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April 2, 2010

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Aberjona River Flood Mitigation Program
PROJECT MUNICIPALITY : Winchester
PROJECT WATERSHED : Mystic River
EOEA NUMBER : 13046
PROJECT PROPONENT : Town of Winchester
DATE NOTICED IN MONITOR : February 24, 2010

As Secretary of Energy and Environmental Affairs (EEA), I hereby determine that the Final Environmental Impact Report (EIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00). The project may proceed to permitting.

Low-lying areas adjacent to the Aberjona River in Winchester have been subject to flooding throughout history. This flooding has been exacerbated by an increase in stormwater flows resulting from development (upstream and within Winchester) over the past 20 to 30 years and the placement of structures that restrict the River's flow, including dams, culverts and siphon chambers. The Town of Winchester estimates that 5 storms in the past 10 years have caused more than \$20 million in flood damage. This estimate does not include damage and costs associated with the two storms we experienced this month, which caused flooding and sewage overflow within Winchester.

The numerous and severe storms experienced during the review of this project and the damage they have caused to infrastructure and personal property within the Winchester and in many other Commonwealth communities have brought renewed attention to the environmental

and economic issues surrounding flood control and floodplain management. These storms have underscored the importance of both addressing existing flooding problems as well as investing in sound environmental and land use planning to address flooding in the long-term.

The Aberjona River Flood Mitigation Program represents a concerted effort by the Town of Winchester to address their flooding problems directly, comprehensively and within the context of the Aberjona, Mystic River and Alewife Brook watershed. The evolution of this project, supported by the active participation of many state agencies and municipalities, from a narrow focus on Winchester's flooding problems to a watershed-wide approach that includes not only widening of the Aberjona, but also stormwater management, flood storage and drainage improvements, demonstrates that the Commonwealth and our communities can work effectively to address the challenges posed by flooding without shifting the burden downstream. The comprehensive approach undertaken by Winchester is a positive example of the type of planning that is needed to help avoid the type of flooding conditions that many Commonwealth communities are struggling to recover from this week.

Project Description

The purpose of this project and proposed mitigation is to minimize flood-related economic losses. This will be achieved primarily by increasing flood storage capacity within the Aberjona River and removing constrictions to flow. To maximize the long-term benefits of the project and minimize the amount of widening proposed within the Aberjona River, the project includes improved control of upstream flows, stormwater standards for new development and re-development projects, localized drainage improvements and increases in flood storage. Downstream impacts will be avoided and minimized through improvements to the Scalley Dam by the Town of Winchester and the City of Woburn, re-construction of the Upper Mystic Lakes Mid-Lakes Dam by the Department of Conservation and Recreation (DCR) and removal of constrictions at the Main Street Bridge/Craddock Locks in Medford either by the Town of Winchester or the Massachusetts Department of Transportation (MassDOT).

Projects to reduce constrictions and improve flood storage capacity within the Aberjona River are described below. Projects 1, 3, 5, 12 and 13 have been completed or partially completed and are included in the baseline modeling. With the exception of Project 1, the Town of Winchester is the project proponent.

#1 Wedgemere Train Station: Widening of the channel from 19 feet to 30 feet by relocating a Massachusetts Water Resources Authority (MWRA) siphon. The project was completed by the MWRA in 2008.

#2 Waterfield Road to Bacon Street: Widening and deepening of the channel to a uniform 35-foot bottom width (from the current 10 to 20-foot width) for 1,300 linear feet from Waterfield Road to Manchester Road. Re-grading and deepening of the channel from Manchester Road to Bacon Street. This project will incorporate a low-flow channel and bank/riverfront restoration. It includes removal of existing granite revetments along the east side of the river, replacement with a 1:1 engineered slope using a cellular

confinement system and conversion of the 8-foot shoulder along the Mystic Valley Parkway to a 5-foot sidewalk and planting strip.

#3 Center Falls Dam: Replacement of two 30-inch gate valves and discharges located on the Center Falls Dam with 5-foot by 5-foot butterfly gates and 4-foot by 6-foot discharge boxes. This project was permitted in 2002, prior to the filing of the ENF, and one valve has been replaced.

#4 Mount Vernon Street Bridge Improvements: Installation of an additional 8-foot opening under the bridge.

