

**NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION
CROTON FACILITY MONITORING COMMITTEE MEETING MINUTES**

THURSDAY, OCTOBER 16, 2008 – 7:00PM

The Croton Facility Monitoring Committee met on Thursday, October 16, 2008 at the DEP community office, 3660 Jerome Avenue, Bronx, NY 10467. Attendees, including CFMC representatives, elected officials and their representatives, staff from DEP, its construction manager, design engineer, Grimshaw Architects and members of the public, are listed on the attached sheet. (*Attachment 1*) A few of the attendees did not sign in.

Welcome

Greg Faulkner, Chair of Community Board #7 and of the CFMC, called the meeting to order at approximately 7:10 PM; a revised agenda (*Attachment 2*) was available. Mr. Faulkner said that, on an experimental basis, the public would be able to ask questions or make comments after each of the agenda items, so there would not be a separate public session.

Jobs Report

Mr. Faulkner asked Parks to update the CFMC on Croton-funded parks improvements. Faisal Choudhury, Dept of Parks and Recreation, made a presentation. It is *Attachment 3*. There was a discussion between Saul Scheinbach, Community Board #8 and Bronx Parks Borough Commissioner Hector Aponte, about the quality of parks' maintenance in a time of budget cutbacks. Carmen Rosa, Community Board #12, asked if Edenwald Playground is included in the Croton-funded parks improvements; Mr. Aponte said it is not. Mr. Faulkner asked about the use of apprenticeships for construction workers on the parks projects. Mr. Aponte replied that they are available only on larger projects. Mr. Faulkner asked that, at future CFMC meetings, the DEP and Parks Dept report jointly on DEP job applicants that successfully become Parks hires. Karen Argenti, Friends of Jerome Park Reservoir, asked for the names of all Bronx-based Parks Dept. contractors working on the Croton-funded parks projects. When told there was none, she inquired about the number of NYC contractors working on these projects. Mr. Choudhury said that about 50% of contractors are NYC-based. Mr. Aponte said that Parks must select the lowest responsible bidder for the construction projects.

Ezra Glaser, Amalgamated Houses, requested better maintenance at Ft. Independence Park. Michael Gary, Amalgamated Houses, complained about problems at Classic Playground. Mr. Faulkner asked for more garbage cans in the area to correct some of the litter problems.

Nicole Torres, DEP, summarized jobs and purchases progress since the September CFMC meeting. Her summary is *Attachment #4*. Mr. Faulkner said he is interested in seeing increased apprenticeships brought into the Croton jobs program; Ms. Argenti asked details about breakdown of skilled laborers versus non-skilled jobs. Kevin Johns, Amalgamated Houses, provided information about various construction skills.

Chlorine Incident at Jerome Park Reservoir (JPR)

Anne Canty, DEP Deputy Commissioner, said that on October 15, the DEP's Emergency Action Plan (EAP) was activated as a result of a small chlorine leak inside Gate House 5 at JPR. The incident was caused by a leaky valve at the time an empty chlorine cylinder was being removed so that a full cylinder could be installed. DEP workers left the building as required by the EAP and both NYPD and FDNY responded as required by the EAP. Messrs. Faulkner, Scheinbach and Laura Stockstill, Borough President's office, questioned aspects of the EAP. It was explained that FDNY and NYPD take the lead if the EAP is activated. Richard Barr, Bronx H.S. of Science Parents Association, complained that the school wasn't briefed until the afternoon of October 16th. Several representatives of the public asked for more timely notifications about incidents. Anne Marie Garti, Jerome Park Conservancy, asked about the installation of the scrubber in Gate House 5, saying that DEP had said the scrubber would be in place during JPR construction. Bernard Daly, DEP Project Manager, concurred, explaining that a scrubber is scheduled to be installed in the Gate House within six months. . Mr. Glaser said that Amalgamated Housing Security was notified about the chlorine leak at 3 AM. Jane Sokolow, BCEQ, asked if NYC is working on a community-wide evacuation plan. Ms. Canty said that since OEM, together with the NYPD and FDNY are responsible for city evacuation plans, questions will be referred to them. Mr. Faulkner requested that they attend the next CFMC meeting to provide information.

Independent Budget Office Presentation on Costs of Croton Filter Project

George Sweeting, Deputy IBO Director, distributed information about the costs of the project (*Attachment 5*). He said that IBO did not perform an audit or engineering analysis but examined the information provided by DEP and other sources. He agreed with prior presentations: that inflation, a smaller bidding pool, and changes in design all contributed to higher costs. In comparing costs between in-city construction versus upstate construction, Mr. Sweeting said inflation would have grown similarly at all sites. Although site preparation costs upstate would have been lower, the tunnels to NYC would have been longer, increasing these costs.

Council Member Oliver Koppell asked whether DEP mis-estimated costs because of its bias to build in NYC; Mr. Sweeting stated that he had obtained no evidence to make such a statement. He asked whether IBO investigated bid documents. Mr. Sweeting said no. Ms. Garti, Mr. Gary and Ms. Sokolow commented on costs in the EIS and current costs. Professor Walter Matystik, Manhattan College, questioned escalation factors on midpoint calculations.

Mr. Sweeting said that IBO's report on costs would be produced in the future.

Croton Watershed Pollution Prevention

DEP Assistant Commissioner David Warne presented information about DEP's watershed protection activities in the Croton watershed system – *Attachment 6*. He said the most intensive work currently underway is bringing septic systems and wastewater treatment facilities up to regulatory standards. Tertiary treatment is the desired standard

in the watershed. Mr. Scheinbach said watershed protection is most important because the Croton watershed can be lost in the future if not properly protected. He said DEP has not made an adequate effort to thwart development as per Riverkeeper's recent newsletter which had been distributed to the CFMC. He shared photos of Titicus Reservoir with an algae bloom. Over 35 years the Titicus Reservoir has progressively gotten worse, he said. Mr. Warne discussed many aspects of watershed protection, including the nature of wetlands – they both act as filters but also contribute organic matter to the water supply. He talked about the importance of controlling storm and wastewater as more effective than purchasing additional property at this point. He said the pollution protection program at the Croton system is appropriate and is different from the program for the Catskill/Delaware system.

Ms. Stocksill asked for DEP's estimates of the pollution contributed from runoff. Mr. Warne said that a study has been prepared about sources of pollution and that a water quality staff person from DEP could come to a future meeting to describe it.

Fay Muir, Clean Water Coalition, talked about land acquisition, using East of Hudson funding; Ms. Argenti said NYSDEC was slow to propose water quality regulations. Mr. Warne said that NYSDEC guidance also has been slow to come. Council Member Koppell asked for several years' worth of pollution generation data in the Croton system. Mr. Warne said that information could be incorporated into the water quality study documentation.

Above Ground Buildings Architecture

David Burke, Grimshaw Architects, said the information he would present (*Attachment 7*) was an update from the Grimshaw presentation a year ago. The updated design includes sustainability features that should earn the buildings at least LEED Silver rating or better. Stormwater and groundwater will be contained and used on site, including in landscaping and green roofs. Council Member Koppell and others questioned the location and height of Tee boxes and the safety of the retaining pond. Mr. Burke said the design plan was to create a water aesthetic like Central Park's and to be as open as possible to the public. Mr. Faulkner said that Community Board #7 believes there isn't enough public, non-golf course access, and that CB #7 will adopt a motion that reflects its recommendations. Ms. Sokolow complained about parking at the south end of the site as being beyond the original alienation boundary. Charles McKinney, Dept of Parks & Recreation, said the Parks Dept has fully participated with DEP and Grimshaw in the design of the structures and surrounding area. Ms. Argenti recommended that the three community boards object to the additional park land being utilized for parking. Mr. Gary said the design is confusing and appears to create a golf course suitable for the PGA. Russell LeCount, Bissell Gardens, recommended more flowers be added, in addition to the extensive greenery.

CFMC Discussion

Mr. Barr asked about the status of the school's request for air conditioning the gym at Bronx HS of Science and when hoe ram operations would begin. Lynn Schwarz, FIPNA, said information about hoe ramming should be placed on FIPNA's web page. She urged

that noise, trucks, dust containment, rat abatement, and site cleanliness be addressed at the next meeting. Mr. Glaser said DEP hasn't explained why it can't solely construct at JPR with raise bore and must do hoe ram and/or blasting. He urged DEP to provide information in advance and not to surprise the public with its plans as was previously done. Mr. Matystik asked for a formal presentation on the revised project scope, technical memorandum and upcoming work at JPR.

Mr. Faulkner reiterated his request for a presentation on site safety and evacuation at JPR for the November meeting. Council Member Koppell asked for a November construction update.

Ms. Stockstill asked when the minor modification will be ready. Ms. Canty said it is in preparation.

The meeting was adjourned at 9:15 PM.

