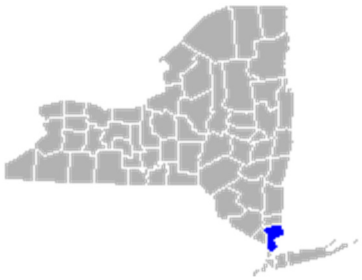
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 5



WESTCHESTER COUNTY, NEW YORK

(ALL JURISDICTIONS)

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ARDSLEY, VILLAGE OF	360902	NEW ROCHELLE, CITY OF	360922
BEDFORD, TOWN OF	360903	NORTH CASTLE, TOWN OF	360923
BRIARCLIFF MANOR, VILLAGE OF	360904	NORTH SALEM, TOWN OF	361240
BRONXVILLE, VILLAGE OF	360905	OSSINING, TOWN OF	361241
BUCHANAN, VILLAGE OF	361534	OSSINING, VILLAGE OF	361021
CORTLANDT, TOWN OF	360906	PEEKSKILL, CITY OF	360924
CROTON-ON-HUDSON, VILLAGE OF	360907	PELHAM, VILLAGE OF	360925
DOBBS FERRY, VILLAGE OF	360908	PELHAM MANOR, VILLAGE OF	360926
EASTCHESTER, TOWN OF	360909	PLEASANTVILLE, VILLAGE OF	360927
ELMSFORD, VILLAGE OF	360910	PORT CHESTER, VILLAGE OF	360928
GREENBURGH, TOWN OF	360911	POUND RIDGE, TOWN OF	360929
HARRISON, TOWN OF	360912	RYE, CITY OF	360931
HASTINGS-ON-HUDSON, VILLAGE OF	360913	RYE BROOK, VILLAGE OF	360930
IRVINGTON, VILLAGE OF	360914	SCARSDALE, VILLAGE OF	360932
LARCHMONT, VILLAGE OF	360915	SLEEPY HOLLOW, VILLAGE OF	361515
LEWISBORO, TOWN OF	361227	SOMERS, TOWN OF	361242
MAMARONECK, TOWN OF	360917	TARRYTOWN, VILLAGE OF	360933
MAMARONECK, VILLAGE OF	360916	TUCKAHOE, VILLAGE OF	360934
MOUNT KISCO, VILLAGE OF	360918	WHITE PLAINS, CITY OF	360935
MOUNT PLEASANT, TOWN OF	360919	YONKERS, CITY OF	360936
MOUNT VERNON, CITY OF	360920	YORKTOWN, TOWN OF	360937
NEW CASTLE, TOWN OF	360921		

PRELIMINARY

December 8, 2014

FLOOD INSURANCE STUDY NUMBER
36119CV001B

Version Number 2.2.2.1

FEMA

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FLOOD INSURANCE STUDY REPORT
WESTCHESTER COUNTY, NEW YORK

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for land Management and Use.*

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as "Post-FIRM" buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community's regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Westchester County, New York.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Village of Ardsley	360902	2030101, 2030102	36119C0263F, 36119C0264F	
Town of Bedford	360903	1100006, 2030101	36119C0063F, 36119C0064F, 36119C0067F, 36119C0068F, 36119C0069F, 36119C0090F, 36119C0151F, 36119C0152F, 36119C0153F, 36119C0154F, 36119C0156F, 36119C0157F,	

Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Town of Bedford (continued)	360903	1100006, 2030101	36119C0158F, 36119C0159F, 36119C0162F, 36119C0166F, 36119C0167F, 36119C0176F, 36119C0178F, 36119C0180F, 36119C0186F	
Village of Briarcliff Manor	360904	2030101	36119C0119F[1], 36119C0136G, 36119C0137F, 36119C0138G, 36119C0139F, 36119C0143F, 36119C0251G, 36119C0252F	
Village of Bronxville	360905	2030102	36119C0329F, 36119C0337G	
Village of Buchanan	361534	2030101	36119C0012G, 36119C0014G, 36119C0018G, 36119C0102G	
Town of Cortlandt	360906	2030101	36119C0003G, 36119C0004F[1], 36119C0008G, 36119C0009F, 36119C0011G, 36119C0012G, 36119C0013F[1], 36119C0014G, 36119C0016G, 36119C0017F, 36119C0018G, 36119C0019F, 36119C0028F, 36119C0036F, 36119C0038F, 36119C0101F[1], 36119C0102G, 36119C0104F[1], 36119C0106G, 36119C0107F, 36119C0108G, 36119C0126F, 36119C0127F, 36119C0128G, 36119C0129F	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Village of Croton-on-Hudson	360907	2030101	36119C0106G, 36119C0107F, 36119C0108G, 36119C0109G, 36119C0116F[1], 36119C0117G, 36119C0126F, 36119C0128G, 36119C0136G	
Village of Dobbs Ferry	360908	2030101	36119C0244G, 36119C0263F, 36119C0326F	
Town of Eastchester	360909	2030102	36119C0327F, 36119C0329F, 36119C0331F, 36119C0333F, 36119C0337G, 36119C0341G	
Village of Elmsford	360910	2030101, 2030102	36119C0262F, 36119C0266F	
Town of Greenburgh	360911	2030101, 2030102	36119C0253G, 36119C0254F, 36119C0258F, 36119C0259F, 36119C0261G, 36119C0262F, 36119C0263F, 36119C0264F, 36119C0266F, 36119C0267F, 36119C0268F, 36119C0326F, 36119C0327F, 36119C0331F	
Town of Harrison	360912	2030102	36119C0259F, 36119C0267F, 36119C0269F, 36119C0278F, 36119C0279F, 36119C0286F, 36119C0287F, 36119C0288F, 36119C0289F, 36119C0293G, 36119C0351F, 36119C0352G, 36119C0353G, 36119C0354G, 36119C0356G	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Village of Hastings-on-Hudson	360913	2030101	36119C0244G, 36119C0263F, 36119C0307G, 36119C0326F	
Village of Irvington	360914	2030101	36119C0242G, 36119C0244G, 36119C0261G, 36119C0262F, 36119C0263F, 36119C0264F	
Village of Larchmont	360915	2030102	36119C0342G, 36119C0344G, 36119C0361G, 36119C0363F[1], 36119C0364F[1]	
Town of Lewisboro	361227	1100006, 2030101	36119C0062F, 36119C0064F, 36119C0066F, 36119C0067F, 36119C0068F, 36119C0069F, 36119C0090F, 36119C0095F, 36119C0185F, 36119C0205F[1]	
Town of Mamaroneck	360917	2030102	36119C0332F, 36119C0334F, 36119C0342G, 36119C0351F, 36119C0353G, 36119C0361G	
Village of Mamaroneck	360916	2030102	36119C0351F, 36119C0353G, 36119C0354G, 36119C0361G, 36119C0362G, 36119C0363F[1], 36119C0364F[1]	
Village of Mount Kisco	360918	2030101	36119C0134F, 36119C0151F, 36119C0152F, 36119C0153F, 36119C0154F, 36119C0161F, 36119C0162F	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Town of Mount Pleasant	360919	2030101, 2030102	36119C0119F[1], 36119C0137F, 36119C0138G, 36119C0139F, 36119C0141F, 36119C0142F, 36119C0143F, 36119C0144F, 36119C0163F, 36119C0232F[1], 36119C0251G, 36119C0252F, 36119C0253G, 36119C0254F, 36119C0256F, 36119C0257F, 36119C0258F, 36119C0259F, 36119C0267F, 36119C0276F	
City of Mount Vernon	360920	2030102	36119C0336G, 36119C0337G, 36119C0338G, 36119C0339G, 36119C0341G	
Town of New Castle	360921	1100006, 2030101, 2030102	36119C0128G, 36119C0129F, 36119C0132F, 36119C0133F, 36119C0134F, 36119C0136G, 36119C0137F, 36119C0141F, 36119C0142F, 36119C0144F, 36119C0151F, 36119C0153F, 36119C0154F, 36119C0161F, 36119C0162F, 36119C0163F, 36119C0164F	
City of New Rochelle	360922	2030102	36119C0331F, 36119C0332F, 36119C0333F, 36119C0334F, 36119C0341G, 36119C0342G, 36119C0343G, 36119C0344G, 36119C0363F, 36119C0407F, 36119C0426F	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Town of North Castle	360923	1100006, 2030101, 2030102	36119C0162F, 36119C0163F, 36119C0164F, 36119C0166F, 36119C0167F, 36119C0168F, 36119C0169F, 36119C0186F, 36119C0188F, 36119C0257F, 36119C0259F, 36119C0267F, 36119C0276F, 36119C0277F, 36119C0278F, 36119C0279F, 36119C0281F, 36119C0286F	
Town of North Salem	361240	2030101	36119C0056F, 36119C0057F[1], 36119C0058F, 36119C0059F, 36119C0066F, 36119C0067F, 36119C0076F[1], 36119C0077F, 36119C0078F, 36119C0079F, 36119C0085F, 36119C0090F, 36119C0095F	
Town of Ossining	361241	2030101	36119C0117G, 36119C0128G, 36119C0136G, 36119C0137F	
Village of Ossining	361021	2030101	36119C0116F[1], 36119C0117G, 36119C0119F[1], 36119C0136G, 36119C0137F, 36119C0138G	
City of Peekskill	360924	2030101	36119C0012G, 36119C0014G, 36119C0016G, 36119C0017F, 36119C0018G, 36119C0019F	
Village of Pelham	360925	2030102	36119C0337G, 36119C0339G, 36119C0341G, 36119C0343G	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Village of Pelham Manor	360926	2030102	36119C0339G, 36119C0343G	
Village of Pleasantville	360927	2030101, 2030102	36119C0143F, 36119C0144F	
Village of Port Chester	360928	1100006, 1100007, 2030102	36119C0293G, 36119C0294G, 36119C0356G	
Town of Pound Ridge	360929	1100006, 2030101	36119C0090F, 36119C0095F, 36119C0176F, 36119C0178F, 36119C0180F, 36119C0183F, 36119C0185F, 36119C0186F, 36119C0187F, 36119C0188F, 36119C0191F	
City of Rye	360931	1100007, 2030102	36119C0352G, 36119C0354G, 36119C0356G, 36119C0357G[1], 36119C0358G, 36119C0359F[1], 36119C0362G, 36119C0364F[1], 36119C0366F[1], 36119C0367F[1], 36119C0378F[1]	
Village of Rye Brook	360930	1100006, 2030102	36119C0279F, 36119C0287F, 36119C0289F, 36119C0291F[1], 36119C0293G, 36119C0356G	
Village of Scarsdale	360932	2030102	36119C0268F, 36119C0269F, 36119C0331F, 36119C0332F, 36119C0334F, 36119C0351F	
Village of Sleepy Hollow	361515	2030101	36119C0232F[1], 36119C0234F[1], 36119C0251G, 36119C0253G	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Town of Somers	361242	2030101	36119C0032F[1], 36119C0034F, 36119C0042F, 36119C0044F, 36119C0051F, 36119C0052F, 36119C0053F, 36119C0054F, 36119C0056F, 36119C0058F, 36119C0061F, 36119C0062F, 36119C0063F, 36119C0064F, 36119C0066F, 36119C0132F, 36119C0151F	
Village of Tarrytown	360933	2030101	36119C0234F[1], 36119C0242G, 36119C0253G, 36119C0254F, 36119C0261G	
Village of Tuckahoe	360934	2030102	36119C0329F	
City of White Plains	360935	2030102	36119C0259F, 36119C0266F, 36119C0267F, 36119C0268F, 36119C0269F, 36119C0286F, 36119C0288F, 36119C0332F, 36119C0351F	
City of Yonkers	360936	2030101, 2030102	36119C0307G, 36119C0308F[1], 36119C0309G, 36119C0316G[1], 36119C0317G, 36119C0319F, 36119C0326F, 36119C0327F, 36119C0328F, 36119C0329F, 36119C0331F, 36119C0336G, 36119C0337G, 36119C0338G	

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Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Town of Yorktown	360937	2030101	36119C0028F, 36119C0029F, 36119C0033F, 36119C0034F, 36119C0036F, 36119C0037F, 36119C0038F, 36119C0039F, 36119C0041F, 36119C0042F, 36119C0043F, 36119C0044F, 36119C0126F, 36119C0127F, 36119C0129F, 36119C0131F, 36119C0132F, 36119C0133F, 36119C0134F	

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

  It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, "Map Repositories," within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The initial Countywide FIS Report for Westchester County became effective on September 28, 2007. Refer to Table 28 for information about subsequent revisions to the FIRMs.

- FEMA does not impose floodplain management requirements or special insurance ratings based on Limit of Moderate Wave Action (LiMWA) delineations at this time. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. If the LiMWA is shown on the FIRM, it is being provided by FEMA as information only. For communities that do adopt Zone VE building standards in the area defined by the LiMWA, additional Community Rating System (CRS) credits are available. Refer to Section 2.5.4 for additional information about the LiMWA.

  The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at http://www.fema.gov or contact your appropriate FEMA Regional Office for more information about this program.

- Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled "Mapping of Areas Protected by Levee Systems."

  Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE national levee database. For all other levees, the user is encouraged to contact the appropriate local community.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at http://www.fema.gov.

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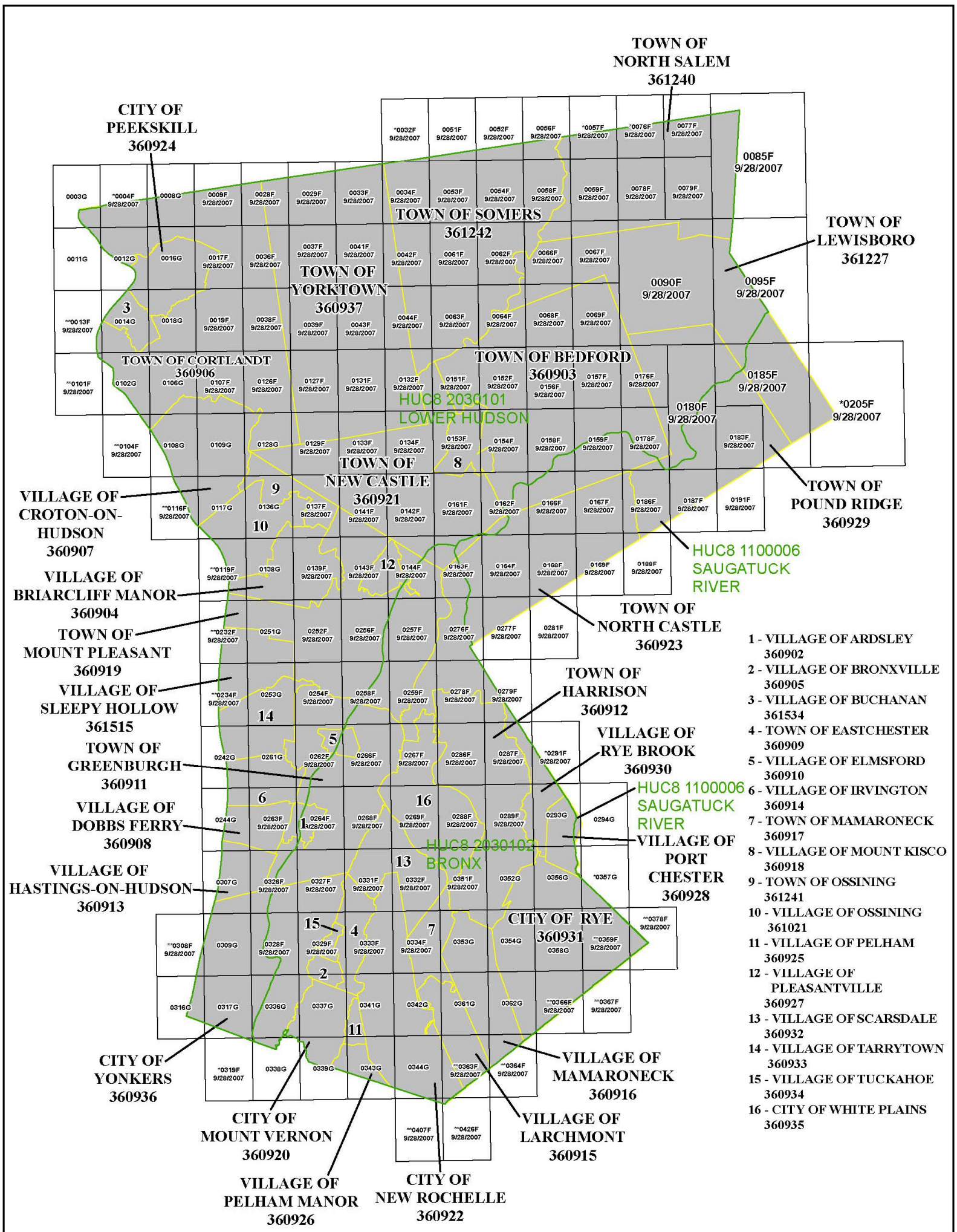
Figure 1: FIRM Panel Index



1 in = 3 miles

0 0.75 1.5 3 4.5 6 Miles

Map Projection:
Universal Transverse Mercator Zone 18N North;
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS
**PANEL NOT PRINTED - OPEN WATER AREA

COUNTY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

WESTCHESTER COUNTY, NEW YORK (ALL JURISDICTIONS)
PANELS PRINTED:
0003, 0008, 0009, 0011, 0012, 0014, 0016, 0017, 0018, 0019, 0028, 0029, 0033, 0034, 0036, 0037, 0038, 0039, 0041, 0042, 0043, 0044, 0051, 0052, 0053, 0054, 0056, 0058, 0059, 0061, 0062, 0063, 0064, 0066, 0067, 0068, 0069, 0077, 0078, 0079, 0085, 0090, 0095, 0102, 0106, 0107, 0108, 0109, 0117, 0126, 0127, 0128, 0129, 0131, 0132, 0133, 0134, 0136, 0137, 0138, 0139, 0141, 0142, 0143, 0144, 0151, 0152, 0153, 0154, 0156, 0157, 0158, 0159, 0161, 0162, 0163, 0164, 0166, 0167, 0168, 0169, 0176, 0178, 0180, 0183, 0185, 0186, 0187, 0188, 0191, 0242, 0244, 0251, 0252, 0253, 0254, 0256, 0257, 0258, 0259, 0261, 0262, 0263, 0264, 0266, 0267, 0268, 0269, 0276, 0277, 0278, 0279, 0281, 0286, 0287, 0288, 0289, 0293, 0294, 0307, 0309, 0316, 0317, 0326, 0327, 0328, 0329, 0331, 0332, 0333, 0334, 0336, 0337, 0338, 0339, 0341, 0342, 0343, 0344, 0351, 0352, 0353, 0354, 0356, 0358, 0361, 0362

FEMA

MAP NUMBER
36119CIND0B

MAP REVISED

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Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 28 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

Coastal Base Flood Elevations shown on the map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the FIS Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

Figure 2: FIRM Notes to Users (continued)

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM) Zone 18N**.** The horizontal datum was NAD 83 GRS 1980 Spheroid**.** Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988 (NAVD 88)**.** These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988 (NAVD 88)**,** visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by 2013 High Resolution Imagery NY State Cyber 0.5 feet. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Westchester County, New York, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

Figure 2: FIRM Notes to Users (continued)

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Westchester County, New York, effective (*DATE*).

LIMIT OF MODERATE WAVE ACTION: Zone AE has been divided by a Limit of Moderate Wave Action (LiMWA). The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between Zone VE and the LiMWA (or between the shoreline and the LiMWA for areas where Zone VE is not identified) will be similar to, but less severe than, those in Zone VE.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*

Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

Zone A — The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE — The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.

Zone AH — The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.

Zone AO — The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.

Zone AR — The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

Zone A99 — The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.

Zone V — The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.

Zone VE — Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.

Regulatory Floodway determined in Zone AE.

Figure 3: Map Legend for FIRM (continued)

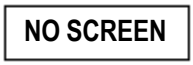
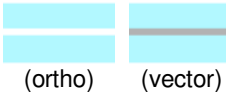
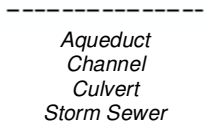
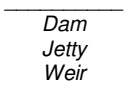
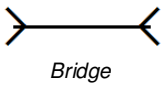
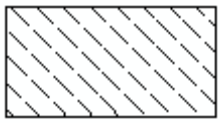
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. See Notes to Users for important information.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible
	Unshaded Zone X: Areas determined to be outside the 0.2% annual chance flood hazard
FLOOD HAZARD AND OTHER BOUNDARY LINES	
	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
GENERAL STRUCTURES	
	Channel, Culvert, Aqueduct, or Storm Sewer
	Dam, Jetty, Weir
	Levee, Dike, or Floodwall accredited or provisionally accredited to reduce the flood risk from the 1% annual chance flood.
	Levee, Dike or Floodwall not accredited to reduce the flood risk from the 1% annual chance flood.
	Bridge

Figure 3: Map Legend for FIRM (continued)

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. See Notes to Users for important information.*

CBRS AREA
09/30/2009

Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.



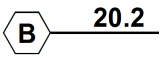
OTHERWISE PROTECTED AREA
09/30/2009

Otherwise Protected Area

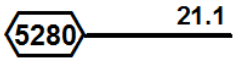
REFERENCE MARKERS

River mile Markers

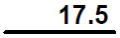
CROSS SECTION & TRANSECT INFORMATION



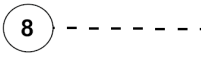
Lettered Cross Section with Regulatory Water Surface Elevation (BFE)



Numbered Cross Section with Regulatory Water Surface Elevation (BFE)



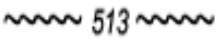
Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)



Coastal Transect

Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.

Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.



Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)

ZONE AE
(EL 16)

Static Base Flood Elevation value (shown under zone label)

ZONE AO
(DEPTH 2)

Zone designation with Depth

ZONE AO
(DEPTH 2)
(VEL 15 FPS)

Zone designation with Depth and Velocity

Figure 3: Map Legend for FIRM (continued)

BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}$E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Westchester County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, "Map Legend for FIRM", describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Westchester County, New York, respectively.

Table 2, "Flooding Sources Included in this FIS Report," lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

2.2 Floodways

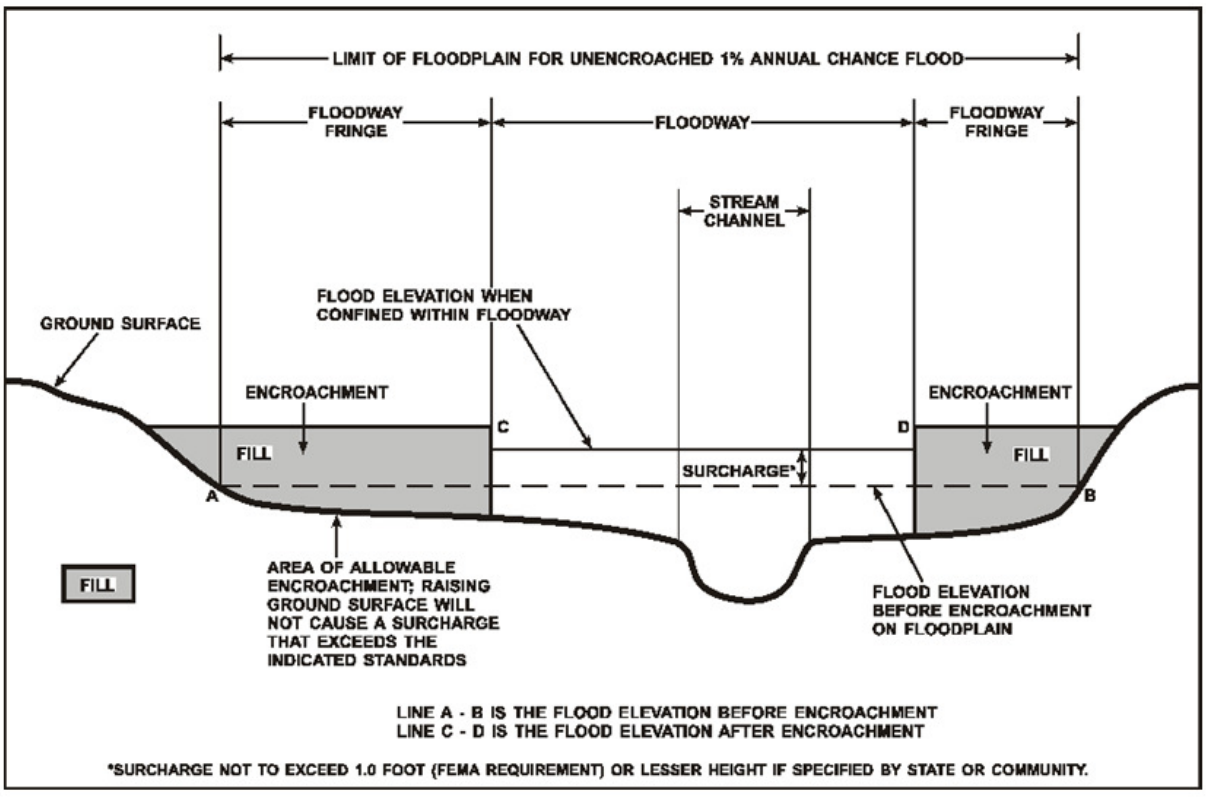
Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself.

One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. Regulations regarding encroachment by several communities have adopted additional restrictions. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain

would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, “Floodway Data.”

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Annsville Creek	City of Peekskill, Town of Cortlandt	From its confluence with Hudson River	to the confluence Peekskill Hollow Brook and Sprout Brook	2030101	0.9		Y	VE,AE	1982
Barney Brook	Village of Irvington	From the confluence with the Hudson River	to approximately 1,800 feet upstream of Fieldpoint Drive in the Village of Irvington	2030101	1.7		Y	AE	2006
Barney Brook Tributary	Village of Irvington	From the confluence with Barney Brook	to Halsey's Pond	2030101	0.8		Y	AE	2006
Bear Gutter Creek	Town of North Castle	From approximately 30 feet downstream of State Route 120	to approximately 160 feet downstream Labriola Court in Town of North Castle	1100006	0.9		Y	AE	1988
Beaver Swamp Brook	Town of Harrison, Village of Mamaroneck, City of Rye	From its confluence with the Long Island Sound	to approximately 450 feet upstream of Park Drive in the Town of Harrison	2030102	4.1		Y	AE	2006
Blind Brook	Town of Harrison, City of Rye, Village of Rye Brook	From its confluence with the Long Island Sound	to approximately 1,860 feet upstream of Lincoln Avenue in the Village of Rye Brook	2030102	9.4		Y	AE	2006
Branch 1 Hutchinson River	Village of Pelham	From approximately 100 feet downstream of Highbrook Avenue	to approximately 1,060 feet upstream of Highbrook Avenue	2030102	0.2		Y	AE	1977

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Branch 2 Kisco River	Town of New Castle	From approximately 290 feet downstream of Horseshoe Road	to Kathleen Lane in the Town of New Castle	2030101	0.3		Y	AE	1988
Branch Brook	Town of Bedford, Village of Mount Kisco	From Main Street in the Village of Mount Kisco	to approximately 650 feet upstream of Wood Road in the Town of Bedford	2030101	3.2		Y	AE	2006
Brentwood Brook	Town of Harrison, Village of Mamaroneck	From its confluence with Beaver Swamp Brook	to approximately 100 feet downstream of Haviland Road in the Town of Harrison	2030102	2.8		Y	AE	2006
Bronx River	Village of Bronxville, Town of Eastchester, Town of Greenburgh, Town of Mount Pleasant, City of Mount Vernon, Town of North Castle, Village of Scarsdale, Village of Tuckahoe, City of White Plains, City of Yonkers	From the county boundary	to approximately 180 feet upstream of Metro North Railroad	2030102	14.2		Y	AE	2006
Brown Brook	Town of Mount Pleasant	From the confluence with Muscoot Reservoir	to the county boundary	2030101	4.3		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Byram River Reach 1	Village of Port Chester	From the confluence with the Long Island Sound	to the county boundary	1100006	1.8		Y	VE, AE	2006
Byram River Reach 2	Town of North Castle	From the county boundary	to approximately 1,175 feet upstream of Byram Lake road in the Town of North Castle	1100006	3.9		Y	AE	1988
Caney Brook	Village of Briarcliff Manor	From the confluence with Pocantico River	to approximately 2,260 feet upstream of Long Hill Road in the Village of Briarcliff Manor	2030101	1.6		Y	AE	2006
Clove Brook	Town of Mount Pleasant	From Taconic State Parkway	to approximately 1,050 feet upstream of Wall Street in the Town of Mount Pleasant	2030102	0.3		Y	AE	2006
Crook Brook	Town of North Salem	From its confluence with Titicus River	to approximately 160 upstream of East Hawley Road in the Town of North Salem	2030101	1.7		Y	AE	1982
Croton River	Town of Cortlandt, Village of Croton-on-Hudson, Town of Ossining	From its confluence with the Hudson River	to approximately 3,650 feet upstream of Quaker Bridge Road in the Town of Cortlandt	2030101	2.9		Y	AE	2006
David's Brook	Town of Bedford	From its confluence with Stone Hill River	to approximately 315 downstream of Guard Hill Road in the Town of Bedford	2030101	1.2		Y	AE	1977

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
East Branch Blind Brook	Village of Rye Brook	From its confluence with Blind Brook	to approximately 260 feet upstream of Bluebird Hollow in the Village Rye Brook	2030102	1.7		Y	AE	2006
East Branch Mamaroneck River	Town of Harrison	From approximately 65 feet downstream of Anderson Hill Road	to approximately 240 feet downstream of Park Lane in the Town of Harrison	2030102	2.9		Y	AE	2006
East Branch Sheldrake River	Town of Mamaroneck	From its confluence with Sheldrake River	to approximately 150 feet downstream of Fenimore Road in the Town of Mamaroneck	2030102	1.2		Y	AE	2006
Fly Kill Brook	Town of Mount Pleasant	From its confluence with Saw Mill River	to approximately 130 feet downstream of Livingston Street in the Town of Mount Pleasant	2030101	0.5		Y	AE	2006
Furnace Brook	Town of Cortlandt	From its confluence with Hudson River	to approximately 1,520 feet upstream of Maple Avenue in the Town of Cortlandt	2030101	6.0		Y	AE	2006
Gedney Brook	Town of New Castle	From approximately 80 feet downstream of Seven Bridges Road	to approximately 60 feet upstream of Woodmill Road in the Town of New Castle	2030101	1.4		Y	AE	1988

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Grassy Sprain Brook	City of Yonkers	From its confluence with Bronx River	to approximately 3,500 feet upstream of Palmer Road in the City of Yonkers	2030102	0.8		Y	AE	2006
Hallocks Mill Brook	Town of Yorktown	From approximately 1,340 feet downstream of Greenwood Street	to approximately 2,448 feet upstream of U.S. Route 202 in the Town of Yorktown	2030101	3.2		Y	AE	1983
Hallocks Mill Brook Tributary 1	Town of Yorktown	From its confluence with Hallocks Mill Brook	to approximately 1,018 feet upstream of Moseman Road in the Town of Yorktown	2030101	1.3		Y	AE	1983
Hallocks Mill Brook Tributary 2	Town of Yorktown	From its confluence with Hallocks Mill Brook	to approximately 708 feet upstream of Granite Springs Road in Town of Yorktown	2030101	1.1		Y	AE	1983
Highland Avenue Brook	Town of Eastchester	From its confluence with Hutchinson River	to approximately 1,270 feet upstream of California Road in the Town of Eastchester	2030102	0.4		Y	AE	2006
Hillside Avenue Brook	Village of Rye Brook	From its confluence with East Blind Brook	to approximately 140 feet upstream of Hillandale Road in the Village of Rye Brook	2030102	0.5		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Hudson River	Village of Briarcliff Manor, Village of Buchanan, Town of Cortlandt, Village of Croton-on-Hudson, Village of Dobbs Ferry, Village of Hastings-on-Hudson, Village of Irvington, Town of Mount Pleasant, Town of Ossing, Village of Ossining, City of Peekskill, Village of Sleepy Hollow, Village of Tarrytown, City of Yonkers	Entire reach in Westchester County		2030101	67.6		N	VE, AE, AO	2014
Hutchinson River	Town of Eastchester, City of Mount Vernon, City of New Rochelle, Village of Pelham, Village of Pelham Manor, Village of Scarsdale	From the county boundary	to approximately 3,190 feet upstream of Grand Boulevard in the Village of Scarsdale	2030102	8.1		Y	AE	2006
Kenisco Road Tributary	Town of Mount Pleasant	From its confluence with Nanny Hagen Brook	to approximately 100 feet downstream of Rolling Hills Road in the Town of Mount Pleasant	2030101	0.2		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Kill Brook	Town of Ossining, Village of Ossining	From the confluence with Hudson River	to approximately 530 feet upstream of Brookside Lane	2030101	1.9		Y	AE	2006
Kisco River	Village of Mount Kisco, Town of New Castle	From its confluence with New Croton Reservoir	to approximately 133 feet upstream of Byram Lake Road in the Village of Mount Kisco	2030101	5.2		Y	AE	1988
Kisco River Tributary 1	Village of Mount Kisco	From its confluence with Kisco River	to approximately 3,790 feet upstream from confluence of Kisco River	2030101	0.7		Y	AE	1983
Knollwood Brook	Village of Elmsford, Town of Greenburgh	From approximately 9,120 feet upstream from the confluence with the Bronx River	to approximately 1,085 upstream of Knollwood Road in the Village of Elmsford	2030102	0.6		Y	AE	1977
Leroy Avenue Brook	Village of Tarrytown	From approximately 640 feet downstream of South Broadway	to approximately 280 feet upstream of Loh Avenue in the Village of Tarrytown	2030101	0.5		Y	AE	2006
Long Island Sound	City of New Rochelle, Village of Larchmont, Town of Mamaroneck, Village of Mamaroneck, Village of Pelham Manor, Village of Port Chester, City of Rye	Entire reach in Westchester County		2030102	63.6		N	VE, AE, AO	2014

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Mamaroneck River Lower Reach	Town of Harrison, Village of Mamaroneck	From its confluence with Long Island Sound	to Mamaroneck Reservoir	2030102	2.2		Y	AE	2006
Mamaroneck River Upper Reach	Town of Harrison, City of White Plains	From approximately 120 feet downstream of I-287 on ramp	to approximately 310 feet upstream of Millers Mill Road Bridge in the Town of Bedford	2030102	0.7		Y	AE	2006
Manhattan Park Brook	Town of Greenburgh	From its confluence with Bronx River	to approximately 1,377 feet upstream of County Center Road in the Town of Greenburgh	2030102	0.5		Y	AE	1978
Mianus River	Town of Bedford, Town of North Castle	From its confluence with Mianus Reservoir	to approximately 5,250 feet downstream of Millers Mill Road Bridge in the Town Bedford	1100006	4.7		Y	AE	2006
Mill River	Town of Pound Ridge	From county boundary	to approximately 2,400 feet upstream of the confluence	1100006	0.7		Y	AE	1988
Mohegan Outlet	Town of Cortlandt, Town of Yorktown	From the county boundary	to Lake Mohegan	2030101	1.4		Y	AE	2006
Muscoot River	Town of Somers	From its confluence with Amawalk Reservoir	to the county boundary	2030101	3.1		Y	AE	1982
Nanny Hagen Brook	Town of Mount Pleasant, Village of Pleasantville	From its confluence with Saw Mill River	to approximately 730 feet upstream of Marble Avenue in	2030101	1.2		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Nelson Creek	Town of Harrison	From its confluence with Brentwood Brook	to approximately 80 feet downstream of Harrison Avenue in the Town of Harrison	2030102	0.9		Y	AE	2006
Peekskill Hollow Brook	Town of Cortlandt, City of Peekskill	From its confluence with Annsville Creek and Sprout Brook	to the county boundary	2030101	3.9		Y	AE	1982
Peekskill Hollow Brook Tributary	Town of Cortlandt	From its confluence with Peekskill Hollow Brook	to approximately 251 feet upstream of Bear Mountain State Parkway in the Town of Cortlandt	2030101	2.9		Y	AE	2006
Pitch Swamp Brook	Town of Bedford	From approximately 7,360 feet upstream from the confluence with Stone Hill River	to approximately 27 feet downstream of State route 172 in the Town of Bedford	2030101	0.2		Y	AE	1977
Plum Brook	Town of Somers	From confluence with Muscoot Reservoir	to county boundary	2030101	5.0		Y	AE	2006
Plum Brook Tributary 1	Town of Somers	From its confluence with Plum Brook	to approximately 180 feet upstream of Lake Shore Drive in the Town of Somers	2030101	0.6		Y	AE	2006
Pocantico River Lower Reach	Town of Mount Pleasant, Village of Sleepy Hollow	From its confluence with Hudson River	to approximately 1,445 feet downstream of Route 117 in the Town of mount Pleasant	2030101	2.8		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Pocantico River Upper Reach	Village of Briarcliff Manor, Town of Ossining, Town of Mount Pleasant	From Beech Hill Road	to approximately 790 feet upstream of Chappaqua Road in the Village of Ossining	2030101	2.9		Y	AE	2006
Saw Mill Creek	Town of Yorktown	From its confluence with new Croton Reservoir	to approximately 125 feet upstream of Locke Avenue in the Town of Yorktown	2030101	1		Y	AE	1983
Saw Mill River	Village of Ardsley, Village of Dobbs Ferry, Village of Elmsford, Town of Greenburgh, Village of Hastings-on-Hudson, Village of Irvington, Town of Mount Pleasant, Town of New Castle, Village of Pleasantville, City of Yonkers, Town of Yorktown	From approximately 130 feet upstream of New Main Street in the City of Yonkers	to approximately 1,700 feet upstream of Kipp Street in the Town of New Castle	2030101	22.7		Y	AE	2006
Saw Mill River West Channel	Village of Dobbs Ferry	From its confluence with Saw Mill River	to the confluence with Saw Mill River	2030101	0.5		Y	AE	1978

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sheldrake River	Town of Mamaroneck, Village of Mamaroneck, City of New Rochelle, Village of Scarsdale	From its confluence with Lower Mamaroneck River	to approximately 1,000 feet upstream of Oneida Road in the Village of Scarsdale	2030102	7.1		Y	AE	2006
Shrub Oak Brook	Town of Yorktown	From the county boundary	to approximately 1,125 feet upstream of U.S. Route 6 in the Town of Yorktown	2030101	3.4		Y	AE	1992
Shrub Oak Brook Tributary 1	Town of Yorktown	From its confluence with Shrub Oak Brook	to approximately 2,875 feet upstream of East Main Street	2030101	0.6		Y	AE	1992
Sing Sing Creek	Village of Ossining	From its confluence with Hudson River	to approximately 280 feet upstream of Brookside Lane in the Town of Ossining	2030101	1.5		Y	AE	2006
South Fox Meadow Brook	Village of Scarsdale	From its confluence with Bronx River	to approximately 1,210 feet upstream of Oxford Road in the Village of Scarsdale	2030102	2.4		Y	AE	2006
Sprain Brook	Village of Ardsley, Town of Greenburgh	From approximately 1,662 feet downstream from Ashford Avenue in Town of Greenburgh and the Village of Ardsley	to approximately 721 feet upstream of Cross Road in the Village of Ardsley	2030102	0.6		N	AE	1977

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sprout Brook	Town of Cortlandt	From its confluence with Annsville Creek and Peekskill Hollow Brook	to the county boundary	2030101	2.2		Y	AE	1982
Stone Hill River	Town of Bedford	From its confluence with Muscoot Reservoir	to approximately 450 feet upstream of Cantitoe Street (Route 22)	2030101	1.4		Y	AE	1977
Sunnyside Brook	Town of Greenburgh, Village of Irvington, Village of Tarrytown	From its confluence with Hudson River	to approximately 1,170 feet upstream of Mountain Road in the Town of Greenburgh	2030101	1.5		Y	AE	2006
Tibbetts Brook	City of Yonkers	From the county boundary	to approximately 650 feet upstream of Jervis Road in the City of Yonkers	2030101	0.7		Y	AE	2006
Titicus River	Town of North Salem	From its confluence with Titicus Reservoir	to approximately 3,650 feet upstream of Norton Road in the Town of North Salem	2030101	4.5		Y	AE	1982
Tributary 1 to Wampus River	Town of North Castle	From its confluence with Wampus River	to approximately 80 feet upstream of Stony Brook Place in the Town of North Castle	1100006	1.1		Y	AE	1982
Tributary 2 to Wampus River	Town of North Castle	From its confluence with Wampus River	to approximately 3,096 feet upstream of Byram Ridge Road in the Town of North Castle	1100006	1.4		Y	AE	1982

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Tributary 3 to Wampus River	Town of North Castle	From its confluence with Wampus River	to approximately 1,214 feet upstream of Wayne Valley Road in the Town of North Castle	1100006	0.8		Y	AE	1982
Tributary to Mill River	Town of Pound Ridge	From its confluence with Mill River	to approximately 652 feet upstream of South Bedford Road in the Town of Pound Ridge	1100006	1.1		Y	AE	1988
Troublesome Brook Reach 1	City of Yonkers	From its confluence with Bronx River	to Crestwood Lake	2030102	1.4		Y	AE	2006
Unnamed Tributary to Plum Brook	Town of Somers	From its confluence with Plum Brook	to approximately 3,000 feet upstream of Dunhill Road in the Town of Somers	2030101	0.4		Y	AE	2006
Wampus River	Town of North Castle	From its confluence with Byram River Reach 2	to approximately 925 feet upstream of State Route 128 in the Town of North Castle	1100006	3.0		Y	AE	1982
West Branch Blind Brook	Town of Harrison	From its confluence with Blind Brook	to Beverly Road in the Town of Harrison	2030102	1.2		Y	AE	1989
Wickers Creek	Village of Dobbs Ferry	From its confluence with Hudson River	to approximately 920 feet downstream of Broadway in the Village of Dobbs Ferry	2030101	0.5		Y	AE	2006

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Woodlands Road Brook 1	Town of Harrison	From its confluence with Brentwood Brook	to approximately 330 feet upstream of Woodlands Road in the Town of Harrison	2030102	0.5		Y	AE	2006
Woodlands Road Brook 2	Town of Harrison	From its confluence with Woodlands Road Brook 1	to approximately 120 feet upstream of Woodland Road in the Town of Harrison	2030102	0.2		Y	AE	2006

All floodways that were developed for this FIS project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and l% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Non-Encroachment Zones

Some States and communities use non-encroachment zones to manage floodplain development. For flooding sources with medium flood risk, field surveys are often not collected and surveyed bridge and culvert geometry is not developed. Standard hydrologic and hydraulic analyses are still performed to determine BFEs in these areas. However, floodways are not typically determined, since specific channel profiles are not developed. To assist communities with managing floodplain development in these areas, a "non-encroachment zone" may be provided. While not a FEMA designated floodway, the non-encroachment zone represents that area around the stream that should be reserved to convey the 1% annual chance flood event. As with a floodway, all surcharges must fall within the acceptable range in the non-encroachment zone.

