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*Executive Office of Energy and Environmental Affairs*
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May 7, 2021

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

| | |
|---|---|
| PROJECT NAME | : Eagle Mill Redevelopment |
| PROJECT MUNICIPALITY | : Lee |
| PROJECT WATERSHED | : Housatonic |
| EEA NUMBER | : 16357 |
| PROJECT PROPONENT | : Eagle Mill Redevelopment LLC |
| DATE NOTICED IN MONITOR | : April 7, 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 project consists of the redevelopment of the Eagle Mill complex in the Town of Lee (Town) into a residential complex, totaling 128 residential units spread across five buildings (approximately 70 percent will be low-income housing). Seven houses adjacent to the mill will be demolished as part of the project and a new mixed-used building constructed in their place. A three-story condominium structure will be constructed over the existing foundation on the westernmost end of the mill building, while the easternmost end of the mill building will be demolished and replaced with a four-story residential building and the remaining portions of the existing building converted into apartments. The machine shop building will be converted into retail space and offices. The project also includes the construction of 174 surface-level parking spaces, stormwater management system improvements, lighting fixtures, landscaping, and utility infrastructure. The project will be serviced by municipal sewer and water. Access to the project will be achieved via two proposed curb cuts along West Center Street. Remediation of lead-

contaminated soils will be performed as part of the project, and two Activity Use Limitations (AULs) will be designated on the project site.

Project Site

As described in the ENF, the approximately 9.0-acre project site is comprised of the 6.1-acre Eagle Mill complex, an undeveloped 2.4-acre area north of the mill property/Housatonic River, and residential properties located between the mill complex and West Center Street. The project site is bounded by West Center Street to the south and west and by the Housatonic Railroad to the east. The Housatonic River bounds the northern extent of the mill complex and the southern extent of the undeveloped 2.4-acre parcel. The 6.1-acre mill parcel includes a 103,00 square foot (sf) main building and a 6,600-sf machine shop building. The surrounding land use is characterized as commercial and residential, with downtown Lee located directly south of the project site. The mill complex and adjacent residential properties are zoned as a Smart Growth Overlay District (SGOD) (M.G.L. chapter 40R). Eagle Mill, located at 73 West Center Street, operated as a paper mill for over 200 years; it has been inactive since 2008. The mill complex is listed in the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth.

The project site contains areas regulated by Massachusetts Oil and Hazardous Material Release Prevention and Response Act (M.G.L. c. 21E) and the Massachusetts Contingency Plan (MCP), associated with historic mill activities. Comments from the Massachusetts Department of Environmental Protection (MassDEP) state the Release Tracking Number (RTN) assigned to the site is RTN 1-0020494. According to the ENF, the site contains soil contaminated with petroleum and lead. The project site contains several wetland resource areas associated with the Housatonic River, including Land Under Water (LUW), Riverfront Area (RFA), Bordering Land Subject to Flooding (BLSF), and Bordering Vegetated Wetland (BVW). Portions of the site are within the 100-year floodplain as delineated by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 250028-0006-B (effective date June 1, 1982). The project site also contains Estimated Habitat of Rare Species as delineated by the Natural Heritage and Endangered Species Program (NHESP) in the 14th Edition of the Massachusetts Natural Heritage Atlas.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include the alteration of 172,956 sf (3.97 acres) of previously disturbed RFA and 207,600 sf (4.77 acres) of BLSF, including 37,248 cubic feet (cf) of fill; generation of an additional 2,100 average daily trips (adt) within the project site (2,210 adt total); construction of an additional 24 parking spaces (174 parking spaces total); and generation of 11,530 gallons per day (gpd) of water demand and wastewater (current usage unknown).[1]

Measures to avoid, minimize, and mitigate environmental impacts include a net reduction of 5,304 sf of impervious surface; the restoration of 11,800 sf of RFA, including the removal of 3,065 sf of impervious surface within RFA; the creation of 51,713 cf of compensatory flood storage; stormwater management system improvements; remediation of contaminated soils; use of "Dark Sky" guidelines for lighting fixtures to minimize light pollution/impacts to rare species; preservation of historic features of the mill complex; and elevation of residential areas outside of the 100-year floodplain.

[1] The ENF does not identify current or historic rates of water usage or wastewater generation.

Jurisdiction and Permitting

This project is subject to MEPA review and preparation of an ENF pursuant to 310 CMR 11.03(6)(b)(13)[2] and 11.03(6)(b)(14) because it involves a State Agency Action and will generate 2,000 or more New adt on roadways providing access to a single location and will generate 1,000 or more New adt on roadways providing access to a single location and construction of 150 or more New parking spaces at a single location, respectively. The project requires a State Highway Access Permit from the Massachusetts Department of Transportation (MassDOT). The project will receive Financial Assistance from the Massachusetts Department of Housing and Community Development (DHCD), MHC, and MassHousing.

The project requires and has received: a Special Permit from the Lee Zoning Board of Appeals, Site Plan Review from the Lee Planning Board, Tax Credit Application approval from the Lee Historical Commission, and an Order of Conditions from the Lee Conservation Commission (originally issued December 20, 2020; an amended Order of Conditions was issued on November 20, 2020 following project modifications, which was not appealed). The project will also require a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the United States Environmental Protection Agency (EPA).[3]

Because the project will receive Financial Assistance, MEPA jurisdiction is broad in scope 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 provided a description of existing and proposed conditions, preliminary project plans, stormwater report, communication from MHC and NHESP, a sub-surface investigation summary, and Transportation Impact Assessment (TIA). It identified measures to avoid, minimize and mitigate environmental impacts. The Proponent submitted supplemental information on April 26 and 26, 2021 regarding the design of the stormwater management system, FEMA floodplain boundaries and flood-proofing, sustainable and climate resilient design aspects of the project, hazardous waste remediation, zoning, and proposed cuts and fill. For purposes of clarity, all supplemental materials are referred to herein as the "ENF" unless otherwise referenced.

Comments from State Agencies do not identify any significant impacts that were not reviewed in the ENF but include recommendations to improve the resiliency and energy efficiency of the project. Comments from the Berkshire Environmental Action Team (BEAT) note concerns with hazardous waste remediation, impacts to rare species, and the resiliency of the project given its location adjacent to the Housatonic River and within the 100-year floodplain. Comments from the Berkshire Regional Planning Commission (BRPC) identify concerns regarding traffic impacts (as further discussed below).

[2] The exceedance of 301 CMR 11.03(6)(b)(13) was not identified in the ENF, however the ENF describes a projected increase of 2,100 adt on West Center Street (adjacent roadway).
[3] The requirement of a CGP was not identified in the ENF, but confirmed in an email sent from Robert Fournier (SK Design Group, Inc.) to Eva Murray (MEPA Office) on May 7, 2021.