#5 Shore Road: Addition of an 8-foot by 4-foot culvert adjacent to existing 6-foot by 15-foot culverts to reduce constrictions. This project was completed in 2002 prior to the filing of the ENF.

#6 High School Playing Field: Installation of an additional 7-foot by 15-foot box culvert parallel to the three existing 7-foot diameter culverts beneath the playing fields.

#8 Swanton Street Bridge Improvement: Reconstruction and/or replacement of the existing 10-foot by 16-foot bridge opening to expand it to create a 10-foot by 25-foot opening.

#10 Railroad Bridge Near Muraco School: Installation of two 7-foot diameter conduits under the MBTA railroad to supplement the existing 6.5-foot by 7-foot bridge openings.

#12 Dam Upstream of Railroad Bridge Near Muraco School: Removal of the dam. This was completed in 2002 prior to the filing of the ENF.

#13 Cross Street Culvert: Installation of a 5-foot by 12-foot supplemental box culvert.

The project, as proposed in the Final EIR, will alter approximately 1,000 square feet (sf) of bordering vegetated wetlands (BVW), 2,240 sf of inland bank, 101,970 sf of land under water (LUW), 623,390 sf of Bordering Land Subject to Flooding (BLSF) and 63,390 sf of riverfront area. It will include dredging 16,000 cubic yards (cy) of material from the channel and its banks. The alteration of BVW is associated with Project 10. Project 2 is located entirely within the Mystic Valley Parkway and parkland owned by DCR, which is listed on the National Register of Historic Places, and will include removal of existing vegetation and mature trees and alteration of 475 feet of parkway curb line including a narrower travelway and elimination of informal on-street parking. Without adequate mitigation, the project could increase the 100-year flood elevation in the lower Mystic River and Alewife Brook by 0.2 feet.

Project Site

The Aberjona River source waters begin in Reading and flow southward through Woburn and Winchester. It drains approximately 27.5 square miles of urban land. Horn Pond Brook is its largest tributary and its water level is controlled by Scalley Dam. Farther downstream, it

flows into the Upper Mystic Lake, where its level is controlled by a series of 6 spillways owned and operated by DCR. The Aberjona River is classified among the most polluted water bodies in the state and is considered a High Stress basin by the Water Resources Commission (WRC). Pollution sources include unionized ammonia, nutrient enrichment and low dissolved oxygen and pathogens. Within Winchester, the watershed is generally 20-40 feet wide and ranges from wide, flat natural areas to constricted flow through culverts. During normal, dry-weather flow, the typical depth in the river is 1 to 3 feet and less than one foot in the flattest part of the River. The flow of the river is lower upstream (about .5 feet per second (fps)) and higher downstream (about 1 fps in some locations).

Permits and Jurisdiction

The project originally underwent MEPA review and required the preparation of an EIR pursuant to Section 11.03(3)(a)(1)(a) and 11.03 (3)(a)(2) of the MEPA regulations because it required a state permit and it proposed alteration of 50 or more acres of land and may have required a variance in accordance with the Wetlands Protection Act (WPA). The project requires Chapter 91 licenses and/or dredging permits and 401 Water Quality Certifications from the Department of Environmental Protection (MassDEP), Access Permits and a Dam Safety Permit from DCR, a license agreement with the Massachusetts Bay Transportation Authority (MBTA) and 8(m) permits from the MWRA.¹ In addition, it requires review by the Massachusetts Historical Commission. Section 404 permits are required from the US ACOE under the Federal Clean Water Act. Also, the project will require Orders of Conditions from the Winchester Conservation Commission (and a Superseding Order of Conditions from MassDEP if the Order is appealed).

Because elements of the project may be funded by the state, MEPA jurisdiction is broad and extends to all aspects of the project that may, directly or indirectly, cause Damage to the Environment as defined in the MEPA regulations. In this case potential project impacts include: wetlands, water quality, drainage, dredging, wastewater/water supply, wildlife habitat, open space, historic resources and construction period impacts.

Procedural History

An ENF for this project was filed in May, 2003. The ENF proposed 17 flood improvement projects including five projects that would widen the river channel to 30 to 40 feet. Also, the proponent requested a Phase I waiver for three of the proposed projects (4, 13 and 17) which, if granted, would have allowed Phase I of the project to proceed prior to preparing the EIR for the entire project. A Certificate was issued on June 30, 2003 detailing the Scope for the EIR and denying the waiver request.