General setbacks can be used in areas of lower risk (e.g. unnumbered Zone A), but these are not considered sufficient where unnumbered Zone A is replaced by Zone AE. The NFIP requires communities to ensure that any development in a non-encroachment area causes no increase in BFEs. Communities must generally prohibit development within the area defined by the non-encroachment width to meet the NFIP requirement. Regulations regarding encroachment by several communities have adopted additional restrictions.

Non-encroachment determinations may be delineated where it is not possible to delineate floodways because specific channel profiles with bridge and culvert geometry were not developed. Any non-encroachment determinations for this FIS project have been tabulated for selected cross sections and are shown in Table 25, "Flood Hazard and Non-Encroachment Data for Selected Streams." Areas for which non-encroachment zones are provided show BFEs and the 1% annual chance floodplain boundaries mapped as zone AE on the FIRM but no floodways.

2.5 Coastal Flood Hazard Areas

For most areas along rivers, streams, and small lakes, BFEs and floodplain boundaries are based on the amount of water expected to enter the area during a 1% annual chance flood and the geometry of the floodplain. Floods in these areas are typically caused by storm events. However, for areas on or near ocean coasts, large rivers, or large bodies of water, BFE and floodplain boundaries may need to be based on additional components, including storm surges and waves. Communities on or near ocean coasts face flood hazards caused by offshore seismic events as well as storm events.

Coastal flooding sources that are included in this FIS project are shown in Table 2.

2.5.1 Water Elevations and the Effects of Waves

Specific terminology is used in coastal analyses to indicate which components have been included in evaluating flood hazards.

The stillwater elevation (SWEL or still water level) is the surface of the water resulting from astronomical tides, storm surge, and freshwater inputs, but excluding wave setup contribution or the effects of waves.

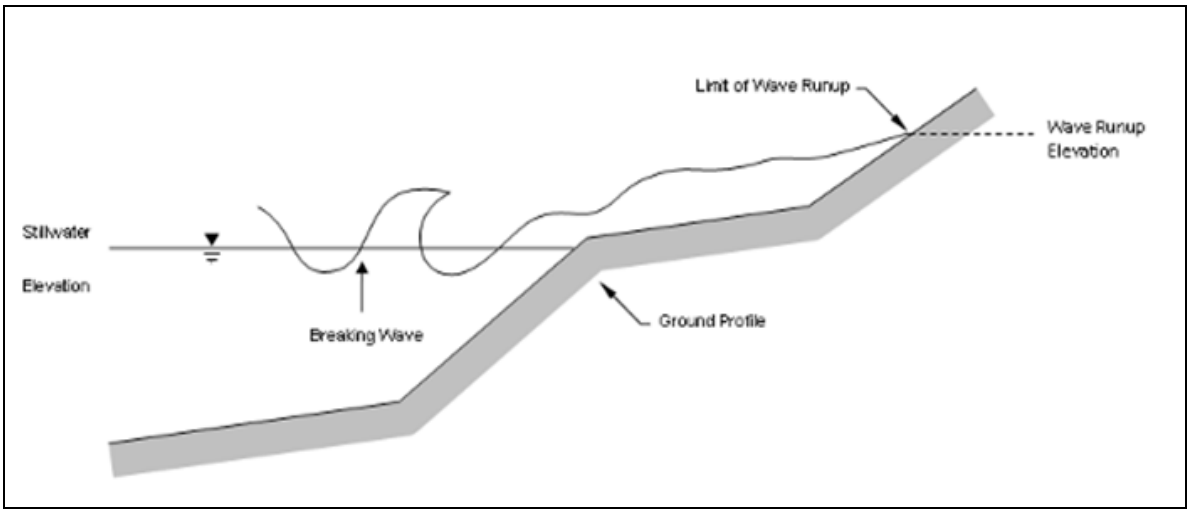
- *Astronomical tides* are periodic rises and falls in large bodies of water caused by the rotation of the earth and by the gravitational forces exerted by the earth, moon and sun.
- *Storm surge* is the additional water depth that occurs during large storm events. These events can bring air pressure changes and strong winds that force water up against the shore.
- *Freshwater inputs* include rainfall that falls directly on the body of water, runoff from surfaces and overland flow, and inputs from rivers.

The 1% annual chance stillwater elevation is the stillwater elevation that has been calculated for a storm surge from a 1% annual chance storm. The 1% annual chance storm surge can be determined from analyses of tidal gage records, statistical study of regional historical storms, or other modeling approaches. Stillwater elevations for storms of other frequencies can be developed using similar approaches.

The total stillwater elevation (also referred to as the mean water level) is the stillwater elevation plus wave setup contribution but excluding the effects of waves.

- *Wave setup* is the increase in stillwater elevation at the shoreline caused by the reduction of waves in shallow water. It occurs as breaking wave momentum is transferred to the water column.

Figure 5: Wave Runup Transect Schematic



2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

For coastal communities along the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, and the Caribbean Sea, flood hazards must take into account how storm surges, waves, and extreme tides interact with factors such as topography and vegetation. Storm surge and waves must also be considered in assessing flood risk for certain communities on rivers or large inland bodies of water.

Beyond areas that are affected by waves and tides, coastal communities can also have riverine floodplains with designated floodways, as described in previous sections.

Floodplain Boundaries

In many coastal areas, storm surge is the principle component of flooding. The extent of the 1% annual chance floodplain in these areas is derived from the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm. The methods that were used for calculation of total stillwater elevations for coastal areas are described in Section 5.3 of this FIS Report. Location of total stillwater elevations for coastal areas are shown in Figure 8, "1% Annual Chance Total Stillwater Levels for Coastal Areas."

In some areas, the 1% annual chance floodplain is determined based on the limit of wave runup or wave overtopping for the 1% annual chance storm surge. The methods that were used for calculation of wave hazards are described in Section 5.3 of this FIS Report.

Table 26 presents the types of coastal analyses that were used in mapping the 1% annual chance floodplain in coastal areas.

Coastal BFEs

Coastal BFEs are calculated as the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm plus the additional flood hazard from overland wave effects (storm-induced erosion, overland wave propagation, wave runup and wave overtopping).

Where they apply, coastal BFEs are calculated along transects extending from offshore to the limit of coastal flooding onshore. Results of these analyses are accurate until local topography, vegetation, or development type and density within the community undergoes major changes.

Parameters that were included in calculating coastal BFEs for each transect included in this FIS Report are presented in Table 17, "Coastal Transect Parameters." The locations of transects are shown in Page intentionally left blank.

Figure 9, "Transect Location Map." More detailed information about the methods used in coastal analyses and the results of intermediate steps in the coastal analyses are presented in Section 5.3 of this FIS Report. Additional information on specific mapping methods is provided in Section 6.4 of this FIS Report.

2.5.3 Coastal High Hazard Areas

Certain areas along the open coast and other areas may have higher risk of experiencing structural damage caused by wave action and/or high-velocity water during the 1% annual chance flood. These areas will be identified on the FIRM as Coastal High Hazard Areas.

- *Coastal High Hazard Area (CHHA)* is a SFHA extending from offshore to the inland limit of the primary frontal dune (PFD) or any other area subject to damages caused by wave action and/or high-velocity water during the 1% annual chance flood.
- *Primary Frontal Dune (PFD)* is a continuous or nearly continuous mound or ridge of sand with relatively steep slopes immediately landward and adjacent to the beach. The PFD is subject to erosion and overtopping from high tides and waves during major coastal storms.

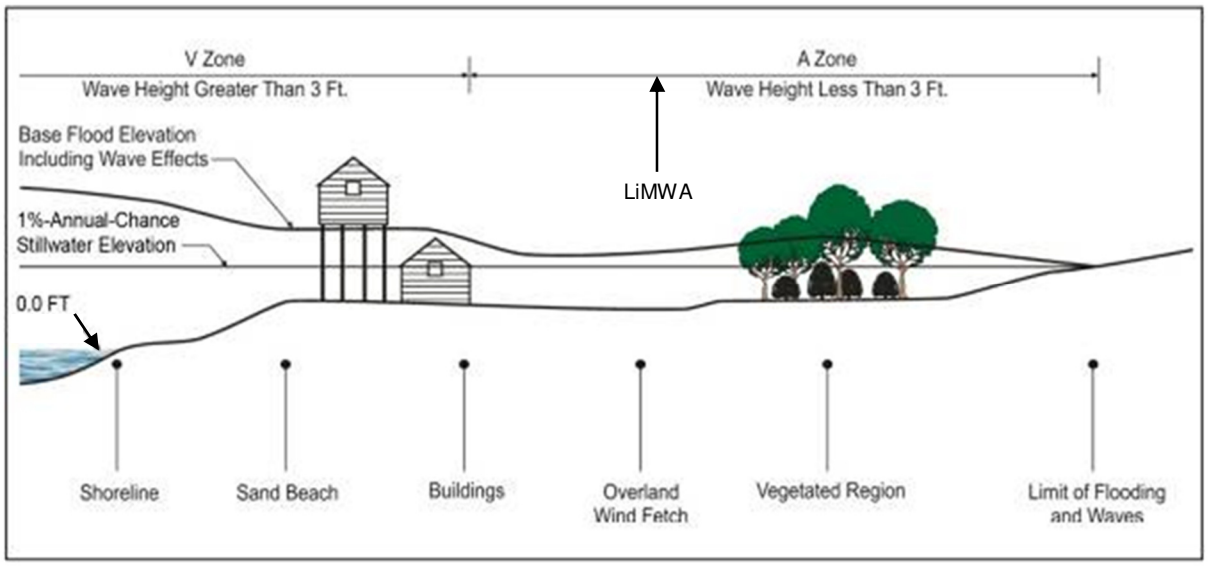
CHHAs are designated as "V" zones (for "velocity wave zones") and are subject to more stringent regulatory requirements and a different flood insurance rate structure. The areas of greatest risk are shown as VE on the FIRM. Zone VE is further subdivided into elevation zones and shown with BFEs on the FIRM.

The landward limit of the PFD occurs at a point where there is a distinct change from a relatively steep slope to a relatively mild slope; this point represents the landward extension of Zone VE. Areas of lower risk in the CHHA are designated with Zone V on the FIRM. More detailed information about the identification and designation of Zone VE is presented in Section 6.4 of this FIS Report.

Areas that are not within the CHHA but are SFHAs may still be impacted by coastal flooding and damaging waves; these areas are shown as "A" zones on the FIRM.

Figure 6, "Coastal Transect Schematic," illustrates the relationship between the base flood elevation, the 1% annual chance stillwater elevation, and the ground profile as well as the location of the Zone VE and Zone AE areas in an area without a PFD subject to overland wave propagation. This figure also illustrates energy dissipation and regeneration of a wave as it moves inland.

Figure 6: Coastal Transect Schematic



Methods used in coastal analyses in this FIS project are presented in Section 5.3 and mapping methods are provided in Section 6.4 of this FIS Report.

Coastal floodplains are shown on the FIRM using the symbology described in Figure 3, "Map Legend for FIRM." In many cases, the BFE on the FIRM is higher than the stillwater elevations shown in Table 17 due to the presence of wave effects. The higher elevation should be used for construction and/or floodplain management purposes.

2.5.4 Limit of Moderate Wave Action

Laboratory tests and field investigations have shown that wave heights as little as 1.5 feet can cause damage to and failure of typical Zone AE building construction. Wood-frame, light gage steel, or masonry walls on shallow footings or slabs are subject to damage when exposed to waves less than 3 feet in height. Other flood hazards associated with coastal waves (floating debris, high velocity flow, erosion, and scour) can also damage Zone AE construction.

Therefore, a LiMWA boundary may be shown on the FIRM as an informational layer to assist coastal communities in safe rebuilding practices. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The location of the LiMWA relative to Zone VE and Zone AE is shown in Figure 6.

The effects of wave hazards in Zone AE between Zone VE (or the shoreline where Zone VE is not identified) and the limit of the LiMWA boundary are similar to, but less severe than, those in Zone VE where 3-foot or greater breaking waves are projected to occur during the 1% annual chance flooding event. Communities are therefore encouraged to adopt and enforce more stringent floodplain management requirements than the minimum NFIP requirements in the LiMWA. The NFIP Community Rating System provides credits for these actions.

Where wave runup elevations dominate over wave heights, there is no evidence to date of significant damage to residential structures by runup depths less than 3 feet. Examples of these

areas include areas with steeply sloped beaches, bluffs, or flood protection structures that lie parallel to the shore. In these areas, the FIRM shows the LiMWA immediately landward of the VE/AE boundary. Similarly, in areas where the zone VE designation is based on the presence of a primary frontal dune or wave overtopping, the LiMWA is delineated immediately landward of the Zone VE/AE boundary.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, "Map Legend for FIRM." Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in the unincorporated and incorporated areas of Westchester County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Village of Ardsley	AE, X
Town of Bedford	A, AE, AO, X
Village of Briarcliff Manor	A, AE, VE, X
Village of Bronxville	AE, X
Village of Buchanan	AE, VE, X
Town of Cortlandt	A, AE, VE, X
Village of Croton-on-Hudson	A, AE, AO, VE, X
Village of Dobbs Ferry	AE, VE, X
Town of Eastchester	AE X
Village of Elmsford	AE X
Town of Greenburgh	A, AE, AO, X
Town of Harrison	A, AE, X
Village of Hastings-on-Hudson	AE, VE, X
Village of Irvington	AE, VE, X
Village of Larchmont	AE, VE, X

Table 3: Flood Zone Designations by Community (continued)

Community	Flood Zone(s)
Town of Lewisboro	A, X
Town of Mamaroneck	A, AE, VE, X
Village of Mamaroneck	A, AE, AO, VE, X
Village of Mount Kisco	A, AE, X
Town of Mount Pleasant	A, AE, VE, X
City of Mount Vernon	AE, X
Town of New Castle	A, AE, X
City of New Rochelle	A, AE, AO, VE, X
Town of North Castle	A, AE, X
Town of North Salem	A, AE, X
Town of Ossining	A, AE, VE, X
Village of Ossining	A, AE, VE, X
City of Peekskill	A, AE, VE, X
Village of Pelham	AE, X
Village of Pelham Manor	AE, VE, X
Village of Pleasantville	AE, X
Village of Port Chester	AE, VE, X
Town of Pound Ridge	A, AE, X
City of Rye	AE, AO, VE, X
Village of Rye Brook	A, AE, X
Village of Scarsdale	A, AE, X
Village of Sleepy Hollow	A, AE, VE, X
Town of Somers	A, AE, X
Village of Tarrytown	A, AE, VE, X
Village of Tuckahoe	AE, X
City of White Plains	A, AE, X
City of Yonkers	A, AE, AH, VE, X
Town of Yorktown	A, AE, X

3.2 Coastal Barrier Resources System

The Coastal Barrier Resources Act (CBRA) of 1982 was established by Congress to create areas along the Atlantic and Gulf coasts and the Great Lakes, where restrictions for Federal financial assistance including flood insurance are prohibited. In 1990, Congress passed the Coastal Barrier Improvement Act (CBIA), which increased the extent of areas established by the CBRA and added

"Otherwise Protected Areas" (OPA) to the system. These areas are collectively referred to as the John. H Chafee Coastal Barrier Resources System (CBRS). The CBRS boundaries that have been identified in the project area are in Table 4, "Coastal Barrier Resource System Information."

Table 4: Coastal Barrier Resources System Information

[Not Applicable to this Flood Risk Project]

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Bronx	2030102	Bronx River	The majority of the watershed falls within Westchester County, encompassing the southern and eastern half of the county	187
Long Island Sound	1100007	Long Island Sound	A small portion of the watershed falls within Westchester County on the eastern side	582
Lower Hudson	2030101	Hudson River	Largest watershed within Westchester County, encompassing the northern and western half of the county	730
Saugatuck	1100006	Saugatuck River	Portions of this watershed falls fall on the eastern side of Westchester County	440

4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Westchester County by flooding source.

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
Beaver Swamp Brook	A flood of record occurred on January 21, 1979; November 9, 1977; and September 26, 1975.In the Town of Harrison flooding problems occur in the area with the confluence with Brentwood Brook. In the Village of Mamaroneck a flood of record was measure at USGS gaging station 0130050.
Blind Brook	Flooding problems are generally limited to areas upstream of culverts, where backwater occurs because of smaller flow areas within the culverts. A flood of record was recorded at USGS gaging station 01300000 on June 19, 1972 and September 26, 1975.
Branch 1 Hutchinson River	Flooding has been reported along Highbrook Avenue between the railroad tracks and Washington Avenue due to the inadequate capacity of the Highbrook Avenue drain.
Brentwood Brook	A flood of record occurred on January 21, 1979; November 9, 1977; and September 26, 1975.In the town of Harrison flooding occurs in the downtown area of town.
Bronx River	In the Village of Scarsdale flooding occurs on the Bronx River Parkway in the areas of Fenimore Road and Popham Roads.
Byram River Reach 1	In the Village of Port Chester flooding is a result of high discharges because of extensive rainfall, coastal flooding caused by northeasters and hurricanes or a combination of the two.
Caney Brook	In the Village of Briarcliff a severe flood occurred September 1975.
Clove Brook	In the Town of Mamaroneck residential buildings and their contents have been damaged by flooding. The higher velocities have caused structural damage.
Fly Kill Brook	In the Town of Mamaroneck an undersized culvert under the railroad embankment on the upper reach causes periodic flood damage to residences in the area.
Hudson River	Major storms have produced high river stages: February 1875, October 1903, March 1913, November 1950, October 1955, September 1960 and October 2012.In the Village of Croton most of the damage is caused by poor downstream drainage and highwater stages.
Hutchinson River	Frequently floods the Hutchinson River Parkway and Bronx River Parkway.
Mamaroneck River Upper Reach	In the Town of Harrison flooding occurs between New England Thruway and Winfield Avenue. Severe floods have occurred on September 26, 1975 and June 19, 1972.
Mianus River	Flat slope is not conductive to water conveyance from the level lowlands along its borders at a rate to accommodate runoff from heavy rainfall. September 1975, the Mianus overflowed its east bank at Stamford Road. October 1955 and September 1975 flooding covered Greenwich Road.

Table 6: Principal Flood Problems (continued)

Flooding Source	Description of Flood Problems
Nanny Hagen Brook	In the Village of Pleasantville flooding occurred along Lake Street and Orbaek Lane. A retaining wall along Lake Street was undermined and damaged.
Pocantico River Upper Reach	Major floods occurred as a result of Tropical Storm Doria in September 1971.The hurricane of August 1955 produced severe flooding, including the inundation of Routes 9A and 100.
Saw Mill River	Flood of record with Hurricane Floyd of September 1999.In the Village of Dobbs Ferry, a record of 1,450 cfs was occurred in July 1984.In the Village of Elmsford particularly damaging floods were in 1955, 1972, and 1975.
Sheldrake River	In the Town of Mamaroneck flooding problems exist between the confluence with East Branch Sheldrake River and Rockland Avenue. In the City of New Rochelle flooding occurs in areas along Pine Brook Boulevard and Puritan Drive. Two of the worst floods occurred on September 26, 1975 and June 19, 1972.In the Village of Scarsdale the flooding normally occurs along Seneca, Cayuga and Oneida Roads.
South Fox Meadow Brook	In the Village of Scarsdale flooding occurs in the area between Rugby Lane and the upper end of George Field Park. During periods of high runoff the culvert system is unable to handle peak discharges. The other area of flooding occurs in the vicinity of Ogden and Paddington Roads, Church Lane and Brite Avenue. Here the brooks is flat and the culverts become clogged with silt and debris.
Sprain Brook	Floods of a large recurrence interval would result in damage to several residences and a school building.
Stone Hill River	Greatest historical flood occurred in October 1955.
Tibbetts Brook	Result from the flat stream slope combined with a severe constriction in the stream at a railroad bridge, opening easily blocked by debris.
Troublesome Brook Reach 1	Periodically floods the surrounding apartment buildings. Again, a narrow channel, bridge constrictions, and encroachment into the floodplain have aggravated the problem.

Table 7 contains information about historic flood elevations in the communities within Westchester County.

Table 7: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (ft (NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Hudson River	Near Railroad on Babcock Place road	4.8, ft NAVD88	9/21/1938	500	USACE

Flooding Source	Location	Historic Peak (ft (NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Port Chester Harbor	Residential property off of Grace Church Street	11.2, ft NAVD88	9/21/1938	500	USACE
Byram River	Intersection of Townsend Street and Traverse Avenue	10.7, ft NAVD88	9/21/1938	100	USACE
Mamaroneck River Lower Reach	Side of a structure off of Oakhurst road	11.2, ft NAVD88	9/21/1938	500	USACE
Echo Bay	Side of a structure off of Kensington Oval road	11.47, ft NAVD88	9/21/1938	500	USACE
Long Island Sound	Off of Glen Island	7.1, ft NAVD88	9/11/1960	100	USACE
Hudson River	In the Hudson River off of John F Kennedy Memorial Drive	6.9, ft NAVD88	9/11/1960	100	USACE
Hudson River	In the Hudson River off of Warburton Avenue	6.0, ft NAVD88	9/11/1960	100	USACE
Long Island Sound	Back of a residential property off of Woodland Avenue	6.5, ft NAVD88	9/11/1960	500	USACE

4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Westchester County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 8: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Blind Brook	N/A	Dam	Just upstream from the confluence of East Branch Blind Brook	Constructed in 1992, affects the small portion of the Town of Harrison and for the Village of Rye Brook along Blind Brook
Long Island Sound	N/A	Seawall	Along the coast	Protects beaches, marinas against wave action but overtop during tidal storms
Manhattan Park Brook	Kensico Aqueduct	1% Annual Chance Flood Discharge Contained in Structure	From Kensico Aqueduct to County Center Road	Constructed by Daniel Frankfurt, Inc.
Saw Mill River	N/A	Channel	Along Saw Mill River	Construction of rectangular and trapezoidal channels, channel widening and channel dredging

4.4 Levees

For purposes of the NFIP, FEMA only recognizes levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with comprehensive floodplain management criteria. The Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) describes the information needed for FEMA to determine if a levee system reduces the risk from the 1% annual chance flood. This information must be supplied to FEMA by the community or other party when a flood risk study or restudy is conducted, when FIRMs are revised, or upon FEMA request. FEMA reviews the information for the purpose of establishing the appropriate FIRM flood zone.

Levee systems that are determined to reduce the risk from the 1% annual chance flood are accredited by FEMA. FEMA can also grant provisional accreditation to a levee system that was previously accredited on an effective FIRM and for which FEMA is awaiting data and/or documentation to demonstrate compliance with Section 65.10. These levee systems are referred to as Provisionally Accredited Levees, or PALs. Provisional accreditation provides communities and levee owners with a specified timeframe to obtain the necessary data to confirm the levee's certification status. Accredited levee systems and PALs are shown on the FIRM using the symbology shown in Figure 3 and in Table 9. If the required information for a PAL is not submitted within the required timeframe, or if information indicates that a levee system no longer meets Section 65.10, FEMA will de-accredit the levee system and issue an effective FIRM showing the levee-impacted area as a SFHA.

FEMA coordinates its programs with USACE, who may inspect, maintain, and repair levee systems. The USACE has authority under Public Law 84-99 to supplement local efforts to repair flood control projects that are damaged by floods. Like FEMA, the USACE provides a program to allow public sponsors or operators to address levee system maintenance deficiencies. Failure to do

so within the required timeframe results in the levee system being placed in an inactive status in the USACE Rehabilitation and Inspection Program. Levee systems in an inactive status are ineligible for rehabilitation assistance under Public Law 84-99.

FEMA coordinated with the USACE, the local communities, and other organizations to compile a list of levees that exist within Westchester County. Table 9, "Levees," lists all accredited levees, PALs, and de-accredited levees shown on the FIRM for this FIS Report. Other categories of levees may also be included in the table. The Levee ID shown in this table may not match numbers based on other identification systems that were listed in previous FIS Reports. Levees identified as PALs in the table are labeled on the FIRM to indicate their provisional status.

Please note that the information presented in Table 9 is subject to change at any time. For that reason, the latest information regarding any USACE structure presented in the table should be obtained by contacting USACE and accessing the USACE national levee database. For levees owned and/or operated by someone other than the USACE, contact the local community shown in Table 31.

Table 9: Levees

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)	Levee Status
Village of Ardsley	Saw Mill River	Left Descending	City of Yonkers	No	1204000003	No	36119C0263F	Underway
Village of Ardsley	Saw Mill River	Right Descending	City of Yonkers	Yes	1204000004	No	36119C0263F	Underway
City of Yonkers	Saw Mill River	Left Descending	City of Yonkers	No	1204000005	No	36119C0309G, 36119C0317G	Underway
City of Yonkers	Saw Mill River	Right Descending	City of Yonkers	No	1204000006	No	36119C0309G, 36119C0317G	Underway

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

The engineering analyses described here incorporate the results of previously issued Letters of Map Change (LOMCs) listed in Table 27, "Incorporated Letters of Map Change", which include Letters of Map Revision (LOMRs). For more information about LOMRs, refer to Section 6.5, "FIRM Revisions."

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in
Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.

Table 10: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Annsville Creek	At confluence with the Hudson River	68.9	1,891	*	3,141	3,768	*	5,635
Barney Brook	Mouth at confluence with Hudson River	1.2	516	*	856	988	*	1,040
Barney Brook	Upstream of confluence with Barney Brook Tributary	0.8	430	*	585	676	*	840
Barney Brook	Inflow at reservoir outlet	0.3	206	*	279	330	*	415
Barney Brook Tributary	Upstream of confluence with Barney Brook	0.3	221	*	287	331	*	400
Bear Gutter Creek	At mouth	0.95	124	*	339	460	*	*
Beaver Swamp Brook	Upstream of South Barry Avenue	4.9	210	*	332	387	*	530
Beaver Swamp Brook	At USGS Gage	4.4	207	*	328	382	*	520
Beaver Swamp Brook	Upstream of confluence with Brentwood Brook	2.8	296	*	559	685	*	920
Beaver Swamp Brook	Downstream of Bradford Avenue	2.7	206	*	396	493	*	700

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Beaver Swamp Brook	Upstream of Bradford Avenue	2.7	267	*	540	660	*	1,050
Beaver Swamp Brook	Downstream Metro North Railroad	2.34	251	*	512	628	*	1,610
Beaver Swamp Brook	Upstream Metro North Railroad	2.34	454	*	816	968	*	1,400
Beaver Swamp Brook	Upstream of Locust Avenue	1.6	414	*	751	892	*	1,300
Beaver Swamp Brook	Upstream of Park Drive	0.9	344	*	631	752	*	1,145
Blind Brook	At mouth	10.9	1,660	*	2,731	3,265	*	4,426
Blind Brook	At USGS Gage	9.6	1,521	*	2,497	2,984	*	4,042
Blind Brook	At Purchase Street	8.80	1,434	*	2,353	2,812	*	3,807
Blind Brook	At corporate limit	8.32	1,374	*	2,255	2,694	*	3,645
Blind Brook	Upstream of confluence with East Branch Blind Brook	7.80	1,317	*	2,160	2,580	*	3,490
Blind Brook	At Bowman Avenue	6.90	1,211	*	1,986	2,372	*	3,206
Blind Brook	At Cross Section O	6.00	1,100	*	1,803	2,153	*	2,907
Blind Brook	At a point approximately 400 feet upstream of Brookside Avenue	3.0	780	*	1,220	1,535	*	2,375
Blind Brook	Upstream of New Blind Brook Country Club Dam	2.4	575	*	930	1,135	*	1,765

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Blind Brook	At Cross Section M (upstream of Anderson Hill Road	1.80	425	*	695	850	*	1330
Branch Brook	Confluence with Kisco River	2.83	255	*	422	494	*	713
Branch Brook	Upstream of East Main Street	2.20	252	*	363	422	*	548
Branch Brook	At tributary approximately 1,100 feet upstream of Preston Way	1.10	183	*	302	369	*	524
Branch Brook	Upstream of Green Lane	0.40	98	*	168	209	*	321
Branch 1 Hutchinson River	Highbrook Avenue	0.25	172	*	219	239	*	291
Branch 2 Kisco River	At downstream Town of New Castle corporate limits	0.18	147	*	195	214	*	259
Brentwood Brook	Upstream of confluence with Beaver Swamp Brook	1.57	108	*	197	248	*	382
Brentwood Brook	Downstream of Metro North Railroad crossing	1.34	96	*	177	224	*	352

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Brentwood Brook	Upstream of Metro North Railroad crossing	1.34	338	*	626	748	*	1,150
Brentwood Brook	Downstream of confluence with Nelson Creek	1.14	291	*	538	643	*	1,020
Brentwood Brook	Upstream of confluence with Nelson Creek	0.90	225	*	417	499	*	750
Brentwood Brook	Upstream of confluence with Woodlands Road Tributary 1	0.4	179	*	247	289	*	378
Bronx River	Upstream of corporate limits with New York City	47.8	1,952	*	2,441	3,232	*	4,253
Bronx River	Downstream of Mount Vernon corporate limits with New York City	46.9	1,926	*	2,409	3,191	*	4,198
Bronx River	Upstream of Cross County Parkway	44.9	1,869	*	2,337	3,095	*	4,072
Bronx River	Upstream of confluence with Grassy Sprain Brook	34.3	1,554	*	1,944	2,574	*	3,387
Bronx River	At USGS gage	42.8	1,809	*	2,262	2,996	*	3,942

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Bronx River	Upstream of confluence with Grassy Sprain Brook	34.3	1,554	*	1,944	2,574	*	3,387
Bronx River	Downstream of Tuckahoe corporate limits	34.0	1,545	*	1,932	2,559	*	3,367
Bronx River	Upstream of confluence with Troublesome Brook	30.9	1,447	*	1,809	2,396	*	3,153
Bronx River	Downstream of Scarsdale corporate limits	29.2	1,390	*	1,738	2,302	*	3,029
Bronx River	Upstream of confluence with South Fox Meadow Brook	26.9	1,316	*	1,645	2,179	*	2,867
Bronx River	Downstream of White Plain corporate limits	24.6	1,238	*	1,548	2,051	*	2,698
Bronx River	Approximately 1,00 feet upstream of County Center Parking Lot	22.2	1,153	*	1,442	1,910	*	2,513
Brown Brook	Upstream of Muscoot Reservoir	3.58	464	*	736	888	*	1,469
Brown Brook	Upstream of Somertown Road	3.07	410	*	657	796	*	1,314

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Brown Brook	Upstream of Mill Street	2.16	330	*	525	632	*	1016
Brown Brook	Upstream of Unnamed Tributary near Warren Street	1.69	263	*	419	504	*	849
Brown Brook	Upstream of Green Brier Drive	1.18	182	*	298	362	*	652
Brown Brook	Upstream of Warren Street	1.01	162	*	259	312	*	581
Byram River Reach 1	At mouth	30.4	2,719	*	4,442	5,439	*	7,259
Byram River Reach 1	Upstream Metro North Railroad bridge	29.0	2,567	*	4,222	5,180	*	6,796
Byram River Reach 2	At county boundary	8.39	1,171	*	2,164	2,576	*	*
Byram River Reach 2	Upstream of confluence of Wampus River	4.59	436	*	796	996	*	*
Byram River Reach 2	Upstream of State Route 22	4.10	400	*	745	927	*	*
Byram River Reach 2	Approximately 900 feet downstream of Tributary 1 to Byram River	3.73	376	*	708	886	*	*

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Byram River Reach 2	Upstream of confluence of Tributary to Byram River	2.87	281	*	521	656	*	*
Byram River Reach 2	Upstream of Byram Lake Road	0.28	114	*	224	289	*	*
Caney Brook	Upstream of confluence with Pocantico River	1.4	328	*	482	552	*	706
Caney Brook	Upstream of Leroy Road	1.0	234	*	342	390	*	494
Clove Brook	At downstream limit of study	1.3	460	*	760	945	*	1,450
Crook Brook	At confluence with Titicus River	4.00	475	*	800	935	*	1,370
Crook Brook	Confluence of Tributary west of Routes 121 and 124	2.36	325	*	540	635	*	920
Croton River	At USGS Gage	378	10,963	*	23,499	31,264	*	58,545
David's Brook	At confluence with Stone Mill River	3.2	220	*	395	505	*	850
David's Brook	At Guard Hill Road	1.3	85	*	155	200	*	340
East Branch Blind Brook	Upstream of confluence with Blind Brook	1.20	433	*	631	717	*	940
East Branch Blind Brook	Upstream of dam	0.90	409	*	558	648	*	825
East Branch Blind Brook	Upstream of Access Road	0.81	378	*	519	598	*	755

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
East Branch Blind Brook	Upstream of Betsy Brown Road	0.66	369	*	495	576	*	720
East Branch Blind Brook	Upstream of confluence with West Branch Blind Brook	0.20	123	*	165	192	*	243
East Branch Mamaroneck River	At Town of Harrison corporate boundary	2.76	749	*	1,042	1,152	*	1,444
East Branch Mamaroneck River	At Anderson Hill Road	2.44	650	*	900	1,000	*	1,300
East Branch Mamaroneck River	Approximately 2,250 feet downstream of Barnes Lane	2.18	571	*	794	878	*	1,100
East Branch Mamaroneck River	Approximately 935 feet downstream of Barnes Lane	1.61	230	*	360	410	*	700
East Branch Mamaroneck River	Approximately 100 feet upstream of Barnes Lane	0.95	160	*	225	285	*	400
East Branch Mamaroneck River	Inflow from Forest Lake	0.85	315	*	437	482	*	603
East Branch Mamaroneck River	Outflow from Forest Lake	0.85	315	*	216	256	*	366

