

Atlantic Ocean/Long Island Sound (New York City Waters)



Jamaica Bay/Rockaway Inlet Watershed (0203020201)

Water Index Number

(MW8.5) JB
 (MW8.5a) JB-238 thru 241 (select)
 (MW8.5a) JB-241
 (MW8.5a) JB-241 thru 249 (select)
 (MW8.5a) JB-241a
 (MW8.5a) JB-247
 (MW8.5a) JB-248
 (MW8.5a) JB-248a
 (MW8.5a) JB-249
 (MW8.5a) JB..P1033
 (MW8.6) JB
 (MW8.6a) JB-249a
 (MW8.6a) JB-250
 (MW8.6a) JB-250a
 (MW8.6a) JB 250b
 (MW8.6a) JB 251
 (MW8.6a) JB 252a
 (MW8.6a) JB..P0009

Waterbody Segment

Jamaica Bay, Eastern, and tribs (Queens) (1701-0005)
 LI Tidal Tribs to Jamaica Bay (1701-0224)
 Valley Stream, Upper, and tribs (1701-0225)
 Minor Tidal Tribs to Jamaica Bay (1701-0194)
 Thurston Basin (1701-0152)
 Bergen Basin (1701-0009)
 Hawtree Basin (1701-0007)
 Shellbank Basin (1701-0001)
 Spring Creek and tribs (1701-0361)
 Baisley Pond (1701-0197)
 Jamaica Bay, Western, and tribs (Brklyn) (1701-0226)
 Hendrix Creek (1701-0006)
 Fresh Creek (1701-0362)
 Paerdegat Basin (1701-0363)
 Mill Basin and tidal tribs (1701-0178)
 Gerritsen Creek and tidal tribs (1701-0193)
 Sheepshead Bay (1701-0148)
 Prospect Park Lake (1701-0196)

Assessment Category

Impaired Seg
 MinorImpacts
 Impaired Seg
 MinorImpacts
 Impaired Seg
 Impaired Seg
 MinorImpacts
 Impaired Seg
 Impaired Seg
 Threatened
 Impaired Seg
 Impaired Seg
 MinorImpacts
 Impaired Seg
 Impaired Seg
 MinorImpacts
 MinorImpacts
 UnAssessed

Jamaica Bay, Eastern, and tribs (Queens) (1701-0005)

Impaired Seg

Waterbody Location Information

Revised: 01/27/2011

Water Index No: (MW8.5) JB
Hydro Unit Code: 02030202/020 **Str Class:** SB
Waterbody Type: Estuary
Waterbody Size: 7121.2 Acres
Seg Description: portion of bay and selected tidal tribs within Queens

Drain Basin: Atlantic-Long Island Sound
Reg/County: 2/Queens Co. (41) ...
Quad Map: JAMAICA (S-25-2) ...

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-------------------|----------|-----------------------|
| PUBLIC BATHING | Impaired | Known |
| Fish Consumption | Stressed | Suspected |
| AQUATIC LIFE | Impaired | Known |
| RECREATION | Impaired | Known |
| HABITAT/HYDROLOGY | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables), SPECIES ALTERATION, D.O./OXYGEN DEMAND, NUTRIENTS (nitrogen), PATHOGENS, Ammonia (proposed new std)
Suspected: Priority Organics (PCBs/migratory fish)
Possible: Oil and Grease

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, HABITAT MODIFICATION, MUNICIPAL (NYC WWTPs, Cedarhurst), URBAN/STORM RUNOFF, Deicing (stor/appl) (airport), Other Source (migratory fish species), Other Sanitary Disch
Suspected: ON-SITE/SEPTIC SYST, OTHER SOURCE (boat pollution), Chemical Leak/Spill, Industrial
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** High
TMDL/303d Status: 1,3c,4b,4c* (Individual Waterbody Impairment Requiring a TMDL, more)

Further Details

Overview

Public Bathing and other recreational uses, as well as aquatic life in eastern Jamaica Bay are impaired by a variety of pollutants from municipal discharges, combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. Failing and/or inadequate on-site system discharges (Broad Channel Island) have also been cited as a problem. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in algal blooms and low dissolved oxygen. Neither coliform nor D.O. standards are currently being met in the waterbody. Coliform levels are primarily influenced by CSOs in the tributary watersheds and are most elevated near trib mouths.

D.O. levels are low throughout the bay, but severe conditions occur in Grassy Bay where vertical stratification and hypoxic conditions frequently prevail. Fish consumption is considered to experience minor impacts due to precautionary health advisories limiting the consumption of certain species due to elevated PCB levels. These advisories are the result of the migratory range of these fish species, and not related to any known contamination in this specific waterbody. Habitat modification, particularly the loss of seagrass beds in the bay, are also a major concern.

Shellfishing Use

Shellfish harvesting for consumption purposes in these tribs is restricted due to the year-round designations these waters (Shellfish Growing Area #60) as uncertified for the taking of shellfish for use as food. Shellfish that grow in contaminated waters can accumulate disease-causing microorganisms (bacteria, viruses) that can be eaten with the shellfish. This designation is based on results of water quality monitoring and evaluation of data against New York State and National Shellfish Sanitation Program monitoring criteria for pathogens. Certified/uncertified shellfish area designations are revised regularly; for detailed descriptions of current designations, go to www.dec.ny.gov/regs/4014.html. (DEC/DFWMR, Region 1, July 2010)

Although this waterbody is monitored through the shellfish program, its class SB designation does not include shellfishing as an appropriate use so these waters are not assessed for support of shellfishing use. However, based on the shellfishing restrictions, other recreational uses are considered to be stressed. (DEC/DFWMR, BMR and DEC/DOW, BWAM/WQAS, July 2010)

Bathing Beach Assessment

Recreational use including public bathing is considered to experience minor impacts based on the shellfish advisory indicating somewhat elevated bacteriological levels. Beach monitoring is not conducted at any location in the segment. (from summary of local 2008 beach monitoring data as cited in Testing the Waters, NRDC, 2009)

Fish Consumption Advisories

NYS DOH has issued precautionary health advisories recommending limiting consumption of American eel, bluefish, striped bass and weakfish from these waters due to possible elevated levels of PCBs. These advisories are largely precautionary and are related to the specific habits and characteristics of these species, specifically the wide migratory range, predatory nature and high lipid/fat content that make them more likely to accumulate contaminants. Because possible contamination is more a result of the migratory range and other factors rather than any known sources of PCBs in this waterbody, fish consumption use in this segment is considered to be stressed. In addition, for some species the advisories recommend limiting consumption to no more than one meal per week which is no more stringent than the general statewide advisory for all New York waters and does not result in significant impact to uses. Health advisories regarding the consumption of fish are revised regularly; for the most current advisories, go to www.nyhealth.gov/environmental/outdoors/fish/fish.htm. (2009-10 NYS DOH Health Advisories and DEC/DFWMR, Habitat, January 2010)