<u>Name</u>	<u>Organization / Company</u>	<u>Address</u>	<u>Phone</u>	<u>Fax</u>	<u>E-Mail</u>
Nicole Torres	DEP - Legislative Affairs	59-17 Junction Boulevard Corona NY 11368	(718) 595 7864		nicoletto@dep.nyc.gov
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Laura Stockstill	Office of Bronx Borough President Carrion	198 East 161st Street Bronx, NY 10451	(718) 590-3881	(718) 590-2698	lstockstill@bronxbp.nyc.gov
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Anne Marie Garti	Jerome Park Conservancy	3967 Sedgwick Avenue Bronx NY	(718) 601-1322; (718) 884-7864		annemarie@att.net
Jane Sokolow	BCEQ	2 Spaulding Lane Bronx NY 10471	(718) 548-8090		jsbx101@gmail.com
Lynn Schwarz	FIPNA	3332 Giles Place Bronx NY	(718) 543-2457	(718) 798-3879	

NYC DEP - CROTON FCMC

Page 2 Continued.....

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Greg Faulkner	Chairman, Community Board #7	2559 Sedgwick Avenue Bronx NY 10468	(718) 482-5193	(718) 609-2096	gfaulkner@lagcc.cuny.edu ; gfaulkner@cb.nyc.gov
Anne Canty	Dep Comm, Commun. & Intergov. Affairs DEP	59-17 Junction Blvd. Corona NY 11368	(718) 595-3402	(718) 595-3477	acanty@dep.nyc.gov
David Warne	Assistant Commissioner DEP	465 Columbus Avenue Valhalla NY	(914) 742-2099		dwarne@dep.nyc.gov
Faisal Choudhury	Dept of Parks & Recreation	1 Bronx River Parkway Bronx NY	(718) 760-6816	(718) 760-6741	faisal.choudhury@parks.nyc.gov
Rebecca Walker	MWH/DEP	96-05 Horace Harding Exp. Flushing NY	(718) 595-6065		rwalker@dep.nyc.gov
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Walt Matystik	Manhattan College	4573 Manhattan College Pkwy Bronx NY 10471	(718) 862-7268	(718) 862-7941	wmatysti@manhattan.edu
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REVISED AGENDA

Croton Facility Monitoring Committee Meeting

Thursday, October 16, 2008 – 7:00 PM

DEP Community Office, 3660 Jerome Avenue, Bronx NY 10467
(718) 231-8470

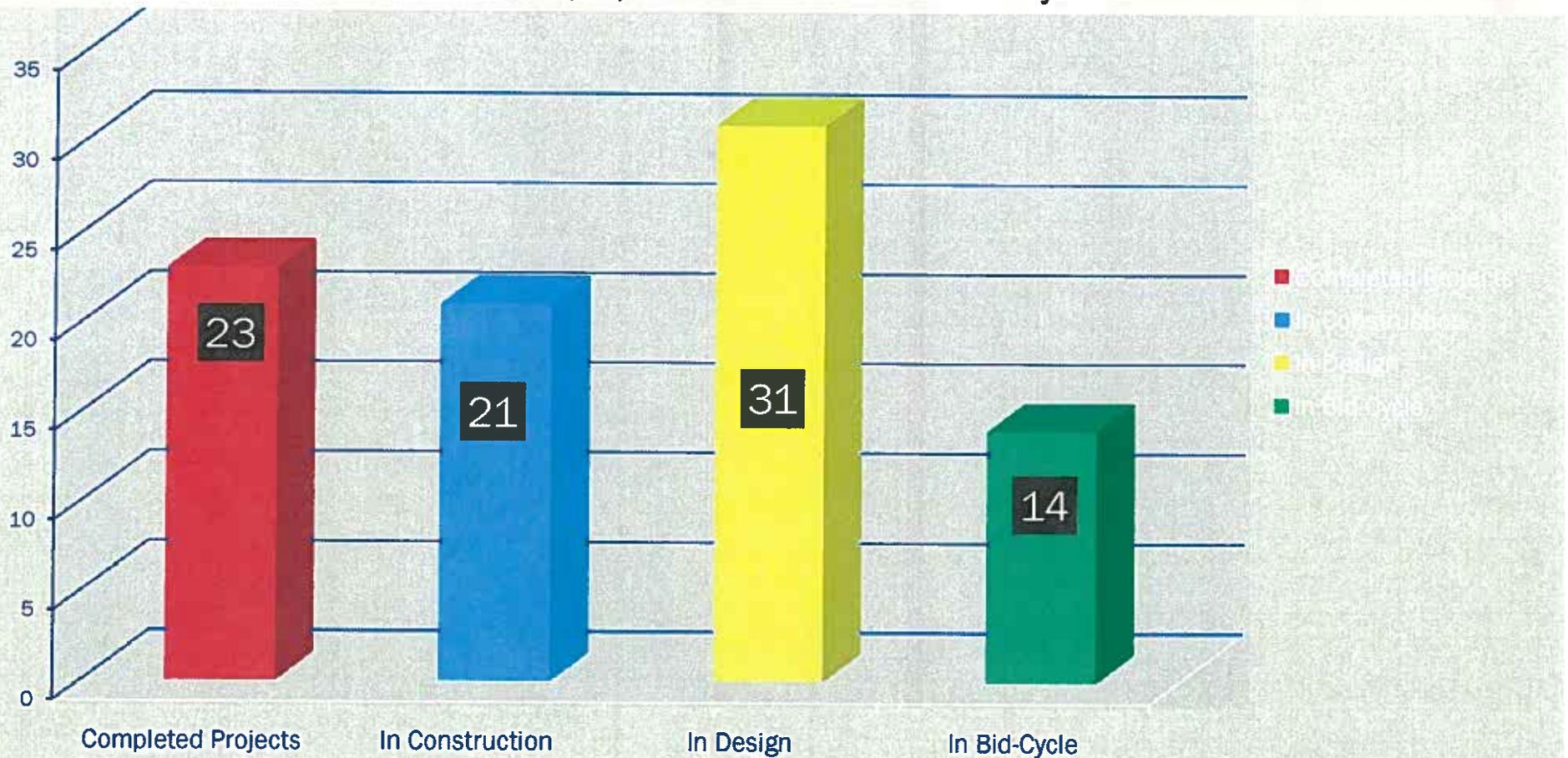
- I. Welcome, Propose new Meeting Procedure Greg Faulkner
(5 minutes)
- II. Update on chlorine gas response at JPR DEP
- III. Consider, Adopt Minutes
of Sept CFMC Meeting (5 minutes) CFMC Principals
- IV. DEP Report on Jobs and
Training (5 minutes) Nicole Torres, DEP
- V. Parks Report on Jobs (5 minutes) Faisal Choudhury, Dept of Parks &
Recreation
CFMC & Public Comments, Questions on DEP & Parks Jobs
(5 minutes)
- VI. Presentation Update on Croton Costs George Sweeting, IBO
(10 minutes)
- CFMC & Public Comments, Questions on IBO Report**
(10 minutes)
- VII. Update on Croton Watershed Protection Dave Warne, DEP
(10 minutes)
- CFMC & Public Comments, Questions on watershed protection**
(10 minutes)
- VIII. Update on Above Ground Buildings at VCP Grimshaw Architects
(5 minutes)
- CFMC & Public Comments, Questions on architectural design**
(5 minutes)
- IX. CFMC Discussion and
Set Next Meeting (15 minutes) CFMC
- X. Adjourn

The Croton Program



THE CROTON PROGRAM CROTON PROJECTS OVERVIEW:

Within the Croton Projects, we have completed twenty-three (23) construction projects totaling **\$42,567,515** and twenty-one (21) more projects totaling **\$66,973,907** currently in construction. There are thirty-one (31) projects currently in design totaling **\$86,602,533**, fourteen (14) of which are in the bid-cycle .





