



## Committee on Environment & Health

~AGENDA~

Tuesday, March, 21, 2017

11:01 AM

Committee Chair: Francis Corcoran

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Committee Room, 148 Martine Avenue, 8th Floor, White Plains, NY 10601

[www.westchesterlegislators.com](http://www.westchesterlegislators.com)

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### CALL TO ORDER

### MINUTES APPROVAL

### I. ITEMS FOR DISCUSSION

1. **(ID # 9930) Communication – Stormwater Mngmt Law Semi-Annual Status Rpt 1-9-17:**

Forwarding a copy of the Westchester County Stormwater Management Law Semi-Annual Status Report, dated January 9, 2017.

### II. OTHER BUSINESS

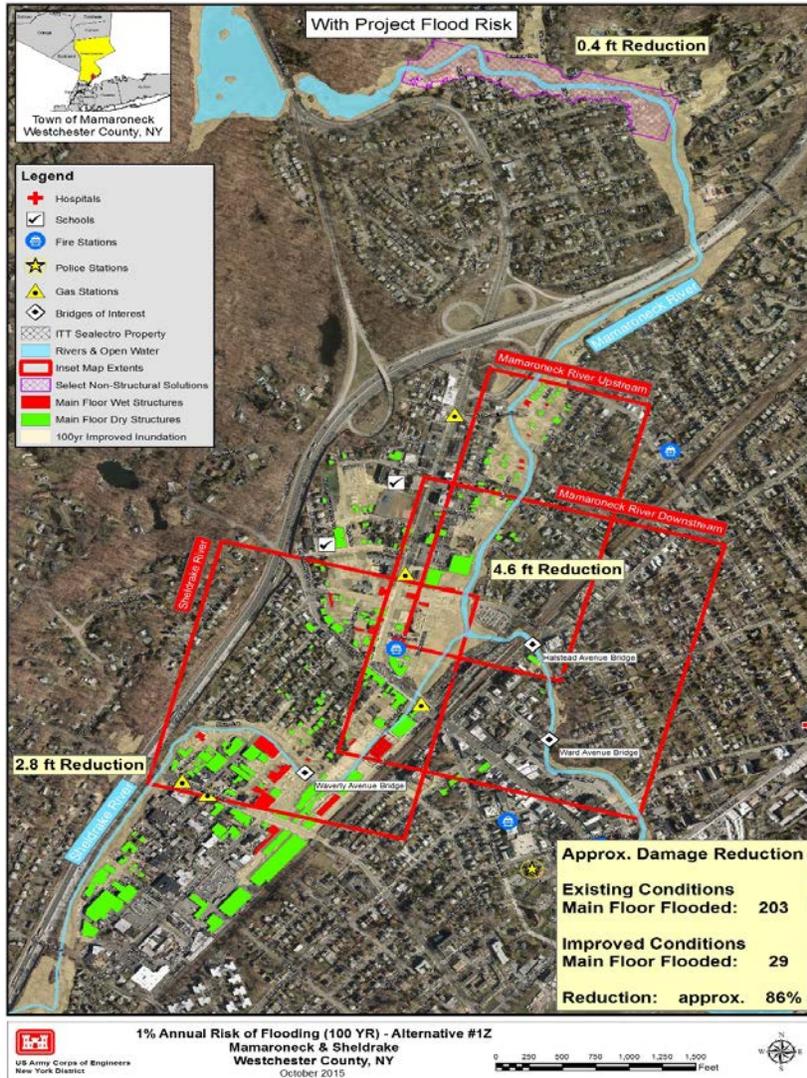
Unfinished Business and any other agenda items to come before the Committee.

### III. RECEIVE & FILE

### ADJOURNMENT

# Westchester County Stormwater Management Law SEMI-ANNUAL STATUS REPORT

January 9, 2017



Graphic from USACE Mamaroneck Sheldrake General Reevaluation Report

Prepared by  
Westchester County Department of Planning



Robert P. Astorino, County Executive  
Edward Burroughs, Commissioner  
Department of Planning

The Westchester County Stormwater Management Law (added as Article III-A of Chapter 241 of the County Code by Local Law 5-2011) requires that the Commissioner of Planning, working with other County departments, local municipalities and others, prepare a reconnaissance plan for each of Westchester's major drainage basins. The Law calls for creation of a County Stormwater Advisory Board and recommends creation of basin-wide advisory boards to assist in the development of the reconnaissance plans. The Law also requires the Commissioner of Planning to prepare semi-annual reports on the status of the reconnaissance plans and any current or proposed stormwater projects. The County Storm Water Management Law is available online at <https://library.municode.com/index.aspx?clientId=15288>. A map of the major drainage basins and a list of municipalities within each basin are provided as Appendix A.

This report is the semi-annual status report for the period from July 1, 2016 through December 31, 2016.

Please note that the terms "watershed" and "drainage basin" are used interchangeably throughout this report. In addition, the term "stormwater" is used as a single word for consistency and following the USEPA Communications Stylebook.