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. In Jamaica Bay, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Loss of Seagrasses in Jamaica Bay is an additional concern. Seagrasses have long been recognized as vital habitat and nursery grounds for commercially, recreationally and ecologically important fish and shellfish species. They also

function as a food source for fish and waterfowl, important nutrient and carbon cyclers, sediment stabilizers, contributors to the marine and estuarine food web, and indicator species of estuarine health and quality. Acres of seagrass have been reduced to about one-tenth their historic level due primarily to anthropogenic causes, primarily decreased water quality and clarity due to increased nutrient loading, as well as large phytoplankton blooms, habitat degradation, fishing gear and boating impacts, and climate change impacts. Natural events such as disease also contribute to seagrass loss. Current efforts to restore Jamaica Bay include considerable focus on seagrass habitat restoration. (DEC/DFWMR, Region 1, August 2009)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (wastewater treatment)

Recent and anticipated future changes to water quality standards that research has shown is necessary to protect resources may result in the modification of SPDES permit limits for facilities that discharge to waters where these standards apply. In some cases, meeting these new, more stringent, standards may require changes to treatment processes and/or upgrades to existing treatment facilities. Changes to two water quality standards, in particular, are likely to result in changes to discharge limits for facilities that discharge to some waters of the state. Based on residual chlorine standards promulgated in 1991 new residual chlorine limits are being required of all facilities that chlorinate their effluent and discharge to marine waters, including the Cedarhurst WWTP which discharges to Jamaica Bay, as well as Lawrence, Patchogue, Cedarhurst, Jones Beach and several others that discharge to other area waters. Likewise, the recently proposed and anticipated adoption of a new standard for marine ammonia, will affect a number of dischargers to marine waters. The Department has identified four facilities including Cedarhurst that will be specifically impacted by the new standard if it is adopted. The others are Long Beach, Bay Park and Cedarhurst.

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

This portion of Jamaica Bay is included on the NYS 2010 Section 303(d) List of Impaired Waters. The waterbody is included on Part 1 of the List as an impaired waterbody requiring development of a TMDL to attain water quality standards for nitrogen and low dissolved oxygen. The waterbody also appears on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred (pending implementation and evaluation of other restoration measures). However this updated assessment suggests that it may be appropriate to move the the listing for nitrogen and low dissolved oxygen to Part 3c of the list due to the Jamaica Bay Consent Order and the nitrogen reduction efforts it requires. Impairments due to floatables are categorized as not requiring listing due to other enforceable measures, namely floatables control measures in the CSO Order, expected to address the impairment (Category 4b water/impairment). This waterbody was first listed on the 2002 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

This segment includes the eastern portion of Jamaica Bay that lies within the boundaries of Queens County, and east of a line from southeasterly tip of Coney Island peninsula near Manhattan Beach to westerly shoreline west of lookout tower on Rockaway Point. The waters of Jamaica Bay include Gerritsen Inlet, Dead Horse Bay, Head of Bay and all waters of Jamaica Bay and Rockaway Inlet for which a waters index number has not been assigned within Kings and Queens Counties. The waters of this segment are designated Class SB.

LI Tidal Tribs to Jamaica Bay (1701-0224)

MinorImpacts

Waterbody Location Information

Revised: 03/26/2001

Water Index No: (MW8.5a) JB-238 thru 241 (select) **Drain Basin:** Atlantic-Long Island Sound
Hydro Unit Code: 02030202/020 **Str Class:** SC Southern Long Island
Waterbody Type: Estuary **Reg/County:** 1/Nassau Co. (30)
Waterbody Size: 226.5 Acres **Quad Map:** JAMAICA (S-25-2) ...
Seg Description: total area of selected tidal tribs to bay

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Recreation | Stressed | Known |

Type of Pollutant(s)

Known: PATHOGENS
Suspected: ---
Possible: ---

Source(s) of Pollutant(s)

Known: OTHER SOURCE (boat pollution), OTHER SANITARY DISCH, URBAN/STORM RUNOFF
Suspected: ---
Possible: ---

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: ext/WQCC
TMDL/303d Status: n/a

Resolution Potential: Medium

Further Details

Overview

Recreational uses in these tribs to Jamaica Bay are thought to experience minor impacts due to pathogens from urban stormwater runoff and other nonpoint sources.

Shellfishing Use

Shellfish harvesting for consumption purposes in these tribs is restricted due to the year-round and seasonal designations of these waters (a portion within Shellfish Growing Area #60) as uncertified for the taking of shellfish for use as food. Shellfish that grow in contaminated waters can accumulate disease-causing microorganisms (bacteria, viruses) that can be eaten with the shellfish. This designation is based on results of water quality monitoring and evaluation of data against New York State and National Shellfish Sanitation Program monitoring criteria for pathogens. Certified/uncertified shellfish area designations are revised regularly; for detailed descriptions of current designations, go to www.dec.ny.gov/regs/4014.html. (DEC/DFWMR, Region 1, July 2010)

Although this waterbody is monitored through the shellfish program, its class SC designation does not include shellfishing as an appropriate use so these waters are not assessed for support of shellfishing use. However, based on

the shellfishing restrictions, other recreational uses are considered to be stressed. (DEC/DFWMR, BMR and DEC/DOW, BWAM/WQAS, July 2010)

Bathing Beach Assessment

Recreational use including public bathing is considered to experience minor impacts based on the shellfish advisory indicating somewhat elevated bacteriological levels. Beach monitoring is not conducted at any location in the segment. (from summary of local 2008 beach monitoring data as cited in Testing the Waters, NRDC, 2009)

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for these tribs, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year

intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Segment Description

This segment includes the tidal portions of Motts Basin (-238a), Inwood Creek (-238), Motts Creek (-240), Hook Creek (-241).

Valley Stream, Upper, and tribs (1701-0225)

Impaired Seg

Waterbody Location Information

Revised: 12/14/2009

Water Index No: (MW8.5a) JB-241 **Drain Basin:** Atlantic-Long Island Sound
Hydro Unit Code: 02030202/020 **Str Class:** C Southern Long Island
Waterbody Type: River **Reg/County:** 1/Nassau Co. (30)
Waterbody Size: 3.0 Miles **Quad Map:** ()
Seg Description: stream and tribs above trib -3 (freshwater)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|-----------|-----------------------|
| AQUATIC LIFE | Precluded | Known |
| RECREATION | Impaired | Known |

Type of Pollutant(s)

Known: UNKNOWN TOXICITY
Suspected: D.O./Oxygen Demand, Nutrients
Possible: - - -

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected: - - -
Possible: On-Site/Septic Syst,

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 2 (Problem Verified, Cause Unknown)
Lead Agency/Office: DOW/Reg1
TMDL/303d Status: n/a->3b

Resolution Potential: Medium

Further Details

Overview

Aquatic life and recreational uses in Valley Stream are impaired by unknown toxicity. Organic impacts from municipal or other sources are suggested. Urban storm runoff is also a source of the impairment.

