



May 11, 2020

Town of Sudbury  
Conservation Commission  
275 Old Lancaster road  
Sudbury, MA 01776

Attn.: Lori Capone, Conservation Administrator

Re: **Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project  
Conservation Commission Review**

Dear Ms. Capone:

BETA Group, Inc. has reviewed the stormwater, floodplain, and resource area impacts for the project known as **Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project**. This letter is provided to outline BETA's findings, comments and recommendations. Note that review comments pertain only to the portion of the project within the Town of Sudbury.

### **BASIS OF REVIEW**

The following documents were received by BETA and will form the basis of the review:

- **Notice of Intent**, dated March 2020 and prepared by VHB of Watertown, MA.
  - Narrative
  - WPA Forms
  - Figures
  - Wetland Replication Report
  - Site Photographs
  - Sudbury ORAD
  - NHESP Correspondence
  - Erosion Control BMPs
  - Draft SPCC Plan
  - Wildlife Habitat Evaluation
  - Snag and Brush Pile Replacement
- Site Plan (179 sheets) entitled **Sudbury-Hudson Transmission Reliability Project – Sudbury Notice of Intent Plans** dated March 2020 by VHB, Watertown, MA.
- Site Plan (41 sheets) entitled **Commonwealth of Massachusetts Department of Conservation and Recreation Division of Planning and Engineering Mass Central Rail Trail in the Towns of Hudson, Stow, Marlborough & Sudbury Massachusetts Middlesex County** dated March 2020 by VHB, Watertown, MA.
- **Stormwater Report** – Sudbury-Hudson Transmission Reliability Project and Mass Central Rail Trail Project, dated March 2020 by VHB, Watertown, MA.

Review by BETA Inc. will include the above items along with the following, as applicable:

- **Stormwater Management Bylaw Regulations**, Town of Sudbury, Revised January 23, 2013.
- **Massachusetts Stormwater Handbook** effective January 2, 2008 by MassDEP
- **Sudbury Wetlands Administration Bylaw Regulations** updated through September 25, 2017.
- **Sudbury Wetlands Administration Bylaw – Article XXII** updated through February 17, 2016
- **Massachusetts Wetlands Protection Regulations 310 CMR 10.00** effective October 24, 2014
- Applicable federal and state regulations

## INTRODUCTION

The project Site is a portion of the regional Mass Central Rail Trail (MCRT). Approximately 4.3 miles in length, the 82' wide right-of-way runs through a variety of neighborhoods as it crosses Sudbury. The portion the trail relevant to this submittal begins at the intersection of the Marlborough, Hudson, and Sudbury town lines. The trail continues southeast, crossing Dutton Road, Peakham Road, Horse Pond Road, Union Ave and Boston Post Road before turning eastwards and crossing under Landham Road before reaching a privately owned driveway. While the trail continues east towards the Town of Wayland, this submittal proposes alterations only to the portion of the trail between the aforementioned town line intersection and the private driveway associated with #163 and #183 Boston Post Road (the "Site"). The included lots are identified as Lots H03-5000, J05-5000, J06-5000, K07-5000, K08-5100, K08-5000, K09-5000. Alterations are also proposed to parcel K11-0402, #163 Boston Post Road, which is an electric substation owned by Eversource.

The existing site is an abandoned rail line. An unmaintained single-track railroad in poor condition spans the length of the Site. Vegetation within the rail right-of-way is generally light, and foot traffic has created a walking path along most of its length. Small amounts of solid waste and structures associated with the former railtrack (signs, whistle posts, etc.) are present throughout its length. The rail line includes two bridges to cross Hop Brook, one in the northwest portion and one in the southeast. Several culverts in various conditions cross beneath the rail trail. These culverts generally convey flows from the numerous wetland areas, intermittent and perennial streams, and other water bodies present on both sides of the Site.

Topography at the Site is varied, but prominently follows two patterns. Pattern 1 includes areas where the rail track is "built-up" to be several feet above the surrounding areas, causing runoff to flow off the track in either direction. Pattern 2 includes areas where the track is at a much lower elevation compared to surrounding areas, causing runoff to flow into the trail footprint and travel along its length. In most areas, runoff is conveyed to nearby streams, wetlands or other low-lying areas.

The project proposes to remove the existing railroad line and clear an 18 to 70 foot wide area for a construction platform, and install a 115KV underground transmission line extends below the proposed trail the length of the Site. The transmission line will connect to the #163 Boston Post Road substation and link to another proposed transmission line in the Town of Hudson. Above the transmission line, the applicant proposes a 14' wide gravel base and 10-foot wide paved publicly accessible multi-use trail. Associated improvements include rehabilitation of Bridge 128, replacement of Bridge 127 landscaping, areas of fencing, and utility equipment. Stormwater management is proposed through the creation of swales and infiltration areas as well as restoration or replacement of existing culverts.

The project will require significant disturbance of resource areas and/or their associated buffer zones, including wetlands, riverfront area, land under water, banks, vernal pools, and bordering land subject to flooding. Mitigation is generally proposed through restoration of temporarily impacted areas and wetland replication.

## GENERAL

- G1. *The submitted plans and calculations do not easily provide for confirmation of compliance.*
- a. *Provide additional contour labels to construction plans to better understand topography.*
  - b. *Identify existing/proposed cover types on watershed plans.*
  - c. *Provide station markers on Drain Area plans to clarify limit of watersheds compared to proposed improvements.*

- d. *Include Tc paths on watershed plans.*
  - e. *Use consistent units (i.e. square foot measurements are included in the existing condition model while acres are used in the proposed condition)*
  - f. *Use consistent nomenclature for BMPs; plans indicate “swales” and “area of increased infiltration” where stormwater reports refer to water quality swales and infiltration basins.*
  - g. *Show and label all BMP swales and area of increased infiltration on cross sections.*
- G2. *Provide plans for earthwork operation in regard to possible soil contamination issues. Railroads are known to commonly contain contaminated media in the form of both track components (rails, ties) and the underlying soil. BETA notes that rail and tie removal is proposed in the narrative, but there are no measures to inspect the subsoils.*
- G3. *Evaluate current condition and provide report and plan to restore, if necessary, the function on all culverts in the project area. Field visit by BETA identified that several culverts were in poor condition, blocked, buried or needed tree removal.*

## **WETLANDS AND RESOURCE AREA IMPACT SUMMARY**

The existing Site includes several resource areas located in and along the Project corridor. According to the NOI, there are 45 vegetated wetlands (bordering – BVW and isolated - IVW), 13 Vernal Pools, three perennial streams (as defined by the Mass. Wetlands Protection Act), five intermittent streams, Bank and Land Under Water associated with the perennial and intermittent streams, Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RA) located in and along the Project corridor. In addition, the Adjacent Upland Resource Area (AURA) and Coldwater Fisheries Resources (CFR), protected under the Sudbury Wetlands Administration Bylaw are also present. With the exception of BLSF, the resource area boundaries depicted on the plans were confirmed through an Order of Resource Area Delineation dated August 27, 2018.

The ORAD affirmed the FEMA 100-year base flood elevations (BLSF boundary) only. Meaning, the BLSF boundary locations on the ORAD plan were not confirmed because:

- i. A significant amount of the Site’s topography is derived from aerial LiDAR data.
- ii. During the ANRAD process it was documented that many of the contour elevations differ significantly (by several feet) from the LiDAR contours. Therefore, fill volumes below the 100-year floodplain boundary are still not understood or accurately quantified.

Portions of the Project qualify as a Limited Project under 310 CMR 10.53(6 -bike path in Riverfront Area only) and (8 – stream crossing replacement). The Project may not fully meet the limited project provisions at 310 CMR 10.53(3)(d)<sup>1</sup> due to the permanent alteration of topography and vegetation. Although MassDEP Central Regional Office stated in their 12/8/2017 comment letter that the Project “qualifies as a limited project”, no specific analysis on the Project’s compliance with conditions in the Wetlands Protection Regulations was

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<sup>1</sup> 310 CMR 10.53(3)(d): *The construction, reconstruction, operation and maintenance of underground and overhead public utilities, such as electrical distribution or transmission lines... may be permitted, in accordance with the following general condition and any additional conditions deemed necessary by the issuing authority:*

1. *The issuing authority may require a reasonable alternative route with fewer adverse effects for a local distribution or connecting line not reviewed by the Energy Facilities Siting Council;*
2. *Best available measures shall be used to minimized adverse effects during construction;*
3. *The surface vegetation and contours of the area shall be substantially restored; and*
4. *All sewer lines shall be constructed to minimize inflow and leakage*

provided. The applicability and use of this provision are subject to the Conservation Commission discretion under 310 CMR 10.53(3)<sup>2</sup>.

The project proposes permanent and/or temporary impacts to Inland Bank, Bordering and Isolated Vegetated Wetlands, Land Under Water, Bordering Land Subject to Flooding, and Riverfront Area. The Applicant has included only the proposed impervious surfaces related to the bikepath as the “permanent” impacts associated with the Project and has considered the impacts associated with installation of the duct bank, permanent contour changes, and habitat conversion as “temporary” impacts even though these areas will be maintained in perpetuity. The design includes wetland replication in one location, LUW and Bank restoration, and partial BLSF and Riverfront Area restoration.