In November, 2003, the proponent filed a Notice of Project Change (NPC) requesting a Phase I waiver limited to Project 13. The NPC provided additional analysis of potential impacts and mitigation. The Secretary's Certificate on the NPC was issued on February 23, 2004 and a

¹ Project changes have avoided the need for a variance under the WPA and no longer include a disposition or a change in use of parkland in accordance with Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts.

Final Record of Decision (FROD) was issued on March 26, 2004 allowing Phase I to proceed prior to the filing of the Draft EIR.

In February, 2006, the proponent filed the Draft EIR. However, after review of the Draft EIR, the proponent was required to develop a Supplemental Draft EIR to address insufficient information regarding wetland impacts, Article 97 impacts, stormwater management and dredging. A Certificate issued on April 20, 2007 found that the Supplemental Draft EIR adequately and properly complied with MEPA and provided a Scope for the Final EIR.

REVIEW OF THE FINAL EIR

The Final EIR provides an updated project description, 25% design plans for Project 2, expanded information on existing conditions, and identification of permits or approvals required or potentially required for each project. It identifies measures to avoid, minimize and mitigate project impacts and includes Draft Section 61 Findings. It includes responses to comments on the Supplemental Draft EIR and describes proposed changes to the project design to address concerns.

Alternatives Analysis

The Final EIR summarizes the alternatives analysis provided in previous filings which demonstrated that the Preferred Alternative in the Supplemental Draft EIR was the most effective in reducing impacts associated with the 100-year storm. It describes changes to the Preferred Alternative and proposed mitigation and uses modeling to compare it to existing conditions and the Preferred Alternative presented in the Supplemental Draft EIR. It includes revised maps that illustrate the impacts of the project on the 50- and 100-year floodplain and an updated Level of Service (LOS) analysis that identifies impacts to buildings, roadways and channels. In addition, it includes predicted water surface profiles for the 100-year flood.

Concurrent with MEPA review, the Federal Emergency Management Agency (FEMA) has been updating the Flood Insurance Rate Maps (FIRM) for Middlesex County to more accurately reflect the existing floodplain. In December, 2009 FEMA issued Letters of Final Determination. The updated maps will become effective on June 4, 2010. The Town of Winchester will update its floodplain bylaw at the Spring 2010 Town Meeting to reflect these changes. The modeling used for this project was intended to provide the best available current data and has been thoroughly reviewed by DCR, MassDEP and other commenters. As noted in the Supplemental Draft EIR Certificate, this model can be used with reasonable confidence to assess the relative impacts of project alternatives and identify the need for and effectiveness of mitigation measures.

The Supplemental Draft EIR Preferred Alternative included a 39-foot wide channel bottom, installation of a pilot channel for low flow consolidation and the east bank rising up to the Mystic Valley Parkway on a 1:1 slope. Based on comments received during the review process and in an effort to reduce the impacts of the project, additional alternatives were analyzed including reductions in the width of the bottom channel to a minimum of 35 feet. The Final EIR summarizes the results of optimization models that demonstrate that a 35-foot bottom

width can provide adequate flood mitigation while decreasing environmental impacts and improving recreational access. However, the ACOE indicated that this alternative could not meet its cost-effectiveness requirements. As a result, the Town has opted to design and construct the project to ensure environmental impacts are minimized.

The LOS analysis evaluates the effect of the 10-, 25-, 50- and 100-year storm on elements within the floodplain.² It indicates that, of the 50 locations studied, 22 (44%) were identified as LOS D or F, 10 (20%) were identified as LOS C and 19 (36%) were identified as LOS A. The Preferred Alternative will decrease the locations identified as LOS D or F from 22 to 15 (44% to 30%) and of the 15 elements, 10 elements will improve from an F to a D.

Mitigation/Sequencing

As noted in prior Certificates, mitigation, as well as project sequencing, is critical to increase the overall effectiveness of this project and avoid downstream impacts. As required, the Final EIR clarifies Winchester's commitments to mitigation and provides additional information on three off-site projects that will mitigate this project's impacts and address existing flooding problems along the Mystic River and Alewife Brook. These projects include: (1) reconstruction of Scalley Dam; (2) the Mystic Lake Mid-Lakes Dam project; and (3) removal of constrictions at the Main Street Bridge/Craddock Locks on an interim basis, or as part of a bridge reconstruction project by MassDOT. These projects are discussed in turn below.

