WATERSHED PROTECTION AND PARTNERSHIP COUNCIL

2001-2002

George E. Pataki, Governor

Annual Report

Historical photos courtesy of
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WATERSHED PROTECTION AND PARTNERSHIP COUNCIL'S MISSION

The Watershed Protection and Partnership Council represents and provides a working forum for the diverse interests that share the common goal of protecting and enhancing the environmental integrity of the Watershed, the social and economic vitality of its communities and the quality and quantity of the water that sustains them.

MESSAGE FROM GOVERNOR GEORGE E. PATAKI

STATE OF NEW YORK

GEORGE E. PATAKI
GOVERNOR

September 16, 2003

Dear Members of the Watershed Protection Partnership Council:

Allow me to extend my sincerest thanks and congratulations on your accomplishmen regarding the New York City Watershed for 2001 and 2002.

For over a century, City officials kept up with increased demand for safe drinking wat by constructing a water supply system unprecedented in size and scope, complete with unrivale engineering marvels. The historic 1997 Watershed Agreement instituted a fundamental chang in the approach to protecting New York City's drinking water supply, forging importa partnerships between the City and the up-state watershed communities vital to the long ter protection of this valuable resource. These partnerships have proven to be extremely effective i continuing to protect New York City's drinking water supply and especially helpful in managin issues of public safety during times of crisis as seen on September 11, 2001.

I commend Department of Environmental Conservation Commissioner Erin Crotty f her exemplary leadership as the Council Chair. I would also like to extend my gratitude t Secretary of State Randy Daniels and the Department of State staff, including Executive Direct William Harding, for their efforts over the past two years.

Protecting the drinking water supply of nearly half of New York State's population is n small task, and I thank you again for your efforts on behalf of the people of New York. I wis you all the best as you continue to aid in the implementation of the 1997 Watershed Agreement.

Very truly yours,

EXECUTIVE CHAMBER STATE CAPITOL ALBANY 12224
http://www.state.ny.us

MESSAGE FROM CHAIR, ERIN M. CROTTY

GEORGE E. PATAKI
GOVERNOR

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

ERIN M. CROTTY
COMMISSIONER

Watershed Protection and
Partnership Council
2 John Walsh Boulevard
Suite 206
Peekskill, New York 10566

Dear Members of the Watershed Protection and Partnership Council:

I am very pleased to present you with the Annual Report of the New York City Watershed Protection and Partnership Council for 2001-2002. This unique partnership, formed with the January 21, 1997 signing of the historic New York City Watershed Agreement, made tremendous progress in 2001 and 2002 toward achieving the goals of protecting drinking water quality while preserving the economic vitality of the Watershed communities.

The Council's 2001-2002 report describes the many activities that our members and other Watershed partners have underway to ensure the continued protection of the City's water supply system. In addition, this year's report includes information regarding the development of the City's water supply system. I found it particularly reassuring to be reminded of the tremendous obstacles that New Yorkers overcame to provide New York City with a healthy water supply as it grew from a tiny port to a city swelling with immigrants from all over the world to what it is today - the nation's largest city and the heartbeat of the world's economy.

In addition, as required by the New York City Watershed Agreement, the State and City have compiled information needed for their five-year assessments. Their reports were very helpful for the Executive Committee's review of the Agreement that took place in August 2002.

I wish to sincerely thank all the Council members, their staffs and our other Watershed partners for their efforts in helping respond to the tragic events of September 11, 2001 and their joint efforts to continue to secure the Watershed. I trust that the Council will continue to play a vital role in helping New York build toward the future.

Sincerely,

Erin M. Crotty

The New York City water supply system provides 1.4 billion gallons of high quality drinking water to 9 million New Yorkers every day. The source of this superior water supply is a network of 19 reservoirs and controlled lakes in a 2,000 square mile watershed that extends 125 miles north and west of New York City. The building of this massive water supply system has been called one of the wonders of the modern world. From civil engineer to politician to upstate farmer, the history of the making of the City's water supply system has had profound impacts.

Since 1842 when the island of Manhattan celebrated the introduction of Croton water to a burgeoning metropolis, the City of New York has been planning, building or improving its water system to sustain the quality of life and economic livelihood of millions - but not without impacts on upstate watershed communities. As New York City moved northward condemning lands and building dams and reservoirs, resentments developed. The costs, both social and economic, have been tremendous; however, without high quality and plentiful water, the costs to New York City and New York State as a whole would be devastating. Inextricably linked by a life sustaining resource more precious than gold, the upstate-downstate relationship is complicated but essential.

In 1995, Governor George E. Pataki initiated a new era in the New York City water supply system when he made a promise that New York City would continue to enjoy high quality, affordable drinking water and that the economic vitality of upstate Watershed communities would be sustained. With New York City under a consent order to filter its upstate water supply at a cost of more than $6 billion and upstate communities faced with a proposal for more land condemnation and onerous watershed rules and regulations, the tension within the Watershed had reached historic proportions. Faced with a filtration plant that was too costly for the City, as well as New York State as a whole, to bear and potentially disastrous economic consequences for upstate watershed communities if condemnation and regulation was implemented as proposed, Governor Pataki orchestrated the Watershed Agreement among the upstate watershed communities, certain environmental organizations, New York City, New York State and EPA. The historic Agreement, signed in 1997, reflects a new partnership among the parties and a new era of cooperation between upstate and downstate that protects the City's drinking water supply and the economic vitality of upstate communities.

Conflicts and conquests, engineering and environmental challenges, resentment and anger have marked more than 150 years of development and management of the New York City water supply system. Driven in part by disasters and terror, such as the Typhoid outbreaks in 1907, the Great Fire of 1935 and concerns over potential terrorist attacks from two world wars and the Cold War, even those who complain of the loss of communities acknowledge the need for life-sustaining water, security and peace of mind that the complex system brings to a metropolis of 9 million New Yorkers. As we reflect on the tragic events of September 11, 2001, we know that when we, upstate and downstate, focus on that which unites us rather than that which divides us, we can rise to any challenge.

The historic Watershed Agreement has turned a new page in the era of New York City's water supply system - an era that promises health, prosperity and a robust quality of life for all New Yorkers. As we observe the fifth anniversary of the Watershed Agreement, let us look to see how far we have come. The history of the Watershed is marked with hard work and vision for the benefit of posterity. Its successes are marked by cooperation and collaboration, whether among the teams of engineers that built the system or the partners of the Watershed Agreement that now collaboratively manage and protect the system. Let us also keep our sights on what makes this Watershed a symbol of our great Empire State.

New York State Secretary of State Randy A. Daniels

WATERSHED PROTECTION AND PARTNERSHIP COUNCIL MEMBERS

CHAIR
Erin M. Crotty, *Commissioner, NYS Dept. of Environmental Conservation*

Randy A. Daniels, *Secretary of State*
Gregory Allen, *Governor's Office*
Darren Suarez, *NYS Senate*
Julia Mallalieu, *NYS Assembly*
Ronald Tramontano, *NYS Department of Health*
Amy Schoch, *NYS Empire State Development*
Ruth A. Moore, *NYS Agriculture & Markets*
Jeffrey Gratz, *EPA-Region II*
Jeffrey D. Freidlander, *NYC Mayor's Office*
Michael A. Principe, Ph.D., *NYC DEP*
Wilfredo Lopez, *NYC Department of Health*
Stanley E. Michels, *NYC Council*
Andrew M. Alper, *NYC Economic Development Corporation*
Gretchen Dykstra, *Commissioner, NYC Dept. of Consumer Affairs*
Jonathan A. Ballen, *NYC Business Community*
Ronald L. Wozniak, *Dutchess County*
John Lynch, *Putnam County*
Joyce Lannert, *Westchester County*
Richard Knabel, *Westchester Water Consumer*
Alan Rosa, *Catskill Watershed Corporation*
Ward Todd, *Catskill Watershed Corporation*
Georgianna Lepke, *Catskill Watershed Corporation*
Leonard Govern, *Watershed Business Community*
Richard I. Coombe, *Watershed Agricultural Council*
Robert F. Kennedy Jr., *Environmental Parties*
Cathleen Breen, *Environmental Parties*

WPPC EXECUTIVE DIRECTOR
William C. Harding

Water for the City that Doesn't Sleep

New York City's water supply system provides 1.4 billion gallons of high quality drinking water to more than 9 million New Yorkers each day. The NYC Watershed covers over 2,000 square miles and extends 125 miles north and west of the City. A total of 19 reservoirs supply drinking water to the City. The Watershed is composed of three systems: the Catskill, the Delaware and the Croton. Together, the Catskill and Delaware systems provide up to 90% of the City's water supply and originate West of the Hudson River (WOH) in portions of Delaware, Greene, Schoharie, Sullivan and Ulster Counties. The older Croton system, which came on line in 1842, is located East of the Hudson River (EOH) in portions of Westchester, Putnam and Dutchess Counties. It typically supplies the remaining 10% of the City's water supply but has provided up to 30% in times of drought.

Ensuring the Health of 9 Million New Yorkers

Responding to public health concerns spawned by outbreaks of water borne illnesses, such as giardia where 5,000 citizens of Luzerne County, Pennsylvania were sickened in 1983, the United States Congress approved the federal Safe Drinking Water Act (SDWA) to mandate that the United States Environmental Protection Agency (EPA) address drinking water quality. In 1989, EPA mandated filtration of all the nation's surface water supplies. An exception was allowed only for those supplies that have a comprehensive watershed management program to ensure that a high quality of drinking water can be maintained. For these systems, EPA can grant a Filtration Avoidance Determination (FAD). City, state and federal entities believed that the high quality of water in the City's Catskill and Delaware systems could meet the stringent requirements of the SDWA regulations upon the adoption of more comprehensive watershed management measures.

Christopher O. Ward
Commissioner NYC DEP

"The key to the success of the watershed protection program has been the enormous support and commitment of the City's watershed partners, including the federal government, the State of New York, eight counties, dozens of towns and villages, organizations, the Catskill Watershed Corporation, the Agricultural Council, the Coalition of Watershed Towns, and the Watershed Protection and Partnership Council."

Steps to Partnership

Recognizing the need for a new collaborative approach to make a FAD possible, in 1995 Governor George E. Pataki tasked key State representatives to reach out to Watershed stakeholders. These stakeholders worked tirelessly over the next two years to develop a cooperative framework to address water quality protection. On January 21, 1997, the historic "New York City Watershed Agreement" was signed, which cemented a partnership among New York City, New York State, EPA, environmental representatives and the 80 Watershed host communities. This landmark agreement formed a new partnership to protect New York City's Watershed, yet ensured the economic vitality of the Watershed communities. This innovative, cooperative watershed protection program is the first and only of this magnitude in the nation.

