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April 20, 2021

Ms. Kristin Kent
Nahant Conservation Commission
Nahant Town Hall
334 Nahant Road
Nahant, MA 01908

RE: DEP File No. 047-0580
Northeastern University
Coastal Sustainability Institute
NOI Peer Review Responses

Dear Ms. Kent and Members of the Commission:

On behalf of Northeastern University, Nitsch Engineering and Epsilon Associates offer the following responses to comments made by the Commission's peer reviewer, EcoTec for the Coastal Sustainability Institute project at the Northeastern University Marine Science Center located at 430 Nahant Road in Nahant, MA.

We have received comments from EcoTec dated March 16, 2021, regarding the proposed Coastal Sustainability Institute project. Below, please find HMDG's comments in regular text and Nitsch Engineering's response in **bold**.

NOI Form:
The filing is relatively complete, as evidenced by the issuance by MassDEP of a file number with no technical comments. Notwithstanding, I note the following administrative issues with the NOI and recommend that the applicant amend the filing accordingly:

1. The NOI (section A) notes "more than one owner" but lists only Northeastern University;

2. Section B2 has checked that work will occur in "Inland Resource Areas" but none are checked. I believe that the only work related to Inland Resource Areas is buffer zone to Bordering Vegetated Wetland ("BVW") and Inland Bank, as detailed below;

3. Section B-3-f indicates alteration of 180 linear feet ("lf") of Coastal Bank, while the narrative states that no alteration of Coastal Bank is proposed.

4. Section C-1 does not indicate whether Estimated Habitat of Rare Wetlands Wildlife is present. The narrative indicates that none is present, and Figure 3 (undated) of the NOI shows a lack of Estimated Habitat at the site. The correct box should be checked, and a date provided for Figure 3.

5. Section C-5 (Outstanding Resource Waters) has no box checked, which should be corrected.

6. The Nahant Wetlands Bylaw Regulations require that for a joint state-local NOI, below the heading on page 1 of the NOI Form 3, the following must be added: "And Nahant Wetlands Protection Bylaw and Regulations."

RESPONSE: Refer to attached revised NOI form to address these comments.

General – Requirement to have Filed for Other Permits:
The Wetlands Protection Act (MGL c.131, s.40) states re NOI filings:
"No such notice shall be sent before all permits, variances, and approvals required by local by-law with respect to the proposed activity, which are obtainable at the time of such notice, have been obtained, except that such notice may be sent, at the option of the applicant, after the filing of an application or applications for said permits, variances, and approvals; provided, that such notice shall include any information submitted in connection with such permits, variances, and approvals which is necessary to describe the effect of the proposed activity on the environment."

The Regulations at 310 CMR 10.05(4)(e) provide additional clarification of this provision:
"The requirement under M.G.L. c. 131, § 40 to obtain or apply for all obtainable permits, variances and approvals required by local by-law with respect to the proposed activity shall mean only those which are feasible to obtain at the time the Notice of Intent is filed. Permits, variances, and approvals required by local by-law may include, among others, zoning variances, permits from boards of appeals, permits required under floodplain or wetland zoning by-laws and gravel removal permits. They do not include, among others, building permits under the State Building Code…."

I recommend that the applicant review this requirement with respect to other necessary permit filings and provide a summary to the NCC which addresses the potential need to file for other local permits.

RESPONSE: Review of local permitting requirements was conducted by Northeastern counsel and they concluded that no local permits, other than a building permit, is needed for the CSI project.

Abutter Notifications:
The NOI includes:
• a copy of the notice mailed to abutters, which provides a reasonable general description of the project, in my opinion;
• a list of abutters prepared and certified by the Nahant Assessors office on June 18, 2020. The NOI indicates that it was filed on 7/31/2020, and the NCC website notes a date of 8/3/2020 associated with the NOI (which I interpret to mean date of NOI receipt). The Regulations and Bylaw do not specify a maximum acceptable age of an abutters list. In my opinion, the approximately 6-week time period between the abutters list certification and the filing is reasonable;
• the Regulations state that "Mailing at least seven days prior to the public hearing shall constitute timely notice. The applicant shall present either the certified mail receipts or certificate of mailing receipts for all Abutters at the beginning of the public hearing. The presentation of the receipts for all abutters required to be notified as identified on the tax list shall constitute compliance with Abutter notification requirements." The NCC should verify that documentation of mailing has been provided; and
• The Bylaw requires an affidavit of abutter service. The NOI includes such an affidavit, however the copy on the NCC website is unsigned. If a signed affidavit has not been provided, the applicant should do so.