*Traffic*

The project will require a State Highway Access Permit for the proposed curb cuts along West Center Street (Route 20). The project will increase the number of parking spaces by 24, from 150 parking spaces to 174 spaces. The existing surface parking is proposed to be demolished as part of project construction. The ENF indicates the project will generate an additional 2,100 adt within the project site (2,210 total), an additional 2,100 adt on West Center Street (16,569 adt total), and an additional 1,050 adt on Main Street (15,867 adt total). The ENF included a TIA for the project that was completed in September 2020, which evaluated projected traffic volumes under Existing, 2027 No-Build, and 2027 Build conditions for Route 20 intersections surrounding the project site. According to the TIA, the Level of Service (LOS) for the Saturday midday eastbound, left/right-turn movements at the unsignalized intersection of West Center Street at Laurel Street/Summer Street will decrease from LOS E in the 2027 No-Build scenario to LOS F in the 2027 Build scenario. The weekday morning, westbound left/right-turn movements at the intersection of West Center Street at East Center Street/Main Street is projected to decrease from LOS C in the 2027 No-Build scenario to LOS D in the 2027 Build scenario, as will the weekday morning westbound right-turn/through movement at the intersection of Main Street at Park Street/West Park Street.

The ENF states the anticipated increase in traffic from the project can be accommodated by the adjacent roadways with the implementation of Transportation Demand Management (TDM) techniques, including:

- Staggered work hours to reduce weekday morning and evening peak hour trips
- Bicycle racks and consideration of incorporating the site as part of the Berkshire Bike Path route
- Pedestrian connectivity to the adjacent roadways
- A commitment by the Proponent to work with the Berkshire Regional Transit Authority (BRTA) to determine if the site is an appropriate location for a transit stop.

Comments from the BRPC note concerns with the impacts from traffic generated by the project and the effectiveness of the proposed mitigation measures. BRPC comments further identify concerns regarding the safety of the project driveways including their proximity to the Housatonic railroad crossing and recommend an additional traffic simulation analysis to demonstrate the effect of a train crossing on traffic. BRPC recommends additional mitigation measures, such as the designation of a TDM manager; construction of a paved walkway connecting the buildings to adjacent roadways; installation of EV charging stations; and a traffic signal analysis for three adjacent intersections. While the major impacts to roadways are on local roads, the project driveway will intersect a state highway and safety concerns should be addressed. The Proponent should work with MassDOT and BRPC to ensure that the project's traffic impacts are adequately mitigated.

*Alternatives Analysis*

The ENF evaluated several project alternatives based on their ability to meet project goals while minimizing environmental impacts. Project goals were identified as the redevelopment of the abandoned mill complex to provide more affordable rental housing units, retail, and job opportunities, while preserving the historic resources on-site. The project evaluated the following alternatives: No-Build;

Original Concept (2013 Alternative); 2018 Approved Plan (2018 Alternative); and 2020 Current Plan (the Preferred Alternative).

The No-Build Alternative would leave the site in its current condition, which would result in the further deterioration of the mill buildings and the potential release of hazardous materials contained within. This alternative was dismissed as it would not meet project goals nor address the public safety concerns of the existing buildings. The 2013 Alternative proposed significant infrastructure within RFA (including an outdoor performance space, boardwalk, and tennis courts), a bike path on the undeveloped parcel north of the Housatonic River, and other amenities, in addition to residential developments, a hotel, and commercial space. While not formally estimated, the ENF indicates this alternative was expected to result in more trip generation and environmental impacts than all other alternatives. The ENF states the 2013 Alternative was dismissed as it was considered both technically and financially infeasible. The 2018 Alternative proposed the development of 80 units of subsidized and market-rate apartments; 9,000 sf of commercial space; 8,5000 sf of retail space; a 72-room hotel; a 33,000-sf food marketplace; and multiple parking lots on a parcel located south of West Center Street. The 2018 Alternative was estimated to result in 4,595 total adt along West Center Street and increase impervious surface on-site by 1.37 acres.

According to the ENF, the Preferred Alternative (described herein) is a result of several modifications to the 2018 Alternative based on economic constraints. Specifically, the Preferred Alternative eliminates the hotel and additional parking lots south of West Center Street, and redesigns the food market as additional apartments. The Preferred Alternative is projected to result in significantly less trips than the 2018 Alternative and a net reduction in impervious area within the project site. According to the ENF, the Preferred Alternative will result in the least environmental impacts compared to other alternatives that were evaluated, while still meeting project goals.

*Wetlands and Stormwater*

The project will permanently alter 172,956 sf of previously disturbed RFA and 207,600 sf of previously disturbed BLSF (the majority of these resource areas and associated impacts overlap). As previously mentioned, the Lee Conservation Commission reviewed the project for its consistency with the Wetlands Protections Act (WPA), the Wetland Regulations (310 CMR 10.00), and associated performance standards and issued an amended OOC on November 20, 2020 following project modifications reflected in the Preferred Alternative, which was not appealed. To mitigate impacts to wetland resources, the project proposes the restoration of 11,800 sf of RFA (five percent of the total RFA within the project site). The project will result in a net decrease of 3,065 sf of impervious area within RFA (1.2 percent of total RFA within the project site). The project proposes grading within BLSF and will require 37,248 cf of fill. To mitigate this impact, 51,713 cf of compensatory flood storage will be provided on an incremental foot-by-foot basis.

The project will result in a net reduction of 5,304 sf of impervious surface within the project site, for a total of 5.2 acres. According to the ENF, stormwater runoff from the site currently flows through several catch basins prior to discharging to the Housatonic River. The ENF proposes a Low Impact Development (LID) stormwater management system that consists of a series of tree box filters or catch basins that will direct flow to one of three separate infiltration systems, prior to being discharged through the existing outlets at the west end of the property. No new outfalls are proposed as part of the

project. The ENF states the proposed stormwater management system will be an improvement over existing conditions, and has been designed to mitigate the 2, 10, 25, and 100-year storm events and provide treatment of total suspended solids (TSS) prior to discharge. Comments from MassDEP state that all underground infiltration structures proposed for stormwater control are subject to the MassDEP Underground Injection Control (UIC) program (310 CMR 27.00). I refer the Proponent to MassDEP's comments for more information on the UIC program requirements.

*Water and Wastewater*

The project will result in a total water demand of 11,530 gpd and generate 11,530 gpd of wastewater. According to the ENF, sewer and water capacities have been reviewed by the Town through the municipal permitting process, and the Town has sufficient capacity to support the project. Comments from MassDEP recommend the Proponent continue detailed consultation with the Lee Water Department to ensure adequate capacity and compliance with local requirements in addition to the appropriate use of backflow prevention devices.

*Rare Species*

The project site includes Estimated Habitat for state-listed rare species. The ENF includes a determination from NHESP that the project will not adversely affect the actual Resource Area Habitat of state-protected rare wildlife species and will not result in a prohibited Take of state-listed rare species. Comments from BEAT identify concerns regarding impacts from light pollution from the project on rare species. The ENF states outdoor lighting will be LED, downward-directing fixtures in accordance with "Dark Sky" guidelines to minimize any potential impacts to rare species. Proposed landscaping will utilize non-invasive, indigenous species.