The Council - Where the Partners Meet

The Watershed Protection and Partnership Council (WPPC) was created under the Agreement to provide a regional forum to aid in the long-term protection of the City's drinking water quality and the economic vitality of the Watershed communities. The 27 members of the Council represent a broad-based, diverse group of interests. Consisting of representatives from the Watershed stakeholders, the Council continues to bring the parties together, as partners, to share information and reports of progress as well as to identify issues of concern. It also provides a resource for dispute resolution.

The Council's 16 member Executive Committee anchors the organization while the Technical Advisory, East of Hudson Advisory and the East of Hudson Sporting Advisory Committees contribute sound technical support. New York State Department of Environmental Conservation (DEC) Commissioner Erin M. Crotty provides exemplary leadership as chair of both the full Council and the Executive Committee. Executive Director William C. Harding and staff from the New York State Department of State skillfully manage the day-to-day operations.

New Sewage Treatment Infrastructure

Paragraph 122 of the Watershed Agreement establishes a new sewage treatment infrastructure program which identifies, in order of priority of greatest water quality benefit, 22 communities in the WOH portion of the Watershed that are eligible to receive funds for the construction of wastewater treatment facilities. New York City has provided $75 million to fund this program.

With the study phase of sewage treatment infrastructure complete, it was time to get down to business in 2002. Wastewater treatment plant operation and maintenance (O&M) costs were fine tuned, technical issues were resolved and O&M agreements were developed. State Environmental Quality Review Act (SEQRA) reviews were completed in each of the 22 communities slated to receive funds.

In coordination with the Regulatory Upgrade Program, a number of existing privately-owned surface discharging wastewater facilities in three communities (Hunter, Windham and Fleischmanns) were scheduled to be connected to the planned municipal wastewater treatment plants. In Hunter, plants at Colonel's Chair, Forester Motor Lodge and Camp Loyaltown are to be consolidated. In Windham, plants at Ski America, Thompson House and Frog House are planned for consolidation. In Fleischmanns, the Regis Hotel is planned to connect to the municipal plant.

"Block grants" were allocated to each community authorized to proceed with a new infrastructure project. If bids exceed the capped funds, the community may re-bid, scale back the project size or proceed with construction utilizing other funds.

In 2001, the top five communities signed design/construction amendments to existing contracts and initiated the one-year design period. The following table identifies milestones for the top five communities. Additional information on program development and components is included in previous Annual Reports.

Municipality	*Design/Construction Amendment Execution Date**	*Design Complete Date**	*Construction Bids Complete Date**	*Functional Completion Date**
Andes	Complete	Complete	Complete	September 2004
Roxbury	Complete	Complete	Complete	September 2004
Windham	Complete	May 2002	November 2002	November 2004
Fleischmanns	Complete	August 2002	February 2003	February 2005
Hunter	Complete	Ocotber 2002	April 2003	April 2005

*appproximate

The Town of Bovina continued to make great strides toward forming a state-of-the-art septic maintenance district in Bovina Center. Assistance was provided through a $334,000 grant made pursuant to the federal Water Resources Development Act (WRDA) and a $1,334,000 construction grant also funded by WRDA and the Catskill Watershed Corporation (CWC).

As part of the 2002 FAD for the Catskill and Delaware Watersheds, the City committed to providing funds for projects to address wastewater in Identified Communities Six and Seven (Phoenicia and Prattsville, respectively). Additionally, the City has agreed to work with the CWC to develop a Community Wastewater Management Program to address solutions to the wastewater issues for the 15 communities that were included in the original list of 22 New Infrastructure Communities.

The following identifies the New Infrastructure Communities:

Town	County
Bloomville, Kortright/Stamford	Delaware
Boiceville, Olive	Ulster
Hamden, Hamden	Delaware
Delancey, Hamden	Delaware
Bovina Center, Bovina	Delaware
Ashland, Ashland	Greene
Haines Falls, Hunter	Greene
Trout Creek, Tomkins	Delaware
Lexington, Lexington	Delaware
S. Kortright, Kortright/Stamford	Delaware
Shandaken, Shandaken	Ulster
West Conesville, Conesville	Schoharie
Claryville, Denning/Neversink	Ulster & Sullivan
Halcottsville, Middletown	Delaware
New Kingston, Middletown	Delaware

Septic System Rehabilitation and Replacement

Established under paragraph 124 of the Watershed Agreement, the $13.6 million septic rehabilitation program rehabilitates failing septic systems serving single-family or two-family homes in the WOH portion of the Watershed, ensuring that wastes from these systems do not enter the City's water supply. The City and CWC finance this effort.

In the fall of 2001, CWC staff compiled information to expand the Septic System Rehabilitation and Replacement program to approximately 1,400 property owners located within the next geographic priority focus areas. This includes systems located within the 60 dg travel time to terminal reservoirs, as well as systems within close proximity to a reservoir and/or a watercourse. With the help of global positioning system mapping, CWC pinpoints the location of all repaired systems and links this information to a broad database.

Through December 31, 2002, the CWC had remediated a total of 1,562 systems. Another 74 systems have been designed and readied for construction. CWC staff contacted 1,858 property owners in the high priority areas where the program is concentrated, and more repairs are anticipated as inspections continue at the homes of participating residents.

Following a revamp of the program to more aggressively focus on failing systems in the most environmentally sensitive areas, the program remains one of the most successful under the Watershed Agreement.

Stormwater Infrastructure Retrofits

Existing stormwater infrastructure problems are addressed in paragraph 125 of the Watershed Agreement through this $7.625 million program, paid for by the City and administered by the CWC. This effort funds stormwater control measures or "best management practices" (BMPs) to address problems from existing stormwater runoff in the WOH portion of the Watershed.

Early in 2001, CWC approved $1.4 million for 11 projects in this program. As of the end of the year, 9 of the projects had completed the contract phase and designs were begun. One program participant, the Town of Denning, substantially completed construction of its project.

The Greene County Soil and Water Conservation District began the implementation of a Critical Area Seeding Program and, together with the New York City Department of Environmental Protection (DEP) and CWC, organized a hydroseeding demonstration.

By the end of 2002, CWC approved a total of 22 grants for Stormwater Retrofit projects, awarded to municipalities and businesses seeking to correct runoff and erosion problems which had the potential to degrade water quality. Grants in the four rounds of funding already approved total $4.1 million.

Future Stormwater Controls

As provided in paragraph 128 of the Watershed Agreement, the City provided $31.7 million to fund new stormwater measures required by the Watershed Rules and Regulations but not otherwise required by federal or State law in the WOH atershed. CWC manages the program.

In 2001, CWC approved $384,297 in funding for 7 projects under the Future Stormwater Program, the largest annual approval amount thus far in the program.

Since maintenance of these important stormwater controls is important to keep them in good working order, CWC and DEP worked together in early 2002 to assess maintenance needs, develop a maintenance component of the program and establish an O&M funding policy.

Through the end of 2002, CWC had approved a total of $1.1 million in funding for 26 projects under the Future Stormwater Program. Grahamsville's Daniel Pierce Library, where a major addition is being constructed, was among projects receiving assistance in 2002 to develop required Stormwater Pollution Prevention Plans.

The Greene County Soil & Water Conservation District continues to employ a CWC-assisted hydroseeding program on roadsides and critical areas in Greene County Watershed towns. Planning has also begun for assessment and development of Stormwater BMPs so that a maintenance component can be added to the Future Stormwater Program.

Future Stormwater Control Funding - 2001

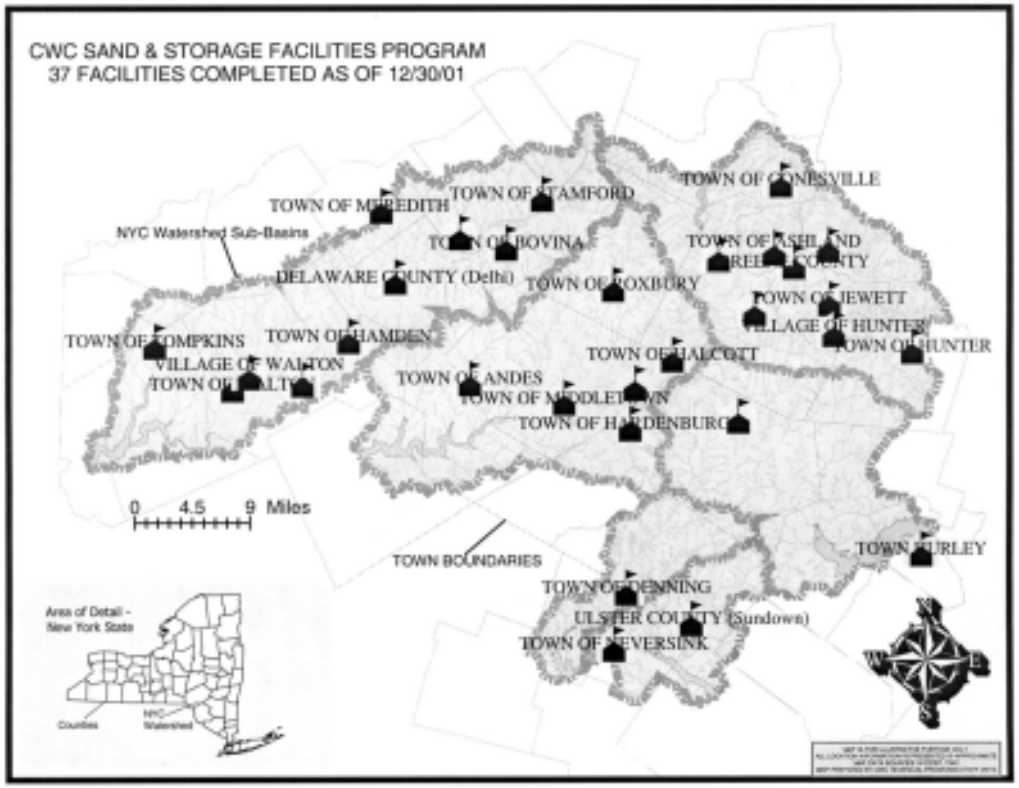
Applicant	*Project*	*Approval Date*	*CWC Funding*
Town of Middletown	Town Offices	3/27/01	$39,842.00
Ulster County	Sundown Sand & Salt Facility	8/28/01	$22,100.00
Camp Loyaltown	Swimming Pool	9/25/01	$54,852.20
Walton Central School	High School Running Track	9/25/01	$146,155.00
		11/27/01	$75,745.00
Clark Management, Inc.	Betty Brook Subdivision	9/25/01	$9,712.50
Hamil	Water Business Expansion	11/27/01	$1,991.99
Village of Hunter	Dolan Park Project	11/27/01	$33,898.50

Sand and Salt Storage Facilities

Under paragraph 126 of the Watershed Agreement, the City provided $10.25 million for a program, administered by CWC, to build new or upgrade municipal road maintenance sand and salt storage facilities in the WOH portion of the Watershed in order to keep these materials from coming in contact with water and entering into streams.