Water Quality Sampling

A biological (macroinvertebrate) assessment of Valley Stream in North Valley Stream (at end of West Fenimore Street) was conducted as part of the RIBS biological screening effort in 2003. Sampling results indicated severely impacted conditions. In such samples the fauna is extremely altered and comprised of tolerant species. Diversity and abundance of organisms is significantly reduced. The nutrient biotic index indicates (no/low/some/elevated/highly elevated) enrichment and impact source determination reveals a community that is most similar to those influenced by municipal discharges and organic wastes. The sampling habitat was less than ideal and likely had some influence on the assessment. Nonetheless, water quality is considered to be poor and aquatic life is not fully supported in the stream. This segment is considered to be impaired. (DEC/DOW, BWAM/SBU, December 2009)

Section 303d Listing

Valley Stream is included on the 2010 NYS Section 303(d) List of Impaired Waters. It is included on Part 3b of the List due to aquatic toxicity , as a waterbody for which TDML development may be deferred pending the verification of the cause/pollutant causing the impairment. (DEC/DOW, BWAM, WQAS, July 2010)

Segment Description

This segment includes the entire stream above tidal waters and all tribs. The waters of the stream are Class C. Tribs to this reach/segment are also Class C.

Minor Tidal Tribs to Jamaica Bay (1701-0194)

MinorImpacts

Waterbody Location Information

Revised: 04/07/2011

Water Index No: (MW8.5a) JB-241 thru 249 (select) **Drain Basin:** Atlantic-Long Island Sound
Hydro Unit Code: 02030202/020 **Str Class:** I Southern Long Island
Waterbody Type: Estuary **Reg/County:** 2/Queens Co. (41)
Waterbody Size: 6.5 Acres **Quad Map:** JAMAICA (S-25-2)
Seg Description: total area of all selected tribs

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Suspected |
| Recreation | Stressed | Suspected |

Type of Pollutant(s)

Known: ---
Suspected: D.O./OXYGEN DEMAND, PATHOGENS, SILT/SEDIMENT, Nutrients
Possible: Water Level/Flow

Source(s) of Pollutant(s)

Known: ---
Suspected: OTHER SANITARY DISCH, URBAN/STORM RUNOFF
Possible: Comb. Sewer Overflow

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC **Resolution Potential:** Medium
TMDL/303d Status: n/a

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in these tribs to Jamaica Bay are thought to experience impacts due to a variety of pollutants from urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a

is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for these tribs, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Tribes Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of the 26th Ward WPCP, upgrading of the Spring Creek Auxillary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan, and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects

in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

These tribs to Jamaica Bay are not currently included on the NYS 2010 Section 303(d) List of Impaired Waters. Pending the evaluation of more recent monitoring data, it may be appropriate to consider addition of this waterbody to the List for nutrients, low D.O. and/or pathogens. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the total area of these tidal basins, above the mouth at Jamaica Bay. Waters of this segment include the lower tidal portion of Valley Stream (-241).

Thurston Basin (1701-0152)

Impaired Seg

Waterbody Location Information

Revised: 09/07/2001

| | | | |
|-------------------------|------------------|---------------------|----------------------------|
| Water Index No: | (MW8.5a) JB-241a | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/020 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Queens Co. (41) |
| Waterbody Size: | 31.3 Acres | Quad Map: | JAMAICA (S-25-2) |
| Seg Description: | entire basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Impaired | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables), D.O./OXYGEN DEMAND
Suspected: Nutrients, Oil and Grease, Pathogens
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, OTHER SANITARY DISCH (illegal connections),
URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

| | | |
|-----------------------------|--|-----------------------------------|
| Issue Resolvability: | 3 (Strategy Being Implemented) | |
| Verification Status: | 5 (Management Strategy has been Developed) | |
| Lead Agency/Office: | ext/NYC | Resolution Potential: High |
| TMDL/303d Status: | 3c,4b (Waterbody Being Addressed by Other Means, more) | |

Further Details

Overview

Aquatic life and recreational uses in Thurston Basin are impaired by a variety of pollutants from municipal discharges, combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. D.O. standards are currently not being met in the waterbody, with periodic exceedences at the head of the basin where circulation and flushing is limited. Coliform levels are primarily influenced by CSOs and are occasionally high.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have

been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Thurston Basin, dissolved oxygen criteria is projected to be attained 60% to 78% of the time, while coliform criteria is met 92% to 100% of the time; higher levels of attainment occurring nearer the mouth of the trib. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. Previous assessments have noted that dry weather discharges from the communities of Meadowmere and Warnerville also impact water quality in the basin. However these discharges are thought to have been abated by a project completed in 2009 under the NYC CSO Order. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Tribes Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of

the 26th Ward WPCP, upgrading of the Spring Creek Auxiliary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan, and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Thurston Basin is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen. The waterbody is included on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO Consent Order and Jamaica Bay Nitrogen Consent Judgment). This waterbody was first listed on the 2002 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Bergen Basin (1701-0009)

Impaired Seg

Waterbody Location Information

Revised: 09/07/2001

| | | | |
|-------------------------|-----------------|---------------------|----------------------------|
| Water Index No: | (MW8.5a) JB-247 | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/020 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Queens Co. (41) |
| Waterbody Size: | 69.3 Acres | Quad Map: | JAMAICA (S-25-2) |
| Seg Description: | entire basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables), D.O./OXYGEN DEMAND, NUTRIENTS (Nitrogen), PATHOGENS
Suspected: Nutrients, Oil and Grease
Possible: Metals, Priority Organics

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, MUNICIPAL (Jamaica WPCF), OTHER SANITARY DISCH (illegal connections), URBAN/STORM RUNOFF, Deicing (stor/appl) (JFKennedy Airport)
Suspected: Chemical Leak/Spill
Possible: Private/Comm/Inst

Resolution/Management Information

| | | |
|-----------------------------|--|-----------------------------------|
| Issue Resolvability: | 3 (Strategy Being Implemented) | |
| Verification Status: | 5 (Management Strategy has been Developed) | |
| Lead Agency/Office: | ext/NYC | Resolution Potential: High |
| TMDL/303d Status: | 1,3c,4b (Individual Waterbody Impairment Requiring a TMDL, more) | |