CROTON PROJECTS
“BEFORE & AFTER”

DEVOE PARK

Total Budget \$2,814,790

Accepted 4/3/08



MULLALY PARK NORTH

Total Budget \$1,357,395

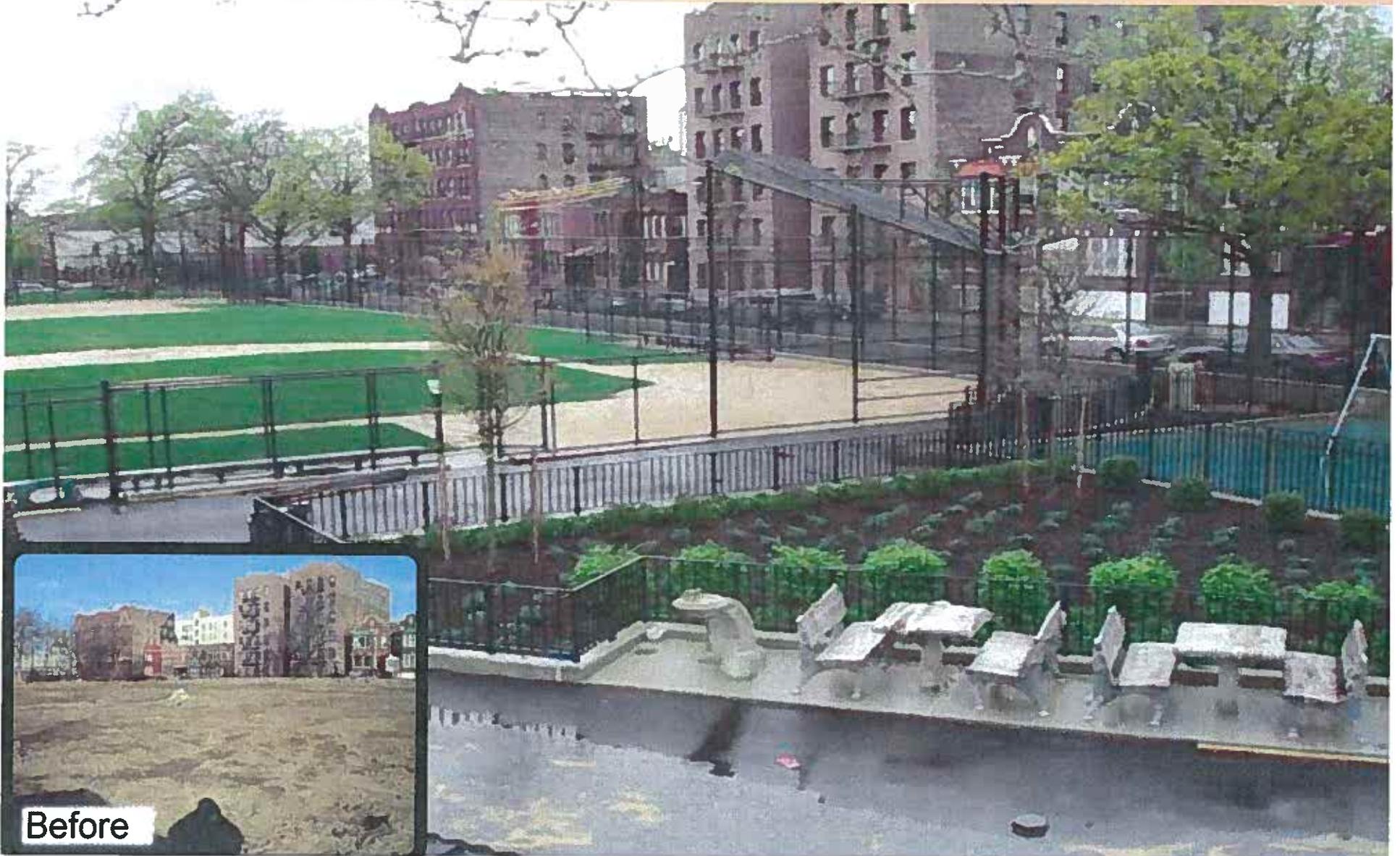
Accepted 5/23/08



MANIDA BALLFIELD

Total Budget \$1,357,395

Accepted 5/23/08



Before

AQUEDUCT LANDS PLGD.

Total Budget \$ 1,809,860

F.I. 6/26/08



DREW PARK

Total Budget \$1,447,888

F.I. 6/27/08



Before

MT. HOPE PLAYGROUND

Total Budget \$1,809,860

F.I. 6/27/08



Before

STORY PLAYGROUND

Total Budget \$5,795,989

F.I. 6/28/08



Before

CLARK PLAYGROUND

Total Budget \$1,357,395

F.I. 6/30/08



BRONX SKATE PARK EAST (BALLFIELD BUNDLE)

Total Budget \$1,357,395

Accepted 5/23/08



SOUNDVIEW BALLFIELD (BALLFIELD BUNDLE)

Total Budget \$2,714,790

U.I. 8/01/08



TROJAN BALLFIELD (BALLFIELD BUNDLE)

Total Budget \$2,714,790

U.I. 8/08/08



ST. JAMES (PHASE 4)

Total Budget \$3,000,000

Accepted 10/07/08





**CROTON PROJECTS
“IN-CONSTRUCTION”**

St. James Phase 3

Total Budget \$1,949,000

Current Conditions



St. James Reconstruction of the retaining wall at 193rd St.

St. James Park (Phase 4)