2001 was another banner year for the Sand and Salt program with $1.88 million in program expenditures. Final construction of the Ulster County facility at Sundown completed Round 1 of the program, which totaled 30 facilities. CWC set an aggressive pace for the remainder of the program, emphasizing completion of as many Round 2 facilities as possible. As a result, 7 of the 9 Round 2 facilities were completed in 2001: Gilboa, Harpersfield, Jefferson, Masonville, Wawarsing, Schoharie County and Delaware County at Stilesvile, with two facilities (Woodstock and Colchester) working hard to overcome site selection and site development difficulties.

This program was virtually completed by the end of 2002. Final construction of the Ulster County facility at Sundown in 2001 completed Round 1 of the program, addressing 30 facilities. Seven Round 2 facilities were also finished in 2001. The Colchester facility was completed in 2002, leaving Woodstock, which is experiencing site selection difficulties, the only remaining project.



Stream Management

Under paragraph 127 of the Watershed Agreement, the City provided $3 million for a stream management program to work in partnership with the WOH Soil and Water Conservation Districts (SWCDs) to develop stream management plans and stream restoration demonstration projects in priority streams.

A single stream restoration "demonstration project" is constructed as part of the development of a stream management plan in priority sub-basins. These projects use "bioengineering" and natural channel design to reduce erosion and potentially decrease turbidity, lessen the threat of flood damage from erosion and improve stream ecology. The DEP and SWCDs had restored some 4 miles of Catskill streams through 6 restoration projects by the close of 2002. Stream management plans, built on a broad public outreach effort and local input, were close to completion for the Batavia Kill and the Broadstreet Hollow by the close of 2002. Plans define the extent of stream instability and stability - related problems and provide recommendations for addressing these problems.

In 2001-2002, DEP allocated $4.48 million for the design and construction of stabilization projects for an additional 6 miles of stream channel in 5 major sections of the Batavia Kill. A nearly one-mile reach of the Batavia Kill located in the headwaters of the sub-basin was restored to stable channel dimensions and significant strides were made on the 5 Watershed Environmental Assistance Program projects, (Stony Clove, Chestnut Creek, West Branch Delaware, Broadstreet Hollow and Esopus Creek at Woodland Valley) which are funded by the federal WRDA and administered by the New York District Army Corps of Engineers. DEC also contributed Environmental Bond Act funds toward this effort

Public education and involvement regarding this program were enhanced through two riparian planting projects with upstate and watershed high schools and the Council on the Environment of NYC funded by CWC, in partnership with the Greene County Soil and Water Conservation District (GCSWCD). In May 2001, over 70 students from NYC's High School for Environmental Studies, Margaretville and South Kortright High Schools received an orientation to the Watershed and then participated in hands-on bioengineering that is critical to re-establishing stream channel stability after construction. They planted several hundred bare root willow, dogwood, poplar and green ash stock at the Farber Farm on the East Kill.

Stream Management

In the chill of November, 80 volunteers participated in a major volunteer riparian planting weekend with Greene County Soil and Water Conservation District (GCSWCD) and Trout Unlimited on the Batavia Kill at Big Hollow. The weekend's volunteers included New York City Department of Environmental Protection, GCSWCD, New York State Department of Environmental Conservation staff, school environmental clubs, Trout Unlimited members from multiple chapters and a Boy Scout troop from the Bronx. Over 10,000 bare root seedlings were planted with 160 cold but hardworking hands!

Existing Wastewater Treatment Plant Upgrades

Under paragraph 141 of the Watershed Agreement, the City pays the costs, including future added O&M costs, of upgrades to existing wastewater treatment plants (WWTPs) in the Watershed that are required by the Watershed Rules and Regulations. For the WOH portion of the Watershed, the City also agreed to provide up to $5 million to help pay for upgrades required under State Pollutant Discharge Elimination System (SPDES) requirements.

In order to provide highly advanced treatment of wastewater treatment plant effluent, more than 100 WWTPs in the Watershed are participating in the process of being upgraded to include phosphorus removal, sand filtration, back-up power, back-up disinfection, microfiltration, flow metering and alarm telemetry.

The 2001 and 2002 periods have been the most productive years in the program to date. It was during this time that the designs of the largest WOH facilities were completed and constructed. This resulted in 83% of the permitted flow to be coming from upgraded WWTPs. Since August 2002, these facilities have been engaged in start-up and performance testing procedures in order to ensure compliance with their new SPDES permit limits.

Three EOH plants: Bedford Hills Correctional Facility, the I-684 Rest Area and the Watchtower Educational Center also began construction in 2001. All three achieved functional completion in 2002. These facilities are also presently engaged in start-up and performance testing procedures. Nearly 50% of facilities in the EOH Watershed completed preliminary design by the end of 2002 and are expected to begin construction in 2003.

On November 26, 2002, EPA and the City of New York signed a new 2002 FAD for the Catskill and Delaware Watersheds which extends several of the programs included in the 1997 FAD, including the Upgrade Program, and adds some additional programs. The 2002 FAD integrated significant aspects of the Fast Track Action Plan proposed in 2000 by DEP and discussed in the 2000 Annual Report, including a detailed schedule for completing the remaining WOH projects.

DEP and the New York State Environmental Facilities Corporation (EFC) also executed two program contract amendments in 2001 and 2002 with the goal of ensuring completion of the program objectives. Through these amendments, the City allocated approximately $192,000,000 in additional funding for the program while EFC agreed to provide additional services, some of which include negotiation of O&M agreements and disbursement of start-up and performance testing payments. Additionally, the City chose to add 10 additional WWTPs to the Upgrade program as part of these amendments.

Delaware County Action Plan (DCAP)

The Delaware County Action Plan (DCAP) was created to help Delaware County residents, farmers, businesses and communities in meeting water quality parameters as a result of the Cannonsville Reservoir being designated a phosphorus restricted basin.

Under Section 18-83 of the New York City Watershed Rules and Regulations, the Cannonsville Basin Watershed is designated a "phosphorus restricted" basin. To assist Delaware County's residents, farmers, businesses and communities in meeting heightened water quality measures as a result of this designation, Delaware County developed a comprehensive strategy for water quality management – DCAP. As a result of nearly two years in developing a strategy, in late 2001 Delaware County released its first DCAP reports to reduce pollutant loadings associated with phosphorus, pathogens and other contaminants. Specifically, DCAP developed management strategies for addressing contaminant load reductions through the following components:

- improved septic system and septage disposal; and
- comprehensive precision farm nutrient and manure
- management for reductions of phosphorus;
- basin stormwater and drainage management;
- erosion control and phosphorus reduction through stream corridor protection and rehabilitation.

In 2002, the Cannonsville Reservoir was removed from the "phosphorus-restricted" list under Section 18-83 of the New York City Watershed Rules and Regulations. Variability in annual loading could cause reinstatement to the phosphorus-restricted list, particularly since the phosphorus concentration of the reservoir hovers tenuously below the guidance value threshold.

The Cannonsville Reservoir is also subject to a Total Maximum Daily Load (TMDL) for phosphorus, as are all the reservoirs in the New York City supply. With the TMDL and current guidance value standing, the DCAP objectives remain constant. Delaware County continues to develop, review, refine and implement DCAP to reduce phosphorus and other pollutant loading to the reservoir.

In addition to the Cannonsville Basin, DCAP programs are being implemented in the Schoharie and Pepacton Reservoir Basins as well as the Susquehanna River Basin within the County. Delaware County seeks to share the processes and information that have been produced under DCAP with other Watershed communities.

DCAP components address multiple pollutants and include efforts in agriculture, stormwater, stream corridor management and septic systems in partnership with other Watershed stakeholders.

Grant awards to implement DCAP for 2002 include a $900,000 federal WRDA grant to advance Precision Feeding on farms, a $242,000 federal SDWA grant and an EPA 104B3 grant of $100,000 for Enhanced Pathogen Management in the Susquehanna Basin. Since 1996, funds associated with assisting community projects, implementing DCAP or meeting compliance requirements include: Delaware County commitment in excess of $3 million, match from Cornell University and the New York State Water Resources Institute exceeding $ .75 million related to DCAP research work and total cash awards from a variety of grants since 1996 exceeding $6.5 million. Sources include: WRDA, SDWA, CWC, Housing and Urban Development, Department of State and the State Environmental Protection Fund.

Federal Funding

Recognizing the importance of ensuring that all sectors of government (federal, state, and local) effectively commit to the implementation of the Watershed Agreement, paragraph 164 references an enhanced water quality monitoring program. Based upon the intent of the Watershed Agreement, Governor George E. Pataki worked with members of the New York Congressional Delegation, particularly Congressmen James T. Walsh and Sherwood L. Boehlert, to fashion appropriation language authorizing funding to undertake the monitoring program. Resulting from their efforts, the SDWA of 1996 includes language directing EPA to monitor the effectiveness of the Watershed Agreement and authorizing up to $15 million annually over 7 years to demonstrate compliance with the Watershed Agreement.

Following Congressional approval of this authorizing language, the State and the WPPC have worked diligently each year to secure funding under the SDWA for monitoring activities. Although Congress has not been able to award the full amount authorized for each year, substantial sums have been dedicated toward monitoring. Appropriations made to the State for this purpose are matched equally from non-federal sources, such as the City or upstate communities.

In addition to the federal funds appropriated for monitoring activities, under the WRDA of 1996, Congress has directed the United States Army Corps of Engineers to expend up to $42.5 million to assist local governments in their implementation of activities to protect the Watershed. Through these funds, upstate communities have been able to construct or improve sewage treatment facilities, control stormwater and support many other important water quality initiatives.