*Hazardous Waste*

The ENF included a subsurface investigation summary, which described historic hazardous waste present on-site and past remediation efforts. Testing conducted in 2020 found volatile petroleum hydrocarbons (VPH) and lead in soil samples in concentrations above the MCP standards. Asbestos-containing material (ACM) was also found in the existing buildings in the mill complex. The EPA is currently leading a clean-up of polychlorinated biphenyls (PCBs) found throughout the Housatonic River, which bisects the project site.[4] RTN 1-0020494 is a Tier II classified site under the MCP (submitted to MassDEP for the property on March 19, 2019). Comments from BEAT note concerns regarding the presence of hazardous waste on-site. The project proposes various activities to address hazardous waste within the project site, including:

- The remediation and proper disposal of lead contaminated soil above the 100mg/kg threshold; the exact area and volume of material will be determined by future sampling.
- Two AULs will be designated on-site and documents will be added to the state registry associated with the property deeds.

[4] More information on the EPA-led Housatonic River Superfund cleanup can be found at the following: https://semspub.epa.gov/work/01/477424.pdf

- A Partial Permanent Solution Statement (PSS) will be submitted to MassDEP to close the site in accordance with the MCP.
- Direct access to the Housatonic River will be restricted on the Eagle Mill site by not providing clearings along the riverbank and allowing the natural vegetated state to remain, and posting signage indicating that the river cannot be accessed.

As stated by MassDEP, a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. I encourage the Proponent to coordinate with MassDEP Brownfields staff as necessary throughout project construction and waste remediation activities.

*Climate Change Adaptation and Resiliency*

Governor Baker's Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569; the Order) was issued on September 16, 2016. The Order recognizes the serious threat presented by climate change and direct Executive Branch agencies to develop and implement an integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The Order seeks to ensure that Massachusetts will meet greenhouse gas (GHG) emissions reduction limits established under the Global Warming Solution Act of 2008 (GWSA) and will work to prepare state government and cities and towns for the impacts of climate change. I note that the MEPA statute directs all State Agencies to consider reasonably foreseeable climate change impacts, including additional GHG emissions, and effects, such as predicted sea level rise, when issuing permits, licenses and other administrative approvals and decisions. M.G.L. c. 30, § 61.

The region's climate is expected to experience higher temperatures and more frequent and intense storms. The Northeast Climate Science Center at the University of Massachusetts at Amherst has developed projections of changes in temperature, precipitation and sea level rise for each river basin in Massachusetts. This data is available through the Climate Change Clearinghouse for the Commonwealth at http://www.resilientMA.org. As noted above, portions of the project are within the mapped FEMA 100-year floodplain, including several of the residential buildings. Directly adjacent to the mill complex is the remnants of the Eagle Mill Dam, which is planned to be removed as part of the EPA-led cleanup of the Housatonic River. According to the Proponent, the FEMA floodplain elevations reflect the flood potential under current conditions (including the remaining dam infrastructure), but the downstream flood elevations, where the project is located, are not anticipated to change significantly once the remaining parts of the dam are removed.

Comments from BEAT note concerns regarding the project's vulnerability to flooding, especially in the context of climate change. The ENF states that all residential areas will be elevated above the appropriate Design Flood Elevation (DFE), or one foot above the 100-year floodplain elevation. However, as noted, FEMA flood elevations are calculated based on currently available data, and do not take into account the future effects of climate change. The project should consider the best available data on future climate conditions, relative to both flooding risk and extreme heat, in making design choices for the project. In addition, the ENF notes that the basement areas of several of the residential/mixed-use buildings will be below the DFE. According to the ENF these areas will be limited to non-essential uses (trash, laundry, and/or bike storage); in addition, the basement area of the renovated mill will be dry-floodproofed. The ENF states the Machine Shop first floor is below the DFE but is eligible for a historic

exemption. The first floor will be used as a retail space, and the basement of the Machine Shop will be unused. Particularly since the project is an affordable housing development, I strongly urge the Proponent to incorporate climate change into final design to minimize future climate risks for this community. I encourage the Proponent to consider adopting additional design elements that could increase the site's resilience, including ecosystem-based adaptation measures to reduce heat island effect, such as integration of tree canopy cover; and designing the stormwater management system such that it will accommodate rainfall under projected climate conditions.

*Greenhouse Gas (GHG) Emissions and Sustainable Design*

While the project does not exceed the thresholds for application of MEPA's GHG Policy and Protocol, it does involve the development of new residential homes that will add to GHG emissions from the building sector. Supplemental information provided by the Proponent states the buildings will utilize LED lighting fixtures, Energy-Star qualified appliances, low-flow fixtures and faucets, and each residential unit will be equipped with a high-efficiency, mini-split heat pump system. The existing mill building will be renovated to improve the building envelope, including thermal improvements at the roof, windows, doors, and select wall, and a portion of the roof will be designed to be solar PV-ready. I encourage the Proponent to undertake further measures to minimize GHG emissions from the project by incorporating energy conservation measures into the housing design. Measures that may be suitable include:

- Passivehouse building standards
- Efficient electrification of space and water heating
- Maintaining envelope integrity with framed, insulated walls with continuous insulation
- Reducing air leakage
- Avoiding glass curtain wall assemblies and excessive windows
- Mitigation of solar heat gains
- Energy recovery
- Electric Vehicle (EV)-ready parking

As noted in comments from the Massachusetts Department of Energy Resources (DOER), the Proponent should consider maximizing EV-ready parking, where EV-charging is not already provided, as it is significantly cheaper and easier to size electrical service and install wiring or wiring conduit during construction rather than retrofitting a project later. Significant incentives may be available including MassSave® incentives, Alternative Energy Credits (AECs), and Solar Massachusetts Renewable Target (SMART) incentives. I refer the Proponent to comments from DOER, which encourage the Proponent to investigate Passivehouse as an alternative to constructing to minimum code standards as Passivehouse could be more cost-effective once incentives are considered, such as the MassSave® Passivehouse incentive - which is valued at approximately $3,000 per dwelling unit or $366,000 - $384,000 when applied across the 128-units. Furthermore, Passivehouse results in significant reduction in utility costs, which increases affordability for residents, and improves the resiliency of the buildings, as Passivehouse buildings can stay warm (or cool, in the summer) for extended periods of time even with loss of power. I refer the Proponent to the DOER comment letter which provides additional guidance on key mitigation strategies, energy efficiency pathways, and available incentives.

Supplemental information provided by the Proponent states that the mill building is a listed historic building, exempting it from the stretch code and the base energy code; however, I note that DHCD's funding criteria for affordable housing incorporates energy efficiency as a key metric in evaluating the quality of proposals for state financial assistance.[5] Particularly in light of the energy bill savings that will inure to the benefit of future low-income residents, I strongly urge the Proponent to consider all feasible means to maximize energy efficiency and reduce GHG emissions in building construction, including by considering Passivehouse design and electrification. This is consistent with recommendations made through the *Massachusetts 2050 Decarbonization Roadmap*,[6] as well as the 2050 Net Zero emissions goal now mandated by the recently enacted Senate Bill 9 - An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy.

*Historic Resources*

The Eagle Mill complex is listed in MHC's Inventory (MHC LEE.188), which includes the Union Mill and Eagle Mill buildings and several adjacent structures. The project will include the demolition of several of the secondary buildings and portions of the main mill building. According to the ENF, historically significant portions of the project site/buildings will be retained and preserved. The project has been reviewed by MHC staff and has been awarded multiple Massachusetts Historic Rehabilitation Tax Credits. The ENF states that, additionally, the U.S. National Park Service (NPS) has approved the project for federal Historic Investment Tax Credits, and that all work will follow the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties.

