

Executive Summary

Since 1996, the Town of Winchester has experienced several devastating floods which have imperiled public safety, disrupted businesses and schools, and led to significant economic losses. During these events (October 1996, June 1998, March 2001, April 2004, and May 2006), economic losses have totaled more than \$25 million. The frequency and severity of the flooding along the Aberjona River has prompted the Town of Winchester to investigate the causes of, and possible flood mitigation projects to reduce the problem.

The proposed flood mitigation projects evaluated as part of this Final Environmental Impact Report (FEIR) consists of both structural and non-structural measures intended to reduce the 100-year floodplain, primarily in downtown Winchester where much of the economic damage due to flooding occurs. The proposed projects also serve to reduce flooding during more frequent events (e.g., 25-year storms); the effects of the projects during the 10-, 25-, 50-, and 100-year storms were evaluated in the current study. The Executive Office of Energy and Environmental Affairs (EOEEA, formerly EOE) Secretary's Certificates on the Environmental Notification Form (ENF), Draft Environmental Impact Report (DEIR), and Supplemental Draft Environmental Impact Report (SDEIR) placed emphasis on integrating conveyance improvements with stormwater detention, infiltration, non-structural measures, and watershed-wide mitigation projects. Studies conducted on these issues in preparation of this FEIR have resulted in a preferred alternative which does integrate these three elements into an overall flood mitigation program for Winchester that also has benefits to upstream and downstream communities.

The FEIR Alternative or the Preferred Alternative includes Projects 2, 3, 4, 6, 8, and 10. Project 2 has been significantly revised since the SDEIR to include a smaller, 35-foot channel bottom width; the remaining projects have not changed. A summary of the FEIR Alternative is provided below:

- **Project 2: Waterfield Road to Bacon Street** – Widening of the Aberjona River channel between Waterfield Road and Manchester Road from an average bottom width of 15 to 20-feet to approximately 35-feet and addition of a low flow channel. Re-grading and deepening of the channel between Manchester Road and Bacon Street, and continuation of the 8-foot wide low flow channel. Removal and replacement the USGS gage and associated weir.
- **Project 3: Center Falls Dam** – Replacement of the remaining 30-inch gate valve at the Center Falls Dam with 5 by 5-foot butterfly gates and 4 by 6-foot discharge boxes (the other gate was replaced in 2003).
- **Project 4: Mount Vernon Street Bridge Improvements** – Expansion of the hydraulic opening at the Mount Vernon Street Bridge.
- **Project 6: High School Playing Field** – Construction of a parallel 7 by 15-foot box culvert adjacent to the three existing culverts under the High School playing field.
- **Project 8: Swanton Street Bridge Improvement** – Replacement of the existing 10 by 16-foot bridge opening under Swanton Street with a 10 by 25-foot bridge opening.
- **Project 10: Railroad Bridge Near Muraco School** – Installation of two seven-foot diameter conduits under the MBTA railroad near the Muraco School to supplement the two existing 6.5 by 7-foot bridge openings.

The FEIR Alternative includes still includes three significant mitigation projects in the watershed that help manage floodwaters more effectively and reduce flood impacts throughout the watershed. These projects, which were also included in the SDEIR Alternative, are:

- Craddock Locks in Medford
- Upper Mystic Lake Dam in Arlington and Medford
- Scalley Dam in Woburn

Studies performed on the Craddock Locks and Scalley Dam outlet structure resulted in modifications to the mitigation proposed in the SDEIR. The Scalley dam outlet structure is proposed to be larger and structural analysis indicated that the concrete panel remnants of the Craddock Locks can be removed without impacting the integrity of the Main Street Bridge in Medford.