The purpose of the re-construction of the Scalley Dam on Horn Pond in Woburn is to facilitate controlled discharge throughout a storm event and flatten out peak flows. The Final EIR includes a feasibility study (Appendix H) that evaluates the optimal opening for the outlet structure. Based on this study and input from the City of Woburn, the Final EIR proposes to construct an additional 8-foot-wide sluice. It indicates that this project can reduce flood stages downstream of the confluence with Horn Pond Brook by .3 feet or more in the 100-year flood and could reduce flood stages along Horn Pond Brook up to 1 foot without negative impacts to water surface profiles or velocities upstream or downstream of the Dam. The Final EIR includes a commitment to design and construct improvements at Scalley Dam in partnership with the City of Woburn. A comment letter from the City of Woburn expresses its support for the project.

Re-construction of the Mystic Lake Mid-Lakes Dam (EEA #14341) by DCR is underway and is scheduled to be completed by Memorial Day 2011. This project was filed with MEPA in November, 2008. Although the primary purpose of the project is to address structural deficiencies, the improvements will provide DCR with greater reliability and operational flexibility. It will improve the flood flow buffering capacity of the Lake by allowing operators to draw down the lake by two feet to approximately 112 feet (MDC Datum) within two days of a predicted storm event. In addition, it will reduce the amount of time required to restore the Upper Lake to pre-storm levels. The Final EIR demonstrates that the completion of this project will mitigate the potential downstream impacts of the Aberjona Flood Control project.

The Final EIR evaluates the feasibility of removing constrictions at the Main Street Bridge/Craddock Locks as an interim measure prior to reconstruction of the bridge by

² LOS C is considered acceptable. LOS F represents a poor LOS or where flooding is predicted for all design storms considered.

MassDOT. It asserts that the panels blocking flow through the arches can be removed without affecting the structural support of the bridge. The Final EIR indicates that the Town of Winchester is committed to complete this interim mitigation measure, if it is necessary to mitigate project impacts prior to construction of the MassDOT project. Design of the MassDOT project has been advertised and is scheduled to be constructed in the Spring of 2012. It will include removal of obstructions to flow and does not require that this removal be contingent upon any operational or infrastructure changes at the Amelia Earhart Dam.³

The Final EIR proposes certain changes to project sequencing, which has generally been proposed from downstream to upstream, and provides water surface profiles based on the following sequencing: Project 2 (after completion of Mid-Lakes Dam), Main Street Bridge/Craddock Locks, Scalley Dam, Project 3 (Center Falls Dam), Project 4, Project 6, Project 8 and Project 10. Completion of the Mid-Lakes Dam will provide additional flexibility in project sequencing. The Final EIR indicates that the proponent evaluated whether Projects 2, 4, 8 and 10 could be completed prior to Craddock Locks and Scalley Dam without causing impacts downstream. The Final EIR concludes that Project 2 could be constructed prior to completion of the additional mitigation but that acceleration of the other projects located in Winchester is not recommended because such acceleration could result in adverse downstream impacts.

In addition, the Final EIR asserts that changes in sequencing obviate the need for operational changes at the Amelia Earhart Dam prior to the Main Street Bridge/Craddock Locks project. The data provided, which assumes operation of two pumps (with one on reserve) at the Amelia Earhart Dam, appears to support this conclusion. The Final EIR does acknowledge that the addition of a fourth pump at the Amelia Earhart Dam would provide regional benefits and alleviate existing backwater flooding of Alewife Brook. Comments from DCR concur that this project would allow DCR to positively control the basin elevation during flood flows at high tides. The most recent estimate for the addition of a fourth pump provided by DCR is \$12 million.⁴

