



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Kathleen A. Theoharides
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/envir>

June 19, 2020

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

PROJECT NAME	: Northeastern University Coastal Sustainability Institute
PROJECT MUNICIPALITY	: Nahant
PROJECT WATERSHED	: North Coastal
EEA NUMBER	: 16046
PROJECT PROPONENT	: Northeastern University
DATE NOTICED IN MONITOR	: March 25, 2020

Pursuant to the Massachusetts Environmental Policy Act (MEPA, M.G. L. c. 30, ss. 61-62I) and Section 11.08 and 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Final Environmental Impact Report (FEIR) and hereby determine that it **adequately and properly complies** with MEPA and its implementing regulations.

While this project may now proceed to permitting, I acknowledge the numerous comments received from the Town of Nahant, residents, advocacy organizations and State Agencies throughout the course of this review. This level of public participation, together with review of the project through submission of Draft and Final Environmental Impact Reports (EIRs), have allowed for extensive disclosures of relevant environmental impacts associated with the project, including land, water/waterways, wetlands, historic resources, climate change and other related impacts. Given this record, I am satisfied that the FEIR and prior reviews have provided an adequate description and analysis of the project and its alternatives, and assessment of its potential environmental impacts and mitigation measures, so as to enable Participating Agencies to fulfill their obligations under Section 61 of M.G.L. c. 30. As indicated below, to the extent material changes are made to the project in the course of future permitting or other related developments prior to the taking of Agency Actions, including completion of archaeological

surveys, feasibility studies of proposed geothermal wells, and pending litigation regarding the status of the project site under Article 97 of the Amendments to the State Constitution, the Proponent is directed to consult with the MEPA Office to determine the need for additional MEPA review in the form of a Notice of Project Change (NPC).

I note that MEPA review is not a permitting process, nor does it serve as an appeal for local decisions. It does not pass judgment on whether a project is or is not beneficial, or whether a project can or should receive a particular permit. Rather, the MEPA process requires public disclosure of a project's environmental impacts as well as the measures that the proponent will undertake to avoid, minimize and mitigate these impacts. MEPA review occurs before public agencies act to issue permits and approvals for a proposed project to ensure that those agencies are fully cognizant of the environmental consequences of their actions. I am confident that review of the FEIR and prior MEPA documents have garnered sufficient input from the public so as to make State Agencies with permitting authority for this project fully aware of the important environmental issues involved.

Project Description

As described in the FEIR the project consists of the development of a Coastal Sustainability Institute (CSI) that will include academic, research, meeting, office space and support facilities at Northeastern University's Marine Science Center (MSC). The CSI would support an additional 114 faculty, staff and students for a total campus population of 228.

The CSI will consist of an approximately 55,000 square foot (sf) structure proposed to be located on top of the Murphy Bunker, which is part of the MSC. The project includes a reconfigured entrance from Nahant Road, reconstruction and minor realignment of driveways, and new parking areas that will provide 125 spaces. The project includes grading; upgrades to water, sewer, gas, electric and telecommunication systems and stormwater management; and removal of invasive plants and restoration of native species in the vicinity of the new building.

A geothermal heating and cooling system will be located in the area to the east of the CSI. The geothermal wellfield will occupy an area of approximately 1.06 acres and consist of approximately 80 wells in total that are spaced approximately 25 feet (ft) apart. The wells will be arranged along seven parallel lines that are generally oriented north-south and will be connected to the CSI via a central pipe. The wells will be completely buried and the land over it will be restored in accordance with a habitat restoration plan.

In addition, the project includes replacement of a seawater intake system and associated pump house that support research in the Murphy Bunker and Edwards Laboratory. The seawater intake system will be replaced with two 14-inch diameter high-density polyethylene (HDPE) pipes which will extend approximately 400 ft from the seawall into Bathing Beach Cove. The FEIR notes that the pipes will be oversized due to the long pipe length from the pump house to the intake site and will help compensate for friction losses that result from biofouling and associated cavitation problems. The intake pipes will be used on a rotating basis to prevent biofouling and will operate at a flow capacity of 600 gpm (reduced from the originally proposed 2,400 gpm flow capacity). The replacement is proposed to improve the reliability of the

seawater system and to meet existing and future research needs of the MSC and the CSI. The seawater system discharge replacement will consist of two 16-inch diameter HDPE pipes extending approximately 275 ft into Bathing Beach Cove. Both the intake and discharge lines will be directionally drilled below the Bathing Beach seawall and emerge seaward of mean low water (MLW). The lines will be secured to the ocean floor using concrete ballast blocks. The intake structures and discharge diffusers will be mounted on a concrete pad. The dive locker and indoor aquatics lab at the southwest end of the Edwards Lab will be demolished and replaced with a 3,270-sf pump house with below grade level that will have a 1,400 sf footprint. Before discharge, seawater will be collected in a new discharge chamber located slightly northeast of the existing pump house. Before seawater is discharged back into the ocean it will pass through an energy recovery heat exchanger that helps to further reduce any temperature differential of the effluent.

Project Changes Since the NPC/DEIR

The Certificate on the NPC/DEIR required the FEIR to address vulnerabilities to the project including the location of the site's only access way and the associated utilities located within a VE Zone. In response, the Proponent is proposing to relocate the water and electric lines away from Canoe Beach. An approximately 200 linear foot (lf) segment of these utilities will remain along the beach before it travels southward away from the beach, out of the VE Zone and potential areas of erosion. A new water line connection will be made from Swallow Cave Road and run along the south side of the site to the new CSI Building. The former water line will be abandoned in place. The existing electrical ductbank in the access road will be also be abandoned in place and the overhead electrical lines that run from a point near the access gate adjacent to Canoe Beach to the rear of the Edwards Building will be taken down. A new electric ductbank connection will be installed on the south side of the Site to service the CSI. As described in the FEIR, the sewer line cannot practicably be relocated. Because it is gravity fed and the low point leaving the site is in the roadway near Canoe Beach, a relocation would require the construction of new pump station. The Proponent maintains that the most practicable solution is to replace the sewer pipe in its existing location, and to armor it to protect it from potential storm induced erosion.

Project Site

The 20.4-acre project site is located on East Point in Nahant. The project site is bounded by Shallow Cave Road and a residential area to the west, Canoe Beach and Nahant Bay to the north, Bathing Beach and Broad Sound to the south and Lodge Park to the east. The site is in an area zoned as a Natural Resource District by the Town of Nahant.¹

Sole access to the site and to Lodge Park is provided via Nahant Road and a site access road that bisects the MSC campus. The site includes a public access easement to Lodge Park. The site was acquired by Northeastern in 1966 from the U.S. Government. It was formerly part

¹ The Proponent asserts that the project is not subject to the local zoning district based on protections provided by the Dover Amendment (M.G.L. c. 40A, Sec. 3) which provides that "[n]o zoning ordinance or by-law shall regulate or restrict ... the use of land or structures ... for educational purposes on land owned or leased by ... a nonprofit educational corporation [except for] reasonable regulations concerning the bulk and height of structures and determining yard sizes, lot area, setbacks, open space, parking and building coverage requirements." The Proponent maintains that the educational purpose by a nonprofit educational corporation is consistent with the protections provided by this statute.

of the U.S. National Coastal Defense System in World War II. Remnant military structures, including the Murphy Bunker, were converted into a 31,083-sf research facility. The MSC includes 15,081 sf of lab/research space (Edwards Laboratory), a 1,517-sf greenhouse, a 500-sf ice house and 2,854 sf of temporary trailer space. As currently designed, the seawater intake system consists of two 6-inch diameter HDPE intake pipes that extend approximately 350 ft from the seawall into Bathing Beach Cove. Seawater is pumped to a pump house where it then flows to two 20,000-gallon storage tanks. It is gravity fed to the Edwards Lab and Murphy Bunker. After flowing through research tanks, the seawater is discharged onto Bathing Beach through a 15-inch pipe at the Bathing Beach seawall. The pipe has been identified as a source of beach erosion. The flow capacity of the intake system is 1,100 gpm; flows have averaged 291 gpm over the past year.

