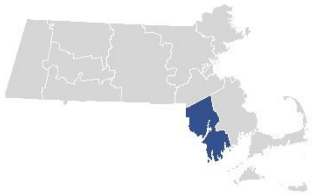
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 5



BRISTOL COUNTY, MASSACHUSETTS

(ALL JURISDICTIONS)

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ACUSHNET, TOWN OF	250048	NEW BEDFORD, CITY OF	255216
ATTLEBORO, CITY OF	250049	NORTH ATTLEBOROUGH, TOWN OF	250059
BERKLEY, TOWN OF	250050	NORTON, TOWN OF	250060
DARTMOUTH, TOWN OF	250051	RAYNHAM, TOWN OF	250061
DIGHTON, TOWN OF	250052	REHOBOTH, TOWN OF	250062
EASTON, TOWN OF	250053	SEEKONK, TOWN OF	250063
FAIRHAVEN, TOWN OF	250054	SOMERSET, TOWN OF	255220
FALL RIVER, CITY OF	250055	SWANSEA, TOWN OF	255221
FREETOWN, TOWN OF	250056	TAUNTON, CITY OF	250066
MANSFIELD, TOWN OF	250057	WESTPORT, TOWN OF	255224

REVISED:

JULY 6, 2021

FLOOD INSURANCE STUDY NUMBER
25005CV001D
Version Number 2.6.3.5

FEMA

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FLOOD INSURANCE STUDY REPORT
BRISTOL COUNTY, MASSACHUSETTS

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 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, *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 Bristol County, Massachusetts.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 1. The 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.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s) (*all prefixed by 25005C*)	If Not Included, Location of Flood Hazard Data
Acushnet, Town of	250048	01090002	0293H, 0294G, 0377G, 0381G, 0382G, 0383H, 0384G, 0391H, 0392G, 0401G, 0403G, 0411G	
Attleboro, City of	250049	01090003, 01090004	0092F, 0094F, 0104G, 0106G, 0107G, 0108G, 0109F, 0111G, 0112G, 0113G, 0114G, 0116G, 0117F, 0118F, 0119F, 0128G, 0136F, 0137F	
Berkley, Town of	250050	01090004	0251G, 0252G, 0253H, 0254G, 0256F, 0257F, 0258F, 0259F, 0261G, 0262G, 0263G	

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s) (*all prefixed by 25005C*)	If Not Included, Location of Flood Hazard Data
Dartmouth, Town of	250051	01090002, 01090004	0354G, 0358G, 0359G, 0362G, 0366G, 0367G, 0368G, 0369G, 0376G, 0377G, 0378G, 0379G, 0386G, 0388G, 0389G, 0456G, 0457G, 0458G, 0459G, 0466G, 0467G, 0468F, 0469G, 0476G, 0477G, 0478G, 0479F, 0481G, 0483F, 0486F, 0487F, 0488F, 0489F, 0491F	
Dighton, Town of	250052	01090004	0139F, 0143F, 0227F, 0229F, 0231F, 0232F, 0233F, 0234G, 0241F, 0242G, 0251G, 0253H, 0261G	
Easton, Town of	250053	01090004	0033F, 0034F, 0041F, 0042F, 0043F, 0044F, 0052F, 0053F, 0054F, 0061F, 0062F, 0063F, 0064F, 0068F, 0132F, 0151F, 0152F, 0156F	
Fairhaven, Town of	250054	01090002	0391H, 0392G, 0393G, 0394H, 0411G, 0413G, 0425F, 0482G, 0501F, 0502F, 0503F, 0504F	
Fall River, City of	250055	01090002, 01090004	0244G, 0263G, 0264F, 0268G, 0269F, 0329G, 0331G, 0332G, 0333G, 0334G, 0337G, 0341G, 0342F, 0344F, 0351F, 0352G, 0353F, 0354G, 0356G, 0357G, 0358G, 0359G, 0361G, 0362G, 0432F	
Freetown, Town of	250056	01090002, 01090004	0254G, 0258F, 0261G, 0262G, 0263G, 0264F, 0266G, 0267F, 0268G, 0269F, 0286F, 0287G, 0288F, 0289G, 0291H, 0293H, 0357G, 0359G, 0376G, 0377G, 0378G, 0381G	
Mansfield, Town of	250057	01090004	0018F, 0019G, 0036F, 0037F, 0038F, 0039F, 0041F, 0043F, 0107G, 0126G, 0127F	
New Bedford, City of	255216	01090002, 01090004	0377G, 0378G, 0379G, 0381G, 0383H, 0386G, 0387G, 0388G, 0389G, 0391H, 0393G, 0394H, 0477G, 0481G, 0482G, 0483F, 0484F	

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s) (*all prefixed by 25005C*)	If Not Included, Location of Flood Hazard Data
North Attleborough, Town of	250059	01090003, 01090004	0014F[1], 0018F, 0019G, 0082F[1], 0084F, 0092F, 0101G, 0102G, 0103G, 0104G, 0106G, 0107G, 0108G, 0111G, 0112G	
Norton, Town of	250060	01090004	0039F, 0043F, 0044F, 0107G, 0109F, 0126G, 0127F, 0128G, 0129G, 0131F, 0132F, 0133G, 0134F, 0136F, 0137F, 0141F, 0151F, 0153F	
Raynham, Town of	250061	01090004	0152F, 0154F, 0156F, 0158F, 0159F, 0162G, 0164G, 0166F, 0167G, 0168G, 0169G, 0186G, 0188G	
Rehoboth, Town of	250062	01090004	0117F, 0118F, 0119F, 0136F, 0137F, 0138F, 0139F, 0143F, 0206F, 0207F, 0208F, 0209F, 0216G, 0217F, 0218G, 0219G, 0226F, 0227F, 0228F, 0229F, 0236F, 0237F, 0238G, 0239G	
Seekonk, Town of	250063	01090004	0114G, 0118F, 0202G, 0203G, 0204G, 0206F, 0208F, 0212F, 0214G, 0216G, 0218G	
Somerset, Town of	255220	01090004	0242G, 0244G, 0261G, 0263G, 0327G, 0329G, 0331G, 0332G, 0333G, 0337G	
Swansea, Town of	255221	01090004	0214G, 0218G, 0219G, 0229F, 0233F, 0237F, 0238G, 0239G, 0241F, 0242G, 0243F, 0244G, 0307G, 0326G, 0327G, 0328G, 0329G, 0331G, 0332G	
Taunton, City of	250066	01090004	0133G, 0134F, 0137F, 0139F, 0141F, 0142F, 0143F, 0144F, 0151F, 0152F, 0153F, 0154F, 0161F, 0162G, 0163G, 0164G, 0168G, 0169G, 0186G, 0188G, 0231F, 0232F, 0251G, 0252G, 0256F, 0257F, 0259F, 0276F	

[1] Panel not printed

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s) (*all prefixed by 25005C*)	If Not Included, Location of Flood Hazard Data
Westport, Town of	255224	01090002, 01090004	0342F, 0344F, 0353F, 0354G, 0361G, 0362G, 0363G, 0364G, 0366G, 0368G, 0432F, 0434G, 0442G, 0451G, 0452G, 0453G, 0454G, 0456G, 0458G, 0459G, 0461G, 0462G, 0463F, 0464F, 0466G, 0467G, 0468F, 0469G, 0526F, 0531F, 0550F	

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 30, "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 Bristol County became effective on July 7, 2009. Refer to Table 27 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 www.fema.gov/national-flood-insurance-program-community-rating-system or contact your appropriate FEMA Regional Office for more information about this program.

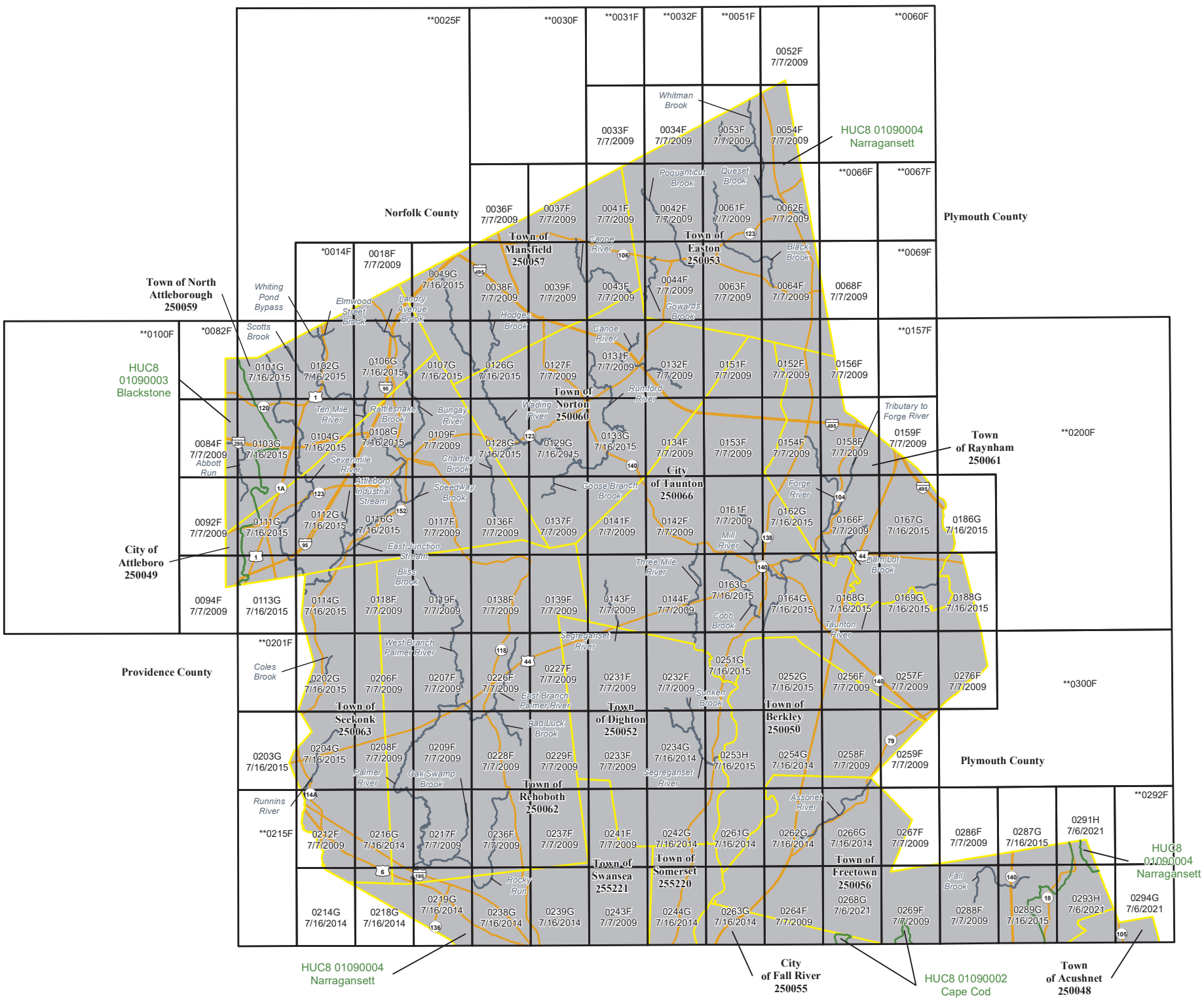
- Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must 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 8 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 (nld.usace.army.mil). 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 www.fema.gov/online-tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Barnstable County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and USGS HUC-8 codes.

Figure 1. FIRM Index



ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before July 6, 2021.

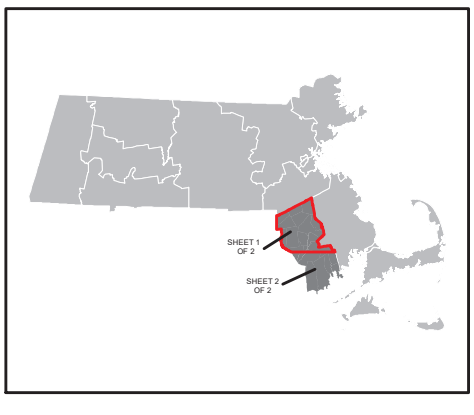
N

1 inch = 18,333 feet 1:220,000
0 7,500 15,000 30,000 Feet
0 2,000 4,000 6,000 8,000 Meters

Map Projection:
NAD 1983 State Plane, Massachusetts Mainland, FIPS 2001, Feet; Western Hemisphere; Vertical Datum: NAVD 88

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
HTTPS://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX
(SHEET 1 OF 2)

BRISTOL COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)
PANELS PRINTED:

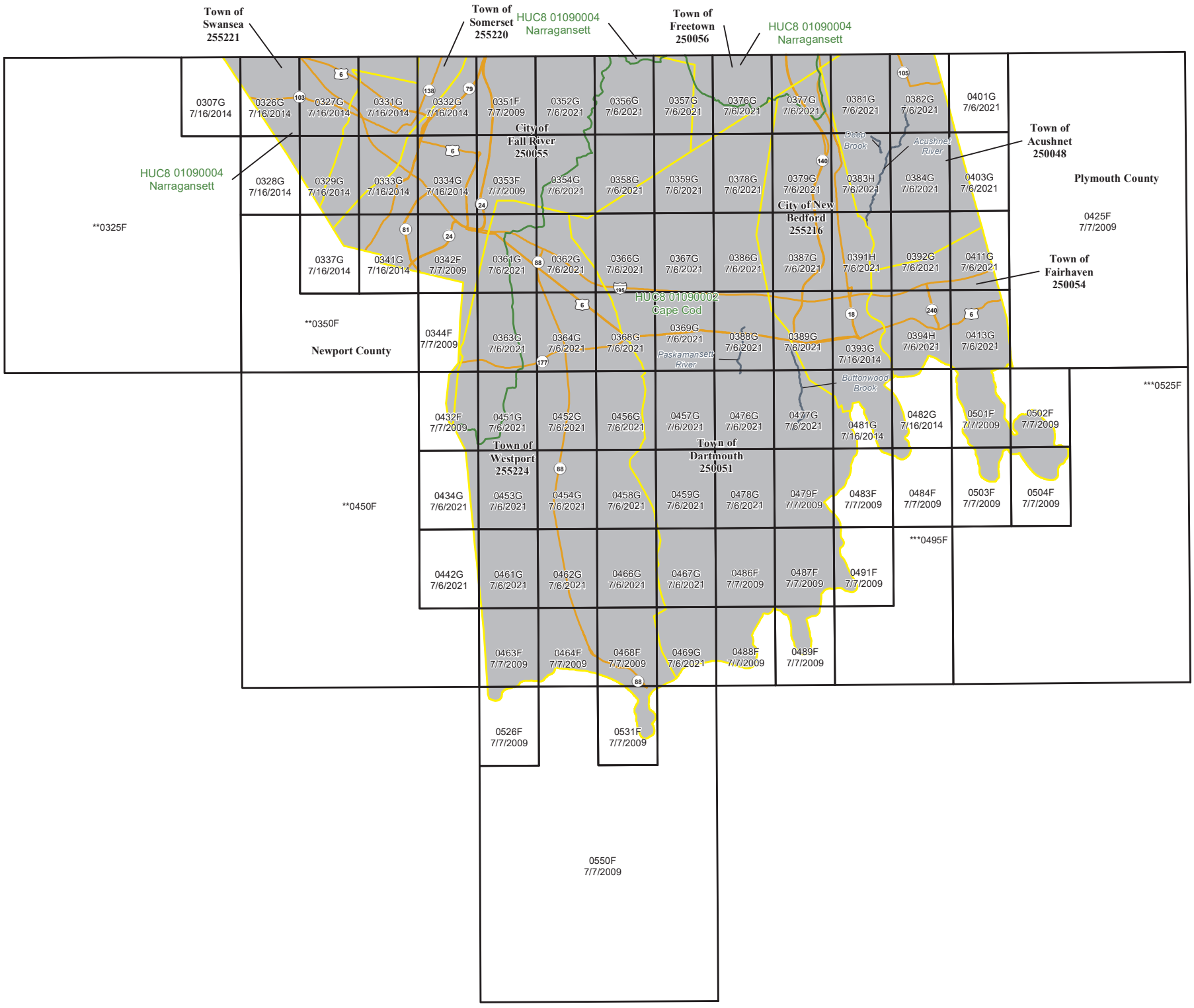
0018, 0019, 0033, 0034, 0036, 0037, 0038, 0039, 0041, 0042, 0043, 0044, 0052, 0053, 0054, 0061, 0062, 0063, 0064, 0068, 0084, 0092, 0094, 0101, 0102, 0103, 0104, 0106, 0107, 0108, 0109, 0111, 0112, 0113, 0114, 0116, 0117, 0118, 0119, 0126, 0127, 0128, 0129, 0131, 0132, 0133, 0134, 0136, 0137, 0138, 0139, 0141, 0142, 0143, 0144, 0151, 0152, 0153, 0154, 0156, 0158, 0159, 0161, 0162, 0163, 0164, 0166, 0167, 0168, 0169, 0186, 0188, 0202, 0203, 0204, 0206, 0207, 0208, 0209, 0212, 0214, 0216, 0217, 0218, 0219, 0226, 0227, 0228, 0229, 0231, 0232, 0233, 0234, 0236, 0237, 0238, 0239, 0241, 0242, 0243, 0244, 0251, 0252, 0253, 0254, 0256, 0257, 0258, 0259, 0261, 0262, 0263, 0264, 0266, 0267, 0268, 0269, 0276, 0286, 0287, 0288, 0289, 0291, 0293, 0294

FEMA

MAP INDEX
25005CIND1D
MAP REVISED
July 6, 2021

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREA
** PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY

Figure 1. FIRM Index



ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before July 6, 2021.

