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June 25, 2021

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Monoosnoc Brook Resilient Redesign & Retrofit Project
PROJECT MUNICIPALITY	: Leominster
PROJECT WATERSHED	: Nashua River
EEA NUMBER	: 16376
PROJECT PROPONENT	: City of Leominster
DATE NOTICED IN MONITOR	: May 26, 2021

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the City of Leominster (City) proposes improvements to an urbanized open channel and culverted section of Monoosnoc Brook in downtown Leominster to stabilize the embankment and to accommodate additional hydraulic forces from increased precipitation due to climate change. As described further below, the existing stone masonry retaining walls along the bank are at the end of their useful life and are in disrepair. The stabilization of the embankment will protect existing utilities including those under Manning Avenue which are vulnerable to flooding and erosion during large storm events.

A stone masonry retaining wall runs along the southeast bank of the brook, providing separation between the brook and Manning Avenue. In the spring of 2017, an approximately 30-foot-long segment of this section of retaining wall collapsed into the brook. As a temporary repair, the City placed large riprap stone to stabilize the embankment and placed precast Jersey barriers along the toe of the slope within the brook to help restrain the base of the riprap.

The project includes removing existing stone masonry retaining walls and existing temporary wall stabilization measures (i.e., concrete jersey barriers and rip-rap slope); replacing and enlarging an existing approximately 150 foot (ft) long culvert that runs below the municipal parking lot; and reshaping the brook and establishing a naturalized stream bank, fringing wetland system, and embankment. The open channel section of Monoosnoc Brook will be widened to provide a uniform longitudinal slope and an increased conveyance and flood storage capacity. An existing 3-sided box culvert will be replaced with an open bottom arch culvert, and the brook will be widened and partially realigned to a uniform 24-foot width to match the existing culvert and stream width downstream at Mechanic Street. The concrete-lined river bottom will be removed and replaced with a naturalized stream bottom. An approximately 200-foot section of the river will be dredged to el. 1.5 ft resulting in the removal of approximately 166 cubic yards of existing stream bed material.

A new vegetated stream bank will be established along each side of the river and will be comprised of coir logs planted with hydrophytic herbaceous plugs. A fringing wetland system will be established adjacent to the stream bank on each side of the river where space allows and temporary wetland impacts along the south western bank of the river will be restored. While the majority of retaining walls will be shifted further away from the river to allow a naturalized buffer, due to site constraints within the southern project area, retaining walls will be replaced in the same general footprint proximate to the southern culvert. The project will result in a decrease in impervious surface and an increase of 2,770 sf of naturalized buffer zone/Riverfront Area.

Utility infrastructure will be removed, relocated, and/or upgraded to accommodate the project. A concrete utility bridge and footing will be removed and sewer main will be relocated further east and upgraded from a 15-inch clay pipe to a 15-inch high density poly ethylene (HDPE) pipe. In addition, nearby drainage infrastructure will be upgraded and reconfigured.

Project Site

The approximately 3.5-acre project site includes Monoosnoc Brook and surrounding areas within the urban downtown section of Leominster. Bound by Mechanic Street to the north, Manning Avenue to the east, Central Street to the south, and Monument Square/Pleasant Street to the west, the project site is immediately surrounded by commercial development and the City of Leominster municipal parking lot. The Monoosnoc Brook Walk and associated amenities, including light poles, benches, tables, and interpretive signage, parallels the west side of the brook.

Above and below-ground utilities occur within or proximate to the project area. Approximately 30 ft downstream of the Central Street culvert, a concrete utility bridge spans the brook. A 150±-year old sewer main, with flows of approximately 0.30 million gallons per day, and constructed of 15-inch Vitrified Clay pipe occurs proximate to the retaining wall within and adjacent to Manning Avenue. While the sewer main has recently been lined to maintain the pipe's integrity, it is still subject to rupture should the surrounding soils become unstable as a result of continued bank erosion. Stormwater runoff from adjacent paved and impervious surfaces is conveyed through drainage pipes and discharges into the brook via five outfalls penetrating stone masonry or concrete retaining walls; four (4) 12-inch round concrete pipes (RCP) are located along the eastern bank and one (1) 15-inch RCP is located along the western bank. Monoosnoc Brook flows northerly beneath Central Street through a granite arch bridge transitioning to a 20-foot diameter corrugated metal arch culvert. The brook flows

above-ground for approximately 270 feet and then into a 150± foot long, 3-side box culvert located beneath the municipal parking lot transitioning to a 50±foot long stone arch culvert located below Mechanic Street. Beneath the parking lot the 3-sided box culvert is generally 12 feet wide and widens to 24 feet towards Mechanic Street.