These funds require a 25 percent non-federal match. The federal appropriations under the SDWA and the WRDA are delineated below:

Federal Appropriations for the New York City Watershed

Federal Fiscal Year	*SDWA*	*WRDA*
1997	$1.0 million	0
1998	$2.0 million	$5.0 million
1999	$2.0 million	$2.0 million
2000	$10.0 million	0
2001	$8.0 million	$3.0 million
2002	$3.0 million	$3.0 million
TOTAL	**$26.0 million**	**$13.0 million**

Highlighted Projects:

SDWA Project Geographic Information System Program

During the initial review of the water quality monitoring efforts undertaken in the Watershed, the regulatory agencies recognized that there was a tremendous need to better track and disseminate information, both to share known information and to identify informational needs. The first step was as simple as providing the City with computers better able to handle the complex data already being generated. Then the State commenced work on a new three-dimensional GIS database for the Watershed that can be readily used by the Watershed partners for access to topographic and programmatic information and for modeling assessment. This will allow for assessment of potential physical, chemical and biological stressors to human health and ecological concerns in the Watershed. Development of a build-out analysis of the Watershed and stormwater database pilot is underway.

Enhanced GIS helps Watershed professionals identify actual on-the-ground conditions.

The overall health of streams in the Watershed must be maintained to reduce the likelihood of pathogens and other pollutants from entering or traveling into the City's drinking water supply system. Preservation of natural stream channels is an important component of stream health. Stream channels have been modified by manmade, as well as natural events. In 1996, a significant flood event disrupted the stream banks of many streams in the Catskill portion of the Watershed. In 1999, excessive rainfall from Hurricane Floyd exacerbated problems from muddy conditions.

Streambank restoration will provide added protection for neighboring homeowners while reducing environmental risk to New York City's water supply system

Using WRDA and Environmental Benefit Funding, the Ulster County SWCD along with the neighboring Greene County SWCD undertook a stream restoration and stabilization project to remedy a local problem that developed in the Broadstreet Hollow Stream as a result of these storm events. Greene County SWCD has also undertaken a similar project on Batavia Kill-Big Hollow using New York City funding. These projects reduce the likelihood of future flood damage to adjacent properties, enhance fishing downstream and reduce risk to the City's water supply system. The success of these projects, both for the local watershed community and New York City, has sparked great interest in these types of "win-win" projects.

Ambient Water Quality Monitoring

Several ambient water quality monitoring projects are underway in the Watershed. Efforts have begun to study the effects that stream restoration projects have on problematic algal production, as have fish tissue studies that test for the presence of toxic or bioaccumulative substances. Also in progress are two important macroinvertebrate-related studies. State staff are using analysis of macroinvertebrate populations in streams to assess the overall health of the stream and to determine possible impacts of pesticide use. In addition, the State has retained the Stroud Water Research Center to undertake a comprehensive, independent study of the health of the Watershed and to analyze the ability of the streams in the Watershed to naturally absorb and process contaminants.

New York State Department of Environmental Conservation staff study macroinvertebrate populations in stream

Total Maximum Daily Loads

In accordance with paragraph 162 of the Watershed Agreement, DEP and DEC agreed to gather data and calculate, for each of the City's reservoir basins, the amount of phosphorus from all sources which can be added without exceeding acceptable limits. These calculations are known as TMDLs.

Section (C)(d)(1) 303 of the Clean Water Act and EPA's implementing regulations (40CFR Part 130) require states to identify those waterbodies that do not meet water quality standards after application of technology-based effluent limitations required by the Act. States are then required to develop a TMDL analysis for pollutants that are not meeting water quality standards in those waterbodies. In essence, a TMDL defines the assimilative capacity of the waterbody to absorb a pollutant and still meet water quality standards.

In June 2000, DEC submitted the New York City Water Supply Watershed TMDLs to EPA for formal approval. In October 2000, EPA approved DEC's Phase II phosphorus TMDLs for each of the City's 19 reservoirs. According to the TMDLs, 10 reservoirs were found to be exceeding an acceptable TMDL for phosphorus. Since the phosphorus coming from existing wastewater treatment plant discharges upstream of these reservoirs is being reduced by enhanced wastewater treatment, the primary focus to ensure compliance with appropriate TMDL phosphorus levels will now be on implementing phosphorus reduction measures from "nonpoint sources." Nonpoint source discharges are from an area-wide source or many sources which cumulatively contribute to water quality degradation.

In April 2001, DEC and DEP issued a report that identifies potential nonpoint source management practices to reduce phosphorus loads to those reservoirs requiring phosphorus load reductions. In March 2002, DEC issued an "Interim Report" that provided a snapshot of the status of implementation programs, projects and activities and next steps toward a final implementation plan.

In August 2002, the WPPC Executive Committee recommended in its 5-Year Review Process that the WPPC Technical Advisory Committee (TAC) should review DEC's Interim Report, solicit stakeholder input and make recommendations on how DEC should finalize its report and ensure development of individual basin plans. The TAC is scheduled to meet in January 2003 to begin addressing this issue.

Land Acquisition

Article III of the Watershed Agreement, the Land Acquisition Program, is a crucial tool for protecting the City's water supply. This program allows the City to purchase title to or conservation easements on environmentally sensitive, undeveloped lands. The City must pay fair market value for these lands and is responsible for municipal property taxes once they are under City ownership. Most importantly, the City has agreed to only acquire land from willing sellers. The Watershed Agreement stipulated that the City will seek a 10-year permit from DEC to acquire additional Watershed lands. On a priority basis, over time, the City will solicit owners of 355,050 acres of eligible land for the Catskill and Delaware Watersheds and will commit $250 million for the purchase of Watershed lands in these watersheds. The City has agreed to notify the towns or villages of its intent to purchase properties within their borders. In addition, the City committed to expend $10 million for Watershed lands in the Croton Watershed. The State will also spend $7.5 million to acquire land in the Croton Watershed.

Attaining its goal for 2002, DEP solicited owners of 48,531 acres of watershed lands in designated priority areas. In the first five years of the program, New York City solicited owners of more than 306,000 acres of Catskill and Delaware land, with 40,511 acres either acquired or under purchase contract.

During 2002, 107 projects comprising 8,149 acres were closed and 89 projects accounting for 5,919 acres were signed to purchase contract.

In the Kensico basin, a total of 7 projects were signed to contract in 2001 and 2002. Of the 1,038 acres eligible in the basin, the total number of acres acquired or under contract stands at 180 acres (17%). Of the 4,830 acres eligible in the Rondout 1A priority area, the total number of acres acquired or under contract increased to 2,594 acres (54%). Of the 12,645 acres eligible in West Branch 1A and 1B priority areas, the total number of acres acquired or under contract increased to 7,521 acres (59%).

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In total, the State has purchased 696 acres in fee and acquired an additional 111 acres through a conservation easement in the EOH.

"The open space ballot propositions are among the most significant land preservation accomplishments in Westchester County in recent memory. They raised $31 million for land acquisition in 12 communities, which proves that local residents are committed to protecting natural resources and community character. The propositions were also the rallying point for the Westchester Open Space Alliance, which now encompasses two dozen community groups. It continues to serve as a positive force for land preservation and local planning changes that will help enhance our communities and keep our water supply and wildlife habitats healthy."

Paul Gallay, Executive Director, Westchester Land Trust

Due to the tremendous success of the State's land acquisition program in 2002, Governor Pataki announced that $10 million, on top of the $7.5 million previously committed under the 1997 New York City MOA, will be dedicated toward land acquisition within the EOH portion of the New York City Watershed. DEC will continue to work with interested landowners and organizations to target high priority water quality protection lands for acquisition.

DEC anticipates the receipt of a significant number of conservation easements from the City in 2003, having finalized a formal Memorandum of Understanding (MOU) between DEC and DEP authorizing a specific process for transferring conservation easements.

Recreational Opportunities

The undeveloped lands that the City owns or is purchasing can provide tremendous recreational opportunities for outdoor enthusiasts. In fact, for many of the Watershed communities, such activities represent a way of life that they would like to see continued. Yet, the City's priority for managing these lands is to ensure that they have adequate security to prevent anything from adversely impacting the City's water supply. Thus, it is compelled to carefully evaluate potential recreational opportunities. The City requires permits, which are available at no cost, for recreational users of its lands.

During 2001, the third year of public access to newly acquired lands, a total of 7,023 acres were opened to hiking and fishing. No significant violations or water quality impacts were observed on newly acquired lands as a result of the public access program.

Public access to all City-owned watershed lands was suspended following the September 11, 2001 attacks. Recreational use was re-opened in 2002 with a revised Public Access Permit system providing additional means of security. This system was successfully implemented with over 57,000 access permits and 4,200 hunting tags issued. The amount of lands available to the public continued to increase with 43 sites totaling 11,212 acres open for hiking and 42 sites totaling 23,603 acres open for deer hunting. On three of these areas (3,805 acres), access was made available during the archery season for the first time.

These two committees reviewed more than 8,000 acres in 2001 and 2002 and made recommendations to the City for appropriate recreational uses such as fishing, hiking, hunting large and small game and trapping.

Sporting Advisory Committees

Paragraph 115 of the Watershed Agreement created an EOH Sporting Advisory Committee that reports to the Council, and paragraph 118 created a WHO Sporting Advisory Committee that reports to the CWC. The Committees make recommendations to the City regarding potential recreational use opportunities on newly acquired lands.

New York City Rules and Regulations

The New York City Watershed Rules and Regulations work in concert with existing federal, state and local environmental regulations, providing comprehensive long term protection of the City's drinking water and minimizing, to the extent feasible, adverse impacts on the watershed communities.

The Regulations

- prohibit or restrict the construction of WWTPs in Watershed basins deemed to have excess phosphorus or coliforms;
- prohibit discharges in wetlands;
- require prior approval for all new septic systems and prohibit such systems within certain areas;
- require the study of appropriate siting distances for septic systems and the use of galley type systems;
- prohibit new impervious surfaces in certain areas;
- require stormwater pollution prevention plans for stormwater discharges.

Prohibit or restrict the location of new hazardous or petroleum subsurface tanks; and

- require existing WWTPs to implement microfiltration and phosphorus removal measures within five years and require any new plants to implement these measures.