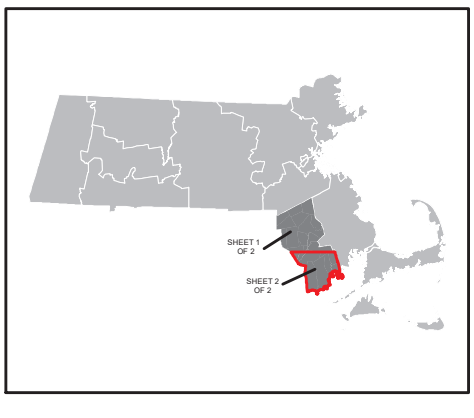
N

1 inch = 18,333 feet 1:220,000
0 7,500 15,000 30,000 Feet
0 2,000 4,000 6,000 8,000 Meters

Map Projection:
NAD 1983 State Plane, Massachusetts Mainland, FIPS 2001, Feet; Western Hemisphere; Vertical Datum: NAVD 88

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
HTTPS://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX
(SHEET 2 OF 2)

BRISTOL COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)
PANELS PRINTED:

0307, 0326, 0327, 0328, 0329, 0331, 0332, 0333, 0334, 0337, 0341, 0342, 0344, 0351, 0352, 0353, 0354, 0356, 0357, 0358, 0359, 0361, 0362, 0363, 0364, 0366, 0367, 0368, 0369, 0376, 0377, 0378, 0379, 0381, 0382, 0383, 0384, 0386, 0387, 0388, 0389, 0391, 0392, 0393, 0394, 0401, 0403, 0411, 0413,0425, 0432, 0434, 0442, 0451, 0452, 0453, 0454, 0456, 0457, 0458, 0459,0461, 0462, 0463, 0464, 0466, 0467, 0468, 0469, 0476, 0477, 0478, 0479, 0481, 0482, 0483, 0484, 0486, 0487, 0488, 0489, 0491, 0501, 0502, 0503, 0504, 0526, 0531, 0550

FEMA

MAP INDEX
25005CIND2D

MAP REVISED
July 6, 2021

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREA
** PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY
*** PANEL NOT PRINTED - OPEN WATER AREA

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

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 Flood Map Service Center website at 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 Flood 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 Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 27 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.

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 Non-Coastal 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 (NAVD88). Coastal flood elevations are also provided in the Coastal Transect Parameters table in the FIS Report for this jurisdiction. Elevations shown in the Coastal Transect Parameters 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.

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.

Figure 2. FIRM Notes to Users

PROJECTION INFORMATION: The projection used in the preparation of the map was Massachusetts State Plane, Mainland Zone (FIPSZONE 2001). The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 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. 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, visit the National Geodetic Survey website at www.ngs.noaa.gov.

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 30 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by Massachusetts Geographic Information System (MassGIS). Orthoimagery is from 2008 or 2009 and is at a resolution of either 0.5 or 1 foot. Vector data are undated. The following panels use 2013 imagery provided by the U.S. Geological Survey at a scale of 1:2,400 with all vector data unchanged from the previous FIRM: 0019G, 0101G, 0102G, 0103G, 0104G, 0106G, 0107G, 0108G, 0111G, 0112G, 0113G, 0114G, 0116G, 0126G, 0128G, 0129G, 0133G, 0162G, 0163G, 0164G, 0167G, 0168G, 0169G, 0186G, 0188G, 0202G, 0203G, 0204G, 0251G, 0252G, 0253H, 0287G, 0289G, 0291G, and 0293G. The following panels use 2013 or 2014 imagery provided by the U.S. Geological Survey at a resolution of 0.3 meter and 2016 transportation data provided by the U.S. Census Bureau, with all other vector data unchanged from the previous FIRM: 0268G, 0291H, 0293H, 0294G, 0352G, 0354G, 0356G, 0357G, 0358G, 0359G, 0361G, 0362G, 0363G, 0364G, 0366G, 0367G, 0368G, 0369G, 0376G, 0377G, 0378G, 0379G, 0381G, 0382G, 0383H, 0384G, 0386G, 0387G, 0388G, 0389G, 0391H, 0392G, 0394H, 0401G, 0403G, 0411G, 0413G, 0434G, 0442G, 0451G, 0452G, 0453G, 0454G, 0456G, 0457G, 0458G, 0459G, 0461G, 0462G, 0466G, 0467G, 0469G, 0476G, 0477G, and 0478G. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

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 Bristol County, Massachusetts, 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 27 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

ATTENTION: The corporate limits shown on the FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before July 6, 2021.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Bristol County, Massachusetts, effective July 6, 2021.

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.

ACCREDITED LEVEE: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit www.fema.gov/national-flood-insurance-program.

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.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Bristol County.

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.
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.

Figure 3: Map Legend for FIRM

	Regulatory Floodway determined in Zone AE.
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.
	Area with Flood Risk due to Levee: Areas where a non-accredited levee, dike, or other flood control structure is shown as providing protection to less than the 1% annual chance flood.
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 of minimal flood hazard.
FLOOD HAZARD AND OTHER BOUNDARY LINES	
(ortho) (vector)	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	
Aqueduct *Channel* *Culvert* *Storm Sewer*	Channel, Culvert, Aqueduct, or Storm Sewer
Dam *Jetty* *Weir*	Dam, Jetty, Weir

Figure 3: Map Legend for FIRM

	Levee, Dike, or Floodwall
Bridge	Bridge
REFERENCE MARKERS	
22.0	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
B 20.2	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
5280 21.1	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
17.5	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
8	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.
513	Base Flood Elevation Line
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
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway

Figure 3: Map Legend for FIRM

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 Bristol 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 22), 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 Bristol County, 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 12. 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.

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
Abbott Run	North Attleborough, Town of	Approximately 200 feet downstream of Meadow Road	North Attleborough corporate limits	01090003	2.4		Y	AE	8/1/1977
Acushnet River	Acushnet, Town of	Downstream Acushnet corporate limits	New Bedford Reservoir	01090002	4.2		Y	AE	4/1/1980
Acushnet River and Zone A tributaries	Acushnet, Town of; Freetown, Town of	New Bedford Reservoir	Points of one square mile of drainage area	01090002	11.6		N	A	5/31/2017
Acushnet River Tributary A and Zone A tributaries	Acushnet, Town of	Confluence of Acushnet River Tributary A with Acushnet River	Points of one square mile of drainage area	01090002	2.6		N	A	5/31/2017
Acushnet River Tributary B	Acushnet, Town of	Confluence with Acushnet River	Point of one square mile of drainage area	01090002	2.8		N	A	5/31/2017
Anawan Brook	Rehoboth, Town of	Confluence with East Branch Palmer River	Kelton Street Extension	01090004	0.8		Y	AE	4/1/1976
Angeline Brook	Westport, Town of	Confluence with West Branch Westport River	Point of one square mile of drainage area	01090002	4.7		N	A	5/31/2017
Armstrong Brook	North Attleborough, Town of	Confluence with Bungay River	Approximate 200 feet upstream of Lindsey Street	01090004	0.4		Y	AE	8/1/1977
Assonet River	Freetown, Town of	Mouth at Assonet Bay	County limits	01090004	3.2		Y	AE	2/1/1978
Attleboro Industrial Stream	Attleboro, City of	Confluence with Ten Mile River	Tiffany Street	01090004	0.7		Y	AE	6/1/1977
Bad Luck Brook	Rehoboth, Town of	Confluence with East Branch Palmer River	Approximately 0.76 miles upstream of confluence with East Branch Palmer River	01090004	1.7		Y	AE	4/1/1976

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
Black Brook	Easton, Town of	Foundry Street	Approximately 1,310 feet upstream of Randall Street	01090004	4.5		Y	AE	6/1/1979
Bliss Brook	Rehoboth, Town of	Confluence with West Branch Palmer River	Agricultural Avenue	01090004	1.3		Y	AE	4/1/1976
Bread and Cheese Brook and Zone A tributaries	Dartmouth, Town of; Westport, Town of	Confluence of Bread and Cheese Brook with East Branch Westport River	Points of one square mile of drainage area	01090002	10.9		N	A	5/31/2017
Bungay River	Attleboro, City of; North Attleborough, Town of	Confluence with Ten Mile River	Downstream of Bungay Road	01090004	4.7		Y	AE	8/1/1977
Buttonwood Brook	Dartmouth, Town of	Mouth at Apponagansett Bay	Lexington Avenue	01090002	2.8		Y	AE	12/1/1974
Buttonwood Brook East	Dartmouth, Town of	Sharp Street	Point of one square mile of drainage area	01090002	0.1		N	A	5/31/2017
Buttonwood Brook East	Dartmouth, Town of	Confluence with Buttonwood Brook	Sharp Street	01090002	1.1		Y	AE	12/1/1974
Buttonwood Brook West	Dartmouth, Town of	Confluence with Buttonwood Brook	Allen Street	01090002	1.5		Y	AE	12/1/1974
Buzzards Bay and Rhode Island Sound	Dartmouth, Town of; Fairhaven, Town of; New Bedford, City of; Westport, Town of	Entire coastline	Entire coastline	N/A	142.1		N	AE/VE	3/28/2008
Canoe River (Lower Reach)	Norton, Town of	Confluence with Winnecunnet Pond	Approximately 5,000 feet upstream of Interstate 495	01090004	3.8		Y	AE	8/1/1985
Canoe River (Upper Reach)	Mansfield, Town of	Approximately 31,850 feet upstream of confluence with Winnecunnet Pond	East Street	01090004	3.5		Y	AE	10/1/1976

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
Chartley Brook	Attleboro, City of	Downstream Attleboro corporate limits	Approximately 100 feet upstream of Wilmarth Street	01090004	2.2		N	AE	6/1/1977
Coastal Tributary K	Fairhaven, Town of	Mouth at New Bedford Harbor	Point of one square mile of drainage area	01090002	0.3		N	A	5/31/2017
Coastal Tributary L	Dartmouth, Town of	Mouth at Allens Pond	Point of one square mile of drainage area	01090002	1.2		N	A	5/31/2017
Cobb Brook	Taunton, City of	Confluence with Taunton River	Tremont Street	01090004	2.9		Y	AE	10/1/1985
Coles Brook	Seekonk, Town of	Confluence with Central Pond	1,500 upstream of Talbot Way	01090004	1.2		Y	AE	10/1/1985
Dam Lot Brook	Raynham, Town of	Confluence with Taunton River	Confluence with Tributary to Dam Lot Brook	01090004	1.4		Y	AE	6/1/1978
Deep Brook	Acushnet, Town of	Confluence with Acushnet River	Approximately 1 mile upstream of confluence with Acushnet River	01090002	1.0		Y	AE	4/1/1980
Deep Brook and Zone A tributaries	Acushnet, Town of	Approximately 1 mile upstream of confluence with Acushnet River	Points of one square mile of drainage area	01090002	4.2		N	A	5/31/2017
Deep Brook Tributary A and Zone A tributaries	Acushnet, Town of	Confluence of Deep Brook Tributary A with Deep Brook	Points of one square mile of drainage area	01090002	4.1		N	A	5/31/2017
Destruction Brook	Dartmouth, Town of	Confluence with Slocums River	Point of one square mile of drainage area	01090002	4.3		N	A	5/31/2017
Dunhams Brook	Westport, Town of	Confluence with West Branch Westport River	Point of one square mile of drainage area	01090002	0.5		N	A	5/31/2017

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
East Branch Palmer River	Rehoboth, Town of	Confluence with Palmer River	Fairfield Street	01090004	4.1		Y	AE	4/1/1976
East Branch Westport River and Zone A tributaries	Dartmouth, Town of; Fall River, City of; Freetown, Town of	Limit of coastal flooding of East Branch Westport River	Points of one square mile of drainage area	01090002	42.9		N	A	5/31/2017
East Branch Westport River Tributary A	Westport, Town of	Confluence with East Branch Westport River	Point of one square mile of drainage area	01090002	0.5		N	A	5/31/2017
East Branch Westport River Tributary B	Westport, Town of	Confluence with East Branch Westport River	Point of one square mile of drainage area	01090002	0.5		N	A	5/31/2017
East Junction Stream	Attleboro, City of	Confluence with Ten Mile River	Railroad crossing	01090004	0.9		Y	AE	6/1/1977
Elmwood Street Brook	North Attleborough, Town of	Confluence with Ten Mile River	0.02 mile upstream of Parmenter Lane	01090004	0.5		Y	AE	8/1/1977
Fall Brook	Freetown, Town of	Confluence with Long Pond	Dam 100 feet upstream of Chace Road	01090004	3.0		Y	AE	2/1/1978
Forge River	Raynham, Town of	Confluence with Taunton River	Old railroad grade west of State Route 138	01090004	4.8		Y	AE	6/1/1978
Goose Branch Brook	Norton, Town of	Confluence with Wading River	Approximately 50 feet upstream of West Hodges Street	01090004	1.8		Y	AE	8/1/1985
Gowards Brook	Easton, Town of	Confluence with Canoe River	Approximately 100 feet upstream of State Route 106	01090004	1.8		Y	AE	3/1/1998
Hodges Brook	Mansfield, Town of	Confluence with Wading River	Downstream of Penn Central Railroad	01090004	2.5		Y	AE	10/1/1976