The project site contains wetland resources areas including Inland Bank, Bordering Vegetated Wetlands (BVW), Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA). The project site is located within the Federal Emergency Management Agency (FEMA) Zone A6 (el. 396', NVGD 1929) and Zone A12 (el. 396', NVGD 1929) (area of 100-year floodplain). The project site does not include any structures listed the Massachusetts Historical Commission's (MHC) *Inventory of Historic and Archaeological Assets of the Commonwealth* (the Inventory). The project site does not contain rare species habitat or Areas of Critical Environmental Concern (ACEC).

Environmental Impacts and Mitigation

Environmental impacts associated with the project include impacts to 842 linear feet of bank, 1,659 sf of Bordering Vegetated Wetlands (BVW), 5,219 sf of Land Under Water (LUW), 17,400 sf of Bordering Land Subject to Flooding and 39,360 sf of riverfront Area.

Measures to avoid, minimize, and mitigate environmental impacts associated with the project include reducing impervious area by 3,812 sf. The project is expected to improve Monoosnoc Brook's resiliency to projected increases in storm frequency and severity associated with climate change. In addition, the project will protect critical infrastructure, increase the site capacity for flood storage, and improve the form and function of wetland resources areas, including LUW, Bank, Riverfront Area, and BLSF, by establishing a wider and deeper channel, creating a new and wider naturalized stream bed beneath the arch culvert, removing degraded retaining walls and establishing naturalized banks and sloping embankments, and establishing a fringing wetland system to the maximum extent practicable. In addition, there will be a retrofit of the existing drainage infrastructure within the project footprint that will result in an overall improvement in the treatment and management of stormwater runoff that discharges to Monoosnoc Brook.

Jurisdiction and Permitting

The project is undergoing MEPA review and requires an ENF pursuant to 301 CMR 11.03(3)(b)(1)(b)[1] and 11.03(3)(b)(1)(f) because it requires a State Agency Action and involves alteration of inland bank and alteration of more than ½ acre of any other wetland. The project requires a 401 Water Quality Certification and Chapter 91 License from MassDEP. The project is receiving funding from the Municipal Vulnerability Preparedness (MVP) Program.

The project will require an Order of Conditions from Leominster Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP. The project will need to submit a Pre-Construction Notification (PCN) to the U.S. Army Corp of Engineers (ACOE). The project will require a National Pollutant Discharge Elimination System (NPDES) Permit from the U.S. Environmental Protection Agency (EPA) for stormwater discharges from a site of over one acre.

[1] This threshold was not identified in the ENF filing.

Because the Proponent is receiving State Financial Assistance, MEPA jurisdiction for any future review is broad and extends to all aspects of the project that may cause Damage to the Environment as defined in the MEPA regulations.

Review of the ENF

The ENF included a description of existing and proposed conditions for the area, identified environmental impacts, and included an alternatives analysis and a hydrologic and hydraulic modeling (H&H) report to support the project. Subsequent to the remote consultation meeting held on June 7, 2021, the Proponent provided a parking study undertaken by the City to support the Preferred Alternative which was distributed to the distribution list on June 9, 2021.

Alternatives Analysis

The ENF included an alternatives analysis which considered a No-Build Alternative, Minimal Intervention Alternative, Naturalized Edge Alternative (Preferred Alternative), and Daylighting Alternative. The No-Build Alternative would leave the stream and culvert in its existing condition. This alternative was dismissed given the existing degraded conditions and flooding which could negatively impact proximate utilities and infrastructure, and impact water quality.

The Minimal Intervention Alternative would involve replacing approximately 350 linear feet of existing retaining walls on both sides of Monoosnoc Brook. This Alternative includes the replacement of the existing 150-foot-long culvert below the municipal parking lot, resulting in a temporary loss of parking. No additional green space will be provided as part of this alternative. While this alternative results in a more resilient brook as compared to existing conditions (the retaining walls would be designed to withstand greater forces and flows), this alternative provides the lowest climate change benefit of the alternatives considered because flood storage capacity will be maintained and not expanded (as in the Preferred Alternative) through the widening of Monoosnoc Brook.