RESPONSE: A copy of the certified mailings (green cards and receipts) and the legal notice advertisements were emailed to the Nahant Conservation Commission on January 20, 2021 prior to the start of the initial meeting for the project.

Filing Fees:
The NOI includes documentation of filing fees under the WPA and Bylaw, based upon the following fee categories:

Category	# of Items	WPA unit fee	WPA total fee	Bylaw unit fee	Bylaw total fee
2b.) - Parking Lot	2	$500	$1,000	$250	$500
2h.) - Control Vegetation	1	$500	$500	$250	$250
3c.) - Road Construction	1	$1,050	$1,050	$525	$525
3b.) - Each Building	1	$1,050	$1,050	$525	$525
1d.) - Resource Improvement	1	$110	$110	$55	$55
1b.) - Site Work	1	$110	$110	$55	$55
Total Project Fee			$3,820		$1,910

I note that the Regulations state with respect to category 3b (commercial building) that "Any activities associated with the construction of said building, including associated site preparation… shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent. I note also that that category 1.b (site work) is for work associated with single-family home projects. The category 1.b portion of the fee appears to be unnecessary. Therefore, in my opinion, the fees paid are sufficient to cover the required NOI fees under the Regulations and the Bylaw.

RESPONSE: Comment acknowledged.

Plan Scale:
The Bylaw Regulations specify the following minimum plan scale requirements unless a waiver is requested and the Commission determines that strict adherence is not necessary:
• Profile view: Horiz: 1"=10', Vert: 1"=4' (provided: 1'=10; 1"=2' - complies);
• Plan view: 1" =10' (provided: 1"=40' – does not comply).
A scale of 1" =40' is typical for projects of this nature. The applicant should request a waiver of this provision and the Commission consider if 1" =10' plans are necessary.

RESPONSE: We concur with Mr. McManus that a plan scale of 1" = 40' is standard practice for projects / parcels of this size. We respectfully request a waiver from the Bylaw regulations relative to plans scale requirements.

Coastal Bank:
Coastal Banks are delineated in accordance with the definition at 310 CMR 10.30(2) as: "the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland"
The Coastal Bank delineation criteria are further detailed in MassDEP Policy 92-1. In the areas where work is proposed in close proximity to the Coastal Bank, the Bank boundary is abrupt and straightforward in my opinion, and I concur with the Coastal Bank delineation interpretations in the NOI.

RESPONSE: Comment noted. We respectfully request that the Commission find, as part of the Order of Conditions for the project, that the Coastal Bank delineation properly demarcates the limit of Coastal Bank.

Land Subject to Coastal Storm Flowage ("LSCSF")
Under state and local regulations, Land Subject to Coastal Storm Flowage ("LSCSF") includes all areas of the site above the Coastal Bank and Beach subject to any inundation, including wave action, from the 100-year storm, surge of record or storm of record, whichever is greater. At the site, FEMA flood mapping, including Letters of Map Revision, indicates three zones that are included within the LSCSF boundary of the site:
• Zone AE (Elevation 13) in the southern part of the property;
• Zone AO (Depth 3-feet): located within the low-lying field east of the cluster of buildings near the site entrance in the northern and central part of the property; and
• Velocity Zone VE (Elevations 17 and 18 extending landward for a mapped distance from Bathing and Canoe Beaches).
Also, Velocity Zone VE elevation 27 is found associated with much of the perimeter of East Point, outside of the project limits, and a small area of VE Zone elevation 31 is located north of Canoe Beach.

The site plans include mapping of these LSCSF areas. The Zone VE boundary and Zone AO boundary are mapped o the site plans based upon the FEMA boundary location, while the Zone AE (Elevation 13) boundary is plotted on the site plans to coincide with the 13-foot contour of actual surveyed site topography. The VE and AO boundaries appear to be accurately transcribed. Based upon the site topography provided, the AE boundary appears to be consistent with state and local LSCSF definitions. Because the FEMA FIRMette maps provided with the NOI do not include all of the above detailed elevations, I include two images below from the FEMA website depicting the project area with complete flood zone elevation information.