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
Kirby Brook and Zone A tributaries	Westport, Town of	Confluence of Kirby Brook with East Branch Westport River	Points of one square mile of drainage area	01090002	1.8		N	A	5/31/2017
Lake Como Stream	Attleboro, City of	Confluence with Seven Mile River	1 mile upstream of confluence with Seven Mile River	01090004	0.9		Y	AE	6/1/1977
Landry Avenue Brook	North Attleborough, Town of	Confluence with Bungay River	0.02 mile upstream of Hall Drive	01090004	1.4		Y	AE	8/1/1977
Long Pond	Freetown, Town of	Entire shoreline	Entire shoreline	01090004		2.7	N	AE	7/1/2014
Mary Kennedy Brook	North Attleborough, Town of	Confluence with Bungay River	Kelly Boulevard	01090004	0.6		Y	AE	8/1/1977
Mason Park Brook	North Attleborough, Town of	Confluence with Ten Mile River	Landry Lane	01090004	1.2		Y	AE	8/1/1977
Mattapoisett River Tributary A	Acushnet, Town of	Confluence with Mattapoisett River	Point of one square mile of drainage area	01090002	1.5		N	A	5/31/2017
Mattapoisett River Tributary B and Zone A tributaries	Acushnet, Town of	Confluence of Mattapoisett River Tributary B with Mattapoisett River	Points of one square mile of drainage area	01090002	9.1		N	A	5/31/2017
Mattapoisett River Tributary E and Zone A tributaries	Acushnet, Town of	Confluence of Mattapoisett River Tributary E with Mattapoisett River	Points of one square mile of drainage area	01090002	3.7		N	A	5/31/2017
Mattapoisett River Tributary F	Acushnet, Town of	Confluence with Mattapoisett River	Point of one square mile of drainage area	01090002	4.7		N	A	5/31/2017
Mill River	Taunton, City of	Confluence with Taunton River	Approximately 250 feet upstream of Whittenton Street	01090004	3.5		Y	AE	3/1/1978

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
Mount Hope Bay and Taunton River	Berkley, Town of; Dighton, Town of; Fall River, City of; Freetown, Town of; Rehoboth, Town of; Seekonk, Town of; Somerset, Town of; Swansea, Town of	Entire coastline	Entire coastline	N/A	66.1		N	AE/VE	11/1/2012
Mulberry Brook	Easton, Town of	Approximately 17,200 feet upstream of Plain Street	Confluence with Beaver Brook	01090004	0.4		Y	AE	6/1/1979
Naskatucket River	Fairhaven, Town of	Limit of coastal flooding	Point of one square mile of drainage area	01090002	1.3		N	A	5/31/2017
Oak Swamp Brook	Rehoboth, Town of	Confluence with Rocky Run	Approximately 4,600 feet upstream of Providence Street	01090004	1.7		Y	AE	4/1/1976
Palmer River	Rehoboth, Town of	Downstream Rehoboth corporate limits	Confluence with East and West Branches Palmer River	01090004	9.6		Y	AE	4/1/1976
Paskamanset River	Dartmouth, Town of	Approximately 28,000 feet upstream of confluence with Slocums River	Approximate 700 feet upstream of Mill Dam	01090002	1.5		Y	AE	12/1/1974
Paskamanset River and Zone A tributaries	Dartmouth, Town of; New Bedford, City of	Limit of coastal flooding of Paskamanset River	Points of one square mile of drainage area	01090002	31.4		N	A	5/31/2017
Poquanticut Brook	Easton, Town of	Confluence with Beaver Brook	Approximately 1,030 feet upstream of Rockland Street	01090004	3.0		Y	AE	6/1/1979

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
Queset Brook	Easton, Town of	1,600 feet upstream of Walnut Street	Approximately 1,480 feet upstream of Canton Street	01090004	5.1		Y	AE	12/1/1991
Rattlesnake Brook (Freetown)	Freetown, Town of	Confluence with Assonet Bay	350 upstream of State Route 24	01090004	0.7		Y	AE	2/1/1978
Rattlesnake Brook (North Attleborough)	North Attleborough, Town of	Confluence with Ten Mile River	0.03 mile upstream of Towne Street	01090004	0.7		Y	AE	2/1/1978
Rocklawn Avenue Stream	Attleboro, City of	Confluence with Seven Mile River	Rocklawn Avenue	01090004	0.3		Y	AE	6/1/1977
Rocky Run	Rehoboth, Town of; Swansea, Town of	Confluence with Palmer River	Approximate 3,400 upstream of Private Road Dam	01090004	6.1		Y	AE	4/1/1976
Rumford River (Lower Reach)	Norton, Town of	Confluence with Three Mile River	Approximately 6,000 feet upstream of Cross Street	01090004	4.4		Y	AE	6/1/1977
Rumford River (Upper Reach)	Mansfield, Town of	Norton Reservoir	Approximately 700 feet upstream of County Street	01090004	4.1		Y	AE	10/1/1976
Runnins River	Seekonk, Town of	Mobile Company Dam	Greenwood Avenue	01090004	5.1		Y	AE	11/1/1977
Sabin Pond Brook	Rehoboth, Town of	Confluence with Palmer River	Approximately 0.83 mile upstream of confluence with Palmer River	01090004	0.8		Y	AE	4/1/1976
Scotts Brook	North Attleborough, Town of	Confluence with Ten Mile River	0.17 mile upstream of High Street	01090004	1.4		Y	AE	8/1/1977
Segreganset River (Lower Reach)	Dighton, Town of	Confluence with Taunton River	700 feet upstream of confluence with Unnamed Tributary	01090004	3.4		Y	AE	5/1/1978
Segreganset River (Upper Reach)	Taunton, City of	300 feet downstream of U.S. Route 44	Glebe Street	01090004	1.6		Y	AE	10/1/1985

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
Sevenmile River	Attleboro, City of; North Attleborough, Town of	Outflow of unnamed pond about 100 feet east of Peck Road	Amtrak railroad bridge	01090004	9.1		Y	AE	7/1/2014
Slocums River Tributary A	Dartmouth, Town of	Confluence with Slocums River	Point of one square mile of drainage area	01090002	1.0		N	A	5/31/2017
Speedway Brook	Attleboro, City of	Confluence with Ten Mile River	Maple Street	01090004	1.0		Y	AE	6/1/1977
Sunken Brook	Dighton, Town of	Confluence with Segreganset River	3,500 feet upstream of Center Street	01090004	1.0		Y	AE	5/1/1978
Sweedens Swamp	Attleboro, City of	Entire shoreline	Entire shoreline	01090004		0.1	Y	AE	6/1/1977
Taunton River	Raynham, Town of; Taunton, City of	Plain Street	2,800 feet upstream of State Route 25	01090004	13.2		Y	AE	7/1/2014
Ten Mile River	Attleboro, City of; North Attleborough, Town of; Seekonk, Town of	Omega Pond Dam	High Street	01090004	12.7		Y	AE	7/1/2014
Three Mile River	Dighton, Town of; Taunton, City of	Confluence with Taunton River	Tremont Street	01090004	6.0		Y	AE	3/1/1978
Tributary to Dam Lot Brook	Raynham, Town of	Confluence with Dam Lot Brook	Approximately 3,000 feet upstream of confluence with Dam Lot Brook	01090004	0.6		Y	AE	6/1/1978
Tributary to Forge River	Raynham, Town of	Confluence with Forge River	Approximately 3,925 feet upstream of White Street	01090004	2.1		Y	AE	6/1/1978
Wading River	Mansfield, Town of; Norton, Town of	Confluence with Three Mile River	Cedar Street	01090004	11.7		Y	AE	7/1/2014
Warren Reservoir	Swansea, Town of	Entire shoreline	Entire shoreline	01090004		0.1	N	AE	4/1/1979
Watson Pond	Taunton, City of	Entire shoreline	Entire shoreline	01090004		0.1	N	AE	4/1/1979

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
West Branch Palmer River	Rehoboth, Town of	Confluence with Palmer River	Fairfield Street	01090004	4.1		Y	AE	4/1/1976
West Branch Westport River	Westport, Town of	Limit of coastal flooding	Point of one square mile of drainage area	01090002	3.5		N	A	5/31/2017
Whiting Pond Bypass	North Attleborough, Town of	Confluence with Ten Mile River	Dirvergence from Ten Mile River	01090004	0.3		Y	AE	7/1/2014
Whitman Brook	Easton, Town of	Confluence with Queset Brook	2,000 upstream of railroad crossing	01090004	1.4		Y	AE	12/1/1991
Winnecunnet Pond	Norton, Town of	Entire shoreline	Entire shoreline	01090004		0.2	N	AE	6/1/1977

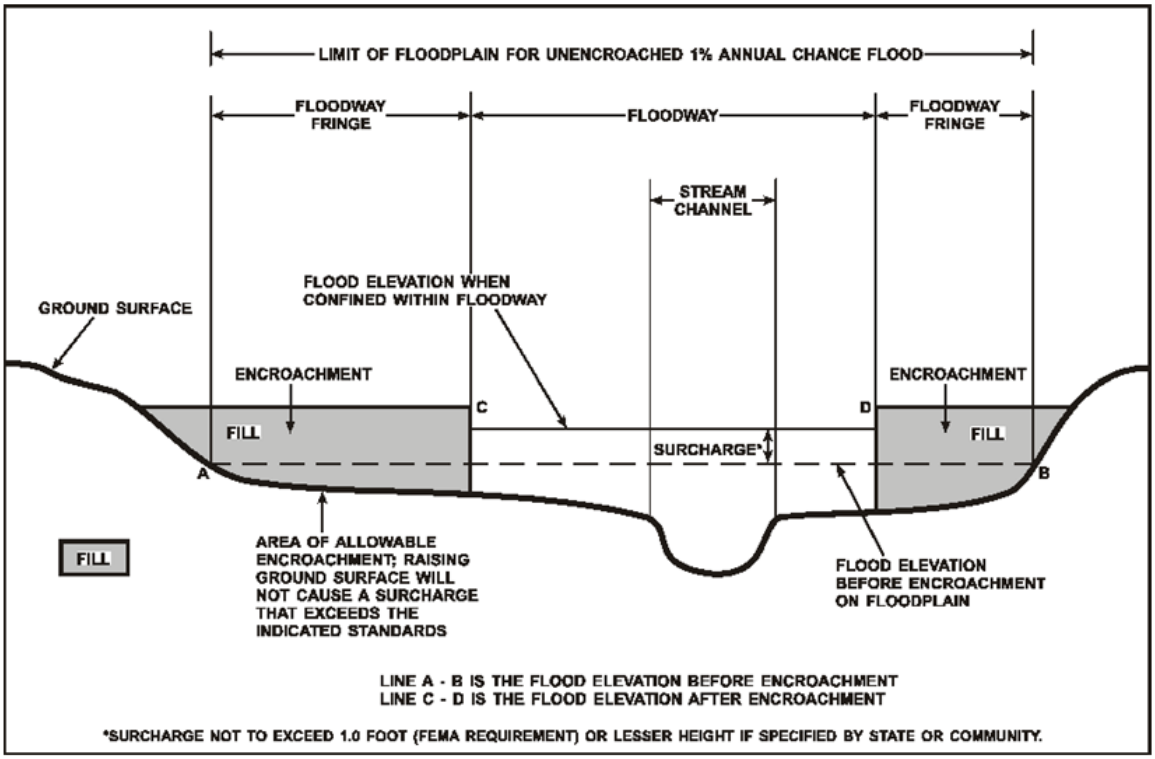
2.2 Floodways

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. 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 23, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% 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

This section is not applicable to this Flood Risk Project.

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 Flood Risk 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.

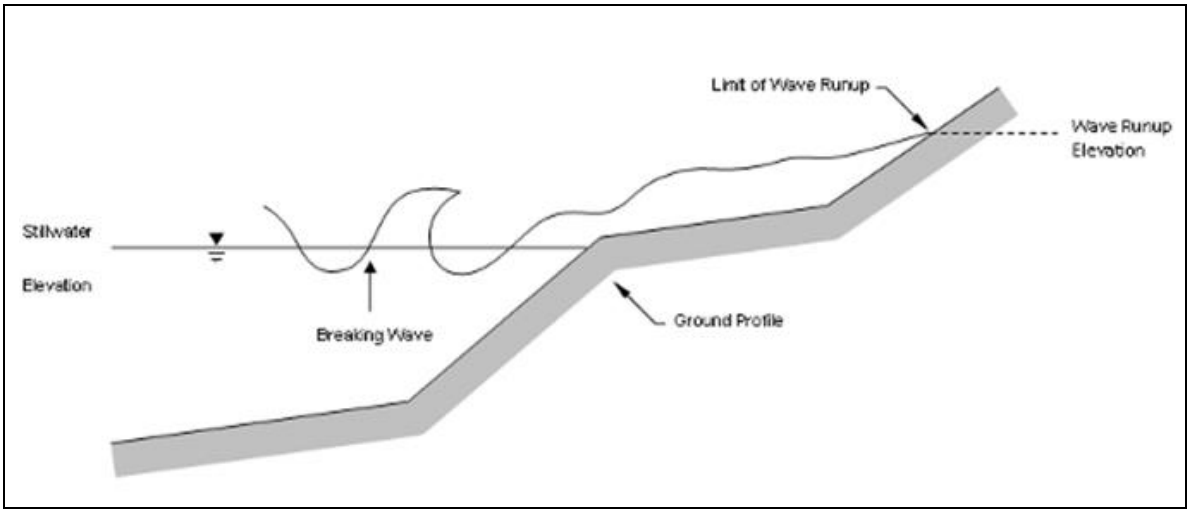
- *Wave setup* is the increase in stillwater elevation at the shoreline caused by the reduction of waves in shallow water. It occurs as breaking wave momentum is transferred to the water column.

Like the stillwater elevation, the total stillwater elevation is based on a storm of a particular frequency, such as the 1% annual chance storm. Wave setup is typically estimated using standard engineering practices or calculated using models, since tidal gages are often sited in areas sheltered from wave action and do not capture this information.

Coastal analyses may examine the effects of overland waves by analyzing storm-induced erosion, overland wave propagation, wave runup, and/or wave overtopping.

- *Storm-induced erosion* is the modification of existing topography by erosion caused by a specific storm event, as opposed to general erosion that occurs at a more constant rate.
- *Overland wave propagation* describes the combined effects of variation in ground elevation, vegetation, and physical features on wave characteristics as waves move onshore.
- *Wave runup* is the uprush of water from wave action on a shore barrier. It is a function of the roughness and geometry of the shoreline at the point where the stillwater elevation intersects the land.
- *Wave overtopping* refers to wave runup that occurs when waves pass over the crest of a barrier.

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 25 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 16, "Coastal Transect Parameters." The locations of transects are shown in 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.