The project site is primarily vegetated and contains uplands and wetlands including Bordering Vegetated Wetlands (BVW), Land Subject to Coastal Storm Flowage (LSCSF), Land Under Ocean (LUO), Land Containing Shellfish (LCSF), Coastal Beach, and Coastal Bank. Previously disturbed areas associated with the bunkers, including the area above bunkers have revegetated and are primarily wooded. Site topography is variable, ranging from Mean Low Water (elevation -4.91 NAVD88) to a maximum elevation of approximately 64 feet above the Murphy Bunker. Higher elevations on the west and east sides of the Site border a central valley oriented on a north-south axis between Canoe Beach and Bathing Beach. Portions of the project site are located within a Velocity (VE) Zone with base flood elevation (BFE) of 18 ft NAVD88 along the northern portion of the property (where Canoe Beach is located); Zone AO with a ponding depth of 3 ft through the center of the property; and Zone AE with BFE of 13 ft NAVD88 and VE Zone with BFE of 17 ft NAVD88 along the southern shoreline.²

According to the 14th edition of the Massachusetts Natural Heritage Atlas, the project is not located within mapped *Estimated* or *Priority Habitat of Rare Species*. East Point is identified as an Important Bird Area by MassAudubon. Nahant Bay supports recreationally and commercially significant marine fisheries resources and habitats. The project site is habitat for the spawning, larval settlement and juvenile development of winter flounder (*Pseudopleuronectes americanus*). Lobster (*Homarus americanus*) are common and are commercially and recreationally fished in this area. The site provides habitat for the larval settlement and juvenile development of lobster. Several diadromous species can also be found within the project area and include alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), American shad (*Alosa sapidissima*), rainbow smelt (*Osmerus mordax*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), and Atlantic tomcod (*Microgadus tomcod*). Finally, eelgrass (*Zostera marina*) is present along the coves to the west of the site.

Prior MEPA Review

Northeastern (Proponent) submitted an ENF in January 2018 (EEA# 15793) which included only the seawater intake system. The ENF was withdrawn to address a number of issues raised by State agencies and Nahant residents, including concerns that the proposed CSI development was not included in the ENF and potential segmentation issues arising from this

² Based on Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Letter of Map Revision (LOMR) 18-01-0243P effective December 29, 2019 and LOMR 16-01-2425P effective July 7, 2017.

omission. The Proponent filed a new ENF on May 31, 2019 which included both the seawater system upgrade and the proposed CSI building and included additional information based on feedback received including: a reduction in the proposed operation of the seawater system (from 2,400 gpm to 600 gpm); elimination of seawater use for building heating and cooling; use of an offshore diffuser system at Bathing Beach to eliminate erosion; elimination of impacts to BVW associated with the seawater system; and addition of an onsite lobster hatchery to mitigate potential lobster larvae mortality associated with the seawater intake system. On August 2, 2019, a Certificate on the ENF requiring the preparation of a Draft and Final EIR was issued. On November 22, 2019, an NPC/DEIR was submitted by the Proponent with a request for a Phase 1 Waiver which would allow the permitting of the seawater system to move ahead prior to the completion of MEPA review. The waiver was denied and a Scope for an FEIR was issued on January 10, 2020. Among other issues, the Scope required the Proponent to continue to consider resiliency improvements at Canoe Beach to reduce flooding and improve the resiliency of the adjacent access drive to the site. A key focus of the FEIR therefore involved analysis of alternatives that could incorporate resiliency measures while assessing potential locations adjacent to this access point (albeit a low-lying area) to the site.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include 23,759 sf³ of LSCSF of which 6,667 will be permanent impacts; 2,038 sf of LUO (permanent) and 2,038 sf of Land Containing Shellfish (permanent). The Proponent plans to remove the existing intake lines and anchor block which will total approximately 175 sf of temporary impacts to LUO and Land Containing Shellfish. The project will result in the alteration of 4.1 acres of land⁴ including the creation of 1.71 acres of new impervious surface. The project will result in the alteration of historic resources and potential alteration of archaeological resources; generation of an additional 175 new average daily trips (adt) (350 total adt for the site)⁵; increase in water demand by 1,094 gpd (2,023 gpd total); and increase in wastewater generation by 995 gpd (1,839 gpd total).⁶ The project involves the installation of 0.42 miles of water main and 0.25 miles of sewer main (reduced from calculations included in previous filings). The project will generate greenhouse gas (GHG) emissions associated with energy use.

Measures proposed to avoid, minimize, and mitigate project impacts include improvements to the stormwater management system, habitat restoration (including removal of invasive species), development of a lobster hatchery, and development of a mitigation package to address impacts to municipal infrastructure. Intake and discharge pipes will be directionally drilled under the seawall and beach and will emerge just seaward of MLW to minimize disturbance to the beach and seawall. The project will include measures to reduce GHG emissions and energy use.

³ The NPC/Certificate listed a total of 28,408 sf to LSCSF which was a calculation error was corrected in the FEIR.

⁴ The Certificate on the NPC/DEIR identified 5.9 acres of new land alteration. This number included incorrectly included existing alteration as well as the proposed 4.12 acres of new alteration.

⁵ The project does not exceed transportation thresholds outlined in the MEPA Regulations (301 CMR 11.03(6)) nor does it require any transportation related permits from State Agencies.

⁶ E-mail correspondence received on January 9, 2020 indicated that the proposed water demand and wastewater generation are accurately reflected in the original ENF and not the NPC from.

Jurisdiction and Permitting

This project is subject to MEPA review and preparation of an ENF pursuant to 301 CMR 11.0 (3)(b)(1)(e); (3)(b)(1)(f); (3)(b)(6); and (10)(b)(1) because it requires Agency Actions and involves the alteration of ½ or more acres of any other wetland; new fill or structure or expansion of fill or structure in a velocity zone or regulatory floodway; construction, reconstruction or expansion of an existing solid fill structure of 1,000 or more sf base area or a pile supported or bottom-anchored structure of 2,000 or more sf base area provided that the structure occupies flowed tidelands or other waterways; and demolition of all or any exterior part of any historic structure listed in or located in the any historic district listed in the State Register of Historic Places or Inventory of Historic and Archaeological Assets of the Commonwealth.⁷ The project requires a Chapter 91 (c. 91) License from the Massachusetts Department of Environmental Protection (MassDEP). The project has received a grant from the Office of Coastal Zone Management (CZM) and it requires Federal Consistency Review by CZM. As a discretionary EIR was required for the project, it is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (GHG Policy).