The regulations include certain exemptions from these restrictions for activities within existing concentrated communities, such as hamlets and villages, to encourage any new development to be focused in these areas, reducing the likelihood of environmentally unfriendly sprawl. Compliance with environmental regulations in the Watershed is ensured through a rigorous and coordinated program including project design and review, inspection and enforcement.

Project Design and Review

Projects proposed in the Watershed are reviewed by DEP, State and local authorities to ensure conformance with the Watershed Rules and Regulations, as well as State and local laws. The SEQRA process also is used to coordinate the interests and comments of various agencies and to maximize the effectiveness of analysis for projects in the Watershed.

"Year after year, the Watershed Enforcement Coordination Committee continues to serve as a model for environmental enforcement through its comprehensive and effective process of ensuring compliance in the Watershed."

James Tierney
New York City Watershed
Inspector General

Regulatory Compliance and Inspection

DEC and DEP track water quality compliance and enforcement efforts through the Watershed Enforcement Coordination Committee. This Committee conducts quarterly meetings, which typically also include EPA, the New York State Department of Health and the State Watershed Inspector General, to review a docket of water-related compliance and enforcement activities. Through this Committee, a coordinated and effective compliance program in the Watershed is ensured. The meetings are chaired by DEC. Compliance efforts include consent orders, increased surveillance and site-specific technical assistance with wastewater treatment operators. Watershed enforcement is also a topic at DEC's quarterly meetings with EPA.

DEP and DEC also track projects to ensure that during construction they adhere to requirements in their approvals and permits and that existing facilities do not violate current regulations or parameters. This oversight is especially important where extensive stormwater and erosion control measures have been installed.

At a minimum, DEP conducts comprehensive technical inspections of the 110 WWTPs in the Watershed on a quarterly basis. In addition, DEC conducts enhanced monitoring and inspection of the existing 137 permitted surface water discharges within the Watershed.

DEC's monitoring program included 86 comprehensive inspections, 128 reconnaissance inspections and sampling at 23 of the WWTPs. DEC found that approximately 87% of those facilities were in substantial compliance with permit effluent limits. Less than 3% of all measured SPDES effluent parameters were violated during the year. The number of SPDES parameter violations has decreased by 49% since 1995.

New York City Watershed Master Planning and Zoning Incentive Awards Program

In 2001, Round III of the program produced 22 approved projects from WOH municipalities, totaling over $194,000. The approved projects included the preparation of municipal comprehensive plans, the preparation of strategic capital investment and management plans for potentially developable areas within the watershed and the development of new or revised development tools that promote land use and development in the Watershed. These projects foster the dual purposes of protecting water quality and encouraging development consistent with the MOA.

In total, through the third round of projects the program approved projects in 37 of the 55 WOH municipalities for over $512,000, exceeding Governor Pataki's and New York State's original commitment of $500,000.

Round III - 2001

Municipality	*Type of Project*	*State Funding ($)*
Delaware County	Comprehensive Plan	$10,000
Jewett (T)	Comprehensive Plan Update	$10,000
Meredith (T)	Comprehensive Plan	$10,000
Harpersfield (T)	Comprehensive Plan	$10,000
Deposit (T)	Comprehensive Plan (Phase 2)	$10,000
Tompkins (T)	Comprehensive Plan	$10,000
Andes (V)	Comprehensive Plan	$10,000
Middletown (T)	Comprehensive Plan Update	$10,000
Bovina (T)	Comprehensive Plan	$10,000
Andes (T)	Comprehensive Plan	$10,000
Colchester (T)	Comprehensive Plan	$10,000
Hobart (V)	Comprehensive Plan Update	$10,000
Stamford (T)	Comprehensive Plan	$10,000
Walton (T)	Comprehensive Plan	$10,000
Greene County	Recreation/Open Space Plan	$10,000
Fleischmanns (V)	Water Supply Protection Study	$10,000
Margaretville (V)	Water Supply Protection Study	$10,000
Walton (V)	Zoning Law Update	$5,000
Delhi (V)	Zoning Update	$5,000
Hobart (V)	Zoning Update	$5,000
Walton (T)	Zoning Update	$5,000
Lexington (T)	Zoning Law	$4,945
Total ($)		**$194,945**

New York City Watershed Master Planning and Zoning Incentive Awards Program

Also during the year, the program was expanded to include the EOH watershed municipalities. The amended program is partially funded through a SDWA grant to the New York State Department of State from DEC, supplementing the annual State commitment with an additional $240,000.

With the amendment to the program, the fourth round of applications was solicited from all Watershed municipalities. In December, 2002, reimbursement grants totaling over $388,000 were approved in 11 EOH and 12 WOH municipalities. As a requirement of the enhanced program, the new projects were required to emphasize water quality protection and the management of nonpoint sources of water pollution and environmental resources of their municipality.

Round IV - 2001-2002

Municipality	*Type of Project*	*State Funding ($)*
New Castle	Drafting for the Environmental Overlay Zoning	$15,000
Gilboa/Jefferson (T)	Joint Comprehensive Plan for Gilboa and Jefferson	$30,000
Southeast (T)	US EPA Phase II Stormwater Program	$15,000
Lewisboro (T)	Env. Ordinances Relevant to Watershed Protection	$15,000
Delaware County	Stormwater Infrastructure Database	$15,000
Kent (T)	Update Erosion Control Ordinance/Tree Protection Ord.	$15,000
Brewster (V)	NPS Planning	$15,000
Marbletown (T)	Comprehensive Plan Update	$12,000
New Castle (T)	Digitalization of Storm Water Infrastructure in the Watershed	$15,000
Walton (V)	Municipal Stormwater Management Plan	$15,000
Somers (T)	Development of Tree Preservation Local Law	$4,300
Somers (T)	Watershed Master Plan: Phase 1	$15,000
Lewisboro (T)	Comprehensive Plan Updates/Open Space Plan	$15,000
Brewster (V)	Update Master Plan	$15,000
Hurley (T)	Open Space Preservation Plan	$10,000
North Salem (T)	Comprehensive Plan Update Mapping	$9,000
Yorktown (T)	Comprehensive Assessment of Stormwater Control Devices	$4,800
Patterson (T)	Zoning Code Revisions	$13,500
Cortlant (T)	Utilities Digital Mapping	$15,000
Windham (T)	Comprehensive Plan	$15,000
Cortlant (T)	Master Plan Update	$15,000
Pound Ridge (T)	Comprehensive Plan	$15,000
Woodstock (T)	Erosion & Sediment Control Law w/steep Slopes & Land Clearing Components	$1,590
Tannersville (V)	Sump Pump Discharge Project	$15,000
Kent (T)	Proposal to Update Components of Master Plan	$15,000
Tannersville (V)	Park Lane Project	$15,000
Hunter (T)	Development of a New Local Land Use Regulation	$4,500
Margaretville (V)	Margaretville Stormwater Study	$12,000
Halcott (T)	Comprehensive Plan Update	$15,000
Total ($)		**$388,690**

The Catskill Fund for the Future

The Catskill Fund for the Future (CFF), a $59.7 million program funded by the City to provide loan and grant support for environmentally sensitive economic development projects in the WOH Watershed communities, was created in paragraph 135 of the Watershed Agreement and is administered by CWC.

Consisting of three loan programs and four grant programs, CFF continues to promote environmentally sensitive growth opportunities in WOH Watershed towns. The Regional Economic Development Investments (REDI) Loan Program offers low interest rates for businesses and non-profit organizations. In 2001, 11 loans valued at $2,199,268 were closed for projects which are expected to create 91 jobs over the next three years. The program had continued success in year 2002, with 16 loans valued at $2,801,500 with a projection of 52 jobs being created over three years.

CFF also offers a Micro-Loan Program (loans up to $25,000), as well as a Commercial Septic and WOH Mandates Loan Program. The latter provides low-interest loans to repair or replace non-residential septic systems or other projects required solely by Watershed Rules and Regulations. By the end of 2002, a total of 57 loans valued at $9,755,988 had been awarded by CFF, generating $22,166,598 in leveraged funds.

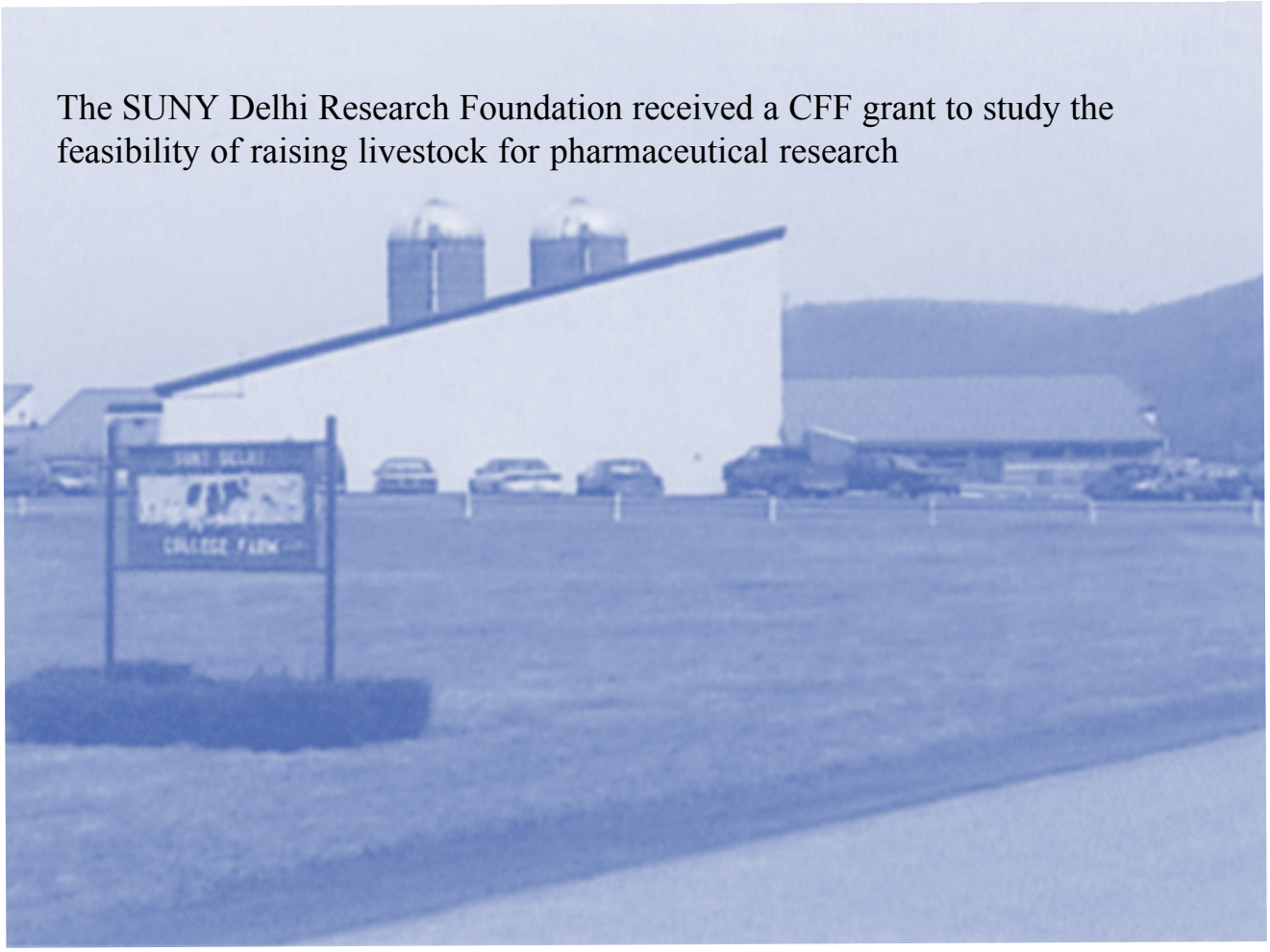
Four new grant programs were initiated in 2001 allowing businesses, non-profit entities and municipalities to apply for projects which create or retain jobs, revitalize hamlets and main streets, spur cultural activity or assist natural resource-based industries. A total of 58 CFF Economic Development Grants totaling $1,128,207 were awarded in 2001 and 2002 in four areas: Main Street and Hamlet Revitalization, Non-profit/Cultural programs, Job Retention/Expansion and Natural Resource-Based Industries. The 2002 grants will, among other things, help develop three parks, install signage and new lighting in three hamlets, design or renovate facades of 28 buildings and repair or restore six historic structures, including two railroad stations. One grant is to fund a study to locate a new community water source.