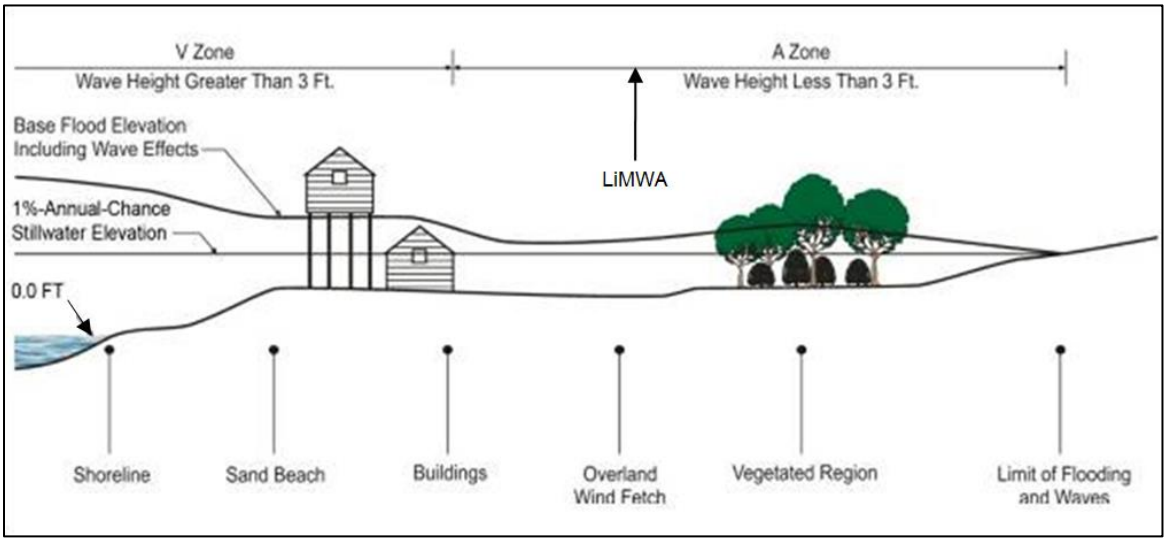
CHHAs are designated as "V" zones (for "velocity wave zones") and are subject to more stringent regulatory requirements and a different flood insurance rate structure. The areas of greatest risk are shown as VE on the FIRM. Zone VE is further subdivided into elevation zones and shown with BFEs on the 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 Flood Risk 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 16 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 Bristol County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Acushnet, Town of	A, AE, X
Attleboro, City of	A, AE, X
Berkley, Town of	A, AE, VE, X
Dartmouth, Town of	A, AE, VE, X
Dighton, Town of	A, AE, VE, X
Easton, Town of	A, AE, AH, X
Fairhaven, Town of	A, AE, VE, X
Fall River, City of	A, AE, AO, VE, X
Freetown, Town of	A, AE, VE, X
Mansfield, Town of	A, AE, X
New Bedford, City of	A, AE, VE, X
North Attleborough, Town of	A, AE, X
Norton, Town of	A, AE, X
Raynham, Town of	A, AE, X

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Rehoboth, Town of	A, AE, X
Seekonk, Town of	A, AE, X
Somerset, Town of	AE, VE, X
Swansea, Town of	A, AE, VE, X
Taunton, City of	A, AE, X
Westport, Town of	A, AE, VE, X

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 4 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 4: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Blackstone	01090003	Blackstone River and tributaries	Blackstone River, Branch River, Abbott Run, Mill River, Peters River, Mumford River, Quinsigamond River, and many other small streams and tributaries	474
Cape Cod	01090002	Atlantic Ocean	The coastal land along Buzzards Bay	1,204
Narragansett	01090004	Narragansett Bay and coastal rivers	The Narragansett Watershed is the watershed drained by all coastal rivers (such as the Pawtuxet, Providence, and Taunton Rivers and their tributaries) discharging into Narragansett Bay, Rhode Island, excluding the Blackstone River Watershed (01090003)	1,379

4.2 Principal Flood Problems

Table 5 contains a description of the principal flood problems that have been noted for Bristol County by flooding source.

Table 5: Principal Flood Problems

Flooding Source	Description of Flood Problems
Atlantic Ocean - Buzzards Bay and Mt. Hope Bay	The coastal communities (Somerset, Swansea, Fall River, Dighton, Berkley, Freetown, Taunton, Westport, Dartmouth, New Bedford, and Fairhaven) along Buzzards Bay and Mt. Hope Bay in Bristol County are primarily subject to coastal flooding caused by nor'easters and hurricanes. Nor'easters can occur at any time of the year but are more prevalent in the winter months, whereas hurricanes mostly occur in the late summer and early fall months. The coastal areas tend to be a little more impacted by hurricanes and tropical storms given that they face primarily to the south, but nor'easters still affect the coastal low-lying area in these communities. Coastal flooding of significance occurred during the Hurricanes of September 1938 and August 1954; Hurricane Bob in 1991; and Hurricane Sandy in 2012 (relatively minor damage compared to the other three hurricanes).
Mill River	The MIll River has caused flooding in the City of Taunton as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The October 2005 flood resulted in the evacuations of parts of Taunton over fears the Whittenton Pond Dam would fail. Flood waters were pumped around the dam to lessen the stress, a temporary rock dam was built, and the dam was permanently removed in 2013. The other notable flooding occurred during March 1968 and the March 2010 floods. Theses flood events have generally resulted in some roads being overtopped.
Paskamanet River	The Paskamanset River has caused flooding issues in the Town of Dartmouth as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The March 1968 flood is the most notable in causing flooding in the areas along the river. A USGS streamgage installed in 1995, and it shows that the most significant floods since March 1968 were the October 2005, March 2001, and March 2010 events.
Rumford River, Wading River, and Canoe River	The Rumford, Wading, and Canoe Rivers have caused flooding in the Towns of Mansfield and Norton as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The most notable flooding occurred during March 1968 and the March 2010 floods. Theses flood events have generally resulted in some roads being overtopped. The spring 2010 flood was about a 1-percent annual chance flood on the Wading River (USGS Wading River near Norton streamgage 01109000).
Runnins River	The Runnins River has caused flooding in the Town of Seekonk as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The most notable flooding occurred during March 1968 and the March 2010 floods. Theses flood events have generally resulted in some roads being overtopped.

Table 5: Principal Flood Problems

Flooding Source	Description of Flood Problems
Taunton River	The Taunton River has caused severe flooding in the Towns of Somerset, Berkley, Dighton, and Raynham and the City of Taunton as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The most recent flood event happened during the spring 2010 as a result of 17-23 inches of rain from three primary storms over a five-week period from mid-February through the end of March. It resulted in several bridges being overtopped and roads near the river being flooded. The USGS streamgage on the Taunton River near Bridgewater, Massachusetts (01108000) experienced a 1-percent chance flood event from the spring 2010 storm. Other notable floods on the Taunton River include the floods produced by hurricanes in September 1938 and August 1954, and the rain and snow melt event of March 1968.
Tenmile River	The Tenmile River has caused severe flooding in the City of Attleboro. Town of North Attleborough, and the Town of Seekonk as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The most recent flood event happened during the spring 2010 as a result of 17-23 inches of rain from three primary storms over a five-week period from mid-February through the end of March. It resulted in several bridges being overtopped and roads near the river being flooded. The USGS stream gage on the Ten Mile River at East Providence, Rhode Island (01109403), downstream of the City of Attleboro, has operated since 1987 and experienced about a 1-percent chance flood event from the spring 2010 storm. Two other notable floods occurred during a tropical storm (Hurricane Diane) during August 17-19, 1955 and the March 17-18, 1968 rain and snow melt event. Both of these events were between a 2- to 0.2-percent annual chance flood.
Threemile River and Segreganset River	The Threemile River and Segreganset Rivers have caused flooding in the Town of Dighton as a result of hurricanes, snow melt combined with spring rains, and summer thunderstorms. The most notable flooding occurred during the 1938, 1954, 1955, 1968, and 2010 floods. During these floods bridges in several locations were overtopped and roads near the river being flooded. The spring 2010 flood was about a 10-percent annual chance flood on the Threemile River (USGS Threemile River at North Dighton streamgage 01109060) and about a 1-percent annual chance flood on the Segreganset River (USGS Segreganset River near Dighton streamgage 01109070).

Table 6 contains information about historic flood elevations in the communities within Bristol County.

Table 6: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Narragansett Bay	Tide gage at Newport, RI	15.8	8/3/1638		Tide gage

Table 6: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Narragansett Bay	Tide gage at Newport, RI	14.9	8/15/1635		Tide gage
Narragansett Bay	Tide gage at Newport, RI	12.9	9/21/1938		Tide gage
Narragansett Bay	Tide gage at Newport, RI	12.2	9/23/1815		Tide gage
Narragansett Bay	Tide gage at Newport, RI	8.6	9/14/1944		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.3	9/21/1961		Tide gage
Narragansett Bay	Tide gage at Newport, RI	12.6	8/31/1954		Tide gage
Narragansett Bay	Tide gage at Newport, RI	6.5	9/12/1960		Tide gage
Narragansett Bay	Tide gage at Newport, RI	7.2	11/30/1963		Tide gage
Narragansett Bay	Tide gage at Newport, RI	6.7	11/30/1944		Tide gage
Narragansett Bay	Tide gage at Newport, RI	6.2	11/7/1962		Tide gage
Narragansett Bay	Tide gage at Newport, RI	6.1	3/7/1962		Tide gage
Narragansett Bay	Tide gage at Newport, RI	6.0	3/3/1947		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.9	2/19/1960		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.7	3/3/1942		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.7	11/12/1947		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.7	2/14/1960		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.6	2/7/1951		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.6	4/3/1958		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.6	12/29/1959		Tide gage

Table 6: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Narragansett Bay	Tide gage at Newport, RI	5.6	1/3/1960		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.5	1/27/1933		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.5	11/3/1951		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.5	1/16/1961		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.3	2/15/1953		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.3	11/10/1958		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.3	11/23/1961		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	12/2/1942		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	10/31/1947		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	10/22/1949		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	10/23/1953		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	10/16/1955		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.2	12/6/1962		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	10/1/1936		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	11/25/1950		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	4/13/1953		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	3/20/1958		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	1/27/1963		Tide gage
Narragansett Bay	Tide gage at Newport, RI	5.0	11/2/1963		Tide gage

4.3 Non-Levee Flood Protection Measures

Table 7 contains information about non-levee flood protection measures within Bristol County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 7: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Atlantic Ocean	Padanaram breakwater and Hunts Rock breakwater	Rock breakwater	Town of Dartmouth, in Apponagansett Bay and between Round Hill Point and Salters Point, respectively	Protective structures
Atlantic Ocean	N/A	Protective structures, such as small sea walls and jetties	Towns of Dartmouth, Fairhaven, Somerset, Swansea, and Westport; and the Cities of Fall River and New Bedford; privately and municipally owned	Protective structures
Riverine	N/A	Natural swamps	Most towns and cities in Bristol County, for example, Acushnet, Easton, Mansfield, Norton, Raynham, Seekonk, and Taunton	Natural swamps/wetlands provide some natural storage during flood events - slowly releasing flood waters and slowing velocities
Riverine	N/A	Natural lake and pond storage	Most towns and cities in Bristol County	Natural lakes and ponds provide some natural storage during flood events - slowly releasing flood waters and slowing velocities
Riverine	N/A	Small dams	Most towns and cities in Bristol County have small dams on river, ponds, and lakes, for example, Cabot Pond and Norton Reservoir in Mansfield; Lake Sabbatia and Watson Pond in Taunton; and Falls Pond and Whiting Pond in North Attleborough	The small dams can provide some storage during flood events - slowly releasing flood waters and slowing velocities, but it depends on their management and current capacity available for storage

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 8. If the required information for a PAL is not submitted within the required timeframe, or if information indicates that a levee system not 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 Bristol County. Table 8, "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 8 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 30.

Table 8: Levees

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
New Bedford and Fairhaven	Atlantic Ocean	Hurricane barrier at the entrance of New Bedford and Fairhaven Harbor	USACE, City of New Bedford and Town of Fairhaven	Yes	N/A	Unknown	25005C0481G, 25005C0482G
Fairhaven	Buzzards Bay	Coastal dike	Unknown	Unknown	N/A	Unknown	25005C0394H

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.

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 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 9. 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 10. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 16.) Stream gage information is provided in Table 11.

Table 9: 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	0.2% Annual Chance
Abbott Run	Mendon Road	24.08	690	*	1,120	1,370	2,120
Abbott Run	Cushman Road	23.79	680	*	1,110	1,360	2,100
Abbott Run	Old Railroad Grade	23.37	670	*	1,100	1,340	2,070
Abbott Run	Hunts Bridge Road	22.87	660	*	1,080	1,310	2,030
Abbott Run	Corporate limit of North Attleborough	21.35	620	*	1,010	1,230	1,910
Acushnet River	Dam at Station 79-30	17.90	280	*	475	620	935
Acushnet River	Upstream of Hamilton Street	15.60	220	*	380	505	760
Acushnet River	Upstream of Deep Brook	10.00	90	*	180	285	430
Acushnet River	Below New Bedford Reservoir	6.80	40	*	90	170	250
Anawan Brook	Location 1** in Rehoboth	0.72	80	*	130	160	280
Anawan Brook	Location 2** in Rehoboth	0.60	70	*	110	140	250
Anawan Brook	Location 3** in Rehoboth	0.50	60	*	100	130	220
Armstrong Brook	Confluence with Bungay River	0.19	24	*	41	49	75
Armstrong Brook	Gravel Road	0.17	21	*	37	44	67
Armstrong Brook	Lindsey Street	0.10	13	*	22	26	39

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Armstrong Brook	Cross Section B	0.09	11	*	19	23	36
Assonet River	State Route 24 in Freetown	22.50	650	*	1,022	1,206	1,948
Assonet River	State Route 79 in Freetown	22.20	640	*	1,007	1,191	1,914
Assonet River	Mill Street in Freetown	22.00	637	*	1,001	1,180	1,904
Assonet River	Dam No. 1	21.20	616	*	966	1,137	1,830
Assonet River	Gravel Road in Freetown	21.00	600	*	931	1,079	1,744
Assonet River	Locust Street in Freetown	20.90	580	*	897	1,051	1,666
Assonet River	Dam No. 2	20.80	577	*	893	1,046	1,660
Assonet River	Forge Road in Freetown	20.60	573	*	885	1,036	1,641
Assonet River	Dam No. 3	20.50	570	*	880	1,030	1,630
Assonet River	1,500 feet downstream of Myricks Street	16.80	500	*	765	885	1,405
Assonet River	Myricks Street in Freetown	16.40	481	*	733	852	1,333
Assonet River	Dam No. 4	16.30	469	*	718	836	1,311
Assonet River	Northern corporate limit of Freetown	15.80	460	*	704	820	1,288

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Attleboro Industrial Stream	County Street in Attleboro	0.30	13	*	23	28	43
Attleboro Industrial Stream	Tiffany Street in Attleboro	0.10	4	*	7	8	13
Bad Luck Brook	Location 1** in Rehoboth	1.75	140	*	220	280	500
Bad Luck Brook	Location 2** in Rehoboth	1.65	130	*	210	270	460
Bad Luck Brook	Location 3** in Rehoboth	1.20	110	*	170	210	360
Bad Luck Brook	Location 4** in Rehoboth	0.71	80	*	130	160	260
Bad Luck Brook	Location 5** in Rehoboth	0.62	70	*	120	140	250
Black Brook	Above unnamed tributary below Foundry Street in Easton	6.20	270	*	450	550	850
Black Brook	Above Little Cedar Swamp	4.10	200	*	330	410	630
Black Brook	At private road below Depot Street	1.80	110	*	185	230	350
Black Brook	At Depot Street in Easton	1.40	85	*	140	180	270
Black Brook	At Summer Street in Easton	0.90	70	*	120	140	230
Bliss Brook	Location 1** in Rehoboth	2.50	180	*	300	380	530

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Bliss Brook	Location 2** in Rehoboth	2.00	150	*	250	320	540
Bliss Brook	Location 3** in Rehoboth	1.60	130	*	210	260	450
Bungay River	Route 152 in Attleboro	8.00	82	*	130	160	230
Bungay River	Holden Street in Attleboro	7.00	81	*	130	150	230
Bungay River	Attleboro corporate limit	5.16	81	*	130	154	228
Bungay River	Confluence with Mary Kennedy Brook	5.05	81	*	130	154	228
Bungay River	Confluence with Armstrong Brook	4.09	81	*	130	154	228
Bungay River	Confluence with Landry Avenue Brook	3.22	46	*	87	110	180
Bungay River	Bungay Road in North Attleborough	2.14	27	*	52	66	110
Buttonwood Brook	Location 1** in Dartmouth	3.10	300	*	495	595	800
Buttonwood Brook	Location 2** in Dartmouth	2.60	240	*	385	435	600
Buttonwood Brook	Location 3** in Dartmouth	2.10	190	*	250	290	355

