MEMORANDUM

DATE: March 22, 2022
TO: Mayor Jeff Caggiano, Flood and Erosion Control Board
               Raymond Rogozinski, P.E., Public Works Director
               Nancy Levesque, P.E., City Engineer
FROM: Carol Noble, P.E., Environmental Engineer, Certified Floodplain Manager

RE: Proposed FEMA Insurance Map Update & Flood Damage Prevention Ordinance Fact Sheet

This Memorandum is prepared to address summary information on the floodplain program in Bristol:

- The City's Flood Damage Prevention (aka floodplain) ordinance allows residents to participate in the National Flood Insurance program (NFIP), managed by Federal Emergency Management Agency (FEMA). (Most homeowners insurance do not cover flooding). The City has participated in the program since 1981, when the initial flood ordinance was established.
- The ordinance regulates flood prone areas to help mitigate flooding effects.
- The flood prone areas in the City are established by FEMA Flood Insurance Study and are mapped on Flood Insurance Rate Maps (FIRMs)
- Bristol is part of 3 major drainage basins in the state. The majority of Bristol (about 85%) drains to the Coppermine Brook and Pequabuck River, which are in the Farmington River watershed basin. About 10% of Bristol's land area in the southeastern section drains to the Eight Mile/Quinnipiac River basin. A small area (approximately 5% of Bristol's land area) in the southwestern portion (Cedar Lake and the area southwest of Witches Rock and Falls Brook roads) drains to the Housatonic Basin.
    - Quinnipiac Watershed: In 2016, FEMA updated the flood study documents for the Quinnipiac basin of the state. Because of limited land area in the upper basin, the updates had little effect on the Bristol City map designations.
    - Farmington River Watershed: Bristol's "Official" floodplain study and maps for Hartford County were published in 2008. FEMA began the study update in September 2018, performing field survey in the detailed study areas. In May 2020, FEMA published a "Discovery Report", documenting the three levels of study and indicating the priority study areas based on funding (attached). Priorities are established based on community input at discovery meeting, as well as FEMA's means management strategy. In July 2020, the work maps were presented and FEMA provided an informational webinar (available upon request). Preliminary maps, scheduled for Spring 2021, have been delayed, but are anticipated by Summer 2022. After the Preliminary maps are issued, a community engagement period is initiated to include public notification and appeal processes. The new study and maps will not become effective until formally adopted, a public process that takes over 1 year.
- FEMA offers a Community Rating System "CRS" program that lowers FEMA flood insurance rates due to tighter/more restrictive management and regulatory requirements. DPW wants to move forward with CRS to coincide with new maps, estimated to be adopted in 1-2 years.

For more information, please feel free to contact me at 860-584-6111.

Discovery Report

Farmington Watershed, HUC-8 01080207
Hartford, Litchfield, and New Haven Counties, Connecticut and
Berkshire and Hampden Counties, Massachusetts
Communities listed inside cover
Report Number 01

May 2020

VI. Next Step: Prioritization of Study Areas

As discussed during the Discovery Meeting, three levels of study may be used during the study of the Farmington Watershed: (1) detailed study, (2) approximate study/base level engineering, and (3) redelineation. **Figure 3** shows the type of studies that will be conducted on the streams within the Farmington Watershed.

Each level of study uses a different methodology, as summarized below:

(1) Riverine Zone AE (Detailed Study)

- Most detailed and most expensive riverine study

- Structures and cross-sections are field surveyed

- Streamgage data or regression equations used for hydrology, and Hydrologic Engineering Center's River Analysis System (HEC-RAS) modeling used for hydraulics

- Flood way data table and flood profiles are included in the FIS

- Mapping:

  o *Base Flood Elevations (BFEs), appeal eligible*

  o *Cross sections*

  o *Flood way*

  o *1 percent annual exceedance probability (100-year flood) floodplain*

  o *0.2 percent annual exceedance probability (500-year flood) floodplain*

(2) Riverine Zone A (Base Level Engineering)

- Hydrologic and hydraulic modeling analysis based on new terrain data

- Streamgage data or regression equations used for hydrology, and HEC-RAS modeling used for hydraulics

- No field survey

- Cross-sectional values derived from new LiDAR terrain data

- Mapping: Approximate delineation for the 1-percent annual-chance event, no BFEs

- Also available: Delineations and analysis grids for 0.2-, 2-, 4-, 10-, and 1-percent ± annual-chance events

(3) Redelineation (Zone AE)

- No new engineering analysis

- Acceptable when effective BFEs are considered accurate

- Effective elevation data are transferred to new LiDAR terrain data to create new floodplain delineations for a FIRM

- FIS data: same as effective study

FEMA Region I used the information provided by communities—as shared in this Discovery Report—to help determine priority areas for study in the next phase of the Risk MAP process. The final selection and prioritization of areas for new study depended on the funds that Congress allocates to Region I for this purpose. Additionally, individual communities may choose to conduct their own studies of priority areas and/or take mitigation actions, and provide that information to FEMA Region I for consideration as part of the updated maps the communities may receive in the future.

Figure 3. Discovery Map, Farmington Watershed

MAP SYMBOLOGY

- Watershed Boundary
- HUC10 Watershed Boundary
- Neighboring Watersheds
- Communities
- State Boundary
- County Boundary
- Future Detailed Study
- Future Redelineation Study
- Draft Base Level Engineering

Average Annualized Loss
- Very Low
- Low
- Medium
- High
- Very High

WATERSHED LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

Discovery Map

FARMINGTON WATERSHED

Total Stream Miles:	540 Miles
Future Detailed Study (AE):	81 Miles
Future Redelineation Study (AE):	142 Miles
Draft Base Level Engineering (A):	317 Miles
Population:	267,935

FEMA

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