### **COUNTY STORMWATER ADVISORY BOARD**

In 2011, the County Executive and the County Board of Legislators (BOL) each appointed five members to the County Stormwater Advisory Board (SAB), which held its first meeting on January 19, 2012. The board generally met every two months during 2012 and 2013 when the initial reconnaissance plans were being developed. Since that time, the board has met intermittently when items requiring discussion and advice or more formal review are pending. The board is sent information regularly via email with pertinent information on pending projects and related issues. The SAB was given presentations from County staff on prior studies and reports, prior, current and planned County projects and other related items. The Board was actively involved in the development of the process to be followed, recommendations to be made and evaluations performed in connection with the development of the reconnaissance plans, most importantly including the outreach efforts to Westchester municipalities. The Board provides valuable insight and advice.

The Board met on November 3, 2016 but did not have a quorum. However, presentations were made to the Board members in attendance for five municipal applications for studies and projects, described in more detail below. The Board is forwarded information regularly on activities and progress made by staff as discussed below. . A roster of SAB members is included in Appendix B. The five County Executive-appointed members were reappointed, though one member has since resigned. The five BOL-appointed members have been reappointed and vacant seats filled, though one member has retired from his position as Village Manager.

### **BASIN-WIDE WATERSHED ADVISORY BOARDS**

While not a requirement of the Law, the formation of basin-wide watershed advisory boards for each of the major drainage basins is encouraged by the Law, emphasizing the importance of watershed-wide collaboration. Refer to Appendix A for a map of major drainage basins and a list

of municipalities located within each. A description of current or planned basin-wide watershed advisory boards for each of the major drainage basins is included in the Status section below. Staff attended meetings of the watershed advisory boards upon request. During this reporting period, staff concentrated efforts on outreach to municipalities and discussions concerning potential stormwater/flood mitigation projects proposed by both the County and local municipalities.

## **MUNICIPAL DATA AND OUTREACH**

To prepare the stormwater reconnaissance plans, County staff compiled and reviewed information that it had on file as well as information submitted by local municipalities regarding previous studies and areas of flood problems. More detailed information on how the data and outreach was conducted is included in prior status reports. Almost all of Westchester's municipalities have responded. County staff continues to work with remaining municipalities to collect this valuable local information on flood problem areas. All additional information obtained will be included in proposed amendments to the reconnaissance plans in 2015.

The County continues to provide education and outreach materials for local municipal officials, design professionals and the general public. The Department of Planning also updated and added information to its Web site, providing information on flooding, the updated FEMA flood mapping and hazard mitigation planning. Links to these Web pages can be found at [www.westchestergov.com/flooding](http://www.westchestergov.com/flooding) and [www.westchestergov.com/hazardmitigation](http://www.westchestergov.com/hazardmitigation). Previously, an information packet was sent to municipal officials with information on the updated FEMA Flood Insurance Rate Maps (FIRMs) for coastal Westchester municipalities. The packet included maps and lists of properties potentially impacted by the new FIRMs and brochures with information for property owners and municipal officials. A letter of final determination is anticipated to be sent from FEMA over the summer, after which municipalities will have six months to reference the new maps in their local floodplain ordinances.

## **RECONNAISSANCE PLAN CONTENTS**

The Stormwater Management Law requires that reconnaissance plans address certain specific items. The plans were prepared for individual watersheds and utilize existing data to avoid lengthy data collection efforts and be completed as quickly as possible. Reconnaissance plans are organized as follows, in compliance with the requirements of the Stormwater Management Law:

1. Description of the characteristics of the watershed.
2. Evaluation of prior flood related studies within the watershed.
3. Description and ranking of flood problem areas identified by local municipalities.
4. Inventory of local codes and ordinances related to flooding.
5. List of key findings from the preparation of the reconnaissance plan.
6. List of goals for flood mitigation projects under the program.
7. List of recommended actions for both local municipalities and the County.
8. List of recommended next steps for both local municipalities and the County.

More detailed descriptions of each section are included in prior status reports.

## **STATUS OF RECONNAISSANCE PLANS**

In order to better manage and expedite the development of a county-wide watershed based reconnaissance plan, separate plans were developed for individual drainage basins or groups of drainage basins as described below. The County Stormwater Management Law requires that the Board of Legislators adopt the plans prior to municipalities submitting a request for funding. In order for projects to be eligible for funding, the projects or flood problem areas they are intended to address must be included in the reconnaissance plans.

The County completed the five reconnaissance plans that cover Westchester's six major drainage basins in the first half of 2014. By September 2014, the Board of Legislators had adopted all five reconnaissance plans. The reconnaissance plans are available for download on the County Web site at [www.westchestergov.com/flooding](http://www.westchestergov.com/flooding).

### **Saw Mill River-Pocantico River**

County staff attended and made presentations to the basin-wide advisory board for the Saw Mill River Watershed, which was created in 2011. The board meets regularly and has focused on working with the New York State Department of Transportation to clear the Saw Mill River of debris and obstructions. As the Saw Mill River Watershed is a component of a larger major drainage basin (refer to Appendix B) that includes the Pocantico River and the lower portion of the Hudson River within Westchester County, the County has included the municipalities in those sub-basins in its outreach efforts and has encouraged those municipalities to join the group. Completed questionnaires were received from all but one of the municipalities. The reconnaissance plan was prepared by staff, reviewed by the County Stormwater Advisory Board in December 2012 and submitted to the BOL in January 2013. The plan was approved by the Board of Legislators at its meeting of June 23, 2014. A questionnaire from the Village of Briarcliff Manor has been received, and a proposed amendment of this reconnaissance plan will be prepared in 2017 to include the additional flood problem areas identified.