BVW Boundary Review:
I conducted a detailed flag-to-flag review of the Bordering Vegetated Wetland ("BVW") boundary with Brian Madden of LEC, who had completed the BVW delineation. I reviewed the BVW boundary in accordance with the definition set forth in the regulations at 310 CMR 10.55(2)(c). Section 10.55(2)(c) states that "The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist." The methodology used to delineate Bordering Vegetated Wetlands is further described in: (1) the BVW Policy "BVW: Bordering Vegetated Wetlands Delineation Criteria and Methodology," issued March 1, 1995; and (2) "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook" produced by the Massachusetts Department of Environmental Protection, dated March 1995.

The BVW and immediate surrounding area contains historically disturbed soils and the remnants of a concrete block foundation, but a portion of this disturbed area satisfies the criteria for BVW jurisdiction. The BVW plant community consists of a near monoculture of invasive common reed (Phragmites australis). The Phragmites is present to some degree outside of the delineated BVW but those areas were reasonably excluded in my opinion due to the lack of wetland hydrology and/or the sufficient presence of upland plant species including cherry (Prunus sp) staghorn sumac (Rhus typhina) Pokeweed (Phytolacca americana) Virginia creeper (Parthenocissus quinquefolia) Asiatic bittersweet (Celastrus orbiculata) rugosa rose (Rosa rugosa) and Climbing Nightshade (Solanum dulcamara). In my opinion the BVW delineation is consistent with the Regulations and the DEP BVW delineation Policy.

RESPONSE: Comment noted. We respectfully request that the Commission find, as part of the Order of Conditions for the project, that the BVW delineation properly demarcates the limit of BVW on the project site.

Inland Bank:
The BVW area borders a small internal intermittent stream which continues as a culvert that discharges through the seawall to the south. The intermittent stream contains the wetland resource area Bank as defined at 310 CMR 10.54(2)(a). The intermittent stream Bank, including the culvert to the seawall, should be identified on the plans and the 100-foot Buffer Zone revised accordingly.

RESPONSE: The Bank of the intermittent stream is now shown on the project plans. Refer to Sheets C-1, C-2 and C-3. Because this resource area is contained within the BVW the associated buffer zone is not shown.

Other Coastal Wetland Resources
Land Under the Ocean, Coastal Beach, Rocky Intertidal Shores and a man-made Coastal Dune (which the applicant described as being constructed above a portion of Canoe Beach north of Nahant Road under wetlands File #047-0529 and subsequently substantially eroded) are also present on the site seaward of the proposed limit of work for the Coastal Sustainability Institute.

RESPONSE: No work is intended to occur in these areas.

Buffer Zone:
State regulations attach a 100-foot Buffer Zone to all of the above resource areas except LSCSF. Nahant Bylaw regulations state that: "Wetland resource areas, as defined in Section 2 of the Wetlands By-law, include land within 100 feet of the other resources areas identified therein." Therefore, as noted on the site plans, the Bylaw attaches a 100-foot Buffer Zone to LSCSF. As discussed below, under the Bylaw, the Buffer Zone to LSCSF is regulated as a jurisdictional wetland resource area.

Based on my site inspection and review of the plans, the NOI, including attachments, accurately describes site conditions and wetlands jurisdiction, except as noted above. The site includes a wide range of conditions, including sand and cobble beach, retaining walls, rock outcrop, manicured lawn areas, gravel and paved driveway and parking, buildings, scrub-shrub/ woodlands, and Phragmites-dominated wetland. As indicated on the NOI plans, a substantial portion of the site property is located within Land Subject To Coastal Storm Flowage ("LSFSF") and associated state and local Buffer Zone.

RESPONSE: No response required.

Proposed Work and Performance Standards Evaluation – Preliminary Comments:
Proposed work for the CSI includes activities within the following jurisdictional areas:
• LSCSF (state and local);
• Buffer Zone to Coastal Bank, Inland bank, and BVW (state and local); and
• Buffer Zone to LSCSF (local only).
State regulations at 310 CMR 10.00 do not currently contain regulatory performance standards for work in LSCSF. The Nahant Regulations Section V.B provides regulatory presumption that LSCSF is significant to the protection of the Bylaw interests and states that:

"If the following activities, when combined, alter a total of 5,000 or more square feet in LSCSF with the exception of the construction of a single-family home) they shall be presumed to have an acceptable significant or cumulative effects upon the protection of wildlife habitat: construction of new or proposed expansions of roads, driveways or parking lots; construction of impermeable paving for existing unpaved roads, driveways or parking lots; and/or any activities which will result in the building within or upon, removing, filling and/or altering (as defined in Section 2 of the Wetlands By-law) of any vegetated area(s)."