The combined NOI filing for the bikepath and transmission line is inconsistent with previous permits and applications, including with MEPA and under MESA. In addition, according to the project construction sequence, restoration of the corridor will not be conducted until after the bikepath is complete to avoid impacts to the installed plants, however, the duration of time from transmission line construction to bikepath construction is unknown due to the uncertainty of the funding for the MCRT construction. The construction schedule for the transmission line is also unknown. Restoration of the corridor after Phase 1 clearing and grading activities could be a significant amount of time if the Project under the current proposal.

The western portion of the Project is located within Natural Heritage and Endangered Species Program (NHESP) mapped habitat for the Eastern Box-turtle (*Terrapene carolina*), Eastern Whip-poor-will (*Caprimulgus vociferous*), Gerhard’s Underwing Moth (*Catocala Herodias gerhardi*), and Coastal Swamp Metarranthis Moth (*Metarranthis pilosaria*). This mapped habitat area extends from just east of Bridge 128 to the Sudbury/Hudson town line. The Project has been reviewed under the Massachusetts Endangered Act and must be conditioned to avoid a prohibited “Take” of rare species.

Time of Year (TOY) restrictions are required in several locations throughout the Project corridor to avoid adverse effects to wildlife habitat. These restrictions will limit construction windows, increase the construction duration, and impact wildlife migration due to the presence of erosion controls along the corridor. The NOI has not addressed how the TOY restrictions will impact construction duration, and how an increase in construction duration will impact the species along the corridor.

As proposed, the Project does not fully meet the Wetland Protection Acts performance standards for BVW, BLSF, and RA and additional information is required to determine whether the Project meets the standards for Bank and LUW. First, this letter provides an overview of construction mitigation methods proposed to be used with recommendations for special conditions to avoid additional impacts to protected resource areas, then the Project is evaluated based on its compliance with the Massachusetts Wetlands Protection Act and the Sudbury Wetlands Administration Bylaw.

The comments provided below assume the following:

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<sup>2</sup> 310 CMR 10.53(3): *Notwithstanding the provisions of 310 CMR 10.54 through 10.58 and 10.60, the Issuing Authority **may** issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40 permitting the following limited projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.59). In determining whether to exercise its discretion to approve the limited projects listed in 310 CMR 10.53(3), the Issuing Authority shall consider the following factors: the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.*

1. The Project may not fully comply with the conditions to qualify for the limited project provision under 310 CMR 10.53(3)(d), therefore the Commission may require that the Project fully comply with the performance standards.
2. The resource areas, including BLSF and RA, present within the Project Corridor / Railroad ROW provide important wildlife habitat, including upland habitat for Vernal Pool species, cover for reptiles, nesting habitat for birds, and food and cover for mammals, among other habitat.
3. Impacts to Vernal Pools, and the surrounding “Vernal Pool Envelope<sup>3</sup>” and “critical terrestrial habitat (CTH)<sup>4</sup>” have not been adequately evaluated in the Wildlife Habitat Evaluation. The Project’s greater than three-year construction period, clearing within 5 feet of several pools, grading within 5 feet of these pools erosion control installation, security lighting, and access through these areas to get to other work zones have not been addressed adequately to confirm the Project will not adversely impact the Vernal Pools along the Project corridor.
4. The Project must fully comply with the MA Stormwater Regulations and Standards regardless of the application of the Bikepath Redevelopment provision.

## CONSTRUCTION IMPACTS / MITIGATION

Phase 1 of the Project includes the following construction activities in order of construction sequencing described in the NOI:

- Clearing vegetation to ground level within the ROW and limb removal of vegetation that overhangs the ROW (no stumping)
- Installation of erosion and sedimentation controls
- Installation of new equipment at Sudbury Substation
- Removal of existing rail and ties
- Grading to create 22-foot wide construction platform
- Installation of stormwater management features
- Construct wetland replication area
- Construct bridges and other crossings
- Installation of manholes and duct bank
- Final grading of the gravel road
- Cable pulling
- Stabilizing site using loam and seed

Once Phase 1 is complete, there may be an extended period of time before Phase 2 construction begins and the Right of Way planting/restoration is not proposed until the completion of Phase 2.

Activities required for constructing the Project have the potential to further impact wetland resource areas if not properly managed and/or conditioned.

**Vegetation Clearing:** The NOI narrative states the contractor will conduct vegetation removal within the limit of work prior to installation of the erosion controls and that no stumping will occur, however, there is no description of how the limit of work will be delineated for the contractor. In addition, the vegetation to be removed will be chipped for removal from the Site. The NOI does not address the clearing operation landings

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<sup>3</sup> The area within 0 – 100 feet of the Vernal Pool depression’s edge – Vernal Pool Best Management Practices (BMPs), Jan 2015, US Army Corps of Engineers, New England District.

<https://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/VPBMPsJan2015.pdf>

<sup>4</sup> The area within 100 – 750 feet of the Vernal Pool depression’s edge. – Vernal Pool Best Management Practices (BMPs), Jan 2015, US Army Corps of Engineers, New England District.

or chipping locations, the height required for limb removal, or how trees with roots outside of the limit of work that have grown above the railroad will be addressed. Note that vegetation clearing will be subject to all Time of Year restrictions.

- W1. *Include a special condition requiring the limit of work/erosion controls be staked in the field by survey. The staked boundary should be certified by a Mass. Registered Professional Land Surveyor and reviewed by the Conservation Commission and/or their Agent prior to beginning any clearing.*
- W2. *Include a special condition requiring appropriate vegetation chipping be conducted greater than 50 feet from any resource area subject to protection under the state and local Bylaw.*
- W3. *Specify the height of limb removal required for construction.*
- W4. *Describe how trees that have grown over the railroad will be addressed during clearing.*

Clearing and removal of invasive vegetation within the Project corridor during the vegetation removal process was not addressed in the Notice of Intent. Proper management of this vegetation is required to avoid spreading this vegetation within the Project corridor. Chipping most woody invasive vegetation is generally ok if the standing material is void of hanging fruit/seed. Chipping of Asiatic bittersweet (*Celastrus orbiculatus*) should only be conducted once the material is dry because this species can reproduce through plant fragments.

- W5. *Provide a protocol for invasive species vegetation management during the initial vegetation removal stage of planting. Details should be provided on how the contractor will avoid seed dispersion during vegetation removal.*

**Sedimentation and Erosion Control:** According to the NOI, a SWPPP will be prepared and implemented during construction. The Project proposes the use of four types of erosion controls: a combination of silt fence/compost filter tubes, syncopated silt fence, standard silt fence, and turbidity curtains.

- W6. *Include a special condition requiring the Conservation Commission's review and approval of the SWPPP prior to construction. BETA recommends that any use of permanent infiltration BMPs for temporary construction-related stormwater management be specifically addressed in the SWPPP and protocols for removal of fine silt and sediment from these BMPs be conducted after completion of construction.*
- W7. *Include a special condition requiring the Conservation Commission and/or its agent review the erosion control installation in the field prior to the start of work.*
- W8. *Include a special condition requiring the Conservation Commission and/or their agent to inspect all permanent stormwater infiltration BMPs for acceptance prior to construction demobilization for any specific Project section.*

The narrative describes maintaining the erosion controls through both the transmission line and bikepath construction phases, however, in areas of manhole installation and near the bridges, the limit of work associated with the transmission line is located downgradient of the areas required for construction of the bikepath. In addition, since the construction funding of the MCRT is uncertain, maintenance of the erosion controls through both phases could be labor-intensive, and the controls would impact wildlife migration for an extended amount of time (see Time-of-Year restriction discussion on wildlife migration impacts).

- W9. *Include a special condition requiring site stabilization and removal of all erosion controls within the Project corridor immediately upon site stabilization after work associated with the transmission line installation is complete along sections of the project corridor. Erosion controls may be removed in sections as appropriate.*

W10. *The erosion control barrier associated with the MCRT / Phase 2 should be located at the limit of that specific work. As recommended above, the erosion control barrier should be staked out and comply with W1. Above.*

**Construction Staging, Access, and grading:** The NOI narrative states the contractor will identify access and laydown areas, which are to be located outside wetland jurisdictional areas. These areas should be proposed where additional clearing is necessary beyond what is required for the transmission line construction and should be located outside areas of Natural Heritage and Rare Species Program (NHESP) mapped habitat.

The NOI does not address how grading and other earthwork will be conducted within corridor prior to the completion of bridge construction, including any equipment turn-around locations that may be required. This information is necessary to confirm that additional work within jurisdiction is not required for Project construction.

The NOI also does not address how site grading will be conducted if no stumping will occur. Grubbing within the limit of work is also not discussed in the NOI. If stumping/grubbing is necessary prior to grading the construction platform, this should be described in the construction sequence and should be conducted after installation of erosion controls.

W11. *Include a special condition requiring the Conservation Commissions approval of contractor access and laydown areas prior to construction.*

W12. *Provide construction sequencing that addressed corridor access / egress throughout the construction process.*

W13. *Provide a description of when stumping and grubbing will occur during construction.*

**Dewatering:** The NOI narrative and plans provide a description of the dewatering methods and details of dewatering systems on sheet 125 of the plan set. The dewatering details on this sheet include the use of hay-bales, which should not be used on the site to avoid transport of invasive seed to the protected areas onsite. The NOI states that efforts will be made to locate the dewatering discharge either in the construction trench or in uplands greater than 100 feet from wetlands. The NOI does not describe what happens when appropriate discharge locations are not present within the Project area. The narrative describes the potential use of overland flow, which does not include any filtration of the pumped water. The NOI states a soil and groundwater management plan will be developed that includes procedures for the management of dewatering.