### **Bronx River**

Planning attended meetings of the basin-wide advisory board for the Bronx River Drainage Basin, answering questions and updating the board on the status of the reconnaissance plans. A reconnaissance plan was prepared, reviewed by the County Stormwater Advisory Board at its May 16, 2012 meeting and submitted to the Board of Legislators in April 2014. The Board of Legislators approved this plan at its meeting of July 14, 2014.

### **Coastal Long Island Sound**

The Long Island Sound Intermunicipal Council (LISWIC) is acting as the basin-wide advisory board for the Coastal Long Island Sound Drainage Basin. Questionnaires were returned from all but one of the watershed municipalities. A reconnaissance plan was prepared, reviewed by the Stormwater Advisory Board and submitted to the Board of Legislators in April 2014. The Board of Legislators approved this plan at its meeting of August 4, 2014. Questionnaires have been received from the City of Rye, and additional flood problem areas have been identified by the

Village of Mamaroneck. Proposed amendments to the reconnaissance plan will be prepared in 2017 to include the additional flood problem areas identified by the municipalities.

### **Peekskill and Haverstraw Bay Drainage Basin**

A presentation was made to the municipalities in the northwestern portion of the county on June 19, 2012, covering the Peekskill and Haverstraw Bay Drainage Basin and the portions of the Croton River downstream of the Croton Dam. Questionnaires were returned from all of the watershed municipalities. A reconnaissance plan was prepared, reviewed by the Stormwater Advisory Board and submitted to the Board of Legislators in April 2014. The Board of Legislators approved the plan at its meeting of August 4, 2014.

### **Croton Reservoir and Inland Long Island Sound Drainage Basins**

In 2012, the Department of Planning made a presentation to the Northern Westchester Watershed Committee (NWWC), an existing organization of town supervisors of towns with land in the Croton and Kensico basins of the New York City reservoir system. They represent all land in the Croton basin above the New Croton Dam. The land area of the Inland Long Island Sound Basin is also included within these towns. The NWWC agreed to act as the basin-wide advisory board for these two major watersheds. Completed questionnaires were received from all but one of the municipalities. Two municipalities reported no significant flooding problems in the study area. A reconnaissance plan was prepared, reviewed by the County Stormwater Advisory Board in May 2014 and submitted to the Board of Legislators in July 2014. The Board of Legislators approved the plan at its meeting of September 8, 2014.

## **AMENDMENTS TO RECONNAISSANCE PLANS**

The Stormwater Management Law provides for the reconnaissance plans to be amended as necessary to allow the plans to be updated with information and additional flood problem areas or projects. To date, two municipalities have submitted requests for inclusion of additional flood problem areas within one or more of the reconnaissance plans.

In order to best manage amendments to plans, the County is conducting outreach to municipalities each spring to solicit proposed amendments to the plans. As with the creation of the reconnaissance plans, draft amendments to the plans will be prepared by County staff and reviewed by the County Stormwater Advisory Board before submission to the Board of Legislators for review and approval. County staff has had discussions with the Village of Dobbs Ferry and the Village of Briarcliff Manor, both of which did not identify flood problem areas during the development of the reconnaissance plans for their municipalities, and will continue to work with Dobbs Ferry on any flood problem areas for the Stormwater Reconnaissance Plan for the Saw Mill River-Pocantico River Watershed. The City of Rye submitted its list of flood problem areas for the Stormwater Reconnaissance Plan for the Coastal Long Island Sound Watershed June 28, 2016.

## FLOOD MITIGATION PROJECTS UNDER THE COUNTY STORMWATER MANAGEMENT LAW

Appendix C is a complete list of flood mitigation projects undertaken or contemplated utilizing County funding assistance under the County Stormwater Management Law and prior funding programs. County staff has met with the following municipalities to discuss applications for potential flood mitigation projects:

- Village of Scarsdale/City of New Rochelle/Town of Eastchester – County staff met with representatives from the Village of Scarsdale, City of New Rochelle and Town of Eastchester to discuss a joint project located along the Hutchinson River through these municipalities. The project involves the upgrade of roadway culverts and widening and realignment of the stream channel to improve the ability of the river to flow to Reservoir Number One. The three municipalities are working on an agreement and will approach the County once it has been arrived at.
- Village of Scarsdale – Scarsdale met with County staff to discuss the expansion of the geographic scope of the recently completed Fox Meadow Brook project, which the County cost-shared. It plans to request funding to study the potential project.
- Village of Tarrytown – County staff continued discussions with Village representatives on the progress of the Village’s efforts to revise the flood mitigation plan for the Loh Park neighborhood. This project was approved by the Board of Legislators on a recommendation by the Flood Action Task Force, an ad hoc committee formed under the prior administration for flood project purposes. The Village could not acquire the easements necessary for the initial plan and continues to explore alternative solutions to provide additional flood storage in the area. After a final plan has been determined by the Village and cost estimates prepared, the necessary bonding legislation, including the necessary revisions to the IMA, will be updated for submission to the BOL for approval.
- City of New Rochelle – New Rochelle has identified a number of projects, though many were considered of low priority at this time. Staff continue to work with City representatives to discuss funding assistance for a project to address flooding in the Beechmont Lake neighborhood of the City. A meeting with representatives from New Rochelle and the Village of Larchmont, downstream from the project, was held in June. A proposal from the consulting engineer has been received, and staff continue to work with the City and Village to finalize an application.
- City of Yonkers – Staff met with representatives from the City of Yonkers in 2015 to discuss two potential projects:
  - An upgrade of an existing outlet pipe and modifications to the weir of the Grassy Sprain dam which will allow pre-release of the dam or a permanent lowering of the water elevation to provide additional flood storage capacity.
  - An engineering study of alternatives to address flooding in the area of Clunie and Nepperhan Avenues.