The project requires review by the Massachusetts Historical Commission (MHC) acting as the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800). The project will require review and approvals from the Town of Nahant, including an Order of Conditions from the Nahant Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP. The project requires a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) and Construction General Permit (CGP) from the U.S. Environmental Protection Agency (EPA). The project may require Pre-Construction Notification under Section 10 and Section 404 from the Army Corps of Engineers (ACOE) in accordance with the General Permits for Massachusetts. The project may require Federal Consistency Review by the Office of Coastal Zone Management (CZM).

Because the project involves Financial Assistance, MEPA jurisdiction is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in the MEPA regulations.

Review of the FEIR

The FEIR provided a description of existing and proposed conditions, conceptual project plans, alternatives discussion and identified measures to avoid, minimize and mitigate environmental impacts. The project will support 29,150 net new sf of academic research and teaching space, meeting spaces, office and support space. The FEIR disclosed the project site's vulnerability to coastal flooding at Canoe Beach and indicated that while the Proponent acknowledges the need to address these vulnerabilities, it does not have immediate plans to do so; the Proponent intends to undertake these efforts within the next ten years.

⁷ The threshold at 301 CMR 11.03(3)(b)(1)(f) (alteration of ½ or more acres of other wetlands) was not identified in the NPC form. The threshold at 301 CMR 11.03(3)(b)(1)(a) (alteration of coastal dune, barrier beach or coastal bank) is no longer exceeded because wetlands impacts were refined from the ENF submission.

There continues to be significant public concern about this project. I received more than 450 comment letters on the FEIR including from the Town of Nahant, the Massachusetts Lobstermen's Association (MLA), and residents, most of which were opposed to the project. The MLA and fishermen continue to express concerns over the seawater system's potential to increase temperatures and entrainment which could impact local fisheries. The Town of Nahant and residents continue to express concerns over the scale of the project and its potential impacts to municipal resources including roadways, water mains and sewer infrastructure, visual impact, archaeological impacts as well as land alternation and vegetation removal at East Point. I encourage the Proponent to continue to engage with the Town and neighboring residents to address these concerns in future permitting. Comments from State Agencies identify information that should be provided during permitting and do not request additional analysis in the form of a Supplemental FEIR.

Since the NPC/DEIR was issued, the Propone has undertaken testing for the geothermal well proposed east of the Murphy Bunker. Drilling indicated shallow bedrock in the location of the proposed geothermal wellfield.⁸ Several comment letters raised concerns with the fact that this information was not provided in the FEIR. In response, the Proponent, in an e-mail to the MEPA Office on June 16, 202, indicated that these factors do not determine the ground's ability to store/deposit thermal energy. That analysis will be determined by the results of conductivity testing that was conducted June 10 – June 12, 2020. Results of that testing are pending. As noted, to the extent the results of this geothermal well testing lead to material design changes to the project prior to the taking of any State Agency Action, the Proponent should consult with the MEPA office to determine the need for any additional MEPA review.

Alternatives Analysis

The alternative analysis for the CSI building has not changed since the NPC/DEIR. Alternative 1 would construct the CSI building north of the existing Edwards Laboratory in the area currently occupied by two modular trailers. This alternative was dismissed because it was proximate to LSCSF which would require a taller building height, increase its vulnerability to coastal storms and sea level rise, and prevent efficiencies of adjacency associated with the Preferred Alternative's location on top of the Murphy Bunker. Additionally, this alternative would not allow for the development of a geothermal well system. Alternative 2 would construct the CSI building southwest of the Murphy Bunker, connected at the south entry port. Alternative 3 would construct the CSI building east of the Murphy Bunker in the meadow adjacent to Lodge Park. Similarly, these alternatives were dismissed because of the flooding risks associated with siting the building in a low-lying area, efficiencies of adjacency and inability to develop a geothermal well system.

The Preferred Alternative was selected because, according to the Proponent, it best meets program design goals and minimizes the amount of new construction required by making use of available underutilized space within the Murphy Bunker; places the CSI outside areas subject to flooding and future sea level rise; it allows for the incorporation of geothermal heating and cooling to reduce greenhouse gas emissions; and it will allow for habitat restoration in the East Point meadow to remove invasive species. The project will not affect access to Lodge Park.

⁸ An e-mail was sent to the MEPA Office on March 18, 2020 which indicated that shallow bedrock was discovered during geotechnical work for the geothermal well and additional borings were required.

As discussed below, the FEIR indicated that the key alternative (Alternative 1) that would involve less new land alteration (2.27 acres) was ultimately dismissed based not only on the efficiencies and reduced impacts associated with expanding an existing building rather than constructing a standalone building, but also on the increased flooding risks associated with Alternative 1, as compared to the Preferred Alternative.

The FEIR provided additional discussion of the Preferred Alternative's efficiencies of adjacency associated with its location on top of the Murphy Bunker. As described in the FEIR, physically connecting the new CSI building with the Murphy Bunker offers numerous space and operational efficiencies including the utilization of existing loading, receiving, entry and lobby spaces that serve the Bunker today which would need to be duplicated with a standalone alternative. The existing HVAC systems supporting the Bunker have capacity to support the additional renovated program space within the Bunker. By utilizing these existing systems, reductions of enclosed mechanical spaces within the new building can be realized. In total, these efficiencies result in a nearly 5,500 gross square foot reduction of new construction over a standalone alternative. Additionally, the Preferred Alternative allows the seawater piping to be replaced in the same location as it exists today, thus limiting areas of new impact.

While the Proponent maintains that there is no plan to fortify Canoe Beach immediately, the FEIR identified several alternatives that were considered to increase the resiliency of Canoe Beach which is located adjacent to the project site's entrance. In 2018, the Proponent received a CZM Coastal Resilience grant to design a mixed sediment dune and beach nourishment project to address the significant erosion and storm damage occurring along Canoe Beach to provide protection for infrastructure landward of the beach. That project sought a design to address the loss of sediment and reduction of volume from the upper beach profile that limits the ability of the beach system to function well to dissipate storm energy and minimize storm damage to Nahant Road, the MSC facilities, and the utilities that run beneath it. Alternatives to address the loss of sediment included a No-action Alternative which would leave the beach in its current condition and allow it to evolve without any stabilization or erosion control measures; a Seawall Extension Alternative which would extend the existing vertical seawall eastward along the edge of Nahant Road until it connects with the stacked stone wall at the eastern end of Canoe Beach; a Sand Nourishment Alternative which would add sand along the upper beach profile with a sand nourishment program; and a Mixed Sediment Nourishment which would add a mixture of sand, gravel, and cobble along the beach.

As described in the FEIR, the No-action Alternative is likely not a viable long-term solution as erosion is expected to continue to occur and eventually lead to damage of the seawall and Nahant Road. While the exact timeframe is unknown, such damage could occur in under ten years. The Seawall Extension Alternative has a number of drawbacks. Wave reflection would be expected to increase as a result of the seawall, which could in turn lead to a further lowering of the upper beach/dune. Reductions in beach height would increase the potential for overtopping and increased storm damage. This alternative may also face permitting challenges because it is a hard structure. The Sand Nourishment Alternative would provide a very low level of shore protection and is likely to be washed away in a significant storm. The Proponent attempted a similar project in the fall of 2016, which was unsuccessful. It was washed away in January 2017

by the first storm following its implementation. The Mixed Sediment Nourishment Alternative represents a reasonable option to restore and provide some level of nature based coastal protection. According to the Proponent, this alternatives analysis demonstrates that efforts to fortify Canoe Beach would be difficult and most likely would lead to the use of nature-based solutions that, while less environmentally impactful than hard structures, may not provide the level of flood protection that would be needed protect the campus. In light of these factors, the Proponent continues to dismiss Alternative 1 as a viable alternative because of its proximity to the floodplain and lower elevation, which would subject any new buildings sited in this low-lying area to flooding risks.

