



July 14, 2020

Mr. David Mercer, Chair  
Hudson Conservation Commission  
78 Main Street  
Hudson, MA 01749

Attn: Pam Helinek, Agent

Via email: [phelinek@townofhudson.org](mailto:phelinek@townofhudson.org)

Reference: Peer Review – Notice of Intent (DEP File #190-0647)  
Sudbury-Hudson Transmission Reliability and MA Central Rail Trail Project  
Eversource and DCR -Hudson, Massachusetts  
WDA JN-0920.20.03

Dear Mr. Mercer and Members of the Conservation Commission:

We are providing this response to the Commission's "questions outline" which was provided to us via email on June 16, and as referenced during the Public hearing (Zoom webinar) on June 17, 2020. In addition to that outline, we were provided a copy of the VHB Response letter to the Commission dated June 11, 2020. We are only responding to several key items that the Commission had requested input based upon their initial review of the VHB response letter. Specifically, the following points were called out by the Commission both in the questions outline, and during the June 17 hearing. Note that during the 6/17 hearing, only portions of the outline and VHB responses were addressed, the goal is to hear the remaining items during the continued hearing of July 16, and we anticipate issuing a follow up report based upon the discussions of that meeting. WDA text is standard format, while VHB prior responses are italicized.

**Stormwater questions:**

The Commission had four (4) key points, and #'s 3 and 4 (there are two 2's numbered in list) were addressed in VHB response letter and discussed and sufficiently addressed or agreed to during the 6/17 webinar. Question #1 regarding the O&M plan and the first #2, SW Standard 3 in Zone II wellhead areas are addressed below.

**Operation and Maintenance Plan:**

An O&M plan was submitted along with a draft Corridor Management Plan by the Applicant.

- a. WDA recommends the draft Corridor Management Plan be included as part of the Long-Term Operation and Maintenance Plan associated with the Notice of Intent.
- b. The Corridor Management Plan states generally throughout the document "DCR plans to" when describing the actions to be taken to maintain the Project. This could be interpreted that the actions may not occur. WDA recommends this language be changed to be more precise, requiring the actions be performed during the specified time schedule.

- c. The Corridor Management Plan states that maintenance will include blowing debris from paved and stabilized pathways. This method may cause debris to be blown closer to, or into the wetland resource areas and does not appear to collect the debris. WDA recommends a different method be proposed to collect and remove the debris to minimize the chance of spreading the debris toward the wetlands.

#### **Groundwater Recharge within Zone II:**

WDA recommends the Applicant consider providing stone infiltration trenches within the proposed grassed swales on the sides of the bike path. This would be an effective way to promote additional recharge along the bike path without increasing the limit of work. This would be especially cost-effective in areas of cut excavation where the topsoil and subsoil are already proposed to be removed and the soil parent material (C-horizon), where the infiltration best management practices should be located, is already exposed. The applicant should also consider, where possible as existing and proposed grades allow within the limit of work, widening the swale to facilitate recharge and suspended solids removal by detaining the stormwater for a longer time period.

WDA recommends the Applicant consider modifying the proposed catch basins at stations 119+25 and 126+70 to leaching catch basins.

#### **Wildlife Habitat:**

Question #4 regarding time of year restriction. Please refer to Question #2 response within the Erosion Control and Construction Staging section below.

#### **Plantings and vegetation management:**

##### **General Corridor:**

In prior reports and replies it has been reported that approximately 52,129 SF of alteration is proposed within the RFA between Stations 105+90 to 124+90 (plan Sheets 25-27), yet no restoration plantings aside from the "General Construction Corridor Seed Mix" was called for (Plan Sheet 131, Schedule C). WDA in our review had expressed that it appears that there are areas along this stretch that could accept shrub and or tree plantings without potential impact to the subsurface transmission line vault, or the 2' wide gravel shoulders. The Applicant's consultant, VHB had replied the following;

*The RFA between Stations 105+90 to 124+90 was evaluated to determine whether additional woody restoration plantings would be appropriate. The Project Site within this area has been reduced to the extent possible to minimize work within the RFA, including an 18-foot-wide construction platform, and most of the limit of work within this area is limited to the construction platform. There will be narrow spaces outside of the bike path shoulders and transmission line duct bank (less than 2 feet) that will remain and will not be periodically mowed which, although narrow, could possibly support limited woody species. In addition, three slightly wider areas were identified throughout this RFA, which includes:*