W14. *Revise plan details to replace hay bales with straw bales in the dewatering details.*

W15. *Provide plans depicting potential dewatering areas where dewatering will likely be required.*

W16. *Remove the use of overland flow from the dewatering options, as fine silt and sediment pumped from excavation areas can impact native soils if allowed to runoff.*

W17. *Include a special condition requiring the Conservation Commission's approval of dewatering discharge locations if proposed within Bylaw resource areas.*

W18. *Include a special condition requiring the Conservation Commission's review and approval of the soil and groundwater management plan prior to construction.*

Duct bank installation at Sta. 704+56 is proposed to go under the culvert in this location. No construction details for installation of the line below the culvert are provided and potential impacts associated with this work are not identified.

W19. *Provide construction details for installation of the transmission line at Sta. 704+56, including likely dewatering locations.*

**Crane/Timber Mat Installation:** Timber mats will be installed at the two bridge construction locations to avoid fill within Hop Brook. These mats are typically re-used on multiple sites and are often covered in soil and vegetative materials after a project's completion. Construction mats brought to this site should be thoroughly cleaned to avoid introduction of additional invasive plant material and fine sediment migration into wetlands. The NOI also does not provide the dimensions of the construction mats to be used or the height of the mats to be stacked to create the required construction platform.

W20. *Include a special condition requiring the timber mats used on the Project site be cleaned prior to being placed within the Project corridor. Prior to installation, mats should be inspected by the Conservation Commission or their Agent to confirm compliance with this condition.*

W21. *Provide the construction mat dimensions and stacked height required to provide the required construction platform.*

**Contaminated Materials:** The NOI narrative and plans do not provide any details regarding contaminated soil and water management during construction. Although a soil management plan is discussed in the NOI, it was not included for review and approval by the Commission. To avoid inadvertent releases of contaminated material to adjacent wetlands through excavation and dewatering, additional details are required.

W22. *Provide plans depicting known areas of soil and groundwater contamination along the Project corridor groundwater which would have an impact on dewatering and potentially stormwater runoff recharge.*

W23. *Provide a contaminated soil and groundwater management plan for review and approval by the Conservation Commission, including a statement that addresses dewatering of potential contaminated groundwater. This plan should include locations for temporary soil stockpiles.*

**Time of Year Restrictions:** The use of Time of Year (TOY) restrictions is required to avoid a take of rare species, impacts to a Coldwater Fishery Resource, work within 450 feet of the mean annual boundary of a Vernal Pool, and within 100 feet of a Black Racer hibernaculum. The following TOY restrictions are proposed for the Project:

- Work below the surface water elevation of Hop Brook: from October 1 to June 31.
- Within areas mapped for Eastern Whip-poor-will habitat: from May 1 to July 31
- Work within 450 feet of a Vernal Pool: from March 1 to May 14
- Work within 100 feet of black racer hibernacula: from November 1 to March 31

The proposed TOY restriction for work within 450 feet of a Vernal Pool during the migratory and breeding season is not long enough to prevent impacts to vernal pool species during early spring migration and migration out of the pools. These restrictions could be extended from February 15 to June 15. Restrictions should include prohibiting construction lighting and vehicular / equipment movement along the ROW within 450 feet of the Vernal Pool. Erosion control placement between Vernal pools and vernal pool species' upland habitat will inhibit typical migration patterns. The construction impact of erosion controls installation and duration on species migration was not evaluated in the Wildlife Habitat Evaluation.

W24. *Extend the TOY restriction for work within 450 feet of a Vernal Pool to protect the species during late winter and post-breeding season migration.*

W25. *Include a special condition requiring removal and re-installation of erosion controls within the Vernal Pool critical areas to outside the TOY restrictions.*

W26. *Include a special condition restricting all construction activities within 450 feet of Vernal Pools (including vehicular / equipment movement and lighting) during the TOY restriction.*

These TOY restrictions and recommended restrictions significantly limit the construction period for the Project corridor. The areas where the TOY restrictions are required are not shown on any plans and the location of the Black Racer hibernaculum was not found on the plans. In the western portion of the Project area, work on some segments of land may be restricted to be conducted between August 1 through October 31 (a 3-month period), depending on the locations of the Black Racer hibernacula. Within this area, the following work is proposed:

- Clearing and grading,
- Duck bank installation,
- Rehabilitation work on Bridge 128,
- Installation of two (2) manholes,
- Stormwater swale construction, and
- Plantings.

If access to the work area is only through the ROW and public roadways, access to this area requires either crossing Hop Brook at Bridge 128 or from White Pond Road in Hudson.

W27. *Provide an exhibit, to be used in contractor bid documents, showing the TOY restrictions and locations on a plan. This exhibit should also show locations of construction equipment and soil management along with access / egress to the ROW, if proposed.*

W28. *Provide construction schedule showing, tentatively, how the work will be scheduled to adhere to the TOY restrictions. This schedule should include an approximate duration for each construction component*

**Corridor Restoration and Invasive Species Management:** Plants native to the Site and present along the Project corridor are proposed to be installed to restore impacts to rare species habitat, BLSF, and Riverfront Area. According to the notes on sheet 131, no horticultural cultivars or varieties are proposed along the Project corridor, however, plantings proposed on sheets C-26, C-29, and C-31 include both a cultivar (*Ilex glabra 'compacta'*) and a species not native to Massachusetts (*Physocarpus opulifolius*). The notes on sheet 131 describe planting details, stating that species substitutions can only be made through approval by the Environmental Monitor (EM) and that only some of the plant material must be inspected by the EM prior to installation (not those in Plant Schedule A).

Plantings are proposed only at Bridge 127 (Sta. 397+70 to 401+80), Bridge 128 (Sta. 723+70 to 729+00), and within mapped priority habitat (Sta. 361+55 to 400+22). Neither the plant number nor area to be planted within priority habitat are specified. All other areas along the Project corridor will be loamed and seeded following completion of Phase 1 of the Project, then left for "successional reforestation". No description of the source of loam to be used on the Site was provided.

The applicant is also proposing loam and seed within the mapped habitat areas, however, soils in some locations within the mapped habitat area do not consist of loam and are not vegetated with species like those included in the seed mix. The restoration plan for the mapped habitat area should restore existing habitat, not introduce another habitat type.

W29. *Provide a revised planting list on the DCR plans that includes only true species native to Massachusetts.*

W30. *Include a special condition requiring the Conservation Commission approve species substitutions and require reasoning behind why the substitution is proposed.*

- W31. *Include a special condition requiring the Environmental Monitor inspect and approve all materials prior to being planted. Photo documentation of plant stock prior to planting should be submitted to the Conservation Commission within 10 days of planting.*
- W32. *Provide landscaping plans showing the locations and numbers of plants to be installed in rare species habitat and near the bridges. Also indicate proposed depth of loam amendments.*
- W33. *Provide a separate restoration plan for the areas in mapped habitat where loam and seed are not appropriate for restoration.*
- W34. *Include a special condition requiring the loam borrow brought to the site to stabilize the work area after completing Phase 1 be sourced appropriately. Use of impacted soils (from contamination or invasive seed) should be prohibited.*

Although the NOI and plans state in several locations that no fertilizers will be used onsite, the BMP document (pages A1-26 and A1-29) as well as the “Jute Mesh Erosion Control Fabric” detail in the plan set (Plan 130) state fertilizers will be used. Hop Brook has been assessed and is impaired for total phosphorus. Accordingly, fertilizer use should be restricted.

- W35. *Include a special condition prohibiting the use of fertilizers within jurisdictional areas.*

The NOI states that the Site will be managed for invasive species by DCR following construction, however, there is no discussion of ongoing invasive species management along the corridor during construction. Invasive species along the Project corridor should begin immediately following stabilization of the work area. An invasive species control plan should be submitted to the Conservation Commission for review and approval. Initial invasive species management should include frequent (once per month minimum during the growing season) management.

Section 3.3.1 of the NOI states that it is “usually not feasible to attempt to control invasive plants beyond the mowed area”, however, in areas where the applicant is proposing a greater than 50-foot wide cleared area and are not proposing any plantings (all manhole areas), invasive species establishment is likely in areas where the canopy is removed. The brief description of invasive species management provided in Section 3.3.1 of the NOI includes the use of chemical control by DCR.

- W36. *Provide a detailed, species-specific Invasive Species Control Plan for the corridor. Control methods should begin immediately following site stabilization and should be phased as stabilization occurs.*
- W37. *Include a special condition prohibiting the use of chemical control methods within jurisdictional areas to protect water quality in vernal pools, wetlands, and waterways.*

## **MASSACHUSETTS WETLANDS PROTECTION ACT COMPLIANCE**

The following are the applicable Massachusetts Wetlands Protection Regulations Provisions and Standards to the Project, and a description of the Project’s compliance with these provisions and/or standards:

### **Limited Project Provisions:**

**310 CMR 10.53(3)(d)(1-4):** *“The construction, reconstruction, operation and maintenance of underground and overhead public utilities, such as electrical distribution or transmission lines... may be permitted, in accordance with the following general condition and any additional conditions deemed necessary by the issuing authority:*

- 1. The issuing authority may require a reasonable alternative route with fewer adverse effects for a local distribution or connecting line not reviewed by the Energy Facilities Siting Council;*
- 2. Best available measures shall be used to minimized adverse effects during construction;*

3. *The surface vegetation and contours of the area shall be substantially restored; and*
4. *All sewer lines shall be constructed to minimize inflow and leakage”.*

The Commission should consider whether the surface vegetation and contours of the area will be substantially restored following construction (Condition 3). Activities related to construction of the proposed 22-foot-wide platform, including clearing and grading to tie into existing topography, are not all temporary. After construction completion, there will not be an “in-kind” replacement of the altered areas and a 19-foot wide corridor will be managed and not allowed to restore to a more natural state.