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Bergen Basin are impaired by a variety of pollutants from municipal discharges (Jamaica WPCF), combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. Runoff from JF Kennedy Airport (including de-icing chemicals) and seepage from fuel storage facilities also impact water quality in the basin. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Neither coliform nor D.O. standards are currently being met in the waterbody. Low D.O. levels are persistent in the upper basin; low D.O. near the mouth is more episodic. Coliform levels are primarily influenced by CSOs.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal

coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Bergen Basin, dissolved oxygen criteria is projected to be attained 48% to 80% of the time, while coliform criteria is met 58% to 100% of the time; higher levels of attainment occurring nearer the mouth of the trib. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Tribes Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of the 26th Ward WPCP, upgrading of the Spring Creek Auxiliary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan,

and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Bergen Basin is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen, nitrogen and pathogens. The waterbody is included on Part 1 of the List as a waterbody requiring TMDL development (or other appropriate restoration measures) for low D.O. and nitrogen. The waterbody also appears on Part 3 of the List for pathogens as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). It may be appropriate to move all listing for this waterbody to Part 3 or the list due to consent order actions; this should be considered during the next listing cycle. This waterbody was first listed on the 1998 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Hawtree Basin (1701-0007)

MinorImpacts

Waterbody Location Information

Revised: 04/07/2011

| | | | |
|-------------------------|-----------------|---------------------|----------------------------|
| Water Index No: | (MW8.5a) JB-248 | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/020 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Queens Co. (41) |
| Waterbody Size: | 33.2 Acres | Quad Map: | JAMAICA (S-25-2) |
| Seg Description: | entire basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Known |
| Recreation | Stressed | Known |
| Aesthetics | Stressed | Suspected |

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND
Suspected: PATHOGENS, Aesthetics (floatables), Nutrients
Possible: - - -

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected:
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: n/a->3c?

Resolution Potential: Medium

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Hawtree Basin are known to be impacted, and may be impaired, by a variety of pollutants from urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Neither D.O. nor pathogen standards are thought to be met in the waterbody, but this assessment is based on monitoring data that predates sanitary sewer construction in the Hamilton Beach area and conditions need to be verified.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular

waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for Hawtree Basin, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Hawtree Basin is not currently included on the NYS 2010 Section 303(d) List of Impaired Waters. Pending the evaluation of more recent monitoring data, it may be appropriate to consider addition of this waterbody to the List for nutrients, low D.O. and/or pathogens (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Shellbank Basin (1701-0001) Impaired Seg

Waterbody Location Information

Revised: 05/10/2002

Water Index No: (MW8.5a) JB-248a
Hydro Unit Code: 02030202/020 **Str Class:** I
Waterbody Type: Estuary
Waterbody Size: 45.3 Acres
Seg Description: entire basin

Drain Basin: Atlantic-Long Island Sound
Southern Long Island
Reg/County: 2/Queens Co. (41)
Quad Map: JAMAICA (S-25-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| AQUATIC LIFE | Impaired | Known |
| Recreation | Stressed | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND, NUTRIENTS (nitrogen), Aesthetics (odors), Thermal Changes
Suspected: ---
Possible: ---

Source(s) of Pollutant(s)

Known: HYDRO MODIFICATION (no flushing, bathymetry), URBAN/STORM RUNOFF
Suspected: ---
Possible: ---

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: 3c,4b (Waterbody Being Addressed by Other Means, more)

Resolution Potential: High

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Shellbank Basin are impaired by a variety of pollutants from urban storm runoff and other nonpoint sources. The impact of these pollutants is exacerbated by the hydrology/bathymetry of the basin. The basin is very deep at its end (50 feet) and gradually rises to a depth of only 6 feet at its mouth. The depth of the basin at its head results in a temperature gradient that prevents the mixing of oxygenated waters at the surface with bottom waters. In addition, the shape of the basin (shallow mouth) results in the trapping and settling of solids, algae and other pollutants that enter the basin from storm sewers, runoff and Jamaica Bay. The algae, solids create a sediment oxygen demand anoxic conditions at the bottom of the basin for much of the year. These conditions also produce hydrogen sulfide which causes odor problems. Dissolved oxygen standards are not met in the basin.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for Shellbank Basin, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary.

Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Shellbank Basin is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to nitrogen and low dissolved oxygen. The waterbody is included on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). This waterbody was first listed on the 1998 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Spring Creek and tribs (1701-0361)

Impaired Seg

Waterbody Location Information

Revised: 02/04/2002

Water Index No: (MW8.5a) JB-249
Hydro Unit Code: 02030202/020 **Str Class:** I
Waterbody Type: Estuary
Waterbody Size: 7.6 Acres
Seg Description: entire basin and tidal tribs

Drain Basin: Atlantic-Long Island Sound
Reg/County: 2/Queens Co. (41)
Quad Map: JAMAICA (S-25-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables)
Suspected: D.O./OXYGEN DEMAND, PATHOGENS, Nutrients
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, MUNICIPAL (Spring Creek Aux WWTP), URBAN/STORM RUNOFF, Other Sanitary Disch
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: 3c,4b (Waterbody Being Addressed by Other Means, more)

Resolution Potential: High

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Spring Creek are impaired by a variety of pollutants from municipal discharges, combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Spring Creek also receives pollutants from the Spring Creek Auxiliary Water Pollution Control Plant. The Spring Creek AWPCP has a maximum retention capacity of 20 MG for storage during wet weather events for subsequent treatment at the 26th Ward WWTP. Wet weather flows exceeding the 20 MG capacity are treated with chlorine disinfection and overflow into Spring Creek. Limited additional treatment includes the settling of solids in the facility and screening of floatables. D.O. standards are currently not being met in the waterbody, with periodic exceedences at the head of the basin where circulation and flushing is limited. Coliform levels are primarily influenced by CSOs and are occasionally high.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Spring Creek, dissolved oxygen criteria is projected to be attained 88% to 90% of the time, while coliform criteria is met 92% to 100% of the time; higher levels of attainment occurring nearer the mouth of the trib. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Tribes Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a

separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of the 26th Ward WPCP, upgrading of the Spring Creek Auxiliary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan, and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Spring Creek is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen and pathogens. The waterbody is included on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). This waterbody was first listed on the 2002 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Baisley Pond (1701-0197)

Threatened

Waterbody Location Information

Revised: 05/26/2011

| | | | |
|-------------------------|--------------------|---------------------|----------------------------|
| Water Index No: | (MW8.5a) JB..P1033 | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/020 | Str Class: | B |
| Waterbody Type: | Lake | Reg/County: | 2/Queens Co. (41) |
| Waterbody Size: | 23.4 Acres | Quad Map: | () |
| Seg Description: | entire lake | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-------------------|------------|-----------------------|
| Recreation | Threatened | Known |
| Habitat/Hydrology | Stressed | Known |

Type of Pollutant(s)

Known: PROBLEM SPECIES
Suspected: ---
Possible: ---

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: ---
Possible: ---

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: ext/WQCC
TMDL/303d Status: n/a

Resolution Potential: Medium

Further Details

Overview

Recreational uses and habitat in Baisley Pond are considered to experience minor impacts and threats due to the presence of exotic invasive plant species.