Total Budget \$3,000,000

Current Conditions



Crotona Park Indian Lake

Total Budget \$4,434,157

Current Conditions



Indian Lake concrete base for the steps in front of the bathhouse



Construction of the stage area

Edenwald Playground

Total Budget \$1,809,860

Current Conditions



Williamsbridge Oval Track and Field

Total Budget \$2,800,000

Current Conditions

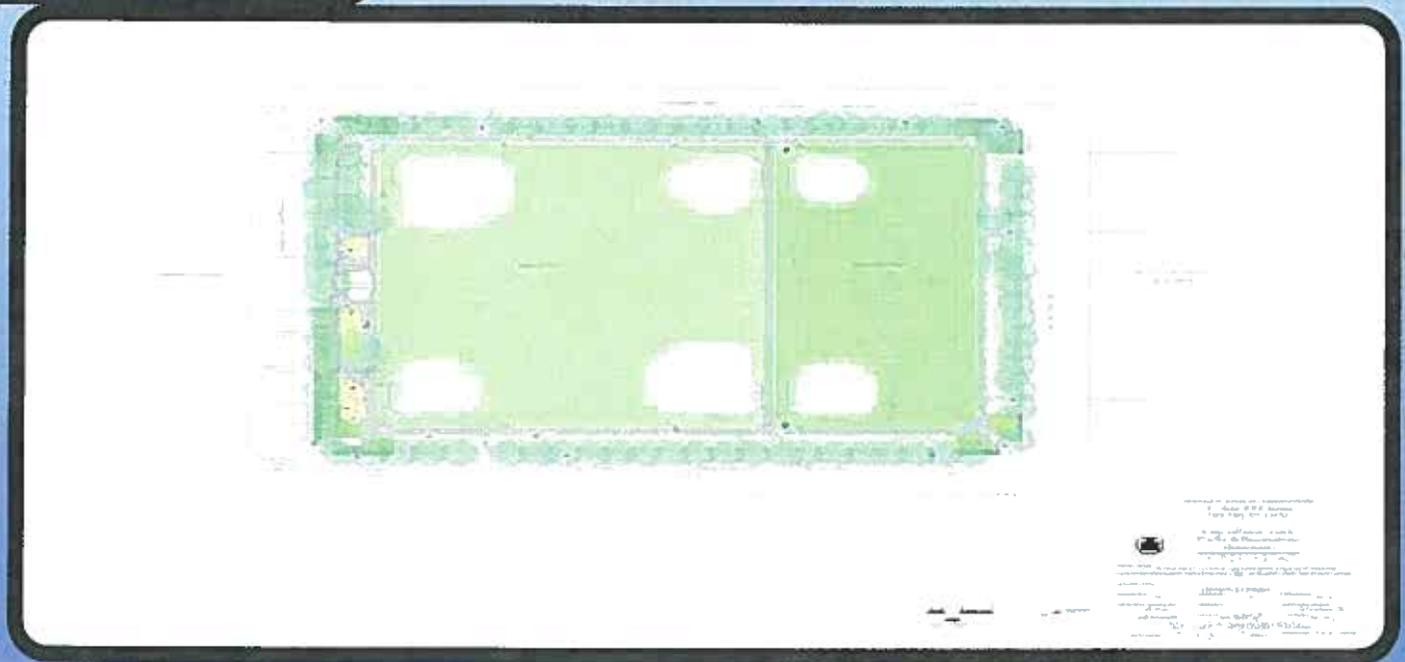


Harris Park Ballfield

Total Budget \$8,922,610



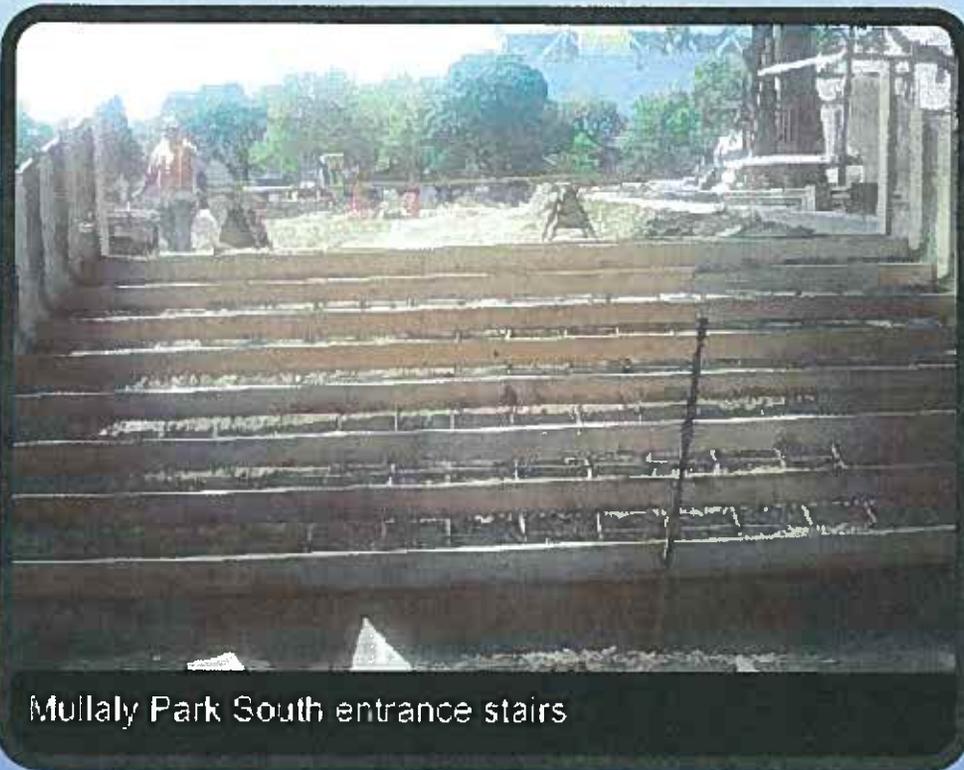
Current Conditions



Mullaly Park south

Total Budget \$4,929,580

Current Conditions



Mullaly Park South entrance stairs



Mullaly Park South earth work and installation of curbs near curbing

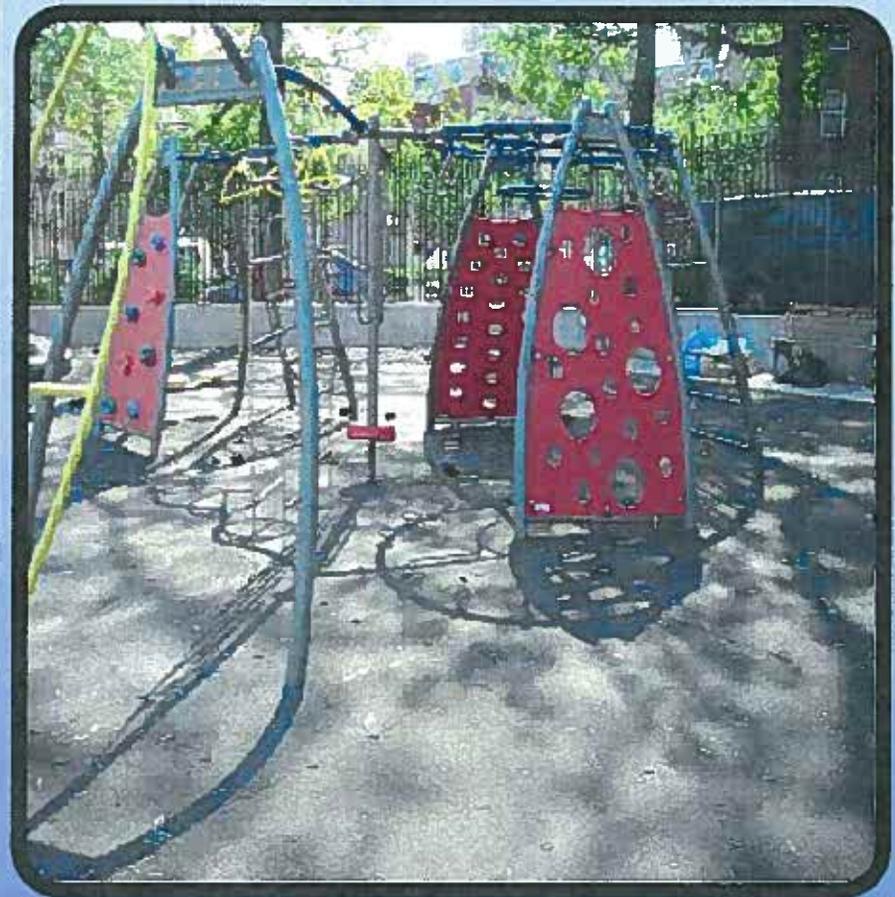
Melrose Playground

Total Budget \$1,357,395



Melrose Playground installation of play equipment (unit B)

Current Conditions



VCP Parade Grounds

Total Budget \$14,931,345



VCP Parade Grounds Perimeter curb drains around the track and high-jump

Current Conditions

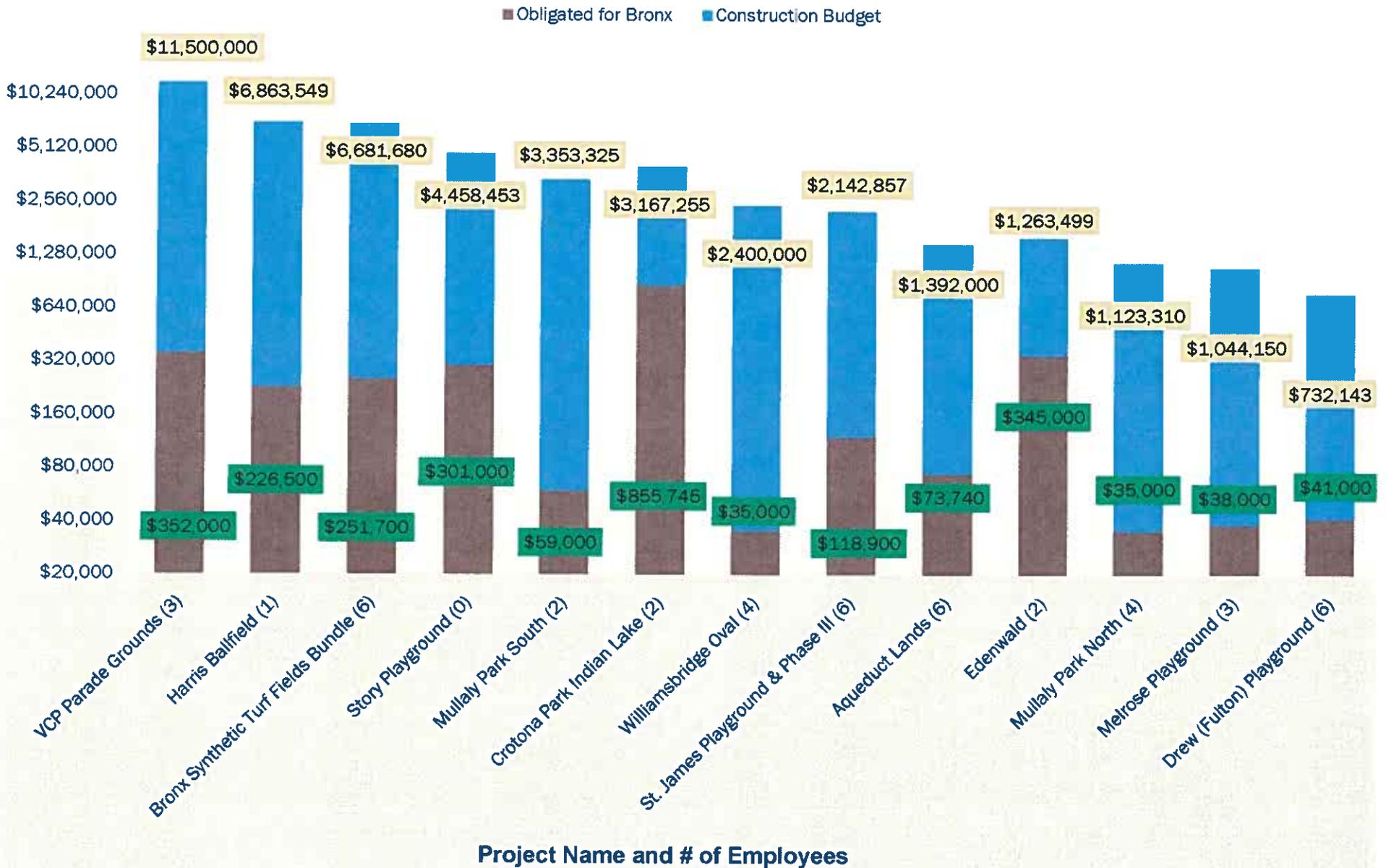


VCP Parade Grounds 48" Piping for infiltration system

Parade Ground Schematic



OUTREACH EFFORTS



**Croton Filtration Plant
Update on Bronx-based Hiring and Purchasing
Presented to the Croton Facility Monitoring Committee
October 16, 2008**

Last FMC Meeting held in September (August Report)

- Bronx Labor – 95 employees or 22% on site
- Bronx Purchasing – \$77.3 million or 43% of Bronx & Non-Bronx contracts
- Croton Community Outreach Office Applicants – 1,600 (460 union, 1,140 non-union)