The FEIR also considered several alternatives which would relocate the site's entrance away from Canoe Beach, making it less vulnerable to flooding and wave overtopping. Alternative access drive locations were considered off of Swallow Cave Road. The Proponent has considered the potential to relocate the entrance drive by moving it southward. One possible alternative would make a connection from Swallow Cave Road due east, passing immediately north of the Edwards Laboratory, to connect with the current access drive through the site. This option would require relocating the two trailers currently located adjacent to the Edwards Laboratory. A second alternative would move the connection further south on Swallow Cave Road, just past its intersection with Vernon Street. The new entrance drive would pass south of the Edwards Laboratory in the vicinity of Bathing Beach to reach the driveway leading to Lodge Park. The Proponent does not plan to relocate the roadway at this time. While relocation is feasible, the Proponent indicated that conversations with abutters⁹ revealed residents were not in favor of relocating the access way closer to the residential neighborhood and wish to limit traffic impacts on the residential Swallow Cave Road. The Proponent recognizes that leaving the roadway in its existing location will lead to access issues during storms. However, the FEIR notes that the entire Town faces similar concerns due to the potential for flooding at the Nahant Rotary in Lynn and the potential for the causeway to be closed due either directly to flooding or due to debris being deposited in the roadway by wave action. Additional resiliency analysis is provided below.

Land Alteration

As described in the FEIR, land alteration impacts have not changed since the DEIR. The project will result in approximately 0.8 acres (34,905 sf) of new building footprint; a reduction of internal roadways by 0.08 acres (3,657 sf); and an increase in parking and other paved areas by 43,435 sf (0.99 acres). This results in a total of 1.71 acres of new impervious surface. Additionally, the project will result in the new alteration of 2.39 acres (104,194 sf) for a total of 4.1 acres of new land alteration, which is below MEPA review thresholds for land impacts. As described in the FEIR, "other altered areas" includes all other altered pervious areas such as landscaped areas, mowed paths, mowed lawns, and the geothermal wellfield area. The FEIR included site plans that clearly identified and delineated areas proposed for development and those that will not be altered or disturbed, including areas for the geothermal wellfield.

The FEIR also provided an update on pending litigation regarding the status of the project site under article 97 of the amendments to the state constitution. As noted above, to the extent

⁹ E-mail from the Proponent to MEPA Office on 6/16/2020 clarified that the statement in the FEIR indicating that this alternative was not supported locally based on conversations with abutters early in the project design.

this litigation results in material changes to the project—such as a need for article 97 legislation and compliance with EEA’s Land Disposition Policy—the Proponent is directed to consult with the MEPA Office about the need for any additional MEPA review.

As directed by the Scope in the DEIR, the FEIR evaluated additional measures to reduce land alteration and creation of impervious area. While the Proponent asserts that reducing the building and development size would be inconsistent with project goals, it indicates that all roadways and parking will be compliant with Nahant zoning requirements. The Proponent will work with the Town to further reduce parking. Pervious pavement will be incorporated where possible. I encourage the Proponent to consider all available means to reduce impervious surfaces on site and consider ecosystem-based adaptation measures to reduce heat island effect and mitigate stormwater runoff, such as integration of tree canopy cover, rain gardens, and low impact development (LID) stormwater management techniques.

The DEIR requested that the Proponent consider placing a conservation restriction (CR) on a portion(s) of the site designated as open space, including areas containing wetlands, to ensure their permanent protection. The Proponent has declined to consider this proposal. Placement of a CR to permanently protect open space is a widely accepted land conservation measure and would be a beneficial way to offset the land and vegetation clearing associated with siting the campus expansion at the Murphy Bunker location. I strongly encourage the Proponent to continue to consider this mitigation option.

The FEIR included conceptual plans that identify proposed areas of cut and fill. As described in the FEIR, approximately 8,300 cy of soil material will be cut and reused on site for grading. The FEIR provided details on the proposed vegetation restoration plan, including proposed invasive species best management practices (BMPs), and described how vegetation restoration will be implemented, including vegetation types. All invasive species along with any soil material that may contain roots, propagules, and/or seed stock shall be removed/excavated via manual and mechanical control, bagged as necessary, and brought to an approved facility for proper disposal. Removal of invasive vegetative material is preferred during the dormant season (e.g., November – March) to minimize the potential for the spread of invasive species through seed dispersal.

The FEIR included figures depicting the proposed planting plan and for areas surrounding the proposed building, parking lots, and bioretention basins. The proposed native species east of the Murphy Bunker will restore and/or enhance natural communities at East Point, including Maritime Shrubland and Grassland/Meadow habitat. Selected tree species will serve to diversify the limited existing native species and provide screening for the proposed new building. Areas surrounding the building will be planted with the selected tree and shrub species, along with groundcover species. Native Grassland/Meadow will be re-established within the Limit of Work east of the building (“East Meadow”), including the geothermal well area and construction access/staging areas will result in temporary disturbance). The planting plan identifies the following species: Trees: Red Maple (*Acer rubrum*), Shagbark Hickory (*Carya ovata*), American Holly (*Ilex opaca*), Eastern Red Cedar (*Juniperus virginiana*), Tamarack (*Larix laricina*), Tupelo (*Nyssa sylvatica*), Pitch Pine (*Pinus rigida*), Black Cherry (*Prunus*

serotina), White Oak (*Quercus alba*), Red Oak (*Quercus rubra*), Scrub Oak (*Quercus ilicifolia*), Sassafras (*Sassafras albidum*), and American Elm (*Ulmus americana*).

The FEIR also included an adaptive monitoring plan to prevent re-establishment of invasive species and ensure long-term effectiveness of the native species restoration. The management plan includes monitoring following the first month of planting; and at the beginning and end of the first and second full growing seasons to observe vegetation, propagation, and development. Long-term manual, mechanical, and/or chemical control BMP's will be implemented as feasible to manage any encroaching invasive species and ensure the successful establishment of native species.

Wetlands and Waterways

The installation of the new seawater system will permanently impact 2,038 sf of overlapping LUO and LCSF. Removal of the remnant system will temporarily impact approximately 175 sf of LUO and LCSF. The project will result in a total of 23,759 sf of LSCSF of which 6,667 sf will be permanent impacts associated with the construction of the parking for the CSI and 17,092 sf will be temporary impacts¹⁰ associated with construction, landscaping, roadway and utility work, and installation of the seawater intake system. The FEIR indicates that the changes to the project since the NPC/DEIR, including proposed utility relocation, will increase impacts to Coastal Bank Buffer Zone from 23,164 sf to 23,925 sf¹¹ and increase impacts to BVW buffer zone from 15,381 sf to 15,724 sf.¹² The Nahant Conservation Commission will review the project for its consistency with the Wetlands Protection Act (WPA), associated regulations (310 CMR 14.00) and local wetlands bylaws. The seawater intake system will require a c.91 License because it partially located within flowed tidelands. MassDEP will review the project for its consistency with the Waterways Regulations. Comments received on the FEIR indicate that the project appears to be a water dependent use pursuant to 310 CMR 9.12(2)(a)(5).