The CSI NOI proposes more than 5 times the 5,000 sf LSCSF alteration threshold, however not all of the proposed LSCSF work area is subject to the presumption. Therefore, I recommend that the NOI clearly indicate how much of the proposed work is subject to the above presumption, to determine whether the 5,000 sf threshold is triggered, and if so, the applicant should address the regulatory presumption of impact to wildlife habitat.

The Bylaw Regulations Section V.C identifies eight performance standards for work in LSCSF. The NOI discusses these performance standards under the heading "Conformance with the Nahant Performance Standards for Buffer Zone." While proposed mitigation in the form of restoration of temporary alterations (e.g., for utility installations) and invasive species vegetation management and native planting are described, it is difficult to conduct a detailed assessment of the nature and extent of the proposed changes to the site within wetlands jurisdiction.

Therefore, I recommend that for all work areas within the Commission's jurisdiction, the applicant provide a detailed summary table that indicates the major categories of work proposed (e.g., driveway/parking, building, stormwater structures, utilities) and tabulates the size (sf) and condition (e.g., paved, type of vegetative cover, etc.) of each category under existing and proposed conditions. Due to possible overlap of work zones, it may be appropriate to combine proposed CSI alterations with alterations proposed for the seawater intake. With the recommended table as a reference, the applicant should then provide an analysis of how the proposed project satisfies or overcomes the unacceptable effect presumption of the Bylaw for LSCSF. A similar analysis is recommended for state and local Buffer Zones (discussed below).

The NOI analysis should, in my opinion, provide a greater level of detail with respect to compliance with the eight Bylaw LSCSF performance standards (e.g., the statement "The proposed project will not result in the reduction in the ability of the land to buffer more inland area from flooding and wave damage" should be substantiated with information concerning land surface conditions).

RESPONSE: Alteration of LSCSF is quantified below in Table 1 and quantification of work in Buffer Zone to BVW and LSCSF is present in Table 2. Please note the quantities in Tables 1 and 2 overstate total alteration because the resource areas and buffer zones overlap in many instances, for example buffer zone to Coastal Bank overlaps LSCSF and buffer zone to LSCSF.

Table 1. Proposed Disturbance in LSCSF

Proposed Impact	Total Area (SF)	Developed/ Undeveloped	Temporary (s.f.)	Permanent (s.f)	Current Surface Condition
Impervious Pavement	6,999	Developed	2,663	4,336	Paved parking, drives and sidewalks.
Grading & Utility Installation	15,721	Developed	15,721	0	
Total	22,720	Developed	18,384	4,336	

Table 2. Proposed Disturbance in Buffer Zone

Proposed Impact	Total Area (SF)	Resource Area	Developed/ Undeveloped	Temporary (S.F.)	Permanent (S.F.)	Current Surface Condition
Parking, bio bioetention and landscaping	6,317	BVW	Developed	2,005	4,312	Existing paved driveways and grassed areas
Parking, roadway realignment & utility installation	47,377	LSCSF	Developed	11,737	35,640	Existing paved driveways and grassed areas
Parking, roadway realignment & utility installation	23,096	Coastal Bank	Developed	19,783	3,313	Paved road, paved driveways and grassed areas
Total	76,790			33,525	43,265	

Following is a review of the eight standards established in the Bylaw for work LSCSF. The definition of LSCSF the Bylaw regulations reads as follows: "Land Subject to Coastal Storm Flowage – as defined in the MA Wetlands Protection Act Regulations (310 CMR 10.04), means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater." Mr. McManus confirm the mapping of LSCSF was correct thus the review of LSCSF performance standards is limited to construction activity and changes of ground surface with the FEMA mapped 1% change of flood zone (i.e. the 100-year flood zone) on the NEU property.