- 1) *An area to the north of the construction platform from approximately Station 115+75 to 116+40 that is approximately 700 square feet.*

- 2) *Two areas to both the north and south of the proposed manhole at approximately Station 120+00 to 121+80. To the north, the area is approximately 1,370 square feet and to the south the area is approximately 1,175 square feet.*
- 3) *An area to the south of the construction platform from approximately Station 123+20 to 124+40 that is approximately 850 square feet.*

*After consulting with a licensed Landscape Architect, it was determined that planting this area of RFA is problematic for nursery-grown woody shrubs and trees. Where the slopes are 2:1 or greater, we have experience low survival rates with planted stock on other projects. Much of the RFA to be restored will be subject to periodic mowing, leaving only narrow strips (2 to 3 feet wide) adjacent to the 19-foot-wide maintained corridor available for planting. Planting this area would create linear rows of plants that the Commission has already expressed concern about. However, a seed mix containing seeds of alternate-leaved dogwood (*Cornus alternifolia*), arrowwood (*Viburnum dentatum*), nannyberry (*Viburnum lentago*), and hazelnut (*Corylus americana*) is proposed to be applied to these areas which would encourage woody vegetation to grow. By starting the plants from seed, the woody plants will be randomly placed, and it will allow them to grow their root systems to adapt to the slopes, therefore ensuring a higher rate of success.*

This topic was brought up by the Commission during the 6/17 webinar and VHB reiterated that the landscape architect's opinion was that container or bare root shrub/tree plantings on anything greater than 2:1 slope had little chance of success. The applicants are utilizing jute mat slope stabilization and that with the applicable stapling and utilizing shrub/tree saucers around planted shrub/trees can be successful on 2:1 slopes. If the decision is that on slopes greater than 2:1 that only the hydroseed specified herbaceous/shrub seed mix will be applied, then areas containing slopes 2:1 or less should be able to receive supplemental plantings as the Commission has requested. The Commission may also want to request photographic examples be provided of regional sites that the applicant or engineer has successfully utilized the shrub seed mix.

Given the three areas identified above, within the 200' riverfront/and or 100' buffer zone. Looking closely at the plan and profile pages for those three areas, specifically on the Eversource Sudbury-Hudson NOI plan set, sheets 16, 26, 127, 174 and 176-179 of 315, several areas are 2:1 or less.

We agree that the area near station 116+00 is not conducive to planting additional shrub/trees beyond the planned hydroseed mixture. The two other areas, or portion of Station 120+60 to 121+30 (left), the profiles indicate a proposed maximum slope of 2:1 to tie into the existing slope (generally 2.5:1 to 3:1), therefore there appear to be areas of opportunity to add supplemental shrub/tree plantings here on those areas. The second and largest area available is located at approximately station 123+20 to 124+80 (right side of centerline and swale). This area is shown in the plan and profile sections on Sheets 26 and 178-179 to be graded nearly flat and to receive loam and seed. This area is contained within both the Riverfront area and 100' buffer zone and could be planted with additional shrubs/trees with species applicable to the area.

#### **Crane Mats (Fort Meadow Brook):**

The Applicants are proposing to plant additional shrub and tree species as noted below along the areas of the crane mat restoration areas at Fort Meadow Brook. Existing slopes along the two noted stretches scheduled for restoration, specifically sta. 147+75 to 148+50 and 149+00 to 150+25, are typically 2.4:1-2.7:1, with some localized areas as steep as 1.8:1 (sta. 149+50 RT). The flattest slope appears to be 3:1. The profile section on sheet 14 indicates a 2:1 max side slope and on Sheet 130, the section for "crane mat restoration-bridge 130", the callout is to "restore existing slope", so that would indicate there may be areas of slope that are greater than or close to 2:1. In discussion with VHB, the plan is to grade all slopes within the crane mats and outside

the steel sheeting walls at maximum 2:1. It may be beneficial to the Commission if a larger, scaled detail (plan and cross section view) of these two critical areas was submitted showing existing grades, resource area limits, proposed grading, spot elevations, and proposed plantings of shrubs and trees (understanding that the plantings will not necessarily be planted in the graphic locations (avoiding row planting etc.), but it may assist the Commission in review of planting density, slopes, resource areas and overall clarity of the proposed restoration of these two key areas as they relate to the planting schedule on Sheet 131.