Comments from MassDEP, downstream communities, the Mystic River Watershed Association (MRWA) and individuals urge the inclusion of a fourth pump as mitigation for this project. This request is based on a concern that, although the modeling demonstrates the projects can be mitigated without it, storm events are difficult to model and predict and will require coordinated releases of flows at Scalley Dam and the Mid-Lakes Dam and activation of the pumps at the Amelia Earhart Dam. In addition, commenters note that coordination among Woburn, Winchester and DCR will be essential to avoid downstream impacts during actual storm events. Commenters do not suggest that the modeling effort is not adequate or demonstrate that alternatives to the proposed project have not been adequately evaluated. Based on a careful review of the Final EIR and comments, it does not appear warranted to require Winchester to fund this project element. I do expect that Winchester will work cooperatively with DCR and downstream communities to ensure that operating protocols, prior to and during storm events, are understood and coordinated and that contingency plans are developed. This should include consideration of developing a Memorandum of Understanding (MOU) between

³ I note that this represents a change from the February, 2009 memo included in Appendix J of the FEIR. The current schedule and scope for the project were confirmed through a conversation with the MassDOT project manager on April 1, 2010 and through a subsequent email.

⁴ This estimate was provided in an email from DCR on March 30, 2010.

the parties to document these efforts. In addition, I agree with MassDEP's recommendation that additional stream gauges be located within the watershed to provide data and support coordination during storm events.

Commenters have also suggested that projects completed by DCR and/or MassDOT should be included in baseline modeling. In the context of MEPA review, the purpose of the model is to demonstrate the relative benefits of alternatives and proposed mitigation and I believe that the modeling presented in the Final EIR accomplishes this objective. The benefits and impacts of the proposed projects, including mitigation, whether included in the baseline or as part of the proposed project demonstrate that impacts associated with the proposed project can be mitigated. Because the project has not been designed or constructed and the Town is committed to undertaking the Main Street Bridge/Craddock Lock project as a mitigation measure, if necessary, revised modeling does not appear warranted. However, I note that MassDEP may require additional modeling during the permitting process, and that such modeling may potentially include analysis of the most recent storm events and their correlation with existing modeling predictions.

Sequencing will have to be approached very thoughtfully, particularly when considering mitigation necessary to manage potential construction period flood flows. Comments from DCR highlight the propensity of the Aberjona watershed to fast-rising and receding floodwaters during heavy periods of precipitation. Although the FEIR indicates that Project 2 could proceed prior to the upstream and downstream mitigation projects (Scalley Dam and Craddock Locks), completion of these projects may help mitigate increased flooding risks during the construction period. During permitting, DCR and MassDEP should carefully review proposed sequencing and the construction contingency plan to ensure that it is adequately protective.

Wetlands

The Final EIR includes refined estimates of wetland impacts. Although the reduction in the width of the channel for Project #2 minimizes actual impacts compared to previous review, surveys were more refined than previous efforts and show a larger impact to LUW, in particular. The Final EIR indicates that all projects will meet performance standards for wetland resource areas including provision of 2,000 sf of BVW replacement area, 2,200 linear feet of bank restoration, 125,000 sq feet of LUW restoration and restoration of a minimum of 40,000 sf of riverfront area (based on impacts to undeveloped riverfront area).

The Final EIR includes a riverfront area analysis and concludes that a Variance under the Wetlands Protection Act is not required because less than 10% of the lot will be altered. Because this project is along a corridor owned by DCR and not on identified lots, artificial boundaries were drawn for the purpose of this assessment for each proposed project. Comments from MassDEP agree with the proponent's conclusion and concur that a variance is not required.

The Final EIR includes a 25% planting plan. Bank restoration will include re-vegetation with indigenous, non-invasive shrubs and herbaceous vegetation to provide bank stability under all flow conditions, and vegetation and in-stream components for wildlife habitat including fish and provide shade to minimize impacts to water temperature.

The Final EIR provides additional assessment of the project's impact on water quality and low flow conditions and a commitment to incorporate a low flow channel within Project 2. The low-flow channel will be established between the Waterfield Road Bridge and the Bacon Street Bridge to concentrate flow into a narrow, relatively deep channel during periods when river flows are low, including during Alewife spawning season. The Final EIR indicates that the proponent evaluated the historical streamflow record using daily flow from the USGS stream gauge and concluded that the average daily discharge for all months exceeds the bank-full capacity of the low-flow channel. Comments from MassDEP and DCR identify design considerations related to the low-flow channel and request additional information regarding monitoring of stream depth and measures to maintain fish passage and conveyance capacity. Comments from the Mystic River Watershed Association MRWA suggest that the low-flow channel be allowed to develop naturally. In light of these comments, design refinements and/or alternative approaches should be considered during permitting that will protect habitat adequately while minimizing long-term maintenance requirements.