Revisions Since the SDEIR

The following bullets describe the major changes that have occurred since the issuance of the SDEIR:

- US Army Corps of Engineers (USACE) is no longer participating in the design or construction of Project 2, which will now be funded completely by the Town of Winchester (Section 3.3.2).
- Baseline Conditions flood model has been used and accepted by DCR and the calibration has been accepted by DEP (Section 2.1.2).
- A Riverfront Area analysis has been developed, as requested in the Secretary's certificate on the SDEIR (Section 4.2.4).
- FEMA completed the review of the watershed model, produced mapping for the communities within the watershed, publicly reviewed these maps, and made revisions. The new maps are scheduled to become effective in June 2010. This process verified the veracity of the model used in Winchester's Flood Mitigation Program (Section 2.1.1).
- Winchester Board of Selectman officially adopted the "Rules and Regulations Regarding the Use of Public Sewers and Stormdrains in the Town of Winchester, Massachusetts".
- Implementation of a rain barrel program in Winchester. In addition to the ongoing infiltration projects being installed by the Town and local developers, the Town has run a successful rain barrel program for its residents since 2007.

Summary of Permitting Required

Table 1 shows a summary of the local, state, and federal permitting processes potentially required for the preferred FEIR Alternative.

Table1: Project Permitting Summary

Issuing Authority, License or Permit	License, Permit or Approval
Winchester Conservation Commission	WPA Orders of Conditions, Local By-Law Approvals
Woburn Conservation Commission	WPA Orders of Conditions, Local By-Law Approvals
Medford Conservation Commission	WPA Orders of Conditions, Local By-Law Approvals
Massachusetts Department of	Water Quality Certification (CWA Section 401)

Issuing Authority, License or Permit	License, Permit or Approval
Environmental Protection	
Massachusetts Department of Environmental Protection	Waterways (MGL Chapter 91) License or Permit
Division of Conservation and Recreation	Chapter 253 Dam Safety Permit
Massachusetts Historical Commission	Memorandum of Agreement
Division of Conservation and Recreation	Access Permit to work on DCR property
Massachusetts Bay Transit Authority	MBTA License Agreement
Massachusetts Water Resources Authority	Plan review and approval for work near sewer easement (8M Permit)
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permitting/NEPA Compliance
USEPA	NPDES Stormwater Permitting
FEMA	Letter of Map Revision

Summary of Potential Environmental Impacts and Mitigation Measures

The impacts of the projects with respect to wetland resource areas and compliance of the projects with the Massachusetts Wetland Protection Act performance standards has been a primary concern of many commenters since the filing of the ENF. The FEIR Alternative further seeks to minimize impacts to resource areas and includes mitigation which will effectively improve the habitat along significant reaches of this urbanized stream. Table 2 presents a summary of resource area impacts by project for the FEIR Alternative.

Table 2: Summary of Resource Area Impacts, FEIR Alternative

Project No.	Bank (l.f.) ¹	LUW (s.f.)	BVW (s.f.)	Riverfront Area (s.f.) ²	BLSF (s.f.)
2	1,540	98,990	0	53,720	53,720
3	50	540	0	670	670
4	100	200	0	1500	1500
6	100	300	0	1000	1000
8	100	300	0	1000	1000
10	320	1000	1,000	4000	4000
Craddock Locks	0	0	0	0	0
Scalley Dam	30	640	0	1500	1500
Sum	2,240	101,970	1,000	63,390	63,390

¹ All in town projects involve the temporary alteration of Bank which will be restored in-place and in-kind resulting in no loss.

² All projects that involve impacts to the Riverfront Area will, in most cases, result in the replacement in-kind in a slightly different location due to the relocation of the river channel.

All projects meet the performance standards as set forth in the Regulations, as described in FEIR Section 4.2. Mitigation of impacts includes creation of approximately 2,000 square feet of Bordering Vegetated Wetland replacement area, 2,240 linear feet of Bank restoration, and 125,000 square feet of Land under Waterways restoration, and over 40,000 square feet of Riverfront Area restoration. None of

the projects propose any additional fill in a floodplain, nor will they act as a restriction to flow. Therefore it has been determined that there are no permanent impacts to BLSF even though work is being performed in floodplains. The alteration areas have been minimized to the greatest extent feasible and all mitigation is in excess of 1:1. A comprehensive stormwater control plan that includes cofferdams, silt curtains, dewatering/filtration areas, and haybale/silt fence barriers will help to avoid alterations to federal and state resource areas.