During the 6/17 meeting the Commission questioned the amount of aquatic plug plantings in the area of the crane mats. On Sheet 131 the table shows 2 plugs each of four aquatic species, this is the same for both the areas associated with the crane mats between station 147+75 to 148+50 and 149+00 to 150+25. We inquired of VHB as to whether the call out indicates 8 per side, or that is the total for each mat. The total is 8 per each mat, 4 per side (north and south), therefore the total for the four sides is 16 (400 LF total of both areas). This appears to be a low count (4 per side equals 1 every 19' per side for west mat, and 1 every 31' for the east side mat) since there will be anticipated mortality of some of the plugs, and some of the impacted existing vegetation will likely see mortality and not necessarily regenerate following removal of the crane mats. Additionally, the plug count is the same for both mat areas, although the crane mat from station 149+00 to 150+25 is proposed 50' longer than the westerly mat and should receive more plugs. We would suggest that the plug count be doubled (total 8 per side) along the west mat (Sta. 147+00 to 148+25, and tripled (12 per side) along the east mat (station 149+00 to 150+25). This will create a plug spacing average of 10'. Please note that it is difficult to discern from the plan (Sheet 30), or planting schedule, and not identified during the discussions, if the low count was based upon the plantings only for areas below elevation 177, and if so the amount of additional plug count we have suggested may be high, but that should be specified or adjusted accordingly by the applicant/engineer.

#### **Erosion control and construction staging:**

Question #1 of the Commission letter (and a DEP comment) was inquiring whether the crane mats would impact land under water (LUW). Note that this DEP comment was pertaining to the Bridge-127 Crossing which is in Sudbury and not pertinent to this Hudson review. The engineer stated that the crane mats would not impact LUW. The crane mat work located within Hudson near a water body are those proposed near Fort Meadow Brook (Stations 147+75 to 148+50 and 149+00 to 150+25). The crane mats are outside the thread of Fort Meadow Brook, and the adjacent mean annual highwater and observed water elevation of FMB as provided by the VHB survey is noted on the plans as 176.50 (observed on 9/21/17). Observations at the site have shown water along the edge of the area of the proposed crane mats which is "backwater" from the main stream thread. If the water level associated with the brook does not get higher than 176.50-177, with the crane mats at elevation 177.4 and 177.5 respectively, then the crane mats would not be located in LUW.

The Engineers have submitted that the crane mats will be wrapped in geotextile fabric (underneath and around sides) providing an envelope around the mats. The plans also call for a Type A (plan sheet 124) compost filter tube and silt fence at the limit of grading along the limit of grading/work along the corridor which includes the crane mats. The Commission inquired whether the crane mat work would also require silt curtains. VHB has indicated in their 6/11/20 response letter that an additional silt curtain or other appropriate measure could be utilized to supplement the other identified measures in the area of the crane mats as site conditions dictate.

Question #2 was regarding erosion control measures allowing for movement of amphibians to and from vernal pools. VHB responded that a syncopated silt fence (see plan sheet 124 for detail) is to be utilized. This is an acceptable and recommended method. VHB indicated in their letter response that the environmental inspector to be hired is “typically a qualified biologist familiar with vernal pool ecology”. If the environmental inspector that is hired is not a qualified biologist, then the Commission may want to consider that a qualified biologist familiar with vernal pools and the species specific to these vernal pools, aside from the environmental inspector, be retained to provide observations during the TOY restrictions and construction work in/around the vernal pools and provide periodic reports to the Commission. With the expanded TOY restrictions (March 1 to June 1), monitoring and use of the syncopated fencing, all movement and breeding should be completed and the potential for impact should be relatively minimal.

### Construction/Engineering:

#### **Culverts:**

On Sheet 25, Station 107+90, there is an existing 30” clay culvert that runs SE to NW under the ROW conveying an unnamed perennial stream and connecting wetland 1 to Wetland 2. The culvert is shown as to be retained. MA DEP had suggested in their review comments that the culverts conveying streams #1 and #3 be upgraded to meet MA Stream Crossing Standards.