October FMC Meeting 2008 (September 2008 Report)

- Bronx Labor – 116 employees or 25% on site
- Bronx Purchasing – \$77.6 million or 44% of Bronx & Non-Bronx contracts
- Croton Community Outreach Office Applicants – 1,650 (500 union, 1,150 non-union)

Increasing Costs of the Croton Filtration Plant at Mosholu

Presentation to the Croton Facility Monitoring Committee
October 16, 2008

By George Sweeting
Deputy Director
New York City Independent Budget Office

Purpose of Analysis

- Help understand why project cost grew so much
- IBO's focus is budget and economic analysis

Not an engineering review

Not an audit

What We Found

- Construction cost more than doubled since 2003
- General construction cost escalation explains 45 percent of the increase
- Limited bidding pool also contributed
- Scope changes were not big factor
- Cost escalation would impact other sites

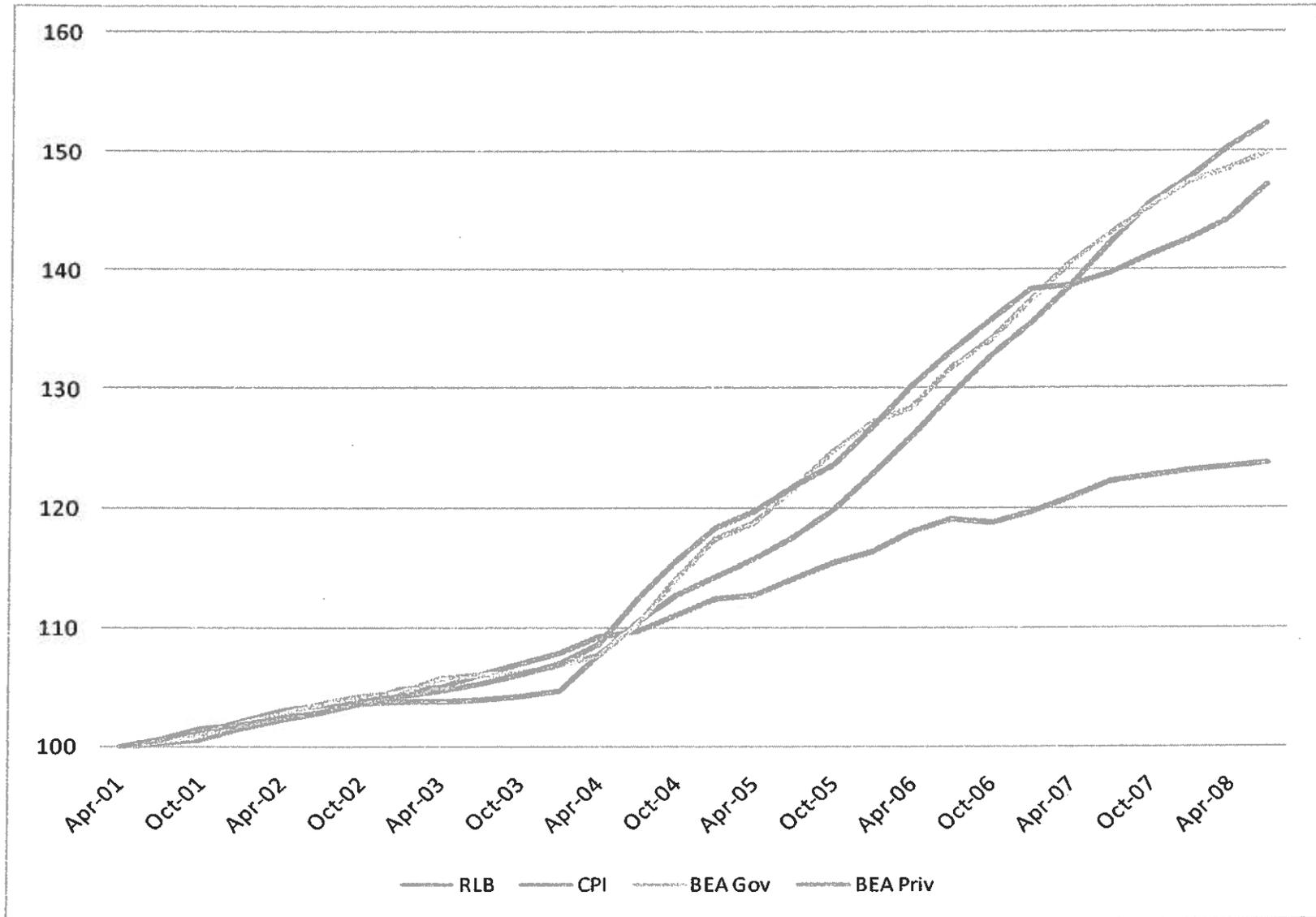
Comparison of 2003 and 2009 Estimates

Project Detail	Contracts	2003 Estimate	FY 2009 Estimate	Percentage Change
<u>Construction Costs Included in EIS</u>				
Site Prep	CRO-311	\$117,097,856	\$119,538,421	2.1%
Tunnel	CRO-313	169,707,038	214,820,230	26.6%
Plant	CRO-312G, CRO-312H, CRO-312P, CRO-312E1/E2	665,251,587	1,665,774,688	150.4%
Off-Site	CRO-312OS, CRO-312HP, CRO-312FM	40,406,438	171,676,000	324.9%
Subtotal (Construction Costs in EIS)		992,462,918	2,171,809,339	118.8%
<u>Other Costs Included in EIS</u>				
Mitigation and Amenities Total		243,000,000	243,168,154	0.1%
Subtotal (Costs Included in EIS)		1,235,462,918	2,414,977,494	95.5%
<u>Costs Not Included in EIS</u>				
NCA Reconstruction Total		55,485,000	140,394,223	153.0%
Design and Construction Management			326,908,161	
Additional Mitigation (Club House and First Tee)		No initial breakdown provided	106,833,520	
Interfund Agreements			91,732,540	
Subtotal (Costs Not Included in EIS)		55,485,000	665,868,444	
Comprehensive TOTAL		1,290,947,918	3,080,845,937	138.6%

Measuring and Forecasting Inflation

- **Definition:**
 - a rise in general level of prices of goods and services over a period of time
- **Commonly measured by indices**
 - Change in the price of “baskets” of goods and services between two points in time
 - Adjustments for changes in quality
- **Index used should match type of project**
- **Difficult to forecast inflation**

Inflation Indices April 2001-June 2008



Cost Escalation in Design Estimates

- Conceptual design cost estimates in EIS assumed no escalation
- EIS estimate did include 30 percent contingency for design changes
- City practice varies

Construction Inflation Index Accounts for 45% of Increase

Contract	Description	2003 DEP Estimate	Escalation to Construction Midpoint	FY 2009 DEP Planned	Share of Increase Due to General Escalation
<u>Construction Costs Included in EIS</u>					
CRO-311	Site Prep	117,097,856	138,539,103	119,538,421	
CRO-313	Tunnel	169,707,038	259,113,556	214,820,230	
Plant		665,251,587	1,057,502,578	1,665,774,688	39.2%
Off-site		40,406,438	71,649,066	171,676,000	23.8%
Construction Subtotal		992,462,918	1,526,804,304	2,171,809,339	45.3%
<u>Other Costs Included in EIS</u>					
Mitigation and Amenities Total		243,000,000	356,612,213	243,168,154	
Total for costs included in EIS		1,235,462,918	1,883,416,517	2,414,977,494	54.9%

Costs Would Have Also Grown at Other Sites

- Main WFP design was similar
- Mosholu's higher site prep
- Offset by lengthier raw and treated water tunnels at Eastview and Harlem River
- General cost escalation driven by markets for labor and materials

Little difference between the sites

Adjusting Construction Estimates at Other Sites

(\$ in millions)