*Construction*

The project is proposed to be conducted in two phases: Phase 1 will include the construction/renovation of the Union/Eagle Mill residential buildings, the Machine Shop, and the West End Condos; Phase 2 will include the construction of the new Eagle Housing residential building and the Center Street Mixed Use building. Project construction is anticipated to be completed by November 2023. I refer the Proponent to comments from MassDEP regarding approval/permit requirements for boilers, emergency generators, and other equipment. The ENF indicates the presence of asbestos within the project site. Comments from MassDEP note that an asbestos survey to identify all asbestos containing materials should be conducted prior to demolition activities. MassDEP must be notified prior to its handling or removal in accordance with the Asbestos regulations (310 CMR 7.15).

All construction and demolition (C&D) activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles

[5] See https://www.mass.gov/doc/2020-2021-qap-low-income-housing-tax-creditqualified-allocation-plan-qap/download.
[6] The document can be accessed online at https://www.mass.gov/info-details/ma-decarbonization-roadmap#final-reports.

are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.00). All C&D activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle C&D debris to the maximum extent.

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

May 7, 2021
Date

Kathleen A. Theoharides

Comments received:

04/22/2021 Berkshire Environmental Action Team (BEAT)
04/27/2021 Berkshire Regional Planning Commission (BRPC)
04/27/2021 Massachusetts Department of Environmental Protection (MassDEP), Western Regional Office (WERO)
04/29/2021 Massachusetts Department of Energy Resources (DOER)

KAT/ELM/elm

BERKSHIRE ENVIRONMENTAL ACTION TEAM
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**Protecting the environment for wildlife in support of the natural world that sustains us all.**

April 22nd, 2021

Massachusetts Environmental Policy Act Office (MEPA)
100 Cambridge St., Suite 900, Boston, MA 02114

Re: Proposed Eagle Mill Redevelopment West Center Street Lee, Massachusetts

Dear Eva Murray,

Please accept the following comments from the Berkshire Environmental Action Team (BEAT). BEAT is a 501(c)3 nonprofit with a mission to protect the environment for wildlife in support of the natural world that sustains us all.

Berkshire Environmental Action Team is greatly concerned that this project aims to build 70% affordable housing within a 100-year floodplain. BEAT realizes there is a critical need for affordable housing in Berkshire county, but we would much prefer that it be established outside an area where there is a high flood risk, especially when climate change is projected to bring more intense storms to New England[1]. We believe the developers should be required to provide flood insurance to their constituents if they are not already planning on doing so. Further, we believe that if this project is to proceed buildings should be elevated or pulled back 100' away from the river to help mitigate the risk of flooding.

We request that the contractor specifies how they plan to mitigate existing hazardous waste. The current proposal lists unmitigated hazard waste as a consequence of "no build" option but does not clearly specify in their building plan what they intend to do with existing hazardous waste.

Further, we request more details on how the contractor plans to mitigate light pollution, especially in reference to the rare species area they plan to build on.

One of the major benefits this project lists is improved stormwater BMP's. We request that the contractor provides additional details on the stormwater BMP's they plan to use.

Thank you for considering our comments.

Sincerely,

Noah Henkenius

Noah Henkenius
Stewardship Manager

[1] https://www.mass.gov/files/massachusetts-climate-projections-mvp-training-workshops.pdf

BRPC
Berkshire Regional Planning Commission

KYLE HANLON, Chair
JOHN DUVAL, Vice-Chair
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THOMAS MATUSZKO, A.I.C.P.
Executive Director

April 27, 2021

Kathleen Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Eva Murray
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Eagle Mills ENF, EEA# 16357

Dear Secretary Theoharides:

The Berkshire Regional Planning Commission (BRPC) hereby submits comments on the proposed redevelopment project for Eagle Mills ENF (EEA # 16357) in the Town of Lee. This site is located along West Center Street, the location of the former Eagle Mill, recently known as Schweitzer-Mauduit International which closed in 2008. The 6.1 acre site will be redeveloped with mixed uses consisting of 122 apartments, 6 condominiums, 9,900 sf. of retail space and 3,000 sf. of office space; development consists of two phases with completion by 2027.

The project was approved by various town boards in 2018/2019, and an amended plan was approved in 2020/2021. These boards and approvals included:
1. Lee Planning Board - *Site Plan Review*
2. Lee Zoning Board of Appeals - *Special Permit*
3. Lee Conservation Commission-*Order of Conditions*
4. Lee Historical Commission - *Tax Credit Application approvals*

The ENF indicates that the project meets or exceeds the following review thresholds: 11.03(6)(b)(14)-Generation of 1,000 or more average daily trips (ADT) on roadways providing access to a single location and construction of 150 or more new parking spaces at a single location. The ENF also indicates that the project will require a State Highway Access Permit from MassDOT and financial assistance from both the Massachusetts Historical Commission and the Massachusetts Department of Housing and Community Development.

**Considerations and Potential Issues**

Wetlands, Riverfront & Stormwater

*Bordering Land Subject to Flooding:* A significant portion of the proposed work is located in bordering land subject to flooding, most of which is previously developed and altered areas. These areas include buildings, paved parking areas, gravel driveways, railway, and mowed turf lawn. Compensation for the proposed construction will occur

on-site. Existing buildings (or portions thereof) will be demolished, thereby providing compensation. The parking area will be graded and cut to provide additional compensation. All of these areas will provide for incremental compensation in accordance with Wetlands Protection Act and local zoning.

*Riverfront*: The project redevelopment will result in a 3,065 square feet *decrease* in the amount of impervious area in the Riverfront by 1.2% of total Riverfront. In addition, two separate areas will be restored. In total, approximately 11,800 square feet (5%) of Riverfront will be improved under this application, which satisfies the requirements of the Wetlands Protection Act.

*Stormwater:* The stormwater design for the development will mimic existing drainage patterns. The stormwater will be collected in a series of tree box filters or catch basins, mitigated, and infiltrated where feasible. The system has been designed to mitigate the 2, 10, 25 and 100-year storm events provide treatment of TSS and infiltration. These are improvements over current conditions at the property.

Climate & Energy

Little detail is provided within the ENF with regard to climate and energy. However, at the MEPA consultation session held on April 21, 2021 the project proponent indicated that they are currently exploring the property assessed clean energy (PACE) program as a mechanism for financing energy efficiency and renewable energy improvements on the property. In addition, it was stated that the rooftops will be built and/or retrofitted to be solar ready, and EV charging stations will be installed.

Transportation Impacts

West Center Street (Route 20) is an arterial roadway which runs through downtown Lee and provides a vital north/south connection to the Massachusetts Turnpike (Route 90). This roadway currently experiences 14,469 average daily trips (ADT) and already carries a significant amount of traffic during peak travel periods. With this project, traffic will increase by 2,100 ADT, to 16,569, further impacting an already strained roadway.