The Daylighting Alternative would involve naturalizing the edge of the brook and daylighting the brook to Mechanic Street. This design does not include the replacement of the existing 150-foot-long culvert beneath the municipal parking lot like the Preferred Alternative. Instead, this design eliminates the deteriorating culvert under the parking area entirely by removing a section of the parking area. In removing the culvert, this design provides a larger community amenity in the form of approximately 18,000 square feet of additional green space and it would increase flood storage capacity to 6,162 cy. Approximately 380 linear feet of retaining wall will be constructed as part of this Alternative. This Alternative would result in the permanent loss of approximately 30 parking spaces from the municipal lot. The City undertook a parking study to determine the feasibility of this alternative. Based on the results of the parking study, the City determined that the loss of parking was not feasible. Therefore, this alternative was dismissed.

The Naturalized Edge Alternative (Preferred Alternative) involves enhancing the green space around the brook by constructing a naturalized sloped edge along the brook's banks and shifting the location of retaining wall structures from the bank towards Manning Avenue. This solution is achieved by creating a channel within Monoosnoc Brook with consistent 24 ft bottom width, expanding the footprint of the brook eastward, and adjusting traffic flow on Manning Avenue to maximize green space.

This Alternative also includes the replacement of the existing 150-foot-long culvert below the municipal parking lot, resulting in a temporary loss of parking. This alternative would create an additional 2,770 sf of green space within the project area and increase flood storage capacity within the brook by 499 cy. Because this alternative increases flood storage capacity without the loss of a significant number of municipal parking spaces, it was chosen as the Preferred Alternative.

New retaining walls proposed as part of all alternatives would be designed to withstand greater forces and flows associated with projected increases in storm frequency and intensity because of climate change. Naturalized edges will also be designed to withstand increased velocities associated with larger flows moving through the brook with minimal erosion. Each of the alternatives will result in a more resilient brook as compared to existing conditions at the project area. Removing the existing retaining walls, riprap, and jersey barriers will result in temporary impacts to all resource areas in all alternatives.

Wetlands and Stormwater

The project includes impacts to wetland resource areas subject to jurisdiction under the Wetlands Protection Act (WPA), Wetlands Regulations (310 CMR 10.00), and associated performance standards including stormwater management standards (SMS). As described in the ENF, the project will result in the following temporary impacts: 39,360 square feet (sf) Riverfront Area, 842 linear feet (lf) Bank, 5,219 sf LUW and 17,400 sf BLSF. The project will permanently alter 1,659 sf Bordering Vegetated Wetland (BVW). The project will result in a gain of 2,770 sf of naturalized Buffer Zone/Riverfront Area and within Riverfront Area, and impervious surface will be reduced by 3,812 sf. The project will result in the filling of 202 sf of LUW during the realignment but will be replaced with 3,538 sf of new LUW associated with the restored and widened brook. The Proponent will replace 300 lf of Bank in-kind. The Proponent has submitted a Notice of Intent (NOI) to the Leominster Conservation Commission and MassDEP under the Wetlands Protection Act and its associated regulations. The project seeks to be permitted as an Ecological Restoration Limited Project under 310 CMR 10.53(4).

During the reconstruction of the stream channel and culvert, approximately 166 cubic yards of the stream channel will be dredged to create a uniform longitudinal slope and greater hydrologic conveyance and flood storage capacity. Therefore, the project will require a 401 WQC and c. 91 Permit from MassDEP. MassDEP will review the project for its consistency with the 401 Water Quality Regulations (314 CMR 9.00) and the Waterways Regulations (310 CMR 9.00). I refer the City to additional permitting guidance provided in comments from the MassDEP Waterways Regulation Program (WRP).

The project includes the installation of drainage manholes and select catch basins along Manning Avenue which will be replaced and equipped with deep sumps and hoods, consistent with MassDEP SMS. Existing drainage outfalls will be upgraded with new or replaced energy dissipators and two new proprietary water quality inlets will be added to the municipal parking lot to augment treatment of stormwater runoff. As a result, the project will improve stormwater management as compared to existing conditions.

Climate Change Adaptation and Resiliency

As previously mentioned, the project will expand green space along the Monoosnoc Brookto provide stormwater management and flood storage capacity in an area that experiences regular flooding.

As compared to existing conditions, there will be an improvement in the brook's resiliency to projected increases in storm frequency and severity as a result of removal, replacement and/or reconfiguration of the retaining walls that are designed to withstand greater forces and flows, a new and/or improved vegetated embankment similarly designed to withstand greater forces and flows, deepening and widening of the brook, and installation of a wider and taller culvert that mitigates the existing hydraulic restriction.