Water Quality Sampling

Baisley Pond was surveyed once in 2003 as part of the Lake Classification and Inventory (LCI) survey-shoreline samples only were collected. This survey work found curly-leaved pondweed (*Potamogeton crispus*), an invasive exotic plant species. Detailed survey work has not been conducted, but dense lily pad populations are consistently found at the lake. Based on the single water quality sampling session in 2003, Baisley Pond can be characterized as mesotrophic, or moderately productive. The phosphorus reading (trophic state index (TSI) = 47, representative of mesotrophic lakes) suggested that the lake does not appear to be susceptible to algal blooms. The lake is otherwise typical of highly urbanized, shallow lakes, with elevated pH, conductivity, and chloride levels. Additional water quality monitoring would be needed to fully evaluate the condition of the lake. (DEC/DOW, BWAM/LMAS, March 2011)

Segment Description

Baisley Pond is a 23 acre pond that is the centerpiece of the 110 acre Baisley Park in Queens. The pond was created in the 1700s to power a local grain mill, and was purchased by the Brooklyn Water Works in 1852 to serve as a potable water supply. The Park was transferred to the Parks Department in 1914, and opened to the public in 1919. Baisley Pond is a Class B lake designated for contact and non-contact recreation, and the pond supports angling and passive recreational uses. Largemouth bass, black crappie, bluegill, pumpkinseed sunfish, brown bullhead and common carp are found in the lake. (DEC/DOW, BWAM/LMAS, March 2011)

This segment includes the total area of the entire lake.

Jamaica Bay, Western, and tribs (Brklyn) (1701-0226)

Impaired Seg

Waterbody Location Information

Revised: 01/27/2011

Water Index No: (MW8.6) JB
Hydro Unit Code: 02030202/010 **Str Class:** SB
Waterbody Type: Estuary
Waterbody Size: 6541.1 Acres
Seg Description: portion of bay and selected tidal tribs within Brooklyn

Drain Basin: Atlantic-Long Island Sound
Southern Long Island
Reg/County: 2/Kings Co. (24)
Quad Map: BROOKLYN (S-25-1) ...

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-------------------|----------|-----------------------|
| PUBLIC BATHING | Impaired | Known |
| Fish Consumption | Stressed | Suspected |
| Aquatic Life | Stressed | Known |
| RECREATION | Impaired | Known |
| HABITAT/HYDROLOGY | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: SPECIES ALTERATION, Aesthetics (floatables), Nutrients (nitrogen)
Suspected: PRIORITY ORGANICS (PCBs/migratory fish), D.O./Oxygen Demand, Pathogens
Possible: Oil and Grease

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, HABITAT MODIFICATION, MUNICIPAL (NYC WWTPs), OTHER SOURCE (migratory fish species), URBAN/STORM RUNOFF
Suspected: ON-SITE/SEPTIC SYST (Broad Channel Island), Chemical Leak/Spill, Deicing (stor/appl) (airport), Industrial, Landfill/Land Disp.
Possible:

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: n/a->3c?,4c*

Resolution Potential: High

Further Details

Overview

Public Bathing and other recreational uses, as well as aquatic life in western Jamaica Bay are impaired by a variety of pollutants from municipal discharges, combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. Failing and/or inadequate on-site system discharges (Broad Channel Island) have also been cited as a problem. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in algal blooms and low dissolved oxygen. Neither coliform nor D.O. standards are currently being met in the waterbody. Coliform levels are primarily influenced by CSOs in the tributary watersheds and are most elevated near trib mouths. D.O. levels are low throughout the bay, however the more severe conditions occur in Grassy Bay in the eastern end of

the bay. Fish consumption is considered to experience minor impacts due to precautionary health advisories limiting the consumption of certain species due to elevated PCB levels. These advisories are the result of the migratory range of these fish species, and not related to any known contamination in this specific waterbody. Habitat modification, particularly the loss of seagrass beds in the bay, are also a major concern.

Shellfishing Use

Shellfish harvesting for consumption purposes in these tribs is restricted due to the year-round designations these waters (Shellfish Growing Area #60) as uncertified for the taking of shellfish for use as food. Shellfish that grow in contaminated waters can accumulate disease-causing microorganisms (bacteria, viruses) that can be eaten with the shellfish. This designation is based on results of water quality monitoring and evaluation of data against New York State and National Shellfish Sanitation Program monitoring criteria for pathogens. Certified/uncertified shellfish area designations are revised regularly; for detailed descriptions of current designations, go to www.dec.ny.gov/regs/4014.html. (DEC/DFWMR, Region 1, July 2010)

Although this waterbody is monitored through the shellfish program, its class SB designation does not include shellfishing as an appropriate use so these waters are not assessed for support of shellfishing use. However, based on the shellfishing restrictions, other recreational uses are considered to be stressed. (DEC/DFWMR, BMR and DEC/DOW, BWAM/WQAS, July 2010)

Bathing Beach Assessment

Recreational use including public bathing is considered to experience minor impacts based on the shellfish advisory indicating somewhat elevated bacteriological levels. Beach monitoring is not conducted at any location in the segment. (from summary of local 2008 beach monitoring data as cited in Testing the Waters, NRDC, 2009)

Fish Consumption Advisories

NYS DOH has issued precautionary health advisories recommending limiting consumption of American eel, bluefish, striped bass and weakfish from these waters due to possible elevated levels of PCBs. These advisories are largely precautionary and are related to the specific habits and characteristics of these species, specifically the wide migratory range, predatory nature and high lipid/fat content that make them more likely to accumulate contaminants. Because possible contamination is more a result of the migratory range and other factors rather than any known sources of PCBs in this waterbody, fish consumption use in this segment is considered to be stressed. In addition, for some species the advisories recommend limiting consumption to no more than one meal per week which is no more stringent than the general statewide advisory for all New York waters and does not result in significant impact to uses. Health advisories regarding the consumption of fish are revised regularly; for the most current advisories, go to www.nyhealth.gov/environmental/outdoors/fish/fish.htm. (2009-10 NYS DOH Health Advisories and DEC/DFWMR, Habitat, January 2010)

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. In Jamaica Bay, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to

Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Loss of Seagrasses in Jamaica Bay is an additional concern. Seagrasses have long been recognized as vital habitat and nursery grounds for commercially, recreationally and ecologically important fish and shellfish species. They also function as a food source for fish and waterfowl, important nutrient and carbon cyclers, sediment stabilizers, contributors to the marine and estuarine food web, and indicator species of estuarine health and quality. Acres of seagrass have been reduced to about one-tenth their historic level due primarily to anthropogenic causes, primarily decreased water quality and clarity due to increased nutrient loading, as well as large phytoplankton blooms, habitat degradation, fishing gear and boating impacts, and climate change impacts. Natural events such as disease also contribute to seagrass loss. Current efforts to restore Jamaica Bay include considerable focus on seagrass habitat restoration. (DEC/DFWMR, Region 1, August 2009)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

This portion of Jamaica Bay is not included on the NYS 2010 Section 303(d) List of Impaired Waters. However this updated assessment suggests it may be appropriate to include this waterbody on the next List. It is recommended that this waterbody be considered for addition to Part 3c of the List, as an impaired waterbody for which TMDL development may be deferred (pending implementation and evaluation of other restoration measures). (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

This segment includes the western portion of Jamaica Bay that lies within the boundaries of Kings County (Brooklyn), and east of a line from southeasterly tip of Coney Island peninsula near Manhattan Beach to westerly shoreline west of lookout tower on Rockaway Point. The waters of Jamaica Bay include Gerritsen Inlet, Dead Horse Bay, Head of Bay and all waters of Jamaica Bay and Rockaway Inlet for which a waters index number has not been assigned within Kings and Queens Counties. The waters of this segment are designated Class SB.

Hendrix Creek (1701-0006)

Impaired Seg

Waterbody Location Information

Revised: 03/09/2001

| | | | |
|-------------------------|--------------------|---------------------|----------------------------|
| Water Index No: | (MW8.6a) JB-249a | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/010 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Kings Co. (24) |
| Waterbody Size: | 54.5 Acres | Quad Map: | BROOKLYN (S-25-1) |
| Seg Description: | entire creek/basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| AQUATIC LIFE | Impaired | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (odors, floatables), D.O./OXYGEN DEMAND, NUTRIENTS (nitrogen), PATHOGENS
Suspected: Oil and Grease, Silt/Sediment
Possible: Priority Organics

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, URBAN/STORM RUNOFF, Other Sanitary Disch
Suspected: Municipal (26th Ward WPCF)
Possible: Landfill/Land Disp. (Penna, Fountain Ave Lfill)

Resolution/Management Information

| | | |
|-----------------------------|--|-----------------------------------|
| Issue Resolvability: | 3 (Strategy Being Implemented) | |
| Verification Status: | 5 (Management Strategy has been Developed) | |
| Lead Agency/Office: | ext/NYC | Resolution Potential: High |
| TMDL/303d Status: | 1,3c,4b (Individual Waterbody Impairment Requiring a TMDL, more) | |

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Hendrix Creek are impaired by a variety of pollutants from municipal discharges (26th Ward WPCF), combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. These sources contribute pathogens, nutrients and settleable solids which form sediment mounds on the creek basin bottoms. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Neither coliform nor D.O. standards are currently being met in the waterbody. Low D.O. levels are persistent in the upper basin; low D.O. near the mouth is more episodic. Coliform levels are primarily influenced by CSOs.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal

coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Hendrix Creek, dissolved oxygen criteria is projected to be attained 75% to 100% of the time, while coliform criteria is projected to be met 100% of the time; higher levels of attainment occurring nearer the mouth of the trib. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Trib Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of the 26th Ward WPCP, upgrading of the Spring Creek Auxiliary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan,

and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Hendrix Creek is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen, nitrogen and pathogens. The waterbody is included on Part 1 of the List as a waterbody requiring TMDL development (or other appropriate restoration measures) for low D.O. and nitrogen. The waterbody also appears on Part 3 of the List for pathogens as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). It may be appropriate to move all listing for this waterbody to Part 3 or the list due to consent order actions; this should be considered during the next listing cycle. This waterbody was first listed on the 1998 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Fresh Creek (1701-0362)

MinorImpacts

Waterbody Location Information

Revised: 12/26/2001

| | | | |
|-------------------------|--------------------|---------------------|----------------------------|
| Water Index No: | (MW8.6a) JB-250 | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/010 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Kings Co. (24) |
| Waterbody Size: | 64.4 Acres | Quad Map: | BROOKLYN (S-25-1) |
| Seg Description: | entire creek/basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Known |
| Recreation | Stressed | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables)
Suspected: D.O./Oxygen Demand, Nutrients, Oil and Grease, Pathogens
Possible: Priority Organics

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, URBAN/STORM RUNOFF, Other Sanitary Disch
Suspected: - - -
Possible: Landfill/Land Disp. (Penna,Fountain Ave Lfills)

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: n/a

Resolution Potential: High

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Fresh Creek are known to be impacted, and may be impaired, by a variety of pollutants from CSOs, urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Neither D.O. nor pathogen standards are thought to be met in the waterbody, but conditions need to be verified.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not

meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009) Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Fresh Creek, dissolved oxygen criteria is projected to be attained 78% to 10% of the time, while coliform criteria is met 42% to 75% of the time; higher levels of attainment occurring nearer the mouth of the trib. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Jamaica Bay and Tribs WWFP)

The current proposed Jamaica Bay/Tribes Waterbody/Watershed Facility Plan (WWFP) to address water quality pollution looks at a wide range of CSO control alternatives. CSOs in the Jamaica Bay Watershed discharge to the tribs, rather than the Bay itself; specifically, the tribs receiving direct CSO discharge addressed in this report are Fresh Creek, Hendrix Creek, Spring Creek, Bergen Basin and Thurston Basin (Paerdegat Basin is addressed in a separate WWFP). The plan includes alternatives projected to cost \$600 million (2005) and include 1) expansion of the 26th Ward WPCP, upgrading of the Spring Creek Auxiliary WPCP, 3) regulator and collection system enhancements for the Jamaica WPCP 4) completion of the Southeast Queens Drainage (and sewer separation) Plan, and 5) continued and enhanced floatables capture. Construction to implement these components of the plan - which are in addition to other adjoining watershed and city-wide initiatives - would be conducted concurrently with projects in other WWFPs throughout the New York Harbor area. A final WWFP for Jamaica Bay and tribs has not yet been approved by NYSDEC. (NYCDEP, August 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Fresh Creek is not currently included on the NYS 2010 Section 303(d) List of Impaired Waters. Pending the evaluation of more recent monitoring data, it may be appropriate to consider addition of this waterbody to the List for nutrients, low D.O. and/or pathogens (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Paerdegat Basin (1701-0363)