A number of unsignalized intersections in the study area have stop controlled side street movements which currently operate at poor levels of service. This poor level of service indicates that vehicles operating on side streets that are attempting to access Route 20 will experience an even longer wait (delay) before they are able to maneuver into the traffic stream. This situation will only worsen as a result of more vehicles/trips associated with this project. One item to note is that traffic within the Route 20 corridor is greater during the peak AM and peak PM periods and it tends to lessen in the afternoon and evenings.

The ENF section on Transportation Facility Impacts indicates that this project exceeds two thresholds. First, the project is proceeding through the MEPA review process because it exceeds the transportation threshold of adding more than 1,000 new trips to local roadways and constructing more that 150 new parking spaces at a single location.

Information provided reveals that the project will generate 2,100 average daily trips and 174 new parking spaces will be created. The second threshold relates to the need of obtaining Access Permit to a state controlled roadway from MassDOT for their access driveways.

It should also be noted that the ENF lacks a response to part III; Consistency, under the Transportation Section for traffic generation.

**Comments and Recommendations**

Based on the submittal materials and the Traffic Impact Assessment, this project will affect the transportation network with the greatest impacts occurring in the immediate vicinity of the project and the downtown area of Lee. Mitigation items included in the ENF to address traffic increases from the Eagle Mill redevelopment include the following Transportation Demand Management techniques:

- Staggered work hours that allow for a flexible work schedule to reduce weekday morning and evening peak hour trips
- Bicycle racks to encourage workers and patrons to use bicycles
- Pedestrian connectivity from adjacent roadways to the front doors of buildings
- The proponent is committed to working with BRTA to determine if this site is appropriate for a transit stop
- Consider incorporating the site as part of the Berkshire Bike Path route.

The Traffic Impact Assessment does not provide any information on the overall effectiveness of the proposed mitigation measures. Staff's position is that the proposed mitigation measures will result in a negligible benefit. To increase efforts to abate the additional traffic from the Eagle Mill project, the mitigation efforts in the ENF should be strengthened. The following are our recommendations in addition to those which have been proposed.

1. The property manager for the Eagle Mills will designate a Transportation Demand Management (TDM) manager. This manager will actively promote alternative transportation modes to all site employees and residents. Annual reports will be provided which outline efforts of the prior year and the activities that will occur in the upcoming year.
2. The project proponent commits that the TDM manager will participate in efforts related to the creation and implementation of a Transportation Management Association currently being devised by BRPC, BRTA and 1Berkshires.
3. As the approved site plan lacks a sidewalk along the entire frontage of the project, the project proponent will take all necessary steps to revise the site plan to include a paved walkway to provide connectivity from adjacent roadways to the front doors of buildings.
4. In anticipation of electric vehicles entering into the fleet mix, all parking areas will include electric conduit for level 2 charging equipment. At minimum, 50 charging receptacles will be installed and operational when the project receives the first certificate of occupancy.
5. The project owner commits to working with the Town of Lee, BRPC and MassDOT on planning for Berkshire Bike Path alignments through the project.

6. The project engineer shall evaluate the adequacy of existing crosswalk locations and shall present findings and recommendations to MassDOT.
7. The project proponent will hire a certified traffic engineer to evaluate left turn lanes along West Center Street and the two project access driveways. This analysis will be shared with MassDOT and the Berkshire MPO.
8. A traffic signal warrant analysis shall be performed by a certified traffic engineer for both project driveways and the following intersections:
   Summer St. & Laurel Street
   Canal St./ Site Drive 1 & W Center St
   E Center St. & Main Street
   This analysis will be shared with MassDOT and the Berkshire MPO. Should traffic signal warrants be met, the project proponent shall provide funding for traffic signal installation.
9. A traffic simulation analysis shall be prepared for the corridor which simulates traffic progression and delay. A second simulation analysis shall be prepared to demonstrate the effect which a train crossing will have on traffic. The simulation analysis shall be made available to MassDOT and the Berkshire MPO. **Extreme concerns exist regarding the safety of the project driveways including their proximity to the rail road crossing.** These simulations will be paid for by the project developer.

These comments were approved by the BRPC Environmental Review Committee on April 26, 2021.

Sincerely,

Thomas Matuszko
Executive Director

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

April 27, 2021

Kathleen A. Theoharides, Secretary
Executive Office of Energy & Environmental Affairs
Massachusetts Environmental Policy Act Office
Eva Murray, EEA No. 16357
100 Cambridge Street, 9th Floor
Boston, MA 02114-2524

Re: Eagle Mill Redevelopment
Lee

Dear Secretary Theoharides,

The Massachusetts Department of Environmental Protection (MassDEP), Western Regional Office appreciates the opportunity to comment on the Environmental Notification Form (ENF) submitted for the proposed Eagle Mill Redevelopment project at West Center Street in Lee, MA (EEA #16357).

The applicable MassDEP regulatory and permitting considerations regarding wetlands, drinking water, underground injection control, air pollution, solid waste, hazardous waste and waste site cleanup are discussed. MassDEP attended a site visit on April 21, 2021.

## I. Project Description

The project proponent, Eagle Mill Redevelopment LLC, proposes to rehabilitate this former mill site that was constructed in the early 1800's, to become affordable housing and retail space. This former paper mill is serviced by municipal water, sewer, gas and electric utilities. The 6.1-acre mill site is bordered by the Housatonic River to the east and to the north and by West Center Street and residential homes to the west and south. The residential properties to the south have been purchased by the Proponent and most will be demolished to make way for an expanded, redeveloped complex including additional buildings and parking spaces. The project will be accomplished in two phases. The eastern end of the existing Eagle Mill will be demolished and the remaining portion will be converted to housing. The Machine Shop building will be converted to retail space and

offices, and a new building will be constructed along West Center Street (approximately 10,000 square feet) for retail space on the ground level and residential units on the second floor. A three-story condominium (market rate) with garages is also planned. Final plans are for 128 individual residential units and 12,900 square feet of commercial/retail space at the site. Approximately 70% of the residential units will be low-income housing and 30% will be market rate. A 2.4 acre parcel of undeveloped property to the north will be included in the redevelopment project

New sewer, water and electric utilities are included in the project and a new stormwater management system which includes a series of tree box filters or catch basins will enter one of three infiltration systems before being discharged to the current outfall. The system is designed to mitigate up to a 100-year storm event. Project construction for phase 1 may begin in late 2021 and be completed by 2023. Depending on market demand, phase 2 will begin in 2022 or 2023 and be completed by 2025.

Environmental impacts associated with this project include:

- total site acreage - 9.0 acres,
- acres of impervious area current - 6.0 acres, change 5.2 acres,
- Riverfront Area (RA) impacts current – 4.1 acres, change 0.2 acres total – 4.3 acres,
- Bordering Land Subject to Flooding (BLSF) 6.1 acres,
- Buffer Zone 103,800 square feet (sq ft),
- structures gross sq ft – 123,000 existing, change – 46,580, Total 76,420 gross sq ft,
- vehicle trips per day - increase of 1,556, total daily 16,025 vehicle trips per day along the main roadway,
- parking spaces increase of 24 spaces, total of 174 parking spaces,
- water use (gallons per day) - 11,530, and
- wastewater (gallons per day) – 11,530.