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
East Branch Sheldrake River	Immediately upstream of confluence with Sheldrake River	1.9	485	*	681	776	*	972
Fly Kill Brook	At mouth	0.72	315	*	510	630	*	970
Fly Kill Brook	Confluence with Saw Mill	0.7	352	*	495	571	*	730
Furnace Brook	At Cortlandt Street	7.7	578	*	936	1123	*	1,600
Furnace Brook	At dam	7.4	528	*	845	1008	*	1,450
Furnace Brook	At Furnace Lake Outlet	6.0	392	*	626	748	*	1,080
Furnace Brook	At Furnace Dock Road	5.4	347	*	563	677	*	940
Furnace Brook	Approximately 850 feet downstream of Watch Hill Road	3.8	260	*	422	508	*	710
Gedney Brook	At Town of New Castle corporate limits	2.00	254	*	431	534	*	800
Gedney Brook	At Millwood Road	1.21	178	*	306	382	*	570
Gedney Brook	At Turner Drive	1.04	162	*	280	355	*	522
Grassy Sprain Brook	Upstream of confluence with Bronx River	8.7	919	*	1,320	1,544	*	1955
Grassy Spring Brook	Upstream of Longvale Road	7.6	747	*	1,074	1,256	*	1,579

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Hallocks Mill Brook	At Yorktown corporate limits	9.50	700	*	1,191	1,399	*	2,067
Hallocks Mill Brook	At confluence of Hallocks Mill Brook Tributary 1	7.97	608	*	1,031	1,210	*	1,782
Hallocks Mill Brook	At confluence of Hallocks Mill Brook Tributary 2	4.01	301	*	508	593	*	861
Hallocks Mill Brook Tributary 1	At confluence with Hallocks Mill Brook	1.03	141	*	231	269	*	383
Hallocks Mill Brook Tributary 2	At confluence with Hallocks Mill Brook	3.21	330	*	553	646	*	938
Highland Avenue Brook	At confluence with Reservoir #3	0.45	276	*	380	437	*	560
Highland Avenue Brook	Approximately 1,300 feet upstream of confluence with Reservoir #3	0.36	265	*	356	414	*	515
Hillside Avenue	Upstream of confluence with East Branch Blind Brook	0.30	188	*	256	293	*	350
Hutchinson River	At New York City corporate limits	9.52	1,662	*	2,461	2,754	*	3,525

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Hutchinson River	Approximately 1,006 feet downstream of East Sanford Boulevard	7.67	829	*	1,260	1,422	*	1,985
Hutchinson River	At USGS Gage 01301500	6.22	431	*	649	758	*	1,054
Hutchinson River	Downstream of Reservoir No. 2	3.06	262	*	503	642	*	1,240
Hutchinson River	Upstream of Reservoir No. 2	3.06	663	*	1075	1227	*	1,420
Hutchinson River	Downstream of Reservoir No.3	2.74	585	*	948	1084	*	1,243
Hutchinson River	Upstream of Reservoir No.3	2.16	561	*	880	998	*	1,310
Hutchinson River	Downstream of Reservoir No.1	1.86	181	*	378	464	*	708
Hutchinson River	Upstream of Reservoir No.1	1.18	728	*	1,137	1,290	*	1,695
Hutchinson River	Upstream of Hutchinson Boulevard	0.68	486	*	745	840	*	1,090
Kensico Road Tributary	At confluence with Nanny Hagen Brook	0.8	430	*	580	670	*	850
Kil Brook	Upstream of confluence with Sing Sing Creek	2.63	381	*	605	725	*	945
Kil Brook	Near Narragansett Avenue	1.3	163	*	254	300	*	419

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Kisco River	At confluence with New Croton Reservoir	18.18	1214	*	1952	2369	*	3300
Kisco River	At railroad	8.79	761	*	1,297	1,524	*	2,256
Kisco River Tributary 1	Confluence with Kisco River	2.48	337	*	564	659	*	958
Knollwood Brook	At Knollwood Road	1.1	342	*	555	679	*	1,000
Lecount Creek	At confluence with Mamaroneck River Lower Reach	0.36	*	*		270	*	*
Leroy Avenue Brook	Upstream of Broadway Culvert	0.2	138	*	184	215	*	270
Mamaroneck River Lower Reach	At mouth	24.00	2,870	*	4,210	4,800	*	6,070
Mamaroneck River Lower Reach	At USGS gage	23.40	2,820	*	4,140	4,710	*	5,960
Mamaroneck River Lower Reach	Upstream of confluence with Sheldrake River	17.10	2,280	*	3,330	3,800	*	4,790
Mamaroneck River Upper Reach	At Westchester Avenue	1.8	655	*	852	927	*	1,130
Mamaroneck River Upper Reach	At I-287 Ramp	1.3	353	*	492	549	*	716

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Mamaroneck River Upper Reach	At outflow of Silver Lake	1.0	273	*	391	438	*	563
Manhattan Park Brook	At confluence with Bronx River	*	610	*	980	1200	*	1,760
Mianus River	Downstream of Millers Mill Road	12.2	606	*	938	1106	*	1,520
Mianus River	Upstream of Greenwich Road	9.8	511	*	810	964	*	1,320
Mianus River	Upstream of dam	6.8	374	*	609	733	*	1,010
Mill River	At Town of Pond Ridge corporate limits	10.5	*	*	*	1,484	*	*
Mohegan Outlet	At county boundary	1.67	384	*	633	729	*	989
Mohegan Outlet	Upstream of Strawberry Road	1.44	268	*	434	498	*	670
Muscoot River	At confluence with Amawalk Reservoir	14.67	1,083	*	1,861	2,191	*	3,269
Nanny Hagen Brook	At confluence with Saw Kill	3.1	782	*	1,127	1,310	*	1,669
Nanny Hagen Brook	Upstream of confluence with Kensico Road Tributary	2.3	599	*	866	1,003	*	1,288
Nelson Creek	Upstream of confluence with Brentwood Brook	0.24	113	*	154	179	*	209

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Nelson Creek	Approximately 300 feet downstream of Union Avenue	0.07	46	*	60	69	*	84
Peekskill Hollow Brook	At Albany Post Road	48.1	1,404	*	2,378	2,873	*	4,363
Peekskill Hollow Brook Tributary	Upstream of confluence with Peekskill Hollow Brook	3.08	660	*	900	1,000	*	1,230
Peekskill Hollow Brook Tributary	Downstream of Marilyn Road	2.56	470	*	620	680	*	880
Peekskill Hollow Brook Tributary	Downstream of East Main Street	2.00	330	*	440	490	*	725
Pitch Swamp Brook	Pound Ridge Road	1.2	85	*	150	195	*	325
Plum Brook	At confluence with Muscoot Reservoir	7.40	1,099	*	1,737	2,076	*	2,732
Plum Brook	Upstream of Pond	6.80	1,053	*	1,666	1,990	*	2,588
Plum Brook	Upstream of Brick Hill Road	6.20	966	*	1,543	1,849	*	2,396
Plum Brook	Upstream of Krystal Drive	5.88	918	*	1,407	1,682	*	2,258
Plum Brook	Upstream of confluence with Unnamed Tributary to Plum Brook	4.00	616	*	976	1,163	*	1,535

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Plum Brook	Upstream of confluence with Plum Brook Tributary 1	2.60	468	*	709	829	*	1,069
Plum Brook	At county boundary	1.71	335	*	521	624	*	950
Plum Brook Tributary 1	Upstream of confluence with Plum Brook	0.67	91	*	164	200	*	360
Pocantico River Lower Reach	Upstream of confluence with Hudson River	15.7	1,169	*	2,561	3,041	*	3,933
Pocantico River Lower Reach	At North Broadway	15.4	1,585	*	2,389	2,817	*	3,628
Pocantico River Lower Reach	Upstream of Gory Brook Road	14.2	1,391	*	2,112	2,497	*	3,241
Pocantico River Upper Reach	Upstream of Long Hill Road	8.4	1,075	*	1,631	1,925	*	2,477
Pocantico River Upper Reach	Upstream of Tributary #1	5.0	755	*	1,184	1,411	*	1,845
Pocantico River Upper Reach	Upstream of Pleasantville Road	4.8	634	*	977	1,157	*	1,509
Pitch Swamp Brook	At Pound Ridge Road	1.2	85	*	150	195	*	325

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Saw Mill Creek	At confluence with New Croton Reservoir	1.40	195	*	322	376	*	539
Saw Mill River	Upstream of confluence with Hudson River	26.0	890	*	1,558	1,910	*	2,890
Saw Mill River	At USGS gage	25.5	888	*	1,550	1,905	*	2,880
Saw Mill River	Upstream of Torre Place	24.4	885	*	1,535	1,895	*	2,850
Saw Mill River	Upstream of Unnamed Tributary	20.8	907	*	1,587	1,980	*	2,932
Saw Mill River	Upstream of Ashford Avenue	20.4	899	*	1,586	1,967	*	2,916
Saw Mill River	Upstream of Woodlands Lake Outlet	19.7	1,018	*	1,965	2,344	*	3,521
Saw Mill River	Upstream of Conrail bridge	18.1	1,208	*	2,204	2,638	*	3,837
Saw Mill River	Upstream of confluence of Rum Brook	17.0	1,180	*	2,150	2,575	*	3,750
Saw Mill River	Upstream of East Main Street	16.6	1,242	*	2,266	2,698	*	3,954
Saw Mill River	Upstream of confluence of Mine Brook	14.6	1,136	*	2,072	2,467	*	3,616

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Saw Mill River	Upstream of confluence of Tarrytown Reservoir Outlet	12.4	1,015	*	1,853	2,206	*	3,266
Saw Mill River	Upstream of confluence of tributary near Stevens Avenue	10.9	930	*	1,696	2,019	*	2,959
Saw Mill River	Upstream of confluence of tributary near Route 100	9.8	864	*	1,577	1,877	*	2,751
Saw Mill River	Downstream of confluence with Nanny Hagen Brook	8.3	771	*	1,407	1,675	*	2,455
Saw Mill River	Upstream of confluence with Nanny Hagen Brook	5.2	349	*	660	782	*	1,114
Saw Mill River	Upstream of Saw Mill River Parkway	5.1	440	*	809	957	*	1,355
Saw Mill River	Upstream of Catskill Aqueduct Crossing	3.7	355	*	660	780	*	1,110
Saw Mill River	Upstream of Railroad bridge	3.3	394	*	736	884	*	1,319

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Saw Mill River	Upstream of confluence with tributary near Washington Avenue	2.0	195	*	350	435	*	660
Saw Mill River	Upstream of Quaker Street (Route 120)	1.2	393	*	701	828	*	1,185
Sheldrake River	Upstream of confluence with Mamaroneck River	6.5	1,112	*	1,564	1,806	*	2,256
Sheldrake River	Upstream of confluence of East Branch Sheldrake River	3.2	515	*	724	830	*	1,042
Sheldrake River	Upstream of Weaver Street	2.9	440	*	614	700	*	862
Sheldrake River	Downstream of Hutchinson River Parkway	1.9	360	*	495	557	*	669
Sheldrake River	Downstream of Palmer Avenue (New Rochelle corporate limits)	1.2	242	*	323	361	*	434
Sheldrake River	Upstream of Brookby Road	0.9	182	*	247	276	*	325
Shrub Oak Brook	At county boundary	9.5	833	*	1,423	1,673	*	2.483

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Shrub Oak Brook	Northeast of US Route 6 and Mill Street	8.1	648	*	110	1,292	*	1,905
Shrub Oak Brook	Upstream of Barger Brook	3.7	320	*	500	600	*	850
Shrub Oak Brook	At Lee Boulevard	2.6	220	*	360	420	*	600
Shrub Oak Brook Tributary 1	At confluence with Shrub Oak Brook	0.9	166	*	203	230	*	280
Sing Sing Creek	Upstream of Metro North railroad crossing	4.9	898	*	1,193	1,667	*	2,215
Sing Sing Creek	Upstream of North Highland Avenue	4.4	799	*	1,242	1,487	*	1,983
South Fox Meadow Brook	Upstream of confluence with Bronx River	1.4	356	*	637	750	*	1,065
South Fox Meadow Brook	Downstream of Ogden Road	1.2	329	*	594	701	*	992
South Fox Meadow Brook	Downstream of Harcourt Road	1.2	323	*	586	692	*	979
South Fox Meadow Brook	Downstream of Olmstead Road	1.0	264	*	482	569	*	801
South Fox Meadow Brook	Downstream of Tompskins Road	0.6	120	*	226	267	*	371

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
South Fox Meadow Brook	Approximately 450 feet downstream of Mamaroneck Road	0.4	89	*	174	208	*	290
Sprain Brook	At Village of Ardsley corporate limits	2.1	475	*	775	950	*	1,550
Stone Hill River	At Dam Road	13.7	1,110	*	1,980	2,540	*	4,300
Stone Hill River	At confluence of David's Brook	9.1	735	*	1,310	1,680	*	2,850
Stone Hill River	At Hook Road	3.7	180	*	320	410	*	695
Sunnyside Brook	At confluence with Hudson River	0.7	330	*	470	550	*	700
Sunnyside Brook	Upstream of confluence with unnamed tributary	0.4	240	*	310	370	*	475
Tibbetts Brook	At New York City boundary	2.3	550	*	766	882	*	1,117
Tibbetts Brook	Approximately 1,800 feet upstream of New York City boundary	2.2	543	*	762	879	*	1,103
Titicus River	At confluence with Titicus Reservoir	16.7	1,300	*	2,250	2,650	*	3,970
Titicus River	At Route 121	12.1	965	*	1,790	2,220	*	3,150

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Titicus River	At Norton Road	9.4	800	*	1,550	2,005	*	2,890
Tributary 1 to Wampus River	At mouth	0.7	162	*	319	390	*	*
Tributary 2 to Wampus River	At mouth	0.8	166	*	321	387	*	*
Tributary 2 to Wampus River	Approximately 5,073 feet upstream of confluence with Wampus River	0.3	118	*	235	316	*	*
Tributary 3 to Wampus River	At mouth	0.3	81	*	145	194	*	*
Tributary to Laurel Reservoir	At Town of Pound Ridge corporate limits	0.9	*	*	*	205	*	*
Tributary to Mill River	Upstream of confluence with Mill River	1.6	*	*	*	272	*	*
Troublesome Brook Reach 1	Upstream of confluence with Bronx River	2.8	1,032	*	1,343	1,527	*	1,817
Troublesome Brook Reach 1	At culvert approximately 700 feet downstream of Maira Lane	*	582	*	873	1,037	*	1,291
Unnamed Tributary to Plum Brook	Upstream of confluence with Plum Brook	1.6	226	*	366	439	*	600

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Wampus River	At mouth	3.6	692	*	1,285	1,459	*	*
Wampus River	Upstream of confluence of Tributary 1 to Wampus River	2.6	441	*	804	1,012	*	*
Wampus River	Upstream of confluence of Tributary 2 to Wampus River	1.3	370	*	690	869	*	*
Wampus River	Upstream of confluence of Tributary 3 to Wampus River	0.8	104	*	199	264	*	*
West Branch Blind Brook	At confluence with Blind Brook	3.0	*	*	*	405	*	*
West Branch Blind Brook	At confluence with unnamed tributary	2.5	*	*	*	360	*	*
West Branch Blind Brook	At confluence with unnamed tributary	2.0	*	*	*	305	*	*
Wickers Creek	At confluence with Hudson River	1.2	380	*	620	760	*	1,120
Wickers Creek	Upstream of Railroad	0.7	172	*	294	369	*	579
Woodlands Road Brook 1	Upstream of confluence with Brentwood Brook	0.4	157	*	214	248	*	315

*Not calculated for this Flood Risk project

Table 10: Summary of Discharges (continued)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance Existing	1% Annual Chance Future	0.2% Annual Chance
Woodlands Road Brook 1	Upstream of confluence with Woodlands Road Tributary 2	0.2	117	*	158	185	*	216
Woodlands Road Brook 1	Approximately 220 feet downstream of Woodlands Road	*	77	*	118	145	*	176
Woodlands Road Brook 2	Immediately upstream of confluence with Woodlands Road Tributary 1	0.12	67	*	89	104	*	132

*Not calculated for this Flood Risk project

Figure 7: Frequency Discharge-Drainage Area Curves

[Not Applicable to this Flood Risk Project]

Table 11: Summary of Non-Coastal Stillwater Elevations

Flooding Source	Location	Elevations (ft NAVD 88)				
		10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
New Croton Reservoir	At Saw Mill River Road (State Route 100)	201.8	*	205.1	205.4	206.2

*Not calculated for this FIS project

Table 12: Stream Gage Information used to Determine Discharges

[Not Applicable to this Flood Risk Project]

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed on Table 24, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 13: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Annsville Creek	From its confluence with Hudson River	to the confluence Peekskill Hollow Brook and Sprout Brook	Regression Equations	HEC-2	1982	AE w/ Floodway	
Barney Brook	From the confluence with the Hudson River	to approximately 1,800 feet upstream of Fieldpoint Drive in the Village of Irvington	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Barney Brook Tributary	From the confluence with Barney Brook	to Halsey's Pond	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Bear Gutter Creek	From approximately 30 feet downstream of State Route 120	to approximately 160 feet downstream Labriola Court in Town of North Castle	TR-55	HEC-2	1988	AE w/ Floodway	
Beaver Swamp Brook	From its confluence with the Long Island Sound	to approximately 450 feet upstream of Park Drive in the Town of Harrison	PEAKFQ 2.4 (April 1998) and up	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Blind Brook	From its confluence with the Long Island Sound	to approximately 1,860 feet upstream of Lincoln Avenue in the Village of Rye Brook	PEAKFQ 2.4 (April 1998) and up	HEC-RAS 3.1.1 and up	2066	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Branch 1 Hutchinson River	From approximately 100 feet downstream of Highbrook Avenue	to approximately 1,060 feet upstream of Highbrook Avenue	Regression Equations	HEC-2	1977	AE w/ Floodway	
Branch 2 Kisco River	From approximately 290 feet downstream of Horseshoe Road	to Kathleen Lane in the Town of New Castle	Regression Equations	HEC-2	1988	AE w/ Floodway	
Branch Brook	From Main Street in the Village of Mount Kisco	to approximately 650 feet upstream of Wood Road in the Town of Bedford	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Brentwood Brook	From its confluence with Beaver Swamp Brook	to approximately 100 feet downstream of Haviland Road in the Town of Harrison	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Bronx River	From the county boundary	to approximately 180 feet upstream of Metro North Railroad	PEAKFQ 2.4 (April 1998) and up	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Brown Brook	From the confluence with Muscoot Reservoir	to the county boundary	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Byram River Reach 1	From the confluence with the Long Island Sound	to the county boundary	Regression Equations	HEC-RAS 3.1.1 and up	2006	VE, AE w/ Floodway	
Byram River Reach 2	From the county boundary	to approximately 1,175 feet upstream of Byram Lake Road in the Town of North Castle	TR-55	HEC-2	1988	AE w/ Floodway	
Caney Brook	From the confluence with Pocantico River	to approximately 2,260 feet upstream of Long Hill Road in the Village of Briarcliff Manor	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Clove Brook	From Taconic State Parkway	to approximately 1,050 feet upstream of Wall Street in the Town of Mount Pleasant	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Crook Brook	From its confluence with Titicus River	to approximately 160 upstream of East Hawley Road in the Town of North Salem	Regression Equations	HEC-2	1982	AE w/ Floodway	
Croton River	From its confluence with the Hudson River	to approximately 3,650 feet upstream of Quaker Bridge Road in the Town of Cortlandt	PEAKFQ 2.4 (April 1998) and up	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
David's Brook	From its confluence with Stone Hill River	to approximately 315 downstream of Guard Hill Road in the Town of Bedford	Regression Equations	HEC-2	1977	AE w/ Floodway	
East Branch Blind Brook	From its confluence with Blind Brook	to approximately 260 feet upstream of Bluebird Hollow in the Village Rye Brook	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
East Branch Mamaroneck River	From approximately 65 feet downstream of Anderson Hill Road	to approximately 240 feet downstream of Park Lane in the Town of Harrison	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
East Branch Sheldrake River	From its confluence with Sheldrake River	to approximately 150 feet downstream of Fenimore Road in the Town of Mamaroneck	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Fly Kill Brook	From its confluence with Saw Mill River	to approximately 130 feet downstream of Livingston Street in the Town of Mount Pleasant	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Furnace Brook	From its confluence with Hudson River	to approximately 1,520 feet upstream of Maple Avenue in the Town of Cortlandt	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Gedney Brook	From approximately 80 feet downstream of Seven Bridges Road	to approximately 60 feet upstream of Woodmill Road in the Town of New Castle	Regression Equations	HEC-2	1988	AE w/ Floodway	
Grassy Sprain Brook	From its confluence with Bronx River	to approximately 3,500 feet upstream of Palmer Road in the City of Yonkers	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Hallocks Mill Brook	From approximately 1,340 feet downstream of Greenwood Street	to approximately 2,448 feet upstream of U.S. Route 202 in the Town of Yorktown	Regression Equations	HEC-2	1983	AE w/ Floodway	
Hallocks Mill Brook Tributary 1	From its confluence with Hallocks Mill Brook	to approximately 1,018 feet upstream of Moseman Road in the Town of Yorktown	Regression Equations	HEC-2	1983	AE w/ Floodway	
Hallocks Mill Brook Tributary 2	From its confluence with Hallocks Mill Brook	to approximately 708 feet upstream of Granite Springs Road in Town of Yorktown	Regression Equations	HEC-2	1983	AE w/ Floodway	
Highland Avenue Brook	From its confluence with Hutchinson River	to approximately 1,270 feet upstream of California Road in the Town of Eastchester	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Hillside Avenue Brook	From its confluence with East Blind Brook	to approximately 140 feet upstream of Hillandale Road in the Village of Rye Brook	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Hutchinson River	From the county boundary	to approximately 3,190 feet upstream of Grand Boulevard in the Village of Scarsdale	PEAKFQ 2.4 (April 1998) and up	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Kenisco Road Tributary	From its confluence with Nanny Hagen Brook	to approximately 100 feet downstream of Rolling Hills Road in the Town of Mount Pleasant	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Kill Brook	From the confluence with Hudson River	to approximately 530 feet upstream of Brookside Lane	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Kisco River	From its confluence with New Croton Reservoir	to approximately 133 feet upstream of Byram Lake Road in the Village of Mount Kisco	TR-55	HEC-2	1988	AE w/ Floodway	
Kisco River Tributary 1	From its confluence with Kisco River	to approximately 3,790 feet upstream from confluence of Kisco River	Regression Equations	HEC-2	1983	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Knollwood Brook	From approximately 9,120 feet upstream from the confluence with the Bronx River	to approximately 1,085 upstream of Knollwood Road in the Village of Elmsford	Regression Equations	HEC-2	1977	AE w/ Floodway	
Leroy Avenue Brook	From approximately 640 feet downstream of South Broadway	to approximately 280 feet upstream of Loh Avenue in the Village of Tarrytown	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Mamaroneck River Lower Reach	From its confluence with Long Island Sound	to Mamaroneck Reservoir	PEAKFQ 2.4 (April 1998) and up	HEC-2	2006	AE w/ Floodway	
Mamaroneck River Upper Reach	From approximately 120 feet downstream of I-287 on ramp	to approximately 310 feet upstream of Millers Mill Road Bridge in the Town of Bedford	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Manhattan Park Brook	From its confluence with Bronx River	to approximately 1,377 feet upstream of County Center Road in the Town of Greenburgh	Regression Equations	HEC-2	1978	AE w/ Floodway	
Mianus River	From its confluence with Mianus Reservoir	to approximately 5,250 feet downstream of Millers Mill Road Bridge in the Town Bedford	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Mill River	From county boundary	to approximately 2,400 feet upstream of the confluence	Regression Equations	HEC-2	1988	AE w/ Floodway	
Mohegan Outlet	From the county boundary	to Lake Mohegan	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Muscoot River	From its confluence with Amawalk Reservoir	to the county boundary	Regression Equations	HEC-2	1982	AE w/ Floodway	
Nanny Hagen Brook	From its confluence with Saw Mill River	to approximately 730 feet upstream of Marble Avenue in	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Nelson Creek	From its confluence with Brentwood Brook	to approximately 80 feet downstream of Harrison Avenue in the Town of Harrison	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Peekskill Hollow Brook	From its confluence with Annsville Creek and Sprout Brook	to the county boundary	Regression Equations	HEC-2	1982	AE w/ Floodway	
Peekskill Hollow Brook Tributary	From its confluence with Peeksill Hollow Brook	to approximately 251 feet upstream of Bear Mountain State Parkway in the Town of Cortlandt	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Pitch Swamp	From approximately 7,360 feet upstream from the confluence with Stone Hill River	to approximately 27 feet downstream of State route 172 in the Town of Bedford	Regression Equations	HEC-2	1977	AE w/ Floodway	
Plum Brook	From confluence with Muscoot Reservoir	to county boundary	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Plum Brook Tributary 1	From its confluence with Plum Brook	to approximately 180 feet upstream of Lake Shore Drive in the Town of Somers	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Pocantico River Lower Reach	From its confluence with Hudson River	to approximately 1,445 feet downstream of Route 117 in the Town of mount Pleasant	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Pocantico River Upper Reach	From Beech Hill Road	to approximately 790 feet upstream of Chappaqua Road in the Village of Ossining	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Saw Mill Creek	From its confluence with new Croton Reservoir	to approximately 125 feet upstream of Locke Avenue in the Town of Yorktown	Regression Equations	HEC-2	1983	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Saw Mill River	From approximately 130 feet upstream of New Main Street in the City of Yonkers	to approximately 1,700 feet upstream of Kipp Street in the Town of New Castle	HEC-1	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Saw Mill River West Channel	From its confluence with Saw Mill River	to the confluence with Saw Mill River	HEC-1 4.0.1 and up 1 (May 1991)	HEC-2	1978	AE w/ Floodway	
Sheldrake River	From its confluence with Lower Mamaroneck River	to approximately 1,000 feet upstream of Oneida Road in the Village of Scarsdale	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Shrub Oak Brook	From the county boundary	to approximately 1,125 feet upstream of U.S. Route 6 in the Town of Yorktown	Regression Equations	HEC-2	1992	AE w/ Floodway	
Shrub Oak Brook Tributary 1	From its confluence with Shrub Oak Brook	to approximately 2,875 feet upstream of East Main Street	Regression Equations	HEC-2	1992	AE w/ Floodway	
Sing Sing Creek	From its confluence with Hudson River	to approximately 280 feet upstream of Brookside Lane in the Town of Ossining	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
South Fox Meadow Brook	From its confluence with Bronx River	to approximately 1,210 feet upstream of Oxford Road in the Village of Scarsdale	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Sprain Brook	From approximately 1,662 feet downstream from Ashford Avenue in Town of Greenburgh and the Village of Ardsley	to approximately 721 feet upstream of Cross Road in the Village of Ardsley	Regression Equations	HEC-2	1977	AE w/ Floodway	
Sprout Brook	From its confluence with Annsville Creek and Peekskill Hollow Brook	to the county boundary	Regression Equations	HEC-2	1982	AE w/ Floodway	
Stone Hill River	From its confluence with Muscoot Reservoir	to approximately 450 feet upstream of Cantitoe Street (Route 22)	Regression Equations	HEC-2	1977	AE w/ Floodway	
Sunnyside Brook	From its confluence with Hudson River	to approximately 1,170 feet upstream of Mountain Road in the Town of Greenburgh	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tibbetts Brook	From the county boundary	to approximately 650 feet upstream of Jervis Road in the City of Yonkers	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Titicus River	From its confluence with Titicus Reservoir	to approximately 3,650 feet upstream of Norton Road in the Town of North Salem	Regression Equations	HEC-2	1982	AE w/ Floodway	
Tributary 1 to Wampus River	From its confluence with Wampus River	to approximately 80 feet upstream of Stony Brook Place in the Town of North Castle	TR-55	HEC-2	1982	AE w/ Floodway	
Tributary 2 to Wampus River	From its confluence with Wampus River	to approximately 3,096 feet upstream of Byram Ridge Road in the Town of North Castle	TR-55	HEC-2	1982	AE w/ Floodway	
Tributary 3 to Wampus River	From its confluence with Wampus River	to approximately 1,214 feet upstream of Wayne Valley Road in the Town of North Castle	TR-55	HEC-2	1982	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Tributary to Mill River	From its confluence with Mill River	to approximately 652 feet upstream of South Bedford Road in the Town of Pound Ridge	Regression Equations	HEC-2	1988	AE w/ Floodway	
Troublesome Brook Reach 1	From its confluence with Bronx River	to Crestwood Lake	HEC-1 4.0.1 and up 1 (May 1991)	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Unnamed Tributary to Plum Brook	From its confluence with Plum Brook	to approximately 3,000 feet upstream of Dunhill Road in the Town of Somers	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Wampus River	From its confluence with Byram River Reach 2	to approximately 925 feet upstream of State Route 128 in the Town of North Castle	TR-55 (June 1986)	HEC-2	1982	AE w/ Floodway	
West Branch Blind Brook	From its confluence with Blind Brook	to Beverly Road in the Town of Harrison	Regression Equations	HEC-2	1989	AE w/ Floodway	
Wickers Creek	From its confluence with Hudson River	to approximately 920 feet downstream of Broadway in the Village of Dobbs Ferry	Regression Equations	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses (continued)

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Woodlands Road Brook 1	From its confluence with Brentwood Brook	to approximately 330 feet upstream of Woodlands Road in the Town of Harrison	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	
Woodlands Road Brook 2	From its confluence with Woodlands Road Brook 1	to approximately 120 feet upstream of Woodland Road in the Town of Harrison	Other	HEC-RAS 3.1.1 and up	2006	AE w/ Floodway	

Table 14: Roughness Coefficients

Flooding Source	Channel "n"	Overbank "n"
Annsville Creek	0.030	0.060-0.065
Barney Brook	0.050-0.070	0.030-0.050
Barney Brook Tributary	0.050-0.070	0.030-0.045
Bear Butter Creek	0.030-0.060	0.040-0.090
Beaver Swamp	0.025-0.060	0.030-0.050
Blind Brook	0.020-0.090	0.020-0.090
Blind Brook	0.020-0.080	0.025-0.090
Branch 1 Hutchinson River	0.040	0.080-0.100
Branch 2 Kisco River	0.030	0.080
Brentwood Brook	0.0350	0.060-0.120
Bronx River	0.030-0.065	0.040-0.080
Brown Brook	0.022-0.049	0.080-0.150
Byram River Reach 1	0.035-0.040	0.030-0.100
Byram River Reach 2	0.015-0.070	0.015-0.090
Caney Brook	0.030-0.045	0.050-0.090
Clove Brook	0.030-0.045	0.050-0.100
Crook Brook	0.040-0.060	0.070-0.090
Croton River	0.020-0.030	0.06
David's Brook	0.050	0.100
East Branch Blind Brook	0.020-0.090	0.020-0.090
East Branch Mamaroneck River	0.030-0.120	0.016-0.120
East Branch Sheldrake River	0.030	0.100
Fly Kill	0.030-0.045	0.050-0.100
Fulton Brook	0.040-0.055	0.050-0.080
Furnace Brook	0.035-0.050	0.016-0.100
Gedney Brook	0.030	0.080
Grassy Sprain Brook	0.014-0.060	0.016-0.100
Hallocks Mill Brook	0.040-0.050	0.060-0.085
Hallocks Mill Brook Tributary 1	0.040-0.045	0.050-0.080
Hallocks Mill Brook Tributary 2	0.045	0l.050-0.080
Highland Avenue Brook	0.030-0.100	0.016-0.100
Hillside Avenue Brook	0.035-0.060	0.016-0.060
Hutchinson River	0.015-0.060	0.025-0.080
Kensico Road Tributary	0.030-0.045	0.050-0.100
Kill Brook	0.020-0.040	0.060-0.070
Kisco River	0.030-0.045	0.080-0.100
Kisco River Tributary 1	0.040-0.045	0.090-0.100
Knollwood Brook	0.030-0.040	0.060-0.100
Lecourt Creek	0.035	0.060-0.120
Leroy Avenue Brook	0.040-0.060	0.013-0.120
Mamaroneck River Lower Reach	0.035-0.100	0.016-0.100
Mamaroneck River Upper Reach	0.030-0.050	0.040-0.070
Manhattan Park Brook	0.030-0.045	0.050-0.100
Mianus River	0.030-0.120	0.030-0.120
Mill River	0.015-0.080	0.100
Mohegan Outlet	0.016-0.120	0.016-0.120
Muscoot River	0.020-0.045	0.085-0.100
Nanny Hagen Brook	0.030-0.045	0.050-0.100
Nelson Creek	0.016-0.100	0.030-0.100

Table 14: Roughness Coefficients (continued)

Flooding Source	Channel "n"	Overbank "n"
Peekskill Hollow Brook	0.030-0.035	0.060-0.065
Peekskill Hollow Brook Tributary	0.030-0.120	0.016-0.120
Pitch Swamp Brook	0.05	0.100
Plum Brook	0.004-0.047	0.085-0.100
Plum Brook Tributary 1	0.025-0.040	0.080-0.150
Pocantico River Lower Reach	0.040-0.170	0.040-0.120
Pocantico River Upper Reach	0.040-0.100	0.045-0.120
Saw Mill Creek	0.040	0.050-0.100
Saw Mill River	0.014-0.090	0.020-0.100
Saw Mill River West Channel	0.014-0.090	0.020-0.100
Sheldrake River	0.030-0.050	0.016-0.120
Shrub Oak Brook	0.035-0.045	0.040-0.100
Shrub Oak Brook Tributary 1	0.045	0.050-0.070
South Fox Meadow Brook	0.020	0.030-0.080
Sprain Brook	0.030-0.045	0.050-0.100
Sprout Brook	0.020-0.040	0.060-0.065
Stone Hill River	0.025-0.045	0.030-0.100
Sunnyside Brook	0.060-0.080	0.030-0.045
Sunnyside Brook	0.060-0.080	0.030-0.045
Tibbetts Creek	0.035-0.045	0.013-0.120
Titicus River	0.040-0.055	0.070-0.100
Tributary 1 to the Wampus River	0.015-0.080	0.030-0.100
Tributary 2 to the Wampus River	0.015-0.050	0.07
Tributary 3 to the Wampus River	0.015-0.040	0.05
Tributary to Laurel Reservoir	0.015-0.080	0.100
Tributary to Mill River	0.015-0.080	0.100
Troublesome Brook Reach 1	0.015-0.100	0.015-0.100
Unnamed Tributary to Plum Brook	0.045-0.100	0.030-0.100
Wampus River	0.015-0.060	0.040-0.100
West Branch Blind Brook	0.035	0.060-0.120
Wickers Creek	0.035-0.050	0.060-0.100
Woodlands Road Brook 1	0.016-0.050	0.016-0.100
Woodlands Road Brook 2	0.030-0.040	0.016-0.100

5.3 Coastal Analyses

For the areas of Westchester County that are impacted by coastal flooding processes, coastal flood hazard analyses were performed to provide estimates of coastal BFEs. Coastal BFEs reflect the increase in water levels during a flood event due to extreme tides and storm surge as well as overland wave effects.

The following subsections provide summaries of how each coastal process was considered for this FIS Report. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation. Table 15 summarizes the methods and/or models used for the coastal analyses. Refer to Section 2.5.1 for descriptions of the terms used in this section.

Table 15: Summary of Coastal Analyses

Flooding Source	Study Limits		Hazard Evaluated	Model or Method Used	Date Analysis was Completed
	From	To			
Hudson River	Entire Shoreline	Entire Shoreline	Storm Surge, Wave Runup, Wave Height Analysis, Erosion	ADCIRC, CHAMP, TAW, CSHORE, Runup 2.0	2014
Long Island Sound	Entire Shoreline	Entire Shoreline	Storm Surge, Wave Runup, Wave Height Analysis, Erosion	ADCIRC, CHAMP, TAW, CSHORE, Runup 2.0	2014

5.3.1 Total Stillwater Elevations

The total stillwater elevations (stillwater including storm surge plus wave setup) for the 1% annual chance flood were determined for areas subject to coastal flooding. The models and methods that were used to determine storm surge and wave setup are listed in Table 15. The stillwater elevation that was used for each transect in coastal analyses is shown in Table 17, "Coastal Transect Parameters." Figure 8 shows the total stillwater elevations for the 1% annual chance flood that was determined for this coastal analysis.

Astronomical Tide

Astronomical tidal statistics were generated directly from local tidal constituents by sampling the predicted tide at random times throughout the tidal epoch.

Storm Surge Statistics

Storm surge is modeled based on characteristics of actual storms responsible for significant coastal flooding. The characteristics of these storms are typically determined by statistical study of the regional historical record of storms or by statistical study of tidal gages.