The City is conducting a study to see how the funding from the NY Rising program will be used before finalizing an application for the County program.

- Village of Dobbs Ferry – Staff met with representatives from the Village of Dobbs Ferry in 2015 to discuss a number of flood problem areas. Staff is working with the Village to complete questionnaires for each of these areas so that they may be included in an amendment to the Saw Mill – Pocantico Rivers Reconnaissance Plan.
- Village of Briarcliff Manor – Staff continue to discuss adding flood problem areas within the Briarcliff Manor to the Saw Mill – Pocantico Rivers Reconnaissance Plan. A meeting with Village staff was held in August 2016, at which the questionnaire was completed and two flood problem areas were identified.
- Village of Port Chester – Staff met with representatives from the Village of Port Chester in 2015 to discuss a number of flood problem areas. Staff reviewed the project requirements with the representatives and will continue to discuss the feasibility of potential projects. A more detailed study of potential solutions, with detailed project descriptions and cost estimates for one or more specific problem areas, may be warranted.
- Village of Rye Brook – Staff met with representatives from the Port Chester School District, the Town of Rye and the Village of Rye Brook to discuss a study for a flood mitigation project in the area of Mamaroneck Avenue, Avon Court and the Port Chester Middle School. A revised proposal from the consulting engineer has been received and the three parties have entered into an agreement. The Village submitted an application to the County for funding assistance.
- City of White Plains – Staff discussed two flood problem areas with representatives from the City of White Plains:
  - The City outlined a stormwater management project proposed for a City-owned parcel on Thompson Avenue adjacent to the Central Westchester Parkway. It would involve the construction of a large storage facility to detain stormwater runoff. Additional engineering analysis is needed to determine the project details and to quantify costs and benefits.
  - City representatives described a flood problem associated with an apparently obstructed storm drainage line that crosses under the Metro-North railroad tracks in the vicinity of the North White Plains train station. When the system backs up, flooding results to the east of the train tracks. The storm drainage line empties on County land in the Bronx River Parkway Reservation. Ownership and maintenance responsibility for the storm drainage line has not been determined.
- Town of New Castle – Representatives from the Town of New Castle have expressed an interest in pursuing a project to address flooding in the Chappaqua area. Staff will arrange a meeting with the Town to discuss in more detail.
- Town of Cortlandt – Representatives from the Town of Cortlandt reviewed two potential projects with County staff. The Town will develop an RFP for design of the projects with assistance from County staff, to ensure that the adequate tasks are included to address information required by the County Stormwater Management Law.

- Town/Village of Harrison – Representatives from the Town/Village of Harrison met with County staff to discuss a project involving construction of a dam along Brentwood Brook and related road improvement projects to alleviate flooding in adjacent neighborhoods, on roadways and the middle school complex. The Village presented the project to the Stormwater Advisory Board at its November meeting and is preparing an application for funding.
- Town of Mamaroneck – Representatives from the Town of Mamaroneck met with County staff to discuss projects to alleviate flooding in certain areas of the town as well as the Village of Mamaroneck, including the replacement of the town-owned Waverly Avenue bridge along the Sheldrake River in the village.
- Village of Mamaroneck—Representatives from the Village of Mamaroneck presented two flood mitigation projects, the removal of the Hillside Avenue bridge along the Mamaroneck River and stream and culvert improvements along the Beaver Swamp Brook between Short Street and East Boston Post Road.

## COUNTY-WIDE HAZARD MITIGATION PLAN

The County was awarded a grant through the New York State Office of Emergency Management from FEMA’s Hazard Mitigation Grant Program for the preparation of a county-wide hazard mitigation plan. The plan will address both natural and man-made hazards, including flooding. Forty-two Westchester municipalities are participating in the plan. Tetra Tech was selected as the consultant and began work on the plan in March 2014 under the direction of the County Department of Emergency Services, Office of Emergency Management. The plan has been reviewed by FEMA and NYSDHSES, finalized, adopted by the County Board of Legislators and approved by FEMA, making the County eligible for federal hazard mitigation grant funding. Appropriate recommendations from the reconnaissance plans are included in the Countywide Hazard Mitigation Plan. The Hazard Mitigation Plan and information on hazard mitigation planning can be found on the County Web site at [www.westchestergov.com/hazardmitigation](http://www.westchestergov.com/hazardmitigation).