## II. Required Mass DEP Permits and/or Applicable Regulations

Wetlands
310 CMR 10.000
Drinking Water
310 CMR 22.00
Underground Injection Control
310 CMR 27.00
Air Pollution
310 CMR 7.00
Solid Waste
310 CMR 16.00
Hazardous Waste
310 CMR 30.00
Bureau of Waste Site Cleanup
310 CMR 40.000

## III. Permit Discussion

### Bureau of Water Resource

Wetlands

Based on the information provided, this project is subject to the Wetlands Protection Act and the associated regulations. The site project will include work within RA and BLSF. The Proponent submitted a Notice of Intent to the Lee Conservation Commission on October 15, 2018, MassDEP issued a file number and comments regarding the work and the Conservation Commission issued an Order of Conditions on December 20, 2018, that was not appealed. The Commission issued an amended OOC on November 20, 2020.

Drinking Water

There are no MassDEP permits for this proposed onsite work. MassDEP recommends continued detailed consultation with the Lee Water Department to ensure adequate capacity and compliance with local requirements. In addition, MassDEP advises compliance with all cross-connection requirements, including coordination with the Water Department and the appropriate use of backflow prevention devices.

Underground Injection Control

The project may include subsurface stormwater infiltration structures. The Proponent should be aware that all below grade infiltration structures for stormwater control are subject to jurisdiction of the MassDEP Underground Injection Control (UIC) program (310 CMR 27.00). The structures must be registered with the MassDEP UIC program as Class V wells through the submittal of a BRP WS 06 UIC Registration – Stormwater/Special Drainage-Groundwater Infiltration Well. Additional information can be found at: https://www.mass.gov/how-to/ws-06-registration-of-a-class-v-uic-well-and-modification-of-an-existing-registration.

### Bureau of Air and Waste

Air Quality

*Construction and Demolition Activities*

The Proponent has acknowledged they will comply with appropriate regulations. To clarify, construction and demolition activity must conform to current Air Pollution Control Regulations. The Proponent states they will implement measures to alleviate dust, noise, and odor nuisance conditions that may occur during the construction and demolition activities. Such measures must comply with the MassDEP's Bureau of Air and Waste Regulations 310 CMR 7.01, 7.09, and 7.10.

In addition, the Proponent should be aware of the requirements for the Adhesives and Sealants used during construction relative to the Volatile Organic Compounds (VOC) content of the Adhesives and Sealants, pursuant to 310 CMR 7.18 (30).

*Construction Period Air Quality Mitigation Measures*

MassDEP recommends that the project proponent participate in the MassDEP Diesel Retrofit Program. All non-road engines shall be operated using only ultra-low sulfur diesel (ULSD) with a sulfur content of 15 ppm pursuant to 40 CFR 80.510.

*Boilers/Generators/Emergency Generators*

MassDEP's records indicate that a change of ownership notification has not been completed for the facility. The "*Facility Information Correction"* will be forwarded to the Proponent under separate cover with instructions for return to MassDEP Springfield Office. Prior to removal of the industrial boiler(s), the proponent must notify the regional MassDEP Air Quality program.

The Proponent should be aware that there are air approval/permit or registrations requirements for boilers, stationary turbines, reciprocating engines, emergency generator sets and other internal combustion engines (e.g. those associated with power generation units) that may or may not be applicable to this project. If any energy needs will be met through the combustion of liquid, gaseous, or solid fuels, then such systems may need to be certified (certain boilers depending upon their heat input capacities, and engines and turbines depending upon their rated power outputs) by the MassDEP pursuant to 310 CMR 7.26 and 310 CMR 70.00, may comply with 310 CMR 7.03, or be approved by MassDEP pursuant to 310 CMR 7.02 unless otherwise exempted in 310 CMR 7.00.

In addition, major sources are subject to the operating permit program and may be subject to New Source Review requirements. The Proponent, if subject to these programs may seek a federally enforceable restriction to limit its emissions in order to avoid certain requirements. The proponent should refer to the aforementioned regulations to determine if any approval/permit or registration threshold is met by any on-site combustion units being proposed for the project and should evaluate its approval/permitting/registration requirements/options.

*Asbestos*

The proponent has acknowledged the presence of asbestos containing materials in the two mill buildings. In addition, the residential buildings that are included as part of the project and slated for demolition may also contain asbestos and must be inspected and abatement conducted, as necessary.

Property owners are required to identify asbestos containing materials present in structures prior to conducting demolition or modification and remove asbestos prior to conducting demolition/reconstruction. Some of the materials may be associated with the former heating and process systems or roofing and flooring materials.

MassDEP must be notified using form *BWP AQ 04 (ANF-001) - Asbestos Removal Notification* at least 10 working days prior to initiating work. The handling and removal of asbestos from a facility and/or facility components must be conducted by properly licensed professionals and adhere to the requirements of 310 CMR 7.15.

There may be instances when specific work practices prescribed in the Asbestos Regulation cannot be implemented safely such as within structurally unstable buildings, fire damaged buildings, areas

near high-voltage electrical equipment or other situations where wetting or access would be dangerous. To account for these scenarios, the *BAW AQ 36 Application for a Non-Traditional Asbestos Abatement Work Practice Approval* application would be applicable.

Solid Waste

The Proponent has stated that portions of the mill and other buildings will be demolished. Material may be segregated, and the concrete crushed and repurposed or reused on site in accordance with MassDEP policy. The Proponent is advised that any solid waste currently stockpiled on-site and new solid waste generated, must be properly managed and disposed of in accordance with 310 CMR 16.00 and 310 CMR 19.000, including the waste ban provisions - 310 CMR 19.017. Regulated asbestos and asbestos-containing waste shall be managed in accordance with Solid Waste regulation 310 CMR 19.061 *Special Waste*.

Asphalt, brick and concrete (ABC) generated through crushing and reuse on-site must be handled in accordance with regulation and policy. Solid waste exemption requirements of 310 CMR 16.03 (1)(b)(5), for ABC require that the rubble be clean (i.e. not painted or coated or containing solid wastes). More information regarding the handling of ABC, and a copy of the 30-day notification form may be found at the following website:

- https://www.mass.gov/files/documents/2018/03/19/abc-rubble.pdf

The use of painted or coated ABC rubble from building demolition, or the use of the existing ABC rubble piles on-site, will require *a Beneficial Use Determination (BUD)* permit in accordance with 310 CMR 19.060 for use as fill material on-site. The BUD Regulation 310 CMR 19.060, establishes levels of assessment for four categories of beneficial use. These regulations would be applicable to reuse of materials generated by this project that would otherwise be considered solid waste. Guidance for a BUD permit may be found at:

- https://www.mass.gov/service-details/massdep-solid-waste-forms#waste-determinations-and-demonstrations
- https://www.mass.gov/lists/managing-construction-demolition-cd-wastes

Due to the potential for soil contamination along the driveways, parking areas and in proximity to antiquated mill buildings, excavated material may be managed in accordance with MassDEP policy COMM-97-001 *"Reuse and Disposal of Contaminated Soil at Massachusetts Landfills"* if the excavated/generated solid waste material demonstrate characteristics of hazardous waste or the presence of other contaminants at levels appropriate for such management. Redevelopment work at the facility is currently being overseen by a Licensed Site Professional as regulated under Massachusetts Contingency Plan and is addressed later in this correspondence.