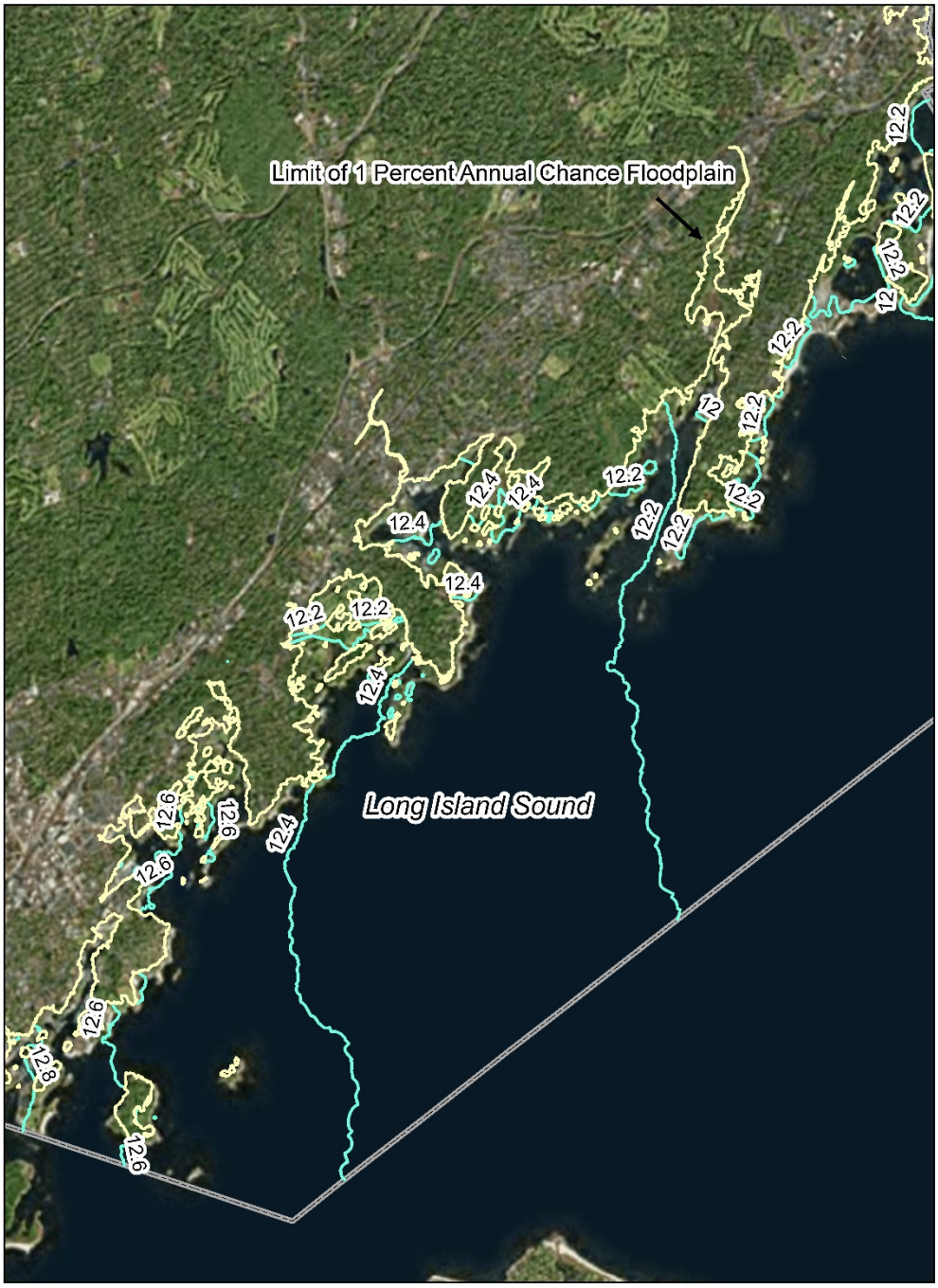
When historic records are used to calculate storm surge, characteristics such as the strength, size, track, etc., of storms are identified by site. Storm data was used in conjunction with numerical hydrodynamic models to determine the corresponding storm surge levels. An extreme value analysis was performed on the storm surge modeling results to determine the total stillwater (including wave setup) elevation for the 1% annual chance event.

Tidal gages can be used instead of historic records of storms when the available tidal gage record for the area represents both the astronomical tide component and the storm surge component.

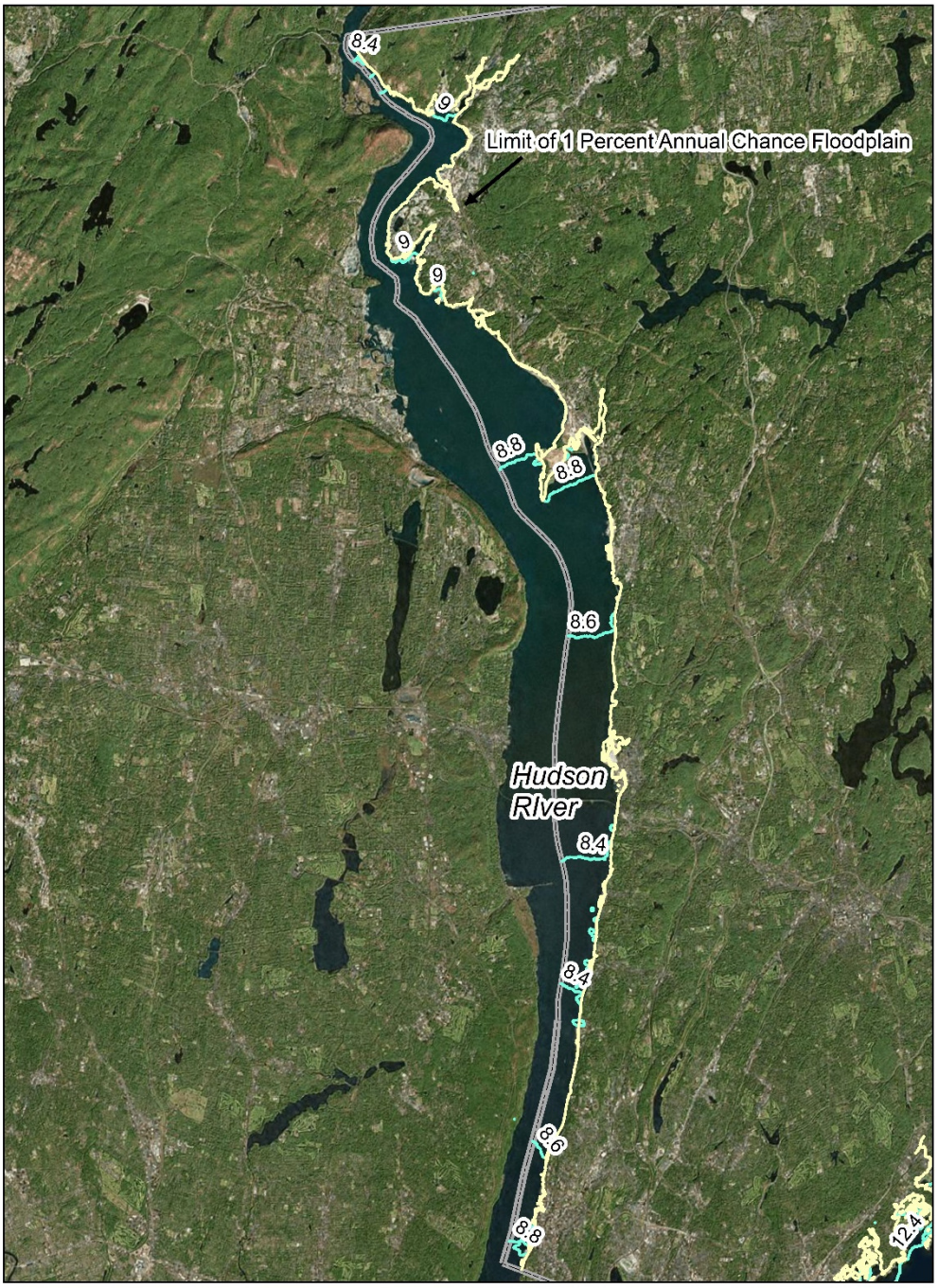
Table 16 provides the gage name, managing agency, gage type, gage identifier, start date, end date, and statistical methodology applied to each gage used to determine the stillwater elevations. For areas between gages, peak stillwater elevations for selected recurrence intervals were estimated by combining interpolation between gages and observed high water marks during major storms. A regionalized statistical approach was applied to the gage data so that stillwater elevations in areas between gages could be identified.

The region wide storm surge modeling system includes the Advanced Circulation Model for Oceanic, Coastal and Estuarine Waters (ADCIRC) for simulation of 2-dimensional hydrodynamics. ADCIRC was dynamically coupled to the unstructured numerical wave model Simulating Waves Nearshore (unSWAN) to calculate the contribution of waves to total storm surge (FEMA, 2010). The resulting model system is typically referred to as SWAN+ADCIRC. A seamless modeling grid was developed to support the storm surge modeling efforts. The modeling system validation consisted of a comprehensive tidal calibration followed by a validation using carefully reconstructed wind and pressure fields for six major flood events affecting the region: the 1938 hurricane, the Great Atlantic Hurricane of 1944, Hurricane Donna, Hurricane Gloria, and two extra-tropical storms, from 1984 and 1992. Two of the more recent storm events Irene and Sandy were not used in this study for validation. Both Irene and Sandy occurred during the study or after this storm surge study was completed. Irene was a major rainfall event and did not produce major coastal tidal flooding. The climatology of Sandy at this time is not well studied.

Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas



Long Island Sound



Hudson River

Table 16: Tide Gage Analysis Specifics

[Not Applicable to this Flood Risk Project]

5.3.2 Waves

The region wide storm surge modeling system includes the Advanced Circulation Model for Oceanic, Coastal and Estuarine Waters (ADCIRC) for simulation of 2-dimensional hydrodynamics. ADCIRC was dynamically coupled to the unstructured numerical wave model Simulating Waves Nearshore (unSWAN) to calculate the contribution of waves to total storm surge (FEMA, 2010). The resulting model system is typically referred to as SWAN+ADCIRC. A seamless modeling grid was developed to support the storm surge modeling efforts. The modeling system validation consisted of a comprehensive tidal calibration followed by a validation using carefully reconstructed wind and pressure fields for six major flood events affecting the region: the 1938 hurricane, the Great Atlantic Hurricane of 1944, Hurricane Donna, Hurricane Gloria, and two extra-tropical storms, from 1984 and 1992. Two of the more recent storm events Irene and Sandy were not used in this study for validation. Both Irene and Sandy occurred during the study or after this storm surge study was completed. Irene was a major rainfall event and did not produce major coastal tidal flooding. The climatology of Sandy at this time is not well studied.

Model skill was assessed by quantitative comparison of model output to wind, wave, and high water mark observations. The model was then used to re-create 30 historical extra-tropical storms and 157 synthetic hurricanes to create a synthetic water elevation record from which the 10-, 2-, 1-, and 0.2- percent annual chance of exceedence elevations were determined.

Wave setup results in an increased water level at the shoreline due to the breaking of waves and transfer of momentum to the water column during hurricanes and severe storms. For the New York and New Jersey surge study, wave setup was determined directly from the coupled wave and storm surge model. The total stillwater elevation with wave setup was then used for the erosion and overland wave modeling.

5.3.3 Coastal Erosion

A single storm episode can cause extensive erosion in coastal areas. Storm-induced erosion was evaluated to determine the modification to existing topography that is expected to be associated with flooding events. Erosion was evaluated using the methods listed in Table 15. The post-event eroded profile was used for the subsequent transect-based onshore wave hazard analyses.

5.3.4 Wave Hazard Analyses

Overland wave hazards were evaluated to determine the combined effects of ground elevation, vegetation, and physical features on overland wave propagation and wave runup. These analyses were performed at representative transects along all shorelines for which waves were expected to be present during the floods of the selected recurrence intervals. The results of these analyses were used to determine elevations for the 1% annual chance flood.

Transect locations were chosen with consideration given to the physical land characteristics as well as development type and density so that they would closely represent conditions in their locality. Additional consideration was given to changes in the total stillwater elevation. Transects were spaced close together in areas of complex topography and dense development or where total stillwater elevations varied. In areas having more uniform characteristics, transects were spaced

at larger intervals. Transect shown in Figure 9, "Transect Location Map," are also depicted on the FIRM. Table 17 provides the location, stillwater elevations, and starting wave conditions for each transect evaluated for overland wave hazards. In this table, "starting" indicates the parameter value at the beginning of the transect.

Wave Height Analysis

Wave height analyses were performed to determine wave heights and corresponding wave crest elevations for the areas inundated by coastal flooding and subject to overland wave propagation hazards. Refer to Figure 6 for a schematic of a coastal transect evaluated for overland wave propagation hazards.

Wave heights and wave crest elevations were modeled using the methods and models listed in Table 15, "Summary of Coastal Analyses".

Wave Runup Analysis

Wave runup analyses were performed to determine the height and extent of runup beyond the limit of stillwater inundation for the 1% annual chance flood. Wave runup is defined as the maximum vertical extent of wave uprush on a beach or structure. FEMA's 2007 Guidelines and Specifications require the 2-percent wave runup level be computed for the coastal feature being evaluated (cliff, coastal bluff, dune, or structure) (FEMA, February 2007). The 2-percent runup level is the highest 2 percent of wave runup affecting the shoreline during the 1-percent-annual-chance flood event. Each transect defined within the study area was evaluated for the applicability of wave runup, and if necessary, the appropriate runup methodology was selected and applied to each transect. Runup elevations were then compared to WHAFIS results to determine the dominant process affecting BFEs and associated flood hazard levels. Based on wave runup rates, wave overtopping was computed following the FEMA 2007 Guidelines and Specifications. Wave runup elevations were modeled using the methods and models listed in Table 15.

Table 17: Coastal Transect Parameters

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	1	4.2	6.9	9.2 9.2-9.2	* *	11.4 11.4-11.4	12.3 12.2-12.3	14.0 14.0-14.0
Long Island Sound	2	4.8	5.2	9.2 9.2-9.2	* *	11.4 11.4-11.4	12.3 12.3-12.3	14.0 14.0-14.0
Long Island Sound	3	4.6	5.3	9.3 9.3-9.3	* *	11.5 11.5-11.5	12.3 12.3-12.3	13.8 13.8-14.1
Long Island Sound	4	4.8	5.3	9.2 9.2-9.2	* *	11.4 11.3-11.4	12.2 12.1-12.2	13.9 13.8-13.9
Long Island Sound	5	4.8	4.5	9.2 9.2-9.3	* *	11.3 11.3-11.5	12.1 12.1-12.3	13.7 13.7-14.1
Long Island Sound	6	4.7	4.6	9.2 9.2-9.3	* *	11.3 11.3-11.5	12.1 12.1-12.4	13.7 13.7-14.1

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	7	5.0	4.8	9.2 9.2-9.3	* *	11.4 11.4-11.5	12.2 12.1-12.2	13.8 13.8-13.9
Long Island Sound	8	5.0	5.0	9.2 9.2-9.2	* *	11.3 11.3-11.3	12.0 12.0-12.1	13.6 13.6-13.7
Long Island Sound	9	5.0	4.7	9.2 9.2-9.2	* *	11.3 11.3-11.5	12.1 12.1-12.3	13.8 13.8-14.1
Long Island Sound	10	5.0	5.2	9.2 9.2-9.3	* *	11.3 11.3-11.3	12.2 12.1-12.2	13.9 13.9-14.0
Long Island Sound	11	5.1	5.0	9.3 9.3-9.3	* *	11.5 11.5-11.5	12.3 12.3-12.3	13.9 13.9-13.9
Long Island Sound	12	5.2	5.1	9.3 9.3-9.3	* *	11.4 11.4-11.4	12.2 12.2-12.2	13.8 13.8-13.9
Long Island Sound	13	5.3	6.1	9.3 9.3-9.3	* *	11.4 11.4-11.4	12.2 12.2-12.2	13.9 13.9-14.0

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	14	5.5	6.1	9.3 9.3-9.3	* *	11.4 11.4-11.4	12.2 12.2-12.2	13.8 13.8-14.0
Long Island Sound	15	5.5	5.8	9.3 9.3-9.3	* *	11.5 11.5-11.5	12.4 12.4-12.4	14.1 14.0-14.1
Long Island Sound	16	6.0	5.8	9.3 9.3-9.3	* *	11.4 11.4-11.4	12.2 12.2-12.3	13.8 13.8-14.0
Long Island Sound	17	4.8	5.7	9.3 9.3-9.3	* *	11.4 11.4-11.5	12.2 12.2-12.4	13.8 13.8-14.0
Long Island Sound	18	5.5	7.0	9.3 9.3-9.3	* *	11.3 11.3-11.4	12.1 12.1-12.1	13.8 13.8-13.8
Long Island Sound	19	1.9	2.9	9.3 9.2-9.3	* *	11.4 11.4-11.4	12.2 12.2-12.2	13.8 13.8-13.8
Long Island Sound	20	2.1	2.6	9.2 9.2-9.2	* *	11.4 11.3-11.4	12.1 12.1-12.1	13.9 13.9-13.9

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	21	1.8	2.6	9.3 9.3-9.3	* *	11.4 11.4-11.5	12.2 12.2-12.3	13.9 13.9-14.0
Long Island Sound	22	4.6	5.5	9.3 9.3-9.3	* *	11.5 11.4-11.5	12.3 12.2-12.3	14.0 13.8-14.0
Long Island Sound	23	4.8	6.0	9.3 9.3-9.3	* *	11.4 11.4-11.5	12.2 12.2-12.3	13.9 13.9-14.0
Long Island Sound	24	3.3	4.0	9.3 9.3-9.4	* *	11.5 11.5-11.5	12.4 12.4-12.4	14.1 14.1-14.2
Long Island Sound	25	3.3	3.9	9.4 9.4-9.5	* *	11.6 11.6-11.6	12.4 12.4-12.5	14.2 14.2-14.3
Long Island Sound	26	3.5	4.6	9.5 9.5-9.5	* *	11.5 11.5-11.6	12.3 12.3-12.4	14.0 14.0-14.3
Long Island Sound	27	3.1	4.4	9.5 9.5-9.5	* *	11.6 11.6-11.7	12.4 12.4-12.5	14.1 14.1-14.2

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	28	3.6	4.7	9.5 9.5-9.5	* *	11.6 11.6-11.6	12.4 12.4-12.4	14.0 14.0-14.0
Long Island Sound	29	5.0	6.1	9.4 9.4-9.5	* *	11.6 11.6-11.6	12.4 12.4-12.4	14.2 14.0-14.2
Long Island Sound	30	5.5	6.7	9.3 9.3-9.4	* *	11.5 11.5-11.5	12.3 12.3-12.3	14.0 14.0-14.2
Long Island Sound	31	5.1	4.9	9.4 9.3-9.4	* *	11.6 11.5-11.6	12.4 12.3-12.4	14.1 14.1-14.1
Long Island Sound	32	4.6	4.9	9.3 9.3-9.4	* *	11.5 11.5-11.6	12.3 12.3-12.4	14.1 14.1-14.3
Long Island Sound	33	5.0	4.9	9.4 9.3-9.4	* *	11.6 11.6-11.6	12.4 12.3-12.4	14.0 14.0-14.0
Long Island Sound	34	2.0	3.0	9.4 9.3-9.4	* *	11.5 11.5-11.6	12.4 12.4-12.4	14.1 14.1-14.2

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	35	2.6	3.4	9.4 9.4-9.4	* *	11.6 11.5-11.6	12.5 12.0-12.5	14.3 13.7-14.3
Long Island Sound	36	2.6	3.7	9.4 9.4-9.4	* *	11.7 11.7-11.7	12.5 12.5-12.5	14.3 14.3-14.3
Long Island Sound	37	3.6	4.2	9.4 9.4-9.4	* *	11.7 11.7-11.7	12.5 12.5-12.5	14.3 14.3-14.3
Long Island Sound	38	4.2	4.9	9.4 9.4-9.4	* *	11.6 11.6-11.6	12.4 12.4-12.5	14.2 14.2-14.2
Long Island Sound	39	4.2	5.0	9.4 9.4-9.4	* *	11.6 11.6-11.6	12.4 12.4-12.4	14.1 14.1-14.1
Long Island Sound	40	4.1	5.2	9.4 9.4-9.4	* *	11.6 11.6-11.6	12.5 12.5-12.5	14.2 14.2-14.2
Long Island Sound	41	5.0	5.4	9.4 9.4-9.4	* *	11.6 11.6-11.7	12.5 12.5-12.6	14.2 14.2-14.4

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	42	5.0	5.4	9.4 9.4-9.4	* *	11.7 11.7-11.7	12.5 12.5-12.6	14.2 14.2-14.4
Long Island Sound	43	5.4	7.0	9.4 9.4-9.4	* *	11.7 11.7-11.7	12.6 12.5-12.5	14.3 14.2-14.3
Long Island Sound	44	4.7	6.5	9.4 9.4-9.5	* *	11.7 11.7-11.7	12.6 12.5-12.6	14.3 14.3-14.3
Long Island Sound	45	2.4	3.6	9.5 9.5-9.5	* *	11.7 11.7-11.8	12.6 12.6-12.6	14.4 14.3-14.4
Long Island Sound	46	3.4	5.7	9.5 9.5-9.5	* *	11.8 11.8-11.8	12.6 12.6-12.6	14.4 14.4-14.4
Long Island Sound	47	3.6	6.0	9.4 9.4-9.5	* *	11.7 11.7-11.8	12.6 12.6-12.7	14.4 14.4-14.6
Long Island Sound	48	2.8	4.4	9.5 9.5-9.5	* *	11.8 11.8-11.8	12.6 12.7-12.7	14.6 14.6-14.7

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	49	3.4	5.2	9.5 9.5-9.5	* *	11.8 11.7-11.8	12.6 12.6-12.6	14.4 14.4-14.5
Long Island Sound	50	4.5	5.6	9.5 9.5-9.5	* *	11.7 11.7-11.8	12.6 12.6-12.7	14.6 14.4-14.6
Long Island Sound	51	5.7	5.8	9.5 9.5-9.5	* *	11.7 11.7-11.8	12.5 12.5-12.5	14.3 14.3-14.4
Long Island Sound	52	4.9	6.8	9.5 9.5-9.5	* *	11.8 11.7-11.8	12.6 12.6-12.6	14.3 14.3-14.4
Long Island Sound	53	5.2	6.6	9.5 9.5-9.6	* *	11.8 11.8-11.8	12.6 12.6-12.7	14.4 14.4-14.5
Long Island Sound	54	5.0	5.9	9.5 9.5-9.5	* *	11.8 11.8-11.9	12.7 12.6-12.7	14.5 14.5-14.6
Long Island Sound	55	4.0	5.7	9.5 9.5-9.6	* *	11.8 11.8-11.9	12.6 12.6-12.8	14.5 14.5-14.6

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Long Island Sound	56	2.2	4.2	9.5 9.5-9.6	* *	11.9 11.9-12.0	12.7 12.7-12.7	14.6 14.6-14.8
Long Island Sound	57	3.4	4.6	9.5 9.5-9.6	* *	11.8 11.8-12.0	12.7 12.7-12.8	14.5 14.5-14.8
Long Island Sound	58	3.9	4.7	9.6 9.6-9.6	* *	11.9 11.9-12.0	12.8 12.7-12.8	14.5 14.5-14.8
Long Island Sound	59	2.2	3.4	9.7 9.7-9.7	* *	12.0 12.0-12.0	12.6 12.9-13.0	14.9 14.9-14.9
Long Island Sound	60	6.9	8.0	9.4 9.4-9.4	* *	11.6 11.6-11.7	12.5 12.4-12.5	14.2 14.2-14.2
Long Island Sound	61	5.3	7.0	9.5 9.5-9.5	* *	11.7 11.7-11.7	12.6 12.6-12.6	14.3 14.3-14.3
Long Island Sound	62	3.5	4.7	9.5 9.5-9.5	* *	11.8 11.8-11.8	12.5 12.6-12.6	14.4 14.4-14.4

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	63	3.5	4.6	5.4 5.3-5.4	* *	7.7 7.7-7.7	8.8 8.9-8.9	12.1 11.9-12.1
Hudson River	64	3.7	4.8	5.3 5.3-5.3	* *	7.7 7.7-7.7	8.8 8.8-8.8	11.9 11.8-11.9
Hudson River	65	3.7	4.5	5.3 5.3-5.3	* *	7.6 7.6-7.6	8.7 8.8-8.8	11.9 11.9-11.9
Hudson River	66	4.1	4.6	5.3 5.2-5.3	* *	7.6 7.6-7.6	8.7 8.7-8.7	11.9 11.9-11.9
Hudson River	67	4.0	4.6	5.2 5.2-5.2	* *	7.5 7.5-7.5	8.7 8.6-8.7	11.8 11.8-11.8
Hudson River	68	4.0	4.6	5.2 5.2-5.2	* *	7.5 7.5-7.5	8.6 8.6-8.6	11.8 11.8-11.8
Hudson River	69	3.9	4.6	5.2 5.2-5.2	* *	7.5 7.5-7.5	8.6 8.6-8.6	11.8 11.7-11.8

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	70	4.0	4.6	5.2 5.2-5.2	* *	7.5 7.5-7.5	8.6 8.6-8.6	11.8 11.8-11.8
Hudson River	71	4.4	5.0	5.2 5.2-5.2	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.7 11.7-11.7
Hudson River	72	4.3	5.0	5.2 5.2-5.2	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.7 11.7-11.7
Hudson River	73	4.3	4.9	5.2 5.2-5.2	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.7 11.7-11.7
Hudson River	74	4.3	5.1	5.2 5.2-5.2	* *	7.4 7.4-7.4	8.4 8.4-8.4	11.6 11.6-11.6
Hudson River	75	4.5	5.0	5.1 5.1-5.1	* *	7.3 7.2-7.3	8.3 8.3-8.3	11.5 11.5-11.5
Hudson River	76	4.5	4.9	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.5 11.5-11.5

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	77	3.6	4.3	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.5 11.5-11.5
Hudson River	78	3.7	4.0	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.5 11.5-11.5
Hudson River	79	3.8	3.8	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.6 11.5-11.6
Hudson River	80	3.9	3.8	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.5 11.5-11.5
Hudson River	81	3.9	3.8	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.6 11.6-11.6
Hudson River	82	4.0	3.8	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.6 11.6-11.6
Hudson River	83	4.4	4.0	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.7 11.7-11.7

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	84	4.7	3.9	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.4 8.4-8.4	11.7 11.7-11.7
Hudson River	85	4.9	3.9	5.1 5.1-5.1	* *	7.3 7.3-7.3	8.5 8.4-8.4	11.8 11.7-11.8
Hudson River	86	4.9	3.9	5.1 5.1-5.1	* *	7.4 7.3-7.4	8.5 8.5-8.5	11.8 11.7-11.8
Hudson River	87	5.0	4.0	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.8 11.8-11.8
Hudson River	88	5.1	4.0	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.8 11.8-11.8
Hudson River	89	5.1	4.1	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.5 8.5-8.5	11.9 11.9-11.9
Hudson River	90	5.1	4.1	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.5 8.5-8.5	12.0 12.0-12.0

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	91	5.2	4.2	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.5 8.5-8.5	12.1 12.0-12.1
Hudson River	92	5.2	4.3	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.6 8.6-8.6	12.1 12.0-12.1
Hudson River	93	5.3	4.3	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.6 8.6-8.6	12.1 12.1-12.1
Hudson River	94	5.4	4.4	5.1 5.1-5.1	* *	7.4 7.4-7.4	8.6 8.6-8.6	12.2 12.2-12.2
Hudson River	95	5.4	4.4	5.1 5.1-5.1	* *	7.5 7.4-7.5	8.6 8.6-8.6	12.2 12.1-12.2
Hudson River	96	5.5	4.5	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.7 8.6-8.7	12.2 12.2-12.2
Hudson River	97	4.8	4.4	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.7 8.7-8.7	12.3 12.1-12.3

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	98	4.9	4.4	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.7 8.7-8.7	12.3 12.3-12.3
Hudson River	99	4.8	4.3	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.8 8.7-8.7	12.4 12.4-12.4
Hudson River	100	4.7	4.3	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.8 8.8-8.8	12.5 12.5-12.5
Hudson River	101	4.3	4.2	5.1 5.1-5.1	* *	7.6 7.6-7.6	8.9 8.8-8.8	12.6 12.6-12.6
Hudson River	102	4.3	4.2	5.1 5.1-5.1	* *	7.6 7.6-7.6	8.9 8.8-8.9	12.6 12.5-12.6
Hudson River	103	4.2	4.1	5.2 5.1-5.2	* *	7.6 7.6-7.6	8.9 8.8-8.9	12.7 12.6-12.7
Hudson River	104	4.1	4.0	5.2 5.2-5.2	* *	7.6 7.5-7.6	8.8 8.8-8.8	12.6 12.6-12.6

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	105	4.4	4.4	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.6 12.6-12.6
Hudson River	106	5.6	4.6	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.4 12.4-12.5
Hudson River	107	5.0	4.4	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.4 12.4-12.4
Hudson River	108	5.1	4.4	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.5 12.5-12.5
Hudson River	109	3.4	3.2	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.5 12.5-12.5
Hudson River	110	3.7	3.5	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.8 8.8-8.8	12.5 12.5-12.5
Hudson River	111	4.3	4.0	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.9 8.8-8.8	12.5 12.5-12.6

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	112	5.1	4.4	5.1 5.1-5.1	* *	7.5 7.5-7.5	8.8 8.8-8.8	12.5 12.5-12.6
Hudson River	113	5.3	4.4	5.1 5.1-5.1	* *	7.6 7.5-7.5	8.9 8.9-8.9	12.7 12.7-12.7
Hudson River	114	5.6	4.5	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.9 8.9-8.9	12.7 12.7-12.7
Hudson River	115	5.8	4.6	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.9 8.9-8.9	12.7 12.7-12.7
Hudson River	116	5.8	4.6	5.2 5.2-5.2	* *	7.7 7.7-7.7	8.9 8.9-8.9	12.7 12.7-12.8
Hudson River	117	5.6	4.7	5.2 5.2-5.2	* *	7.6 7.6-7.6	8.9 8.9-8.9	12.8 12.8-12.8
Hudson River	118	5.8	4.6	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	119	5.6	4.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	120	5.4	4.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	121	5.2	4.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	122	5.2	4.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.9
Hudson River	123	5.0	4.3	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.7 12.7-12.7
Hudson River	124	4.0	4.1	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.7-12.8
Hudson River	125	3.9	3.7	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.7 12.7-12.7

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	126	3.9	3.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 8.9-9.0	12.7 12.7-12.8
Hudson River	127	4.0	3.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	128	2.6	3.0	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 8.9-8.9	12.8 12.8-12.8
Hudson River	129	3.1	3.1	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	130	3.0	3.2	5.1 5.1-5.1	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	131	3.0	3.2	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	132	3.1	3.3	5.1 5.1-5.1	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8

*Data not available

Table 17: Coastal Transect Parameters (continued)

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD 88) Range of Stillwater Elevations (ft NAVD 88)				
		Significant Wave Height H_s (ft)	Peak Wave Period T_p (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hudson River	133	3.5	3.4	5.1 5.1-5.1	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	134	3.3	3.3	5.1 5.1-5.1	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.8 12.8-12.8
Hudson River	135	4.0	3.4	5.2 5.2-5.2	* *	7.7 7.7-7.7	9.0 9.0-9.0	12.9 12.9-13.0
Hudson River	136	3.4	3.2	5.1 5.1-5.1	* *	7.6 7.6-7.6	8.9 8.9-8.9	12.7 12.7-12.8
Hudson River	137	2.4	3.0	5.0 5.0-5.0	* *	7.5 7.5-7.5	8.8 8.8-8.8	12.6 12.6-12.6
Hudson River	138	2.2	2.8	4.8 4.8-4.8	* *	7.3 7.2-7.3	8.5 8.4-8.5	12.1 12.1-12.1
Hudson River	139	2.6	3.0	4.8 4.8-4.8	* *	7.2 7.2-7.2	8.4 8.4-8.4	11.7 11.7-11.7

*Data Not Available

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Figure 9: Transect Location Map

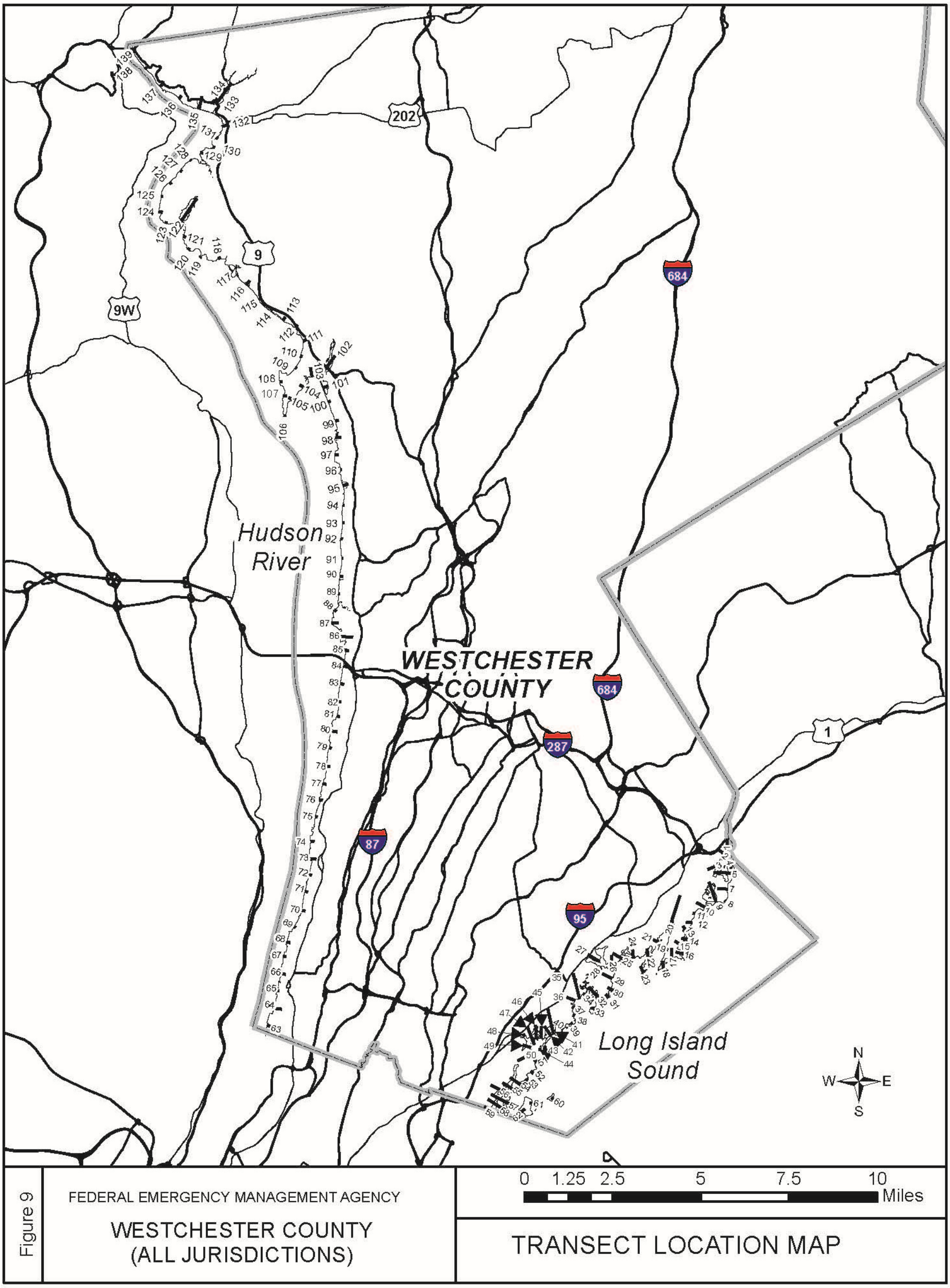

Figure 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY
(ALL JURISDICTIONS)

TRANSECT LOCATION MAP

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5.4 Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 18: Summary of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 19: Results of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to North American Vertical Datum of 1988 (NAVD88). These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please contact information services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Westchester County are provided in Table 20.

Table 20: Countywide Vertical Datum Conversion

Average Conversion from NGVD29 to NAVD88 = -1.0 foot

Table 21: Stream-by-Stream Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping.

Base map information shown on the FIRM was derived from the sources described in Table 22.