Some areas of clearing will be between 50-70 feet wide and these areas are generally not proposed to be planted following clearing. Plantings are proposed only at Bridge 127 (Sta. 397+70 to 401+80), Bridge 128 (Sta. 723+70 to 729+00), and within mapped priority habitat (Sta. 361+55 to 400+22). Neither the plant number nor area to be planted within priority habitat are specified. The remainder of the corridor will be seeded with a native mix for stabilization and will be allowed to “revegetate naturally”.

*WPA1. The Commission should consider whether the Project qualifies as a limited Project under the provision cited above and whether the Applicant has overcome the burden to demonstrate compliance with the conditions of this provision*

*WPA2. Permanent clearing and grading and clearing associated with the transmission line extends outside the footprint of the MCRT bikepath and results in greater impacts.*

**310 CMR 10.53(6):** *“The issuing authority may issue an Order of Conditions permitting ... the construction ... of bikepaths ... to or along riverfront areas but outside other resource areas, provided that adverse impacts from the work are minimized and that the design specifications are commensurate with the Projected use and are compatible with the character of the Riverfront Area.”*

Much of the bikepath portion of the Project meets the requirements of this limited project provision, except where the work extends into BVW, BLSF, and LUW. These locations are not specified, and the impacts associated with the bikepath segments that do not qualify as a limited project are not quantified separately. Construction of the 22-foot wide construction platform and final 19-foot maintained corridor are not required for construction of the bikepath.

*WPA3. Provide separate permanent impacts associated with the bike trail limited project within Riverfront Area from the permanent impacts to the corridor resulting from the transmission line.*

*WPA4. Quantify the temporary and permanent impacts to resource areas where the bikepath does not qualify as a limited project. This is necessary to confirm whether the Project meets the performance standards for all resource areas.*

**310 CMR 10.53(8):** *“Any person proposing the replacement of an existing stream crossing shall demonstrate to the Issuing Authority that the impacts of the crossing have been avoided where possible, and when not possible have been minimized and that mitigation measures have been provided to contribute to the protection of the interests identified in MGL c. 131 s. 40.”*

This provision lists site constraints that may limit a bridge replacements ability to meet the MA Stream Crossing Standards. One stream crossing (Bridge 127 – Sta. 725) will be replaced during Phase 1 of the Project. The applicant has adequately evaluated the replacement structure’s compliance with the MA Stream Crossing Standards (Section 5.1.2). Based on their evaluation and the bridge construction description (Section 3.1.9.1 of the NOI), the proposed structure will result in a change in the stream hydrology. Since FEMA Floodway exists at the two Hop Brook crossings, encroachments (fill, bridge and transmission line components) would be prohibited below the FEMA Floodway elevation unless it is demonstrated through hydraulic analysis that

the encroachment will not result in any increase in flood levels within the community both upstream and downstream during the occurrence of the base flood discharge.

It does not appear that the Applicant has evaluated the risk of meeting the MA Stream Crossing Standards considering the site constraints as required under the provisions at 310 CMR 10.53(8).

*WPA5. Provide evaluation of the replacement stream crossing's potential for downstream flooding, stream stability, impacts to wetlands by replacing the crossing, and the potential to affect property and infrastructure. A "no-rise" determination would be required to demonstrate the Project's compliance with this provision.*

**Inland Bank – 310 CMR 10.54(4):**

The NOI states that work associated with construction of the transmission line, approach to Bridge 127, and the Bridge 127 replacement will result in 246 linear feet of Bank alteration. This work includes clearing, grading, installation of timber construction mats into the embankment, construction of bridge abutments upgradient of the existing abutments, re-grading the embankments, and restoration/stabilization. Based on the descriptions provided in the NOI, it is unclear how the Bank will be restored following completion of bridge construction in order to comply with the standards at 310 CMR 10.54(4)(a)(1, 2, 4, and 5)<sup>5</sup>.

According to Section 3.1.1 of the NOI, vegetation removal will only include standing vegetation removal and stumps/roots will remain in place, however, slope excavation and timber mat placement will require stump/root excavation which will destabilize the Bank. The description of Bank restoration efforts states that the Bank will be regraded, jute netting will be placed on the Bank, the area will be seeded, vegetation will be planted within the Buffer Zone to the Bank, and standing dead trees will be reinstalled, however, the plans do not depict the plant locations and the same seed mix will be used for stabilizing the Bank and the Buffer Zone.

*WPA6. See WPA6. Provide crane mat cross sections using existing topography.*

*WPA7. Provide additional details describing how vegetation removal, excavation of the Bank, and installation of timber mats on the Bank will not impair the physical stability of the Bank in accordance with 310 CMR 10.54(4)(a)(1).*

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<sup>5</sup> 310 CMR 10.54(a): *Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on a Bank shall not impair the following:*

- 1. the physical stability of the Bank;*
- 2. the water carrying capacity of the existing channel within the Bank;*
- 3. ground water and surface water quality;*
- 4. the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;*
- 5. the capacity of the Bank to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (whichever is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. In the case of a bank of a river or an intermittent stream, the impact shall be measured on each side of the stream or river. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*
- 6. Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.54(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirement of 310 CMR 10.54(4)(a)5., the impact on bank caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures contained in 310 CMR 10.60.*

*WPA8. Provide additional details for restoring the Bank topography to ensure final topography is consistent with existing grades to confirm compliance with 310 CMR 10.54(4)(a)(2).*

*WPA9. Provide plans depicting the locations of the restoration plantings, and number and locations of “standing dead tree” re-installation to confirm compliance with 310 CMR 10.54(4)(a)(4 and 5), and 10.60.*

*WPA10. Provide reasoning behind the use of one seed mix for restoration of Bank and Buffer Zone.*

*WPA11. Provide clarification on the vegetation removal process along the Bank. Meaning, will vegetation removal require stump removal for dead trees? Or will dead trees be removed in accordance with the vegetation removal description provided in the NOI?*

*WPA12. Describe how the “standing dead trees” will be re-installed. BETA assumes the trees will not contain their roots based on the proposed method of clearing so they will need to be driven into the ground to some depth to maintain stability. We also assume these dead trees will easily be uprooted due to instability of soil at grade and therefore will result in downed trees, safety issues, and potential soil instability. Also, if the trees are installed by auger drilling, describe the methodology for such activity including auger’s outside diameter measurements, equipment access to advance the augers, etc. If work is to be completed by hand, provide a description of that methodology including depth of the hole, etc.*

*WPA13. Provide evidence that reinstalling dead trees has resulted in successful habitat restoration and the number of standing dead trees that will need to be replaced to avoid an adverse effect on Wildlife Habitat.*

Proposed duct bank installation and bridge rehabilitation from Station 399+00 to 401+60 (Bridge 128) requires placement of timber construction mats immediately upgradient of the Bank, within one foot of the approved Bank boundary in some locations. Given the steep topography from the railbed to the Bank, work in the Buffer Zone of the Bank in this location is likely to result in impacts to Bank. The construction mat profile depicted on Sheet 125 is conceptual and not shown for the actual cross sections of the railbed adjacent to the crossing. The railbed embankments will be excavated for placement of the timber mats immediately adjacent to the Bank. In addition, the Bridge plans do not depict the resource area boundaries.

*WPA14. Provide crane mat cross sections for the approaches to Bridge 128 using existing topography to accurately depict the work proposed in proximity to the Bank and confirm the work will not impact the Bank or be located in Land Under Water or FEMA Floodway*

*WPA15. Provide resource area boundaries on the Bridge plans (Plan Sheets 155 – 167).*

**Bordering Vegetated Wetlands – 310 CMR 10.55(4):**

The NOI application states the Project will result in 89 square feet of permanent BVW alteration and 527 square feet of temporary BVW alteration.

According to the NOI, temporary BVW alteration will result from installation of crane mats on both the east and west sides of Bridge 127 (Stations 724+33 to 726+36), replacement of a drainage pipe (~ Sta. 713+65), and from extending a drainage pipe and wetland replication construction (~Sta. 764+60). Restoration details for the all temporarily impacted BVWs are not shown on the Plans and not adequately described in the NOI to confirm compliance with 310 CMR 10.55(4)(a)<sup>6</sup>.

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<sup>6</sup> 310 CMR 10.55(4)(a): Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.

*WPA16. Provide soil restoration details for all temporarily impacted BVWs and provide BVW restoration notes on construction plans.*

*WPA17. Provide planting plan for BVW restoration areas depicting species, locations and number of plants to be installed.*

*WPA18. Specify the wetland seed mix to be used for BVW restoration.*

No BVW impacts resulting from work on Bridge 128 are quantified, however, erosion controls to both the east and west of the Bridge are proposed to be placed on the wetland boundary and the timber mats will be installed within 1 foot of the wetland boundary. Due to the proximity of the erosion control and crane mat installation to the wetland boundary in all four quadrants, impacts to BVW from construction are likely.