As required, the Final EIR identifies increases in peak velocities associated with the Preferred Alternative and identifies potential mitigation to avoid scouring including alternatives to armoring such as cross-vanes and J-hooks. DCR comments indicate that the proponent should consider extending proposed rip rap to a higher elevation up the slope to prevent undercutting of the roadway embankment during high flows.

The Final EIR identifies changes to riverfront area and the floodplain resulting from the widening of the river. It indicates that the Town will submit Letters of Map Amendment to FEMA, consistent with the National Flood Insurance Program (NFIP) regulations as projects are completed. I agree with MassDEP's suggestion that the Town take a conservative approach to protecting the floodplain and proposing amendments to the extent that these actions are consistent with Winchester's obligations under the NFIP regulations.

Drainage

The Final EIR identifies the Town's efforts to plan and implement stormwater controls to attenuate peak flows during more frequent events and augment low-flows through recharge. These efforts include revisions to the Town's water and sewer regulations to apply Standards 2, 3, 4 and 7 of the Massachusetts Stormwater Policy to new and redevelopment projects (including a prohibition on increases in post-development runoff volume), study and construction of localized drainage improvements (including a recent appropriation of \$750,000 to fund Phase III of this program), and introduction of a rain barrel program to provide barrels to residents at reduced rates.

Localized drainage improvements include the Tufts Road and Chester Street drainage improvements (3,800 cf of storage) and trash rack repairs and rehabilitation at West Side Field. Planned projects include Swanton and Bacon Street storm drain pump stations, drainage improvements in Manchester Road and the Manchester Field area consisting of enlargement of the existing 24-inch drain line that crosses Manchester Field. Improvements in the Manchester Road/Field area include installation of three underground detention/infiltration systems for a combined storage capacity of 150,000 cf. In addition, the Phase III program includes the West Side

Drainage Study to evaluate alternatives for redirecting stormwater from the west side of the Aberjona to other areas of Town.

The Final EIR provides an update on the status of privately-owned open space parcels within Winchester that could be used for flood storage or where substantial infiltration or detention systems could be developed to reduce stormwater runoff. It indicates that the Town funded a feasibility study for the Krafts Food parcel which concluded that the 16 acres of the site located in Winchester could provide up to 6.5 million gallons of floodwater storage for the 25-year storm event while also improving riparian habitat and water quality. The Town is seeking funds to complete the final design and proposed improvements.

Comments from MassDEP indicate that the proponent should address compliance with stormwater standards in more detail during permitting.

Chapter 91/Dredging and Dredged Material Management

As required, the Final EIR provides supplemental and more detailed information on dredging, sediment and soils. It indicates that Projects 2, 3, 4, 8 and 10 will likely require a Chapter 91 license or permit. As noted previously, 16,000 cy of dredging is associated with Project 2. This includes 6,500 cy of dredging, including removal of adverse slopes, within the existing channel and 9,500 cy of bank removal.⁵ In addition, the USGS gage and weir will be removed and replaced with a bottom mounted velocity meter and transducer.

Dredging is proposed in three sections. It will be performed in the dry using cofferdams at the upstream and downstream ends during a period of low flow and will require bypass pumping of the river. Construction period stormwater control will include cofferdams, silt curtains, dewatering/filtration areas and haybale silt fence barriers. When the banks have been stabilized and restored, flow will be re-established and the upstream cofferdam will be removed. The downstream cofferdam will remain in place until the next section is complete.

The Final EIR summarizes and includes the Sediment Sampling and Riparian Soil Analysis Report (Appendix E). It identifies where sediment and soil sampling was conducted and identifies areas where soils exceeded standards. Nine sediment samples were provided within the area of the channel where 6,500 cy of dredging will be required. The Final EIR indicates that some material may require specialized dewatering to avoid contamination and off-site disposal at an approved facility. Manchester Field, Ginn Field and/or the town owned parking lot area west of the river are identified as potential dewatering locations.