The FEIR included an updated *Best Practices for Seawater Use* document and noted additional consultation with the Marine Invasive Species Program (MISP). The FEIR indicated that the Proponent has worked with MISP to further refine language regarding species allowed in the flow through system and annual MISP consultation. The FEIR indicated that the proposed seawater system will include a controls system which will verify flow rates in real time once the system is operational. The FEIR clarified that the proposed seawater system includes two 1,200 gpm pumps (total capacity of 2,400 gpm). However, only one will be in operation at any given time. Additionally, the Proponent is committing to operate the system at no more than 600 gpm including once the CSI is operational.

Comments from MLA and other local fisherman and lobstermen express concerns with the increase in operation of the seawater intake system. As described in MassDEP's comment letter, EPA/MassDEP recommends a standard intake velocity no greater than 0.5 feet per second (fps) to ensure that the majority of aquatic organisms can avoid becoming trapped against intake

¹⁰ Of this total, 2,443 sf of impact will occur on Town owned land to allow for utility work in Nahant Road. E-mail from Proponent dated 06/19/2020 corrected an error in the FEIR which stated that 7,290 sf of these impacts would include work in on Town owned land.

¹¹ Of this total, 1,782 sf of impact will occur on Town owned land to allow for utility work in Nahant Road. E-mail to the MEPA Office dated 06/19/202 corrected an error in table 4.1 of the FEIR which indicated 2,228 sf of impacts to Town owned land.

¹² The FEIR identified wetlands impacts (including buffer zone) in table 4.1 of the FEIR. An e-mail to the MEPA Office on 06/16/2020 confirmed these changes included proposed utility work.

screens. The intake velocity has been calculated at 0.011 fps, well below the 0.5 fps standard. Northeastern has indicated in the FEIR that this intake velocities will be verified once the system is operational. As described in MassDEP's comment letter, MassDEP and EPA will work with Northeastern to ensure that the velocity verification method is acceptable.

As described in MassDEP's comment letter, MassDEP and EPA reviewed the FEIR, the operation of the facility, available sampling data, and the Seawater Advisory Committee's Best Practices for Seawater Use. Review of available sampling data suggests that the quality of the seawater discharge is substantially similar to the intake water. Based on this information, the Agencies' preliminary assessment is that the proposed intake and discharge will not be adding pollutants (such as chlorine, medications, heat, or nutrients) to the receiving water and would not, on a case-by-case basis, be a significant contributor of pollutants. The available information also indicates that the temperature of the discharge is consistent with water quality standards and will be protective of the designated uses of the receiving water. These assessments remain valid provided the levels of biomass held at the facility remain under the threshold defined in the Concentrated Aquatic Animal Production (CAAP) Facilities regulations (314 CMR 3.16, Appendix A and 40 C.F.R. § 122.24, and 40 C.F.R. Part 122, Appendix C), the facility continues to operate as described in the FEIR, and the proposed intake and discharge are built as described in FEIR. This includes the volume of intake and the prohibition on use of medications or chemicals, and the commitment to isolate non-indigenous species from the flow-through system.

The FEIR indicates that the proposed lobster hatchery design cannot proceed without collaboration with local lobstermen. Once the Proponent has greater clarity on the potential of this collaboration and the goals of local lobstermen, MSC personnel and the design team will consult with DMF officials on the hatchery design.

The FEIR did not quantify impacts associated with alternatives to fortify Canoe Beach which will likely be required within the next ten years. If the Proponent intends to move forward with this component of the project, additional MEPA review will likely be required in the form of an NPC or ENF.

Historic and Cultural Resources

The project site is located within and adjacent to historic and archaeological resources identified in MHC's Inventory and/or the State and/or National Registers of Historic Places. The project is subject to review by the MHC acting as State Historic Preservation Office (SHPO) in accordance with Section 106 of the NHPA (as amended) and MGL c. 9 § 26-27C (950 CMR 70-71). The scope and purpose of this review process is focused on preserving historic and archaeological resources.

Comments received by MHC identify concerns related to potential project impacts to historic and archaeological resources associated with the former East Point Military Coastal Defense site during World Wars I and II and the Cold War, as well as earlier historic period and Native American archaeological resources. The proposed new CSI structure will include partial demolition of the Battery Murphy bunker and burial of significant portions of the Murphy (South) and North Bunkers. The MHC has previously determined that the proposed CSI project will have an "adverse effect" on the No1th and South (Murphy) Batteries through the physical

destruction and alteration of parts of historic properties that are included in MHC's Inventory (950 CMR 71.05(a)) The Proponent is currently undertaking intensive (locational) archaeological surveys and will provide the results to MHC upon completion. Comments from MHC indicate that the results of the surveys will be used to avoid, minimize, or mitigate adverse effects to significant historic and archeological resources through the consultation process.

Because the Proponent has submitted the FEIR prior to the completion of the archaeological surveys, additional project design changes may be required to avoid, minimize and mitigate impacts to archaeological resources. The Proponent should consult with the MEPA office if the results of the archeological survey require material project design modifications such that additional MEPA review may be required prior to the taking of Agency Action.

Climate Change

Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569; the Order) was issued on September 16, 2016. EO 569 recognizes the serious threat presented by climate change and directs Executive Branch agencies within the administration 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 GHG emissions reduction limits goals 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. The MEPA statute directs all State Agencies to consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and associated effects, when issuing permits, licenses and other administrative approvals and decisions. M.G.L. c. 30, § 61.

The Scope on the NPC/DEIR requested a response to DOER's comments, including clarifications and details on the proposed geothermal system and required additional analysis on measures to increase the resiliency of the project site, including Canoe Beach and the site's access and egress.

Greenhouse Gas Emissions

The geothermal heat pump system proposed for the CSI building exchanges energy with the earth by circulating water or other solution through pipes buried beneath the earth's surface (geothermal wellfield). A vertical closed loop geothermal wellfield, such as the one proposed for this project, typically consists of multiple vertical heat exchangers (VHEs). VHEs are constructed by drilling holes generally ranging from 50 to 400 feet deep in the earth and then inserting two pipes with a fitting joining the two pipe ends at the bottom. During colder periods, the solution circulating through the system's vertical wellfield absorbs stored heat from the ground and carries it indoors. The geothermal heat pump transfers the heat from the wellfield and distributes it throughout the building. During warmer months, the geothermal heat pump system takes heat from the building and transfers it to the VHEs, which deposits the heat into the ground.

As described above, the proposed geothermal wellfield for the CSI will consist of approximately 80 wells in total that are spaced approximately 25 feet (ft) apart. The wells will be

arranged along seven parallel lines that are generally oriented north-south and will be connected to the CSI via a central pipe.

A propane boiler will be utilized to balance (charge) the geothermal system. It is anticipated that the boiler will be utilized to balance the system for approximately 24 to 48 months. The actual duration of boiler use will be determined as the building's load profile is developed and geothermal modeling is advanced. The FEIR notes that the use of the propane boiler for geothermal balancing could exceed 48 months if process heating loads exceed the design team's current estimates. Comments from DOER recommend that the Proponent terminate the use of the propane boiler at the earliest feasible date within 48 months.