*WPA19. See WPA6. Provide crane mat sections using existing topography to show how the timber mats placed at the wetland edge can be installed and removed without any impacts to the adjacent BVW.*

Work associated with replacement of a drainage pipe (~ Sta. 713+65) and from extending a drainage pipe and wetland replication construction (~Sta. 764+60) will result in 4 square feet and 85 square feet of permanent impacts, respectively. Based on the descriptions provided in the NOI, the wetland replication plan does not comply with the standards at 310 CMR 10.55(4)(b)(2-5)<sup>7</sup>.

No wetland replication is proposed in the area of Sta. 713+65 and instead, the size of the replication area adjacent to Sta. 764+60 was increased. The replication area at Sta. 764+60 is not at the same surface elevation, does not likely have the same groundwater elevation as Wetland 18, does not have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area, and is not within the same general area of the water body as the lost area.

*WPA20. Provide replication of the permanent BVW impacts proposed at Station 713+65 in compliance with the standards at 310 CMR 10.55(4)(b)(1-7).*

A wetland replication plan is presented in Attachment D of the NOI. The plan includes a description of the proposed hydrology, soils, and vegetation. Vegetation to be planted within the replicated BVW includes species typically suitable to replicate open emergent aquatic wetlands, whereas the wetland to be altered is a scrub shrub wetland, however, there is an emergent wetland to the north of the BVW replication area and sunlight conditions are likely appropriate for the species selected. The design proposes a larger wetland area (819 square feet) to also replicate the IVW (Sta. 732+50 / Wetland 13) to be filled (see Sudbury Bylaw

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<sup>7</sup> 310 CMR 10.55()(b): Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:

1. the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");
2. the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;
3. The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;
4. the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;
5. the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;
6. at least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and
7. the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00.

Compliance Discussion).

The proposed wetland elevations appear to be appropriate based on the wetland to the north of the ROW, however, they are different than the existing wetland elevations. Based on a field inspection of the area, the wetland replication is located in an area of extensive invasive vegetation growth.

*WPA21. Provide reasoning behind changing the wetland elevation and plant selection based on site conditions.*

*WPA22. Provide an intensive invasive species management plan for the area surrounding the wetland replication area.*

*WPA23. Include a special condition requiring invasive species management within and adjacent to the replication area for a minimum of 5 years following completion of the replication effort.*

### **Land Under Water – 310 CMR 10.56(4)(a)**

The NOI application states work associated with construction of the transmission line, approach to Bridge 127, and the Bridge 127 replacement will result 1,146 square feet of temporary Land Under Water alteration. This work includes grading, installation of erosion controls and placement of timber construction mats. According to the NOI, following the removal of the mats, the area of temporary LUW impacts will be stabilized with jute mesh erosion control blankets and seeded with a wetland seed mix. Based on the descriptions provided in the NOI, it is unclear how the LUW will be restored following completion of bridge construction in order to comply with the standards at 310 CMR 10.55(4)(a)(2 and 3)<sup>8</sup>. The Applicant will only have the timber mats installed within the stream between July 1 and September 31 during construction to comply with Time of Year restrictions for Hop Brook. Wildlife presence in the soil and sediment of Hop Brook is also unknown and restoration of soil density following construction for this resource area is not provided.

The Wildlife Habitat Evaluation does not describe the importance of the LUW resource area within the limit of work, nor does it individually address the Project's impacts on this resource area. Although impacts are stated to be temporary, vegetation is present within LUW within the Limit of work to both the northeast and southeast of Bridge 127.

*WPA24. Provide details on how timber mats will be placed on LUW (in water) that avoids permanent impacts to the riverbed. If the mats will be placed in dry conditions, then provide details for dewatering.*

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<sup>8</sup> 310 CMR 10.56(4)(a)(1-5): Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land under Water Bodies and Waterways shall not impair the following:

1. The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;
2. Ground and surface water quality;
3. The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and
4. The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.
5. Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.56(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60.

*WPA25. Provide details on how timber mats will be placed and maintained on LUW (in water) that avoids turbidity of the adjacent surface waters.*

*WPA26. Provide a description of how the jute mesh erosion control blankets will be secured in LUW to avoid impacts to ground and surface water quality.*

*WPA27. Describe how the wetland seed mix will be retained onsite so it is not washed away during the establishment period.*

*WPA28. Provide plug plantings of native species within the LUW restoration area to restore the wildlife habitat function of this resource area.*

Section 3.1.9.1 of the NOI describes the work associated with the bridge work. Work on Bridge 127 includes removing the existing timber piers, which will be cut at the mudline and removed by hand. No temporary LUW impacts are quantified for this work and description of how this work will be conducted in accordance with the LUW performance standards is not provided (i.e. will the work be conducted in the dry, and if not, how will water quality be protected during removal).

*WPA29. Provide a description of how work associated with the removal of the existing Bridge 127 timber piers of Bridge 127 will be completed in accordance with 310 CMR 10.56(4)(a).*

#### **Bordering Land Subject to Flooding - 310 CMR 10.57(4)(a)(1-3)**

The NOI application states the Project will result in 2,622 square feet of permanent BLSF impacts and 7,749 square feet of temporary BLSF impacts. Work within BLSF along the Project corridor is located at Bridge 128, along the Unnamed tributary to Hop Brook (parallel to Station Road), and at Bridge 127.

As previously stated, the ORAD affirmed the FEMA 100-year base flood elevations (BLSF boundary) only. It is unclear how much of the topography within the Floodplain areas was surveyed in the field. Accordingly, areal BLSF impacts and fill volumes below the 100-year floodplain boundary may not be accurate.

*WPA30. Provide confirmation that all topography shown on the Project plans (in areas where BLSF and FEMA Floodway is present) is a result of an on-the-ground survey.*

The Proponent has included cut and fill calculations for the Project and has indicated that the Project will result in a Net Gain of 78.46 cubic yards of storage. The methods of the cut and fill calculations were not provided and are not conducted in a way that can confirm compliance with the standards at 310 CMR 10.57(4)(a)(1). Cut and fill volumes for the length of the Project along the Unnamed Tributary to Hop Brook are combined, as are the cut and fill volumes for the length of the Project along Hop Brook. The proposed cut and fill volumes are not separated by the stream reaches in which the cut/fill are proposed. Displaced water within a given reach should be compensated for within that reach to avoid impacts to stream hydrology and changes in the flood stage.

*WPA31. Provide a cut/fill analysis for the project by stream reach and elevations to confirm adequate compensatory storage is provided in accordance with 310 CMR 10.57(4)(a)(1)<sup>9</sup>.*

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<sup>9</sup> 310 CMR 10.57(4)(a)(1): Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.

Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. **Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water**

*WPA32. Provide planting plans for compensatory storage areas.*

The application quantifies only the proposed paved areas within BLSF as permanent impacts, while areas that will be impacted from grading, duct bank installation, and continued maintenance are considered only temporary. The impacts to BLSF were not quantified correctly to accurately describe the projects impact on wildlife habitat. For BLSF impacts to be considered temporary, cleared areas should be planted with native species ultimately resulting in varying heights to comply with 310 CMR 10.60(1)(a)<sup>10</sup>.

*WPA33. Provide accurate permanent and temporary BLSF impacts associated with the Project. Areas that will be converted from forested land to maintained grass area and areas where the topography is changing permanently should be quantified at permanent impacts.*

*WPA34. Provide an updated wildlife habitat evaluation that accurately describes the projects effect on the Wildlife Habitat provided by BLSF and the Project's effect on the site's ability to provide this function following construction.*

*WPA35. Provide planting plans for the BLSF restoration areas.*

In addition, the Applicant cites 310 CMR 10.57(1)(a)(3)<sup>11</sup> in their description of the Project's compliance with the BLSF wildlife habitat performance standard and in their NOI narrative description of compliance with 310 CMR 10.60. However, this section is not applicable to the Site since the railroad has been abandoned for approximately 50 years.

*WPA36. This section of the regulations appears to be inappropriately cited. Any decisions or evaluations that employed this statement should be re-evaluated. Otherwise, the Applicant should provide legal decisions that address this provision interpretation.*

### **Riverfront Area - 310 CMR 10.58(4) and (5)**

As stated in the NOI, the Project will result in impacts to Riverfront Area associated with three perennial streams (as defined under the WPA) and in total, will result in 129,261 square feet of impact in the inner (0-100') riparian area and 27,205 square feet in the outer (100-200') riparian area.