Comments from MassDEP indicate pre-filing consultation should include identification of the appropriate permitting mechanism for each project because some projects may not require any Chapter 91 authorizations while others consisting of repair or minor modifications may be approved administratively. In addition, the comments indicate that additional sediment sampling may be required; however, it appears that, based on clarification provided by the project proponent, the amount of sampling provided is adequate (i.e. more than 1 sample for every 1,000

⁵ This breakdown is not included in the Final EIR but was provided by the consultant in an email dated April 1, 2010.

cy of proposed dredging). As requested by MassDEP and DCR, permit applications should include a detailed water control plan for the proposed bypass, submission of a sediment management plan, address protocols for managing contaminated and uncontaminated sediment and address dewatering alternatives in more detail for those sediments not suited to in situ dewatering.

Open Space/Article 97 Land

Impacts associated with Project 2 will include the removal of existing vegetation and many well established trees, 475 feet of altered parkway curb line, a narrowed travelway and elimination of informal on-street parking spaces. The Final EIR includes renderings, plans and restoration plans, developed in consultation with DCR, that detail how improvements within the Mystic Valley Parkway and associated parkland have been designed and will be constructed.

As noted previously, because an easement to the ACOE from DCR is no longer required, the project no longer requires Article 97 legislation and, therefore, the Final EIR does not include an assessment of the project's consistency with the EEA Article 97 policy.

Comments from DCR indicate that the proponent should be prepared to provide more detailed information during permitting including overall Parks/Parkway site restoration, a maintenance plan that identifies commitments and defines responsibilities, a traffic management plan, haul route identification, public access and safety measures.

Historic Resources

The Final EIR includes the results of the Intensive (Locational) Historic and Architectural Survey and the Intensive (Locational) Archaeological Survey that were conducted as required by the Scope and MHC. The archaeological survey indicated that there did not appear to be any intact archaeological cultural material. The historic survey indicates that three sites are eligible for listing on the State and National Register of Historic Places. These include the Kellaway Landscape, the USGS Stream Gauging Station and Weir and the Bacon Street Bridge. It indicates that Projects 2 and 4 have the potential to negatively affect historic resources and therefore, the proponent is consulting with MHC regarding the development of a Memorandum of Agreement (MOA) to address impacts and appropriate mitigation. A wood guardrail, retention of views between the parkway and the river and multi-use paths have been incorporated into the design of Project 2 consistent with its context.

Conclusion

The Town of Winchester has thoroughly analyzed alternatives, and the Final EIR submitted for review includes a comprehensive plan to address stormwater and flooding that includes efforts to minimize downstream impacts associated with its actions. The development of this project and modeling of alternatives has supported DCR's efforts to re-construct the Upper Mystic Lake Dam and has demonstrated that the Main Street Bridge/Craddock Locks is a flow constriction that should be eliminated. Although commenters remain concerned about the environmental impacts of the significant widening and deepening of the channel associated with Project 2 and that there be adequate mitigation of any potential downstream impacts, I find that

the review of this project has thoroughly analyzed alternatives to the proposed widening and demonstrated that the proposed project provides a reasonable balance of flood control and environmental protection.

The MEPA regulations indicate that I may determine that a Final EIR is adequate, even if certain aspects of the Project or issues require additional analysis of technical details, provided that I find that the aspects and issues have been clearly described and their nature and general elements analyzed in the EIR or during MEPA review, that the aspects and issues can be fully analyzed prior to any Agency issuing its Section 61 Findings and that there will be meaningful opportunities for public review of the additional analysis prior to any Agency taking Agency Action on the Project. This project will continue to evolve throughout the permitting process. Details regarding design, development of mitigation and management during the construction period will be evaluated and considered in more detail. MassDEP and DCR comments stress that consultation prior to and during permitting will be critical. The proponent should carefully review comment letters from these agencies and consult with them prior to submitting permit applications. I expect that MassDEP and DCR will work cooperatively with Winchester and downstream communities to address any outstanding concerns.