## FEMA PRELIMINARY FLOOD INSURANCE RATE MAPS

FEMA has prepared updates to the Flood Insurance Rate Maps for coastal Westchester municipalities. The maps were released December 9, 2014. A webinar for municipal officials was held on December 10, providing an overview of the process for updating the maps. A workshop was held January 12, 2015 to provide more information and discuss in more detail effective mitigation strategies to address coastal flooding. Six Westchester municipalities were represented at this session. A public information meeting was held at the County Center on March 11, 2015 to present the maps and answer questions. Approximately 25 municipal officials, interested professionals and property owners attended. An additional workshop was held August 24, at which over 50 representatives from Westchester municipalities attended.

The Department of Planning distributed outreach materials to local municipalities informing them of the comment period and review and adoption process and providing information on the new mapping, maps and lists of properties potentially impacted and brochures that can be distributed to residents. The comment period closed July 3, 2015 after which FEMA will make

any necessary changes to the preliminary maps. Once FEMA releases a final version of the maps, documented by a Letter of Final Determination, municipalities will have six months to adopt them. The County was also contacted by the New York City Mayor's Office in 2015 regarding the City's concerns with the new mapping and to distribute a copy of their appeal to FEMA. This appeal does not yet appear to have been resolved by FEMA, which may be delaying the issuance of a Letter of Final Determination. Information on flooding, the National Flood Insurance Program, flood mapping, the preliminary map updates can be found on the County Web site at [www.westchestergov.com/flooding](http://www.westchestergov.com/flooding).

## **COUNTY STREAM AND WEATHER MONITORING PROGRAM**

The County submitted an application under the Hazard Mitigation Grant Program released in 2013 after Superstorm Sandy for the creation of a system of stream and weather gauges to improve the understanding of rain events and subsequent flooding and utilize this information for flood forecasting and warning. Such a program is included in the reconnaissance plan recommendations. Staff was notified in January from the NYSDHSES that such a project will not be considered an eligible activity for the foreseeable future as grant priorities are focused on other types of projects. Staff continue to seek other grant sources.

**APPENDIX A: Map and List of Major Drainage Basins and Municipalities**



Municipality	Drainage Basin						Municipality	Drainage Basin					
	Peekskill & Haverstraw Bay	Croton River	Pocantico & Saw Mill River	Bronx River	Inland Long Island Sound	Coastal Long Island Sound		Peekskill & Haverstraw Bay	Croton River	Pocantico & Saw Mill River	Bronx River	Inland Long Island Sound	Coastal Long Island Sound
<b>Cities</b>							<b>Villages</b>						
Mount Vernon							Ardsey						
New Rochelle							Briarcliff Manor						
Peekskill							Bronxville						
Rye							Buchanan						
White Plains							Croton-on-Hudson						
Yonkers							Dobbs Ferry						
<b>Towns</b>							Elmsford						
Bedford							Harrison (V/T)						
Cortlandt							Hastings-on-Hudson						
Eastchester							Irvington						
Greenburgh							Larchmont						
Lewisboro							Mamaroneck						
Mamaroneck							Mount Kisco						
Mount Pleasant							Ossining						
New Castle							Pelham						
North Castle							Pelham Manor						
North Salem							Pleasantville						
Ossining							Port Chester						
Pound Ridge							Rye Brook						
Somers							Scarsdale						
Yorktown							Sleepy Hollow						
							Tarrytown						
							Tuckahoe						

**APPENDIX B: Stormwater Advisory Board Membership****Stormwater Advisory Board  
Member Contact Information**

<b>Name</b>	<b>Term Expiration</b>
<b>CE Appointments<sup>1</sup>:</b>	
Vacant	12/31/2016
James Caggiano	12/31/2016
Marc Godick	12/31/2015
William Mascetta	12/31/2016
Margaret Slavin	12/31/2015
<b>BOL Appointments<sup>2</sup>:</b>	
Chris Bradbury	12/31/2016
Alfred Gatta	12/31/2017
James Palmer	12/31/2017
Nancy Seligson	12/31/2016
Paul Summerfield	12/31/2017
<b>Ex-Officio</b>	
Legislator Mary Jane Shimsky	
Commissioner of Planning (Chair)	