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**body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek (emphasis added).**

<sup>10</sup> 310 CMR 10.60(1)(a): *To the extent that a proposed project on inland Banks, Land under Water, Riverfront Area, or Land Subject to Flooding will alter vernal pool habitat or will alter other wildlife habitat beyond the thresholds permitted under 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., 10.57(4)(a)3. and 10.58(4)(d)1., such alterations may be permitted only if they will have no adverse effects on wildlife habitat. Adverse effects on wildlife habitat mean the alteration of any habitat characteristic listed in 310 CMR 10.60(2), insofar as such alteration will, following two growing seasons of project completion and thereafter (or, if a project would eliminate trees, upon the maturity of replanted saplings) substantially reduce its capacity to provide the important wildlife habitat functions listed in 310 CMR 10.60(2). Such performance standard, however, shall not apply to the habitat of rare species, which are covered by the performance standards established under 310 CMR 10.59.*

<sup>11</sup> 310 CMR 10.57(1)(a)(3): *Certain portions of Bordering Land Subject to Flooding are also likely to be significant to the protection of wildlife habitat. These include all areas on the ten year floodplain or within 100 feet of the bank or bordering vegetated wetland (whichever is further from the water body or waterway, so long as such area is contained within the 100 year floodplain), and all vernal pool habitat on the 100 year floodplain, **except for those portions of which have been so extensively altered by human activity that their important wildlife habitat functions have been effectively eliminated** (such "altered" areas include paved and gravelled areas, golf courses, cemeteries, playgrounds, landfills, fairgrounds, quarries, gravel pits, buildings, lawns, gardens, roadways (including median strips, areas enclosed within highway interchanges, shoulders, and embankments), **railroad tracks (including ballast and embankments)**, and similar areas **lawfully existing on November 1, 1987 and maintained as such since that time**). (emphasis added).*

The NOI describes much of the corridor as being “previously degraded”, stating that the 11-foot area occupied by the rail ties, steel rails, and stone ballast meet the definition. The NOI narrative on pages 59 states that all work is proposed entirely within previously degraded RA, however, on page 57 the Applicant states that, in accordance with 310 CMR 10.58(5)<sup>12</sup> there is a 11-foot-wide degraded area.

Like the impacts proposed within BLSF, the NOI quantifies only the proposed paved areas within RA as permanent impacts, while areas that will be impacted from grading, duct bank installation, and continued maintenance are considered temporary. Impacts within previously degraded RA should be separated from impacts to vegetated RA that is currently providing wildlife habitat, as work within the vegetated RA must fully meet the standards at 310 CMR 10.58(4), while impacts within the previously degraded RA must meet the standards at 310 CMR 10.58(5).

*WPA37.Re-evaluate permanent and temporary RA impacts associated with the Project. Impacts within previously degraded RA should be quantified separately from impacts outside the 11-foot wide rail ballasts. The areas to be cleared and maintained grass area, and areas where the topography is changing permanently should be quantified at permanent impacts.*

*WPA38.Provide a description of how the impacts outside the existing previously degraded RA meet the performance standards at 310 CMR 10.58(4)(c and d)<sup>13</sup>.*

The narrative description of the Project’s compliance with the standards at 310 CMR 10.58(5)(f)<sup>14</sup> requires additional details to confirm compliance. Areas that will be stabilized with a native seed mix, but will be maintained are not true RA restoration, since the work will not result in comparable resource area functions. The entire length of the project within RA should be planted for the work to be considered restoration. Planting is proposed, however, the plans do not clearly depict the planting locations.

*WPA39.Provide planting plans showing RA restoration.*

*WPA40.Provide a revised description of the Project’s compliance with 310 CMR 10.58(5)(f) that fully describes the areas that will be restored RA in-kind and areas that will be converted to different habitat.*

### **Estimated Habitat of Rare Wildlife - 310 CMR 10.59**

The Project has received two conditional approvals from the Natural Heritage and Endangered Species Program: one for the transmission line and one for the bikepath. The approval for the bikepath required that

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<sup>12</sup> 310 CMR 10.58(5): ...A previously developed riverfront area contains areas degraded prior to August 7, 1996 by impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, or abandoned dumping grounds.

<sup>13</sup> 310 CMR 10.58(4)(c): Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.

310 CMR 10.58(4)(d): No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

<sup>14</sup> 310 CMR 10.58(5)(f): When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria. Areas immediately along the river shall be selected for restoration. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Restoration shall include:

1. removal of all debris, but retaining any trees or other mature vegetation;
2. grading to a topography which reduces runoff and increases infiltration;
3. coverage by topsoil at a depth consistent with natural conditions at the site; and
4. seeding and planting with an erosion control seed mixture, followed by plantings of herbaceous and woody species appropriate to the site;

a turtle protection plan be submitted to NHESP for review and approval, while the turtle protection plan submitted by Eversource was approved by NHESP. In addition, TOY restrictions and construction signage are required for the Project to avoid a take of rare species and the Corridor Management Plan must be implemented as proposed to avoid a Take.

*WPA41. Provide the Conservation Commission with a copy of the 5/31/2018 Corridor Management Plan for review and approval.*

*WPA42. Provide the Project's NHESP Approved Turtle Protection Plan.*

### **Wildlife Habitat Evaluations - 310 CMR 10.60**

The NOI includes wildlife habitat evaluations along much of the Project corridor. The evaluation, however, does not address wildlife habitat fragmentation, duration of the construction period and its specific effects on documented wildlife habitat, or the duration of time between restoration activities and full compliance with the no-adverse effect standard. The evaluation also does not address the full scope of the existing habitat features along the corridor for an adequate comparison of proposed impacts to habitat features to features that will remain unaltered by construction. In addition, the Post-construction evaluations of the Appendix B say "See note below", however, there are no notes below the "VI. Quantification Table for Important Habitat Characteristics."

In addition, as previously discussed, the Wildlife Habitat Evaluations do not address the Vernal Pool Envelope or Critical Terrestrial habitat of the Vernal Pools that are extend within the ROW. These vernal pools are also not identified on the wildlife habitat evaluation forms.

*WPA43. Provide an adequate analysis on the Project's potential for wildlife habitat fragmentation.*

*WPA44. Conduct an evaluation of the entire Project locus in accordance with 310 CMR 10.60 and the Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands (DEP – March 2006), describing the quantity of habitat features onsite to remain undisturbed in comparison to the quantity of the features to be altered by project construction. This is required to confirm there will be no-adverse effect on wildlife habitat.*

*WPA45. Describe the wildlife habitat provided by resource areas proposed to be impacted by the Project and the capacity for the Site to maintain this function after construction completion.*

*WPA46. Provide the "Notes Below" as referenced in sections "VI. Quantification Table for Important Habitat Characteristics" included in the Wildlife Habitat Evaluation.*

### **SUDBURY WETLANDS PROTECTION ADMINISTRATION BYLAW**

The following are the applicable Sudbury Wetland Protection Administration Bylaw and Regulations Provisions and Standards to the Project, and the Project's compliance with these standards:

#### **Isolated Vegetated Wetlands -Article XXII- Section 2:**

The Project proposes to fill a 303 square foot IVW north of the Right of Way at Sta. 732+50 (Wetland 13). The purpose of the local Bylaw and Regulations are to prevent adverse effects on wetland values. The Bylaw wetland values provided by the IVW at this location are: protection of groundwater, flood control, wildlife habitat. No wildlife habitat evaluation was conducted specifically on this wetland to be filled, therefore compliance with the local performance standards at Section 7.3 and 7.8.2 cannot be determined.

*SWB1. Provide a wildlife habitat evaluation for the IVW to be filled, in accordance with section 7.4 of the Bylaw Regulations.*

Erosion controls are proposed directly on the boundary of Wetland 26 (~Sta. 577+30). Installation and removal of these erosion controls may result in additional impacts to IVW.

*SWB2. Relocate erosion controls to a distance where impacts to the IVW are not likely, otherwise, impacts to the IVW should be quantified and the area should be restored following construction completion.*

#### **Cold Water Fisheries Resources – Regulations - Section 2.6:**

Cold Water Fisheries Resources (CFR) are protected under the Bylaw. According to the NOI, eight (8) streams that may meet the Bylaw definition of a CFR are present along the Project corridor, while Hop Brook is the only CFR designated by the State. The Project proposes clearing between 5 and 80 feet of the potential CFRs along the Project corridor; accordingly, the Project will reduce the natural vegetative cover between the limit of work and the Bank of the CFRs. The area of clearing adjacent to the eight CFRs onsite has not been quantified or depicted on the Project Plans and the Applicant has not definitively demonstrated that the Project will not result in temporary or permanent impacts to the CFRs located along the Project corridor.

Based on the Project description and the description of compliance with the Sudbury Bylaw, the Applicant has not demonstrated compliance with the CFR Bylaw performance standards. Several of the CFRs flow parallel to the ROW, and the Project will result in on, or immediately adjacent to, the Banks of these areas. For example, clearing is proposed within 20 feet of the Bank to Dudley Brook for a length of 550 feet. Vegetation on the railroad embankment provides shade and overhanging vegetation to the stream, which will be removed by the Project. The Applicant has not definitively demonstrated that the Project will not result in temporary or permanent impacts to the eight (8) Bylaw CFRs located along the Project corridor.

*SWB3. Quantify the area of proposed clearing within 80 feet of CFRs.*

*SWB4. Provide restoration details for areas to be cleared within 80 feet of CFRs that do not already have restoration proposed, for example at Sta. 540, 587, 603, 706+50, etc.*

*SWB5. Evaluate the impacts of clearing on the Bylaw-protected CFRs.*

The NOI states that, according to the Mass. Division of Fisheries and Wildlife (DFW), the clearing associated with the Project is not likely to have an effect on stream temperature of the state-designed CFRs, however, no evaluation by the DFW was conducted on the tributary streams. In addition, no written correspondence between the applicant and the DFW was provided to the Commission describing the DFW's findings on the Project's impacts to Hop Brook.