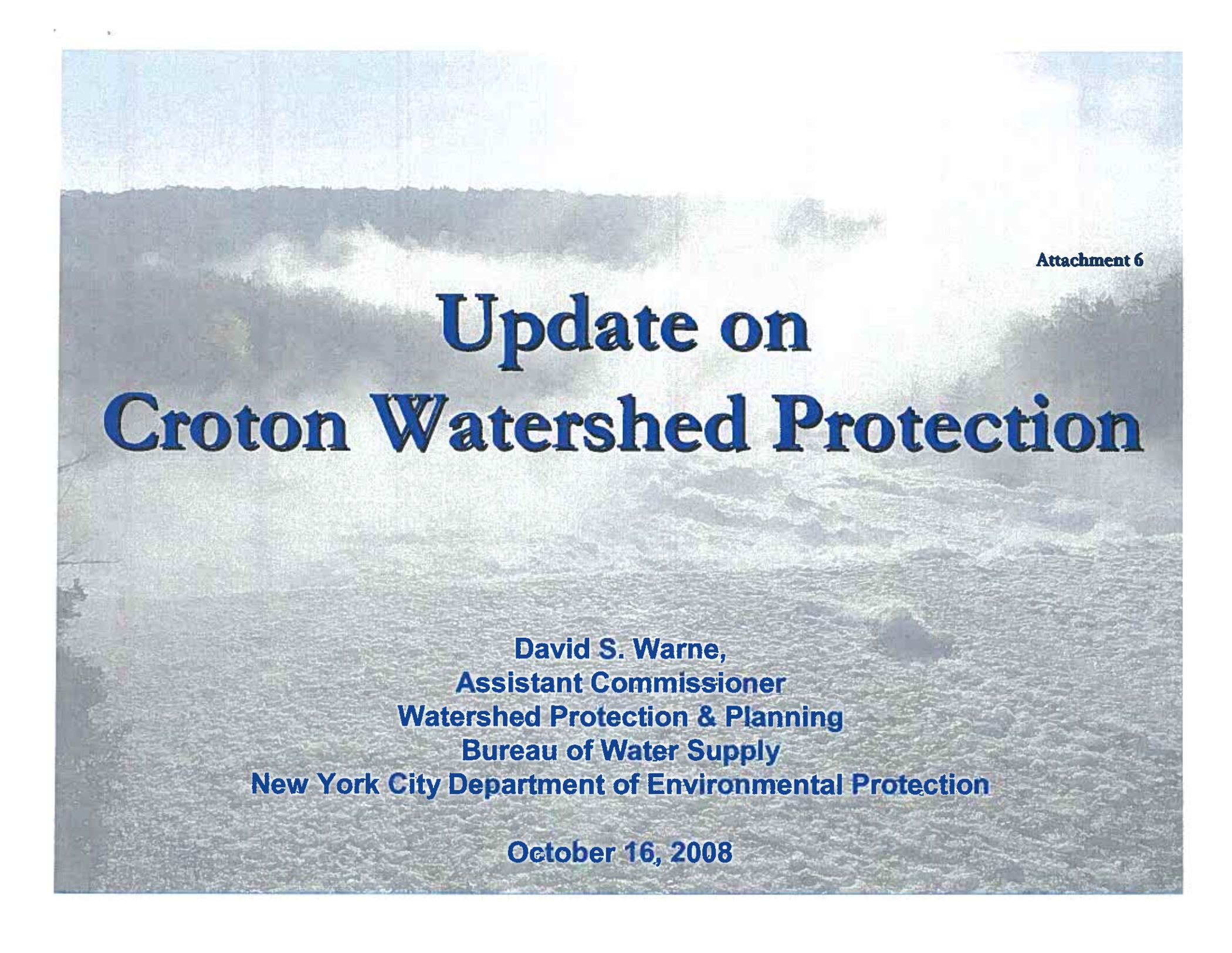
	FY 2003	Construction Midpoint
Mosholu	\$992.0	\$1,526.8
Eastview NCA	1,546.0	2,455.8
Eastview KCT	1,196.0	1,899.9
Harlem River	1,174.0	1,864.9

Other Factors Besides General Construction Inflation

- DEP cites major changes between EIS and final design
 - Few change orders after contracts in place
- Bidding environment for main plant contract
- Limited number of bidders
 - Competition generally results in lower bids
 - Main plant construction contract had only 2 bidders
 - Early contracts had more bidders
 - Remaining contracts likely to draw more competition

Other Questions

- How much of cost increase was due to design changes after EIS?
 - EIS estimates allowed for 30% design contingency
- Was cost escalation higher in NYC than national indices show?
 - Little difference in rate of wage growth
 - Limited number of qualified firms – sellers market
- Can capital planning process be improved?
 - Budgeting before detailed design risks large variances
 - How to account for likely inflation



Attachment 6

Update on Croton Watershed Protection

**David S. Warne,
Assistant Commissioner
Watershed Protection & Planning
Bureau of Water Supply
New York City Department of Environmental Protection**