A hydrologic and hydraulic (H&H) model of the project area was developed using the United States Army Corps of Engineers Hydraulic Engineering Center River Analysis System (HEC-RAS, version 5.0.7) software. The model reflects the existing physical conditions of Monoosnoc Brook approximately 250 feet upstream of Central Street and 325 feet downstream of Mechanic Street. A topographic survey of the project area was performed in December of 2020. This survey, in conjunction with light detection and ranging (LiDAR) data from the National Ocean and Atmospheric Administration (NOAA) 2016 USGS CoNED Topobathymetric Model for New England Data set, were used to create an existing conditions model of the reach. In addition, the H&H analysis incorporates climate change projections as presented in the Commonwealth of Massachusetts climate change data clearinghouse ResilientMA.org (Resilient MA) for the Nashua River Basin for the year 2070. As described in the report, the medium emissions scenario for 2070 projects a 3.57 inch, or 7.8%, increase in total annual inches of precipitation from the baseline of 45.89 inches. The analysis assumed that precipitation frequency estimates will increase the same percentage of the same timeframe. The analysis evaluates the 10-, 50-, 100-, and 500-year, existing and future storm events, utilizing the 50-year climate planning horizon given the expected design life of the infrastructure. As proposed, the project will provide an additional 499 cy of flood storage volume as compared to existing conditions.

The results of the analysis indicate that under all of the alternatives (except the No-Build Alternative), the water surface elevation within the project area and immediately upstream of the project area are significantly reduced in the 2070 scenario for modeled storm events as compared to existing conditions. The model shows that the water surface elevation immediately downstream of Mechanic Street is increased by 0.5 feet for the 2070 100-yr storm event as compared to existing conditions during the 100-year storm event. This is because widening the brook/culvert removes a hydraulic restriction caused by the existing undersized culvert and retaining walls. However, the model depicts the brook staying within its defined channel and not overtopping its bank. The analysis showed that water surface elevations downstream of Mechanic Street return to existing condition elevations within approximately 200 feet.

In addition to water elevation, the velocity of the brook through the channel under future conditions was evaluated to determine if erosive velocities are present in the brook. The peak design velocity for the Preferred Alternative (6.6 cubic feet per second (cfs)) is approximately 30% lower than the existing conditions peak velocity (9.9 cfs) during the 10-year event. To further reduce peak velocities, the Proponent modeled the alternatives with riprap channel armoring and compared the calculated velocities using the existing channel material. This evaluation showed, on average, a 38% decrease in velocity through the project area for the Preferred Alternative during the 2070 projected 10-year storm event when riprap armoring is used. Based on this analysis, the Proponent determined that erosive velocities observed in the channel can be controlled through design improvements such as installation of permanent turf reinforcement matting capable of withstanding modeled forces, installation of cobble and boulder armoring along the stream channel, and retaining wall designed to withstand and contain high flows.

Comments from DCR, in its role as the state coordinating agency for the National Flood Insurance Program (NFIP), note that for work in the floodway, communities participating in the NFIP are required to prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the the 100-year storm.

As described above, the proponent provided a H&H analysis that determined water surface elevations at identified cross sections for several recurrence intervals. The peak discharge used for the 100-year storm event was listed as 1,382 cubic feet per second (cfs). The H&H analysis and comments from DCR identify the peak discharge for Monoosnoc Brook from the current effective Flood Insurance Study (FIS) as 3,050 cfs, more than twice that used in the analysis. The Proponent submitted a response to DCR's comments[2] which reiterate that the current effective FIS flows were developed as part of an Army Corps of Engineer Study, undertaken in 1978, which utilized a combination of rainfall runoff and flood frequency flows from the North Nashua River gauge. The H&H report compared the FIS flows at the North Nashua River gauge, which remained in operation until 2013, to current estimated peak discharge values for the gauge (see Table 2-2 of report). Given the additional 35 years of data collected by the gauge, the Proponent asserts that the current estimate is a better representation of actual flow conditions in the North Nashua River. Therefore, the Proponent may need to submit a Conditional letter of Map Revision (CLOMR) based on the revised hydrology and proposed conditions. If approved, a Letter of Map Revision should be submitted after construction.

I encourage the Town to continue consultations with DCR and other relevant agencies to ensure compliance as the project moves to final design and permitting. While the project does appear to have resiliency benefits and would improve existing conditions by alleviating flooding under existing conditions, the City should ensure that the project's design does not worsen flooding or other risks for the surrounding community. To the extent increased flood risk is attributable to climate change and not project design, the City should continue to engage in adaptive planning strategies such that actions taken now can contribute to, and do not preclude, additional future strategies that may be required.