*SWB6. Provide correspondence from DFW describing their findings on the Project's impacts to the onsite CFRs.*

#### **Adjacent Upland Resource Areas – Regulations - Section 7.2:**

The Bylaw protects Adjacent Upland Resource Areas (AURA) to protected wetlands. According to the NOI, 853,305 square feet of the ROW is within 100 feet of protected resource areas and 71% of this adjacent upland will remain unaltered by the Project, with 94,645 square feet being permanently altered (11% of the AURA onsite) and 153,519 square feet being temporarily altered. The application quantifies only the proposed paved areas within the AURA as permanent impacts, while areas that will be impacted from grading, duct bank installation, and continued maintenance are considered temporary.

Under Section 7.2 of the Bylaw, Commission can designate no-disturbance, temporary disturbance, and limited disturbance areas within the AURA to protect the functions the AURA is providing. Along the Project corridor, the AURA provides important wildlife habitat, habitat for rare species, upland habitat for vernal pool species, and water pollution prevention functions.

*SWB7. Quantify the permanent impacts to AURA from the Project including areas that will not be restored to the existing conditions*

**Vernal Pools and AURA to Vernal Pools – Regulations- Section 2.2 and 7.2:**

The Bylaw establishes the Commission's jurisdiction over Adjacent Upland Resource Areas (AURA) to protect adjacent resource areas, including Vernal Pools. According to the Bylaw Regulations, the presence of Vernal Pool Habitat within wetlands can be used by the Commission to require additional areas of No Disturbance due to the significant habitat provided by of these areas. The Applicant has not demonstrated that the work will not result in impacts to Vernal Pools.

The Project proposes a March 1 to May 15 TOY restriction for work within 450 feet of a Vernal Pool. Migration to Vernal Pools can begin in February and migration out of Vernal Pools to upland areas can extend into mid-June.

*SWB8. Demonstrate that the proposed TOY restriction is appropriate for the Vernal Pool Buffer Zone.*

*SWB9. The Commission can consider requiring a No Disturbance Zone in proximity to the Vernal Pools located along the corridor.*

*SWB10. Quantify the permanent impacts to Vernal Pool Buffer Zone that includes areas that will not be restored to the existing conditions under this Project proposal.*

*SWB11. Update the Wildlife Habitat Evaluation to fully analyze the Project's effects on the Vernal Pool envelope and Critical Terrestrial Habitat area.*

**Resource Replications – Section 7.8:**

The Applicant provides an analysis of the Project's compliance with the Bylaw Resource Replications Standards, however, not all standards are met. The Applicant is requesting a waiver from the requirement that the replication area be established before structures are constructed but then states the replication area will be constructed as part of the vegetation removal process, which is proposed prior to the construction of any structures in Phase 1.

*SWB12. Provide clarification on why the Project requires a Waiver from the requirement that the replication area be constructed before construction of structures.*

The Applicant is also requesting a Waiver from the requirement that the original wetland soil must be transplanted with the soil structure intact. Based on a field inspection of the IVW impact area and BVW replication area, this waiver request is justified, however, the Applicant should still reproduce the soil profile within the replication area.

*SWB13. Provide details for replicating the soil lamination and density profile within the replication area. Placement of 12 inches of compost is not adequate to replicate the soil profile.*

**Wildlife Habitat – Regulations – Section 7.3**

The Applicant states that much of the corridor will be restored upon Project completion and that the restoration areas should be equal to the replacement areas, however, a 19-foot-wide corridor along the Project will be maintained in perpetuity. Therefore, the replacement areas will not be equal to the area lost. To comply with the Bylaw standards at 7.3, for work to have no adverse effect, the work must not substantially impair an areas ability to provide wildlife habitat functions. The abundance of wildlife habitat features located outside the ROW should not be substantially relied upon in the determination of whether the Project will have an adverse effect of the ability for the Project's to provide wildlife habitat.

As previously described, additional existing conditions information describing the existing wildlife habitat features within the Site locus are required to adequately quantify the Project's impact on wildlife habitat.

*SWB14. Provide an analysis of the Project's impacts on Town-defined CFRs.*

*SWB15. Provide an analysis of the Project's impacts on Vernal Pools, the Vernal Pool Envelope and the CTH of Vernal Pools.*

*SWB16. Provide an analysis of the Project's impacts on BLSF, RA, Bank, LUW and AURA.*

## **STORMWATER MANAGEMENT**

The project proposes stormwater management primarily through country drainage with some areas of the property improved with water quality swales and low points intended to function as infiltration basins. A catch basin is proposed near station 531 to convey flows to a 2' deep surface basin near station 534. Existing culverts used to convey flows between wetland areas and/or streams will generally be retained. Otherwise, stormwater from the proposed trail will flow, unmanaged, onto the surrounding areas to the north and south.

Reference is made to the Town of Sudbury Stormwater Regulations where appropriate.

*SW1. Clarify justification for abandonment of existing culvert pipes such that local drainage patterns will not be impaired.*

*SW2. Field visit noted the presence of an outfall near the Landham Road bridge which will discharge into Watershed 10.14. Determine approximate runoff anticipated from this outfall and include in HydroCAD model.*

### **MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS:**

The Applicant indicates the project qualifies as a Limited Project 310 CMR 10.53(3) and Bike Path 310 CMR 10.05(6)(m) and therefore only needs to meet Stormwater Standards to the maximum extent practicable.

BETA notes that the combined projects exceed impacts associated with a typical pedestrian path for the following:

- There is regrading through the length of the project and paved and therefore does not meet the requirements for a limited project 310 CMR 10.53(3)(d)(3).
- In adding the transmission line to the bike path an area greater than that which is required solely for the path needs to be cleared and maintained. A typical 10-foot bike path would only need a total clear zone of 14 feet well below the 18, 22 or 40 feet wide (plus additional grading) provided.
- The narrative indicates that the path is also to serve as an access drive (motorized) to maintain the transmission line.
- Significant portions of this work are within protected resource areas. Including buffer zones to vernal pools and Hop Brook which is impaired for total phosphorus.

*SW3. See WPA1. BETA recommends the commission determine if this combined project qualifies as a Limited Project 310 CMR 10.53(3)(d).*

**LID Measures:** The Checklist for Stormwater Report lists minimizing disturbance to existing trees and shrubs, use of "country drainage" and water quality swales. Plans include swales with stone check dams in several locations, and "areas of increased infiltration".

- SW4. *Water quality swales require specific design requirements. Provide details and supporting calculations in accordance with the MassDEP Stormwater Handbook.*
- SW5. *Some swales are located above “fluidized thermal backfill”. Provide information on infiltrative capacity of this material.*
- SW6. *Most swales and enhanced infiltration areas are not level and check dams are 6 inches high, update HydroCAD model and treatment volume calculations to reflect design.*
- SW7. *In several locations the proposed swales are on the north side of the path where the path cross slope pitches down to the south sites. Recommend relocating swales to side the future path will shed runoff.*
- SW8. *Consider installing infiltration (trench) swale the entire length on the downslope side of the path to facilitate meeting the standards 2,3,4 and 6 more fully.*

**No untreated stormwater (Standard Number 1):** *No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. The project is near numerous wetland areas with minimal treatment. Stormwater from the project area will runoff, untreated, into these resource areas for long stretches of the project area. While no piped outfalls are proposed, the proposed swales and grading patterns will direct runoff into/towards wetlands. Check dams are proposed for swales identified in the plans, but not those created by grading.*

- SW9. *Provide outlet control/overflow devices such that erosion and sedimentation will be controlled.*
- SW10. *Identify where swales will outlet to slopes and flow down slope. Proposed grading will result in the creation of swales alongside the trail for significant portions of its length. Provide calculations showing that these swales can convey proposed flows. Provide outlet aprons for these swales to control sedimentation. For all swales, show that swale lining is capable of managing these flows without losing stability or eroding.*
- SW11. *Provide sizing calculations for riprap aprons.*

**Post-development peak discharge rates (Standard Number 2):** *Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. The project as proposed provides stormwater management in the form of water quality swales, grassed swales, a surface basin, and re-establishment of vegetation. The applicant proposes to meet this standard to the maximum extent practicable due to the limited space available for stormwater BMPs. As such, several design points will see an increase in peak discharge rates.*

The watershed maps include substantial areas outside the proponent’s property and project limits possibly hiding the impacts of the project on direct abutters properties or sensitive resource areas. Typically, stormwater analysis areas include the proponent’s property and any upgradient areas that shed stormwater onto the Applicants’ property to evaluate the impact of the property on the direct downgradient property.