<sup>1</sup>Five appointments by CE - staggered two-year terms for all five

<sup>2</sup>Five appointments by BOL - staggered two-year terms for all five

Revised July 29, 2016

**APPENDIX C: Flood Mitigation Projects and Status**

**Westchester County Flood Mitigation Projects**  
(status as of 12/31/16)

	Project Name	Project Location	Project Description	Approximate Total Cost	Funding	Status
In Design or Construction	WC Project: Mamaroneck River Restoration Project Phase II	Saxon Woods Park along the Mamaroneck River, Town of Mamaroneck	Removal of invasive vegetation, embankment stabilization, and re-planting	\$641,000	\$600,000 (BPL23, Construction) \$41,000 (NFWF Grant, Design)	Design complete. Bond authorization granted. Construction underway, completion Spring 2017.
	Village of Bronxville: High School Flood Mitigation	From Midland Avenue discharging through Scout Field to Laurel Brook and the Bronx River	The project involves the construction of a facility to store a portion of stormwater runoff as it builds up on the high school property and then pump the stormwater via a 30" force main down Midland Avenue, Pondfield Road and Gramatan Avenue and discharge in Laurel Brook, which flows through Scout Field to the Bronx River	N/A	FEMA grant and Village of Bronxville	Project bids exceeded estimates. County is discussing design and funding issues and alternative route with Village and their consultant.
	WC Project: Bronx River and Sprain Brook	Bronx River Reservation at the Confluence of the Bronx River and Grassy Sprain Brook	Project will remove the large sediment deposit at the confluence and stabilize the stream banks.	Rough Estimate: \$500,000	Design (B0097), Construction (BPL40)	Design complete. Re-bid project in 2016 with Harney Road project. Construction underway.
	WC Project: Flood Mitigation Project South of Harney Road, BRP Reservation	Bronx River south of Harney Road, Eastchester and Yonkers	Remove substantial amount of coarse sediment from Bronx River channel, stabilize river banks, construct river channel flow improvement structures, Eastchester and Yonkers	Construction Estimate: \$1,250,000	B0097 (Design) \$1,250,000 (BPL40, Construction)	Design complete. Re-bid project in 2016 with Sprain/Bronx R. project. Construction underway.
	WC Project: Flood Mitigation Project at Garth Woods, BRP Reservation	Garth Woods, Bronx River, Eastchester and Yonkers	Re-direct Bronx River channel away from wall supporting Bronx River Parkway at Garth Woods, Eastchester	Construction Estimate: \$2,500,000	B0097 (Design) \$2,500,000 (BPL40, Construction)	Stream study and conceptual design complete. Final design underway with construction in 2017.
	WC Project: Flood Mitigation Project at Anita Lane/Valley Place on Mamaroneck River	Anita Lane Bridge, Village of Mamaroneck	Replace existing bridge carrying county sewer pipe over Mamaroneck River with new bridge that will enable improved flow in river channel during severe storms, Mamaroneck Village	Estimate: \$1,500,000	\$500,000 (SM085) \$1,000,000 (BPL40)	In Design. Construction anticipated 2016-2017.
	Village of Tuckahoe: Flood Mitigation Project at Garrett Avenue	Bronx River Reservation near Garrett Avenue, Village of Tuckahoe	Village will construct an earthen berm and install portable stormwater pumps along Garrett Avenue in BRP Reservation to minimize volume of stormwater extending from Bronx River to residential neighborhood and pump stormwater runoff from neighborhood to Bronx River	Estimate: \$250,000	100% of project costs funded by Village of Tuckahoe.	Village has permit from PRC. Work will begin once a source of clean fill is secured.
	Village of Tarrytown: Loh Park Flood Mitigation Project	Loh Park neighborhood, east of Route 9 and along Benedict Avenue, Village of Tarrytown	Install new 1,100 linear feet of drainage piping and catch basins from pond at Prospect & Benedict Avenues to Loh Ave. & Benedict Ave. storm water sewer system. Phase 2: install new stormdrain systems, increase drainage channel capacity west of Grove St., enclose about 100 linear feet of open channels at Loh Ave. and Leroy Ave. and construct new storm drain system. Phase 3: construct new pond with associated outlet structure in upper drainage area #3, provide stream restoration, sediment removal and provide outfall protection on all six existing outfalls into main drainage channel.	\$1,667,000 revised to \$3,000,000 (Aug 2014)	Up to \$833,500 (BPL26) \$883,5000 (Village of Tarrytown) Village has requested additional funding due to project re-design.	Necessary easements could not be acquired by Village for initial design. Alternative designs being explored. Updated cost estimate, CBA and amended IMA will be required once design is finalized.
Under Discussion or in Planning Phase	WC/Village of Mamaroneck: Sheldrake-Mamaroneck Rivers General Reevaluation Report by USACE	Village of Mamaroneck	Partnership among USACE, NYS DEC and Westchester County, led by USACE, to re-study flood mitigation options and develop specific recommendation for Mamaroneck Village	\$6,144,000	\$768,000 (BPL26) \$768,000 (NYSDEC) \$4,608,000 (USACE)	Draft report completed by USACE released to public in January 2016. Public meeting held 2/25. Final report adoption anticipated September 2016.
	WC Project: Stormwater management along Fulton Brook	Bronx River Reservation near County Center, White Plains	Stormwater management practices and embankment stabilization	\$720,000	\$245,000 (BPL23) \$475,000 (NYSDEC)	WQIP grant awarded by DEC 11/5/14. Awaiting contract from NYSDEC.
	Village of Larchmont: Pine Brook Flood Mitigation Project	Along the Pine Brook, from Brook Place to the Premium River, Larchmont	Replace culvert(s) beneath Boston Post Road, increase culvert capacity, other flow/storage improvements and streambank improvements along Pine Brook	\$404,500 (study)	50% of eligible project costs (BPL26) Remainder (Village of Larchmont)	Last of several meetings with Larchmont Mayor and Village's consultant on 01/31/14. Final study proposal received from consultant. Project presented to SAB 11/3/16.
	City of New Rochelle: Beechmont Lake	Beechmont Lake	Dredge and redesign existing pond to provide additional flood storage capacity.			Proposal for design study received. Project presented to SAB 11/3/2016.