Construction Period

As described in the ENF, a comprehensive construction phase erosion and sediment control program will be implemented to protect downstream wetland resource areas. Site construction will be conducted in phases to limit the exposure of soil and potential for erosion at any given time. Construction period mitigation measures include the installation of erosion and sedimentation control measures, including coffer dam, turbidity curtain, and sediment barriers. Erosion control measures around staging and stockpiled materials will be maintained throughout construction. Staging and stockpile areas will be located outside of jurisdictional wetland resource areas if occurring outside of the project limits; Work on each bank shall be conducted in the dry (no flow conditions) and a construction phasing and dewatering plan that includes erosion and sediment control barriers, shall be provided by the Contractor prior to construction. Slopes will be stabilized with erosion control matting and loam and seed. In addition, as part of the NPDES Construction General Permit, prior to construction, the

[2] Response to DCR's comment letter was provided to the MEPA Office on Thursday June 17, 2021.

Proponent will submit a Stormwater Pollution Prevention Plan ("SWPPP") identifying BMPs that will be implemented to prevent erosion and sedimentation. The SWPPP will be updated, as necessary, during construction and maintained throughout the period of construction.

The project will result in temporary impacts associated with construction or demolition activity (e.g., noise, fugitive dust, etc.) and minor impacts to traffic and pedestrian flow during streetscape and roadway improvements. The City should implement BMPs to reduce construction period impacts (e.g., dust control, signage, detours, etc.). All construction and demolition should be managed in accordance with applicable MassDEP Solid Waste and Air Pollution Control regulations pursuant to M.G.L. c.40, §54. I refer the City to detailed comments from MassDEP regarding the construction period including air pollution, construction-related measures, and solid waste management. I encourage the City to require contractors to use construction equipment with engines manufactured to Tier 4 federal emissions standards and limit excessive idling during the construction period. If a piece of equipment is not available in the Tier 4 configuration, the City should consider use of construction equipment that has been retrofitted with the best available after-engine emissions control technology to reduce exhaust emissions. All construction activities should be undertaken in compliance with the conditions of all State and local permits.

As indicated in comments from MassDEP, due to the proximity of RTN 2-0020901 to the Project location, there is a possibility that soil may contain contaminants associated with Historic Fill. The Proponent is advised to sample soil for EPH, PAHs and metals prior to disposing of soil at an off-property location. If oil and/or hazardous materials are identified during the Project, notification to MassDEP may be required pursuant to M.G.L. c. 21E and the MCP. A Licensed Site Professional (LSP) should be retained to determine if submittals to MassDEP are required to conduct the work or if notification is required.

Comments from the Board of Underwater Archaeological Resources indicate that no record of any underwater archaeological resources was found within the area and BUAR expects that this project is unlikely to impact submerged cultural resources. However, should underwater archaeological resources be encountered during the course of the project, the BUAR expects that the project's sponsor will take steps to limit adverse effects and notify the BUAR and the Massachusetts Historical Commission, as well as other appropriate agencies, in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

Conclusion

The ENF has adequately described and analyzed the project and its alternatives, and assessed its potential environmental impacts and mitigation measures. Based on review of the ENF and comments received on it, and in consultation with State Agencies, I have determined that an EIR is not required.

K. Theoharides

June 25, 2021
Date

Kathleen A. Theoharides

Comments received:

06/15/2021	Board of Underwater Archeological Resources (BUAR)
06/15/2021	Massachusetts Department of Environmental Protection (MassDEP) Waterways Regulations Program (WRP)
06/16/2021	Massachusetts Department of Environmental Protection (MassDEP) Central Regional Office (CERO)
06/21/2021	Department of Conservation and Recreation (DCR)

KAT/EFF/eff

The COMMONWEALTH OF MASSACHUSETTS
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June 15, 2021

Kathleen A. Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Erin Flaherty, MEPA Unit (via email attachment)
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Monoosnoc Brook Resilient Redesign & Retrofit Project (EEA #16376), Leominster, MA

Dear Secretary Theoharides,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed the above-referenced proposed project as detailed in the Environmental Monitor of May 26, 2021 and offers the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential underwater archaeological resources within the proposed project area. No record of any underwater archaeological resources was found within the area. Based on the results of this review and the disturbed nature of the proposed project area from previous episodes of construction, utilities installation and urbanization, the Board expects that this project is unlikely to impact submerged cultural resources.

However, should heretofore-unknown underwater archaeological resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board and the Massachusetts Historical Commission, as well as other appropriate agencies, immediately, in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

The Board appreciates the opportunity to provide these comments as part of the MEPA review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above or by email at david.s.robinson@mass.gov.