The Hospital and Health Care Fund, a new program established in 2002, was specifically developed to assist WOH health care and medical facilities. Hospitals in Walton and Margaretville have received low-interest loans through this program.

Indian Country, Deposit N.Y. received a CFF loan to expand its operation. The firm cuts and markets Catskill bluestone.

PROMOTION OF ENVIRONMENTALLY SENSITIVE ECONOMIC DEVELOPMENT

The Catskill Regional Tourism Initiative, funded in part by CWC's CFF, has reached millions of potential travelers in its first two years of promotional activities and has generated thousands of requests for information from potential visitors. The three-year $1.6 million campaign, developed and implemented by Ruder-Finn Inc., is being conducted under the auspices of Catskill Association for Tourism Services (CATS). Magazine, newspaper, radio and cable television ads and articles, cultivation of travel writers and tour operators, promotional events and giveaways in New York City, distribution of a new travel brochure along automobile and rail traffic corridors and enhancement of a Catskill region website yielded consistent broad exposure for the Catskills.



The SUNY Delhi Research Foundation received a CFF grant to study the feasibility of raising livestock for pharmaceutical research

Croton Watershed Planning

Pursuant to paragraph 138 of the Watershed Agreement, the City provided $1 million each to both Westchester and Putnam Counties to develop a comprehensive Croton system water quality protection plan.

Even though regional planning of this magnitude had never before been attempted in the Croton system, all Watershed municipalities in Westchester and Putnam Counties readily adopted local resolutions pledging their support and willingness to participate in the Croton Planning process shortly after signing the historic 1997 Watershed Agreement. Since that time, the two counties have been developing information that will:

- identify water quality problems and significant sources of pollution in the Croton Watershed;
- recommend measures to correct problems, improve water quality and prevent further degradation of the Croton system; and
- point out ways to protect the very special character and needs of their communities.

Putnam County's Croton Plan was completed in draft form in September 2002 with the submission of the County's section to DEP. The County's Croton Plan consists of the six municipal plans, completed in early 2002 and submitted to DEP, the County summary section and the build-out analysis. All municipal plans have had various forms of public input throughout plan preparation. The County section will have public input after comments are received from DEP. Of the $1 million allocated for the preparation of the Croton Plan, a little over one-half of the funds have been spent.

EOH Water Quality Investment Funds (WQIF) disbursed in Putnam County were for the construction of a salt storage shed and the acquisition of land known as the Tilly Foster Farm, which is in the Middle Branch Reservoir Basin. Funds allocated or dedicated for approved projects but not yet disbursed include the following:

- sewage treatment project in the Town of Patterson to correct failing septic problems in the hamlet of Patterson. WQIF share $2.1 million;
- wastewater disposal project to correct a failed septic system at the Twin Brook Manor townhouses in the Town of Southeast. WQIF share $200,000;
- stormwater projects in the towns of Carmel, Southeast and Kent and the Village of Brewster. WQIF share $1,435,918;
- wastewater study for Peach Lake in conjunction with Westchester County. WQIF share from Putnam County $75,000;
- land acquisition in/around Great Swamp. WQIF $500,000; and
- purchase of 3 Vac-All trucks for Storm Drain Management Program. WQIF share $734,841.

In Westchester County, several studies such as a local environmental ordinance review, a development regulations assessment, a watershed build-out analysis, an impervious surface analysis, a local highway maintenance and stormwater impacts analysis, and a water resources conditions report, are completed or nearing completion.

Croton Diversion Feasibility Studies

In paragraph 139 of the Watershed Agreement, the City agreed to provide $450,000 to Westchester County and $350,000 to Putnam County to undertake studies to determine whether it is technically feasible and financially practical to divert treated wastewater out of the Croton Watershed.

During 2001-2002 Putnam and Westchester Counties completed their obligations under Croton Diversion feasibility and submitted their findings to DEP.

Discussions between Westchester County and DEP are underway regarding implementing diversions of the Yorktown Heights WWTP and the Yeshiva/Random Farms/Riverwoods area, which were the first priorities identified in the County's Sewage Diversion Study. Westchester has also begun to develop technical and financial specifics associated with addressing longstanding water quality concerns in the Peach Lake (North Salem and Southeast), Katonah (Bedford), and Shenorock (Somers) focus areas.

Putnam County terminated its work on diversion in September 2001, finding it infeasible. Emphasis is now being placed on utilizing EOH Water Quality Funds for projects that protect and improve water quality. The main focus areas will be land acquisition, stormwater and septic improvement projects. Other areas of attention in Putnam are the lake communities in the septic focus areas of Peach Lake (Southeast and North Salem), Putnam Lake (Patterson) and Lake Carmel (Kent).

WPPC WEBSITE LAUNCHED

During the summer of 2002, WPPC launched a new website offering news, information on recreational opportunities, scientific reports and historical and educational information about the New York City Watershed. The site www.dos.state.ny.us/watershed/wppc.htm also includes information about the history of the Watershed and details on the historic New York City Watershed Agreement.

"In keeping with WPPC's mandate to enhance communication and information sharing among the Agreement's many partners and the public, this new web site will provide a central point of access for anyone wishing to find out "what's new" in the Watershed."

WPPC Executive Director William C. Harding.

"The information provided on WPPC's website will allow people to easily access news and reports on the New York City Watershed, allowing our partners and the general public to obtain up-to-date information. One of the goals of WPPC is to increase awareness of Watershed issues and activities, and the website is an important step that will enhance public communication and help foster discussions about the future of the Watershed."

State Department of Environmental Conservation (DEC) Commissioner and WPPC Chair Erin M. Crotty

Catskill Watershed Corporation

Pursuant to paragraph 131 of the Watershed Agreement, the City provided $2 million, administered by CWC, for a public education program.

Thirty-six grants totaling $170,829 were awarded by CWC in 2001 and 2002 to schools and organizations in the WOH Watershed and in New York City. Under a special program in 2001, schools in the Catskill-Delaware Watershed were allowed to apply for 9 proven programs utilizing a CWC Education Allocation based on enrollment. Allocations totaled $71,319 and provided classroom materials on stream programs and student group visits to environmental education centers in the region. In addition, CWC hosted a teacher workshop and sponsored 7 performances of a theater production on the development of the City's water system. The video documentary tracing the development of the system, "Deep Water: Building the Catskill Water System" was sent along with a comprehensive information packet for teachers to 65 schools in the WOH Watershed and in New York City.

In 2002, public education funds were also earmarked for the design and production of exhibits for a regional watershed museum in the Town of Middletown. A conceptual exhibit design has been approved by the CWC Board of Directors, which granted the Catskill Watershed Partnership Museum Board of Directors an extension of time in which to secure construction funding. Architectural drawings and models have been prepared, a site has been secured and outside funding sources are being actively solicited.

New York City Department of Environmental Protection

DEP successfully lead an outreach effort to raise public awareness of the severe drought of 2002 and encouraged water conservation. Among notable water quality programs was the Annual Water Week Celebration, which included art and poetry contests for both New York City and Westchester County students that featured, as their theme, the need to protect water quality in reservoirs.

Watershed Agricultural Council presents the Model Forest

A developing network of four demonstration and research sites, this network offers research and education opportunities for university students, watershed partners and the community at large. These living classrooms are most effective when utilized in conjunction with other program activities for landowners, logger and professional forester training and certification.

Westchester County

In 2002, the County further developed an internet-based outreach program on water quality preservation to include a "Croton Watershed Discussion List" to better facilitate communication and dialogue between the many established committees and other parties interested in Croton watershed planning. The Croton Discussion List is designed as an open forum for the posting and discussion of news and information relating to the Croton Watershed, Croton Planning Process, water quality and other watershed topics. The Discussion List is open and available to the public, meaning that interested parties other than members of the Steering Committee, Municipal Action Teams (MATs) and Croton Watershed Action Committees (CWACs) can join. Appropriate uses of the Croton Discussion List include: requests for data or resources on a given topic, meeting and event announcements, training or symposium opportunities, issue discussion, submission of comments to Croton Planning documents or reports.

"Farming has been a way of life for many residents of the upstate communities since before the development of the City's water supply. Today we are proactively demonstrating that agriculture can be a successful and vital part of the twenty-first century in the New York City Watershed, with an environmentally responsible approach."

Nathan Rudgers, Commissioner
New York State Department of Agriculture and Markets

Watershed Agricultural Program

Watershed Agricultural Council (WAC) programs are designed and implemented to foster well managed farms and forests as preferred land uses for water quality.