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Canoe River	At confluence with Winnecunnet Pond	19.10	450	*	695	815	1,170
Canoe River	Approximately 1,150 feet downstream of upstream crossing of Interstate Route 495	13.10	345	*	530	620	890
Canoe River	Location 1** in Mansfield	11.30	190	*	260	400	640
Canoe River	Location 2** in Mansfield	6.80	140	*	220	280	460
Chartley Brook	Town Boundary with Norton	6.60	180	*	270	320	430
Chartley Brook	Wilmarth Street	1.50	60	*	90	100	150
Cobb Brook	At confluence with Taunton River	2.50	210	*	325	390	570
Cobb Brook	Above confluence of tributary at Godfrey Street	1.80	180	*	275	325	470
Cobb Brook	At Winthrop Street in Taunton	1.30	130	*	200	235	345
Cobb Brook	At East Whitehill Street in Taunton	1.10	105	*	160	190	280
Cobb Brook	At Kilmer Street in Taunton	0.70	65	*	110	130	185

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Cobb Brook	At Tremont Street in Taunton	0.30	25	*	50	55	95
Cole River	At Milford Pond Dam	12.00	350	*	**	1,055	**
Coles Brook	Newman Avenue in Seekonk	3.00	110	*	185	235	345
Coles Brook	Talbot Way in Seekonk	2.70	100	*	165	200	300
Coles Brook	Cross Section E in Seekonk	2.50	90	*	150	185	275
Dam Lot Brook	At mouth	3.00	150	*	260	320	490
Deep Brook	At confluence with Acushnet River	2.80	150	*	250	305	475
Deep Brook	Downstream of Morses Lane in Acushnet	1.60	80	*	135	165	260
East Branch Palmer River	Location 1** in Rehoboth	13.50	550	*	830	980	1,450
East Branch Palmer River	Location 2** in Rehoboth	10.25	440	*	660	780	1,210
East Branch Palmer River	Location 3** in Rehoboth	5.50	310	*	500	620	1,100
East Branch Palmer River	Knight Avenue in Attleboro	1.10	18	*	34	41	64

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
East Branch Palmer River	Thurber Avenue in Attleboro	0.90	14	*	26	31	49
Elmwood Street Brook	Confluence with Ten Mile River	0.20	14	*	22	26	38
Elmwood Street Brook	Washington Street in North Attleborough	0.19	13	*	21	25	36
Elmwood Street Brook	Parmenter Lane in North Attleborough	0.11	8	*	12	14	21
Fall Brook	1,800 feet downstream of Dam No. 1 in Freetown	13.40	457	*	714	836	1,356
Fall Brook	Dam No. 1	13.30	455	*	712	835	1,350
Fall Brook	County Road in Freetown	13.30	453	*	710	834	1,345
Fall Brook	State Route 140 in Freetown	10.00	369	*	572	668	1,067
Fall Brook	Dam No. 2	9.90	367	*	570	666	1,065
Fall Brook	Braley Road in Freetown	9.70	365	*	566	662	1,060
Fall Brook	1,500 feet upstream of Braley Road	9.00	344	*	534	628	1,014
Fall Brook	Cross section H	8.40	323	*	502	591	957
Fall Brook	Cross section I	7.80	309	*	470	554	890

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Fall Brook	Cross section J	7.20	288	*	439	517	826
Fall Brook	Cross section K	6.60	267	*	411	480	763
Fall Brook	1,150 feet downstream of Conrail	6.00	248	*	380	443	701
Fall Brook	Conrail	5.40	228	*	350	406	641
Fall Brook	Chace Road in Freetown	5.30	226	*	347	403	637
Fall Brook	Dam No. 3	5.20	225	*	345	400	635
Forge River	At mouth	9.30	340	*	570	690	1,060
Forge River	Above Tributary to Forge River	5.70	230	*	390	480	730
Forge River	Above Pine Swamp Outlet	2.90	130	*	220	260	410
Forge River	Above Wilbur Pond	1.40	68	*	115	141	219
Forge River	Above Tributary No. 2	0.93	36	*	60	73	113
Goose Branch Brook	At confluence with Winnecunnet Pond	3.30	230	*	335	390	510
Gowards Brook	At Norton Avenue in Easton	1.83	110	*	175	210	300
Gowards Brook	At Highland Street in Easton	1.42	90	*	150	180	255

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Gowards Brook	At State Route 106 in Easton	1.05	75	*	125	150	215
Hodges Brook	Location 1** in Mansfield	3.70	85	*	145	175	285
Hodges Brook	Location 2** in Mansfield	2.50	60	*	100	135	210
Lake Como Stream	Newport Avenue in Attleboro	1.30	87	*	150	180	270
Lake Como Stream	Route 1 in Attleboro	0.30	15	*	23	26	31
Landry Avenue Brook	Confluence with Bungay River	1.06	20	*	39	50	87
Landry Avenue Brook	Bungay Road in North Attleborough	1.02	19	*	38	48	84
Landry Avenue Brook	Irrigation Pond	1.00	19	*	37	47	82
Landry Avenue Brook	Kelley Boulevard in North Attleborough	0.94	18	*	35	44	77
Landry Avenue Brook	Interstate Highway 95 in North Attleborough	0.91	17	*	33	43	75
Landry Avenue Brook	Landry Avenue in North Attleborough	0.86	16	*	32	41	70
Landry Avenue Brook	Kostka Drive in North Attleborough	0.82	15	*	30	39	67

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Landry Avenue Brook	Hall Drive in North Attleborough	0.77	15	*	28	36	63
Mary Kennedy Brook	Confluence with Bungay River	0.96	49	*	82	98	150
Mary Kennedy Brook	Gravel Road in North Attleborough	0.95	48	*	81	97	150
Mary Kennedy Brook	Mary Kennedy Drive Extension	0.93	47	*	79	95	140
Mary Kennedy Brook	Mary Kennedy Drive in North Attleborough	0.78	40	*	67	80	120
Mary Kennedy Brook	Kelley Boulevard in North Attleborough	0.77	39	*	66	79	120
Mason Park Brook	Confluence with Ten Mile River	0.50	35	*	66	82	130
Mason Park Brook	Commonwealth Avenue in North Attleborough	0.48	35	*	63	79	130
Mason Park Brook	Elm Street in North Attleborough	0.43	30	*	57	71	110
Mason Park Brook	Mount Hope Cemetery	0.35	25	*	46	57	93
Mason Park Brook	Spring and Lyman Streets	0.24	17	*	32	39	64
Mason Park Brook	Janice Lane in North Attleborough	0.18	13	*	24	30	48

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Mason Park Brook	Landry Avenue in North Attleborough	0.07	5	*	9	11	19
Mulberry Brook	Above Ward Pond	9.00	370	*	620	760	1,200
Oak Hill Stream	Oak Hill Avenue	0.80	32	*	60	75	120
Oak Hill Stream	Bishop Avenue	0.10	29	*	55	68	109
Oak Hill Stream	Conrail Crossing	0.50	22	*	43	53	86
Oak Swamp Brook	Location 1** in Rehoboth	2.40	180	*	300	360	620
Oak Swamp Brook	Location 2** in Rehoboth	2.00	150	*	260	310	530
Oak Swamp Brook	Location 3** in Rehoboth	0.98	90	*	140	180	310
Palmer River	Location 1** in Rehoboth	46.50	1,480	*	2,360	2,930	4,750
Palmer River	Location 2** in Rehoboth	43.50	1,420	*	2,250	2,750	4,330
Palmer River	Location 3** in Rehoboth	32.50	1,125	*	1,750	2,125	3,275
Palmer River	Location 4** in Rehoboth	29.50	1,050	*	1,650	1,990	3,025
Palmer River	Location 5** in Rehoboth	26.40	950	*	1,500	1,800	2,750
Palmer River	Location 6** in Rehoboth	21.30	800	*	1,250	1,525	2,275
Paskamanset River	Location 1** in Dartmouth	25.00	450	*	700	850	1,200
Paskamanset River	Location 2** in Dartmouth	16.00	305	*	460	555	795

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Poquanticut Brook	At Beaver Brook	5.70	270	*	450	550	840
Poquanticut Brook	At Chestnut Street in Easton	4.50	240	*	400	490	760
Poquanticut Brook	At Rockland Street in Easton	3.20	170	*	290	350	540
Queset Brook	Above Coweeset Brook	10.40	400	*	670	820	1,250
Queset Brook	At State Route 138 in Easton	9.50	320	*	505	600	815
Queset Brook	At Longwater Pond	7.34	270	*	425	510	690
Queset Brook	At Shovelshop Pond	4.38	190	*	305	365	500
Queset Brook	At Ames Lond Pond	2.80	140	*	230	275	380
Rattlesnake Brook	Narrows Road	6.86	344	*	588	664	1,115
Rattlesnake Brook	South Main Street in Freetown	4.29	246	*	388	457	726
Rattlesnake Brook	Conrail	4.26	233	*	308	432	706
Rattlesnake Brook	Confluence with Ten Mile River	1.05	52	*	88	106	160
Rattlesnake Brook	Commonwealth Avenue	0.98	49	*	82	99	150
Rattlesnake Brook	Ivy Street in North Attleborough	0.92	47	*	77	93	140

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Rattlesnake Brook	Towne Street in North Attleborough	0.84	42	*	70	85	130
Rocklawn Avenue Stream	Todd Drive in Attleboro	0.40	15	*	26	32	51
Rocklawn Avenue Stream	Rocklawn Avenue in Attleboro	0.30	13	*	23	28	45
Rocky Run	At the upstream Swansea corporate limits	6.10	357	*	575	719	1,242
Rocky Run	Location 1** in Rehoboth	10.50	540	*	870	1,100	1,890
Rocky Run	Location 2** in Rehoboth	9.50	500	*	810	1,000	1,740
Rocky Run	Location 3** in Rehoboth	6.60	410	*	650	810	1,410
Rocky Run	Location 4** in Rehoboth	6.60	350	*	570	710	1,250
Rocky Run	Location 5** in Rehoboth	5.10	310	*	500	620	1,090
Rocky Run	Location 6** in Rehoboth	3.30	220	*	360	450	780
Rumford River	At confluence with Three Mile River	22.30	500	*	770	910	1,300
Rumford River	Location 1** in Mansfield	13.10	360	*	620	790	1,260
Rumford River	Location 2** in Mansfield	10.80	310	*	540	680	1,090
Rumford River	Location 3** in Mansfield	8.00	250	*	445	560	880

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Rumford River	Location 4** in Mansfield	6.80	230	*	405	505	800
Runnins River	School Street in Seekonk	9.60	275	*	450	535	800
Runnins River	Mink Street in Seekonk	9.10	260	*	430	510	755
Runnins River	Cross Section C	8.90	250	*	410	490	725
Runnins River	Cross Section D	8.20	230	*	375	450	665
Runnins River	Highland Avenue in Seekonk	7.50	195	*	315	375	605
Runnins River	Leonard Street in Seekonk	6.00	165	*	265	335	545
Runnins River	Fall River Avenue in Seekonk	5.90	160	*	255	330	535
Runnins River	Pleasant Street in Seekonk	4.20	105	*	175	235	405
Runnins River	Cross Section R	3.90	100	*	155	225	390
Runnins River	Arcade Avenue in Seekonk	3.30	85	*	135	205	355
Runnins River	Ledge Road in Seekonk	3.10	80	*	130	195	350
Runnins River	Greenwood Avenue in Seekonk	2.40	60	*	105	155	305

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Sabin Pond Brook	Above confluence of tributary at U.S. Route 44 in Taunton	4.80	385	*	565	650	870
Sabin Pond Brook	Above confluence of tributary at Dirt Path No. 1 in Taunton	2.70	265	*	385	440	590
Sabin Pond Brook	At Glebe Street in Taunton	1.20	155	*	225	260	345
Sabin Pond Brook	Location 1** in Rehoboth	0.50	60	*	100	130	230
Scotts Brook	Confluence with Ten Mile River	1.21	110	*	190	230	340
Scotts Brook	Washington Street in North Attleborough	1.18	110	*	180	220	330
Scotts Brook	Avery Street in North Attleborough	1.15	100	*	170	210	310
Scotts Brook	Arnold Road in North Attleborough	1.07	87	*	150	180	270
Scotts Brook	High Street in North Attleborough	0.98	79	*	130	160	250
Segreganset River	Confluence of Sunken Brook	13.40	600	*	995	1,255	1,269
Segreganset River	Center Street in Dighton	11.00	504	*	849	1,027	1,797

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Table 9: 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	0.2% Annual Chance
Segreganset River	Near Briggs Road in Dighton	1.20	70	*	100	110	165
Segreganset River	At Taunton corporate limits	5.40	415	*	610	700	935
Sevenmile River	Amtrak railroad bridge in Attleboro	12.60	577	*	961	1,144	1,620
Sevenmile River	County Street in Attleboro	12.00	532	*	886	1,055	1,532
Sevenmile River	Pitas Avenue in Attleboro	10.20	468	*	779	928	1,311
Sevenmile River	Roy Avenue in Attleboro	9.31	417	*	694	827	1,166
Sevenmile River	Read Street in Attleboro	7.28	322	*	536	640	900
Sevenmile River	Orrs Pond Dam in Attleboro	7.14	306	*	509	607	852
Sevenmile River	West Street in Attleboro	5.01	230	*	386	462	651
Sevenmile River	Luther Reservoir Dam in Attleboro	4.44	209	*	351	421	594
Sevenmile River	Old mill dam upstream of Old Post Road in North Attleborough	3.60	179	*	302	363	513
Sevenmile River	Draper Avenue in North Attleborough	3.50	173	*	292	351	496

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Sevenmile River	Riverview Drive in North Attleborough	3.05	155	*	262	315	446
Sevenmile River	Hoppin Hill Avenue in North Attleborough	1.94	108	*	184	223	317
Sevenmile River	Hickory Road in North Attleborough	0.53	38	*	67	82	118
Sevenmile River	Culvert in farm field 1,700 feet south of High Street in North Attleborough	0.41	31	*	55	67	97
Speedway Brook	South Main Street in Attleboro	3.10	170	*	280	340	510
Speedway Brook	Maple Street in Attleboro	0.75	80	*	140	170	260
Sunken Brook	Center Street in Dighton	2.20	123	*	187	216	341
Sunken Brook	3,850 feet upstream of Center Street in Dighton	1.40	75	*	106	125	198
Taunton River	Plain Street above Three Mile River in Taunton	363.00	4,890	*	7,260	8,420	11,100
Taunton River	County Street/Route 140 above Mill River in Taunton	317.00	4,230	*	5,940	6,770	8,690
Taunton River	Route 24 above Forge River	302.00	4,080	*	5,630	6,380	8,120

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Taunton River	South Street	293.00	3,970	*	5,430	6,120	7,750
Taunton River	US Route 44	283.00	3,860	*	5,210	5,850	7,370
Taunton River	Green Street/Plymouth Street	271.00	3,740	*	4,990	5,570	6,970
Taunton River	Titicut Street (Taunton River near Bridgewater, MA streamgage number 01108000)	262.00	3,660	*	4,830	5,380	6,690
Taunton River	Auburn Street	183.00	2,820	*	4,140	4,780	6,260
Taunton River	Cherry Street	129.00	2,280	*	3,590	4,230	5,720
Ten Mile River	Railroad Bridge and Omega Pond Dam, East Providence, RI	55.40	1,510	*	2,440	2,940	4,200
Ten Mile River	Pawtucket Avenue (Routes 114, 1, and 1A), East Providence, RI (USGS streamgage 01109403)	53.70	1,440	*	2,330	2,820	4,030
Ten Mile River	Dam downstream of Pond Street near Maple Avenue in Seekonk	28.70	1,290	*	2,140	2,550	3,640
Ten Mile River	Old unnamed road at Elks Lodge, 887 South Main Street, Attleboro	25.20	1,140	*	1,900	2,260	3,220