Sincerely,

David S. Robinson
Director

/dsr
Cc: Brona Simon, MHC
Bettina Washington, WTGH/A (via email attachment)
David Weeden, MWT (via email attachment)
Cheryll Holley, Nipmuc Nation (via email attachment)

To Kathleen Theoharides, Secretarty, EEA

Through: Erin Flaherty, MEPA Office

From: Daniel Padien, Section Chief, Waterways Regulation Program, DEP

Date: June 14, 2021

Re: EEA #16376; Monoosoc Brook, Leominster

The Department of Environmental Protection's Waterways Regulation Program ("Program") has reviewed the Environmental Notification Form ("ENF") by the City of Leominster ("Proponent"), noticed in the *Environmental Monitor* dated May 17, 2021 and submits the following comments.

Project Description:

The project site is located within and along Monoosnoc Brook channel between Central Street and Mechanic Street in the City of Leominster. The project site is within an urbanized district of the city, and this particular section of Monoosoc Brook has been channelized in concrete embankments and an existing 150-foot long concrete culvert beneath the Mechanic Street road crossing. The total site area is approximately 3.5 acres, though the c.91 jurisdiction is limited to the stream itself.

The Proponent plans to stabilize the embankment to improve the site's resiliency for expected higher flow events that have been projected resulting from climate change. The project also proposes to replace and expand the existing concrete culvert under Mechanic Street. The project will remove the existing concrete embankments and replace them with a vegetated stream bank and retaining walls.

Along with the improvements on the open-channel section of Monoosoc Brook described above, the work will also entail the replacement of the existing three-sided box culvert running beneath Mechanic Street and a public parking field by the installation of an open-bottom arch culvert 24'-feet wide. The existing concrete-lined channel bottom will be removed and replaced with a natural stream channel unless limited by bedrock.

During the reconstruction of the stream channel and culvert, approximately 166 cubic yards of the stream channel will be dredged to create a uniform longitudinal slope and greater hydrologic conveyance and flood storage capacity.

Project Comments:

Based on the project description in the ENF, all proposed activities are considered to be water-dependent. Regulated c. 91 activities in non-tidal streams and rivers are limited to impacts on navigation. Pursuant to 310 CMR 9.05(3)(g), the project will not require a License because it will not reduce the space available for navigation.

Pursuant to 310 CMR 9.05(2)(b), the project will require a dredge permit for the removal of approximately 166 cubic yards of stream sediments. The permit application shall describe the operational aspects of the dredging, especially the location(s) of the dredged areas to ensure that there will be no slumping in high flow conditions. The applicable dredging regulations at 310 CMR 9.40(2)-(5) must comply with those standards.

Application Process:

Upon completion of the MEPA process in the form of the Secretary's approval, the Program looks forward to the receipt of a permit application and the commencement of the application review process. As may be necessary, the Proponent may at any point contact the Program in its Boston office to set up a pre-application consultation.

MassDEP

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Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

June 16, 2021

Secretary Kathleen A. Theoharides
Executive Office of Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

Attention: MEPA Unit – Erin Flaherty

Re: Environmental Notification Form (ENF)
Monoosnoc Brook Resilient Redesign & Retrofit Project
Leominster
EEA #16376

Dear Secretary Theoharides,

The Massachusetts Department of Environmental Protection's ("MassDEP") Central Regional Office has reviewed the ENF for Monoosnoc Brook Resilient Redesign & Retrofit Project (the "Project") submitted by the City of Leominster (the "Proponent"). The Proponent is proposing to replace and enlarge an existing 150-foot-long culvert; remove existing stone masonry retaining walls; and reshape Monoosnoc Brook (the "Brook") to establish a naturalized stream bank, a fringing wetland system, and an embankment.

In 2017, a 30-foot portion of the stone masonry retaining wall along the eastern bank of the Brook collapsed into the Brook and was replaced with rip-rap stone contained by precast concrete Jersey barriers. An evaluation of the retaining wall found it to be in poor condition and beyond its useful life. During the evaluation of the wall, the consultant conducted a visual inspection of the culvert and found it also to be in poor condition. The Project will involve dredging of 166 yards of material. MassDEP has worked extensively with the Proponent during development of the Project and preparation of the ENF.

The Project is under MEPA review because it meets or exceeds the following review thresholds:

- 301 CMR 11.03 (3)(b)(1)(b) - alteration of 500 or more linear feet of bank along a fish run or inland bank;
- 301 CMR 11.03 (3)(b)(1)(b) - alteration of ½ or more acres of any other wetlands.

The Project requires the following State Agency Permits:

- MassDEP - Superseding Order of Conditions (if local Order of Conditions is appealed);
- MassDEP Water Quality Certification – Fill/Excavation and Dredge;
- MassDEP Chapter 91 Waterways License (potential).