Table 22: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Digital Orthophoto	NY State Cyber	2013	0.5 feet	2013 High Resolution Imagery
Political boundaries	NY State Cyber	2009	1:5,000	Municipal and county boundary
Transportation Features	U.S. Department of Commerce, U.S. Census Bureau, Geography Division	2013	Various	Roads and railroads
Surface Water Features	USGS	2012	1:24,000	Streams, rivers, and lakes were derived from NHD data

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23. For each coastal flooding source studied as part of this FIS Report, the mapped floodplain boundaries on the FIRM have been delineated using the flood and wave elevations determined at each transect; between transects, boundaries were delineated using land use and land cover data, the topographic elevation data described in Table 23, and knowledge of coastal flood processes. In ponding areas, flood elevations were determined at each junction of the model; between junctions, boundaries were interpolated using the topographic elevation data described in Table 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

Table 23: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
Westchester County	Long Island Sound, Hudson River	Light Detection and Ranging data (LiDAR)	N/A	2 ft	Photo Science Inc. 2012
Westchester County	All Riverine Streams within Westchester County	Light Detection and Ranging data (LiDAR)	N/A	2 ft	Westchester County GIS 2006

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Annsville Creek								
A	1,265[1]	*	2,937	1.3***	**	3.6***	4.4***	0.8***
B	1,770[1]	*	2,209	1.7***	**	3.6***	4.4***	0.8***
C	3,635[1]	*	2,667	1.4***	**	3.6***	4.4***	0.8***
Barney Brook								
A	329[2]	20	272	3.6	39.7	39.7	40.3	0.6
B	926[2]	26	91	10.8	54.2	54.2	54.2	0.0
C	1,480[2]	61	310	3.2	71.0	71.0	71.7	0.7
D	1,789[2]	57	287	3.4	77.9	77.9	78.9	1.0
E	2,323[2]	43	164	6.0	89.7	89.7	90.0	0.3
F	3,270[2]	40	237	2.9	120.5	120.5	121.0	0.5
G	3,675[2]	43	96	7.1	138.6	138.6	138.6	0.0
H	4,271[2]	40	156	4.3	159.8	159.8	160.3	0.5
I	4,772[2]	34	111	6.1	195.6	195.6	195.7	0.1
J	5,302[2]	80	455	1.5	231.2	231.2	232.0	0.8
K	5,807[2]	70	131	5.2	237.7	237.7	238.1	0.4
L	6,263[2]	80	188	3.6	240.3	240.3	241.2	0.9
M	6,836[2]	60	260	2.6	269.1	269.1	269.7	0.6
N	7,485[2]	495	2,804	0.2	290.3	290.3	290.4	0.1
O	8,130[2]	22	42	7.8	294.7	294.7	294.7	0.0
P	8,843[2]	50	55	6.0	331.9	331.9	331.9	0.0
Barney Brook Tributary								
A	236[3]	22	99	3.3	110.6	110.6	111.1	0.5
B	706[3]	6	31	10.8	132.9	132.9	133.5	0.5
C	1,218[3]	84	552	0.6	155.3	155.3	156.2	1.0
D	1,725[3]	59	345	1.0	158.8	158.8	159.5	0.7

[1]Feet above confluence with Hudson River
[2]Feet above limit of detailed study
[3]Feet above confluence with Barney Brook
*Floodway coincident with channel banks
**Data superseded by updated coastal analysis
***Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

ANNSVILLE CREEK – BARNEY BROOK – BARNEY BROOK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Barney Brook Tributary (continued)								
E	2,210[1]	29	151	2.2	163.5	163.5	164.3	0.8
F	2,690[1]	43	132	2.5	168.1	168.1	169.0	0.9
G	3,164[1]	17	53	6.2	171.7	171.7	172.6	0.9
H	3,625[1]	50	68	4.9	210.9	210.9	211.3	0.4
I	4,006[1]	23	55	6.1	249.0	249.0	249.6	0.6
Bear Gutter Creek								
A	1,196[2]	26	83	5.5	357.2	353.4[4]	353.3	0.0
B	2,016[2]	26	92	5.0	357.2	357.2	357.3	0.1
C	2,816[2]	38	150	3.1	361.1	361.1	361.4	0.3
D	4,045[2]	60	205	2.2	366.6	366.6	366.9	0.3
Beaver Swamp Brook								
A	2,022[3]	28	51	7.7	12.7	4.4[5]	4.6	0.2
B	2,729[3]	48	87	4.4	22.8	22.8	22.8	0.0
C	2,895[3]	42	142	2.7	23.2	23.2	23.8	0.6
D	3,212[3]	25	97	4.0	27.2	27.2	28.1	0.9
E	3,552[3]	13	41	9.2	28.4	28.4	28.5	0.1
F	3,668[3]	28	134	2.9	31.3	31.3	31.4	0.1
G	4,345[3]	31	183	2.1	32.3	32.3	33.1	0.8
H	4,529[3]	33	202	1.9	32.5	32.5	33.4	0.9
I	4,808[3]	68	339	2.0	32.8	32.8	33.7	0.9
J	5,631[3]	77	406	1.7	33.3	33.3	34.2	0.9
K	7,463[3]	221	1,385	0.4	33.7	33.7	34.7	1.0
L	7,636[3]	242	1,928	0.3	33.7	33.7	34.7	1.0
M	8,003[3]	356	2,310	0.3	33.8	33.8	34.8	1.0

[1]Feet above confluence with Barney Brook
[2]Feet above confluence with Kensico Reservoir
[3]Feet above limit of floodway
[4]Elevation computed without consideration of backwater effects from Kensico Reservoir
[5]Elevation computed without consideration of backwater effects from Long Island Sound

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BARNEY BROOK TRIBUTARY – BEAR GUTTER CREEK – BEAVER SWAMP BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Beaver Swamp Brook (continued)								
N	9,294	299	1,188	0.6	33.8	33.8	34.8	1.0
O	9,934	34	128	5.1	33.8	33.8	34.7	0.9
P	10,053	42	219	3.0	35.3	35.3	36.0	0.7
Q	10,519	40	203	3.3	35.3	35.3	36.1	0.8
R	10,614	40	266	2.5	36.0	36.0	36.9	0.9
S	10,810	69	388	1.7	36.7	36.7	37.6	0.9
T	11,550	45	343	1.8	37.8	37.8	38.3	0.5
U	11,772	76	478	1.3	40.7	40.7	40.7	0.0
V	12,595	77	698	1.4	40.8	40.8	41.2	0.4
W	12,778	88	790	1.2	41.2	41.2	41.6	0.4
X	14,528	133	694	1.4	41.3	41.3	42.3	1.0
Y	14,960	169	1,113	0.9	41.6	41.6	42.5	0.9
Z	16,321	39	201	4.4	42.8	42.8	43.6	0.8
AA	16,393	48	420	2.1	47.1	47.1	47.1	0.0
AB	16,577	120	998	0.9	47.2	47.2	47.2	0.0
AC	17,690	33	96	9.3	47.8	47.8	48.0	0.2
AD	17,731	25	88	10.1	49.6	49.6	49.6	0.0
AE	18,059	45	144	6.2	51.8	51.8	52.2	0.4
AF	19,014	89	838	1.1	54.7	54.7	55.6	0.9
AG	19,818	54	120	7.4	56.7	56.7	56.9	0.2
AH	19,992	59	147	6.1	64.4	64.4	64.8	0.4
AI	20,033	186	1,324	0.7	72.1	72.1	72.4	0.3
AJ	20,519	82	290	3.1	73.3	73.3	74.1	0.8
AK	21,182	42	140	5.4	77.2	77.2	77.9	0.7
AL	21,346	112	1,410	0.5	80.1	80.1	81.0	0.9
AM	21,689	62	698	1.1	80.1	80.1	81.1	1.0

[1]Feet above limit of floodway

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER SWAMP BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Blind Brook								
A	1,088	111	558	5.9**	*	4.1**	4.1**	0.0**
B	1,756	113	954	3.4**	*	5.2**	5.3**	0.1**
C	2,026	112	898	3.6**	*	8.5**	8.6**	0.1**
D	5,473	431	2,318	1.4**	*	9.8**	10.1**	0.3**
E	5,620	425	2,569	1.3**	*	10.8**	11.1**	0.3**
F	8,617	376	1,854	1.8	13.2	13.2	13.8	0.6**
G	8,791	376	1,635	2.0	13.5	13.5	13.6	0.1
H	9,945	178	790	4.1	14.0	14.0	14.5	0.5
I	10,132	115	737	4.4	16.7	16.7	17.0	0.3
J	11,475	91	525	6.2	18.5	18.5	19.4	0.9
K	11,556	191	960	3.4	21.1	21.1	21.3	0.2
L	12,248	223	1,051	2.8	22.5	22.5	23.3	0.8
M	12,977	90	1,265	2.4	30.3	30.3	30.3	0.0
N	18,371	120	770	3.5	32.0	32.0	32.9	0.9
O	20,679	46	218	11.8	35.0	35.0	35.7	0.7
P	22,113	50	546	4.7	58.7	58.7	58.9	0.2
Q	23,398	127	484	4.9	63.5	63.5	63.6	0.1
R	24,205	59	339	7.0	69.4	69.4	70.4	1.0
S	25,074	37	238	10.0	74.3	74.3	75.2	0.9
T	27,024	89	378	5.7	88.8	88.8	88.8	0.0
U	27,556	117	554	3.9	94.5	94.5	94.9	0.4
V	27,943	123	297	7.3	99.1	99.1	99.1	0.0
W	28,525	53	247	8.7	104.4	104.4	105.2	0.8
X	31,426	54	169	9.1	126.8	126.8	126.8	0.0
Y	31,959	47	155	9.9	133.3	133.3	133.3	0.0
Z	32,143	70	461	3.3	139.0	139.0	139.0	0.0

[1]Feet above confluence with Long Island Sound

[2]Elevation computed without consideration of backwater effects from Long Island Sound

*Data superseded by updated coastal analysis

**Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BLIND BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Blind Brook (continued)								
AA	32,841	73	315	2.1	146.6	146.6	146.6	0.0
AB	33,253	33	78	8.5	148.3	148.3	148.3	0.0
AC	33,387	47	189	3.5	149.8	149.8	149.8	0.0
AD	33,942	80	152	4.3	156.2	156.2	156.2	0.0
AE	34,146	72	318	4.8	160.3	160.3	160.3	0.0
AF	35,018	27	129	11.9	167.3	167.3	167.4	0.1
AG	35,964	31	191	6.0	187.0	187.0	187.5	0.5
AH	36,097	180	715	1.6	215.7	215.7	215.9	0.2
AI	37,391	57	176	6.5	216.4	216.4	216.5	0.1
AJ	38,176	53	207	5.5	224.2	224.2	224.3	0.1
AK	38,530	36	204	5.6	231.3	231.3	232.0	0.7
AL	39,081	39	116	9.8	239.9	239.9	239.9	0.0
AM	41,540	60	110	7.7	251.1	251.1	251.1	0.0
AN	42,181	35	130	6.5	257.2	257.2	257.6	0.4
AO	43,546	127	329	2.6	261.8	261.8	261.9	0.1
AP	45,238	235	489	1.7	267.2	267.2	267.5	0.3
AQ	45,898	52	119	5.1	273.5	273.5	273.9	0.4
AR	46,069	59	97	6.2	278.1	278.1	278.1	0.0
AS	46,675	48	81	7.4	288.2	288.2	288.2	0.0
AT	46,915	34	72	8.3	307.5	307.5	307.5	0.0
AU	47,472	29	79	7.6	335.4	335.4	335.4	0.0
AV	47,650	56	98	7.0	344.0	344.0	344.0	0.0
AW	48,293	69	115	7.4	357.1	357.1	357.1	0.0
AX	48,787	60	179	4.7	359.2	359.2	359.4	0.2
AY	50,084	22	79	10.8	362.6	362.6	362.7	0.1

[1]Feet above confluence with Long Island Sound

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BLIND BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Branch Brook								
A	3,234[1]	68	337	1.5	281.3	281.3	281.9	0.6
B	3,717[1]	59	353	1.4	281.5	281.5	282.2	0.7
C	4,607[1]	69	317	1.3	281.9	281.9	281.9	0.0
D	5,072[1]	45	247	1.7	282.9	282.9	282.9	0.0
E	6,382[1]	93	439	1.0	284.4	284.4	284.6	0.2
F	7,352[1]	99	297	1.4	284.5	284.5	284.9	0.3
G	8,392[1]	90	246	1.7	285.2	285.2	285.8	0.6
H	8,592[1]	30	123	3.4	286.1	286.1	286.5	0.4
I	9,737[1]	66	263	1.4	287.2	287.2	287.9	0.7
J	11,186[1]	207	850	0.4	291.9	291.9	292.3	0.4
K	11,977[1]	211	969	0.4	291.9	291.9	292.6	0.7
L	12,648[1]	139	753	0.5	292.0	292.0	292.7	0.7
M	13,995[1]	90	345	1.1	292.2	292.2	292.9	0.7
N	14,679[1]	156	381	0.5	293.8	293.8	294.7	0.9
O	15,531[1]	310	1,483	0.1	298.1	298.1	298.1	0.0
P	15,940[1]	16	28	7.5	312.0	312.0	312.1	0.1
Q	16,562[1]	42	73	2.9	401.7	401.7	402.2	0.5
R	16,751[1]	79	327	0.6	405.4	405.4	405.9	0.5
Branch 1 Hutchinson River								
A	50[2]	25	75	3.2	47.6	47.6	48.5	0.9
B	275[2]	19	37	6.4	54.1	54.1	54.1	0.0
C	760[2]	45	57	4.2	76.7	76.7	77.1	0.4
D	960[2]	57	114	2.1	78.1	78.1	78.4	0.3
Branch 2 Kisco River								
A	3,790[3]	17	44	4.9	343.5	343.5	343.6	0.1
B	4,250[3]	16	45	4.8	344.3	344.3	344.9	0.6
C	5,000[3]	15	71	3.0	346.2	346.2	347.2	1.0

[1]Feet above confluence with Kisco River
[2]Feet above Highbrook Avenue
[3]Feet above limit of detailed study

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BRANCH BROOK – BRANCH 1 HUTCHINSON RIVER – BRANCH 2 KISKO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Brentwood Brook								
A	202[1]	19	33	7.5	37.3	37.3	37.3	0.0
B	798[1]	13	29	89.5	44.9	44.9	44.9	0.0
C	2,208[1]	10	27	9.1	49.7	49.7	49.7	0.0
D	2,639[1]	9	33	7.6	52.7	52.7	52.7	0.0
E	3,581[1]	10	34	6.7	56.3	56.3	56.3	0.0
F	9,842[1]	40	165	3	72.0	72.0	72.8	0.8
G	12,264[1]	70	305	0.7	78.7	78.7	79.6	0.9
H	13,257[1]	30	60	3.7	101.1	101.1	101.3	0.2
I	13,702[1]	28	35	6.3	119.8	119.8	120.5	0.7
Bronx River								
A	111[2]	128	1,291	3.0	69.9	69.9	70.6	0.7
B	1,220[2]	125	1,033	3.7	70.6	70.6	71.3	0.7
C	1,792[2]	91	1,053	3.7	71.1	71.1	71.8	0.7
D	2,334[2]	62	709	5.5	71.4	71.4	72.0	0.6
E	2,912[2]	215	1,550	2.5	72.1	72.1	72.7	0.6
F	3,625[2]	85	945	4.0	72.4	72.4	72.9	0.5
G	4,716[2]	68	780	5.0	73.0	73.0	73.5	0.5
H	5,446[2]	54	566	5.7	73.3	73.3	73.6	0.3
I	5,852[2]	97	830	3.9	73.5	73.5	73.5	0.0
J	6,279[2]	42	566	5.7	75.0	75.0	75.1	0.1
K	6,846[2]	63	800	4.0	75.5	75.5	75.6	0.1
L	7,515[2]	257	1,824	1.8	76.1	76.1	76.6	0.5
M	8,148[2]	336	2,719	1.2	76.2	76.2	76.7	0.5
N	8,757[2]	450	3,178	1.0	76.2	76.2	76.8	0.6
O	9,547[2]	63	721	4.4	76.3	76.3	76.8	0.5
P	9,912[2]	132	975	3.3	77.3	77.3	77.8	0.5

[1]Feet above confluence with Beaver Swamp Brook
[2]Feet above county boundary
[3]Width extends beyond county boundary

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BRENTWOOD BROOK – BRONX RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bronx River (continued)								
Q	11,318	56	446	7.1	77.9	77.9	78.3	0.5
R	11,998	68	742	4.2	79.0	79.0	79.7	0.7
S	12,892	94	846	3.7	79.4	79.4	80.2	0.8
T	13,541	180	1,504	2.1	79.7	79.7	80.5	0.8
U	14,343	538	4,099	0.8	80.0	80.0	80.7	0.7
V	15,340	114	913	3.4	80.8	80.8	81.4	0.6
W	15,940	99	861	3.5	83.3	83.3	83.4	0.1
X	16,336	94	1,109	2.3	83.7	83.7	83.9	0.2
Y	17,051	199	1,284	2.0	83.8	83.8	84.0	0.2
Z	17,511	236	1,919	1.3	83.9	83.9	84.3	0.4
AA	18,714	284	1,992	1.3	84.9	84.9	85.3	0.4
AB	19,017	39	218	11.8	86.2	86.2	86.7	0.5
AC	20,039	95	662	3.9	91.7	91.7	92.0	0.3
AD	20,871	190	1,139	2.2	92.0	92.0	92.3	0.3
AE	21,791	175	940	2.7	93.5	93.5	93.7	0.3
AF	23,380	185	402	6.4	98.6	98.6	99.1	0.4
AG	23,819	103	661	3.9	103.5	103.5	103.7	0.3
AH	24,819	496	3,351	0.8	104.1	104.1	104.4	0.3
AI	29,857	130	740	3.2	106.4	106.4	106.8	0.4
AJ	34,948	55	501	4.8	114.7	114.7	115.1	0.4
AK	39,899	102	557	4.1	137.7	137.7	138.7	1.0
AL	45,388	39	273	8.0	156.5	156.5	157.3	0.8
AM	50,177	89	637	3.4	166.8	166.8	167.4	0.6
AN	54,817	55	380	5.4	178.2	178.2	178.8	0.6
AO	59,895	255	1,722	1.1	184.5	184.5	185.2	0.7
AP	65,156	102	554	3.5	188.0	188.0	188.3	0.3

[1]Feet above county boundary

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BRONX RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bronx River (continued)								
AQ	69,895[1]	427	2,483	0.8	193.5	193.5	194.2	0.8
AR	75,574[1]	96	287	6.7	207.7	207.7	207.7	0.0
Brown Brook								
A	368[2]	21	114	7.8	200.4	200.4	201.4	1.0
B	452[2]	39	701	1.3	218.4	218.4	218.8	0.4
C	4,494[2]	29	192	4.1	218.4	218.4	219.2	0.8
D	4,610[2]	29	284	2.8	223.6	223.6	224.4	0.8
E	6,279[2]	76	175	4.6	223.8	223.8	224.5	0.7
F	6,365[2]	47	103	7.7	229.4	229.4	229.4	0.0
G	6,584[2]	210	652	1.2	231.3	231.3	231.3	0.0
H	7,455[2]	75	208	3.8	232.8	232.8	232.9	0.1
I	7,566[2]	278	1,021	0.8	234.9	234.9	235.8	0.9
J	9,432[2]	394	1,542	0.5	235.0	235.0	236.0	1.0
K	10,307[2]	16	67	9.4	239.7	239.7	240.4	0.7
L	10,355[2]	36	267	2.4	246.1	246.1	246.9	0.8
M	11,296[2]	95	539	1.2	246.2	246.2	247.2	1.0
N	11,936[2]	53	100	6.3	249.2	249.2	249.2	0.0
O	12,727[2]	20	55	9.1	257.8	257.8	258.2	0.4
P	12,834[2]	26	109	4.6	261.7	261.7	262.1	0.4
Q	12,862[2]	96	654	0.8	264.4	264.4	264.7	0.3
R	13,348[2]	42	89	5.7	264.4	264.4	264.4	0.0
S	13,876[2]	29	73	6.9	269.9	269.9	270.1	0.2
T	14,095[2]	37	89	5.6	278.6	278.6	278.7	0.1
U	14,181[2]	113	637	0.8	279.2	279.2	279.3	0.1
V	14,776[2]	13	49	10.4	296.9	296.9	297.0	0.1

[1]Feet above county boundary

[2]Feet above confluence with Muscoot Reservoir

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BRONX RIVER – BROWN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Brown Brook (continued)								
W	15,308[1]	27	60	8.4	311.0	311.0	311.0	0.0
X	15,701[1]	30	79	6.4	316.8	316.8	317.2	0.4
Y	15,722[1]	34	117	4.3	319.4	319.4	319.5	0.1
Z	16,716[1]	21	58	8.7	333.0	333.0	333.6	0.6
AA	17,063[1]	22	60	8.3	340.5	340.5	341.1	0.6
AB	17,568[1]	13	66	7.7	347.3	347.3	347.6	0.3
AC	18,149[1]	84	338	1.1	352.5	352.5	353.5	1.0
AD	19,146[1]	196	445	0.8	352.6	352.6	353.6	1.0
AE	19,455[1]	69	91	4.0	353.8	353.8	354.5	0.7
AF	19,522[1]	18	47	6.7	355.7	355.7	356.2	0.5
AG	19,572[1]	30	120	2.6	358.0	358.0	358.8	0.8
AH	19,948[1]	15	34	9.2	369.9	369.9	369.9	0.0
AI	20,360[1]	21	40	7.8	381.5	381.5	381.5	0.0
AJ	20,949[1]	24	45	6.9	421.6	421.6	421.8	0.2
AK	21,509[1]	60	205	1.5	424.3	424.3	425.0	0.7
Byram River Reach 1								
A	102[2]	318[3]	6,518	0.8**	*	11.9**	12.7**	0.8**
B	1,306[2]	227[3]	4,719	1.2**	*	11.9**	12.7**	0.8**
C	2,330[2]	232[3]	4,778	1.1**	*	12.0**	12.8**	0.8**
D	2,537[2]	253[3]	5,227	1.0	12.2	12.0[4]	12.8	0.8
E	3,407[2]	135[3]	2,491	2.2	12.2	12.0[4]	12.8	0.8
F	4,450[2]	282[3]	4,770	1.1	12.2	12.1[4]	12.9	0.8
G	5,570[2]	120[3]	2,253	2.4	12.2	12.1[4]	12.9	0.8
H	6,032[2]	142[3]	2,371	2.3	12.2	12.1[4]	12.9	0.8
I	6,203[2]	188[3]	2,163	2.5	12.2	12.2	13.1	0.9

[1]Feet above confluence with Muscoot Reservoir

[2]Feet above confluence with Long Island Sound

[3]Width extends beyond county boundary

[4]Elevation computed without consideration of backwater effects from Long Island Sound

*Data superseded by updated coastal analysis

**Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BROWN BROOK – BYRAM RIVER REACH 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Byram River Reach 1 (continued)								
J	6,652[1]	64[3]	997	5.2	12.8	12.8	13.5	0.7
K	7,456[1]	91	1,433	3.6	13.5	13.5	14.3	0.8
L	8,654[1]	109	1,529	3.4	14.0	14.0	15.0	1.0
M	9,191[1]	224	2,184	2.4	14.2	14.2	15.2	1.0
N	9,625[1]	50	790	6.6	17.5	17.5	18.1	0.6
Byram River Reach 2								
A	1,851[2]	280	1,729	1.5	369.0	369.0	369.0	0.5
B	4,498[2]	130	489	1.7	369.7	369.7	370.4	0.7
C	6,358[2]	80	217	3.9	371.2	371.2	371.5	0.3
D	8,130[2]	143	541	1.4	377.8	377.8	377.9	0.1
E	8,840[2]	80	427	2.1	378.0	378.0	378.2	0.2
F	10,706[2]	81	409	2.2	381.4	381.4	381.7	0.3
G	13,390[2]	181	234	2.8	383.8	383.8	384.2	0.4
H	16,675[2]	45	199	3.3	396.8	396.8	397.0	0.2
I	18,325[2]	46	106	2.7	406.7	406.7	406.8	0.1
Caney Brook								
A	0[2]	38	81	4.8	218.6	218.6	218.6	0.0
B	994[2]	30	72	5.4	225.3	225.3	225.3	0.0
C	1,590[2]	16	45	8.6	231.4	231.4	231.4	0.0
D	2,284[2]	26	58	6.8	241.0	241.0	241.0	0.0
E	3,132[2]	22	49	8.0	257.1	257.1	257.1	0.0
F	3,792[2]	11	37	10.6	268.9	268.9	269.4	0.5
G	4,067[2]	35	82	6.7	272.0	272.0	272.1	0.1
H	4,817[2]	83	273	2.0	275.7	275.7	276.7	1.0

[1]Feet above confluence with Long Island Sound
[2]Feet above county boundary
[3]Width extends beyond county boundary

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

BYRAM RIVER REACH 1 – BYRAM RIVER REACH 2 - CANEY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Caney Brook (continued)								
I	5,219[1]	82	333	1.7	279.6	279.6	280.3	0.7
J	5,510[1]	54	228	2.4	280.3	280.3	281.1	0.8
K	5,771[1]	26	123	4.5	284.7	284.7	284.7	0.0
L	6,107[1]	25	62	8.9	288.3	288.3	288.3	0.0
M	6,214[1]	73	292	1.9	293.0	293.0	293.4	0.4
N	6,888[1]	18	58	9.5	304.7	304.7	305.2	0.5
O	7,275[1]	19	65	8.5	311.5	311.5	311.7	0.2
P	7,737[1]	17	56	9.8	321.9	321.9	321.9	0.0
Q	8,072[1]	62	202	2.7	325.1	325.1	325.6	0.5
Clove Brook								
A	185[1]	64	348	2.7	244.5	244.5	245.5	1.0
B	475[1]	70	352	2.7	249.3	249.3	250.2	0.9
C	530[1]	65	292	3.2	249.3	249.3	250.2	0.9
D	845[1]	21	97	9.7	253.2	253.2	254.0	0.8
E	1,091[1]	17	79	12.0	259.4	259.4	259.4	0.0
F	1,298[1]	30	133	7.1	262.1	262.1	263.1	1.0
Crook Brook								
A	40[2]	43	230	4.1	329.7	326.6[3]	327.6	1.0
B	1,790[2]	54	222	4.2	332.8	332.8	333.8	1.0
C	4,100[2]	48	224	4.2	342.2	342.2	343.1	0.9
D	5,470[2]	17	67	9.5	368.3	368.3	369.1	0.8
E	5,980[2]	20	71	9.0	379.2	379.2	379.2	0.0
F	6,225[2]	24	104	6.1	386.0	386.0	386.0	0.0
G	7,575[2]	28	75	8.5	418.4	418.4	418.5	0.1
H	8,820[2]	20	76	8.4	450.6	450.6	450.6	0.0

[1]Feet above Limit of Detailed Study
[2]Feet above confluence with Titicus River
[3]Elevation computed without consideration of backwater effects from Titicus River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

CANEY BROOK – CLOVE BROOK – CROOK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Croton River								
A	2,138[1]	517	4,356	7.0**	*	4.5**	5.5**	1.0**
B	2,811[1]	269	2,549	12.0**	*	6.5**	6.9**	0.4**
C	3,286[1]	756	7,791	3.9**	*	9.1**	9.4**	0.3**
D	7,354[1]	182	2,618	11.7	10.6	10.6	11.5	0.9
E	7,779[1]	128	2,068	14.8	11.6	11.6	12.0	0.4
F	8,170[1]	170	2,831	10.8	14.2	14.2	14.7	0.7
G	8,386[1]	122	2,178	14.0	14.3	14.3	14.9	0.4
H	8,939[1]	243	2,205	13.9	16.6	16.6	17.0	0.4
I	9,207[1]	211	1,935	15.8	20.2	20.2	21.1	0.9
J	9,410[1]	147	1,627	18.8	25.6	25.6	25.9	0.3
K	9,951[1]	123	1,600	19.1	30.4	30.4	30.8	0.4
L	10,585[1]	118	2,369	12.9	37.8	37.8	38.3	0.5
M	11,311[1]	128	2,814	10.9	39.9	39.9	40.6	0.7
N	12,042[1]	70	1,305	23.3	47.8	47.8	47.8	0.0
O	12,836[1]	116	2,714	11.2	51.0	51.0	51.0	0.0
P	13,342[1]	335	7,390	4.1	51.9	51.9	52.6	0.7
Q	14,614[1]	200	3,779	8.0	52.2	52.2	53.2	1.0
R	15,098[1]	125	2,603	11.7	52.4	52.4	53.4	1.0
David's Brook								
A	2,636[2]	69	147	3.5	333.4	333.4	334.4	1.0
B	3,268[2]	34	201	2.5	334.1	334.1	335.1	1.0
C	3,365[2]	119	612	1.1	336.6	336.6	337.5	0.9
D	4,690[2]	312	2618	0.2	336.6	336.6	337.5	0.9
E	5,980[2]	252	1974	0.2	336.7	336.7	337.6	0.9
F	9,100[2]	78	412	0.5	336.7	336.7	337.6	0.9

[1]Feet above confluence with Hudson River

[2]Feet above confluence with Stone Hill River

*Data superseded by updated coastal analysis

**Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

CROTON RIVER – DAVID'S BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
East Branch Blind Brook								
A	58[1]	41	144	5.0	35.2	30.2[3]	30.6	0.5
B	523[1]	81	222	3.2	37.9	37.9	37.9	0.0
C	1,169[1]	94	297	2.4	41.0	41.0	41.8	0.8
D	2,161[1]	41	160	4.5	63.7	63.7	64.5	0.7
E	2,601[1]	86	945	0.7	87.3	87.3	87.4	0.1
F	3,249[1]	42	81	8.0	94.8	94.8	94.7	0.0
G	3,686[1]	39	207	2.9	110.6	110.6	111.1	0.5
H	4,220[1]	57	65	5.6	116.7	116.7	116.9	0.2
I	5,637[1]	19	85	7.0	125.8	125.8	126.6	0.8
J	6,229[1]	76	277	2.1	131.3	131.3	131.7	0.4
K	7,107[1]	124	725	0.8	131.5	131.5	132.0	0.5
L	8,366[1]	30	116	5.0	131.5	131.5	131.9	0.4
M	8,706[1]	18	79	2.4	134.2	134.2	134.8	0.6
N	9,060[1]	20	47	4.1	143.4	143.4	143.9	0.5
East Branch Mamaroneck River								
A	61[2]	25	118	9.8	134.4	134.4	134.8	0.4
B	606[2]	33	124	9.3	144.7	144.7	144.7	0.0
C	1,297[2]	21	80	3.9	161.0	161.0	161.0	0.0
D	1,821[2]	35	173	6.7	162.5	162.5	162.5	0.0
E	2,713[2]	65	188	6.1	173.1	173.1	173.1	0.0
F	4,063[2]	50	190	6.1	188.0	188.0	188.8	0.8
G	5,238[2]	32	156	6.4	205.0	205.0	206.0	1.0
H	5,675[2]	29	193	5.2	207.5	207.5	208.0	0.5
I	10,229[2]	90	211	1.9	213.1	213.1	213.9	0.8

[1]Feet above confluence with Blind Brook
[2]Feet above limit of detailed study
[3]Elevation computed without consideration of backwater effects from Blind Brook

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

EAST BRANCH BLIND BROOK – EAST BRANCH MAMARONECK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
East Branch Mamaroneck River (continued)								
J	10,950[1]	45	151	1.9	218.9	218.9	219.1	0.2
K	11,449[1]	42	182	1.6	235.9	235.9	236.1	1.0
L	12,594[1]	76	273	0.9	236.5	236.5	237.4	0.9
M	12,837[1]	90	1,018	0.5	245.9	245.9	245.9	0.0
N	13,468[1]	265	1,575	0.3	246.0	246.0	246.0	0.0
O	15,262[1]	56	85	5.7	246.9	246.9	246.9	0.0
P	15,387[1]	55	241	2.0	251.6	251.6	252.0	0.4
East Branch Sheldrake River								
A	267[2]	19	78	9.9	59.0	59.0	59.2	0.2
B	851[2]	58	359	2.2	69.5	69.5	70.5	0.9
C	1,655[2]	28	158	4.9	71.1	71.1	71.5	0.3
D	2,298[2]	90	302	2.6	75.2	75.2	75.2	0.0
E	2,742[2]	23	104	7.5	75.8	75.8	76.1	0.3
F	3,089[2]	23	76	10.2	84.9	84.9	84.9	0.0
G	3,303[2]	34	108	7.2	89.6	89.6	89.6	0.0
H	4,031[2]	50	262	3.0	93.4	93.4	94.3	0.9
I	4,690[2]	85	320	2.4	94.7	94.7	95.6	0.9
J	5,571[2]	55	205	3.8	98.0	98.0	98.5	0.5
Fly Kill Brook								
A	342[3]	13	169	3.4	240.4	240.4	240.8	0.4
B	624[3]	37	191	3.0	242.6	242.6	243.6	1.0
C	1,300[3]	27	165	3.5	247.0	247.0	247.6	0.6
D	1,485[3]	55	415	1.4	247.9	247.9	248.4	1.0
E	1,579[3]	*	*	*	248.5	*	*	*

[1]Feet above limit of detailed study
[2]Feet above confluence with Sheldrake River
[3]Feet above confluence with Saw Mill River
*Data not calculated

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

EAST BRANCH MAMARONECK RIVER – EAST BRANCH SHELDRAKE RIVER – FLY KILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Fly Kill Brook (continued)								
F	1,713[1]	*	*	*	249.0	*	*	*
G	1,925[1]	*	*	*	249.2	*	*	*
H	2,114[1]	*	*	*	249.4	*	*	*
I	2,215[1]	*	*	*	249.5	*	*	*
J	2,430[1]	*	*	*	249.6	*	*	*
K	2,817[1]	*	*	*	251.9	*	*	*
L	3,024[1]	*	*	*	252.3	*	*	*
M	3,296[1]	*	*	*	253.4	*	*	*
N	3,418[1]	*	*	*	253.4	*	*	*
O	3,647[1]	*	*	*	253.4	*	*	*
P	4,037[1]	*	*	*	253.5	*	*	*
Q	4,452[1]	*	*	*	253.5	*	*	*
R	4,842[1]	*	*	*	253.5	*	*	*
S	5,083[1]	*	*	*	253.5	*	*	*
Furnace Brook								
A	457[2]	112	520	2.2***	**	4.4***	5.1***	0.7***
B	1,334[2]	24	98	11.5	15.5	15.5	15.7	0.2
C	2,305[2]	55	234	4.8	34.4	34.4	35.2	0.8
D	2,704[2]	71	637	1.8	63.0	63.0	63.0	0.0
E	3,594[2]	166	557	2.0	63.3	63.3	63.3	0.0
F	4,565[2]	71	449	2.5	66.4	66.4	66.4	0.0
G	5,163[2]	20	107	10.5	66.5	66.5	66.7	0.2
H	5,489[2]	43	385	2.6	77.7	77.7	77.7	0.0
I	6,545[2]	36	104	9.7	81.5	81.5	81.5	0.0
J	7,579[2]	36	104	9.7	122.3	122.3	122.7	0.4

[1]Feet above confluence with Saw Mill River

[2]Feet above confluence with Hudson River

*Data not calculated

**Data superseded by updated coastal analysis

***Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

FLY KILL BROOK – FURNACE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Furnace Brook (continued)								
K	8,749	451	1,678	0.4	144.3	144.3	144.3	0.0
L	9,710	163	373	2.0	144.4	144.4	144.4	0.0
M	10,861	65	105	7.1	180.5	180.5	180.5	0.0
N	11,783	24	82	8.2	195.4	195.4	195.8	0.4
O	12,769	35	119	5.7	198.7	198.7	199.1	0.4
P	13,661	44	101	6.7	201.4	201.4	201.9	0.5
Q	14,374	29	79	8.6	212.0	212.0	212.2	0.2
R	15,096	99	319	2.1	223.5	223.5	224.5	1.0
S	15,557	35	147	4.6	223.9	223.9	224.8	0.9
T	16,087	50	233	2.9	228.3	228.3	229.3	1.0
U	16,400	40	204	3.3	229.1	229.1	229.7	0.6
V	17,146	70	316	2.1	236.7	236.7	237.3	0.6
W	18,032	221	496	1.4	248.5	248.5	248.5	0.0
X	19,122	219	631	1.1	249.3	249.3	249.5	0.2
Y	19,960	95	230	2.9	251.0	251.0	251.3	0.3
Z	20,602	95	125	4.1	251.4	251.4	252.4	1.0
AA	21,812	76	371	1.4	254.2	254.2	254.7	0.5
AB	22,838	52	461	1.1	264.6	264.6	266.5	1.0
AC	23,701	116	867	0.6	264.7	264.7	266.5	1.0
AD	24,756	116	759	0.7	264.7	264.7	266.5	1.0
AE	25,879	22	56	9.1	267.0	267.0	267.1	0.1
AF	26,562	40	183	2.8	281.3	281.3	282.3	1.0
AG	27,282	85	261	1.9	282.1	282.1	283.0	0.9
AH	27,806	34	70	7.3	283.7	283.7	283.9	0.2
AI	28,346	50	296	1.7	296.6	296.6	297.4	0.8
AJ	29,304	39	119	4.3	303.4	303.4	304.3	0.9

[1]Feet above confluence with Hudson River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

FURNACE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Gedney Brook								
A	3,365[1]	23	64	8.3	265.6	265.6	265.6	0.0
B	4,495[1]	21	56	9.5	288.5	288.5	288.5	0.0
C	4,825[1]	30	65	8.2	291.9	291.9	292.0	0.1
D	5,400[1]	31	64	8.3	306.4	306.4	306.4	0.0
E	5,868[1]	20	45	8.6	312.8	312.8	312.8	0.0
F	6,390[1]	23	47	8.2	321.3	321.3	321.3	0.0
G	6,870[1]	43	195	2.0	332.0	332.0	332.3	0.3
H	8,135[1]	26	49	7.8	347.3	347.3	347.3	0.0
I	9,085[1]	19	44	8.6	379.8	379.8	379.8	0.0
J	10,500[1]	47	57	6.2	403.6	403.6	403.6	0.0
K	10,636[1]	23	60	5.9	406.8	406.8	406.8	0.0
Grassy Sprain Brook								
A	244[2]	75	404	3.8	83.7	79.8[3]	80.0	0.2
Hallocks Mill Brook								
A	169[1]	49	264	5.3	366.9	366.9	367.8	0.9
B	595[1]	31	198	7.1	369.6	369.6	369.6	0.0
C	1,455[1]	90	534	2.6	373.5	373.5	373.7	0.2
D	2,425[1]	52	161	8.7	375.6	375.6	375.9	0.3
E	3,673[1]	143	220	5.5	383.6	383.6	383.6	0.0
F	4,654[1]	387	980	1.2	388.5	388.5	389.2	0.7
G	5,556[1]	38	126	9.6	392.9	392.9	393.1	0.2
H	6,390[1]	55	488	2.5	405.3	405.3	405.3	0.0
I	6,708[1]	43	329	3.7	409.6	409.6	409.6	0.0
J	6,825[1]	108	731	1.7	417.3	417.3	417.3	0.0

[1]Feet above New Croton Reservoir

[2]Feet above confluence with Bronx River

[3]Elevation computed without consideration of backwater effects from Bronx River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

GEDNEY BROOK – GRASSY SPRAIN BROOK – HALLOCKS MILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hallocks Mill Brook (continued)								
K	7,979[1]	28	198	6.1	419.0	419.0	419.2	0.2
L	9,048[1]	130	606	2.0	420.8	420.8	421.4	0.6
M	10,661[1]	172	2,041	0.3	434.1	434.1	434.1	0.0
N	12,406[1]	37	81	7.3	436.1	436.1	436.2	0.1
O	14,114[1]	205	2,514	0.2	461.6	461.6	461.6	0.0
P	16,000[1]	125	1,380	0.4	461.6	461.6	461.6	0.0
Hallocks Mill Brook Tributary 1								
A	1,331[2]	17	43	6.3	392.2	392.2	392.7	0.5
B	1,574[2]	13	37	7.3	395.1	395.1	395.1	0.0
C	1,688[2]	150	781	0.3	401.1	401.1	401.2	0.1
D	2,420[2]	21	51	5.2	401.4	401.4	401.4	0.0
E	3,041[2]	14	42	6.4	407.2	407.2	407.2	0.0
F	3,911[2]	15	44	6.1	415.8	415.8	416.6	0.8
G	5,150[2]	20	45	5.9	434.1	434.1	434.1	0.0
H	5,453[2]	78	261	1.0	438.2	438.2	438.3	0.1
Hallocks Mill Brook Tributary 2								
A	1,487[2]	111	295	2.2	424.6	424.6	425.3	0.7
B	3,725[2]	48	154	4.2	444.4	444.4	445.2	0.8
C	4,819[2]	82	344	1.9	462.7	462.7	463.1	0.4
D	5,319[2]	31	75	8.6	469.3	469.3	469.9	0.6