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Ten Mile River	West Street in Attleboro	11.70	875	*	1,500	1,780	2,580
Ten Mile River	Freeman Street in North Attleborough	9.54	637	*	1,090	1,290	1,860
Ten Mile River	Mount Hope Street in North Attleborough	8.39	506	*	864	1,020	1,450
Ten Mile River	Trailer Park Arch at 300 East Washington Street, North Attleborough	5.56	388	*	679	807	1,160
Ten Mile River	East Washington Street (Route 1) in North Attleborough	4.91	324	*	566	672	962
Ten Mile River	Broad Street in North Attleborough	3.65	179	*	309	365	507
Ten Mile River	Abandoned dirt road at crushed stone operation off Cross Street in Plainville	1.43	122	*	224	268	394
Ten Mile River	High Street in Plainville	0.59	56	*	102	122	177
Three Mile River	At confluence with Taunton River	84.60	1,820	*	2,710	3,170	4,440
Three Mile River - West Channel	At confluence with Three Mile River	*	900	*	1,430	1,690	2,440
Tributary to Dam Lot Brook	At mouth	0.54	41	*	71	87	140

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
Tributary to Forge River	At mouth	2.80	110	*	180	220	340
Tributary to Forge River	At White Street in Raynham	2.30	100	*	165	205	310
Wading River	At confluence with Three Mile River, Norton	44.10	910	*	1,410	1,680	2,330
Wading River	At Taunton Avenue (Route 140) Norton, MA (USGS gage 01109000)	43.70	900	*	1,400	1,660	2,310
Wading River	At Power Street in Norton	37.00	850	*	1,340	1,590	2,200
Wading River	Above confluence with Chartley Brook in Norton	29.60	680	*	1,140	1,380	1,950
Wading River	At Walker Street in Norton	26.50	610	*	1,060	1,290	1,840
Wading River	Above confluence with Hodges Brook, near Richardson Avenue in Norton	21.50	500	*	920	1,150	1,670
Wading River	At Balcom Street in Mansfield (USGS gage 01108500)	19.90	430	*	820	1,040	1,520
Wading River	At Cedar Street in Foxborough	18.20	430	*	810	1,010	1,465

*Not calculated for this Flood Risk Project

Table 9: 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	0.2% Annual Chance
West Branch Palmer River	Location 1** in Rehoboth	7.90	430	*	700	870	1,500
West Branch Palmer River	Location 2** in Rehoboth	6.90	380	*	520	780	1,340
West Branch Palmer River	Location 3** in Rehoboth	5.00	300	*	490	510	1,060
West Branch Palmer River	Location 4** in Rehoboth	4.30	280	*	420	630	950
West Branch Palmer River	Location 5** in Rehoboth	3.65	240	*	380	500	850
West Branch Palmer River	Location 6** in Rehoboth	1.15	100	*	160	210	360
West Branch Palmer River	Location 7** in Rehoboth	0.90	80	*	130	160	300
Whiting Pond Bypass	At confluence with Ten Mile River	*	89	*	154	182	253
Whitman Brook	At Longwater Pond	2.97	150	*	240	290	420
Whitman Brook	At Conrail	1.94	110	*	180	220	335
Whitman Brook	At Stoughton-Easton corporate limits	1.55	95	*	155	190	295

*Not calculated for this Flood Risk Project

**Values estimated from the Frequency-Discharge, Drainage Area Curves following this table

Figure 7: Frequency Discharge-Drainage Area Curves

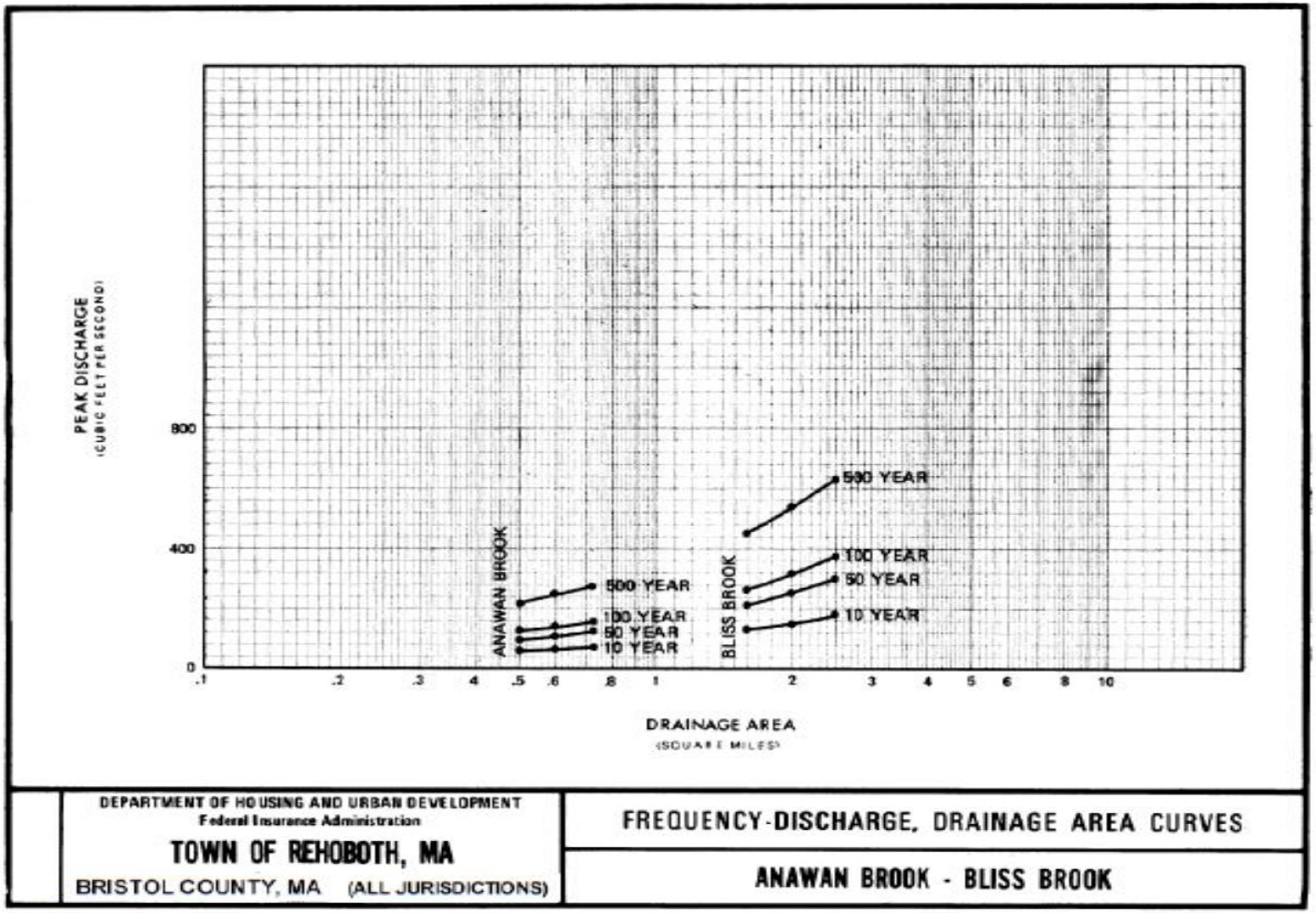


Figure 7: Frequency Discharge-Drainage Area Curves

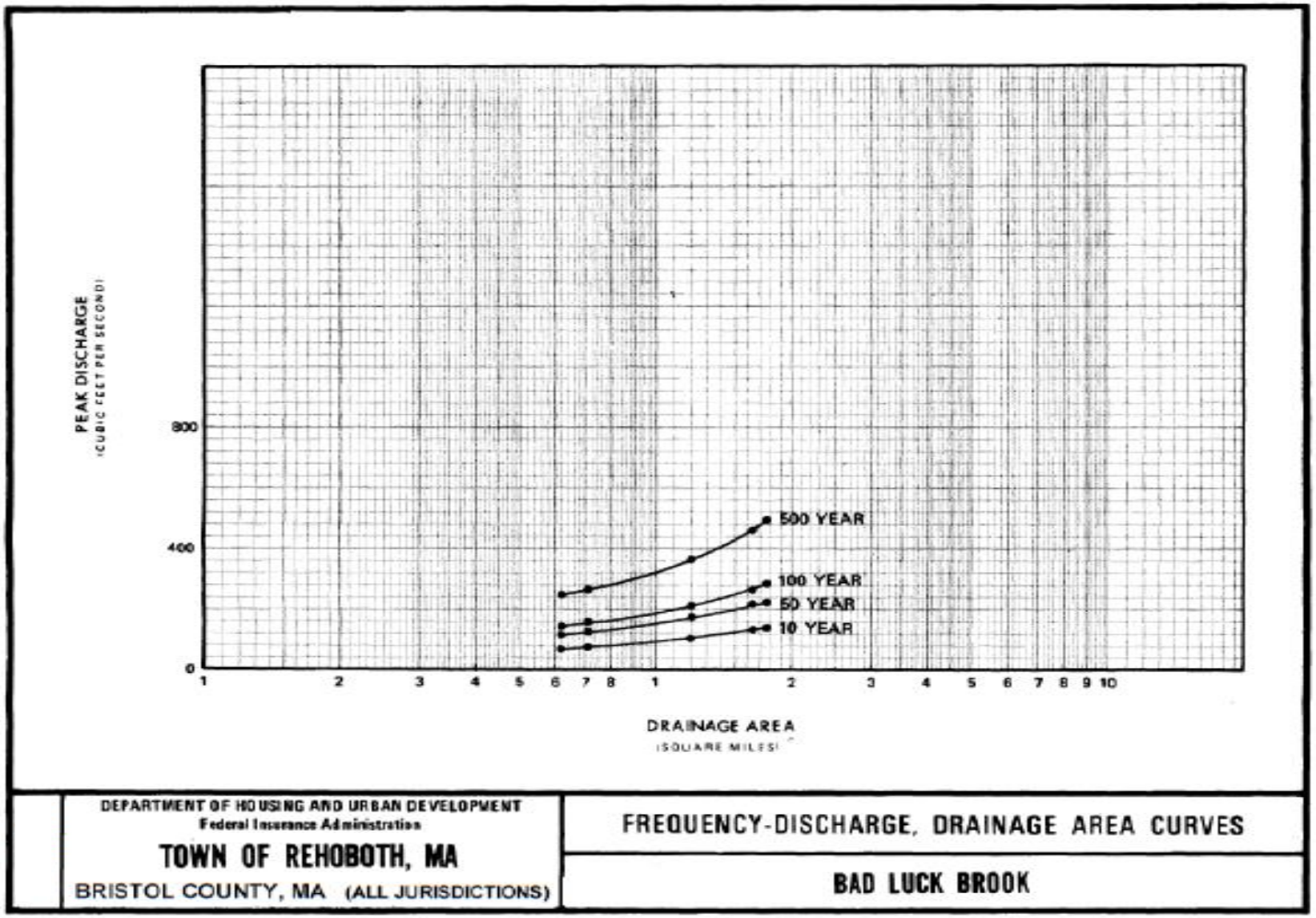
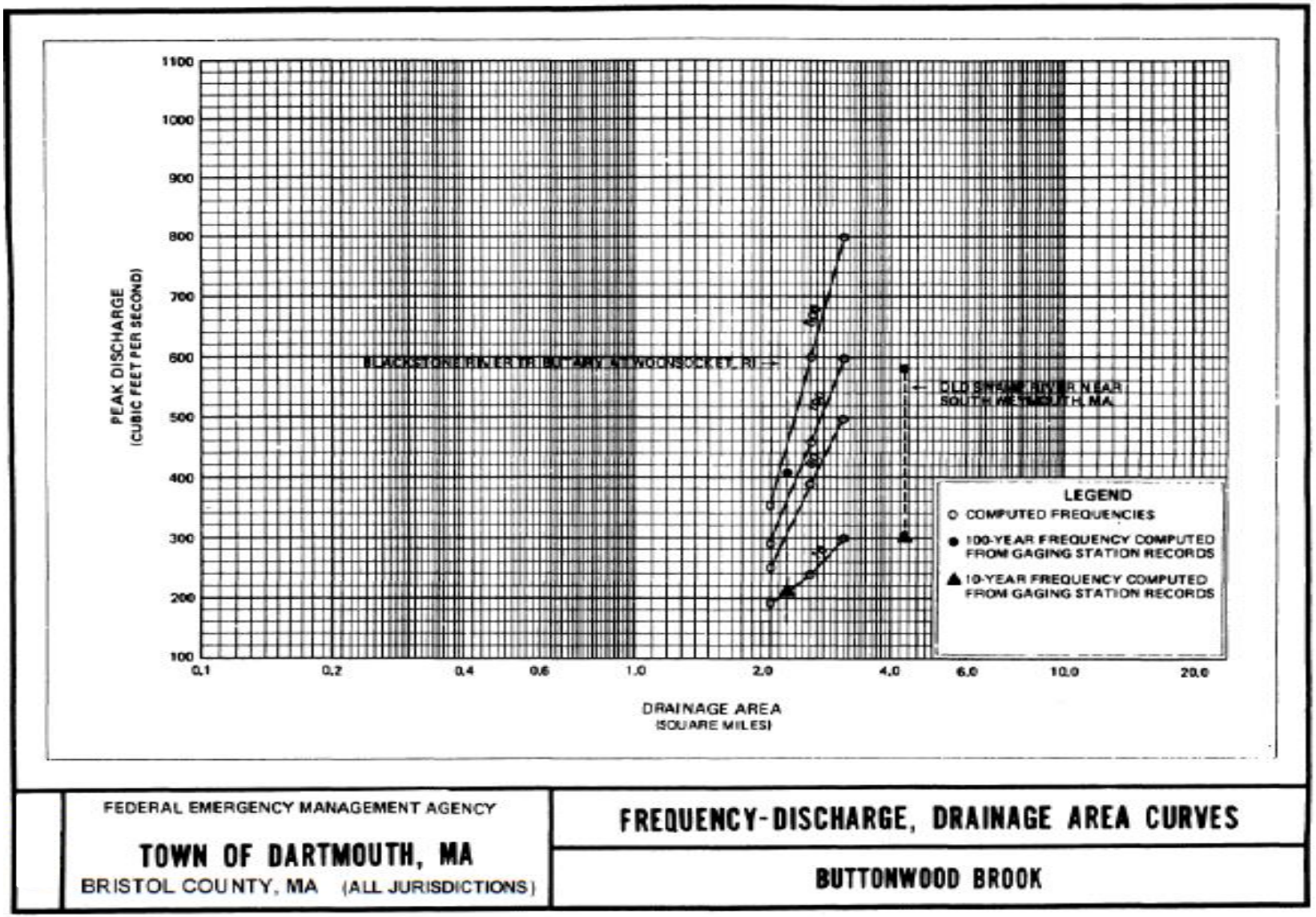


Figure 7: Frequency Discharge-Drainage Area Curves



FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF DARTMOUTH, MA

BRISTOL COUNTY, MA (ALL JURISDICTIONS)