The FEIR indicates that because the Proponent would like to minimize the visual impact of the project ground mounted solar photovoltaic (PV) and/or canopy mounted solar arrays are not currently proposed. However, 60% of the CSI rooftop will be solar ready.

In summary, GHG emissions from the Base Case are calculated to be 954 tons per year (tpy) compared to the mitigation case which will generate 449 tpy (505 tpy or 52 percent reduction). DOER indicates that actual baseline emissions (compliant with the building code) are closer to 856 tpy and the mitigation case emissions are 466 tpy (390 tpy or 46 percent reduction). Comments from DOER indicate that the project's planned 46% reduction in emissions will become more significant in 2050 as a result of Massachusetts' improving electric grid emissions rates. By the year 2050, the ground source geothermal could achieve a mitigation level of 76% compared to a natural gas-heated baseline building because it is powered by electricity.

Measures which will result in significant GHG emissions include:

- Efficient electric space heating and cooling: A ground source geothermal heat pump system will be utilized for both heating and cooling the CSI building.
- Efficient envelope: Aggregate vertical area weighted U value: 0.145. (Vertical assembly consisting of 44% framed, insulated wall having R-24c.i. and 56% window having U-0.25);
- Solar readiness: 60% of the rooftop will be solar PV ready;
- Heat recovery ventilation decoupled from the space conditioning system.

According to the Proponent, the significant GHG benefits associated with the use of geothermal wells weighs heavily in favor of locating the Preferred Alternative above the Murphy Bunker.

Adaptation and Resiliency

The Scope in the NPC/DEIR requested that the FEIR address vulnerabilities of the project site at Canoe Beach which offers minimal protection against hazards associated with storm induced wave action. The MSC campus entrance roadway and utilities which run beneath it are located within a VE Zone directly adjacent to Canoe Beach and are subject to over wash and erosion during coastal storm events. This roadway provides the sole means of access/egress to the site and is vulnerable to flooding, which could prevent emergency and vehicular access to

the site. The Scope requested that the Proponent assess the feasibility of climate resiliency measures together with continued consideration of alternative site locations near the Canoe Beach location.

The FEIR identified sea level rise projections by the National Ocean and Atmospheric Administration (NOAA) published in 2017.¹³ To assess the potential risk to the project due to sea level rise, the Proponent elected the intermediate-high GHG emissions scenarios as a conservative, i.e., more severe, scenario predictions. Under the intermediate-high rates of GHG emissions pathways, projected sea level rise would be approximately 31.1 inches (2.59 ft) in 2070. The FEIR indicates that these projections would affect low-lying areas of the campus between Canoe Beach and Bathing Beach. The FEIR described the impacted areas as the proposed parking area and landscaping immediately east of the Edwards building and the wetland area to the south of the Edwards building. The FEIR did not quantify this area or support the analysis with any figures which overlay the future conditions over the project site or work area. The analysis did not include storm surge elevations. These additional analyses should be incorporated into future resiliency planning, along with the most updated climate change predictions for coastal areas. The FEIR maintains that flooding, at a minimum, would not affect the proposed CSI building itself which is proposed outside the floodplain. The proposed CSI basement floor elevation is at EL. 24' with critical infrastructure at EL. 33', which are above currently projected flood levels even when considering 2.59 ft of SLR by 2070. As discussed above, the Proponent's analysis suggests that resiliency measures at Canoe Beach, even if cost effective, would likely not be sufficient to ensure smooth and continuous campus operations at an alternative location near the Edwards Laboratory, given the high risk of flooding in that low-lying area.

As described above, the Proponent has altered plans for the Project to include the relocation of the water and electric lines out of the roadway although the gravity sewer line will remain adjacent to Canoe Beach; it will be encased in concrete to increase resilience. As described in the FEIR, the Proponent will continue to monitor conditions at Canoe Beach carefully and will undertake a plan to provide shore protection as it becomes necessary to protect Nahant Road and the MSC property. The FEIR maintains that such a project is not necessary for the CSI building, which will be well protected from coastal flooding, or the seawater system upgrade which draws and discharges seawater from the opposite side of the Island.

Comments from CZM note that because the velocity flood elevation at the location of the roadway is mapped at 18 feet NAVD88, and the elevation of the road is approximately 15 feet, the FEMA flood maps predict that there would be approximately 3 feet of water and waves during the 100-year storm under current conditions. As noted in the study conducted for CZM's Coastal Resiliency Grant Project, the volume of sediment at Canoe Beach is depleted such that minor to moderate storms have caused overwash onto and undermining of Nahant Road in the past. Because predicted sea level rise and more significant and frequent coastal storms could jeopardize the sewer line over time, a more detailed vulnerability analysis that includes an eroded profile assessment should be conducted to determine whether the projected lifespan of the sewer line in this location meets the goals of the project and minimizes potential impacts to the adjacent coastal resource areas. For critical infrastructure such as sewer lines, it is important to

¹³https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf

use the best available information to determine the potential hazards that may impact the project components for the life of the infrastructure. In addition to using the most recent FIRMs and data available from the FEMA Map Service Center, consulting the Sea, Lake, and Overland Surge from Hurricanes (SLOSH)¹⁴ maps produced by the ACOE to determine areas that may be inundated by hurricanes, as well as the most recent information regarding projections of sea level rise for Massachusetts available through the Massachusetts Climate Change Clearinghouse website, resilientma.org is recommended.

As described in CZM's comment letter, given the vulnerability of the road to moderate and major coastal storms discussed above, the Proponent should reconsider the feasibility of moving the sewer line out of the velocity zone in the future and consider moving forward with the mixed sediment nourishment at Canoe Beach in the short term to reduce impacts from coastal storms to the site.

Construction Period Impacts

The FEIR included a draft construction management plan (CMP). As described in the CMP, the construction period is expected to last approximately 24-27 months, including time required for design, permitting, procurement and construction. The typical construction work hours will be 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 4:30 p.m. Some activities such as finishing activities could run beyond 6:00 p.m. to ensure the structural integrity of the finished product, for example concrete pours. No substantial sound-generating activity will occur before 7:00 a.m.

Drilling will be required for the geothermal well, but no blasting will be required. The contractor will comply with the requirements of the National Pollution Discharge Elimination System (NPDES) permit once issued and conform to the regulations and requirements of MassDEP, the Town of Nahant, and the U.S. Environmental Protection Agency (EPA) for the quantity and quality of water discharged to the storm drain system during drilling. Geotechnical monitoring will be implemented at the Site and at the surrounding properties. Ground vibration levels will be measured at the Site and adjacent facilities. The actual location of the monitors will be dependent on the Contractor's work areas, and locations may shift based on site observations throughout construction. The monitors will be capable of recording data continuously and will be deployed through the duration of vibration generating activities.

Environmental monitoring will be implemented during construction. The program will include air and dust monitoring, and provide action levels which, if exceeded, will trigger mitigation of dust, vapor migration and/or odors. Air monitoring stations will be equipped with real-time dust monitors and photoionization detectors (PID) to monitor the level of total volatile organic compounds (VOCs) in ambient air.