[1]Feet above limit of detailed study

[2]Feet above confluence with Hallocks Mill Brook

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

HALLOCKS MILL BROOK – HALLOCKS MILL BROOK TRIBUTARY 1 – HALLOCKS MILL BROOK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Highland Avenue Brook								
A	367[1]	101	472	0.9	127.8	127.8	127.9	0.1
B	847[1]	23	58	7.6	128.1	128.1	128.3	0.2
C	1,341[1]	14	44	10.1	156.2	156.2	156.3	0.1
Hillside Avenue Brook								
A	464[2]	55	93	3.2	131.5	127.3[4]	128.2	0.9
B	1,241[2]	47	69	4.2	135.9	135.9	136.3	0.4
C	1,367[2]	115	358	0.8	136.5	136.5	136.9	0.4
D	2,025[2]	45	49	6.0	150.3	150.3	150.2	0.0
E	2,504[2]	25	40	7.3	176.7	176.7	176.7	0.0
F	2,725[2]	19	39	7.5	202.3	202.3	202.3	0.0
Hutchinson River								
A	5,028[3]	65	355	6.0	12.9	7.4[5]	7.5	0.1
B	5,500[3]	65	476	4.5	12.9	11.3[5]	11.4	0.1
C	6,681[3]	104	573	4.8	13.0	13.0	13.2	0.2
D	7,193[3]	159	852	1.7	14.7	14.7	14.9	0.2
E	7,985[3]	49	302	4.7	15.1	15.1	15.6	0.5
F	8,228[3]	46	290	4.9	18.4	18.4	18.6	0.2
G	8,812[3]	59	508	1.5	21.3	21.3	21.4	0.1
H	9,179[3]	33	332	2.3	22.7	22.7	22.8	0.1
I	9,632[3]	130	957	0.8	24.5	24.5	24.5	0.0
J	10,373[3]	118	475	1.6	24.5	24.5	24.5	0.0
K	10,752[3]	32	204	3.7	28.5	28.5	28.6	0.1
L	11,196[3]	86	477	1.6	29.3	29.3	30.0	0.7
M	11,995[3]	68	317	2.4	29.9	29.9	30.8	0.9

[1]Feet above confluence with Hutchinson River

[2]Feet above confluence with East Branch Blind Brook

[3]Feet above county boundary

[4] Elevation computed without consideration of backwater effects from East Branch Blind Brook

[5] Elevation computed without consideration of backwater effects from Long Island Sound

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

HIGHLAND AVENUE BROOK – HILLSIDE AVENUE BROOK – HUTCHINSON RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hutchinson River (continued)								
N	13,103	50	207	3.7	37.0	37.0	37.4	0.4
O	13,780	28	122	5.0	42.2	42.2	42.2	0.0
P	15,030	37	163	4.7	57.6	57.6	58.2	0.6
Q	15,354	50	279	2.7	61.3	61.3	61.4	0.1
R	15,997	46	306	1.5	62.8	62.8	63.3	0.5
S	16,688	682	3,561	0.1	63.5	63.5	63.8	0.3
T	18,740	1,017	3,895	0.2	63.5	63.5	63.9	0.4
U	20,480	25	77	9.9	64.9	64.9	64.9	0.0
V	21,090	21	86	8.9	69.0	69.0	69.6	0.6
W	21,561	37	348	1.8	101.1	101.1	101.1	0.0
X	23,939	155	820	1.5	101.2	101.2	101.2	0.0
Y	24,756	53	267	4.1	103.8	103.8	103.8	0.0
Z	25,246	312	1,861	0.6	124.2	124.2	124.2	0.0
AA	27,248	111	267	4.1	124.3	124.3	124.3	0.0
AB	28,132	76	144	6.9	128.7	128.7	129.0	0.3
AC	29,006	55	235	4.2	137.5	137.5	137.6	0.1
AD	29,228	36	275	3.6	138.9	138.9	138.9	0.0
AE	29,937	68	264	3.8	139.5	139.5	140.1	0.6
AF	30,236	68	235	4.2	142.6	142.6	142.6	0.0
AG	30,791	16	48	9.8	170.8	170.8	171.2	0.4
AH	32,063	895	3,694	0.1	185.6	185.6	185.6	0.0
AI	33,583	180	692	0.7	185.6	185.6	185.6	0.0
AJ	33,779	65	327	1.4	186.5	186.5	186.9	0.4
AK	34,485	62	216	6.0	187.9	187.9	188.3	0.4
AL	35,337	116	641	2.0	202.5	202.5	203.2	0.7
AM	35,872	53	144	9.0	203.1	203.1	203.3	0.2
AN	36,154	60	198	4.2	208.0	208.0	208.1	0.1

[1]Feet above limit of detailed study

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

HUTCHINSON RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hutchinson River (continued)								
AO	36,276[1]	43	193	4.3	209.2	209.2	209.2	0.0
AP	36,406[1]	49	226	3.7	209.4	209.4	209.5	0.1
AQ	36,854[1]	85	442	1.9	209.7	209.7	209.9	0.2
AR	37,812[1]	45	99	8.5	211.3	211.3	211.3	0.0
AS	38,496[1]	50	340	2.5	215.4	215.4	216.1	0.7
AT	39,292[1]	118	736	1.1	215.6	215.6	216.3	0.7
AU	39,963[1]	111	556	1.5	215.7	215.7	216.3	0.6
AV	40,463[1]	102	508	1.7	216.0	216.0	216.7	0.7
AW	41,377[1]	88	332	2.5	216.3	216.3	217.2	0.9
AX	42,136[1]	116	335	2.5	216.7	216.7	217.5	0.8
AY	42,800[1]	31	103	8.1	222.9	222.9	223.5	0.6
Kensico Road Tributary								
A	0[2]	29	74	9.1	249.7	248.5[4]	248.5	0.0
B	2,835[2]	63	214	3.1	344.1	344.1	344.1	0.0
C	3,322[2]	30	145	4.6	351.3	351.3	351.7	0.4
Kil Brook								
A	396[3]	14	62	11.7	195.4	195.4	195.4	0.0
B	673[3]	12	98	7.4	204.5	204.5	204.5	0.0
C	1,130[3]	19	112	6.5	220.6	220.6	220.6	0.0
D	1,314[3]	19	101	7.2	228.7	228.7	228.7	0.0
E	1,816[3]	17	75	9.7	241.7	241.7	242.6	0.9
F	2,026[3]	19	205	3.5	256.6	256.6	257.0	0.4
G	2,681[3]	14	61	11.9	268.0	268.0	268.0	0.0
H	2,838[3]	19	114	6.3	274.7	274.7	274.7	0.0
I	3,060[3]	28	138	5.3	278.4	278.4	278.4	0.0

[1]Feet above limit of detailed study
[2]Feet above confluence with Nanny Hagen Brook
[3]Feet above confluence with Sing Sing Creek
[4]Elevation computed without consideration of backwater effects from Nanny Hagen Brook

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

HUTCHINSON RIVER – KENSICO ROAD TRIBUTARY – KIL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Kil Brook (continued)								
J	3,505[1]	22	75	9.7	294.4	294.4	294.5	0.1
K	3,910[1]	21	79	3.8	302.5	302.5	303.1	0.6
L	4,299[1]	10	30	10.1	318.3	318.3	318.3	0.0
M	4,705[1]	9	28	10.6	329.8	329.8	329.8	0.0
N	5,242[1]	15	35	8.6	347.3	347.3	347.7	0.4
O	5,635[1]	26	45	6.7	360.3	360.3	360.3	0.0
P	5,899[1]	46	54	5.6	368.6	368.6	369.2	0.6
Q	6,285[1]	10	30	10.0	384.6	384.6	384.6	0.0
R	6,099[1]	12	32	9.3	400.2	400.2	400.6	0.4
S	6,931[1]	9	29	10.3	414.1	414.1	414.1	0.0
T	7,364[1]	13	33	9.0	435.3	435.3	435.6	0.3
U	7,903[1]	13	37	8.1	452.7	452.7	453.2	0.5
V	8,435[1]	14	43	6.9	463.3	463.3	464.2	0.9
W	8,995[1]	17	72	4.2	468.3	468.3	469.0	0.7
X	9,403[1]	11	31	9.6	474.1	474.1	474.1	0.0
Y	9,794[1]	41	163	1.8	479.9	479.9	480.9	1.0
Kisco River								
A	2,590[2]	300	1,294	1.8	205.4	194.2[3]	194.2	0.0
B	3,800[2]	90	267	8.9	205.4	199.2[3]	199.2	0.0
C	5,360[2]	80	373	6.4	211.6	211.6	211.8	0.2
D	5,920[2]	294	990	2.4	215.8	215.8	216.3	0.5
E	8,550[2]	39	236	10.8	224.4	224.4	225.4	1.0
F	11,920[2]	41	201	11.8	256.4	256.4	256.6	0.2
G	14,050[2]	118	398	6.0	270.0	270.0	270.2	0.2
H	15,160[2]	49	248	9.6	275.1	275.1	275.7	0.6
I	15,730[2]	93	686	3.5	279.5	279.5	279.5	0.0

[1]Feet above confluence with Sing Sing Creek

[2]Feet above confluence with New Croton Reservoir

[3]Elevation computed without consideration of backwater effects from New Croton Reservoir

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

KIL BROOK – KISCO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Kisco River (continued)								
J	16,750[1]	232	1,710	1.4	279.9	279.9	280.1	0.2
K	18,320[1]	305	2163	1.1	281.3	281.3	281.7	0.4
L	20,415[1]	152	1,403	1.1	281.5	281.5	281.9	0.4
M	21,400[1]	222	1,764	0.7	281.5	281.5	282.0	0.5
N	23,275[1]	270	1,045	1.1	286.0	286.0	286.2	0.2
O	24,330[1]	167	902	1.3	293.0	293.0	293.0	0.0
P	25,470[1]	42	126	9.4	297.2	297.2	297.3	0.1
Q	26,370[1]	34	195	6.1	324.5	324.5	324.5	0.0
R	27,050[1]	37	187	6.3	334.4	334.4	335.3	0.9
S	27,340[1]	45	350	3.4	343.2	343.2	343.2	0.0
Kisco River Tributary 1								
A	1,050[2]	135	106	6.2	281.5	281.5	281.8	0.3
B	2,185[2]	155	832	0.8	281.8	281.8	282.7	0.9
C	3,465[2]	235	978	0.7	283.8	283.8	283.9	0.1
Knollwood Brook								
A	9,290[3]	74	473	1.4	213.4	213.4	214.2	0.8
B	10,190[3]	37	112	6.0	218.0	218.0	218.1	0.1
C	10,450[3]	16	61	11.1	222.8	222.8	222.8	0.0
D	10,586[3]	88	423	1.6	229.4	229.4	230.2	0.8
E	10,960[3]	33	97	6.9	240.8	240.8	240.9	0.1
F	11,470[3]	18	78	8.6	251.5	251.5	251.5	0.0
Lecount Creek								
A	423[4]	11	80	3.4	33.3	33.3	34.0	0.7
B	1,057[4]	19	78	3.5	39.5	39.5	40.2	0.7
C	1,500[4]	13	31	8.8	44.5	44.5	44.5	0.0

[1]Feet above confluence with New Croton Reservoir

[2]Feet above confluence with Kisco River

[3]Feet above Bronx River

[4]Feet above Lower Mamaroneck River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

KISCO RIVER – KISCO RIVER TRIBUTARY 1 – KNOLLWOOD BROOK – LECOUNT CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Leroy Avenue Brook								
A	0[1]	9	23	9.2	87.0	87.0	87.0	0.0
B	462[1]	96	136	1.6	121.0	121.0	121.0	0.0
C	1,022[1]	11	125	1.7	148.3	148.3	148.9	0.6
D	1,571[1]	21	106	2.0	168.5	168.5	169.4	0.8
E	1,939[1]	17	65	3.3	184.1	184.1	184.4	0.3
F	2,382[1]	15	28	7.8	214.7	214.7	215.0	0.2
G	2,557[1]	21	37	5.8	225.1	225.1	225.3	0.1
Mamaroneck River Lower Reach								
A	657[2]	111	1,722	2.8	12.5	9.4[3]	9.9	0.5
B	1,099[2]	72	592	8.1	12.5	8.9[3]	9.4	0.5
C	1,319[2]	115	631	7.6	12.5	9.7[3]	10.1	0.4
D	1,493[2]	175	1,071	4.5	16.7	16.7	16.7	0.0
E	2,276[2]	48	368	13.1	16.9	16.9	17.0	0.1
F	2,380[2]	97	820	5.9	20.3	20.3	20.3	0.0
G	2,840[2]	67	475	10.1	20.5	20.5	20.5	0.0
H	2,917[2]	90	806	6.0	22.2	22.2	22.3	0.1
I	3,089[2]	82	671	7.0	22.3	22.3	22.4	0.1
J	10,836[2]	265	946	4.0	33.1	33.1	34.0	0.9
K	11,202[2]	96	550	6.9	34.8	34.8	35.1	0.3
L	11,395[2]	108	803	4.7	38.1	38.1	38.1	0.0
M	11,560[2]	104	1,092	3.5	38.7	38.7	38.7	0.0
N	11,751[2]	53	305	12.5	38.7	38.7	38.7	0.0
O	11,913[2]	190	1,576	2.4	40.8	40.8	40.8	0.0

[1]Feet above limit of detailed study
[2]Feet above confluence with Long Island Sound
[3]Elevation computed without consideration of backwater effects from Long Island Sound

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

LEROY AVENUE BROOK – MAMARONECK RIVER LOWER REACH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mamaroneck River Upper Reach								
A	101[1]	23	125	7.4	142.5	142.5	143.4	0.9
B	580[1]	60	278	3.3	145.1	145.1	145.7	0.7
C	1,126[1]	128	417	1.3	145.8	145.8	146.6	0.8
D	1,558[1]	107	392	1.4	146.1	146.1	146.9	0.8
E	2,102[1]	86	335	1.6	146.3	146.3	147.3	1.0
F	2,987[1]	25	117	4.7	151.1	151.1	151.7	0.6
G	3,454[1]	26	63	8.6	160.8	160.8	160.8	0.0
H	3,625[1]	20	108	4.1	175.8	175.8	176.6	0.8
I	3,878[1]	103	436	1.0	178.8	178.8	179.8	1.0
Manhattan Park Brook								
A	540[2]	*	*	*	184.7	*	*	*
B	738[2]	*	*	*	184.7	*	*	*
C	910[2]	*	*	*	185.5	*	*	*
D	995[2]	*	*	*	185.5	*	*	*
E	1,274[2]	*	*	*	186.7	*	*	*
F	1,440[2]	99	718	1.7	188.3	188.3	189.2	0.9
G	1,608[2]	96	686	1.7	188.3	188.3	189.2	0.9
H	2,008[2]	75	554	2.2	188.5	188.5	189.4	0.9
I	2,380[2]	28	241	5.0	188.5	188.5	189.5	0.0
J	2,610[2]	28	230	5.2	188.8	188.8	189.8	1.0

[1]Feet above limit of detailed study
[2]Feet above confluence with Bronx River
*Data not available

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

MAMARONECK RIVER UPPER REACH – MANHATTAN PARK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mianus River								
A	4,318[1]	143	261	4.2	334.7	334.7	334.9	0.2
B	5,315[1]	44	239	4.6	338.4	338.4	339.3	0.9
C	5,439[1]	97	861	1.3	348.3	348.3	348.3	0.0
D	9,821[1]	161	546	2.0	349.7	349.7	350.1	0.4
E	9,980[1]	141	838	1.3	350.9	350.9	351.4	0.5
F	14,829[1]	290	1483	0.7	352.1	352.1	352.8	0.7
G	14,955[1]	290	1,254	0.9	352.9	352.9	353.2	0.3
Mill River								
A	1,000[2]	112	141	10.5	343.7	343.7	343.7	0.0
B	2,145[2]	159	224	6.6	359.7	359.7	359.7	0.0
Mohegan Outlet								
A	407[2]	32	100	7.3	200.1	200.1	200.1	0.0
B	858[2]	36	97	7.5	220.6	220.6	220.6	0.0
C	1,210[2]	29	78	9.4	248.7	248.7	248.7	0.0
D	1,737[2]	38	86	8.5	282.1	282.1	282.1	0.0
E	1,950[2]	27	76	9.6	296.4	296.4	294.4	0.0
F	2,185[2]	28	78	9.4	324.7	324.7	324.7	0.0
G	2,694[2]	33	82	8.9	368.4	368.4	368.4	0.3
H	3,184[2]	122	328	2.2	384.1	384.1	384.1	0.0

[1]Feet above Mianus Reservoir
[2]Feet above limit of flooding affecting county

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

MIANUS RIVER – MILL RIVER – MOHEGAN OUTLET

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mohegan Outlet (continued)								
I	3,784[1]	93	150	4.9	412.1	412.1	412.1	0.0
J	4,507[1]	107	120	6.1	429.8	429.8	429.8	0.0
K	4,678[1]	80	230	2.2	445.9	445.9	446.6	0.7
L	5,541[1]	571	2,762	0.2	446.1	446.1	446.9	0.7
M	6,448[1]	44	74	6.8	446.7	446.7	446.7	0.0
N	6,798[1]	817	4,870	0.1	451.1	451.1	452.0	0.9
O	7,480[1]	363	2,692	0.2	451.1	451.1	452.0	0.9
P	7,826[1]	380	3,029	0.2	451.1	451.1	452.0	0.9
Muscoot River								
A	170[2]	329	3,543	0.6	402.6	402.6	402.6	0.0
B	3,160[2]	81	372	5.9	439.3	439.3	440.3	1.0
C	5,080[2]	120	892	2.5	458.3	458.3	458.3	0.0
D	8,690[2]	231	641	3.4	459.1	459.1	460.1	1.0
E	10,650[2]	158	807	2.2	478.4	478.4	478.4	0.0
F	11,785[2]	24	137	12.8	487.6	487.6	487.9	0.3
G	13,835[2]	125	523	3.4	510.3	510.3	510.3	0.0
H	14,790[2]	153	950	1.8	511.5	511.5	511.6	0.1
Nanny Hagen Brook								
A	162[3]	47	242	5.4	249.1	249.1	249.3	0.2
B	599[3]	35	135	9.9	249.7	249.7	250.7	1.0

[1]Feet above limit of flooding affecting county
[2]Feet above confluence with Amawalk Reservoir
[3]Feet above confluence with Saw Mill River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

MOHEGAN OUTLET – MUSCOOT RIVER – NANNY HAGEN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Nanny Hagen Brook (continued)								
C	839[1]	142	349	3.8	253.5	253.5	254.2	0.8
D	1,085[1]	52	413	2.4	259.4	259.4	259.8	0.4
E	1,309[1]	54	498	2.0	262.1	262.1	262.1	0.0
F	1,795[1]	273	2,113	0.5	262.1	262.1	262.1	0.0
G	2,795[1]	20	87	11.9	267.1	267.1	267.1	0.0
H	3,374[1]	32	104	9.9	273.7	273.7	273.7	0.0
I	3,531[1]	29	118	8.7	275.3	275.3	275.9	0.6
J	3,700[1]	56	191	5.4	277.4	277.4	277.8	0.4
K	4,510[1]	42	128	6.6	293.4	293.4	293.2	0.0
L	4,760[1]	36	185	4.5	298.6	298.6	298.7	0.1
M	5,490[1]	58	123	6.8	309.8	309.8	309.8	0.0
N	5,960[1]	73	111	7.5	318.3	318.3	318.3	0.0
O	6,785[1]	30	90	7.8	335.6	335.6	335.6	0.0
Nelson Creek								
A	454[2]	77	96	1.9	65.2[3]	62.6	62.7	0.1
B	962[2]	33	53	3.4	65.2	65.2	65.7	0.5
C	1,833[2]	46	22	3.1	65.8	65.8	66.0	0.2
D	2,294[2]	46	39	1.8	66.7	66.7	66.9	0.2
E	2,820[2]	43	31	2.2	69.9	69.9	70.3	0.4
F	3,029[2]	34	76	0.9	70.0	70.0	70.4	0.4
G	3,971[2]	45	37	1.8	79.4	79.4	79.4	0.0
H	4,843[2]	12	13	5.5	125.3	125.3	125.5	0.2

[1]Feet above confluence with Saw Mill River
[2]Feet above confluence with Brentwood Brook
[3]Elevation computed without consideration of backwater effects from Brentwood Brook

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

NANNY HAGEN BROOK – NELSON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peekskill Hollow Brook								
A	500[1]	*	785	3.7***	**	4.5***	5.0***	0.5***
B	1,985[1]	105	791	3.6	9.0	6.4[4]	6.9	0.5
C	3,000[1]	182	1,251	2.3	9.0	6.9[4]	7.5	0.6
D	5,175[1]	168	1,030	2.8	9.0	7.9[4]	8.6	0.7
E	7,040[1]	30	197	14.6	12.6	12.6	12.7	0.1
F	8,450[1]	103	642	4.4	29.6	29.6	29.7	0.1
G	10,925[1]	50	231	12.3	40.1	40.1	40.1	0.0
H	12,425[1]	70	379	7.5	48.0	48.0	48.3	0.3
I	13,450[1]	114	642	4.4	58.8	58.8	58.8	0.0
J	15,215[1]	60	299	9.5	70.1	70.1	70.7	0.6
K	16,900[1]	46	314	8.5	87.0	87.0	87.7	0.7
L	19,750[1]	30	187	14.2	112.8	112.8	113.0	0.2
M	20,560[1]	48[3]	221	12.0	122.2	122.2	122.3	0.1
Peekskill Hollow Brook Tributary								
A	42[2]	349	921	1.1	61.5	60.1[5]	60.2	0.1
B	1,065[2]	291	2,163	0.5	71.2	71.2	71.8	0.6
C	1,570[2]	93	759	1.3	106.6	106.6	106.7	0.1
D	1,989[2]	42	278	3.6	118.5	118.5	119.4	0.9
E	2,300[2]	30	98	10.2	136.8	136.8	136.8	0.0
F	2,599[2]	54	305	3.3	161.9	161.9	162.8	0.9
G	2,893[2]	34	138	7.3	167.0	167.0	167.7	0.7
H	3,146[2]	225	1,622	0.6	181.7	181.7	181.8	0.1
I	3,794[2]	53	122	8.2	192.6	192.6	192.6	0.0
J	3,989[2]	98	266	3.8	202.8	202.8	203.2	0.4

[1]Feet above confluence with Annsville Creek and Sprout Brook

[2]Feet above Peekskill Hollow Brook

[3]Width extends beyond county boundary

[4]Elevation computed without consideration of backwater effects from Hudson River

[5]Elevation computed without consideration of backwater effects from Peekskill Hollow Brook

*Floodway coincident with channel banks

**Data superseded by updated coastal analysis

***Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area. Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

PEEKSKILL HOLLOW BROOK – PEEKSKILL HOLLOW BROOK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peekskill Hollow Brook Tributary (continued)								
K	4,505[1]	37	139	7.2	208.3	208.3	208.3	0.0
L	4,980[1]	43	120	8.3	231.7	231.7	231.7	0.0
M	5,246[1]	47	206	4.8	237.1	237.1	237.1	0.0
N	5,697[1]	68	197	5.1	241.1	241.1	241.1	0.0
O	6,298[1]	50	148	6.7	254.4	254.4	254.4	0.0
P	6,521[1]	138	527	1.3	276.6	276.6	276.6	0.0
Q	6,905[1]	64	146	4.6	276.9	276.9	276.9	0.0
R	7,417[1]	28	113	6.0	287.7	287.7	287.9	0.2
S	8,220[1]	84	508	1.3	298.3	298.3	298.7	0.4
T	9,088[1]	143	664	1.0	298.5	298.5	298.9	0.4
U	9,617[1]	129	373	1.8	301.4	301.4	301.9	0.5
V	10,489[1]	754	4,994	0.1	303.7	303.7	304.7	1.0
W	11,515[1]	1,813	13,895	0.0	303.7	303.7	304.7	1.0
X	12,139[1]	1,282	10,016	0.0	303.7	303.7	304.7	1.0
Y	13,156[1]	507	3,785	0.1	303.7	303.7	304.7	1.0
Z	14,262[1]	184	686	0.7	303.8	303.8	304.8	1.0
Pitch Swamp Brook								
A	7,360[2]	37	195	1.6	437.0	437.0	438.0	1.0
B	8,200[2]	236	1,131	0.2	437.0	437.0	438.0	1.0
Plum Brook								
A	602[3]	193	1,411	1.5	199.2	199.2	199.7	0.5
B	895[3]	58	331	6.3	199.2	199.2	199.3	0.1
C	1,828[3]	76	270	7.7	202.4	202.4	202.4	0.0
D	1,856[3]	78	446	4.7	204.7	204.7	204.7	0.0

[1]Feet above Peekskill Hollow Brook
[2]Feet above confluence with Stone Hill River
[3]Feet above confluence with Muscoot Reservoir

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

PEEKSKILL HOLLOW BROOK TRIBUTARY – PITCH SWAMP BROOK – PLUM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Plum Brook (continued)								
E	3,020	115	470	4.4	210.5	210.5	211.5	1.0
F	3,197	101	517	4.0	212.0	212.0	212.5	0.5
G	3,661	606	4,492	0.5	212.2	212.2	212.9	0.7
H	4,589	97	260	7.6	216.6	216.6	216.6	0.0
I	5,366	68	208	9.6	227.6	227.6	227.6	0.0
J	5,825	161	357	5.6	235.0	235.0	235.0	0.0
K	7,357	91	224	8.9	248.5	248.5	248.5	0.0
L	8,125	40	207	9.6	256.8	256.8	257.4	0.6
M	8,510	39	189	10.5	262.2	262.2	262.7	0.5
N	9,172	93	549	3.4	267.4	267.4	268.2	0.8
O	9,270	93	749	2.5	271.0	271.0	271.5	0.5
P	11,191	217	858	2.0	274.3	274.3	275.1	0.8
Q	11,346	217	718	2.3	274.8	274.8	275.4	0.6
R	11,656	220	474	2.5	275.3	275.3	276.3	1.0
S	12,274	75	167	7.0	281.7	281.7	281.8	0.1
T	12,542	44	135	8.6	290.9	290.9	291.6	0.7
U	12,906	58	148	7.8	305.9	305.9	305.9	0.0
V	12,993	45	139	8.4	307.6	307.6	307.6	0.0
W	13,077	58	416	2.8	312.5	312.5	312.5	0.0
X	13,173	44	123	9.5	312.7	312.7	312.7	0.0
Y	13,472	48	131	8.9	319.5	319.5	319.5	0.0
Z	13,786	46	128	9.1	335.6	335.6	335.6	0.0
AA	13,915	73	183	6.4	345.5	345.5	345.5	0.0
AB	14,232	29	107	10.9	358.3	358.3	358.3	0.0
AC	14,658	111	219	5.3	370.5	370.5	371.4	0.9
AD	15,082	150	240	4.8	378.4	378.4	378.6	0.2
AE	15,424	100	208	5.6	383.6	383.6	383.7	0.1

[1]Feet above confluence with Muscoot Reservoir

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

PLUM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Plum Brook (continued)								
AF	15,856[1]	58	150	7.8	392.7	392.7	393.1	0.4
AG	16,520[1]	51	170	6.9	397.1	397.1	397.5	0.4
AH	18,092[1]	36	91	9.2	407.9	407.9	407.9	0.0
AI	18,642[1]	41	114	7.3	415.4	415.4	415.5	0.1
AJ	19,591[1]	41	102	8.1	437.2	437.2	437.2	0.0
AK	20,028[1]	60	149	5.6	441.6	441.6	441.7	0.1
AL	21,296[1]	80	128	6.5	451.8	451.8	451.9	0.1
AM	21,653[1]	58	143	5.8	455.6	455.6	455.8	0.2
AN	22,304[1]	56	166	5.0	464.5	464.5	464.5	0.0
AO	22,791[1]	60	156	5.3	465.8	465.8	466.3	0.5
AP	22,976[1]	58	168	4.9	467.3	467.3	467.4	0.1
AQ	23,794[1]	217	661	1.3	469.4	469.4	470.4	1.0
AR	24,250[1]	42	111	7.5	471.6	471.6	472.0	0.4
AS	24,753[1]	65	157	5.3	481.7	481.7	482.4	0.7
AT	25,065[1]	47	111	7.5	494.8	494.8	495.6	0.8
Plum Brook Tributary								
A	1,021[2]	22	57	3.5	407.7	407.7	408.6	0.9
B	1,494[2]	15	52	3.9	409.9	409.9	410.9	1.0
C	1,573[2]	15	76	2.6	414.2	414.2	414.9	0.7
D	1,665[2]	10	43	4.6	414.2	414.2	415.0	0.8
E	1,889[2]	15	27	7.5	421.2	421.2	421.7	0.5
F	2,063[2]	12	25	7.9	428.8	428.8	429.6	0.8
G	2,706[2]	13	27	7.5	447.3	447.3	447.7	0.4
H	2,772[2]	21	95	2.1	453.5	453.5	454.4	0.9

[1]Feet above confluence with Muscoot Reservoir
[2]Feet above confluence with Plum Brook

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

PLUM BROOK – PLUM BROOK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Pocantico River Lower Reach								
A	609	517	5,257	0.6	18.0	18.0	18.7	0.7
B	2,231	703	10,861	0.3	18.1	18.1	18.8	0.7
C	3,377	361	5,145	0.6	18.1	18.1	18.8	0.7
D	3,991	51	562	5.0	19.4	19.4	20.2	0.8
E	5,302	79	378	7.4	26.7	26.7	26.7	0.0
F	6,189	43	272	10.4	37.1	37.1	37.5	0.4
G	7,396	37	236	11.9	59.3	59.3	60.1	0.8
H	8,545	106	863	3.3	80.6	80.6	80.8	0.2
I	10,149	87	537	5.2	82.2	82.2	83.0	0.8
J	11,298	62	498	5.0	94.0	94.0	94.5	0.5
K	11,951	42	314	7.9	96.7	96.7	97.6	0.9
L	12,769	128	799	3.1	113.0	113.0	113.0	0.0
M	13,272	23	166	15.1	115.4	115.4	115.4	0.0
N	13,716	127	780	3.2	120.1	120.1	120.8	0.7
O	14,355	44	276	9.1	121.7	121.7	121.8	0.1
P	14,985	42	200	12.5	141.6	141.6	141.6	0.0

[1]Feet above Hudson River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

POCANTICO RIVER LOWER REACH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Pocantico River Upper Reach								
A	0	175	1,268	1.4	228.7	228.7	228.7	0.0
B	610	165	1,218	1.4	228.8	228.8	228.9	0.1
C	1,360	120	741	2.4	228.9	228.9	229.1	0.2
D	2,785	212	1,171	1.6	231.1	231.1	231.4	0.3
E	3,922	300	2,834	0.7	231.2	231.2	231.8	0.6
F	6,146	283	1,053	1.3	233.9	233.9	234.7	0.8
G	6,981	240	2,037	0.7	234.3	234.3	235.1	0.8
H	7,694	152	1,157	1.0	238.1	238.1	239.1	1.0
I	7,929	110	871	1.3	238.1	238.1	239.1	1.0
J	8,322	79	654	1.8	238.2	238.2	239.2	1.0
K	8,597	53	405	2.9	238.3	238.3	239.3	1.0
L	9,206	72	527	2.4	238.8	238.8	240.1	1.3
M	10,135	93	648	1.8	240.0	240.0	241.0	1.0
N	10,512	55	465	2.5	242.3	242.3	243.3	1.0
O	10,919	37	139	8.3	244.3	244.3	244.5	0.2
P	11,500	36	172	6.7	253.1	253.1	254.0	0.9
Q	11,989	22	167	6.9	261.7	261.7	262.4	0.7
R	12,816	80	218	5.3	271.1	271.1	271.6	0.5
S	13,481	185	1,071	1.1	272.9	272.9	273.7	0.8
T	14,278	324	1,825	0.6	273.0	273.0	273.8	0.8
U	15,145	201	986	1.2	273.2	273.2	274.0	0.8

[1]Feet above limit of detailed study

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

POCANTICO RIVER UPPER REACH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill Creek								
A	310[1]	121	2,981	0.1	211.4	211.4	212.2	0.8
B	935[1]	23	47	8.0	213.4	213.4	213.4	0.0
C	2,155[1]	27	49	7.7	272.6	272.6	272.6	0.0
D	3,100[1]	34	53	7.1	309.8	309.8	309.8	0.0
E	4,475[1]	30	50	7.6	359.4	359.4	359.4	0.0
F	5,275[1]	186	1,863	0.2	389.0	389.0	389.0	0.0
Saw Mill River								
A	0[2]	31	161	11.9	48.1	48.1	48.1	0.0
B	715[2]	37	161	11.9	57.3	57.3	57.3	0.0
C	1,253[2]	58	258	7.4	63.8	63.8	63.8	0.0
D	2,748[2]	81	362	5.3	82.3	82.3	82.3	0.0
E	3,613[2]	85	446	4.3	87.0	87.0	87.4	0.4
F	4,185[2]	30	216	8.8	92.5	92.5	92.5	0.0
G	4,864[2]	20	146	13.1	94.5	94.5	94.5	0.0
H	5,303[2]	36	376	5.1	100.6	100.6	100.6	0.0
I	6,390[2]	150	762	2.5	101.9	101.9	102.0	0.1
J	7,320[2]	25	299	6.4	102.1	102.1	102.2	0.1
K	7,789[2]	82	719	2.6	104.9	104.9	104.9	0.0
L	8,532[2]	205	1,286	1.5	105.1	105.1	105.4	0.3
M	8,835[2]	31	437	4.4	106.8	106.8	107.1	0.3
N	9,323[2]	136	1,001	1.9	106.8	106.8	107.3	0.5
O	9,735[2]	116	965	2.0	106.9	106.9	107.4	0.5
P	10,278[2]	24	326	5.8	106.9	106.9	107.4	0.5
Q	11,048[2]	41	463	4.1	107.1	107.1	107.7	0.6
R	11,289[2]	40	441	4.3	107.4	107.4	108.0	0.6
S	12,293[2]	21	281	6.8	107.4	107.4	107.9	0.5
T	12,750[2]	55	551	3.4	108.0	108.0	108.6	0.6
U	13,024[2]	140	762	2.5	108.8	108.8	109.2	0.4

[1]Feet above confluence with New Croton Reservoir
[2]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL CREEK – SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
V	13,791	52	406	4.7	109.3	109.3	109.7	0.4
W	14,419	59	383	5.0	109.8	109.8	110.2	0.4
X	14,913	68	640	3.0	110.4	110.4	110.8	0.4
Y	15,397	55	560	3.4	110.6	110.6	110.9	0.3
Z	16,073	76	995	1.9	110.7	110.7	111.2	0.5
AA	16,602	37	363	5.2	110.7	110.7	111.1	0.4
AB	17,106	45	377	5.0	111.4	111.4	112.1	0.7
AC	17,940	112	1,097	1.7	112.9	112.9	113.6	0.7
AD	18,610	274	1,423	1.3	112.9	112.9	113.7	0.8
AE	18,874	277	1,441	1.3	113.0	113.0	113.8	0.8
AF	19,461	396	1,901	1.0	113.1	113.1	113.9	0.8
AG	20,096	226	1,098	1.7	113.2	113.2	114.0	0.8
AH	20,473	301	1,441	1.3	113.3	113.3	114.1	0.8
AI	20,751	307	1,661	1.1	114.1	114.1	114.7	0.6
AJ	21,198	200	1,623	1.2	114.1	114.1	114.7	0.6
AK	21,819	111	833	2.3	114.1	114.1	114.8	0.7
AL	22,341	58	447	4.2	114.2	114.2	114.9	0.7
AM	23,012	95	536	3.5	115.0	115.0	115.6	0.6
AN	23,422	90	528	3.6	115.6	115.6	116.4	0.8
AO	23,782	290	1,743	1.1	116.6	116.6	117.4	0.8
AP	24,375	202	1,257	1.5	116.9	116.9	117.8	0.9
AQ	25,682	130	993	1.9	117.2	117.2	118.2	1.0
AR	26,166	171	812	2.6	118.6	118.6	118.9	0.3
AS	27,232	163	1,301	1.5	119.8	119.8	120.2	0.4
AT	28,176	128	887	2.1	120.3	120.3	120.9	0.6
AU	28,932	111	867	2.2	120.5	120.5	121.1	0.6