FREQUENCY-DISCHARGE, DRAINAGE AREA CURVES

BUTTONWOOD BROOK

Figure 7: Frequency Discharge-Drainage Area Curves

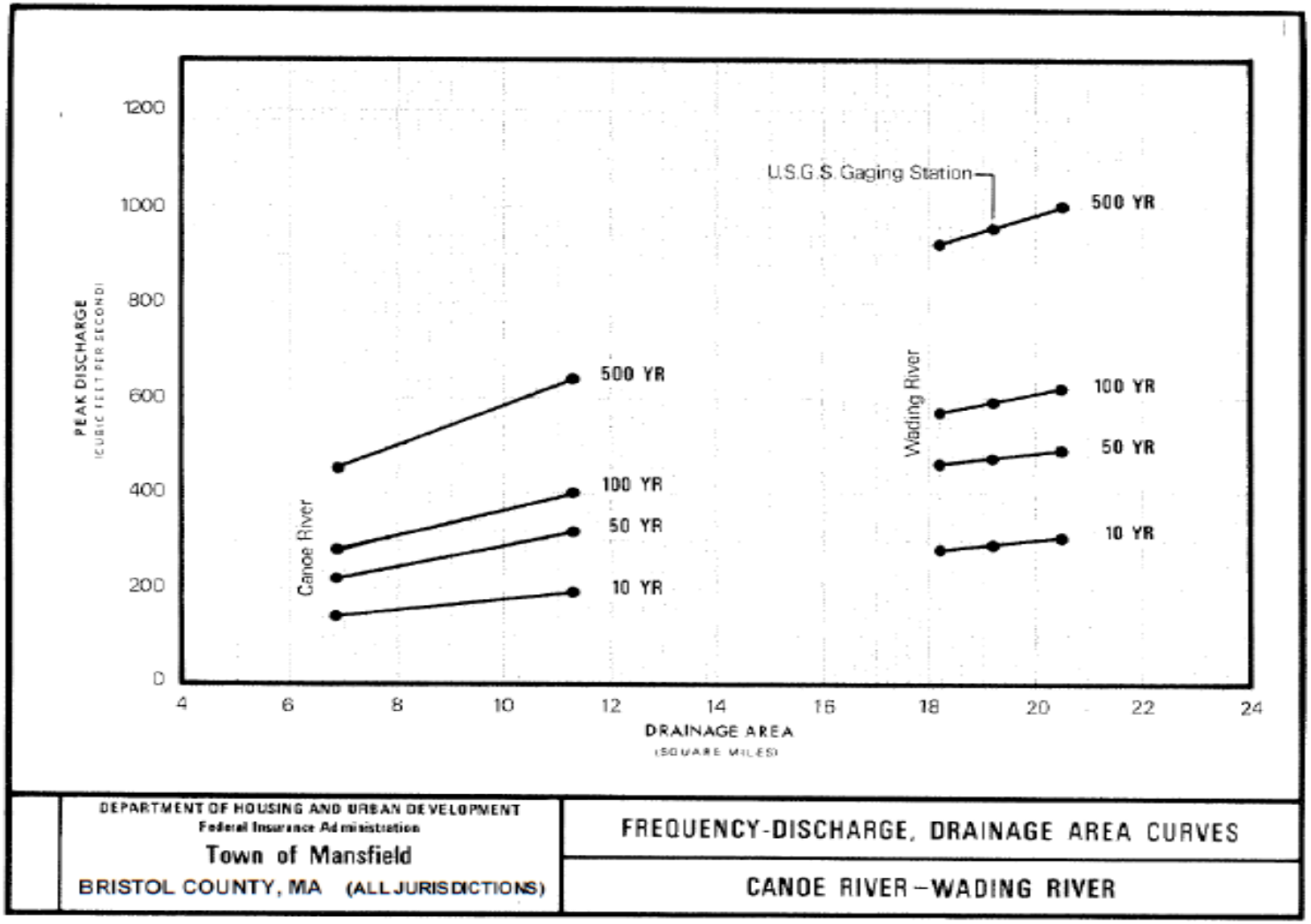
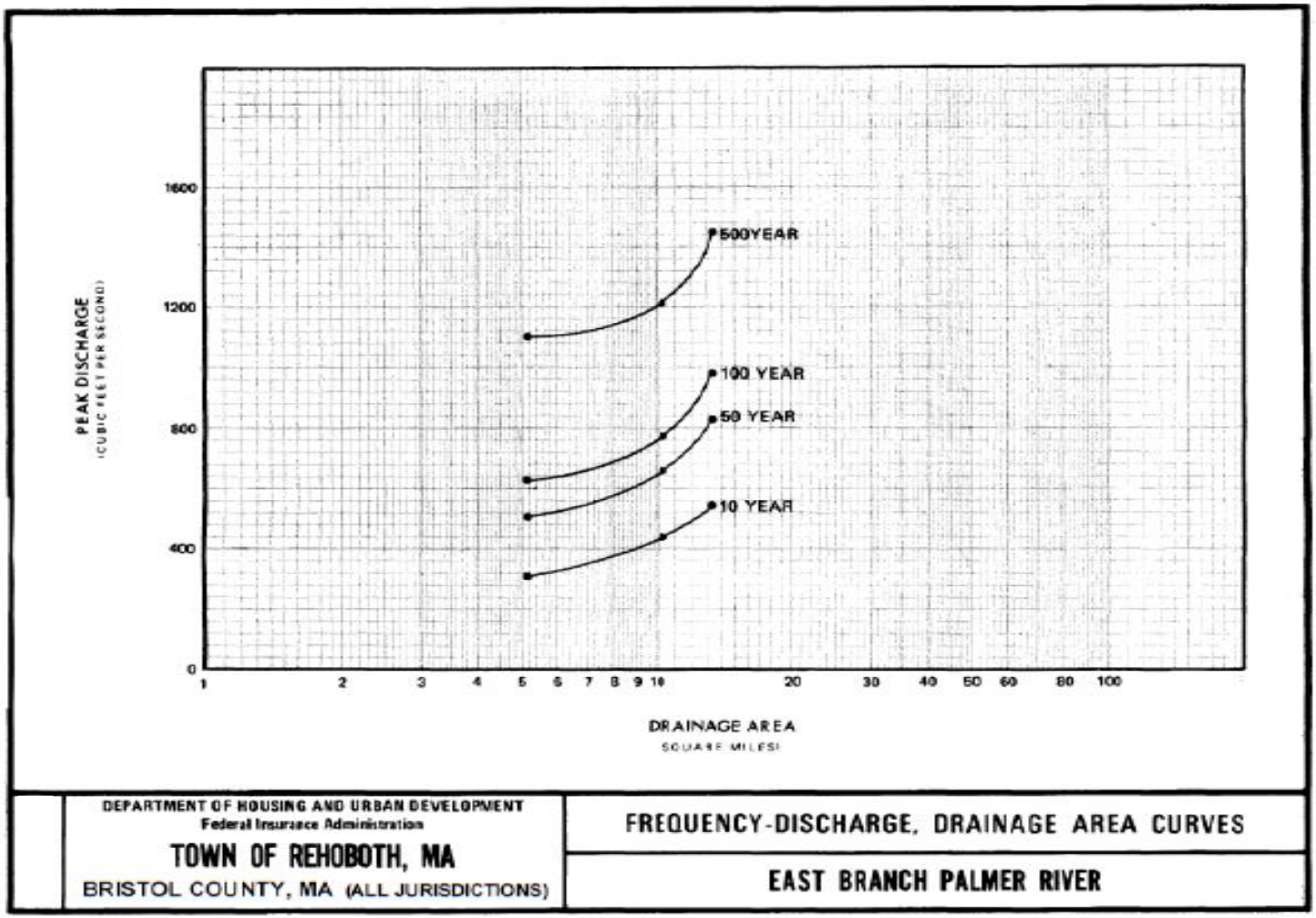


Figure 7: Frequency Discharge-Drainage Area Curves



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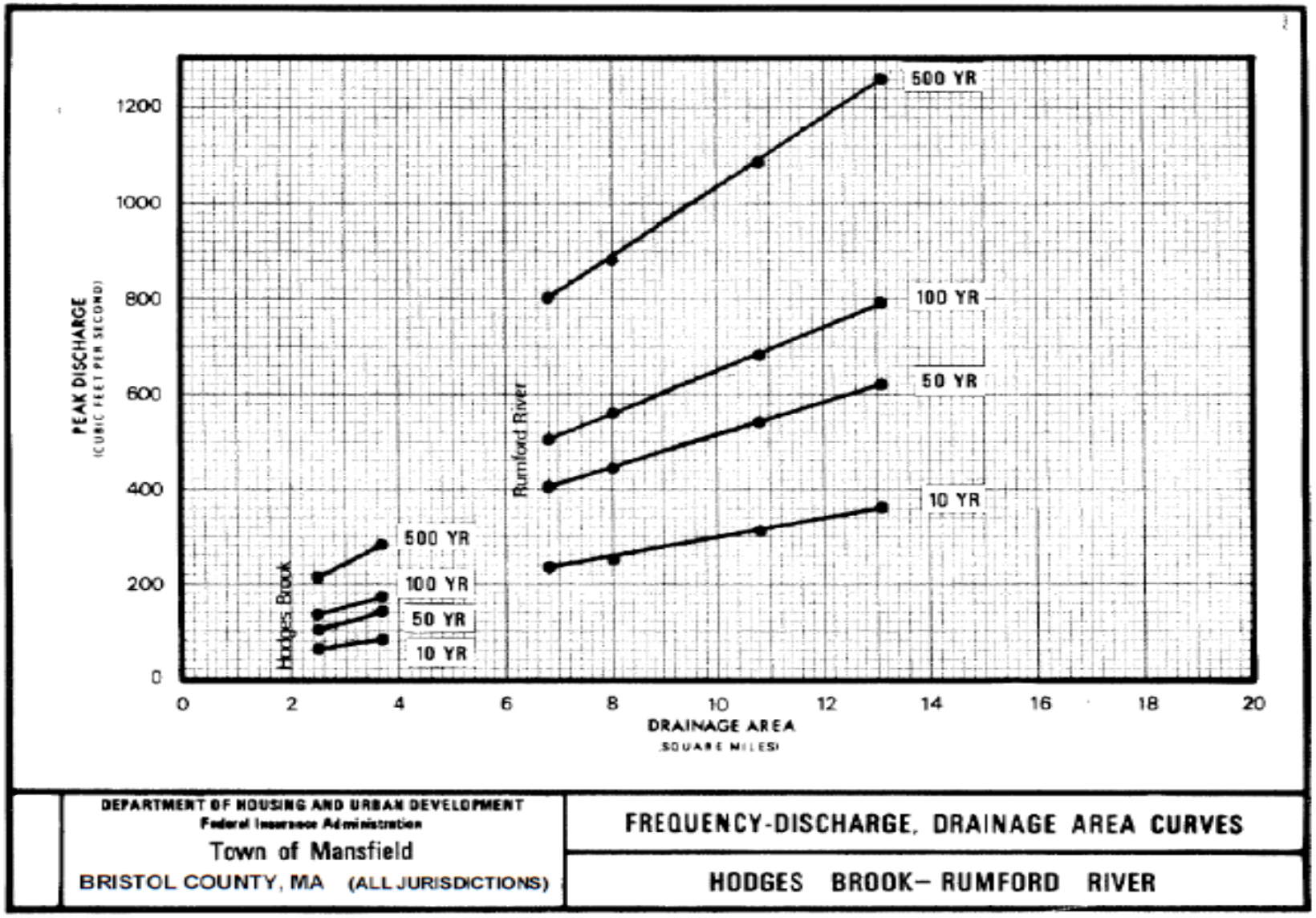