The contractor will develop and submit a Project-specific Stormwater Pollution Prevention Plan (SWPPP) for the Project prior to starting construction in the field. The SWPPP plan will be submitted for approval to MassDEP. The onsite Sitework Subcontractor will be

¹⁴<http://memamaps.maps.arcgis.com/home/webmap/templates/OnePane/basicviewer/embed.html?webmap=45e2419bf23e40eca0b94a9bfe815fbf&gcsextent=-72.5308,41.7353,-69.2926,42.9091&displayslider=true&displayscalebar=true&displaylegend=true&displaysearch=true&searchextent=true&displaybasemaps=true>

responsible for maintaining compliance with the SWPPP, including all requirements in the CGP and will maintain erosion and sediment control Best Management Practices (BMPs) in all areas of the site under its day-to-day control. As described in the FEIR, BMPs will be implemented to reduce the potential for spread of invasive species during construction, including, but not limited to: contractor education; clean vehicles and equipment entering project site; installation of washing station for equipment and personnel conducting invasive species management; and use of clean, weed-free soil supplements, etc.

All construction traffic, including deliveries, will be routed via the roundabout in Lynn and will follow Nahant Road directly to the Project site. No traffic will be allowed to traverse the residential streets off of Nahant Road. All construction personnel will be made aware of the posted speed limit along the Nahant Road. Deliveries will be scheduled to avoid peak morning and evening hours to minimize the impact on local traffic. Delivery of any oversize load will be coordinated via the Town Manager and Nahant Police Department.

The contractor will use an off-site parking lot located in Lynn and construction workers will be shuttled to the Site to minimize traffic impacts on Nahant. The contractor will use one to two shuttles making trips in the morning and afternoon depending on the number of construction workers on site for the duration of the construction period. The projected peak manpower for construction is approximately 100 to 125 workers.

Mitigation and Draft Section 61 Findings

The FEIR identifies measures to avoid, minimize and mitigate Damage to the Environment and includes draft Section 61 Findings. The Section 61 Findings include a commitment to provide a GHG self-certification. Following completion of construction of the project, the Town or future tenant must provide a certification to the MEPA Office signed by an appropriate professional (e.g., engineer, architect, transportation planner, general contractor) indicating that all of the mitigation measures proposed in the FEIR have been incorporated into the buildings. Alternatively, the Town or future tenant may certify that equivalent emissions reduction measures have been adopted that collectively are designed to reduce GHG emissions by the same percentage and volumetric measure (tpy) as the measures outlined in the FEIR and based on the same modeling assumptions. The certification should be supported by plans that clearly illustrate where GHG mitigation measures have been incorporated. Any material reduction in mitigation commitments will result in the need to file a Notice of Project Change.

The current mitigation commitments and Section 61 Findings submitted by the Proponent are as follows:

Transportation

- To reduce project related trips and required parking, the Proponent will continue to provide remote shuttle service for employees and students from its Boston campus.

Land Alteration

- The Proponent will continue to incorporate the use of pervious pavement and reinforced grass parking pavers in low traffic areas to further reduce stormwater runoff.

- The Proponent will seek means to further reduce parking, in accordance with local approvals, including land banking parking areas until such time as there is documented demand.
- The Proponent will implement a habitat restoration plan to remove invasive species and enhance ecological functioning to the area east of the Murphy Bunker including a monitoring plan.

Wetlands and Stormwater

- The Project includes the installation of a stormwater management system that will comply with MassDEP's Stormwater Management Guidelines.
- The Proponent will submit a NOI to the Nahant Conservation Commission for work within wetland resource areas as required.

Seawater Intake System

- Intake and discharge pipes will be directionally drilled under the seawall and beach and will emerge just seaward of mean low water to minimize disturbance to Bathing Beach and seawall.
- The intake pipes are designed to prevent entrainment of aquatic organisms. The intake velocity at the mesh screen has been calculated to be 0.011 feet per sec (fps) which is 45 times slower than the maximum allowable intake velocity of 0.5 fps. These velocities will be verified by MassDEP/EPA once the system is operational.
- The existing seawater system components will be removed.
- The Proponent will conduct additional temperature sampling and CORMIX model runs once the new system is operational. Results of the modeling will be submitted to MassDEP/EPA for verification.
- As mitigation to offset the potential loss of five mature lobsters per year attributable to the new seawater system, NU proposes to construct an onsite lobster hatchery to produce approximately 90,000 Stage IV larvae per year in coordination with DMF and local fishermen. The larvae will be released in Bathing Beach Cove or in nearby Nahant waters as recommended by lobstermen that are willing to collaborate on this effort and will result in the addition of an estimated 45 market sized lobsters per year.

Historical Resources

- Historical and archaeological impacts will be avoided, minimized and mitigated in consultation with MHC.

GHG Emissions

- Efficient electric space heating and cooling: A ground source geothermal heat pump system will be utilized for both heating and cooling the CSI building.
- The lighting system will use all LED fixtures to achieve a low lighting power density (LPD), estimated at 25% lower than ASHRAE 90.1-2013 allowances.
- Efficient envelope: Aggregate vertical area weighted U value: 0.145. (Vertical assembly consisting of 44% framed, insulated wall having R-24c.i. and 56% window having U-0.25);
- Solar readiness: 60% of the rooftop will be solar PV ready;
- The CSI building will include heat recovery ventilation decoupled from the space conditioning system.

Adaptation and Resiliency

- Water and electric lines will be relocated away from the Canoe Beach area.
- The sewer main will be encased in cement to increase resiliency.
- The CSI Building will be situated outside of the flood plain and future flood plain based on 2070 SLR projections.

Construction Period

- The University will maintain the public easement to Lodge Park during the construction period. During temporary interruptions during construction, persons seeking to go to Lodge Park will be rerouted along the driveway in front of the Edwards Laboratory. Appropriate signage will be posted at the entrance to the site and along the path to direct pedestrian and vehicle traffic. The Proponent will notify the Town Manager well in advance of the dates and expected duration of any disruption so that they can be posted on the Town's Website.
- The contractor will be required to manage the water from drilling activities in accordance with a NPDES Remediation General Permit (RGP) issued for construction.
- The contractor will implement measures to minimize air quality impacts during the construction period including using equipment retrofitted with diesel emissions control devices; maintaining an "idle free" work zone of fossil fuel trucks and equipment by Efficient electric space heating and cooling; Ground source "geothermal" heat pump for both heating and cooling providing supplemental hoisting and pumping equipment along with "just-in-time" delivery methods; on-site idling will be limited to five minutes; "Do Not Idle" signs will be posted at appropriate locations; using ultra low sulfur diesel for all trucks and construction machinery as required by the EPA; using wetting agents as needed to minimize dust; locating combustion engines away from sensitive receptors such as fresh air intakes, air conditioners and windows.
- The contractor will monitor and track materials being recycled and disposed of to achieve 75 percent recycled materials by weight. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract.
- The contractor will develop and submit for approval to MassDEP a Project-specific Stormwater Pollution Specific Prevention Plan (SWPPP) for the Project prior to starting construction in the field. The onsite Sitework Subcontractor will be responsible for maintaining compliance with the SWPPP, including all requirements in the Construction General Permit (CGP) and will maintain erosion and sediment control Best Management Practices (BMPs) in all areas of the Site under its day-to-day control.

Conclusion

Based on a review of the FEIR, comments letters, and consultation with State Agencies, I find that the FEIR adequately and properly complies with MEPA and its implementing regulations. As noted above, the Proponent is directed to consult with the MEPA Office if

material changes to the project are made prior to the taking of Agency Action such that additional MEPA review may be needed. Outstanding issues can now be addressed during State

and local permitting and review. State Agencies should forward copies of the final Section 61 Findings to the MEPA Office for publication in accordance with 301 CMR 11.12.