1. *Reduction in the ability of the land to absorb and contain waters.*

   The change in land surface composition from soil to pavement in LSCSF is limited to 4,336 square feet ("s.f.") at the northerly access driveway to the new parking lot along Nahant Road. All other work in LSCSF is limited to subsurface utility work which involves temporary disturbance with no change to surface topography or soil absorption capacity in the utility corridors.

   The proposed stormwater management system will include sub-surface infiltration well as surface infiltration measures (bioretention) to compensate for diminished soil absorption within and outside of LSCSF (and LSCSF buffer zone). The Nitsch stormwater report and project plans submitted with the NOI demonstrate that the stormwater infiltration standard is met. Therefore, the ability of the landform to absorb stormwater will not be diminished.

2. *Reduction in the ability of the land to buffer more inland areas from flooding and wave damage.*

   The floodplain is contained on the NEU site, extending north to south across the property from Canoe Beach to Bathing Beach. Due to this orientation the on-site floodplain does not buffer off-property inland areas from flooding or wave damage. With the exception of 4,336 square feet of permanent land surface alteration, all other work in LSCSF is limited to temporary disturbance.

3. *Displacement or diversion of flood waters to other areas.*

   As described above the central portion to the NEU campus is mapped as LSCSF with floodwaters flowing across the site with no diversion of flood flows onto other adjacent properties. No above ground structures are proposed in LSCSF thus there are no structures proposed that might divert flood flows off the property. The only permanent fill in LSCSF is in the upper reaches of the AE Zone floodplain, given that the floodplain on the site is coastal floodplain (infinitely large surface area), a small volume of fill will not result in a measurable increase in the vertical or horizontal extent of flooding.

4. *Damage to other structures or property.*

   Similar to response #3 above. There are no on-site or off-site structures in LSCSF presently or proposed. Therefore, the CSI project will not result in any flood damages to existing or proposed structures.

5. *Pollution of groundwater, surface water, or salt water.*

   The purpose of the MassDEP Stormwater Management Standards is to control stormwater quantity and quality to avoid flooding and protect the quality of receiving waters. Compliance with the Stormwater Standards is presumed to adequately protect receiving water quality. As demonstrated in the Stormwater Report filed with the NOI the Standards are met, therefore the project is presumed to avoid pollution of ground water, surface water and salt water.

6. *Reduction of the ability of the resource to serve as a wildlife habitat and migration corridor through activities such as, but not limited to the removal of substantial vegetative cover and/or installation of fencing and other structures which prevent wildlife migration across property.*

   See Tables 1 and 2 above which shows that all alteration of LSCSF for the CSI project is located in developed portions of LSCSF, thus the project is not located in a portion of LSCSF with significant ecological integrity. Constructing the CSI project will not reduce the wildlife habitat capacity of LSCSF.

   To improve wildlife habitat on East Point, NEU proposes to restore and enhance Maritime Shrubland and Grassland Meadow Habitat. This will improve overall habitat conditions and ecological integrity on the peninsula. Refer to NOI Attachment F.

7. *An increase in the elevation or velocity of flood waters.*

   As described above in response to #3, and shown in Table 1 most of the activity in LSCSF is temporary with the surface conditions being restored to pre-construction conditions. The project will require filling less than 5 cubic yards in LSCSF, which will not result in a measurable horizontal or vertical extent of flooding. The project does not include any above ground structures in LSCSF which might channelize of alter flood flow velocities. Therefore, the project will not increase flood elevations or velocities across the site.

8. *Prevention of the migration of resource areas such as salt marshes due to sea level rise*

   There are no salt marshes present in the waters adjacent to the project, i.e. associated with Bathing Beach or Canoe Beach. To the south there is a vertical concrete seawall along the landward limit of Bathing Beach, and this structure prevents the landward migration of coastal resources. Similarly, to the north the existing paved Nahant Road is present along the landward limit of beach. This paved public road prevents the migration of coastal landforms further landward.