October 16, 2008



Presentation Outline

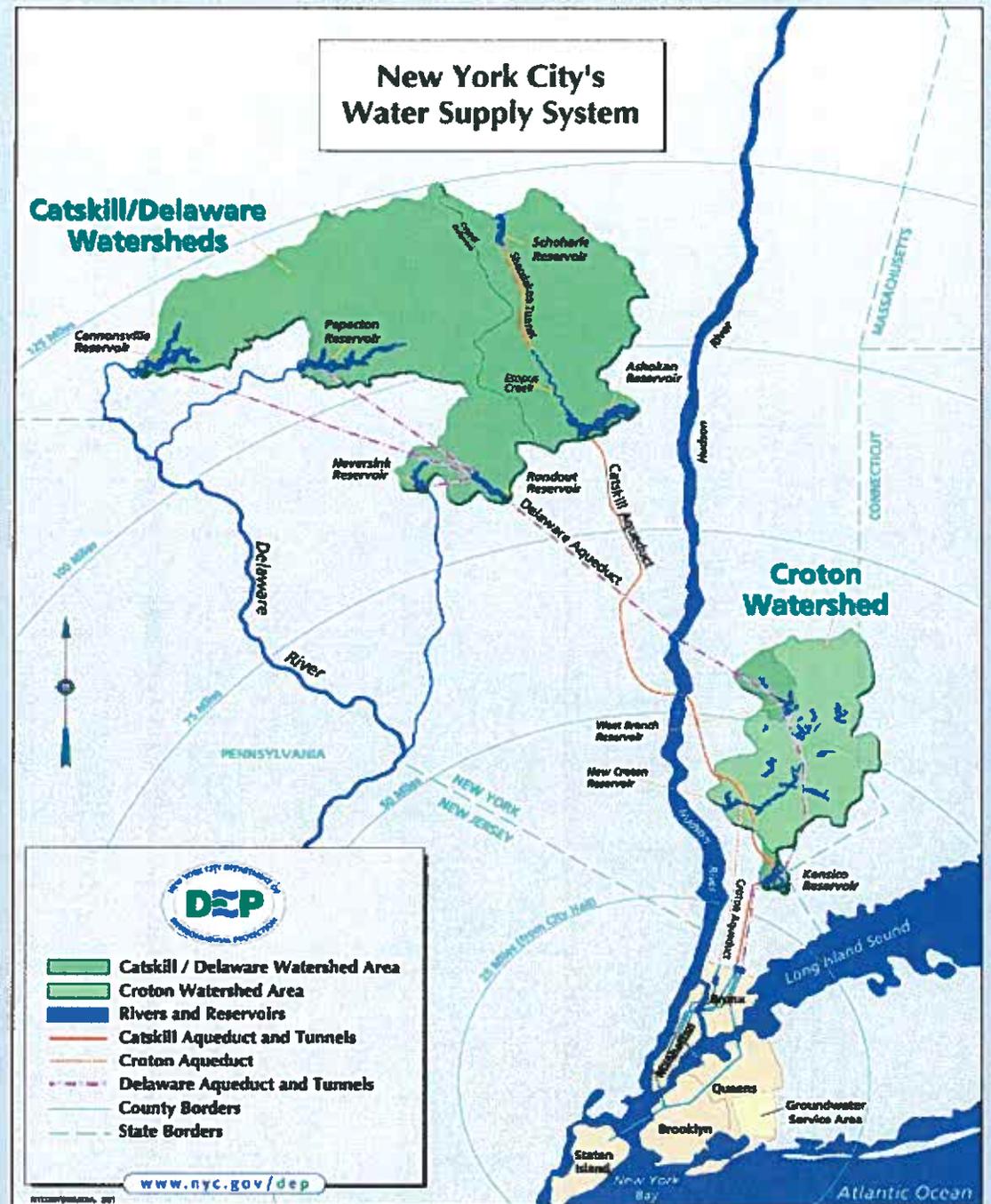
Water Supply System Overview

Croton Watershed Protection Programs

Specific Program Highlights

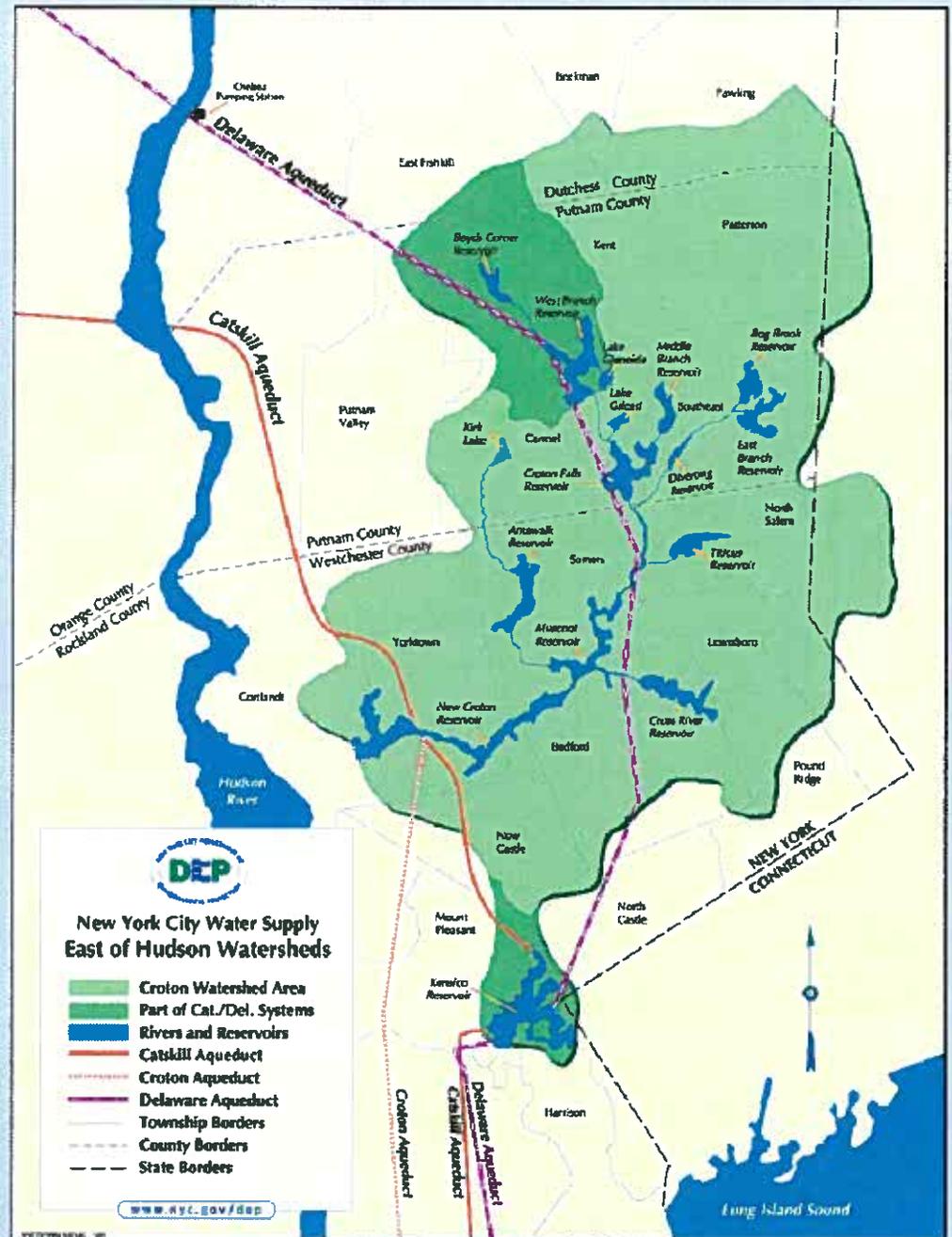
Water Supply

- Primarily a surface water supply
- 19 reservoirs & 3 controlled lakes
- System Capacity: 550 billion gallons
- Serves 9 million people (1/2 of population of New York State)
- Delivers approx. 1.1 billion gallons per day to the City
- Source of water is a 2,000 square mile watershed in parts of 8 upstate counties
- Operated and maintained by NYCDEP



Croton Watershed

- 375 square miles
- Population over 190,000 (~500 people/mile²)
- 63 Wastewater Treatment Plants - total flow of 6.2 million gallons per day
- 72,000 septic systems
- Wetlands: cover 6.5% of the total watershed
- Soils, geology and ecology naturally release minerals and organics that lead to water quality concerns
- Provides drinking water for approx. 800,000 people in Putnam, Westchester, and NYC

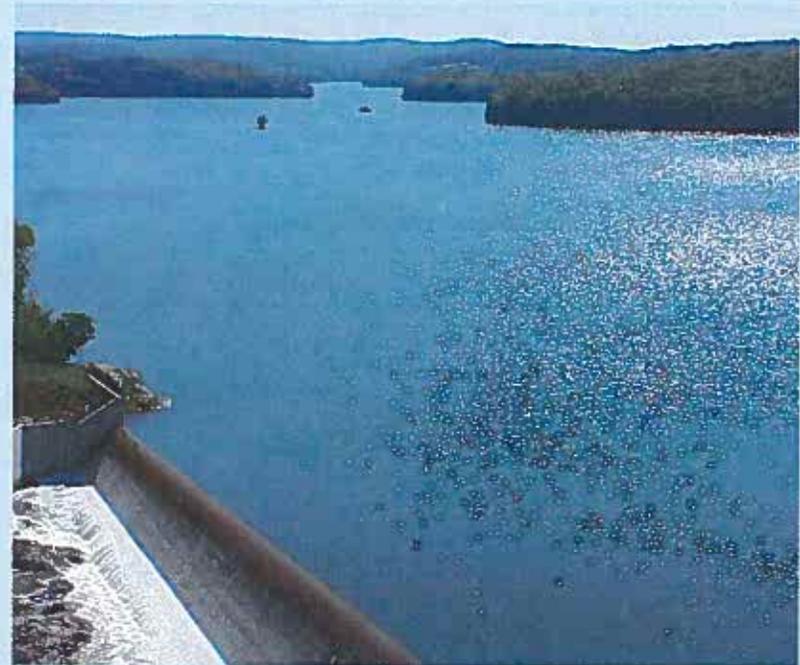




Watershed Management

Watershed management is a critical component of a multi-barrier approach to water supply protection

- ✓ **Helps keep pollutants out of the water**
- ✓ **More protective of public health to have “multiple lines of defense”**



In order to be effective, Watershed Protection needs to be implemented on all levels: Town, County, NYC, NYS and Federal



Multi-Pronged Approach

Regulatory Programs

NYCDEP

Project Review
Regulatory Compliance
Restricted Basins
DEP Police

State and Federal

SEQRA
Wetlands remapping
Stream reclassification
Stormwater enforcement
PhII Stormwater Program (MS4)
TMDLs

Non-regulatory Programs

Research and Monitoring

Process Studies
Wetlands research
Water quality monitoring
USGS gages

Remedial

WWTP Upgrades
EOH NPS program
EOH WAP
WQIF
Sewage Diversion and
Consolidation

Protection and Planning

Land Acquisition
Watershed Strategy
Reservoir and watershed models
Croton Planning



Wastewater Programs

WWTP Upgrades

- Completed the wastewater consolidation and improvement projects in the Town of Patterson and at the Twin Brook Homeowners Association that included the construction of new WWTPs or sewer lines to serve areas with problematic subsurface disposal systems.





Yorktown WWTP

- Largest WWTP in watershed (SPDES flow limit of 1.5 mgd)
- Discharges to Hallocks Mill Brook in the Muscoot Basin
- Upgrade has a long history.....
- Declared Functionally Complete in August 2008, now in 6 month start-up period



- Upgrade includes a 2 million gallon equalization tank to provide off-line storage during flows > 4.5 mgd; after the storm event the equalization tank drains to the head of the plant
- Process includes microfiltration and UV disinfection



Brewster WWTP/Collection System

- Completed the upgrade, expansion and reconstruction of Brewster WWTP and transferred ownership of the WWTP from DEP to the Village of Brewster.
- The reconstructed WWTP includes a 7,500 square foot laboratory for DEP staff.
- The project included the installation of a sewage collection system for the entire Village and a SPDES flow of 240,000 gpd.





Nonpoint Source Programs

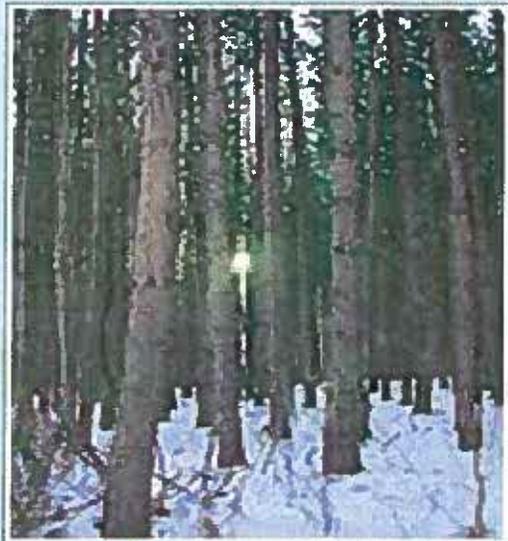
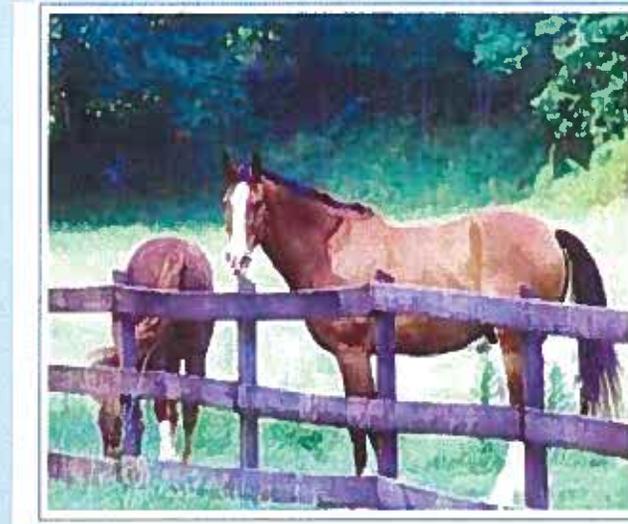
- Provide technical assistance for Putnam and Westchester County continued to use EOH WQIP funds for construction of watershed improvement projects (e.g. stormwater management practices, wastewater sewerage projects)
- Completed the inspection and GIS mapping of all stormwater collection system infrastructure in the four EOH Cat/Del basins. Sites with potential illicit connections were identified and provided to the appropriate municipality.
- Coordinated with Putnam County on their use of EOH WQIP funds to implement a septic repair program in priority areas of the watershed. Using WQIP, the County has repaired over 100 systems located in priority areas.