*The existing 30-inch clay culvert located beneath the railroad embankment at Station 107+90 was evaluated by VHB Structural Engineers in March 2017. The culvert is inside of a stone box and did not exhibit any visible structural inadequacies at the time of the inspection, aside from some decay of the north stone headwall, which is not a concern for the Project and does not affect its function. The proposed design provides for over 4 feet of cover between the estimated top of the culvert and the bottom of the proposed duct bank; thus, no damage to the culvert is expected to occur during construction. Furthermore, the headwalls of this culvert are approximately 15 feet outside of the proposed limits of grading for the Project and are not anticipated to be impacted by project activities. However, should any damage to the existing culvert occur during construction, Eversource will install a new reinforced concrete pipe having the same dimensions, shape, and inverts as the existing culvert.*

The applicant states the original culvert inspection was performed over three years ago in March 2017. WDA recommends the Commission request an updated inspection report stamped by the Applicant’s Structural Engineer detailing the current structural condition of the culvert and to support the statements above on the adequacy of the pipe to remain or a recommendation to replace the pipe if appropriate. The inspection report should confirm the current structural conditions of the culvert are the same as on March 2017. WDA recommends a video camera inspection be performed along the interior length of the pipe. The inspection report should confirm whether or not the current structural conditions of the culvert are the same as on March 2017.

In the event the culvert is damaged during construction and will be replaced, the limit of work for the project has the potential to expand outside the current defined limit. The Commission may want to request, and the Applicant provide an alternative design in the event the culvert is damaged during construction. If the culvert will be replaced, the design documents or a separate detail should be submitted to define the potential culvert replacement. This plan could be referenced along with the current plan set as part of an Order of Conditions.

On Sheet 35, Station 206+10, there is an existing 24" clay culvert that runs SW to NE under the ROW conveying and unnamed intermittent stream and connecting wetland 10 to Wetland 11. The culvert is shown as to be retained.

*The existing 24-inch clay culvert located beneath the railroad embankment at Station 206+10 was evaluated by VHB Structural Engineers in March 2017. Visual inspection of the pipe indicated cracking along the ends of the pipe, likely due to a tree on top of the northeast corner of the pipe. The pipe was clear inside, with no apparent collapsing. Eversource has proposed to cut the tree on top of the northeast corner of the pipe to avoid further cracking. The proposed design will incorporate a 4'x1' transmission line configuration in this location to provide for approximately 1.25 feet of cover between the estimated top of the culvert and the bottom of the proposed duct bank; thus, no damage to the culvert is expected to occur during construction. Furthermore, the ends of this culvert are over 5 feet outside of the proposed limits of grading for the Project and are not anticipated to be impacted by project activities. However, should any damage to the existing culvert occur during construction, Eversource will install a new reinforced concrete pipe having the same dimensions, shape, and inverts as the existing culvert.*

The applicant states the culvert inspection was performed more than three years ago in March 2017 and that cracking on the pipe end, apparently caused by a tree on top of the pipe, was observed. WDA is concerned that the tree may have caused further damage to the pipe. WDA recommends the Commission request an inspection report stamped by the Applicant's Structural Engineer detailing the current structural condition of the culvert and to support the statements above on the adequacy of the pipe to remain or a recommendation to replace the pipe if appropriate. WDA recommends a video camera inspection be performed along the interior length of the pipe. The inspection report should confirm whether or not the current structural conditions of the culvert are the same as observed in March 2017. The report should address the structural stability of the pipe with respect to the duct bank to be installed above with 1.25 feet of cover separating the duct bank from the pipe. In the event the culvert is damaged during construction and will be replaced, the limit of work for the project most likely will expand outside the current defined limit. The Commission may want to request, and the Applicant provide an alternative design in the event the culvert is damaged during construction. If the culvert will be replaced, the design documents or a separate plan should be submitted to detail the potential culvert replacement. This plan(s) could be referenced along with the current (or revised) plan set in an Order of Conditions.

We thank you for the opportunity to work with the Hudson Conservation Commission and trust the comments noted above represent a fair and accurate assessment of the submittal materials. Please contact us should you have any questions or require further clarification on any of these comments.

Sincerely,

**WDA DESIGN GROUP, INC.**



Patrick J. Burke  
Review Engineer



Brian P. Waterman  
Wetland Specialist

g:\common\0920a\0920.20.03-eversource-hudson-noi\review comments\0920.20.03\_review ltr004-july14.docx