[1]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
AV	30,040	58	377	5.0	120.9	120.9	121.9	1.0
AW	30,825	31	274	6.9	121.8	121.8	122.7	0.9
AX	31,000	73	444	3.1	122.7	122.7	122.7	0.0
AY	31,473	70	430	3.2	122.9	122.9	122.9	0.0
AZ	31,712	100	767	1.8	123.6	123.6	123.6	0.0
BA	32,235	51	321	4.3	123.6	123.6	123.6	0.0
BB	32,609	74	639	2.2	124.2	124.2	124.2	0.0
BC	33,320	170	1,077	1.3	124.9	124.9	124.9	0.0
BD	33,989	113	358	3.9	125.1	125.1	125.1	0.0
BE	34,319	310	1,860	1.0	127.6	127.6	128.3	0.7
BF	35,672	195	1,253	1.6	127.9	127.9	128.6	0.7
BG	36,111	49	328	6.0	128.6	128.6	128.9	0.3
BH	36,188	101	335	5.9	128.8	128.8	129.0	0.2
BI	36,259	113	539	3.9	129.7	129.7	130.4	0.7
BJ	36,593	34	490	4.4	131.9	131.9	132.6	0.7
BK	36,963	65	753	2.6	132.3	132.3	133.0	0.7
BL	37,417	39	440	4.5	132.3	132.3	133.2	0.9
BM	37,653	30	365	5.4	133.3	133.3	134.2	0.9
BN	37,749	51	530	3.7	134.9	134.9	135.8	0.9
BO	38,219	174	2,095	0.9	135.4	135.4	136.2	0.8
BP	38,543	199	2,193	0.9	135.4	135.4	136.2	0.8
BQ	39,554	212	2,309	0.9	135.4	135.4	136.3	0.9
BR	40,568	340	2,759	0.7	135.5	135.5	136.3	0.8
BS	41,071	22	237	8.3	135.5	135.5	136.3	0.8
BT	41,344	44	467	4.2	136.5	136.5	137.3	0.8
BU	41,641	64	438	4.5	136.8	136.8	137.6	0.8

[1]Feet above Ann Street in the City of Yonkers

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
BV	41,933	44	188	10.5	138.2	138.2	138.2	0.0
BW	42,240	122	274	8.6	149.4	149.4	149.4	0.0
BX	42,475	189	1,003	2.3	155.5	155.5	155.5	0.0
BY	43,448	213	561	4.2	155.8	155.8	155.8	0.0
BZ	44,376	160	428	5.5	156.6	156.6	157.1	0.5
CA	45,984	120	655	3.6	160.4	160.4	160.9	0.5
CB	46,764	80	359	6.5	162.1	162.1	162.5	0.4
CC	47,541	125	1,124	2.3	167.5	167.5	167.5	0.0
CD	48,735	90	860	3.1	168.3	168.3	168.3	0.0
CE	49,596	40	412	6.4	168.6	168.6	168.9	0.3
CF	50,353	65	495	5.3	169.5	169.5	170.2	0.7
CG	50,855	67	639	4.1	171.6	171.6	172.0	0.4
CH	51,778	234	2,151	1.2	171.9	171.9	172.6	0.7
CI	52,191	209	2,084	1.3	172.6	172.6	173.2	0.6
CJ	53,281	222	2,162	1.2	172.6	172.6	173.3	0.7
CK	54,734	235	2,006	1.3	172.8	172.8	173.5	0.7
CL	55,336	380	2,908	0.9	172.8	172.8	173.6	0.8
CM	55,825	108	730	3.5	172.9	172.9	173.7	0.8
CN	56,880	145	982	2.6	173.5	173.5	174.5	1.0
CO	57,740	100	712	3.6	175.2	175.2	175.8	0.6
CP	58,066	122	851	3.2	175.4	175.4	176.1	0.7
CQ	59,249	150	973	2.8	176.2	176.2	176.8	0.6
CR	59,612	148	948	2.8	176.6	176.6	177.2	0.6
CS	60,223	413	2,328	1.2	176.9	176.9	177.6	0.7
CT	60,372	404	1,742	1.5	176.9	176.9	177.7	0.8
CU	61,167	325	1,179	2.3	177.1	177.1	178.1	1.0

[1]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
CV	61,701	131	954	2.8	177.6	177.6	178.5	0.9
CW	62,165	201	1,254	2.0	178.2	178.2	178.9	0.7
CX	62,430	86	735	3.4	178.8	178.8	179.4	0.6
CY	62,966	128	1,296	1.9	178.9	178.9	179.7	0.8
CZ	63,797	120	1,150	2.1	179.0	179.0	179.9	0.9
DA	64,603	78	551	4.5	179.5	179.5	180.5	1.0
DB	64,919	131	861	2.9	180.3	180.3	181.1	0.8
DC	65,428	285	1,945	1.3	181.1	181.1	181.8	0.7
DD	65,967	135	804	3.1	181.3	181.3	182.0	0.7
DE	66,414	97	569	4.3	181.8	181.8	182.6	0.8
DF	66,885	140	964	2.6	183.1	183.1	183.6	0.5
DG	67,772	225	1,068	2.3	183.5	183.5	184.0	0.5
DH	68,355	278	1,357	1.8	185.5	185.5	185.9	0.4
DI	69,332	160	665	3.7	188.1	188.1	188.5	0.4
DJ	69,920	54	335	6.6	189.6	189.6	189.8	0.2
DK	70,171	122	955	2.3	193.2	193.2	193.2	0.0
DL	70,970	90	576	3.8	193.5	193.5	193.7	0.2
DM	72,118	180	1,033	2.1	194.8	194.8	195.3	0.5
DN	72,944	163	790	2.8	195.6	195.6	196.3	0.7
DO	74,060	160	933	2.4	196.6	196.6	197.3	0.7
DP	74,871	120	550	4.0	198.0	198.0	198.5	0.5
DQ	75,683	100	772	2.9	201.8	201.8	202.0	0.2
DR	76,301	58	357	6.2	203.7	203.7	203.7	0.0
DS	77,416	57	260	8.5	207.2	207.2	207.4	0.2
DT	78,045	180	1,108	2.0	209.8	209.8	210.2	0.4
DU	78,550	140	471	4.7	211.5	211.5	211.6	0.1

[1]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
DV	78,853	140	625	3.2	212.7	212.7	213.4	0.7
DW	79,367	126	473	4.3	214.0	214.0	214.4	0.4
DX	79,509	100	540	3.7	214.7	214.7	215.4	0.7
DY	80,019	60	611	3.3	216.8	216.8	217.3	0.5
DZ	81,058	170	925	2.2	217.0	217.0	217.8	0.8
EA	82,448	60	495	5.3	218.8	218.8	219.4	0.6
EB	82,683	76	492	4.1	221.3	221.3	221.5	0.2
EC	83,516	42	332	5.7	223.2	223.2	223.5	0.3
ED	84,053	75	491	3.8	224.5	224.5	225.0	0.5
EE	84,650	54	315	6.0	225.5	225.5	225.8	0.3
EF	85,629	60	319	5.9	229.1	229.1	229.2	0.1
EG	86,005	40	290	6.5	232.4	232.4	232.4	0.0
EH	86,465	81	488	3.8	233.4	233.4	233.4	0.0
EI	87,606	62	360	5.2	234.6	234.6	234.7	0.1
EJ	88,049	65	373	5.0	236.9	236.9	236.9	0.0
EK	89,473	75	323	5.8	239.8	239.8	240.4	0.6
EL	91,188	185	1,103	1.5	243.5	243.5	243.8	0.3
EM	92,151	110	409	4.1	243.9	243.9	244.2	0.3
EN	93,511	99	449	3.7	246.2	246.2	246.7	0.5
EO	94,044	190	733	2.3	248.5	248.5	248.8	0.3
EP	94,817	66	453	1.7	248.9	248.9	249.3	0.4
EQ	95,924	157	811	1.0	249.0	249.0	249.5	0.5
ER	96,179	155	415	1.9	249.5	249.5	250.2	0.7
ES	96,750	144	766	1.0	249.8	249.8	250.4	0.6
ET	97,846	221	758	1.0	249.8	249.8	250.5	0.7
EU	98,327	220	898	0.9	249.9	249.9	250.6	0.7

[1]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
EV	99,220	163	220	3.6	250.0	250.0	250.8	0.8
EW	100,161	18	69	11.3	256.0	256.0	256.0	0.0
EX	100,720	45	170	4.6	260.0	260.0	260.3	0.3
EY	101,086	39	206	3.8	262.6	262.6	262.7	0.1
EZ	101,456	88	493	1.6	265.9	265.9	266.3	0.4
FA	102,080	206	527	1.5	267.5	267.5	268.4	0.9
FB	102,413	137	384	2.0	267.5	267.5	268.5	1.0
FC	103,406	40	113	6.9	273.9	273.9	273.9	0.0
FD	105,248	28	105	10.4	286.7	286.7	286.7	0.0
FE	105,822	80	364	2.6	292.7	292.7	293.3	0.6
FF	107,161	48	138	5.7	297.0	297.0	297.1	0.1
FG	108,266	31	209	3.7	300.6	300.6	300.7	0.1
FH	109,499	54	243	3.6	301.4	301.4	301.8	0.4
FI	111,070	99	400	2.2	303.3	303.3	303.7	0.4
FJ	112,184	55	100	4.4	305.8	305.8	305.8	0.0
FK	112,948	91	197	2.2	309.2	309.2	309.2	0.0
FL	113,604	24	103	4.2	315.2	315.2	315.5	0.3
FM	114,190	25	52	8.4	328.2	328.2	328.2	0.0
FN	114,936	65	226	1.9	345.6	345.6	345.8	0.2
FO	115,718	80	611	1.4	367.9	367.9	368.1	0.2
FP	116,318	260	1,891	0.4	368.1	368.1	368.3	0.2
FQ	117,054	424	2,789	0.3	368.1	368.1	368.3	0.2
FR	117,707	105	258	3.2	370.0	370.0	370.8	0.8
FS	117,810	143	483	1.7	372.3	372.3	373.1	0.8
FT	117,936	140	318	2.6	374.2	374.2	374.3	0.1
FU	118,455	119	451	1.8	375.7	375.7	375.9	0.2

[1]Feet above Ann Street in the City of Yonkers

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Saw Mill River (continued)								
FV	118,906[1]	99	162	5.1	379.2	379.2	379.5	0.3
FW	119,186[1]	44	121	6.9	391.0	391.0	391.0	0.0
FX	119,589[1]	80	152	5.4	398.9	398.9	398.9	0.0
Saw Mill River West Channel								
A	494[2]	53	514	1.0	123.0	123.0	123.7	0.7
B	1,566[2]	39	334	1.5	123.2	123.2	123.9	0.7
C	2,386[2]	26	218	2.3	125.7	125.7	126.4	0.7
Sheldrake River								
A	12[3]	57	383	4.7	25.8	19.5[4]	20.0	0.5
B	696[3]	55	348	5.2	25.8	24.1[4]	24.1	0.0
C	3,438[3]	164	1,004	1.8	26.5	26.5	27.3	0.8
D	5,612[3]	48	323	5.6	28.6	28.6	29.4	0.8
E	7,380[3]	220	777	2.3	32.4	32.4	33.1	0.7
F	7,842[3]	114	477	3.8	57.8	57.8	58.2	0.4
G	9,038[3]	64	273	6.6	58.2	58.2	59.0	0.8
H	9,800[3]	44	113	7.3	61.1	61.1	61.5	0.4
I	9,934[3]	31	149	5.6	68.4	68.4	68.8	0.4
J	11,263[3]	20	75	11.1	73.5	73.5	73.5	0.0
K	12,379[3]	76	347	2.4	79.7	79.7	80.2	0.5
L	13,964[3]	31	123	5.7	82.9	82.9	83.5	0.6
M	14,256[3]	220	867	0.8	86.5	86.5	87.4	0.9
N	14,815[3]	480	1,783	0.4	101.7	101.7	101.7	0.0
O	15,705[3]	30	78	9.0	105.1	105.1	105.1	0.0
P	17,012[3]	50	498	1.4	130.8	130.8	130.8	0.0

[1]Feet above Ann Street in the City of Yonkers
[2]Feet above confluence with Saw Mill River
[3]Feet above confluence with Mamaroneck River
[4]Elevation computed without consideration of backwater effects from Mamaroneck River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SAW MILL RIVER – SAW MILL RIVER WEST CHANNEL – SHELDRAKE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sheldrake River (continued)								
Q	17,591[1]	34	158	4.4	132.9	132.9	133.1	0.2
R	17,763[1]	27	153	4.6	134.5	134.5	134.7	0.2
S	18,161[1]	19	100	7.0	136.5	136.5	136.9	0.4
T	19,195[1]	75	266	2.6	147.8	147.8	147.9	0.1
U	21,996[1]	36	153	4.6	151.8	151.8	152.2	0.4
V	22,534[1]	62	342	2.0	158.2	158.2	159.0	0.8
W	25,115[1]	28	77	1.9	166.1	166.1	166.9	0.8
X	26,397[1]	54	322	1.7	172.3	172.3	172.9	0.6
Y	27,520[1]	131	332	1.7	180.4	180.4	180.4	0.0
Z	28,268[1]	35	157	3.5	191.3	191.3	191.7	0.4
AA	29,216[1]	33	140	4.0	204.8	204.8	205.2	0.4
AB	30,249[1]	15	97	3.7	218.8	218.8	219.4	0.6
AC	32,348[1]	21	89	3.1	223.5	223.5	224.4	0.9
AD	33,676[1]	19	56	4.9	231.9	231.9	232.6	0.7
AE	34,029[1]	17	58	4.8	235.2	235.2	236.1	0.9
AF	34,187[1]	41	186	1.5	240.0	240.0	240.6	0.6
AG	35,779[1]	226	1,086	0.3	241.2	241.2	241.3	0.1
Shrub Oak Brook								
A	1,071[2]	89	425	3.9	399.1	399.1	399.3	0.2
B	1,503[2]	69	212	7.9	403.0	403.0	403.0	0.0
C	1,878[2]	69	519	3.2	407.2	407.2	407.7	0.5
D	2,084[2]	55	402	4.2	408.3	408.3	409.0	0.7
E	2,853[2]	180	1,326	1.0	410.5	410.5	411.0	0.5
F	3,810[2]	86	372	3.5	411.4	411.4	412.0	0.6
G	5,315[2]	22	134	9.6	412.1	412.1	413.0	0.9
H	7,359[2]	101	571	2.3	418.7	418.7	419.1	0.4
I	8,755[2]	79	481	2.7	419.8	419.8	420.3	0.5

[1]Feet above confluence with Mamaroneck River
[2]Feet above county boundary

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SHELDRAKE RIVER – SHRUB OAK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Shrub Oak Brook (continued)								
J	9,409[1]	81	373	3.5	420.5	420.5	420.8	0.3
K	9,981[1]	133	589	2.2	422.1	422.1	422.7	0.6
L	10,470[1]	131	952	0.6	422.3	422.3	422.9	0.6
M	10,936[1]	122	755	0.8	422.5	422.5	423.3	0.8
N	13,339[1]	143	683	0.9	422.6	422.6	423.5	0.9
O	14,705[1]	49	269	2.2	422.7	422.7	423.7	1.0
P	15,608[1]	83	610	0.7	423.2	423.2	424.2	1.0
Q	15,927[1]	160	1,025	0.4	423.6	423.6	424.6	1.0
R	16,773[1]	58	380	1.1	423.8	423.8	424.7	0.9
S	17,545[1]	156	834	0.5	424.1	424.1	425.0	0.9
Shrub Oak Brook Tributary 1								
A	125[2]	8	23	9.8	419.9	417.0[4]	417.0	0.0
B	300[2]	31	131	1.8	419.9	419.3[4]	419.6	0.3
C	1,009[2]	18	58	4.0	419.9	419.9	420.4	0.5
D	2,294[2]	37	116	2.0	423.7	423.7	424.5	0.8
Sing Sing Creek								
A	244[3]	78	211	7.9**	*	6.7**	7.1**	0.4**
B	854[3]	27	132	12.7	12.0	12.0	12.0	0.0
C	1,298[3]	30	137	12.2	20.4	20.4	20.4	0.0
D	1,488[3]	73	842	2.0	34.2	34.2	34.2	0.0
E	1,852[3]	42	155	10.8	50.2	50.2	50.2	0.0
F	2,452[3]	37	175	9.5	66.1	66.1	66.5	0.4
G	2,871[3]	51	244	6.8	89.2	89.2	89.3	0.1
H	3,395[3]	49	167	8.9	97.7	97.7	97.6	0.0

[1]Feet above county boundary
[2]Feet above confluence with Shrub Oak Brook
[3]Feet above confluence with Hudson River
[4]Elevation computed without consideration of backwater effects from Shrub Oak Brook
[5]Elevation computed without consideration of backwater effects from Hudson River

*Data superseded by updated coastal analysis
**Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area
Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SHRUB OAK BROOK – SHRUB OAK BROOK TRIBUTARY 1 – SING SING CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sing Sing Creek (continued)								
I	4,072[1]	33	223	6.7	115.9	115.9	116.4	0.5
J	5,289[1]	38	136	10.9	127.1	127.1	127.1	0.0
K	6,681[1]	33	148	10.1	153.8	153.8	153.8	0.0
L	7,116[1]	47	180	8.3	165.1	165.1	165.1	0.0
M	7,538[1]	89	257	5.8	173.3	173.3	174.0	0.7
N	8,332[1]	36	164	9.1	185.5	185.5	185.9	0.3
South Fox Meadow Brook								
A	22[2]	82	148	5.1	157.0	157.0	157.0	0.0
B	566[2]	23	74	10.2	173.3	173.3	173.3	0.0
C	817[2]	57	308	2.4	183.9	183.9	184.0	0.1
D	1,437[2]	13	68	11.0	183.9	183.9	184.5	0.6
E	1,614[2]	41	273	2.7	186.5	186.5	186.5	0.0
F	2,616[2]	88	694	1.1	189.8	189.8	190.4	0.6
G	3,667[2]	218	996	0.7	189.8	189.8	190.7	0.9
H	4,684[2]	154	853	0.8	190.0	190.0	190.9	0.9
I	5,605[2]	115	690	1.0	190.1	190.1	190.9	0.8
J	6,815[2]	281	806	0.7	190.1	190.1	190.9	0.8
K	7,333[2]	21	104	2.6	198.6	198.6	198.6	0.0
L	7,998[2]	67	195	1.4	200.6	200.6	201.2	0.6
M	8,426[2]	20	70	3.8	203.8	203.8	203.9	0.1
N	8,577[2]	21	69	3.9	205.7	205.7	206.5	0.8
O	8,931[2]	21	56	4.8	208.1	208.1	208.3	0.2
P	9,096[2]	63	311	0.9	211.8	211.8	211.8	0.0
Q	9,462[2]	46	58	4.6	211.8	211.8	212.0	0.2
R	12,357[2]	246	1,513	0.1	222.6	222.6	222.8	0.2

[1]Feet above confluence with Hudson River

[2]Feet above confluence with Bronx River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SING SING CREEK – SOUTH FOX MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sprain Brook								
A	100[1]	61	335	2.8	178.7	178.7	178.7	0.0
B	300[1]	61	332	2.9	178.9	178.9	178.9	0.0
C	500[1]	61	328	2.9	179.0	179.0	179.0	0.0
D	700[1]	60	324	2.9	179.1	179.1	179.1	0.0
E	900[1]	60	321	3.0	179.3	179.3	179.3	0.0
F	1,250[1]	46	225	4.2	179.5	179.5	179.5	0.0
G	1,476[1]	47	234	4.1	179.9	179.9	180.0	0.1
H	1,670[1]	33	124	7.7	180.0	180.0	180.0	0.0
I	1,790[1]	28	155	6.1	181.2	181.2	181.2	0.0
J	1,952[1]	25	156	6.1	181.3	181.3	181.4	0.1
K	2,166[1]	20	78	11.3	182.6	182.6	182.6	0.0
L	2,344[1]	15	107	8.2	185.0	185.0	185.0	0.0
M	2,469[1]	37	269	3.3	185.5	185.5	186.3	0.8
N	2,641[1]	21	147	6.0	185.5	185.5	186.4	0.9
O	2,883[1]	23	219	4.0	191.5	191.5	191.7	0.2
P	3,069[1]	38	279	3.2	191.6	191.6	192.0	0.4
Q	3,279[1]	34	214	3.8	191.6	191.6	192.0	0.4
Sprout Brook								
A	905[2]	*	164	7.9	9.0	1.8[3]	1.8	0.0
B	2,500[2]	*	231	5.6	9.0	6.8[3]	7.0	0.2
C	3,960[2]	*	235	5.5	11.4	11.4	11.5	0.1
D	5,350[2]	*	123	10.6	25.1	25.1	25.1	0.0
E	7,550[2]	70	193	6.7	54.3	54.3	54.5	0.2
F	8,570[2]	53	150	8.4	59.8	59.8	59.8	0.0
G	9,540[2]	60	196	6.4	67.2	67.2	67.2	0.0
H	10,450[2]	70	568	2.2	72.6	72.6	72.9	0.3

[1]Feet above limit of detailed study
*Floodway coincident with channel banks
[2]Feet above Annsville Creek and Peekskill Hollow Brook
[3]Elevation computed without consideration of backwater effects from Hudson River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SPRAIN BROOK – SPROUT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Stone Hill River								
A	14,185[1]	205	997	2.4	316.5	316.5	317.5	1.0
B	14,360[1]	239	1,540	1.1	318.8	318.8	319.8	1.0
C	14,535[1]	149	725	2.4	318.9	318.9	319.9	1.0
D	14,815[1]	24	141	14.8	319.3	319.3	319.9	0.6
E	20,555[1]	75	375	4.5	387.9	387.9	387.9	0.0
F	21,155[1]	251	1,149	1.6	388.3	388.3	389.3	1.0
G	21,249[1]	239	1,096	1.6	388.5	388.5	389.5	1.0
H	21,271[1]	241	1,100	1.8	388.5	388.5	389.5	1.0
I	21,725[1]	328	1,250	1.3	391.6	391.6	392.5	0.9
J	22,585[1]	220	854	2.0	392.4	392.4	393.0	0.6
K	23,450[1]	251	628	2.5	393.2	393.2	393.5	0.3
L	24,240[1]	259	546	3.3	394.8	394.8	394.8	0.0
M	25,058[1]	37	161	9.9	397.5	397.5	397.5	0.0
N	25,695[1]	134	707	2.1	400.3	400.3	401.2	0.9
O	26,300[1]	199	819	1.8	400.7	400.7	401.5	0.8
P	27,155[1]	88	332	4.6	401.6	401.6	402.2	0.6
Sunnyside Brook								
A	300[2]	10	45	12.2	22.4	22.4	22.7	0.3
B	823[2]	43	85	6.5	57.1	57.1	57.7	0.6
C	1,323[2]	30	189	2.9	88.5	88.5	89.0	0.5
D	1,892[2]	29	72	7.6	130.2	130.2	130.8	0.6
E	2,559[2]	26	73	7.5	175.3	175.3	175.9	0.6
F	3,392[2]	25	60	9.1	218.8	218.8	218.8	0.0
G	3,957[2]	87	324	1.7	253.5	253.5	253.8	0.3
H	4,604[2]	61	178	3.1	264.2	264.2	265.0	0.8
I	5,266[2]	17	57	6.5	277.8	277.8	278.4	0.6

[1]Feet above confluence with Muscoot Reservoir

[2]Feet above limit of floodway

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

STONE HILL RIVER – SUNNYSIDE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sunnyside Brook (continued)								
J	6,378[1]	94	85	4.4	284.0	284.0	284.9	0.9
K	7,129[1]	38	60	6.2	298.3	298.3	298.5	0.2
L	7,886[1]	12	43	8.6	347.4	347.4	347.5	0.1
Tibbetts Brook								
A	739[2]	42	191	4.6	30.0	30.0	30.8	0.8
B	1,268[2]	29	149	5.9	32.0	32.0	32.4	0.4
C	1,714[2]	43	262	3.4	34.4	34.4	35.4	1.0
D	2,128[2]	115	466	1.9	34.9	34.9	35.9	1.0
E	2,671[2]	70	368	2.4	35.2	35.2	35.2	1.0
F	3,482[2]	125	374	2.4	36.0	36.0	37.0	1.0
G	4,111[2]	100	457	1.9	36.7	36.7	37.9	1.1
Titicus River								
A	200[3]	58	417	6.4	324.5	324.5	325.5	1.0
B	570[3]	45	428	6.2	327.0	327.0	327.2	0.2
C	1,315[3]	100	651	4.1	329.0	329.0	330.0	1.0
D	3,270[3]	284	806	3.3	336.0	336.0	337.0	1.0
E	4,440[3]	55	351	7.6	342.7	342.7	343.2	0.5
F	6,830[3]	75	330	6.7	363.7	363.7	364.6	0.9
G	7,860[3]	80	323	6.9	376.0	376.0	376.0	0.0
H	9,895[3]	131	322	6.9	405.3	405.3	405.4	0.1
I	11,275[3]	73	432	5.1	453.6	453.6	453.6	0.0
J	12,175[3]	45	204	10.9	459.2	459.2	459.2	0.0
K	14,270[3]	170	473	4.7	466.3	466.3	466.9	0.6
L	16,190[3]	203	845	2.6	472.9	472.9	473.9	1.0
M	17,530[3]	87	452	4.4	480.0	480.0	480.0	0.0

[1]Feet above limit of floodway

[2]Feet above county boundary

[3]Feet above Titicus Reservoir

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

SUNNYSIDE BROOK – TIBBETTS BROOK – TITICUS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Titicus River (continued)								
N	18,625[1]	63	300	6.7	487.2	487.2	487.3	0.1
O	19,515[1]	120	738	2.7	494.4	494.4	494.8	0.4
P	21,050[1]	260	1,418	1.4	495.0	495.0	495.6	0.6
Tributary to Laurel Reservoir								
A	721[2]	80	286	0.7	355.8	355.8	355.8	0.0
B	2,902[2]	60	145	1.4	379.7	379.7	379.7	0.0
Tributary to Mill River								
A	1,399[3]	68	449	0.6	372.8	372.4[4]	373.4	1.0
B	5,494[3]	80	302	0.9	411.6	411.6	412.5	0.9
Tributary 1 to Wampus River								
A	1,000[4]	91	179	2.2	375.8	375.8	376.4	0.6
B	2,360[4]	70	100	3.9	381.8	381.8	381.8	0.0
C	3,725[4]	15	41	9.5	413.0	413.0	413.3	0.3
D	4,345[4]	29	54	7.3	434.9	434.9	434.9	0.0
E	5,200[4]	14	40	9.7	464.2	464.2	464.5	0.3
Tributary 2 to Wampus River								
A	432[4]	152	1,035	0.4	389.6	389.6	390.0	0.4
B	1,614[4]	150	831	0.4	389.6	389.6	390.0	0.4
C	5,073[4]	13	34	9.3	407.7	407.7	408.1	0.4
D	6,385[4]	30	45	7.0	477.7	477.7	477.7	0.0

[1]Feet above Titicus Reservoir
[2]Feet above county boundary
[3]Feet above the confluence with Mill River
[4]Feet above confluence with Wampus River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

TITICUS RIVER – TRIBUTARY TO LAUREL RESERVOIR – TRIBUTARY TO MILL RIVER – TRIBUTARY 1 TO WAMPUS RIVER – TRIBUTARY 2 TO WAMPUS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary 3 to Wampus River								
A	984[1]	28	32	6.1	430.0	430.0	430.0	0.0
B	2,423[1]	146	878	0.2	472.0	472.0	472.0	0.0
C	3,542[1]	182	946	0.2	472.0	472.0	472.0	0.0
Troublesome Brook								
A	112[2]	41	156	6.6	104.1[4]	99.9	100.2	0.4
B	1,143[2]	174	530	2.0	108.1	108.1	108.1	0.0
C	1,819[2]	57	275	3.8	110.1	110.1	111.0	0.9
D	2,963[2]	50	243	4.3	114.1	114.1	114.9	0.8
E	6,063[2]	40	265	3.9	120.8	120.8	121.8	1.0
F	6,376[2]	56	266	3.9	121.7	121.7	122.1	0.4
G	6,881[2]	22	116	13.1	164.8	164.8	164.8	0.0
Unnamed Tributary to Plum Brook								
A	157[3]	79	134	3.3	275.0	275.0	275.4	0.4
B	313[3]	73	291	1.5	277.8	277.8	278.5	0.7
C	771[3]	57	232	1.9	278.4	278.4	279.1	0.7
D	820[3]	60	190	2.3	282.6	282.6	283.6	1.0
E	1,234[3]	20	61	7.2	282.8	282.8	283.3	0.5
F	1,331[3]	142	564	0.8	288.5	288.5	288.5	0.0
G	1,703[3]	44	177	2.5	288.7	288.7	288.8	0.1
H	1,756[3]	21	93	4.7	289.7	289.7	289.8	0.1
I	1,779[3]	65	463	0.9	292.1	292.1	292.1	0.0
J	2,033[3]	51	73	0.6	292.1	292.1	292.1	0.0

[1]Feet above confluence with Wampus River

[2]Feet above confluence with Bronx River

[3]Feet above confluence with Plum Brook

[4]Elevation computed without consideration of backwater effects from Bronx River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY 3 TO WAMPUS RIVER – TROUBLESOME BROOK – UNNAMED TRIBUTARY TO PLUM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Wampus River								
A	850[1]	200	700	2.1	369.2	368.1[4]	368.4	0.3
B	1,919[1]	270	1,029	1.4	370.0	370.0	370.3	0.3
C	3,496[1]	94	526	2.2	375.1	375.1	375.7	0.6
D	6,210[1]	279	1,291	0.8	375.6	375.6	376.2	0.6
E	8,235[1]	339	945	1.1	377.0	377.0	377.6	0.6
F	9,245[1]	110	566	1.8	384.7	384.7	384.9	0.2
G	10,219[1]	59	187	4.6	401.0	401.0	401.9	0.9
H	12,880[1]	55	51	5.2	423.0	423.0	423.1	0.1
I	13,790[1]	60	120	2.2	428.5	428.5	428.9	0.4
West Branch Blind Brook								
A	675[2]	14	41	9.8	131.5	131.5	131.6	0.1
B	1,900[2]	21	82	5.0	146.4	146.4	147.3	0.9
C	3,500[2]	16	40	9.0	171.0	171.0	171.1	0.1
D	5,225[2]	20	66	4.6	200.7	200.7	200.8	0.1
E	5,890[2]	234	1,556	0.2	214.4	214.4	215.2	0.8
Wickers Creek								
A	0[3]	66	130	5.8**	*	3.6**	3.6**	0.0**
B	508[3]	19	70	10.8	10.9	10.9	11.2	0.3
C	937[3]	25	108	7.0	22.5	22.5	22.9	0.4
D	1,182[3]	18	111	6.8	35.8	35.8	36.7	0.9
E	1,411[3]	24	75	10.1	58.5	58.5	58.5	0.0
F	1,704[3]	11	58	13.0	72.7	72.7	72.7	0.0
G	2,042[3]	26	83	9.1	82.5	82.5	82.7	0.2
H	2,293[3]	23	75	10.1	92.1	92.1	92.1	0.0

[1]Feet above confluence with Byram River Reach 2
[2]Feet above confluence with Blind Brook
[3]Feet above confluence with Hudson River
[4]Elevation computed without consideration of backwater effects from Byram River

*Data superseded by updated coastal analysis
**Coastal flooding effects control NFIP regulatory Base Flood Elevations in this area
Riverine floodway data are provided for the purpose of a no-rise analysis in accordance with floodway determinations for development within the SFHA.

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

WAMPUS RIVER – WEST BRANCH BLIND BROOK – WICKERS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Woodlands Road Brook 1								
A	830[1]	25	92	2.7	71.8	71.8	72.7	0.9
B	1,606[1]	52	82	2.3	72.5	72.5	73.3	0.8
C	1,967[1]	30	27	5.4	91.6	91.6	91.6	0.0
D	2,399[1]	21	102	1.8	92.2	92.2	92.3	0.1
Woodlands Road Brook 2								
A	139[2]	9	19	5.5	72.9	72.9	73.8	0.9
B	687[2]	40	51	2.0	86.2	86.2	86.3	0.1
C	1,019[2]	27	41	2.6	88.5	88.5	88.6	0.1
D	1,193[2]	8	32	3.3	92.2	92.2	92.4	0.2

[1]Feet above confluence with Brentwood Brook

[2]Feet above confluence with Woodlands Road Brook 1

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

WESTCHESTER COUNTY, NY
(ALL JURISDICTIONS)

FLOODWAY DATA

WOODLANDS ROAD BROOK 1 – WOODLANDS ROAD BROOK 2

Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams
[Not Applicable to this Flood Risk Project]

6.4 Coastal Flood Hazard Mapping

Flood insurance zones and BFEs including the wave effects were identified on each transect based on the results from the onshore wave hazard analyses. Between transects, elevations were interpolated using topographic maps, land-use and land-cover data, and knowledge of coastal flood processes to determine the aerial extent of flooding. Sources for topographic data are shown in Table 23.

Zone VE is subdivided into elevation zones and BFEs are provided on the FIRM.

The limit of Zone VE shown on the FIRM is defined as the farthest inland extent of any of these criteria (determined for the 1% annual chance flood condition):

- The *primary frontal dune zone* is defined in 44 CFR Section 59.1 of the NFIP regulations. The primary frontal dune represents a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes that occur immediately landward and adjacent to the beach. The primary frontal dune zone is subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune zone occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

- The *wave runup zone* occurs where the (eroded) ground profile is 3.0 feet or more below the 2-percent wave runup elevation.

- The *wave overtopping splash zone* is the area landward of the crest of an overtopped barrier, in cases where the potential 2-percent wave runup exceeds the barrier crest elevation by 3.0 feet or more.

- The *breaking wave height zone* occurs where 3-foot or greater wave heights could occur (this is the area where the wave crest profile is 2.1 feet or more above the total stillwater elevation).

The SFHA boundary indicates the limit of SFHAs shown on the FIRM as either “V” zones or “A” zones.

Table 26 indicates the coastal analyses used for floodplain mapping and the criteria used to determine the inland limit of the open-coast Zone VE and the SFHA boundary at each transect.