Impaired Seg

Waterbody Location Information

Revised: 04/07/2011

| | | | |
|-------------------------|------------------|---------------------|----------------------------|
| Water Index No: | (MW8.6a) JB-250a | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/010 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Kings Co. (24) |
| Waterbody Size: | 88.9 Acres | Quad Map: | BROOKLYN (S-25-1) |
| Seg Description: | entire basin | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| AQUATIC LIFE | Impaired | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (odors, floatables), D.O./OXYGEN DEMAND, PATHOGENS, Silt/Sediment
Suspected: Nutrients, Oil and Grease
Possible: ---

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, URBAN/STORM RUNOFF, Other Sanitary Disch
Suspected: ---
Possible: ---

Resolution/Management Information

| | | |
|-----------------------------|--|-----------------------------------|
| Issue Resolvability: | 3 (Strategy Being Implemented) | |
| Verification Status: | 5 (Management Strategy has been Developed) | |
| Lead Agency/Office: | ext/NYC | Resolution Potential: High |
| TMDL/303d Status: | 3c,4b (Waterbody Being Addressed by Other Means, more) | |

Further Details

Overview

Aquatic life and recreational uses in Paerdegat Basin are impaired by a variety of pollutants from municipal discharges, combined sewer overflows (CSOs), urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. D.O. standards are currently not being met in the waterbody, with more frequent exceedences at the head of the basin where circulation and flushing is limited. Coliform levels are primarily influenced by CSOs and typically exceed criteria during wet-weather.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular

waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. For Paerdegat Basin, dissolved oxygen criteria is projected to be attained 60% to 80% of the time, with higher levels of attainment occurring nearer the mouth of the trib. Coliform criteria exceedences are strongly correlated to wet-weather events. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2006)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system, including CSOs to this waterbody. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

Water Quality Management (Paerdegat Basin LTCP)

The Paerdegat Basin Combined Sewer Overflow (CSO) abatement project which was recently completed will store up to 50 million gallons of CSO during wet-weather events, which would otherwise exceed treatment plant capacity and spill into the basin. CSO tanks address this problem by storing flows until storms pass, allowing for treatment at the Coney Island WPCP after the storm subsides. This facility will reduce the annual CSO discharge to Paerdegat Basin by 70%, from 1.8 billion gallons per year to 555 million. Cost of the project is \$437 million, part of which is a \$14.6 million stimulus-funded restoration of degraded wetlands and shore areas around the perimeter of the Basin that is funded through the American Recovery and Reinvestment Act. (NYCDEP and DEC/DOW, BWC/NYC Compliance, June 2011)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Paerdegat Basin is included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen. The waterbody is included on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). This waterbody was first listed on the 1998 Section 303(d) List. Other pollutants causing impairments, such as floatables and odors, are not included on the list due to efforts to address the impairment other than an TMDL. Pathogens are also being address by ongoing CSO control efforts. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin, above the mouth at Jamaica Bay.

Mill Basin and tidal tribs (1701-0178)

Impaired Seg

Waterbody Location Information

Revised: 12/26/2001

Water Index No: (MW8.6a) JB-250b
Hydro Unit Code: 02030202/010 **Str Class:** SB
Waterbody Type: Estuary
Waterbody Size: 302.6 Acres
Seg Description: entire basin and tidal tribs

Drain Basin: Atlantic-Long Island Sound
Southern Long Island
Reg/County: 2/Kings Co. (24)
Quad Map: ()

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| PUBLIC BATHING | Impaired | Known |
| AQUATIC LIFE | Impaired | Known |
| RECREATION | Impaired | Known |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: AESTHETICS (floatables), D.O./OXYGEN DEMAND
Suspected: Pathogens
Possible: - - -

Source(s) of Pollutant(s)

Known: HYDRO MODIFICATION (no flushing, bathymetry), OTHER SANITARY DISCH,
URBAN/STORM RUNOFF
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: 3c,4b (Waterbody Being Addressed by Other Means, more)

Resolution Potential: High

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Mill Basin are impaired by a variety of pollutants from urban storm runoff and other nonpoint sources. The impact of these pollutants is exacerbated by the hydrology/bathymetry of the basin. The basin is deep but with a shallow sill at the mouth. The depth of the basin at its head results in a temperature gradient that prevents the mixing of oxygenated waters at the surface with bottom waters. In addition, the shallow mouth results in the trapping and settling of solids, algae and other pollutants that enter the basin from storm sewers, runoff and Jamaica Bay. The algae, solids create a sediment oxygen demand anoxic conditions at the bottom of the basin. Dissolved oxygen standards are not being met in the basin. The D.O. non-compliance is episodic. Elevated coliforms values are also occasionally reported, but generally meet geometric mean standards in the waterbody.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for Mill Basin, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary.

Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Mill Basin is currently included on the NYS 2010 Section 303(d) List of Impaired Waters due to low dissolved oxygen. The waterbody is included on Part 3 of the List as an impaired waterbody for which TMDL development may be deferred pending implementation and evaluation of other restoration measures (i.e., NYC CSO and Jamaica Bay Consent Orders). This waterbody was first listed on the 1998 Section 303(d) List. (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

Gerritsen Creek and tidal tribs (1701-0193)

MinorImpacts

Waterbody Location Information

Revised: 04/07/2011

Water Index No: (MW8.6a) JB-251
Hydro Unit Code: 02030202/010 **Str Class:** SB
Waterbody Type: Estuary
Waterbody Size: 225.7 Acres
Seg Description: entire basin and tidal tribs

Drain Basin: Atlantic-Long Island Sound
Reg/County: 2/Kings Co. (24)
Quad Map: ()

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|-----------------|----------|-----------------------|
| Aquatic Life | Stressed | Suspected |
| Recreation | Stressed | Suspected |

Type of Pollutant(s)

Known: ---
Suspected: D.O./OXYGEN DEMAND, PATHOGENS
Possible: ---

Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF
Suspected: ---
Possible: ---

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/NYC
TMDL/303d Status: n/a

Resolution Potential: Medium

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Gerritsen Creek and tidal tribs are known to experience impacts due to a variety of pollutants from urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. In other similar Jamaica Bay tribs neither D.O. nor pathogen standards are met, but conditions in this waterbody need to be verified.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where

poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for Gerritsen Creek, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary. Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Gerritsen Creek is not currently included on the NYS 2010 Section 303(d) List of Impaired Waters. Pending the evaluation of more recent monitoring data, it may be appropriate to consider addition of this waterbody to the List for nutrients, low D.O. and/or pathogens (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay, including Plumb Beach Channel and Shellbank Creek.