Mitigation

The Final EIR includes the following measures to avoid, minimize and mitigate project impacts:

- Revision of Project 2 to minimize impacts to wetland resource areas, wildlife habitat and MWRA infrastructure.
- Inclusion of a low-flow channel (eight foot wide by two feet deep), or other appropriate measures identified during permitting, in the design of Project 2 to improve water quality and protect fish habitat.
- Incorporation of measures to minimize scouring caused by increased velocity including alternatives to armoring such as cross-vanes and J-hooks.
- The Final EIR indicates that all projects will meet performance standards for wetland resource areas including provision of 2,000 sf of BVW replacement area, 2,200 lf of bank restoration, 125,000 sq feet of LUW restoration and restoration of a minimum of 40,000 sf of riverfront area.
- Comprehensive construction-period stormwater control plan that includes cofferdams, silt curtains, dewatering/filtration areas and haybale/silt fence barriers.
- Development of a construction management plan in coordination with DEP, DCR, MassDOT, MWRA, City of Medford and City of Woburn.
- Bank restoration will consist of replacement of granite block revetment with bio-engineering methods and re-vegetation with indigenous, non-invasive shrubs and herbaceous vegetation.
- Mature trees (4-inch caliper) will be replaced on a 2:1 basis with 3-inch caliper trees.
- TOY restrictions to protect anadromous fish.

- Study and construction of localized drainage improvements including a \$1.7 million project to provide approximately 150,000 cubic feet (cf) of storage capacity in Manchester Road/Manchester Field.
- Krafts Food parcel restoration to provide flood storage and improve water quality and riparian habitat.
- Completion of a study to analyze alternatives for redirecting stormwater from the west side of the Aberjona River.
- The proponent will consult with MHC and develop a MOA to address impacts to historic resources associated with Projects 2 and 4 and appropriate mitigation.
- Proponent will consult with MWRA prior to submitting 8(m) permits.
- Remove constrictions at Main Street Bridge/Craddock Locks if warranted due to delays in the MassDOT bridge rehabilitation project.
- Replacement of the USGS gauge structure with a bottom mounted velocity meter and transducer and a commitment to provide adequate time to correlate with the existing gauge.
- Participation in MassDEP's Diesel Retrofit Program for construction vehicles consisting of use of EPA certified engine retrofit equipment and/or use of low sulfur fuel to reduce exposure to diesel exhaust fumes and particulate emissions during construction.
- Expansion of the Scalley Dam primary spillway in coordination with the City of Woburn, which will cost approximately \$520,000.
- Removal of the constrictions at the Main Street Bridge/Craddock Locks as an interim measure, if deemed necessary, prior to reconstruction of the bridge by MassDOT, which will cost approximately \$400,000.

In addition, I support the request by MassDEP for additional mitigation including:

- Long-term monitoring of stream depths to protect water quality and habitat.
- Installation of stream gauges at additional locations to provide more data during storm events and support coordination among municipalities and DCR.
- Coordination with DCR and the municipalities of Woburn, Arlington, Medford, Cambridge and Belmont regarding operating protocols and data sharing. Consider development of a MOA to formalize agreements between municipalities.

I note that many mitigation measures are general in nature. Additional specificity will be required during project permitting. The Section 61 Findings should be revised to include all project mitigation commitments, in particular, the commitments to Scalley Dam and interim removal of obstructions at the Main Street Bridge/Craddock Locks.


Finally, I note that the Scalley Dam project and Craddock Locks project may require additional MEPA review once the planning and design for those projects is more advanced. The Final EIR includes project descriptions, conceptual designs, potential permitting requirements and the modeling includes the hydraulic impacts of these projects; however, the Final EIR does not include a significant level of information regarding other associated environmental impacts (e.g. wetlands, traffic) or identify how the regulatory standards would be met. These projects may be reviewed individually or as a Notice of Project Change (NPC) associated with the

Aberjona River Flood Control Program. The proponent should consult with the MEPA Office regarding the appropriate filing mechanism once these projects are more fully developed.

Based on a review of the Final EIR, consultation with public agencies and a review of the comment letters, I am satisfied that the Final EIR adequately and properly complies with MEPA and its implementing regulations. The project may proceed to permitting.

April 2, 2010

Date



Ian A. Bowles

Comments received:

3/26/10	Department of Conservation and Recreation (DCR)
3/26/10	Department of Environmental Protection/Northeast Regional Office (DEP/NERO)
3/26/10	Massachusetts Water Resources Authority (MWRA)
2/24/10	City of Woburn
3/23/10	Town of Arlington/Board of Selectmen
2/25/10	Town of Arlington/Conservation Commission
3/25/10	City of Cambridge/Executive Department
3/26/10	Mystic River Watershed Association
3/20/10	Roger Frymire
3/15/10	Stephen H. Kaiser
3/26/10	Stephen H. Kaiser (second letter)

IAB/CDB/cdb