June 19, 2020

Date

K. Theoharides

Kathleen A. Theoharides

Comments Received:	4/22/2020	Margaret Goetschkes
	4/22/2020	Erin DiLisio (2)
3/18/2020 James Dolan	4/22/2020	Mary Lou Kaufman
4/7/2020 Anne Bromer	4/22/2020	Donna Cooper
4/9/2020 Town of Nahant	4/22/2020	Paul E Kinnaly
4/10/2020 Fred Fiducia	4/22/2020	Dan Fiore
4/13/2020 Cynthia Fiducia (2)	4/22/2020	Chris Martone
4/15/2020 Anne Bromer	4/22/2020	Nancy Given
4/15/2020 Peter Foukal	4/22/2020	Jill Mathieu
4/15/2020 Vi Patek	4/22/2020	Leslie Kramer
4/16/2020 Massachusetts Lobstermen's Association (MLA)	4/22/2020	Heidi Harding
4/16/2020 Christoph Wald Tanya Blaich	4/22/2020	Fred Bouchard
4/16/2020 Claire Flebbe	4/22/2020	Becky Briesacher
4/17/2020 Brookline Bird Club	4/22/2020	Nahant Historical Society
4/18/2020 Patricia and Dave Aldrich	4/22/2020	Shilo McDonald
4/18/2020 Nahant SWIM	4/22/2020	Greg Dysart
4/19/2020 William Mahoney	4/22/2020	Ray Orfan
4/19/2020 Judy Walsh	4/22/2020	Robert A Parker
4/20/2020 William Mahoney	4/23/2020	Jonathan Glover
4/20/2020 Nahant Fishermen's Alliance	4/23/2020	Debra Kriensky
4/20/2020 Brendan Mahoney	4/23/2020	Amy Lummen
4/20/2020 Ryan Mahoney	4/24/2020	Joanne O'Brien
4/20/2020 Marilyn Mahoney	4/26/2020	John Nelson Chair, Association of Massachusetts Bird Clubs
4/20/2020 Division of Marine Fisheries (DMF)	4/28/2020	Jeffrey Flebbe
4/21/2020 Charles H Patterson	4/28/2020	Carl and Linda Jenkins
4/21/2020 William Mahoney (2)	5/29/2020	Stephen O'Leary
4/21/2020 Madeline Piccolo	5/31/2020	Timothy Smith
4/21/2020 Robin M Joyce	6/1/2020	Ellen Antrim (4)
4/21/2020 Linda Ferraresso	6/2/2020	Margaret Hinrichs
4/21/2020 Christian Bauta	6/3/2020	Elizabeth Berman (2)
4/21/2020 Richard R Veit	6/4/2020	Nahant Open Space Committee
4/21/2020 Christian Gras	6/5/2020	Esther Johnson
4/21/2020 Mark Patek	6/6/2020	Katharina Radlberger
4/21/2020 Lurie Friedman LLP	6/6/2020	Elizabeth Berman (5)
4/21/2020 Glenn Williams	6/7/2020	John, Katy and Susan Dolhun
4/22/2020 Andrew Fowlie	6/7/2020	Ellen Dickenson
	6/8/2020	Claus Radlberger

6/8/2020	Chett Hopkins	6/12/2020	Town of Nahant
6/8/2020	Gerard Dalpe	6/12/2020	Susan Solomon
6/8/2020	Cynthia Dalpe	6/12/2020	Brendan Mahoney
6/8/2020	Dr Katie Lotterhos	6/12/2020	Ann T McNulty
6/8/2020	Edith Roland	6/12/2020	Marie Pasinski (2)
6/8/2020	Dennis M Maroney	6/12/2020	Nahant Preservation Committee
6/8/2020	Ruthie Merrell	6/12/2020	Lynne Spencer
6/9/2020	Linda Pivacek (5)	6/12/2020	Austin Antrim
6/9/2020	Margaret Silva	6/12/2020	Robert Vanderslice
6/9/2020	Robert A Silva	6/12/2020	Diane Dunfee
6/9/2020	Rebekah Richardson	6/12/2020	Nahant Preservation Trust
6/9/2020	Amy Lowell	6/12/2020	Michael Rauworth
6/9/2020	Mary Dickenson	6/12/2020	Susan Tracy
6/9/2020	John Mackey	6/12/2020	Marilyn Mahoney
6/9/2020	Joseph E Mellen	6/12/2020	Joshua Antrim (2)
6/10/2020	Nancy O'Brien	6/12/2020	Deborah Vanderslice (9)
6/10/2020	Bonnie D'Orlando	6/12/2020	Marny von Aschwege
6/10/2020	Elizabeth Stubbs (11)	6/12/2020	Tess Bauta
6/10/2020	Janet and James Dolan	6/12/2020	Anne and Paul Spirm
6/10/2020	Winifred B Hodges	6/12/2020	Christian Bauta
6/11/2020	Office of Coastal Zone Management (CZM)	6/12/2020	Jeanne A Fiore
6/11/2020	Department of Energy Resources (DOER)	6/12/2020	Eric Pasinski
6/11/2020	Massachusetts Department of Environmental Protection (MassDEP)	6/12/2020	Karen M Falat
6/11/2020	Roger Pasinski	6/12/2020	Thomas Hambleton
6/11/2020	Patrick O'Reilly	6/12/2020	Leonard G Kavanagh
6/11/2020	Maryliz Cort	6/12/2020	Joan B Kavanaugh
6/11/2020	Williane Tomas	6/12/2020	Rick Capozzi
6/11/2020	Ron Cameron	6/12/2020	Stacey O'Brien
6/11/2020	Meaghan Welch	6/12/2020	Johnny Zimmerman-Ward
6/11/2020	Nancy Cantelmo	6/12/2020	Alice Cort
6/12/2020	Anonymous	6/14/2020	Diane Monteith
6/12/2020	Massachusetts Historical Commission (MHC)		
6/12/2020	Lurie Friedman LLP		

12 Form Letters Regarding: Rising sea level effects
13 Form Letters Regarding: Natural Resource district zoning
11 Form Letters Regarding: Parking Impact
15 Form Letters Regarding: Traffic Study
16 Form Letters Regarding: Coastal Management Plans
16 Form Letters Regarding: Geothermal Wellfield Drilling
20 Form Letters Regarding: Utility Relocation
20 Form Letters Regarding: Entrance Alterations
17 Form Letters Regarding: No Build Alternatives
22 Form Letters Regarding: Restoration of disturbed areas
20 Form Letters Regarding: Article 97 Parkland
16 Form Letters Regarding: Canoe Beach
16 Form Letters Regarding: Geothermal Wells
18 Form Letters Regarding: Town Resources
3 Form Letters Regarding: Complete Traffic Study
7 Form Letters Regarding: MHC Survey
7 Form Letters Regarding: Alternative Building Sites
5 Form Letters Regarding: Out of Scale
16 Form Letters Regarding: Concern with Site Disruption
8 Form Letters Regarding: Forty Steps Beach
21 Form Letters Regarding: Offsite and No Build Alternatives
10 Form Letters Regarding: Eastern Cottonwood Tree
4 Form Letters Regarding: Complete Archaeological Consultation