Hazardous Waste

If any hazardous waste or waste oil are generated by the construction/demolition activities, the facility must be properly registered as a hazardous waste generator. Registration is accomplished at the following web site portal: https://www.mass.gov/guides/hazardous-waste-generation-generators.

All hazardous waste or universal wastes such as mercury containing lamps or mercury thermostats, must be properly managed in accordance with 310 CMR 30.0000.

**Bureau of Waste Site Cleanup**

Massachusetts Contingency Plan (MCP)

This project site contains disposal areas governed by the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, M.G.L. c. 21E, and the Massachusetts Contingency Plan (the MCP-310 CMR 40.0000) and the Release Tracking Number assigned to the site is 1-0020494. On March 19, 2019, MassDEP received a Tier II classification under the Massachusetts Contingency Plan (MCP) for this property. MassDEP conducts regulatory reviews of MCP cleanup actions. The Proponent has a Licensed Site Professional (LSP) of record that has conducted investigations and is expected to continue overseeing the redevelopment of this regulated site. Further questions may be directed to MassDEP Brownfields staff.

In addition, a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to refueling of machinery, storage of fuels and potential releases. This plan is of particular importance due to the close proximity of the work to the Housatonic River.

## IV. Other Comments/Guidance

MassDEP staff is available for further discussions as the project progresses. If you have any questions regarding this comment letter, please do not hesitate to contact Kathleen Fournier at (413) 755-2267.

Sincerely,



Michael Gorski
Regional Director

cc: MEPA File

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
**DEPARTMENT OF ENERGY RESOURCES**
100 CAMBRIDGE ST., SUITE 1020
BOSTON, MA 02114
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**Charles D. Baker**
Governor

**Karyn E. Polito**
Lt. Governor

**Kathleen A. Theoharides**
Secretary

**Patrick Woodcock**
Commissioner

27 April 2021

Kathleen Theoharides, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Eagle Hill Development, Lee, Massachusetts, EEA #16357

Cc: Maggie McCarey, Director of Energy Efficiency, Department of Energy Resource
Patrick Woodcock, Commissioner, Department of Energy Resources

Dear Secretary Theoharides:

We've reviewed the Environmental Notification Form (ENF) for the proposed project. The project includes 185,000-sf of new residential construction (128 units), 3,000-sf of new commercial/retail space, and a 23,000-sf renovation of a historic mill. The objective of this letter is to share strategies for the project to reduce greenhouse gas emissions (GHG), improve resiliency, and affordability.

**Key Strategies**

Deployed together, the following have been found to be effective strategies in advancing emission reduction, resilience, and affordability:

- Passivehouse building standard (residential and commercial space);
- Efficient Electrification of space and water heating (all new and renovated space);
- Maintaining envelope integrity with framed, insulated walls with continuous insulation (all new and renovated space);
- Reducing air leakage (all new and renovated space);

- Avoiding glass curtain wall assemblies and excessive windows (all new and renovated space);
- Mitigation of solar heat gains (all new and renovated space);
- Energy recovery (all new and renovated space);
- Rooftop solar PV (all new and renovated space);
- EV Ready Parking (all new and renovated space).

Experience has shown that the above deliver 50 to 80% less emissions than projects built to Code while improving affordability and resilience. In addition, significant incentives may be available, as well, including MassSave® incentives, Alternative Energy Credits (AECs), and Solar Massachusetts Renewable Target (SMART) credits.

**Key Mitigation Strategies Explained**

Passivehouse

Passivehouse is an energy efficiency building standard that results in an ultra-low energy building requiring little energy use for space heating and cooling. This is achieved by focusing on envelope performance, airtightness, and energy recovery. Passivehouse projects also typically have much smaller HVAC systems. Published studies show that in low-rise and mid-rise construction, Passivehouse doesn't necessarily cost more to build because improvements to envelope are offset by reductions in HVAC. For example, four (4) Massachusetts housing developments being built to Passivehouse standards have confirmed incremental building cost increases between 1.4-2.8%[1]. This building cost increase can be offset whole or in part with incentives such as the MassSave® Passivehouse incentive[2] (applicable for 5-unit buildings or larger). The value of this incentive is approximately **$3,000 per dwelling unit, or $366,000 - $384,000 when applied across the 128-units.**

Passivehouse is an energy code standard which is unlike other energy efficient building approaches in that its truly performance based by requiring mandatory, rigorous in-field tests to confirm that strict standards are being met. Passivehouse methods are recognized by both Massachusetts building Code, MassSave®, and incentives under Massachusetts' Alternative Portfolio Standard (APS).

Passivehouse also delivers:

- *Significant reduction in utility costs:* thus is much more affordable to residents;

[1] https://www.masscec.com/emerging-initiatives/passive-house
[2] https://www.masssave.com/saving/residential-rebates/passive-house-incentives

- *Improved resiliency:* Passivehouse buildings can stay warm (or cool, in the summer) for extended periods of time even with loss of power.

At this time there are over 5,000 passivehouse units being designed or under construction in eastern Massachusetts.

Passivehouse projects typically use efficient electric space heating (air source heat pumps/VRF). Efficient electrification is more readily achieved with Passivehouse because HVAC loads are much smaller in Passivehouse applications. (More discussion of efficient electrification is provided below.)

Passivehouse Examples


*206 Main Street*
*Gloucester, MA*

*Finch Cambridge*
*Cambridge, MA*

*Old Colony*
*Boston, MA*

*Newton Riverside*
*Newton, MA*

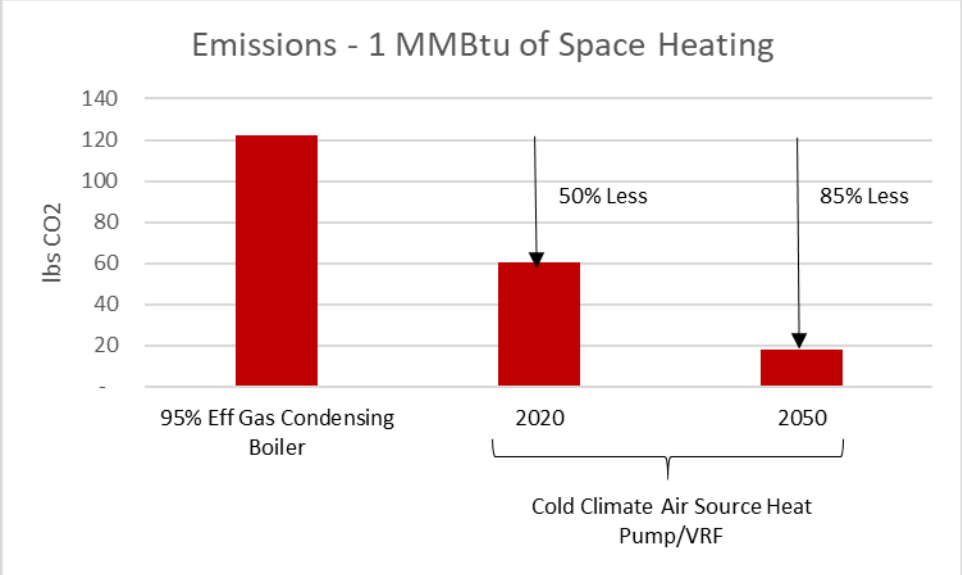
Efficient Electrification

Efficient electrification and renewable thermal space and water heating entails the swapping of fossil fuels (natural gas, oil, and propane) or electric resistance systems with one or more of the following:

- Cold-climate air source heat pumps and variable refrigerant flow (VRF) for space heating;

- Air source heat pumps for water heating;
- Ground source heat pumps;
- Solar thermal.

