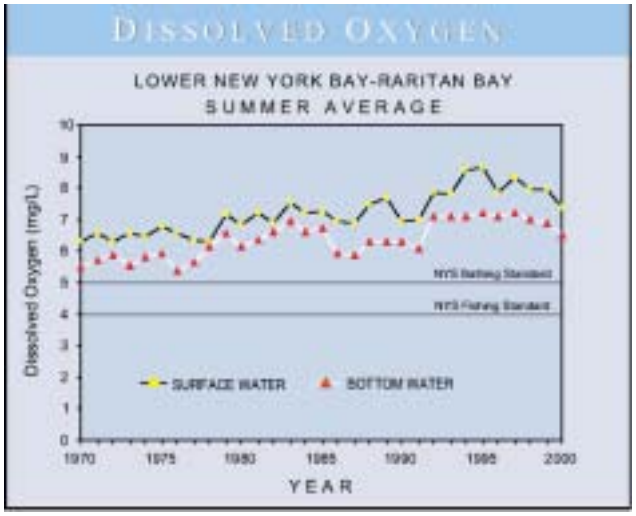
Average DO concentrations in Jamaica Bay have shown improvement over the past 30 years; with top waters often reaching DO levels over 8 mg/L since the 1990s.

- **Outer Harbor**



Sanitary water quality as estimated by fecal coliform was superior to the Lower New York Bay – Raritan Bay (collectively, dubbed Outer Harbor) in summer 2000. Examination of seasonal FC numbers shows waters of the Outer Harbor to meet and surpass NYS standards for this area.

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 over 1.5 mg/L, from just over 6 mg/L to nearly 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 JANUARY 2002 - MARCH 2002

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

April 2002
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: JANUARY 2002 THROUGH MARCH 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	Yes
2. Catch Basin Hooding in Phase III Areas	Yes
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 1st 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

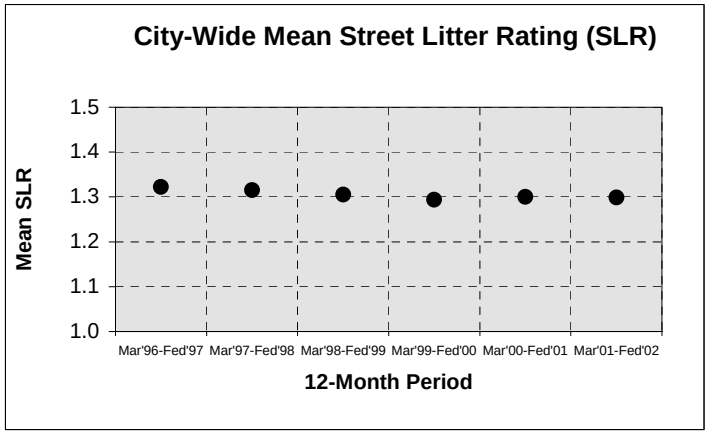
Previous studies have indicated that most floatable litter in New York Harbor can be traced to city streets (HydroQual, 1993). Although many factors can affect the amount of litter on city streets at any given time, the City of New York attempts to control litter levels through a street-sweeping program 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.

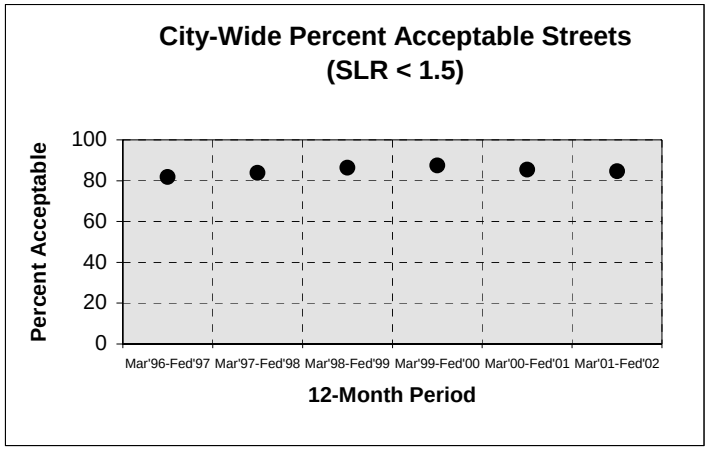
According to the Mayor's Office of Operations, city-wide street litter levels have improved substantially over the past six years. Scorecard Program results for the past six 12-month periods are summarized in the following table and on Figure 1. These results show that street cleanliness has been maintained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

City-Wide Street Cleanliness, 1996 - 2002

Measure of Street Cleanliness	Results of Scorecard Litter Ratings (SLR)					
	3/96-2/97	3/97-2/98	3/98-2/99	3/99-2/00	3/00-2/01	3/01-2/02
Mean SLR[(1)]	1.32	1.32	1.31	1.29	1.30	1.30
% Acceptable[(2)]	81.7	83.9	86.4	87.5	85.5	84.7
% Filthy[(3)]	2.8	2.1	1.2	1.2	1.3	1.7