**Westchester County Flood Mitigation Projects**  
(status as of 12/31/16)

	Project Name	Project Location	Project Description	Approximate Total Cost	Funding	Status
Under Discussion or in Planning Phase	Scarsdale/New Rochelle/Eastchester: Hutchinson River Flood Mitigation Project	Wilmot Road and Hutchinson Blvd. vicinity, Scarsdale, New Rochelle, Eastchester	Replace culverts, river clearing, bank stabilization and realignment	2014 Estimate: \$4 Million	50% of eligible project costs (BPL26) Remainder (Scarsdale, New Rochelle, Eastchester)	Last of several meetings with New Rochelle, Scarsdale and Eastchester representatives on 07/28/14. Discussions with Eastchester to participate in funding design study underway. Easements from all property owners required.
	Rye Brook/Town of Rye/Port Chester School District	Flood mitigation in area of Port Chester Middle School, Mamaroneck Avenue and Astor Circle in Rye Brook		\$100,000	50% of eligible project costs (BPL26) Remainder (Rye Brook, Town of Rye, School District)	Last of several meetings with Rye Brook, School District and Town held on 6/13/16. Rye Brook working on IMAs with Town and School District, consulting engineer has prepared a proposal. Project presented to SAB 11/3/16.
	Village of Scarsdale: Expansion of Fox Meadow Brook Flood Mitigation Project	Area between Kent Rd, Butler Rd and Ogden Rd, Scarsdale	Study area for alternatives to reduce flooding	TBD	TBD	Met with Scarsdale representatives 3/10/15 to discuss
	Town of Mamaroneck: Replacement of Waverly Avenue Bridge	Waverly Avenue, Mamaroneck Village	Town has received rough cost estimate from contractor to replace bridge. Need to perform calculations and coordinate design with USACE project.	TBD	TBD	Met with representatives on 6/30/16 to discuss potential projects
	City of Yonkers: Grassy Sprain Reservoir	Grassy Sprain Reservoir	Rehabilitation of outlet pipe and overflow weir. Possible modification of weir and reduction of water elevation to provide permanent additional flood storage capacity.	TBD	TBD	Met with City representatives 9/4/14 and 11/5/14 to discuss application under BPL26. Awaiting information from City
	City of Yonkers: Clunie and Nepprehan Ave Neighborhood Study	Clunie and Nepperhan Avenues	Study area for alternatives to reduce flooding	TBD	TBD	Met with City representatives 9/4/14 and 11/5/14 to discuss application under BPL26. Awaiting information from City
	Town/Village of Harrison: Harrison Middle School Complex and Neighborhood	Area bounded by Rt 127, Woodlands Rd, and I-95	Construction of dam and levees to detain stormwater flows and reduce flooding at the middle school, surrounding neighborhood and nearby roads	\$3,000,000 to \$5,000,000 (estimate)	50% of eligible project costs (BPL26) Remainder (Harrison)	Met with Harrison representatives 6/7/16 to review plans and discuss application process. Project presented to SAB 11/3/16
	City of New Rochelle: Valley Rd, Brookside Place, Fourth Ave, Fifth Ave, White Oak Street	Various	Upgrade storm sewer system			Met with representatives 3/7/16 to discuss project. Engineering study would need to be performed demonstrating no impacts upstream or downstream. These are considered low priority by City and are not being pursued at this time.
	City of White Plains	Thompson Avenue	Install a stormwater storage facility to provide stormwater detention. Additional engineering analysis needed.	TBD	TBD	Met with representatives from City 12/10/14 to discuss potential project. Awaiting additional scope and cost info from City.
	City of White Plains	North White Plains Parking Lot (BRPR)	Repair obstructed storm sewer pipe apparently on County property.	TBD	TBD	Met with representatives from City 12/10/14 to discuss potential project. City believes this is a County maintenance issue.
	Village of Mamaroneck	Hillside Avenue at the Mamaroneck River	Reconstruction of Hillside Avenue bridge	\$300,000 (design)	50% of eligible project costs (BPL26) Remainder (Mamaroneck)	Application received and project presented to SAB 11/3/16
	Village of Mamaroneck	Beaver Swamp Brook between Short Street and East Boston Post Road	Drainage channel improvements and culvert improvements	\$280,000 (design)	50% of eligible project costs (BPL26) Remainder (Mamaroneck)	Application received and project presented to SAB 11/3/16
Village of Dobbs Ferry	TBD	TBD	TBD	TBD	Met with representatives from Village 9/4/14 to discuss program and process to amend reconnaissance plan to include flood problem areas. Awaiting Village flood info forms	