Sheepshead Bay (1701-0148)

MinorImpacts

Waterbody Location Information

Revised: 03/08/2001

| | | | |
|-------------------------|------------------|---------------------|----------------------------|
| Water Index No: | (MW8.6a) JB-252a | Drain Basin: | Atlantic-Long Island Sound |
| Hydro Unit Code: | 02030202/010 | Str Class: | I |
| Waterbody Type: | Estuary | Reg/County: | 2/Kings Co. (24) |
| Waterbody Size: | 97.7 Acres | Quad Map: | CONEY ISLAND (S-25-4) |
| Seg Description: | entire bay | | |

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

| Use(s) Impacted | Severity | Problem Documentation |
|------------------|----------|-----------------------|
| Fish Consumption | Stressed | Possible |
| Recreation | Stressed | Suspected |
| Aesthetics | Stressed | Known |

Type of Pollutant(s)

Known: ---
Suspected: AESTHETICS (oil sheen, odors), OIL AND GREASE
Possible: ---

Source(s) of Pollutant(s)

Known: ---
Suspected: CHEMICAL LEAK/SPILL, OTHER SOURCE (boat pollution), PRIVATE/COMM/INST (NYC Transit Authority), Other Sanitary Disch
Possible: ---

Resolution/Management Information

| | | |
|-----------------------------|---|-------------------------------------|
| Issue Resolvability: | 1 (Needs Verification/Study (see STATUS)) | |
| Verification Status: | 3 (Cause Identified, Source Unknown) | |
| Lead Agency/Office: | ext/NYC | Resolution Potential: Medium |
| TMDL/303d Status: | n/a | |

Further Details

Overview

Aquatic life, as well as recreational uses and aesthetics in Sheepshead Bay are known to be impacted, and may be impaired, by a variety of pollutants from urban storm runoff and other nonpoint sources. These sources discharge pathogens, nutrients and oxygen-demanding substances which result in low dissolved oxygen, odors and other impacts to recreation and aesthetics. Many previously identified sources (gas stations, car washes, auto repair shops) have been addressed. Tetrachloethylene was found to be leaching into the bay from creosote-treated pilings of a pedestrian foot bridge and from a NYC Transit Authority dewatering operation near the Nostrand Avenue subway station. Boat pollution due to heavy recreational use also contributes to water quality problems. A number of raw sewage discharges to storm sewers and CSOs along Ocean Avenue have been eliminated. Neither D.O. nor pathogen standards are thought to be met in the waterbody, but conditions need to be verified.

Water Quality Sampling

New York City Department of Environmental Protection (NYCDEP) has operated a water quality monitoring program since 1909. The NYCDEP Harbor Survey Program uses primarily four indicators of water quality - fecal coliform bacteria, dissolved oxygen, chlorophyll a and water clarity. Overall in the harbor waters improvements have been noted in all of these parameters since the 1970s and 80s. There are no routine monitoring sites in this particular waterbody. In Jamaica Bay in general, coliform criteria are exceeded during wet weather. Dissolved oxygen does not meet standards in areas at the mouths of many tribs and dead-end canals and in the deeper Grassy Bay area where poor circulation contributes to the problems. Chlorophyll a is found to be considerably high, indicative of eutrophic conditions in much of the bay. (NYCDEP, Harbor Survey, 2009)

Water quality evaluations have also been conducted showing the percent attainment of dissolved oxygen and pathogen criteria under baseline conditions based on water quality model projections developed for the NYCDEP Jamaica Bay and CSO Tributaries Waterbody/Watershed Facility Plan. Though there is no specific projections for Sheepshead Bay, dissolved oxygen criteria attainment is projected to range from 50% to 100% of the time, while coliform criteria projection ranges from 40% to 100% of the time in various tribs; with higher levels of attainment typically occurring nearer the mouth of the tribs. (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2007)

Water Quality Management (NYC Nitrogen Consent Judgment)

Since 2006, New York City has been under a Nitrogen Consent Judgment to reduce nitrogen loads associated with the discharge of treated effluent to Jamaica Bay. Under the current Consent Judgment, which was amended in 2011, the City must install new nitrogen control technologies at four wastewater treatment plants that discharge effluent to Jamaica Bay as well as implement marshland restoration projects for Jamaica Bay. The treatment plants being upgraded are: 26th Ward, Coney Island, Rockaway, and Jamaica. The first upgrades under the Consent Judgment will become operational starting in 2010 and all improvements required under the Consent Judgment will be completed by 2020. The requirements added to the amended Consent Judgment in 2011 are valued at \$115 million, of which \$15 million be used for marshland restoration. The \$115 million represents only a portion of the value of all the upgrades and related environmental benefit projects being executed under the Nitrogen Consent Judgment. (DEC/DOW, BWC/NYCPCS, August 2011)

Water Quality Management (NYC CSO Order)

Combined sewer overflows (CSOs) represent a significant source of pollutants to New York Harbor waters and tributaries. In 2005 NYSDEC issued a Consent Order requiring New York City to address the over 400 CSOs of the NYCDEP municipal wastewater system. The Order follows the two-phased approach identified in the USEPA CSO Control Policy which calls for Nine Minimum Control Measures to minimize overflows and CSO pollution and the development of Long Term Control Plans to address water quality issues not fully addressed by the nine minimum controls. As a result NYCDEP is undertaking projects totaling of \$2 billion to capture about 75% of wet-weather overflows. The Order also requires NYCDEP to develop 11 Waterbody/Watershed Facility Plans (WWFPs) to identify remaining water quality issues, evaluate CSOs contributions to these problems and form the basis of subsequent Long Term Control Plans (LTCPs) to bring these waters into compliance with water quality standards. Jamaica Bay is one of the WWFP areas. The Order requires post-construction monitoring to verify modeling projections and actual water quality compliance, inform decisions regarding SPDES permit renewal at five-year intervals, and evaluate future management actions, including additional CSOs controls if necessary. The ongoing NYCDEP Catch Basin Hooding Program is also effecting a reduction of floatables discharged to NYC receiving waters. (DEC/DOW, BWC, August 2010)

NY/NJ Harbor Estuary Program

These waters are included within the core area of the New York/New Jersey Harbor Estuary Program (HEP). The HEP is a National Estuary Program authorized in 1987 by the U.S. Environmental Protection Agency. The program is a continuing multi-agency effort to develop and implement a plan to protect, conserve, and restore the estuary.

Participants in the program include representatives from local, state, and federal environmental agencies, scientists, citizens, business interests, environmentalists, and others. (DEC/DOW, BWAM, December 2010)

Section 303(d) Listing

Fresh Creek is not currently included on the NYS 2010 Section 303(d) List of Impaired Waters. Pending the evaluation of more recent monitoring data, it may be appropriate to consider addition of this waterbody to the List for nutrients, low D.O. and/or pathogens (DEC/DOW, BWAM/WQAS, January 2010)

Segment Description

The segment includes the entire basin and tributaries, above the mouth at Jamaica Bay.

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