- SW12. *Revise and limit pre and post development areas to include the Applicant’s property and any upgradient area that sheds stormwater runoff to the Applicant’s property.*
- SW13. *In the HydroCAD model the current railroad bed are identified as gravel roads. Much of the bed has developed a forest matting and is overgrown with trees and brush. In limited areas where there are narrow paths these could be model as dirt, revise calculations accordingly*
- SW14. *Clarify how soil groups have been determined for areas listed as HSG Unknown.*
- SW15. *Use known surface type instead of “unpaved” to better calculate Tc for shallow concentrated flow.*

SW16. *Verify watershed area used for EX-5.11, PR-7.2, PR-8.4, PR-8.10, EX-9.1, EX-10.11, EX-10.12, EX-10.6; The area in HydroCAD varies significantly from that shown on the plans.*

SW17. *Verify watershed area used for 5.8, 5.13, 5.14, 5.16, 5.17, 5.18, 6.14, 7.1, 7.3, 7.4, 8.3B, 8.4, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 10.2, 10.8, 10.9 (Existing and Proposed). The areas attributed to each soil group vary significantly from that shown on the plans.*

SW18. *Provide location of Watershed PR-6.15.*

SW19. *Review routing of watersheds into basins. In many cases, only a portion of each watershed will drain into the Basins, rather than the entire area as modeled in HydroCAD. Sub-watersheds should be created as necessary to reflect this.*

SW20. *Provide means of controlling runoff that will be directed/discharged onto Town streets.*

**Recharge to groundwater (Standard Number 3):** *Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable. The project proposes a paved path, resulting in an increase in impervious area. Limited groundwater recharge is proposed via linear infiltration basins and water quality swales throughout the project. The applicant proposes to meet this standard to the maximum extent practicable indicating that providing the required recharge volume would result in clearing of additional vegetation. Provided calculations show that 23,697 c.f. of recharge volume is required, of which only 12,710 c.f. will be provided.*

SW21. *Tabulate comparison of runoff volume to each watershed for pre- and post-development conditions. The Site is abutted by low-lying areas and thus risk of flooding must be considered (8.0(A)(3)(i)).*

SW22. *To address compliance to the maximum extent practicable provide a complete evaluation of all possible infiltration measures per Standard 3, such as infiltration beneath the footprint of the trail or in areas devoid of vegetation such as the sandy area near northern Hop Brook. As discussed above, proposed grading will create low-lying areas which can potentially be used as infiltration areas dependent on presence of vegetation.*

SW23. *Provide detail for linear infiltration basins and show required grading on cross sections. Identify design criteria such as outlet weir elevation on the plans/details. Show top elevation of check dams to ensure proper flow between cells.*

SW24. *Provide location and label of proposed basins on the drain area plans. Clarify location of Basins 5.18, 8.4, 8.5, and 10.13, BETA was not able to see on the site plan set.*

SW25. *Provide minimum 1' of freeboard for all linear infiltration basins. BETA notes that peak elevation for some basins above the crest height of the proposed trail.*

SW26. *Review HydroCAD model for basins to ensure that surface areas and elevations in model match those depicted in the plans/sections. Basins designed in GydroCAD are larger than those shown on the plans.*

SW27. *Provide HydroCAD model for the basin near Station 731.*

SW28. *Conduct test pit/borings at the location of each proposed "area of increased infiltration" to verify soil conditions, infiltration rates, and groundwater levels.*

SW29. *Show that water quality swales will dewater within 72 hours and that seasonal high groundwater is not within 2-4 feet of the swale bottom.*

SW30. *Provide provisions to protect infiltrative capacity of swales and "area of increased infiltration".*

SW31. *Not all new impervious areas are directed to recharge BMPs, provide capture area adjustment analysis*

*(MSWH vol.3, ch.1 pgs. 27 – 28).*

**80% TSS Removal (Standard Number 4):** *For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids.* The project proposes the use water quality swales and infiltration basins to provide limited treatment of stormwater. The applicant proposes to meet this standard to the maximum extent practicable as the project expects only pedestrian traffic, rather than the more significant pollutant loading of vehicles. Provided calculations indicate that 18,675 c.f. of water quality volume is required, of which 12,710 c.f. will be provided.

The MassDEP Stormwater Handbook does not qualify impervious surfaces relative to amount of vehicular traffic. Replacing forested areas with impervious surfaces and grass areas will increase the phosphorus load in runoff. Since some phosphorus binds to solids, it is important to reduce the solids being discharged to sensitive or critical resources areas.

*SW32. Revise TSS Removal worksheets. 80%/70% TSS removal credit can only be attributed to infiltration basins/water quality swales if combined with adequate pretreatment.*

*SW33. Identify location of and provide detail for proposed vegetated filter strips.*

**Higher Potential Pollutant Loads (Standard Number 5):** *Stormwater discharges from Land Uses with Higher Potential Pollutant Loads require the use of specific stormwater management BMPs.*

The project is not considered a LUHPPL – **Not Applicable.**

**Critical Areas (Standard Number 6):** *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. Portions of the project are within or near to critical areas, including outstanding resource waters (vernal pools), Zone II Wellhead Protection Areas, and coldwater fisheries. The applicant proposes to meet this standard to the maximum extent practicable due to the lack of space available for suitable BMPs and the limited potential for pollutants from the pedestrian trail.*

Hop Brook is shown on MassDEP 2014 Integrated List of Waters Map as impaired for total phosphorous. Additional impervious area will increase the phosphorous load to the brook increasing this impairment.

*SW34. Provide required BMPs to treat discharges in these critical areas.*

**Redevelopment and Other Projects Subject to the Standards only to the maximum extent practicable (Standard Number 7):** *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. The project does not qualify as redevelopment however the Applicant is claiming that the project is a Limited Project and a Bike Path Project that only needs to meet the Standards to the maximum extent practicable.*

**Construction Period Erosion and Sediment Controls (Standard Number 8):** *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.* The project includes erosion control designed to mitigate construction period pollution. The project as currently depicted will disturb in excess of one acre of land and will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and file a Notice of Intent with EPA. A description of erosion control BMPs has been provided with the submission outlining practices such as silt fence, straw/hay bales, compost filter tubes, catch basin protection, stabilized construction entrance, temporary seeding, slope protection, dewatering measures, and coir logs.

*SW35. Provide draft copy Stormwater Pollution Prevention Plan SWPPP for review.*

- SW36. *Provide provisions for management of soils including stockpile areas and assessment of contamination levels.*
- SW37. *Provide maintenance/inspection requirements for stabilized construction entrance and turbidity curtain.*
- SW38. *Provide measures for street sweeping of Dutton Road, Peakham Road, Horse Pond Road, Union Avenue, and Boston Post Road during construction.*
- SW39. *Provide perimeter erosion controls along the south side of the Site near stations 391+50, 405, 516, 545 through 555, 557, 565, and 753, and the north side of the Site near stations 565 through 569 and 580 through 585.*
- SW40. *Provide a construction phasing plan that limits the area of the Site disturbed at any one time to mitigate environmental impacts and risk of erosion.*
- SW41. *Provide measures to protect infiltration systems during construction.*
- SW42. *Revise inspection frequency to conform to Town of Sudbury requirements (9.0(B)(1)).*
- SW43. *Provide template for inspection forms (9.0(B)(3)).*
- SW44. *Clarify if use of fertilizers is proposed; contradictory information is presented in narratives and plan set.*
- SW45. *BETA recommends a condition requiring a final, signed SWPPP be provided to and approved by the Town prior to the start of work.*

**Operations/maintenance plan (Standard Number 9):** *A Long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed. An Operation and Maintenance Plan (O&M) has not been provided. The narrative indicates that it is intended to be developed in the future.*

- SW46. *Provide Operation and Maintenance Plan for stormwater controls meeting the requirements of the MassDEP Stormwater Handbook and Town of Sudbury requirements.*
- SW47. *Provide map indicating location of all proposed BMPs.*
- SW48. *Provide inspection measures meeting the requirements of 9.0(C).*
- SW49. *Provide inspection and maintenance procedures for culverts.*
- SW50. *Implement a long term pollution prevention plan to control runoff into Hop Brook, which is an impaired waterbody.*

**Illicit Discharges (Standard Number 10):** *All illicit discharges to the stormwater management systems are prohibited. The narrative indicates that no sanitary sewer infrastructure is known to exist on-site. Otherwise, no illicit discharge compliance statement has been provided.*

- SW51. *Provide illicit discharge compliance statement signed by the Owner.*

## **BRIDGE CONSTRUCTION IMPACTS**

The project includes work on two existing bridges over Hop Brook.

Work associated with former Bridge 128 (station 400+10 to 400+55) approximately 1680 feet west of Dutton Road includes the replacement of the timber deck (12 feet wide by 43± feet long). Work areas include steel sheeting and crane mats, 85'x40' on west side and 95'x40' on the east side.

Work associated with former Bridge 127 (station 725+9 to 725+60) approximately 1350± feet east of Boston Post Road includes the replacement of the timber deck (12 feet wide by 43± feet long). Work areas include steel sheeting and crane mats, 85'x40' on west side and 95'x40' on the east side.

The crane mat detail indicates that timber cribbing will be installed at 20 feet from the centerline and the plans indicate that this is the limit of work and there are no additional impacts beyond the 20 feet.

- B1. Confirm that there will not be any additional disturbance or impacts to resource areas outside the crane mat footprint.*
- B2. Recommend that a condition be included that requires a detailed plan for the construction of the crane mat.*
- B3. Include temporary impacts associated with cutting timber piles. Recommend removing timber piles 2 feet below mud line.*
- B4. Recommend utilizing both erosion control type C options at bridgework areas.*

## **SUMMARY**

Based on our technical review of the NOI, Stormwater Report, and supporting documents, the Applicant has not provided to describe the site, the work and the effect of the work on the interests identified in the Act and Bylaw and should not issue an Order of Conditions approving the work. Our recommendations are listed above. BETA Group, Inc. will be at the May 18, 2020 public hearing of the Sudbury Conservation Commission to answer any questions regarding our comments

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,  
**BETA Group, Inc.**



Philip F Paradis, PE, CPSWQ  
Associate



Marta J. Nover  
Vice President