Figure 7: Frequency Discharge-Drainage Area Curves

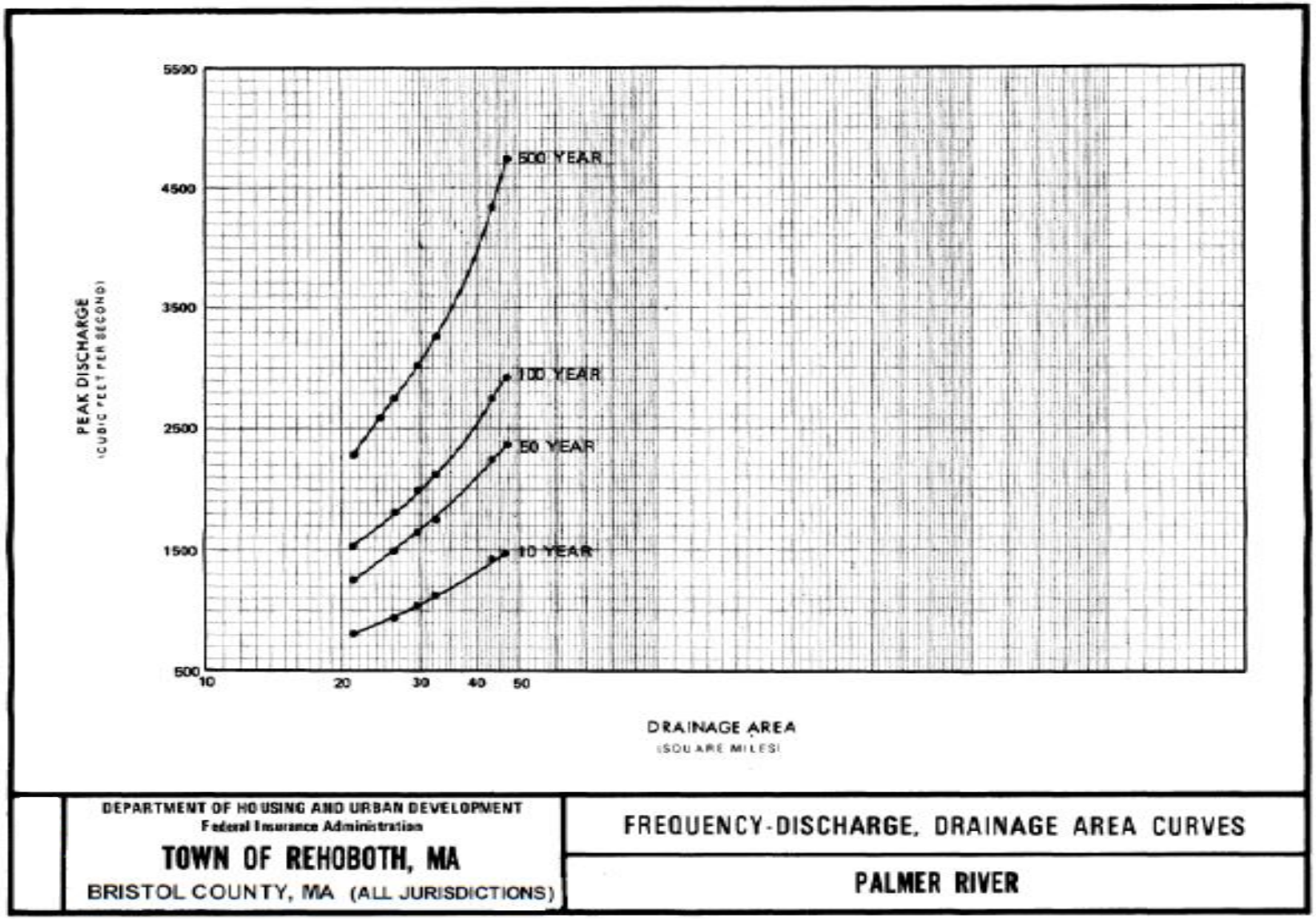

Figure 7: Frequency Discharge-Drainage Area Curves

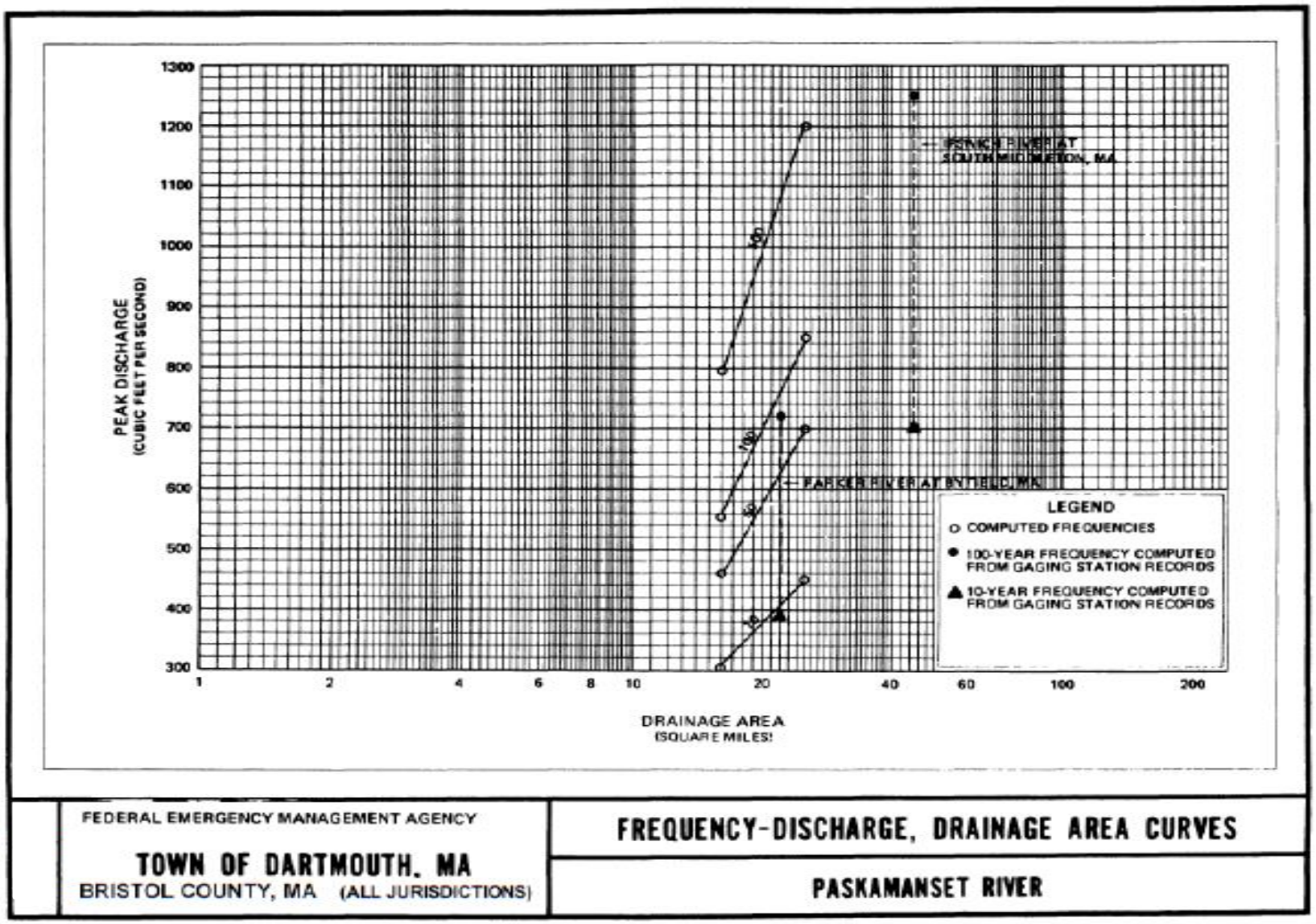

Figure 7: Frequency Discharge-Drainage Area Curves

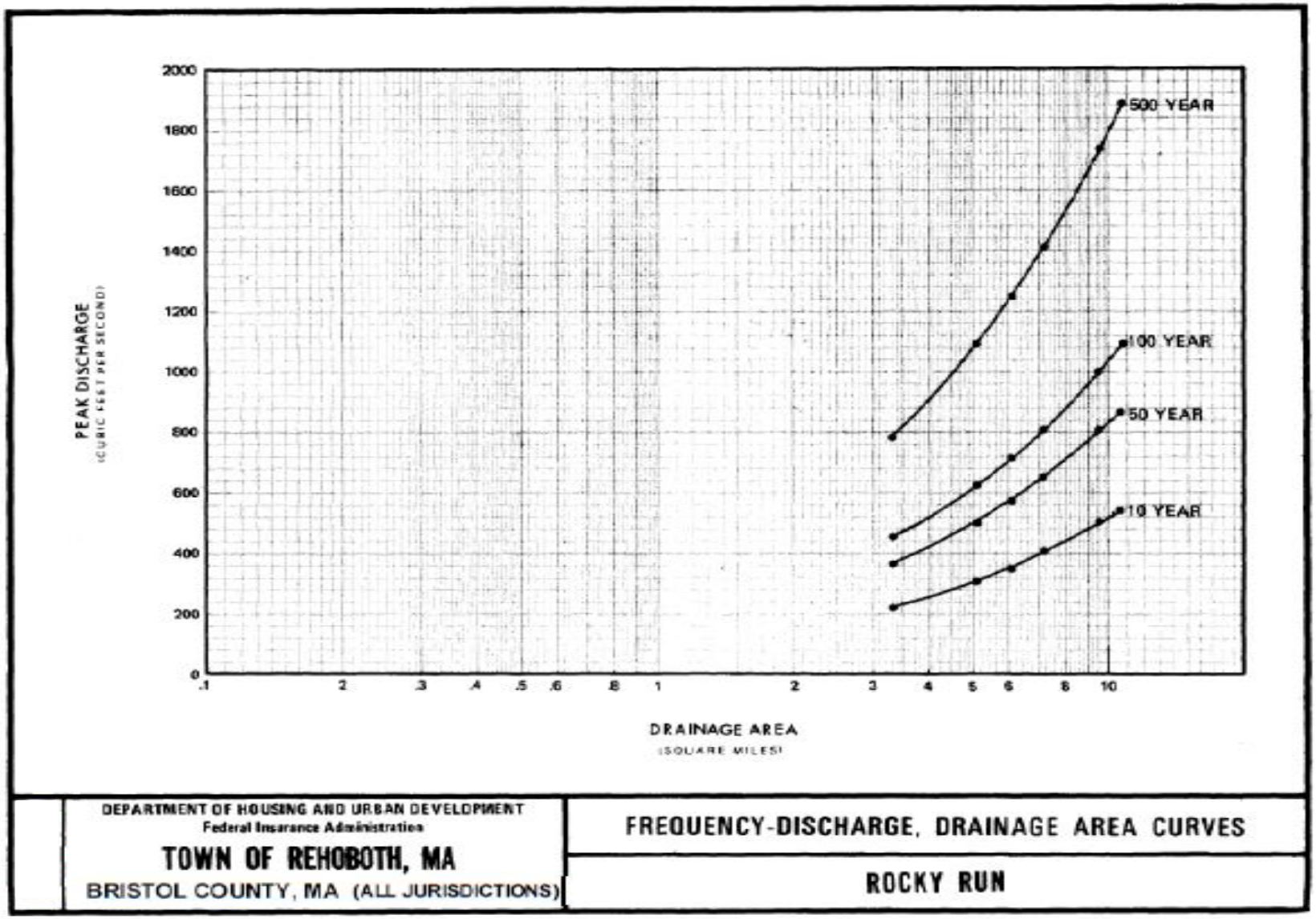

Figure 7: Frequency Discharge-Drainage Area Curves

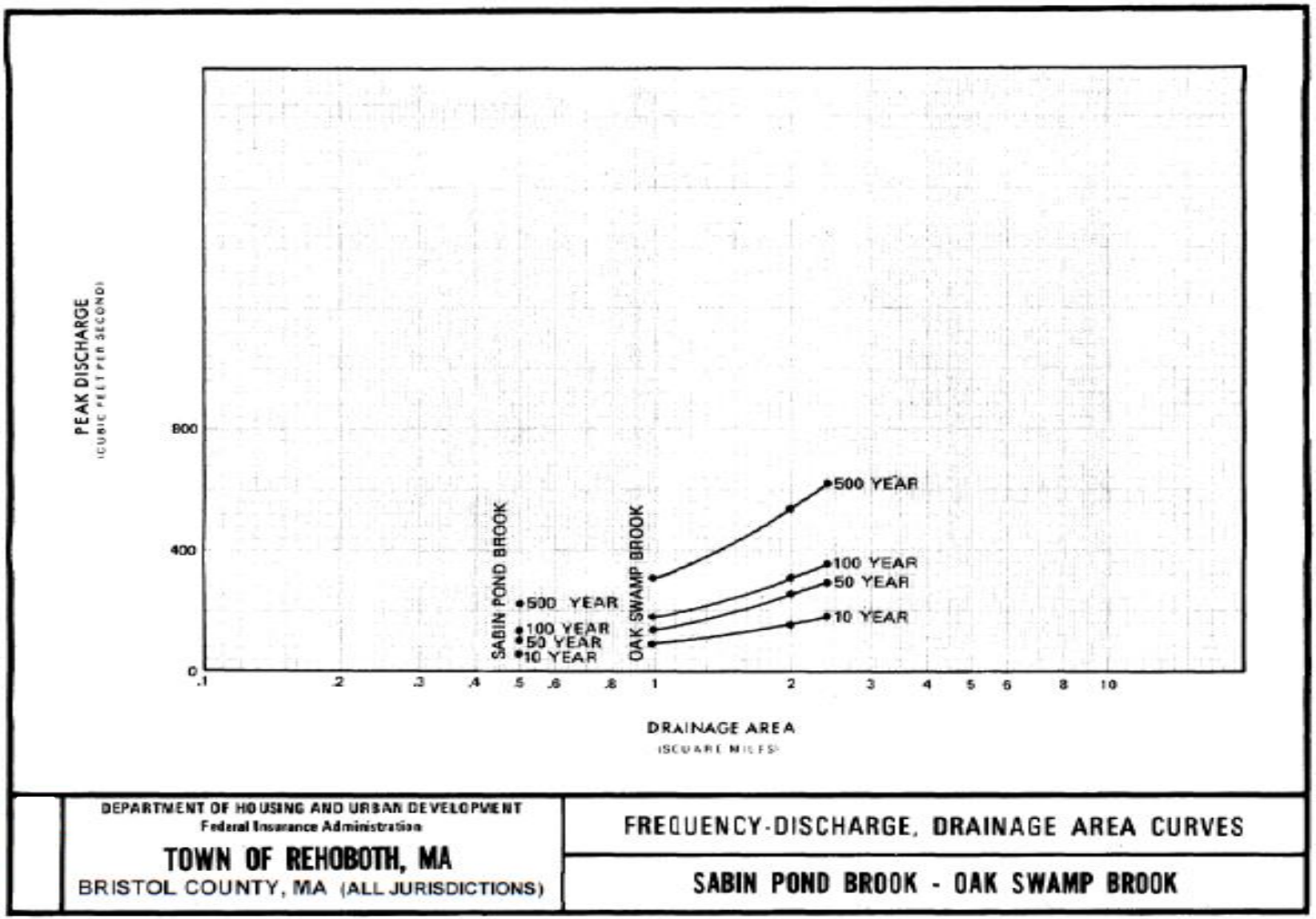

Figure 7: Frequency Discharge-Drainage Area Curves

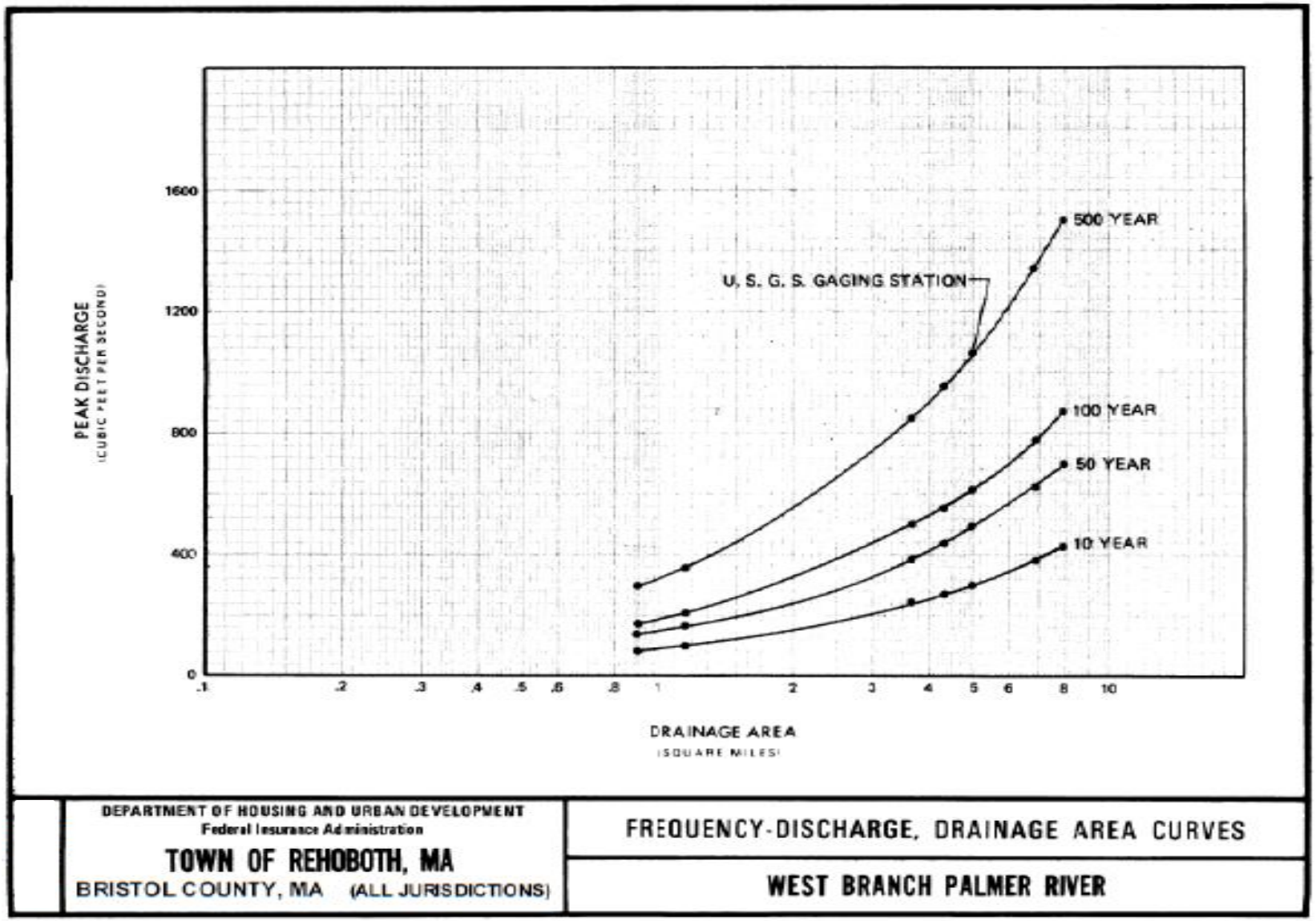

Table 10: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this Flood Risk Project]

Table 11: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Adamsville Brook and West Branch Westport River	01106000	USGS	Adamsville Brook at Adamsville, RI	8.01	10/1/1940	9/30/1978
Paskamanset River	01105933	USGS	Paskamanset River near South Dartmouth, MA	26.2	10/1/1995	9/30/2017

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 in Table 23, “Floodway Data.”

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 12. Roughness coefficients are provided in Table 13. 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.