<u>Buffer Zone Performance Standard: State Regulations</u>
State Regulations at 310 CMR 10.53(1) provide a narrative standard for work in the Buffer Zone and state:

"…If the issuing authority determines that a resource area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interests. For work in the buffer zone subject to review under 310 CMR 10.02(2)(b)3., the issuing authority shall impose conditions to protect the interests of the Act identified for the adjacent resource area. The potential for adverse impacts to resource areas from work in the buffer zone may increase with the extent of the work and the proximity to the resource area. The issuing authority may consider the characteristics of the buffer zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on resource areas. Conditions may include limitations on the scope and location of work in the buffer zone as necessary to avoid alteration of resource areas. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the resource area and/or other measures commensurate with the scope and location of the work within the buffer zone to protect the interests of the Act. Where a buffer zone has already been developed, the issuing authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to a resource area to protect the interest of the Act.

The purpose of preconstruction review of work in the buffer zone is to ensure that adjacent resource areas are not adversely affected during or after completion of the work."

RESPONSE: Comment noted.

Buffer Zone Performance Standard: Bylaw Regulations
The Nahant Wetland Bylaw identifies the land within 100-feet of other wetlands resource areas (including LSCSF) as a jurisdictional resource and states: "The intent of the Wetlands By-law and these regulations is to supplement the state review and provide review of additional resource areas not covered under G.L. c. 131, § 40, the Wetlands Protection Act." The Bylaw does not provide detailed regulatory performance standards for work in the 100-foot Buffer Zone; however, the applicant must demonstrate that the interests of the Bylaw are protected by all such work. I recommend that the applicant provide such an analysis that is modelled on the Bylaw LSCSF performance standards and considers all of the Bylaw Interests.

RESPONSE: A review of the bylaw standards for LSCSF are provided above and are applicable to the LSCSF buffer zone also.

The bylaw specifies a number of "values" protected the bylaw which are enumerated on Article 17 Section 1. Purpose. For reference the Coastal Sustainability Institute project work in only proposed in the LSACF, plus the buffer zone to LSCSF, Coastal Bank and BVW. The values are identified and the effects of the CSI project on those values area reviewed below:

Public or private water supply – Not applicable. There are no public or private drinking water supply wells on the property or abutting properties.

Groundwater – Met. As described in the Stormwater Report attached to the NOI, the project was design to meet the stormwater infiltration standards thus is presumed to result in no adverse effects to groundwater.

Flood control – Met. Flood control is addressed above in review o the LSCSGF bylaw standards.

Erosion and sedimentation control – Met. A sedimentation and erosion control plan was prepared and submitted with the NOI. In response to comments by the Commission's peer reviewer, a draft Stormwater Pollution Prevention Plan ("SWPPP") is submitted to the Commission demonstrating compliance with the USEPA NPDES Construction General Permit which regulates construction period stormwater.

Storm damage prevention including coastal storm flowage – Met. No buildings (existing or proposed) are proposed in LSCSF thus the project does not exacerbate storm damage. See the review above for compliance with the bylaw standards for LSCSF.

Water quality – Met. The MassDEP Stormwater management Standards are established to regulate stormwater to control stormwater quantity (flows) and manage (treat) stormwater to protect the water quality of receiving waters. The Stormwater Report submitted with the NOI demonstrates the project stormwater system meets the standards and therefore is presumed to adequately protect the water quality of receiving waters.

Water pollution control – Met. See above for water quality.

Fisheries, shellfish, and land containing shellfish – Not applicable. The CSI project involves no in-water work. As described above the stormwater systems was design to meet the Stormwater Standards and therefore presumed to protect the water quality of receiving waters.

Wildlife habitat – Met. The CSI project is located in previously developed portions of the site thus the project is not located in an area with significant ecological integrity. To improve wildlife habitat on East Point, NEU proposes to restore and enhance Maritime Shrubland and Grassland Meadow Habitat. This will improve overall habitat conditions and ecological integrity on the peninsula. See NOI Attachment F.

Rare species habitat including rare plant species – Not applicable. The project is not located in or adjacent to the habitats of state-listed species mapped by the NHESP.

Agriculture and aquaculture – Not applicable. The site is not used for agriculture or aquaculture.

Recreation – Met. The site is an academic research campus. Passive recreation is permitted across the site for pedestrians to access the adjacent Lodge Park.

Aesthetic values – Met. This is an ambiguous value because there is no objective manner by which to assess this value. However, the site supports research buildings, trailers and re-uses the Murphy Bunker (a former military installation) and the proposed design removes the trailers rom the site while the addition to the Murphy Bunker was design to blend in with the existing topography. A landscaping plan was developed to add to the site aesthetics.