Table 26: Summary of Coastal Transect Mapping Considerations

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis Zone Designation and BFE (ft NAVD88)	Wave Height Analysis Zone Designation and BFE (ft NAVD88)	Zone VE Limit	SFHA Boundary
1		VE 18	VE 18 AE 13 -18	Runup	Runup
2		VE 22	VE 22	Runup	Runup
3		VE 17	VE 15 - 17 AE 13	Wave Height	SWEL
4		VE 18	VE 14 - 18 AE 13	Runup	Runup
5		VE 18	VE 18 AE 13 - 14	Runup	Runup
6		VE 17	VE 15 - 17 AE 12 - 14	Runup	Runup
7		VE 18	VE 16 - 18 AE 12 - 13	Wave Height	SWEL
8		VE 25	VE 25 AE 25	Runup	Runup
9		VE 18	VE 14 - 18 AE 13 - 14	Wave Height	SWEL
10		VE 18	VE 18 AE 13	Wave Height	SWEL
11		VE 20	VE 20 AE 20	Runup	Runup
12		VE 19	VE 19	Runup	Runup
13		VE 18	VE 16 - 18 AE 12 - 13	Wave Height	SWEL
14		VE 18	VE 16 - 18 AE 13 - 14	Wave Height	SWEL
15		VE 18	VE 18 AE 12 - 13	Wave Height	SWEL
16		VE 18	VE 16 - 18 AE 13 - 14	Wave Height	SWEL
17		VE 18	VE 18 AE 13	Wave Height	SWEL
18		VE 18	VE 16 - 18 AE 13 - 14	Wave Height	SWEL
19		AE 14	AE 14	Runup	Runup
20		VE 14	VE 14 AE 12 - 14	Wave Height	SWEL
21		AE 14	AE 14	Wave Height	SWEL
22		VE 17	VE 17 AE 13 -14	Wave Height	SWEL
23		VE 17	VE 15 - 17 AE 14	Wave Height	SWEL

Table 26: Summary of Coastal Transect Mapping Considerations (continued)

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis: Zone Designation and BFE (ft NAVD88)	Wave Height Analysis: Zone Designation and BFE (ft NAVD88)	Zone VE Limit	SFHA Boundary
24		VE 18	VE 18 AE 13	Runup	Runup
25		VE 16	VE 16 AE 12 - 14	Wave Height	SWEL
26		VE 16	VE 15 - 16 AE 12 -14	Wave Height	SWEL
27		VE 16	VE 15 - 16 AE 13 -14	Wave Height	SWEL
28		VE 17	VE 17 AE 17	Runup	Runup
29		VE 18	VE 16 - 18 AE 13	Wave Height	SWEL
30		VE 18	VE 16 - 18 AE 13	Wave Height	SWEL
31		VE 18	VE 18 AE 12 - 13	Wave Height	SWEL
32		VE 18	VE 15 - 18 AE 13 - 14	Wave Height	SWEL
33		VE 18	VE 16 - 18 AE 13	Runup	Overtopping
34		AE 14	VE 15 AE 13 - 14	Wave Height	SWEL
35		VE 15	VE 15 AE 12 - 14	Wave Height	SWEL
36		VE 16	VE 16 AE 13 - 14	Runup	Runup
37		VE 16	VE 16 AE 13 - 14	Wave Height	SWEL
38		VE 16	VE 15 - 16 AE 15	Runup	Runup
39		VE 17	VE 16 - 17 AE 13	Wave Height	SWEL
40		VE 19	VE 19 AE 19	Runup	Runup
41		VE 18	VE 15 - 18 AE 13 - 14	Wave Height	SWEL
42		VE 18	VE 15 - 18 AE 13 - 14	Wave Height	SWEL
43		VE 18	VE 16 - 18 AE 14	Wave Height	SWEL
44		VE 17	VE 16 - 18 AE 14	Wave Height	SWEL

Table 26: Summary of Coastal Transect Mapping Considerations (continued)

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis: Zone Designation and BFE (ft NAVD88)	Wave Height Analysis: Zone Designation and BFE (ft NAVD88)	Zone VE Limit	SFHA Boundary
45		VE 15	VE 15 AE 13 - 15	Wave Height	SWEL
46		VE 19	VE 19 AE 14 - 19	Runup	Runup
47		VE 17	VE 17 AE 13 - 14	Wave Height	SWEL
48		VE 16	VE 16 AE 13 - 14	Wave Height	SWEL
49		VE 16	VE 15 - 16 AE 13 - 14	Wave Height	SWEL
50		VE 18	VE 18 AE 13 - 14	Wave Height	SWEL
51		VE 19	VE 19 AE 17	Runup	Runup
52		VE 18	VE 18 AE 13 - 14	Wave Height	SWEL
53		VE 18	VE 17 - 18	Runup	Runup
54		VE 18	VE 16 - 1 8 AE 13 - 14	Wave Height	SWEL
55		VE 17	VE 17 AE 13 - 14	Wave Height	SWEL
56		VE 15	VE 15 AE 13 - 14	Wave Height	SWEL
57		VE 17	VE 15 - 17 AE 13 - 15	Runup	Runup
58		VE 17	VE 15 - 17 AE 13 - 14	Wave Height	SWEL
59		VE 17	VE 17	Runup	Runup
60		VE 19	VE 16 - 19 AE 13 - 14	Wave Height	SWEL
61		VE 18	VE 17 - 18 AE 17	Runup	Runup
62		VE 17	VE 17 AE 14	Wave Height	SWEL
63		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
64		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
65		VE 13	VE 13 AE 9	Runup	Runup
66		VE 13	VE 13 AE 9 - 10	Runup	Runup

Table 26: Summary of Coastal Transect Mapping Considerations (continued)

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis Zone Designation and BFE (ft NAVD88)	Wave Height Analysis Zone Designation and BFE (ft NAVD88)	Zone VE Limit	SFHA Boundary
67		VE 13	VE 12- 13 AE 10	Wave Height	SWEL
68		VE 13	VE 13 AE 9 -11	Runup	Runup
69		VE 13	VE 13 AE 9	Wave Height	SWEL
70		VE 13	VE 13 AE 9	Runup	Runup
71		VE 13	VE 13 AE 9	Wave Height	SWEL
72		VE 13	VE 13 AE 11	Runup	Runup
73		VE 13	VE 13 AE 9	Wave Height	SWEL
74		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
75		VE 12	VE 12 AE 10	Runup	Runup
76		VE 12	VE 12 AE 9 - 10	Wave Height	SWEL
77		VE 12	VE 12 AE 8 -10	Wave Height	SWEL
78		VE 12	VE 12 AE 9	Runup	Runup
79		VE 12	VE 12 AE 8	Wave Height	SWEL
80		VE 12	VE 12 AE 9 - 10	Wave Height	SWEL
81		VE 12	VE 12 AE 9	Wave Height	SWEL
82		VE 12	VE 12 AE 9	Wave Height	SWEL
83		VE 12	VE 12 AE 9	Wave Height	SWEL
84		VE 12	VE 12 AE 8 - 9	Wave Height	SWEL
85		VE 12	VE 12 AE 9	Wave Height	SWEL
86		VE 12	VE 12 AE 9 -11	Runup	Overtopping
87		VE 12	VE 12 AE 9	Wave Height	SWEL

Table 26: Summary of Coastal Transect Mapping Considerations (continued)

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis: Zone Designation and BFE (ft NAVD88)	Wave Height Analysis: Zone Designation and BFE (ft NAVD88)	Zone VE Limit	SFHA Boundary
88		VE 15	VE 15	Runup	Runup
89		VE 15	VE 15 AE 15	Runup	Runup
90		VE 13	VE 13 AE 10	Runup	Runup
91		VE 13	VE 13 AE 10	Runup	Runup
92		VE 13	VE 13	Runup	Runup
93		VE 13	C	Runup	Runup
94		VE 13	VE 13	Runup	Runup
95		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
96		VE 13	VE 13 AE 9	Wave Height	SWEL
97		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
98		VE 13	VE 11 - 13 AE 9 - 10	Wave Height	SWEL
99		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
100		VE 13	VE 13 AE 10	Wave Height	SWEL
101		VE 13	VE 13 AE 10	Wave Height	SWEL
102		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
103		VE 13	VE 13 AE 9 - 11	Wave Height	SWEL
104		VE 13	VE 13 AE 10 - 11	Wave Height	SWEL
105		VE 13	VE 11 - 13 AE 10 - 11	Wave Height	SWEL
106		VE 16	VE 16	Runup	Runup
107		VE 17	VE 17 AE 9	Runup	Runup
108		VE 13	VE 13 AE 12	Runup	Runup
109		VE 19	VE 19	Runup	Runup
110		VE 13	VE 13	Runup	Runup
111		VE 14	VE 14	Runup	Runup
112		VE 13	VE 13 AE 9 -10	Wave Height	SWEL

Table 26: Summary of Coastal Transect Mapping Considerations (continued)

Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
		Zone Designation and BFE (ft NAVD88)	Zone Designation and BFE (ft NAVD88)		
113		VE 13	VE 13 AE 9 - 11	Wave Height	SWEL
114		VE 13	VE 13 AE 9 - 11	Wave Height	SWEL
115		VE 13	VE 13 AE 13	Runup	Runup
116		VE 13	VE 13 AE 9 -10	Wave Height	SWEL
117		VE 13	VE 13	Runup	Runup
118		VE 27	VE 27	Runup	Runup
119		VE 21	VE 21	Runup	Overtopping
120		VE 27	VE 27	Runup	Runup
121		VE 13	VE 11 - 13 AE 10 - 11	Wave Height	SWEL
122		VE 13	VE 11 - 13 AE 10 - 11	Wave Height	SWEL
123		VE 13	VE 13 AE 9 - 10	Wave Height	SWEL
124		VE 13	VE 13 AE 10	Wave Height	SWEL
125		VE 13	VE 13 AE 9	Wave Height	SWEL
126		VE 21	VE 21	Runup	Runup
127		VE 13	VE 13 AE 10	Runup	Runup
128		VE 18	VE 18	Runup	Runup
129		VE 14	VE 14	Runup	Runup
130		VE 16	VE 16	Runup	Runup
131		VE 12	VE 12 AE 9 - 11	Wave Height	SWEL
132		VE 12	VE 11 - 12 AE 9 - 11	Wave Height	SWEL
133		VE 13	VE 13	Runup	Runup
134		VE 13	VE 12 - 13 AE 9 - 12	Runup	Runup
135		VE 13	VE 13 AE 10 - 11	Wave Height	SWEL
136		AE 9	AE 9	Wave Height	SWEL
137		AE 9	AE 9	Wave Height	SWEL
138		AE 8	AE 8	Runup	Runup
139		AE 8	AE 8	Runup	Runup

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions to FIS projects may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 31, "Map Repositories").

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA. A LOMA cannot be issued for properties located on the PFD (primary frontal dune).

To obtain an application for a LOMA, visit http://www.fema.gov and download the form "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill". Visit the "Flood Map-Related Fees" section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at http://www.fema.gov/plan/prevent/fhm/ot_lmreq.shtm.

For more information about how to apply for a LOMA, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA's determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting http://www.fema.gov for the "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill" or by calling the FEMA Map Information eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the "Flood Map-Related Fees" section.

A tutorial for LOMR-F is available at http://www.fema.gov/plan/prevent/fhm/ot_lmreq.shtm.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests

for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit http://www.fema.gov and download the form "MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision". Visit the "Flood Map-Related Fees" section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Westchester County FIRM are listed in Table 27.

Table 27: Incorporated Letters of Map Change

Case Number	Effective Date	Flooding Source	FIRM Panel(s)
09-02-0976P	12/21/2009	Beaver Swamp Brook	36119C0352G, 36119C0354G
08-02-1382P	5/19/2009	Unnamed Tributary to the Hudson River	36119C0253G
10-02-2047P	12/20/2010	Sawmill Creek	36119C0254F
09-02-0767P	2/8/2010	Saw Mill River	36119C0262F
10-02-2047P	12/20/2010	Sawmill Creek	36119C0262F
14-02-0594P	9/26/2014	Sheldrake River	36119C0353G
10-02-2170P	6/29/2012	Troublesome Creek	36119C0329F, 36119C0327F
11-02-2126P	10/9/2012	South Fox Meadow Brook	36119C0268F. 36119C0269F

6.5.4 Physical Map Revisions

PMRs are an official republication of a community's NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community's chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit http://www.fema.gov and visit the "Flood Map Revision Processes" section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a

mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Westchester County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBMs) and/or Flood Boundary and Floodway Maps (FBFMs) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 28, "Community Map History." A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.

- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or "pending" (for Preliminary FIS Reports) is shown. If the community is listed in Table 28 but not identified on the map, the community is treated as if it were unmapped.

- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.

- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.

- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community. This is the first effective date that is shown on the FIRM panel.

- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as Physical Map Revisions (PMR) of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Westchester County FIRMs in countywide format was September 28, 2007.

Table 28: Community Map History

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Village of Ardsley	4/13/1973	4/13/1973	3/26/1976	9/29/1978	9/28/2007
Town of Bedford	5/31/1974	5/31/1974	7/9/1976 6/3/1977	12/4/1979	9/28/2007
Village of Briarcliff Manor	6/28/1974	6/28/1974	None	2/1/1978	9/28/2007
Village of Bronxville	7/13/1973	7/13/1973	None	3/1/1979	9/28/2007
Village of Buchanan	10/29/1976	10/29/1976	None	7/27/1979	9/28/2007
Town of Cortlandt	5/31/1974	5/31/1974	8/13/76	4/17/1985	9/28/2007
Village of Croton-on-Hudson	5/10/1974	5/10/1974	1/30/1976	11/2/1983	9/28/2007
Village of Dobbs Ferry	5/17/1974	5/17/1974	6/11/1976	4/16/1979	9/28/2007
Town of Eastchester	5/10/1974	5/10/1974	None	11/15/1979	9/28/2007
Village of Elmsford	4/12/1974	4/12/1974	5/28/1976	6/15/1979	9/28/2007
Town of Greenburgh	6/21/1974	6/21/1974	7/30/1976	8/15/1980	9/28/2007, 6/18/1987
Town of Harrison	3/5/1976	3/5/1976	None	3/15/1982	9/28/2007, 8/5/1991
Village of Hastings-on-Hudson	11/8/1974	11/8/1974	10/3/1975	4/2/1979	9/28/2007
Village of Irvington	6/28/1974	6/28/1974	1/16/1976	3/15/1979	9/28/2007
Village of Larchmont	6/14/1973	6/14/1973	11/23/1973	9/1/1977	9/28/2007, 7/16/1984
Town of Lewisboro	11/1/1974	11/1/1974	None	3/9/1984	9/28/2007
Town of Mamaroneck	6/15/1979	6/15/1979	None	6/15/1979	9/28/2007, 9/15/1989
Village of Mamaroneck	9/14/1973	9/14/1973	1/161976	12/1/1977	9/28/2007, 4/3/1984, 10/29/1982,
Village of Mount Kisco	12/9/1977	12/9/1977	None	9/18/1986	9/28/2007
Town of Mount Pleasant	5/3/1974	5/3/1974	10/17/1975	6/4/1980	9/28/2007, 1/29/1982
City of Mount Vernon	6/28/1974	6/28/1974	None	10/17/1978	9/28/2007
Town of New Castle	6/28/1974	6/28/1974	9/19/1975	9/5/1979	9/28/2007
City of New Rochelle	12/21/1973	12/21/1973	4/9/1976	6/18/1980	9/28/2007, 1/6/1983
Town of North Castle	6/28/1974	6/28/1974	7/30/1976	12/2/1983	9/28/2007, 1/2/1991
Town of North Salem	1/31/1975	1/31/1975	None	7/3/1986	9/28/2007
Town of Ossining	10/25/1974	10/25/1974	2/25/1977	3/16/1983	9/28/2007
Village of Ossining	7/19/1974	7/19/1974	1/30/1976	7/5/1982	9/28/2007
City of Peekskill	5/31/1974	5/31/1974	10/24/1975	8/15/1984	9/28/2007
Village of Pelham	5/17/1974	5/17/1974	11/12/1976 2/27/1976	4/2/1979	9/28/2007
Village of Pelham Manor	5/10/1974	5/10/1974	None	1/3/1979	9/28/2007

Table 28: Community Map History (continued)

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Village of Pleasantville	4/12/1974	4/12/1974	6/4/1976	2/15/1979	9/28/2007
Village of Port Chester	5/3/1974	5/3/1974	2/13/1976	1/16/1980	9/28/2007, 5/1/1984
Town of Pound Ridge	5/24/1974	5/24/1974	1/2/1976	5/25/1984	9/28/2007, 2/6/1991
City of Rye	5/20/1977	5/20/1977	11/3/1978	4/1/1980	9/28/2007, 11/1/1984, 5/16/1983,
Village of Rye Brook	12/28/1973	12/28/1973	12/16/1975	9/28/1979	9/28/2007
Village of Scarsdale	12/28/1973	12/28/1973	7/2/1976	6/18/1980	9/28/2007
Village of Sleepy Hollow	12/13/1974	12/13/1974	None	8/17/1981	9/28/2007
Town of Somers	12/20/1974	12/20/1974	6/4/1976	9/4/1986	9/28/2007
Village of Tarrytown	5/31/1974	5/31/1974	9/24/1976	11/18/1981	9/28/2007
Village of Tuckahoe	5/10/1974	5/10/1974	None	2/15/1979	9/28/2007
City of White Plains	3/16/1973	3/16/1973	7/2/1976	1/2/1980	9/28/2007
City of Yonkers	1/9/1974	1/9/1974	10/8/1976	8/15/1980	9/28/2007, 1/21/1998
Town of Yorktown	9/20/1974	9/20/1974	7/16/1976	11/15/1985	9/28/2007, 8/16/1993

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 29: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Annsville Creek	October 17, 1984 February 15, 1984	NYSDEC	H-4547	1982	Town of Cortlandt, City of Peekskill
Barney Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Irvington
Barney Brook Tributary	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Irvington
Bear Gutter Brook	January 2, 1991	Edwards and Kelcey Engineers Inc.	EMW-85-C-1887	1988	Town of New Castle
Beaver Swamp Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison, Village of Mamaroneck, City of Rye
Blind Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison, City of Rye, Village of Rye Brook
Branch 1 Hutchinson River	October 1978	Harris Toups Associates	H-3962	1977	Village of Pelham
Branch 2 Kisco River	March 1979	Harris Toups Associates	H-3962	1988	Town of New Castle
Branch Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Bedford, Village of Mount Kisco
Brentwood Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison, Village of Mamaroneck

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Bronx River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Bronxville, Town of Eastchester, Town of Greenburgh, Town of Mount Pleasant, City of Mount Vernon, Town of North Castle, Village of Scarsdale, Village of Tuckahoe, City of White Plains, City of Yonkers
Brown Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant
Byram River Reach 1	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Port Chester
Byram River Reach 2	January 2, 1991	Edwards and Kelcey Engineers Inc.	EMW-85-C-1887	1988	Town of North Castle
Caney Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Briarcliff Manor
Clove Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant
Crook Brook	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Salem
Croton River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Cortlandt, Village of Croton-on-Hudson, Town of Ossining
David's Brook	June 1979	Camp, Dresser and McKee	H-3832	1977	Town of Bedford
East Branch Blind Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Rye Brook
East Branch Mamaroneck River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison
East Branch Sheldrake River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mamaroneck

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Fly Kill Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant
Furnace Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Cortlandt
Gedney Brook	March 1979	Harris-Toups Associates	H-3962	1988	Town of New Castle
Grassy Sprain Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	City of Yonkers
Hallocks Mill Brook	November 15, 1985	Andrews & Clark Inc.	H-6810	1983	Town of Yorktown
Hallocks Mill Brook Tributary 1	November 15, 1985	Andrews & Clark Inc.	H-6810	1983	Town of Yorktown
Hallocks Mill Brook Tributary 2	November 15, 1985	Andrews & Clark Inc.	H-6810	1983	Town of Yorktown
Highland Avenue Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Eastchester
Hillside Avenue Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Rye Brook
Hudson River	(*Date*)	RAMPP	HSFEHQ-09-D-0369	2014	Village of Briarcliff Manor, Village of Buchanan, Town of Cortlandt, Village of Croton-on-Hudson, Village of Dobbs Ferry, Village of Hastings-on-Hudson, Village of Irvington, Town of Mount Pleasant, Village of Ossining, City of Peekskill, Village of Sleepy Hollow, Village of Tarrytown, City of Yonkers

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Hutchinson River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Eastchester, City of Mount Vernon, City of New Rochelle, Village of Pelham, Village of Pelham Manor, Village of Scarsdale
Kenisco Road Tributary	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant
Kill Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Ossining, Village of Ossining
Kisco River	September 18, 1986 March 1979	Andrews & Clark Inc. Harris-Toups Associates	H-6810 H-3692	1988	Village of Mount Kisco, Town of New Castle
Kisco River Tributary 1	September 18, 1986	Andrews & Clark Inc.	H-6810	1983	Village of Mount Kisco
Knollwood Brook	December 1978 June 18, 1987	Harris-Toups Associates Camp, Dresser and McKee Inc.	H-3962 H-3832	1977	Village of Elmsford, Town of Greenburgh
Leroy Avenue Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Tarrytown
Long Island Sound	(*Date*)	RAMPP	HSFEHQ-09-D-0369	2014	City of New Rochelle, Village of Larchmont, Town of Mamaroneck, Village of Mamaroneck, Village of Pelham Manor, Village of Port Chester, City of Rye
Mamaroneck River Lower Reach	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison, Village of Mamaroneck

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Mamaroneck River Upper Reach	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison, City of White Plains
Manhattan Park Brook	June 18, 1987	Camp, Dresser and McKee	H-3832	1978	Town of Greenburgh
Mianus River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Bedford, Town of North Castle
Mill River	May 25, 1984	Kelcey Engineers Inc.	EMW-85-C-1887	1988	Town of Pound Ridge
Mohegan Outlet	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Cortlandt, Town of Yorktown
Muscoot River	September 4, 1986	Andrews & Clark Inc.	H-6810	1982	Town of Somers
Nanny Hagen Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant, Village of Pleasantville
Nelson Creek	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison
Peekskill Hollow Brook	October 17, 1984 February 15, 1984	NYSDEC	H-4547	1982	Town of Cortlandt, City of Peekskill
Peekskill Hollow Brook Tributary	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Cortlandt
Pitch Swamp	June 1979	Camp, Dresser and McKee	H-3832	1977	Town of Bedford
Plum Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Somers
Plum Brook Tributary 1	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Somers
Pocantico River Lower Reach	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mount Pleasant, Village of Sleepy Hollow
Pocantico River Upper Reach	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Briarcliff Manor, Town of Ossining, Town of Mount Pleasant
Saw Mill Creek	November 15, 1985	Andrew & Clark	H-6810	1983	Town of Yorktown

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Saw Mill River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Ardsley, Village of Dobbs Ferry, Village of Elmsford, Town of Greenburgh, Village of Hastings-on-Hudson, Village of Irvington, Town of Mount Pleasant, Town of New Castle, Village of Pleasantville, Town of Yorktown
Saw Mill River West Channel	October 1978	Harris-Toups Associates	H-3962	1978	Village of Dobbs Ferry
Sheldrake River	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Mamaroneck, Village of Mamaroneck, City of New Rochelle, Village of Scarsdale
Shrub Oak Brook	August 16, 1993	Leonard Jackson Associates	EMW-90-C-3127	1992	Town of Yorktown
Shrub Oak Brook Tributary 1	August 16, 1993	Leonard Jackson Associates	EMW-90-C-3127	1992	Town of Yorktown
Sing Sing Creek	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Ossining
South Fox Meadow Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Scarsdale
Sprain Brook	March 1978 June 18, 1987	Camp, Dresser and McKee	H-3832	1977	Village of Ardsley, Town of Greenburgh
Sprout Brook	October 17, 1984	Camp, Dresser and McKee	H-3832	1982	Town of Cortlandt
Stone Hill River	June 1979	Camp, Dresser and McKee	H-3832	1977	Town of Bedford

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Sunnyside Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Greenburgh, Village of Irvington, Village of Tarrytown
Tibbetts Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	City of Yonkers
Titicus River	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Salem
Tributary 1 to Wampus River	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Castle
Tributary 2 to Wampus River	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Castle
Tributary 3 to Wampus River	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Castle
Tributary to Mill River	July 1979	Camp, Dresser and McKee	H-3832	1988	Town of Pound Ridge
Troublesome Brook Reach 1	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	City of Yonkers
Unnamed Tributary to Plum Brook	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Somers
Wampus River	July 3, 1986	Andrews & Clark Inc.	H-6810	1982	Town of North Castle
West Branch Blind Brook	August 5, 1991	NYSDEC	EMW-87-R-2448	1989	Town of Harrison
Wickers Creek	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Village of Dobbs Ferry
Woodlands Road Brook 1	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison
Woodlands Road Brook 2	September 28, 2007	Leonard Jackson Associates	EMN-2002-RP-0018	2006	Town of Harrison

7.2 Community Meetings

The dates of the community meetings held for this FIS project and any previous FIS projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

Table 30: Community Meetings

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Village of Ardsley	March 1978	September 10, 1975	Initial CCO	
		*	Final CCO	
Town of Bedford	June 1979	October 2, 1975	Initial CCO	
		November 14, 1978	Final CCO	
Village of Briarcliff Manor	August 1977	October 2, 1975	Initial CCO	
		December 15, 1976	Final CCO	
Village of Bronxville	October 1978	March 1976	Initial CCO	
		January 26, 1978	Final CCO	
Village of Buchanan	*	*	*	
Town of Cortlandt	October 17, 1984	May 24, 1977	Initial CCO	
		October 6, 1983	Final CCO	
Village of Croton-on-Hudson	May 2, 1983	May 23, 1977	Initial CCO	
		December 28, 1982	Final CCO	
Village of Dobbs Ferry	October 1978	November 1976	Initial CCO	
		*	Final CCO	
Town of Eastchester	May 1979	November 1976	Initial CCO	
		*	Final CCO	
Village of Elmsford	December 1978	November 1976	Initial CCO	
		December 1977	Final CCO	
Town of Greenburgh	June 18, 1987	September 3, 1975	Initial CCO	
		November 21, 1978	Final CCO	
Town of Harrison	August 5, 1991	May 1986	Initial CCO	
		July 27, 1990	Final CCO	

Table 30: Community Meetings (continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Village of Hastings-on-Hudson	October 1978	November 1979	Initial CCO	
		April 17, 1978	Final CCO	
Village of Irvington	September 1978	September 10, 1975	Initial CCO	
		November 21, 1977	Final CCO	
Village of Larchmont	January 16, 1984	*	*	
Town of Lewisboro	*	*	*	
Town of Mamaroneck	September 15, 1989	September 10, 1974	Initial CCO	
		November 3, 1988	Final COO	
Village of Mamaroneck	October 3, 1983	September 10, 1974	Initial CCO	
		January 27, 1976	Final CCO	
Village of Mount Kisco	September 18, 1986	May 29, 1979	Initial CCO	
		June 25, 1985	Final CCO	
Town of Mount Pleasant	January 1982	October 2, 1975	Initial CCO	
		July 10, 1979	Final CCO	
City of Mount Vernon	April 1978	November 1976	Initial CCO	
		November 14, 1977	Final CCO	
Town of New Castle	March 1979	November 1977	Initial CCO	
		April 5, 1978	Final CCO	
City of New Rochelle	December 1979	September 4, 1975	Initial CCO	
		January 30, 1979	Final CCO	
Town of North Castle	January 2, 1991	September 19, 1984	Initial CCO	
		February 5, 1990	Final CCO	
Town of North Salem	July 3, 1986	May 29, 1979	Initial CCO	
		March 26, 1985	Final CCO	
Town of Ossining	September 16, 1982	May 23, 1977	Initial CCO	

Table 30: Community Meetings (continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
		May 4, 1982	Final CCO	
Village of Ossining	January 5, 1982	May 23, 1977	Initial CCO	
		August 6, 1983	Final CCO	
City of Peekskill	February 15, 1984	May 25, 1977	Initial CCO	
		October 6, 1983	Final CCO	
Village of Pelham	October 1978	November 1976	Initial CCO	
		March 7, 1978	Final CCO	
Village of Pelham Manor	July 1978	November 1976	Initial CCO	
		March 7, 1978	Final CCO	
Village of Pleasantville	August 1978	November 1976	Initial CCO	
		March 20, 1978	Final CCO	
Village of Port Chester	July 1979	September 3, 1975	Initial CCO	
		November 28, 1977	Final CCO	
Town of Pound Ridge	May 25, 1984	September 26, 1984	Initial CCO	
		February 13, 1990	Final CCO	
City of Rye	October 1979	July 27, 1976	Initial CCO	
		May 10, 1978	Final CCO	
Village of Rye Brook	March 1979	September 3, 1975	Initial CCO	
		June 14, 1977	Final CCO	
Village of Scarsdale	December 1979	September 8, 1975	Initial CCO	
		February 20, 1979	Final CCO	
Village of Sleepy Hollow	February 17, 1981	May 23, 1977	Initial CCO	
		November 1, 1979	Final CCO	
Town of Somers	September 4, 1986	May 29, 1979	Initial CCO	
		September 20, 1985	Final CCO	

Table 30: Community Meetings (continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Village of Tarrytown	May 18, 1981	May 23, 1977	Initial CCO	
		September 15, 1980	Final CCO	
Village of Tuckahoe	August 1978	November 1976	Initial CCO	
		March 13, 1978	Final CCO	
City of White Plains	July 1979	September 4, 1975	Initial CCO	
		December 7, 1978	Final CCO	
City of Yonkers	January 21, 1998	September 11, 1975	Initial CCO	
		September 27, 1978	Final CCO	
Town of Yorktown	August 16, 1993	May 29, 1979	Initial CCO	
		October 24, 1980	Final CCO	
Westchester County (All Jurisdictions)	September 28, 2007	October 22, 2002	Initial CCO	Westchester County Planning, Engineering Department and Public Works, FEMA, NYSDEC, Leonard Jackson Associates, and Dewberry
Westchester County (All Jurisdictions)	September 28, 2007	January 28-30, 2003	Mapping Review	FEMA, NYSDEC, Leonard Jackson Associates, Dewberry and various communities
Westchester County (All Jurisdictions)	September 28, 2007	November 27-29, 2006	Final CCO	FEMA, NYSDEC, Leonard Jackson Associates, Dewberry and various communities
Westchester County (All Jurisdictions)	(*Date*)	August 29, 2013	Discovery	FEMA, NYSDEC, Leonard Jackson Associates, RAMPP, Westchester Planning and various communities
Westchester County (All Jurisdictions)	(*Date*)	August 20, 2014	Flood Risk Review	FEMA, NYSDEC, Leonard Jackson Associates, RAMPP, Westchester Planning and various communities
Westchester County (All Jurisdictions)	(*Date*)		Final CCO	

*Data Not Available

SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see http://www.fema.gov.

Table 31 is a list of the locations where FIRMs for Westchester County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 31: Map Repositories

Community	Address	City	State	Zip Code
City of Mount Vernon	Public Works Department 1 Roosevelt Square, Room 108	Mount Vernon	New York	10550
City of New Rochelle	Clerk's Offrice 515 North Avenue	New Rochelle	New York	10801
City of Peekskill	Building and Engineering Department 840 Main Street	Peekskill	New York	10566
City of Rye	City Building Department 1051 Boston Post Road	Rye	New York	10580
City of White Plains	Planning Department City Hall 255 Main Street	White Plains	New York	10601
City of Yonkers	Engineering Department 40 South Broadway	Yonkers	New York	10701
Town of Bedford	Town Planning Office 425 Cherry Street	Bedford	New York	10507
Town of Cortlandt	Cortandt Town Clerks Office 1 Heady Street	Cortlandt Manor	New York	10567
Town of Eastchester	Town Clerk 40 Mill Road	Eastchester	New York	10709
Town of Greenburgh	Bureau Of Engineering 177 Hillside Avenue	Greenburgh	New York	10607
Town of Harrison	Engineering Department 1 Heineman Place	Harrison	New York	10528
Town of Lewisboro	Town Clerk 11 Main Street	South Salem	New York	10590
Town of Mamaroneck	Town Center 740 West Boston Post Road	Mamaroneck	New York	10543
Town of Mount Pleasant	Mount Pleasant Town Engineering One Town Hall Plaza, 3rd Floor	Valhalla	New York	10595
Town of New Castle	New Castle Town Building Department 200 South Greeley Avenue	Chappaqua	New York	10514
Town of North Castle	Building Inspector 15 Bedford Road	Armock	New York	10504
Town of North Salem	Building Inspector 270 Titicus Road	North Salem	New York	10560
Town of Ossining	Building Department 16 Croton Avenue	Ossining	New York	10562
Town of Pound Ridge	Building Department The Town House 179 Westchester Avenue	Pound Ridge	New York	10576

Table 31: Map Repositories (continued)

Community	Address	City	State	Zip Code
Town of Somers	Town Engineer Town House 335 Route 202	Somers	New York	10589
Town of Yorktown	Town Engineer 363 Underhill Avenue	Yorktown Heights	New York	10598
Village of Ardsley	Village Manager 507 Ashford Avenue	Ardsley	New York	10502
Village of Briarcliff Manor	Village Hall 1111 Pleasantville Road	Briarcliff Manor	New York	10510
Village of Bronxville	Village Engineer 200 Pondfield Road	Bronxville	New York	10708
Village of Buchanan	Municipal Building 236 Tate Avenue	Buchanan	New York	10511
Village of Croton-on-Hudson	Engineering Department 1 Van Wyck Street	Croton-On-Hudson	New York	10520
Village of Dobbs Ferry	Village Hall 112 Main Street	Dobbs Ferry	New York	10522
Village of Elmsford	Village Administrator 15 South Stone Avenue	Elmsford	New York	10523
Village of Hastings-on-Hudson	Village Hall 7 Maple Avenue	Hastings-On-Hudson	New York	10706
Village of Irvington	Building Department 85 Main Street	Irvington	New York	10533
Village of Larchmont	Building Department 120 Larchmont Avenue	Larchmont	New York	10538
Village of Mamaroneck	Building Department 169 Mount Pleasant Avenue	Mamaroneck	New York	10543
Village of Mount Kisco	Village Engineer 104 Main Street	Mount Kisco	New York	10549
Village of Ossining	Building Department 16 Croton Avenue	Ossining	New York	10562
Village of Pelham	Village Hall 195 Sparks Avenue	Pelham	New York	10803
Village of Pelham Manor	Village Hall 4 Penfield Place	Pelham Manor	New York	10803
Village of Pleasantville	Building Inspector Village Hall 80 Wheeler Avenue	Pleasantville	New York	10570
Village of Port Chester	Building Department 222 Grace Church Street	Port Chester	New York	10573
Village of Rye Brook	Village Engineer 938 King Street	Rye Brook	New York	10573
Village of Scarsdale	Village Manager Village Hall 1001 Post Road	Scarsdale	New York	10583
Village of Sleepy Hollow	Building Department 28 Beekman Avenue	Sleepy Hollow	New York	10591
Village of Tarrytown	Building and Engineering Department One Depot Plaza	Tarrytown	New York	10591
Village of Tuckahoe	Building Inspector 65 Main Street 2Nd Floor, Rm #200	Tuckahoe	New York	10707

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 32.

Table 31: Map Repositories (continued)

Table 32 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the state NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of state and local GIS data in their state.

Table 32: Additional Information

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	http://www.fema.gov
NFIP website	http://www.fema.gov/business/nfip
NFHL Dataset	http://msc.fema.gov
Other Federal Agencies	
USGS website	http://www.usgs.gov
Hydraulic Engineering Center website	http://www.hec.usace.army.mil
State Agencies and Organizations	
State NFIP Coordinator	William Nechamen 625 Broadway, 4th Floor Albany, NY 12233 http://www.dec.ny.gov/
State GIS Coordinator	1220 Washington Avenue Building 7A, 4th Floor Albany, NY 12242 http://gis.ny.gov/gisdata/
County GIS Coordinator	David Kvinge 148 Martine Ave, Room 214 White Plains, NY 10601 http://giswww.westchestergov.com/wcgis/Office.htm

SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 33 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

Table 33: Bibliography and References

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, City of Yonkers, Westchester County, New York*	FEMA	Washington, DC	January 21, 1998	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Yorktown, Westchester County, New York*	FEMA	Washington, DC	August 16, 1993	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Harrison, Westchester County, New York*	FEMA	Washington, DC	August 5, 1991	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Pound Ridge, Westchester County, New York*	FEMA	Washington, DC	February 6, 1991	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of North Castle, Westchester County, New York*	FEMA	Washington, DC	January 2, 1991	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Mamaroneck, Westchester County, New York*	FEMA	Washington, DC	September 15, 1989	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Mount Kisco, Westchester County, New York*	FEMA	Washington, DC	September 18, 1986	http://msc.fema.gov/portal

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, Town of Somers, Westchester County, New York*	FEMA	Washington, DC	September 4, 1986	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of North Salem, Westchester County, New York*	FEMA	Washington, DC	July 3, 1986	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Cortlandt, Westchester County, New York*	FEMA	Washington, DC	April 17, 1985	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, City of Rye, Westchester County, New York*	FEMA	Washington, DC	October 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, City of Peekskill, Westchester County, New York*	FEMA	Washington, DC	February 15, 1984	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Larchmont, Westchester County, New York*	FEMA	Washington, DC	January 16, 1984	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Port Chester, Westchester County, New York*	FEMA	Washington, DC	July 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Mamaroneck, Westchester County, New York*	FEMA	Washington, DC	October 3, 1983	http://msc.fema.gov/portal

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, Town of Lewisboro, Westchester County, New York*	FEMA	Washington, DC	March 9, 1984	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Croton-on-Hudson, Westchester County, New York*	FEMA	Washington, DC	May 2, 1983	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Ossining, Westchester County, New York*	FEMA	Washington, DC	September 16, 1982	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Ossining, Westchester County, New York*	FEMA	Washington, DC	January 5, 1982	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Mount Pleasant, Westchester County, New York*	FEMA	Washington, DC	January 1982	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Tarrytown, Westchester County, New York*	FEMA	Washington, DC	May 18, 1981	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of North Tarrytown, Westchester County, New York*	FEMA	Washington, DC	February 17, 1981	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Greenburgh, Westchester County, New York*	FEMA	Washington, DC	June 18, 1987	http://msc.fema.gov/portal

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, Village of Scardale, Westchester County, New York*	FEMA	Washington, DC	December 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, City of New Rochelle, Westchester County, New York*	FEMA	Washington, DC	January 6, 1983	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, City of White Plains, Westchester County, New York*	FEMA	Washington, DC	July 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Bedford, Westchester County, New York*	FEMA	Washington, DC	July 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of Eastchester, Westchester County, New York*	FEMA	Washington, DC	May 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Rye Brook, Westchester County, New York*	FEMA	Washington, DC	March 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Town of New Castle, Westchester County, New York*	FEMA	Washington, DC	March 1979	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Buchanan, Westchester County, New York*	FEMA	Washington, DC	July 27, 1979	http://msc.fema.gov/portal

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, Village of Elmsford, Westchester County, New York*	FEMA	Washington, DC	December 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Dobbs Ferry, Westchester County, New York*	FEMA	Washington, DC	October 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Hastings-on-Hudson, Westchester County, New York*	FEMA	Washington, DC	October 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Pelham, Westchester County, New York*	FEMA	Washington, DC	September 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Irvington, Westchester County, New York*	FEMA	Washington, DC	September 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Bronxville, Westchester County, New York*	FEMA	Washington, DC	October 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Tuckahoe, Westchester County, New York*	FEMA	Washington, DC	August 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Pleasantville, Westchester County, New York*	FEMA	Washington, DC	August 1978	http://msc.fema.gov/portal

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FIS	FEMA	*Flood Insurance Study, Village of Pelham Manor, Westchester County, New York*	FEMA	Washington, DC	July 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Ardsley, Westchester County, New York*	FEMA	Washington, DC	March 1978	http://msc.fema.gov/portal
FIS	FEMA	*Flood Insurance Study, Village of Briarcliff Manor, Westchester County, New York*	FEMA	Washington, DC	August 1977	http://msc.fema.gov/portal
Hydrology	USGS	*Flood Characteristics of Urban Watersheds in the United States*	V.B. Sauer; W.O. Thomas; V.A Stricker; K.V. Wilson	Washington, DC	1983	
Hydrology	NJDEP Division of Water Resources	*Magnitude and Frequency of Floods in New Jersey, With Effects of Urbanization, Special Report 38*	S.J. Stankowski		1974	
Hydrology	USGS	*Evaluation of Six Methods for Estimating Magnitude and Frequency of Peak Discharges of Urban Streams in New York, WRI Report 84-4350*	D.A. Stedfast	Washington, DC	1986	
Hydrology	UGSS	*Magnitude and Frequency of Floods in the United States, Part 1B. North Atlantic Slope Basins, New York to York River*	Richard H. Tice	Washington, DC	1968	

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Hydrology	US Department of Agriculture	*Urban Hydrology for Small Watersheds*	Soil Conservation Service	Washington, DC	1975	
Hydrology	Water Resources Council	*Guidelines for Determining Flood Flow Frequency*	Hydrology Sub-committee Bulletin 17	Washington, DC	1976	
Hydraulics	McGraw-Hill	*Open-Channel Hydraulics*	V.T. Chow	New York	1959	
Hydraulics	USACE	*HEC-1 Flood Hydrograph Package*	USACE	Davis, California	1991	
Hydraulics	USACE	*HEC-RAS, River Analysis System*	USACE	Davis, California	2005	
Base Map	NY State Cyber	*2013 High Resolution Imagery*	NY State Cyber	New York State	2013	http://gis.ny.gov/gateway/mg/
Transportation	U.S. Department of Commerce, U.S. Census Bureau, Geography Division	*TIGER/Line Shapefile, 2013, county, Westchester County, NY, All Roads County-based Shapefile*	U.S. Department of Commerce, U.S. Census Bureau, Geography Division, Geographic Products Branch	Washington, D.C.	May 2013	http://www2.census.gov/geo/tiger/TIGER2013/ROADS/tl_2013_36119_roads.zip
Surface Water Features	USGS	*Streams, rivers, and lakes were derived from NHD data*	1:24,000	Washington, DC	2012	http://www.usgs.gov
Westchester County	Westchester County	*Light Detection and Ranging data (LiDAR)*	Photo Science Inc.	Westchester County, NY	2012	
Westchester County	Westchester County	*Light Detection and Ranging data (LiDAR)*	Westchester County GIS	Westchester County, NY	2006	http://giswww.westchestergov.com/

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