**Westchester County Flood Mitigation Projects**  
(status as of 12/31/16)

	Project Name	Project Location	Project Description	Approximate Total Cost	Funding	Status
Under Discussion or in Planning Phase	Village of Port Chester	TBD	TBD	TBD	TBD	Met with representatives from Village 11/19/14 to discuss program and process to amend reconnaissance plan to include flood problem areas. Awaiting Village flood info forms.
	Town of New Castle: Chappaqua	TBD	TBD	TBD	TBD	Initial discussion with representatives from New Castle. Meeting to be scheduled.
Completed	Village of Scarsdale: Fox Meadow Brook Flood Mitigation Project	Three locations as follows: 1) George Field Park, White Plains Road (Route 22) at Oxford Road, 2) Cooper Green, White Plains Road (Route 22) at Mamaroneck Road, 3) Harcourt Woods, Brewster Road between Olmstead Road and Harcourt Road, Village of Scarsdale	Project components at three locations along Fox Meadow Brook include construction of dry bio-detention/meadow storm water management basins and rain garden with associated spillway controls and stream channel modifications	\$2,900,000	Up to \$1,450,000 (BPL26) \$1,450,000 (Village of Scarsdale)	Complete.
	WC Project: Stormwater Wetland Restoration at Fisher Lane, BRP Reservation	Along the Bronx River within the BRPR upstream of the intersection of Fisher Lane and Bronx River Parkway, Greenburgh	Restoration and hydrological reconnection of wetland and river bank to improve stormwater management, Greenburgh	\$800,000	\$800,000 (BPL23)	Completed 2014.
	WC Project: Water Quality/Quantity Modeling Tool for Bronx River and LIS Watersheds	Bronx River and Long Island Sound Watersheds	Hired consultant, Hydroqual/HDR, to conduct analysis and develop computer-based modeling tool to enable county and municipalities to analyze stormwater management practices application	\$775,110	\$775,110 (B0097)	DPWT finalizing project with consultant.
	WC Project: Flood Mitigation Opportunities at County-Owned Properties	Grasslands, Scout Field, Garth Woods, BRPR near County Center, Tibbetts Brook Park	Hired consultant, AKRF, to conduct analysis for flood mitigation opportunities at five county properties (BRP Reservation in vicinity of County Center, in Garth Woods and at Scout Field; Tibbetts Brook Park; Valhalla Campus at Grasslands)	\$285,000	\$285,000 (B0097)	DPWT finalizing project with consultant.
	WC Project: Stormwater Management Practices	County Center Parking Lot, White Plains	Installation of stormwater wetlands, vegetated swales, subsurface infiltration and pervious pavement in conjunction with reconfiguration of the parking lot	\$3,200,000	\$3,200,000 (RCC10)	Completed 2009.
	Town of Mamaroneck: Garden Lake Flood Mitigation and Water Quality Improvement Project	Garden Lake, Lakeside Drive, Town of Mamaroneck	Enable use of lake on Sheldrake River as stormwater storage basin by dredging and retrofit of dam outlet	\$1,600,000	\$1,000,000 (BPL26) \$600,000 (Town of Mamaroneck)	Completed 2010.
	WC Project: Bronx River at County Center - West Side	Along the Bronx River between the Bronx River Parkway and the County Center Parking Lot, White Plains	Stabilize 1,000 linear feet of river banks to protect against flooding impacts, restore wetlands and buffer along river for stormwater management	\$1,650,750 (Total) incl. \$700,000 (Construction)	\$86,750 (SWCD) \$514,000 (County In-Kind) \$1,050,000 (USACE)	Completed 2011.
	WC Project: Bronx River at County Center - East Side	Along the Bronx River between the Bronx River Parkway and the County Center Parking Lot, White Plains	Stabilize 1,200 linear feet of river banks to protect against flooding impacts, restore wetlands and buffer along river for stormwater management	\$700,000	\$350,000 (BPL21) \$350,000 (NFWF Grant)	Completed 2012.
	WC Project: Stormwater Management Projects at Scout Field, BRP Reservation	Scout Field and along the Bronx River at Scout Field, Bronx River Parkway Reservation, Mount Vernon	Construction of stormwater management basin/wetland and drainage improvements (1st Component); construction of river channel flow improvement structures and river bank stabilization (2nd Component)	\$550,000	\$300,000 (BPL23) \$250,000 (NFWF Grant)	Completed 2012.
	City of Rye, Village of Rye Brook: Blind Brook Dam Retrofit at Bowman Avenue	Blind Brook at Bowman Avenue, Rye Brook	Replace existing fixed, timber outlet control gate at the "Bowman Avenue Dam" with automated, adjustable, cast iron outlet control gate to be automatically controlled based on water surface elevation measured at a gauge mounted on the dam.	\$2,167,100	Up to \$1,083,550 (BPL26) \$1,083,550 (City of Rye)	Project completed 2012. City needs to demonstrate compliance with IMA requirements for reimbursement.
	WC Project: Mamaroneck River Restoration Project Phase I	Saxon Woods Park along the Mamaroneck River, Town of Mamaroneck	Removal of invasive vegetation, embankment stabilization, and re-planting	\$480,000	\$480,000 (SLI02)	Completed 2013.
	WC Project: Oak Street Pump Station Rehabilitation	Bronx River, Yonkers	Rehabilitation of damaged county-owned stormwater pumping station at Oak Street, Yonkers, also enabling it to better operate during storms	\$433,946	100% project costs paid by insurance	Completed 2013.