Canoe Beach Stability:
As described above, Canoe Beach is located in a velocity zone, and a dune restoration project between Nahant Road has reportedly been largely eroded by wave energy. The project proposes a large sewer line in Nahant Road in close proximity to this area of reported recent erosion. I recommend that the applicant evaluate and document the vulnerability of existing and proposed utilities near Canoe Beach.

RESPONSE: This was addressed in the Environmental Impact Report submitted to and reviewed by MEPA. The following is transcribed from Section7.2 of the FEIR.

Of immediate concern is the protection of utilities in Nahant Road near Canoe Beach. As discussed in Section 1.8 [of the FEIR] and shown on Figure 1-10 [of the FEIR], since the filing of the DEIR, the University has altered plans for the Project to include the relocation of the water and electric lines out of the roadway. A new water line connection will be made from the existing line in Swallow Cave Road and run along the south site of the Site to reach 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 between from a point just beyond the Site's 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.

The sewer line is proposed to remain in place, but it will be armored as part of the Project to protect it from damage in the event of a storm causing sudden significant erosion beyond the beach and into Nahant Road itself. At this time, the University believes this is a practicable solution and preferable to relocating the line, which would require the construction of a new pump station.

Nahant Road and the access road to the Site will continue to be susceptible to flooding in coastal storms. The University has considered the potential to relocate the entrance drive by moving it southward. One possible route 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 option 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 University does not plan to relocate the roadway at this time. While relocation is feasible, neither of the options are favored by the town at this time, which seeks to limit traffic impacts on the residential Swallow Cave Road. While the University recognizes that leaving the roadway in place could lead to access issues during storms, it notes that the entire Town of Nahant has the same 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. The University has emergency management plans for the MSC and will coordinate closely with Nahant public safety officials to minimize risks to users of the MSC. As discussed in the DEIR, the proposed CSI will have life safety features to provide shelter for any persons who are at the building during a significant storm event.

Bylaw Regulations Section XIII. Standards of Review for Wetland Alteration
These provisions appear to be related to proposed filling/ alteration of a vegetated wetland; however, the Commission should advise if otherwise.

RESPONSE: No response required as there are no wetland alterations proposed for this project.

Erosion and Sediment Control:
The NOI includes a perimeter erosion control barrier and multiple plan details for possible erosion control best management practices (“BMPs”) but does not provide adequate information, in my opinion, concerning how the project would be constructed in a manner that does not result in erosion impacts to nearby wetland resource areas. The NOI states that the Contractor will be required to comply with NPDES requirements to develop a Stormwater Pollution Prevention Plan (“SWPPP”). While this is true, it is my opinion that the NOI should detail minimum requirements and methods of erosion and sediment control. For example, the NOI should:
• Specify the construction detail of the minimum proposed perimeter erosion control barrier (the site plans include details for several types of erosion control barriers);
• Evaluate the suitability of the perimeter barrier at its most susceptible points where runoff will concentrate, by identifying the size and nature of sub-watersheds that drain to low points in the barrier. This would be much more easily done if the erosion control plan including existing and proposed contours;
• Specify minimum monitoring and repair frequencies and thresholds for all erosion and sediment control BMPs;
• Determine the need for and sizing of temporary sediment basins, based upon the size and shape of sub-watersheds within the work footprint;
• Identify project phasing, including staging and stockpiling, to minimize the amount of exposed soil;
• Specify when and where the various BMPs on Sheet C-9 would be implemented

RESPONSE: It is our opinion this comment correlates with the Hardy+Man Design Group, PC ("Hardy+Man") comments dated March 19, 2021 regarding stormwater and engineering. Please see the response to the Hardy+Man comments prepared by Nitsch Engineering dated April 16, 2021.

We look froward to discussing these comments with the Commission during the April 21, 2021 public meeting. In the meantime, please contact me with question comments on the correspondence and attachments.

Very truly yours,

Nitsch Engineering, Inc.

William R. Maher, PE, LSIT
Project Manager

Dwight R. Dunk, LPD, PWS, BCES
Principal, Epsilon Associates, Inc.

cc: MassDEP-NERO
P. McManus, Eco tec
S. Hardy, Hardy+Man
T. MacKay, Northeastern
D. Linhard, Goulston & Storrs

WRM/drd

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