The Project is partially funded by an Executive Office of Environmental Affairs Municipal Vulnerability Preparedness Program Grant, so MEPA jurisdiction is broad.

MassDEP offers the following comments:

Wetlands

The Project proposes to widen Monoosnoc Brook in downtown Leominster to a stabilized consistent 24-foot-wide channel width, create a naturalized sloped edge along the Brook's banks, and add additional greenspace. The Project will replace the existing deteriorating culvert and stone wall with upgraded and modern structures and provide additional flow capacity to contain the Brook within the channel during the 100-year storm event. The primary purposed of the Project is to restore or improved the natural capacity of wetland resource areas, including improved flood control and storm damage prevention.

The Project will result in the following temporary alterations: 39,360 square feet (sf) Riverfront Area, 842 linear feet (lf) Bank, 5,219 sf Land Under Water and Waterways (LUWW), and 17,400 sf Bordering Land Subject to Flooding. The Project will permanently alter 1,659 sf Bordering Vegetated Wetland. The Project will result in a gain of 2,770 sf of naturalized Buffer Zone/Riverfront Area and within Riverfront Area, impervious surface will be reduced by 3,812 sf. The Project will result in the filling of 202 sf of LUWW during the realignment but will be replaced with 3,538 sf of new LUWW associated with the restored and widened brook. The Proponent will replace 300 lf of Bank in-kind.

The Project will result in the dredging of 166 cubic yards of stream bed material and will require the submittal of a Water Quality Certification-Dredge Permit to MassDEP.

The Proponent has submitted a Notice of Intent (NOI) to the Leominster Conservation Commission (the "Commission") and MassDEP under the Wetlands Protection Act and its

associated regulations. The Project seeks permitting as an Ecological Restoration Limited Project under 310 CMR 10.53(4). The Commission will review the NOI and MassDEP may provide comments related to the culvert replacement and stormwater redevelopment to the LCC as part of the File Number Issuance Notification Letter.

Stormwater

The Proponent has submitted a Stormwater Checklist for the Project as redevelopment, which requires compliance with the Standards to the maximum extent practicable. The checklist appears to demonstrate compliance with the Stormwater Standards for redevelopment. The Project proposes to reduce impervious surface by 3,812± sf; therefore, no new treatment is required. The Project will remove and replace several stormwater discharges along the Brook with new catch basins that will have deep sumps and oil separator hoods to provide stormwater treatment.

Environmental Justice

The Project is within a designated Environmental Justice area with Minority and Income populations. The Proponent solicited bilingual public input during the design alternatives review process to select the preferred alternative. The Project will improve access to expanded public greenspace and better walking access by adding sidewalks to connect the Brook Walk to Mechanic Street.

Other Permits

Based on the information provided in the ENF, MassDEP agrees that a 401 Water Quality Certification pursuant to 314 CMR 9.04 will be required for the Project. Army Corps of Engineers 404 review may also be required. In addition, MassDEP's Waterways Program is reviewing the Project to determine whether a Chapter 91 Permit will be required. If Monoosnoc Brook contains sufficient flow to be navigable, it may qualify as a "Non-Tidal River or Stream" subject to Chapter 91 jurisdiction. Additional information about permitting, including how to schedule a pre-application meeting or obtain a determination from the Waterways Program can be found at www.mass.gov/guides/chapter-91-the-massachusetts-public-waterfront-act.

Bureau of Waste Site Cleanup

Release Tracking Number (RTN) 2-0020901 is assigned to 15 Monument Square, adjacent to the Project. Site contaminants in soil included extractable petroleum hydrocarbons (EPH) and polycyclic aromatic hydrocarbons (PAHs) associated with Historic Fill. The site was closed out with a Permanent Solution with Conditions on October 4, 2019.

The Proponent is advised that due to the proximity of RTN 2-0020901 to the Project location, there is a possibility that soil may contain contaminants associated with Historic Fill. The Proponent is advised to sample soil for EPH, PAHs and metals prior to disposing of soil at an off-property location. If oil and/or hazardous materials are identified during the Project, notification to MassDEP may be required pursuant to M.G.L. c. 21E and the MCP. A

Licensed Site Professional (LSP) should be retained to determine if submittals to MassDEP are required to conduct the work or if notification is required. The BWSC may be contacted for guidance if questions arise regarding contaminated material.

MassDEP appreciates the opportunity to comment on the Project. If you have any questions regarding these comments, please do not hesitate to contact JoAnne Kasper-Dunne, Central Regional Office MEPA Coordinator, at (508) 767-2716.