A successful nutrient management plan usually involves spreading manure more frequently on fields further from the barn, creating higher fuel and equipment costs for the farmer. Taking a page from the Conservation Reserve Enhancement Program, WAC is exploring ways to match City funds with federal sources to improve the economic viability and, ultimately, the effectiveness of this practice.

WAC initiated a pilot program which gives farmers a means to gain credits through compliance with their nutrient management plan and access funding to help defray the cost of their equipment needs. In this way, the farms maintain economic viability while providing effective water quality protection.

Small Farms

During its first year, WAC's program for small farms began implementing Whole Farm Plans on 10 pilot farms, while 16 others have been selected for the next phase of this expanding program. WAC is currently looking at hundreds more farms to identify additional opportunities for water quality protection, while educating farmers about BMPs and providing technical assistance.

East of Hudson Program

In addition to accomplishments in BMP implementation, efforts were made to address the specific needs of the Croton farming and forestry audience. First, a targeted Communications Plan was created for use while conducting presentations, technical workshops and farm tours aimed at Watershed landowners, citizen volunteer boards, municipal officials and partnering agencies. Another tool in the works is a pilot project to demonstrate proper paddock management, with water quality protection techniques that address risks specific to the large number of equine operations located in this watershed. In addition, a new urban forestry approach for the Croton watershed is being developed in order to increase forest landowner participation in the region, and networking with area environmental centers is in progress in tandem with the development of Ninham Model Forest in the Town of Carmel. The EOH program is assisting DEP to identify and map agricultural land uses and develop land cover classifications in support of a project to develop a new land cover/land use analysis of the Croton Watershed. The purpose of this study is to assess natural resource impacts and land cover using spatial data derived from satellite imagery and aerial photography. This will aid WAC's ability to further prioritize areas for future Whole Farm Planning.

Dutchess County SWCD staff worked with WAC staff to identify, prioritize and select farms for Whole Farm Planning in priority Croton subbasins. With grant funding secured through the U.S. Army Corps of Engineers, the Putnam County SWCD identified and inventoried all known agricultural enterprises in Putnam County's Croton region. The Westchester County SWCD secured grant funding to conduct assessments and Whole Farm Plans on agricultural enterprises in Westchester County. Each agency contributed to WAC's quantitative base of information for use in the development of Whole Farm Plans and BMP implementation that will help EOH's staff to accelerate the number of Whole Farm Plans completed each year.

Watershed Forestry

A Watershed Forestry Program, which promotes sustainable forestry in the WOH Watershed by providing education about BMPs for forestry to prevent water pollution, was established in paragraph 130 of the Watershed Agreement. This program also encourages private landowners to be good stewards of forest resources and educates the public about the role well-managed forests can play in protecting water quality.

The Watershed Forestry Program trains and recommends "watershed qualified" loggers and foresters to landowners managing their forests with timber harvests. These professionals are trained in water quality BMPs and are eligible for cost shares on a range of traditional BMPs and innovative tools to help them do their job with Watershed protection as the goal.

Properly built forest roads protect soil and water and last a lifetime. WAC offers loggers cost-sharing and other incentives to properly design and install timber harvest roads using erosion control BMPs such as water bars, culverts and broad based dips. In 2002, the Forestry Program initiated a successful cost share pilot for the remediation of existing forest roads with erosion problems due to poor layout and design. Fourteen roads were rehabilitated with erosion control BMPs and properly stabilized.

To encourage voluntary stewardship of private forest land, the Forestry Program pays for the development of a forest management plan for landowners with 10 or more acres in the watershed. Through the process of working with a forester to plan the future of their forest land, owners learn what is there and how to actively manage it using BMPs. As they gain technical knowledge about these resources, their commitment to keeping the land forested grows. On land adjacent to streams, riparian area management has become a valuable tool in maintaining and protecting water quality. This year, the Forestry Program incorporated the USDA Forest Service standards for delineating and managing riparian areas into 10 pilot management plans, adding another tool in working with private landowners in the Watershed.

Agricultural Easements

The Watershed Agreement at paragraph 78 provides that the City may spend up to $10 million to acquire agricultural easements in the Watershed.

WAC acquired its first conservation easements in 2001on two farms totaling 770 acres. This program pays landowners for a permanent agreement limiting the development of the farm while allowing the continued use of the land for agriculture, forestry and recreation. In 2002, WAC closed on 4 additional properties, purchasing easements on an additional 1,500 acres.

According to Paragraph 105(c) and 179(b) of the Watershed Agreement, on the fifth anniversary (January 21, 2002) of its effective date, the WPPC Executive Committee shall commence a review of the following:

- *the implementation of the Watershed Regulations as set forth in Attachment W of the Agreement;*
- *the Watershed land acquisition program as set forth in Article II of the Agreement;*
- *any comprehensive water quality monitoring programs in the Watershed;*
- *any Watershed Protection and Partnership Programs set forth in Article V; and*
- *the activities and status of the Catskill Fund, with particular emphasis on whether the Catskill Fund has served its intended purpose and has encouraged responsible, environmentally sensitive economic development compatible with protection of the City's water supply.*

At the conclusion of its review, which will include a series of public comment meetings, WPPC will make recommendations to the City, State and EPA as to whether Watershed protection plans and programs should be modified.

To begin the review process, the City and State submitted comprehensive reports to the WPPC Executive Committee. These reports, which were also made available to the public, chronicled the activities of these agencies regarding the implementation of the Watershed Agreement, as well as other activities relating to the protection of water quality in the New York City Watershed. The reports included preliminary recommendations for improvements to MOA programs.

The WPPC Executive Committee thought it was important to solicit input from the public during its review, and a series of public meetings were held in April 2002 to receive the public's comment on the implementation of the Watershed Agreement and to integrate it into the final WPPC findings.

The Council completed the 5-Year Review in August of 2002 and, as a result, adopted and issued 29 specific "Priority Recommendations for MOA Programs" for transmittal to EPA, the State of New York and the City of New York. The specific recommendations are contained in Appendix A and can also be viewed at the WPPC's website, www.dos.state.ny.us/watershed/wppc.htm.

Through WPPC's evaluation of the Watershed Agreement, a number of program recommendations were made, noting that the programs implemented by the MOA were working and will continue to improve bringing demonstrated benefits for the protection of New York City's water supply.

Many of WPPC's program recommendations are included in EPA's most recent FAD.

"The purpose of the review was to take a hard look at the first five years of the historic 1997 Watershed Agreement and to formulate recommendations to the appropriate agencies regarding potential changes to plans and programs in order to make the already successful agreement even better going forward."

NYSDEC Commissioner and WPPC Chair Erin M. Crotty

A New Five-Year Filtration Avoidance Determination

On November 26, 2002, EPA Regional Administrator Jane M. Kenny signed and presented New York City Mayor Michael Bloomberg with an agreement that waives the federal requirement to filter drinking water from the Catskill/Delaware watershed for another five years. Joining the Mayor and Regional Administrator to announce the agreement at the Ashokan Reservoir in Ulster County, New York were: DEC Commissioner Erin M. Crotty, DEP Commissioner Christopher O. Ward, CWC Executive Director Alan Rosa and WPPC Executive Director William C. Harding.

"Today's action is only possible because of a remarkable partnership, not only between EPA and the City, but between the City and all the communities in upstate New York whose water sources feed into the City's reservoir system. This agreement truly helps everyone – those who live and work in the City and those upstate who benefit from a cleaner environment."

Jane M. Kenney EPA Region II Administrator

Christopher O. Ward, NYC DEP Commissioner | Michael R. Bloomberg, NYC Mayor | Jane M. Kenney, EPA Administrator

"I thank the EPA for granting another 5-Year Filtration Avoidance Determination to DEP, rewarding the City for its efforts to protect and improve water quality in the reservoirs and source waters of these beautiful watersheds."

Michael R. Bloomberg, NYC Mayor

In 1997, EPA's FAD required the City to undertake far reaching watershed protection measures according to a set timetable. The waiver extension signed in 2002 calls for these protection programs to be significantly enhanced and expanded. The result will be a safer water supply for millions of New Yorkers and a cleaner environment in the counties that are home to City drinking water reservoirs.

As part of EPAs' new FAD, the City's long-term watershed protection program continues most of the existing program components, provides significant enhancements to others and includes a number of new program initiatives. Some program elements include:

- improvements to the Watershed Rules and Regulations in the areas of SEQRA involvement, stormwater prevention and public education and outreach;
- the continuance of an aggressive and improved land acquisition program;
- building on the City's comprehensive program to protect and improve water quality in the Kensico basin;
- providing additional funding to improve the WWTP upgrade program throughout the watershed;
- improvements to the Stream Management Program, including coordination with local SWCDs;
- expanding the Agricultural and Forestry program to reach small farms, as well as new areas in the EOH Watershed;
- significant expansion of the nonpoint source program to the EOH portion of the Watershed;
- strengthening of the programs addressing turbidity problems within the reservoirs; and
- enhanced regulatory review and enforcement program with DEC and expansion of the City's wetlands functional assessment programs to the entire Catskill/Delaware Watersheds and Croton Watershed in conjunction with the U. S. Fish and Wildlife Service.

Water supply security is also an important component of water supply protection. To that end, the City has significantly increased the amount of police patrols in the watershed and increased police presence at key water supply locations.

In addition, the City will continue to implement and refine important in-City programs, such as its Waterborne Disease Risk Assessment and Cross Connection Programs - both necessary for maintaining filtration avoidance.

BUILDING TOWARD THE FUTURE

On September 11, 2001, the City and the State of New York reeled from a tragedy of unimaginable proportions. The terrorist attacks which leveled the World Trade Center and caused the death of approximately 2,700 people also forced the implementors of the Watershed Agreement to enhance the security of this vital water supply. The enhanced policies and procedures which had been previously developed to offer additional safeguards to the City's water supply were put in place immediately after the terrorist attacks, and these efforts are reviewed continuously. Over the years to come, this new facet of protecting the City's watershed will face additional scrutiny, and like all other aspects of the Watershed Agreement will live up to the challenge of ensuring a safe and adequate water supply to nearly one-half of the population of New York State.