Farm and Forestry Programs

- **Watershed Agricultural Program**
 - 33 farms are enrolled in program (about 6,000 acres)
 - \$3.5 million spent between 2004 and 2008.



- **Watershed Forestry Program**
 - 42 landowners have completed WAC forest management plans (5,193 ac. of forest land); 3 landowners have completed a Timber Harvest Road BMP Project.



2008 Amendments to the WR&Rs

- **Reflect changes in federal and State law since 1997 and address issues that have arisen during administration and enforcement of the Regulations over the past eleven years**
- **Revised stormwater provisions to incorporate new State regulations while preserving the water quality protection standards that DEP has determined are appropriate in the watershed**
- **Variance for new or expanded surface-discharging wastewater treatment plant within the 60-day travel time, in the Croton system only, under specified and limited circumstances**
- **Revise the definition of “Phosphorus restricted basin” to incorporate a phosphorus concentration standard of 15 ug/l, consistent with the NYSDEC Phase II Total Maximum Daily Loads, for source water reservoirs only**



Stormwater Regulations

- **New regional conditions in NYS stormwater permits**
 - **General SPDES Permit for Construction Activity sets new minimum threshold of 5,000 square feet of land disturbance**
 - **EOH municipalities (MS4s) must “review and accept” stormwater plans for all regulated construction activities**
- **Regional Stormwater Entity (RSE)**
 - **Phase II stormwater permits encourage municipalities to work together to achieve compliance with new permit requirements**
 - **Croton MS4s are in the process of forming a RSE**
 - **DEP has agreed to use some of the Challenge Grant funds to support a RSE**



Croton Program Costs

Program	Total Cost (\$)
Wastewater Treatment Plant Upgrades	\$300,000,000
East-of-Hudson Land Acquisition	\$128,827,025
East-of-Hudson Nonpoint Source Program	\$33,000,000
East-of-Hudson Watershed Agricultural Program	\$3,851,710
Croton Process Studies	\$6,021,520
Croton Watershed Strategy	\$2,635,603
Hypolimnetic Aeration Pilot	\$1,500,000
USGS Stream Gages (capital costs only)	\$900,000
Challenge Grant Program	\$4,500,000
Croton Planning	\$2,000,000
Water Quality Investment Funds	\$68,000,000
Croton Diversion	\$800,000

Total > \$550 Million

Questions?



City of New York
Department of Environmental Protection
Water Treatment Plant No. 100

GRINSHAW

DESIGN UPDATE
CROTON FACILITY MONITORING COMMITTEE MEETING



WTP EMPLOYEE AND GUEST PARKING 45 SPACES

GUARD HOUSE

CHEMICAL FILL BUILDING

ARRIVALS AND RECEIVING BUILDING

MGC DRIVING RANGE PARTERRE

IRRIGATION POND

TEE BOXES

MGC CLUBHOUSE

PROPOSED FIRST FAIRWAY

PROPOSED FIRST TEE

PROPOSED FIRST GREEN

CLUBHOUSE PARKING 75 SPACES

JEROME AVENUE

SE

LEGEND

SUMP PUMP

TRAP EXCHANGE

PERCOLATION TRENCH

FILTRATION

PERMEABLE SURFACE STORMWATER

TANK 2 (TANK 2, UNDERGROUND)

SURFACE STRUCTURE

PERCOLATION RANGE DRAINAGE
(SURFACE AND SUBSURFACE)

UNDERGROUND PIPE WATER FLOW

PAVED AREAS (ROADS AND PARKING)

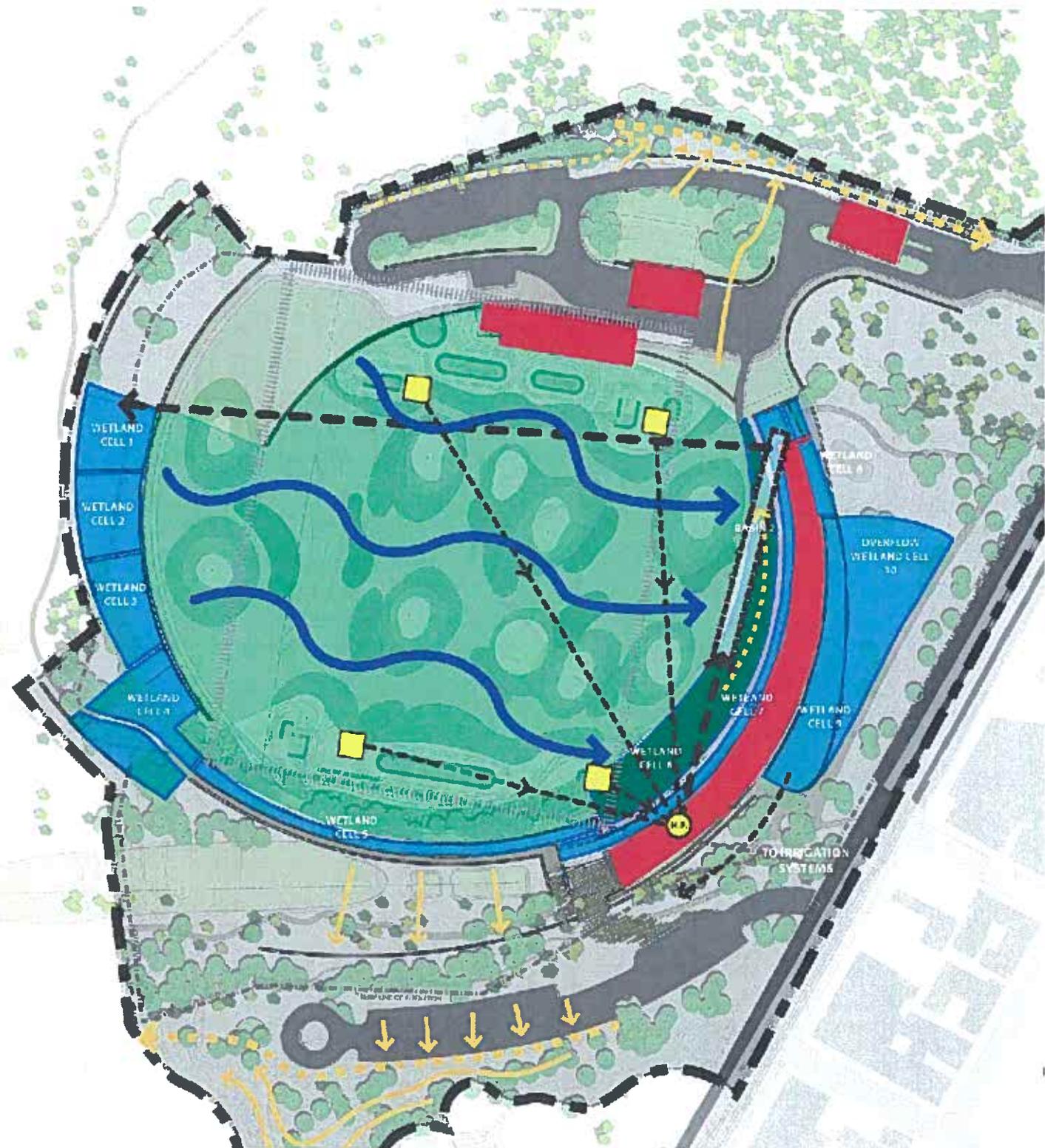
PERVIOUS ROOF (ON BUILDING)

WETLAND CELL 6 (WET MEADOW)

WETLAND TREATMENT SYSTEM

PERCOLATION RANGE

PERCOLATION RANGE AREA (SITE EXTENTS)







KEY PLAN





KEY PLAN





KEY PLAN





KEY PLAN





KEY PLAN





KEY PLAN