Electrification of space and water heating is a key mitigation strategy with significant short- and long-term implications on GHG emissions. Massachusetts grid emissions rates continue to decline with the implementation of clean energy policies that increase renewable electricity sources. The implication is that efficient electric space and water heating with cold climate air source heat pump and VRF equipment have lower emissions than other fossil-fuel based heating options, including best-in-class (95% efficient) condensing natural gas equipment. Currently, efficient electric heating has approximately **50% lower emissions** in Massachusetts than condensing natural gas heating. By 2050, efficient electric heating is expected to have approximately **85% lower emissions** in Massachusetts than condensing natural gas heating. See illustration below.




Heat Pump Water Heating

Water heating can be accomplished in many ways, common technologies include fossil fuel boilers and electric resistance systems. There are approaches that utilize air-source heat pumps, as well. These applications include centrally located systems that distribute hot water to the units, or unit-based heat pump water heaters.

Integrity of Building Envelope

High-performing envelope is essential to successful GHG mitigation, affordability, and resilience. Key strategies for maintaining integrity of envelope are:

- Continuous insulation;
- Reducing air infiltration;
- Eliminating thermal bridges;

- Limiting or eliminating use of glass "curtain wall" and spandrel assemblies;
- Maximizing framed, insulated walls sections;
- Avoiding excessive window areas.

The thermal performance of windows, curtain walls, and spandrels is typically about **70 to 80% less** than the thermal performance of the framed, insulated wall assemblies. Accordingly, buildings which use extensive curtain wall, spandrel, and windows have compromised envelope performance which impacts energy consumption, emissions, resiliency, and affordability.

Mitigation of Solar Heat Gains

To limit solar heat gains, we encourage examination of building self-shading, external shading, and varying glass solar heat gain coefficient (SHGC) as a function of exposure. (For example, targeting lower SHGC-rated glass for building sides and areas more exposed to sun and/or less shaded.)

Rooftop Solar PV

Rooftop PV can provide significant GHG benefits as well as significant financial benefits. Experience has shown that, with planning, up to 80% of roof space can be set aside for PV on roofs of low-rise, mid-rise, and high-rise buildings.

Even if PV is not installed during building construction, it is important to plan the project to ensure that roof space is set aside for PV and that roof space doesn't become unnecessarily encroached with HVAC appurtenances, diminishing the opportunities for future PV. Electrification of heating and Passivehouse both contribute to enabling more PV as these approaches can greatly reduce rooftop equipment associated with conventional code HVAC.

Electric Vehicle (EV) Parking Spaces

EV charging stations are critical for the continual transition towards electric mobility. Even if EV charging stations are not installed during construction, it is critical to maximize EV ready parking spaces as it is significantly cheaper and easier to size electrical service and install wiring or wiring conduit during construction rather than retrofitting a project later.

## Incentives

Buildings which incorporate the above strategies can qualify for significant incentives:

- MassSave® performance-based incentives[4] offer incentives for every kWh or therm saved compared to a program-provided energy model. The above energy efficiency strategies offer opportunities for large kWh and therm savings.

- MassSave® Passivehouse incentives are available to multifamily buildings (5+ units) which meet either PHI or PHIUS Passivehouse certification. In addition to a $3,000/unit

incentive, MassSave® also incentives feasibility and modeling. The incentive structure is as follows:

| Passive House Incentive Structure for Multi-Family Mid- and High-Rise Buildings | | | |
|---|---|---|---|
| **Incentive Timing** | **Activity** | **Incentive Amount** | **Max. Incentive** |
| Pre-Construction | Feasibility Study | 100% Feasibility costs | $5,000 |
| | Energy Modeling | 75% of Energy Modeling costs | $500/Unit, max. $20,000 |
| | Pre-Certification | $500/unit | N/A |
| Post-Construction | Certification | $2,500/unit | |
| | Net Performance Bonus | $0.75/kWh | |
| | | $7.50/therm | |

- Alternative Energy Credits (AECs)[5] offer incentives to electrify building space heating using heat pumps and/or VRF. This program also includes multipliers which increase value if the building meets Passivehouse standards or buildings built to HERs 50 or less. These credits may be distributed on a quarterly basis over time; or, may be distributed in a lump sum to the developer if certain conditions are met.

- Massachusetts SMART program[7] provides significant incentives for solar development on top of federal and state tax incentives. SMART includes pathways which allow solar production to be sold without off-takers. This may be of potential interest to building developers as this allows them to develop rooftop solar without necessarily engaging with building tenants. For this reason, setting aside rooftop solar PV areas helps ensure that building owners' ability to monetize the roof is not impacted.

## Recommendations

The strategies described above provide pathways to GHG mitigation, increased affordability, and improve resiliency. The following are questions that should be considered throughout the planning process:

- Was Passivehouse considered? Early analysis improves the feasibility of Passivehouse. Were the following answered:
    - Does the analysis include all benefits (GHG mitigation, affordability, and resiliency)?
    - Were the MassSave® performance and $3,000/unit Passivehouse incentives incorporated?
    - Did the buildings that qualify for the MassSave® Passivehouse incentive use the pre-construction feasibility and energy modeling incentives?

  - What is the cost difference between the minimum code compliant buildings versus Passivehouse once $366k MassSave® incentive is considered?

- Was efficient electrification considered? Air source systems are feasible for the proposed buildings and should be considered for all buildings. Were the following answered:

  - Does the analysis include all benefits (GHG emissions, affordability, reduced dedicated mechanical space, reduced floor to floor height or more flexible HVAC arrangements)?

  - Did the analysis of water heating consider all available technologies, including heat pumps (centrally located, split, and combined systems), solar thermal, and ground source?

  - Were all MassSave® and AEC incentives accounted for in the analysis?

- Is the project managing solar gains with exterior shading and improved solar heat gain coefficient?

- Is the project using continuous insulation, reduced air infiltration (with in-field confirmation), and limiting or eliminating use of glass "curtain wall" and spandrel assemblies?

- Did the project set-aside as much space as possible for rooftop PV? It is important to set-aside roof space for PV early to ensure that mechanical equipment spacing is designed to maximize rooftop space. A target of 80% roof set-aside is generally achievable.

- Furthermore, integration of these recommended measures has compounding and interrelated benefits. For example: the adoption of an above code building envelope and air-sealing measures greatly improve the feasibility and economics of an all-electric space heating system; electrification reduces rooftop equipment; inclusion of solar PV in a project improves the economics of efficient electrification of space and water heating. Accordingly, these solutions should be considered as a package rather than in isolation.

Sincerely,

Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources

Brendan Place
Clean Energy Engineer
Massachusetts Department of Energy Resources