As we look ahead, we do so in the knowledge that the partnership forged in 1997 is thriving and continues to work in the spirit that was envisioned when the signatories put pens to paper. The promise of a new way to protect the Watershed environment and enhance its communities has been turned into practice. WPPC will continue to effectively meet the challenges ahead and seek innovative ways to continuously improve upon these partnerships and with the daily dedication, commitment and hard work on the part of all the parties, we will together build on the many successes already achieved.

WATERSHED PROTECTION AND PARTNERSHIP COUNCIL

"Information sharing and the inclusion of stakeholder interests is always priority one for the WPPC."

William C. Harding
WPPC Executive Director

APPENDIX A PRIORITY RECOMMENDATIONS FOR MOA PROGRAMS

The following is a listing of the priority recommendations for MOA programs adopted by the members of the Watershed Protection and Partnership Council (WPPC) Executive Committee on August 14, 2002 as part of the 5 Year Review of the Watershed Agreement:

1. The Executive Committee of the WPPC should conduct a 10 year review of the MOA (in 2007) in accordance with the procedures of the MOA's 5 year review.

2. The New York State Department of Environmental Conservation (DEC) is commended for updating its wetlands maps West of Hudson (WOH) and should continue to work with Safe Drinking Water Act (SDWA) funding to complete updating the East of Hudson (EOH) maps. The Governor and the U.S. Army Corps of Engineers are credited for designating the EOH portion of the Watershed as a Critical Resource Water.

3. The Parties are praised for their public education and outreach efforts and should continue these efforts. WPPC should work to enhance its website to assist the Parties with this effort. The website should host information, reports, and other documents.

4. An annual technical conference on NYC Watershed Protection/Water Quality Monitoring should be conducted to present results from water quality monitoring programs - including monitoring programs funded by the City, State, SDWA and the Water Resources Development Act (WRDA) - to the interested public.

5. The New York City Department of Environmental Protection (DEP) should be commended for its progress in continuing to solicit owners of eligible lands consistent with the goals and priorities set forth in the MOA. DEP should work with partners such as the Watershed Agricultural Council (WAC), DEC, the Counties, and local and regional land trusts to complement and enhance the City's Land Acquisition Program, consistent with the goals and priorities set forth in the MOA. [Paragraph 64: Catskill and Delaware Watershed Acquisition Goal; Paragraph 65: Catskill and Delaware Watershed Acquisition Milestones]

6. The City should produce a final version of its comprehensive review of existing and potential recreational uses on City-owned lands, considering comments received from the public and interested parties on its preliminary review (submitted to the WPPC in 1999), its experience and practice to date with opening lands, its evaluation of expanded and new recreational opportunities, its experience with instituting the new permit system and in consideration of emerging security issues. This report should be submitted to the WPPC within 2 years of the effective date of the Filtration Avoidance Determination. The City should be commended for its announcement of an interim pilot program to allow bow hunting on certain City-owned lands. [Paragraph 73: Recreational Uses: Currently Owned City Property; and Paragraph 72: Recreational Uses: Newly Acquired Property]

7. The State is commended for committing an additional $10 million for land acquisition in the EOH Watershed. The State should continue to acquire lands significant to water quality protection within the EOH Watershed. [Paragraph 76: State's Croton Land Acquisition Program]

8. The State should work expeditiously to transfer parcels acquired in the Croton Watershed under the MOA over to the City of New York. [Paragraph 76: State's Croton Land Acquisition Program]

9. The City should work expeditiously to transfer conservation easements on City-owned land over to the State pursuant to the provisions of the MOA. [Paragraph 82: Land Held in Perpetuity for Watershed Protection; and Paragraph 83: Conservation Easements Held in Perpetuity for Watershed Protection]

10. DEP is commended for obtaining additional funding to secure wastewater solutions in the New Sewage Treatment Infrastructure Facilities for Towns, Villages and Hamlets Program to accommodate construction for communities 6 and 7 and DEP should continue to work with the Catskill Watershed Corporation (CWC) to address additional priority communities that wish to participate. [Paragraph 122: New Sewage Treatment Infrastructure Facilities for Towns, Villages and Hamlets]

11. There is progress in developing sewer extension agreements between the local municipalities and DEP, although they are not finalized. DEP and the local municipalities need to come to a consensus on the agreements, so that the design and construction of the facilities may proceed. DEP should reevaluate whether adding more sewer extensions to present hamlet boundaries will in a cost effective manner reduce the need for other wastewater treatment plants and septic systems, protect water quality and focus future economic development within existing hamlet areas. [Paragraph 123: Sewer Extensions]

12. The WPPC acknowledges the effectiveness of CWC's Septic System Rehabilitation Program, and recommends that the program should continue with the current inspections of septic systems in areas identified by priority criteria, and completion of any needed improvement to these systems. DEP is commended for committing to obtain additional funding to facilitate this ongoing program. A pilot cost share program should be implemented to address certain operation and maintenance costs. [Paragraph 124: Septic System Rehabilitation and Replacement]

13. DEP should continue its ongoing efforts in researching stormwater Best Management Practices (BMPs) and test their effectiveness for pollutant removal. For purposes of dissemination and future utility, any analyses or studies conducted should be presented at the annual technical conference on NYC Watershed Protection/Water Quality Monitoring. (See recommendation 4 above). [Paragraph 125: Stormwater Retrofits] [Paragraph 128: West of Hudson Future Stormwater Controls]

14. DEP should work with CWC to develop a plan for providing ongoing maintenance of projects constructed under the Stormwater Retrofits and WOH Future Stormwater Controls Programs and disburse funds that are allocated for the ongoing maintenance of projects. [Paragraph 125: Stormwater Retrofits] [Paragraph 128: West of Hudson Future Stormwater Controls]

15. The City is commended for continuing the Stream Corridor Protection Program. Local Soil and Water Conservation Districts are also recognized for all their efforts on these projects. Implementation of stream stability demonstration projects should continue to be expedited. Sufficient funding should be found for the cost of operation, maintenance and repair of the implemented projects. [Paragraph 127: Stream Corridor Protection]

16. Westchester and Putnam Counties should continue to implement projects beyond diversion to improve water quality identified in Croton planning, utilizing their allotted EOH Water Quality Investment funds. [Paragraph 138: Watershed Planning in the Croton System], [Paragraph 139: Sewage Diversion Feasibility Studies] and [Paragraph 140: EOH Water Quality Investment Program]

17. DEP should work with all Waste Water Treatment Plant (WWTP) owners to expedite the preparation of draft O&M Agreements with the goal of ensuring agreements no later than completion of construction. [Paragraph 141: Upgrades to Existing WWTPs to Comply with Watershed Regulations]

18. DEP should work with WWTP owners, as part of DEP's responsibility under the Operation & Maintenance Agreements, to ensure that the regulatory requirements for appropriate operator grade and coverage is provided prior to the time of the upgraded WWTP start-up. [Paragraph 141: Upgrades to Existing WWTPs to Comply with Watershed Regulations]

19. DEP should work with Westchester County to finalize the list of which, if any, WWTPs are intended to divert outside of the Watershed instead of upgrading to comply with the Regulations. Any diversion proposal must be reviewed under the State Environmental Quality Review Act (SEQRA). [Paragraph 141: Upgrades to Existing WWTPs to Comply with Watershed Regulations]

20. The Technical Advisory Committee of the WPPC should review the final Phase II Non Point Source Total Maximum Daily Load (TMDL) Implementation Report prepared by DEC, solicit stakeholder input, and make recommendations to DEC on how to finalize the Report and to ensure the development of individual basin plans. The Report should be completed no later than 6 months after Croton Planning is complete. Projects identified in the Report should be implemented as soon as possible to maximize water quality improvements, and progress on implementation should be reported to the WPPC. [Paragraph 162: Total Maximum Daily Loads]

21. Delaware County and WAC are applauded for their ongoing efforts to reduce phosphorus in the Cannonsville basin. DEP should continue to monitor phosphorus within the reservoirs, monitor the effluent of WWTPs for phosphorus, and research and monitor the effectiveness of various BMPs to reduce nonpoint source pollution. [Paragraph 162: Total Maximum Daily Loads]

22. The WPPC, the City and the State should continue to pursue full appropriation of funding under the present federal authorizations and reauthorization of SDWA funding for the enhanced monitoring programs. The Governor's Office is already working with Congress on reauthorization of this funding to provide for the next seven years. [Paragraph 164: Enhanced Monitoring] The City should also pursue funding to address enhanced security measures deemed necessary after the events of September 11, 2001.

23. DEC should continue to implement the recommendations as set forth by the Pesticide and Fertilizer Working Group. As recommended by the Pesticide and Fertilizer Working Group, DEC has committed to hire additional Pesticide staff. One Pesticide Control Specialist position remains vacant, and DEC should fill this position as soon as possible. [Paragraph 168: Pesticide and Fertilizer Technical Working Group]

24. The WPPC recognizes DEC for its efforts to convince large applicators within the Hudson Valley to remove phosphorus from their commercial fertilizers. One major lawn care company has already removed phosphorus from their fertilizer mixes. DEC should continue to work with commercial fertilizer applicators to remove phosphorus from their fertilizer applications within the Watershed. [Paragraph 168: Pesticide and Fertilizer Technical Working Group]

25. DEC and DEP are lauded for their ongoing efforts to develop a state of the art Geographic Information System (GIS) for the Watershed. This system will provide detailed data for each area of the Watershed and enhanced modeling capabilities. DEC and DEP should continue their ongoing efforts to complete the state of the art GIS system for the Watershed. Barring sensitive security or proprietary information, data should be made available to the public.

26. The State should continue to work with CWC and Putnam and Westchester Counties on enhancing the "one-stop-shop" permit program for technical and financial assistance that protects water quality while encouraging economic development consistent with the goals of the MOA. The City, State, CWC, and Putnam and Westchester Counties should continue to work to improve communication regarding project review. [Paragraph 152: Master Planning and Zoning Incentives and One-Stop-Shop permit program]

27. DEP is recognized for amending its regulations to ban the use of galley systems in the watershed pursuant to the MOA. The New York State Department of Health should continue to work to amend its regulations to ban the use of galley systems in the Watershed pursuant to the MOA. [Paragraph 169: Galley Study]

28. DEP, DEC, and the New York State Department of Transportation should continue to evaluate road de-icing alternatives in order to minimize potential adverse impacts on water quality.

29. The Public Health Law should be amended to provide for penalties under regulations promulgated pursuant thereto, that are more comparable with those levied under other water pollution control laws and regulations.

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WATERSHED PROTECTION AND PARTNERSHIP COUNCIL