Very truly yours,

Mary Jude Pigsley
Regional Director

cc: Commissioner's Office, MassDEP

dcr
Massachusetts

June 15, 2021

Secretary Kathleen A. Theoharides
Executive Office of Energy and Environmental Affairs
Attn: Erin Flaherty, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EOEAA #16376 – Monoosnoc Brook Resilient Redesign and Retrofit Project ENF

Dear Secretary Theoharides:

The Department of Conservation and Recreation ("DCR" or "the Department") is pleased to submit the following comments in response to the Environmental Notification Form ("ENF") filed for the Proposed Monoosnoc Brook Resilient Redesign and Retrofit Project (the "Project") in Leominster.

As proposed, the Project involves activities within a 100-year floodplain as delineated on the current effective Flood Insurance Rate Map ("FIRM") for Leominster, dated April 3, 1989. The Project also includes work within the regulatory floodway as delineated on the Flood Boundary and Floodway Map ("FBFM") for Leominster, dated April 3, 1989. In its role as the state coordinating agency for the National Flood Insurance Program ("NFIP"), DCR submits the following comments.

DCR's Flood Hazard Management Program ("FHMP"), under agreement with the Federal Emergency Management Agency ("FEMA"), is the state coordinating agency for the NFIP. As such, the FHMP provides technical assistance to communities that participate in the NFIP related directly to the program and also related to floodplain management in general. Communities that participate in the NFIP are required by FEMA, as a condition of their participation, to regulate development within the 100-year floodplain in a manner that meets or exceeds the minimum standards established by FEMA, located at 44 CFR 60.3. Participating communities such as Leominster are required to adopt the NFIP requirements through locally enforceable measures. In Massachusetts, many of the requirements contained in 44 CFR 60.3 are enforced through existing state regulations such as the State Building Code (780 CMR) and Wetlands Protection Act regulations (310 CMR 10.00). Communities typically adopt the remainder of the requirements as part of a zoning ordinance or other locally enforceable measure. Leominster has a zoning ordinance that includes a Floodplain District section which has been accepted by FEMA as meeting their requirements under the NFIP.

In our role as NFIP coordinator, the FHMP offers comments on the proposed Project's relationship to many of the above regulations and requirements. The FHMP does not administer any of these requirements and therefore does not provide official determinations as to compliance with them; rather, our comments are provided as an overview of the requirements and the documentation that the FHMP believes may be necessary to demonstrate compliance with these requirements.

The project involves replacing and enlarging an existing 150±-foot long culvert, removing existing stone masonry retaining walls, reshaping the brook and other associated work. Based on information submitted with the ENF, all of the work is located within the 100-year floodplain on the current effective FIRM, specifically zones A6 and A12, with a base flood elevation of 396 feet above National Geodetic Vertical Datum ("NGVD"). The project also involves work within the floodway. Because of its location in the 100-

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year floodplain and within the floodway, compliance with the requirements of several federal, state and local measures related to floodplain development is required.

For work in the floodway, communities participating in the NFIP are required to prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge (44 CFR 60.3 (d), 3). This standard is enforced through the zoning ordinance, Section 22.34.2.3.2.

The proponent provided a stormwater analysis that determined water surface elevations at identified cross sections for several recurrence intervals. The peak discharge used for the 100-year storm event was listed as 1,382 cubic feet per second ("cfs"). It should be noted that the peak discharge for Monoosnoc Brook from the current effective Flood Insurance Study ("FIS") is 3,050 cfs, more than twice that used in the analysis. The proponent will need to reevaluate impacts by comparing existing and proposed conditions using modeling that is consistent with the current effective FIS. If the proponent believes the current FIS to be in error, they can apply for a Letter of Map Revision ("LOMR"). Also note that if the updated evaluation shows any increase in water surface elevations resulting from the proposed work, the project cannot be permitted without a floodway revision as described in 44 CFR 65.7.

Additionally, projects within the 100-year floodplain involving any federal action (e.g., permit, funding) must also comply with federal Executive Order 11988, Floodplain Management. This executive order requires an eight-step decision-making process which includes analysis of alternatives, avoiding impacts when possible, and minimizing impacts when avoidance is not possible. Because this project requires a NPDES Construction General Permit, compliance with this process is necessary.

DCR appreciates the opportunity to comment on the ENF. If you have any questions regarding these comments, or to request additional information or coordination with DCR, please contact Eric Carlson at eric.carlson@mass.gov.

Sincerely,

Jim Montgomery
Commissioner

cc: Joy Duperault, Priscilla Geigis, Patrice Kish, Tom LaRosa