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





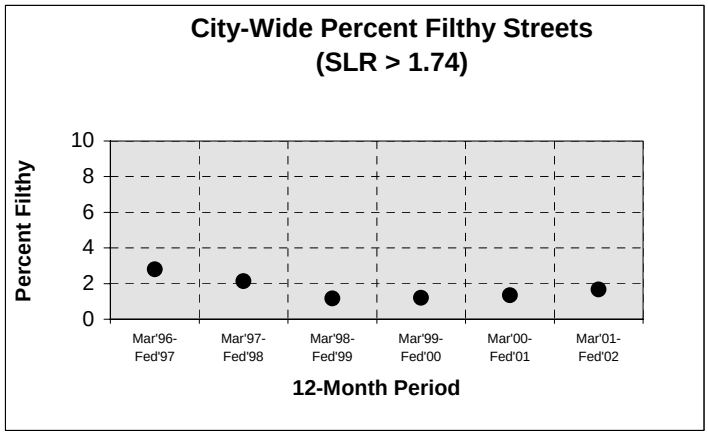


Figure 1. Street Cleanliness

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 March 31, 2002, the IFCP included 19 boomed sites and 4 netted sites draining a total of approximately 58,600 acres. The contractor servicing these sites defaulted in December 2001 and, although an emergency contract was issued in early 2002 to restore service, data from those efforts have not yet been processed. Data pertaining to yields from these sites will be included as available.

DEP also conducts retrievals of large floating debris using the *Cormorant* skimmer vessel throughout New York Harbor. During January through March 2002, the *Cormorant* retrieved a total of approximately 50.8 tons of floating debris, including roughly 6.8 tons of trash, 3.3 tons of metal, 2.5 tons of plastic, and 0.7 tons of rubber. The remaining 37.5 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 1st Quarterly Report – Year 2002.

e) Maximizing Wet-Weather Flow to WPCPs

During the first quarter of 2002 HydroQual completed the following draft documents:

"Wet-Weather Operating Plan for Demonstration and Evaluation of Maximizing Treatment of Wet-Weather Flows at the Red Hook Wastewater Pollution Control Plant";

"Work Plan – Maximizing Treatment of Wet-Weather Flows at the Red Hook Wastewater Pollution Control Plant";

"Specification for Preparing Wet-Weather Operating Plans for New York City Wastewater Pollution Control Plants".

The first document, the wet-weather operating plan for Red Hook, was the subject of a CSO workshop on February 8, 2002. In addition to the wet-weather operating plan, other topics

discussed included obstacles to maximizing wet-weather capacity, implications of BNR and construction activities on wet-weather capacity, pump-back strategies for CSO retention facilities and the possibility of treating more than 2xDDWF.

The second document, the work plan, presents a plan for using Red Hook as a demonstration plant for maximizing treatment of wet-weather flows. The plan specifies flow objectives and supplemental data collection requirements.

The last document, the wet-weather plan specification, outlines how a wet weather plan should be prepared for New York City wastewater pollution control plants. It identifies what unit operations should be included in the plan, identifies the content of the plan, provides some generic text useful to all plans, provides guidelines for determining wet-weather capacity and identifies special considerations such as CSO pump-back from retention facilities, BNR and construction. The plan as outlined in this document conforms with NYSDEC guidelines for wet-weather operating plans

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 4th 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 being identified for reconstruction, and based on estimates by Liro Consulting Engineers, P.C., there are roughly 1,067 catch basins that cannot be inspected and hooded as part of the ongoing program because they are located in "high-speed roadways" and as such require DOT permits as well as special safety equipment. Liro Consulting Engineers, P.C. has visited these high-speed sites to determine the need for safety measures, lane closures, etc., and contract specifications were completed for this project (MI-4) by January 2001. National Water Main was selected as the contractor to perform this work and is expected to start during the second quarter of 2002.

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:

Reinspection Round	Phase	Completion
1	1	December 1999
1	2	September 2000
2	1	January 2002

According to DEP, all missing hoods are being replaced within 90 days of the inspection, as per the Consent Order.

HydroQual will be assisting the Department in the reinspection program as part of a change order to the Catch Basin Inspection and Hooding Project. HydroQual's activities are expected to start in May of 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. HydroQual, under Change Order X-2 to Contract IV (Catch Basin Program) will be providing catch basin re-inspection services consistent with the requirements of the Modified Consent Order, which will allow hood loss and replacement rates to be monitored. This information will be reported in future quarterly reports as available.

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 Education

Please refer to Section VI of the NYC's CSO Program 1st Quarterly Report – Year 2002.

7. Pilot Studies and Demonstration Projects

Please refer to Section IV of the NYC's CSO Program 1st Quarterly Report – Year 2002.

APPENDIX B

CITIZEN ADVISORY COMMITTEE ON WATER QUALITY – AGENDA

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

AGENDA

CITIZENS ADVISORY COMMITTEE
on

WATER QUALITY

MEETING NO. 49
Wednesday, February 13, 2002
3:00 p.m. - 6:00 p.m.

Real Estate Board of New York
570 Lexington Avenue, New York, NY

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1. Opening Remarks -- Review of November 14, 2001 Meeting Summary	CAC co-chairs NYCDEP
2. Wetlands Restoration Work,	Mark Matsil, New York City Department of Parks and Recreation
3. CSO & Floatables Public Education, Review	Rick Raymond, Richard Raymond Associates
4. Other Business	CAC, NYCDEP
5. Next Meeting, March 13, 2002	