VIA CERTIFIED MAIL #
RETURN RECEIPT REQUESTED
AND VIA E-MAIL (jill.provencal@mass.gov)

June 21, 2023

Jill Provencal
Wetlands Section Chief
MassDEP Northeast Regional Office
150 Presidential Way
Woburn, MA 01801

RE: Request for Department Action to Affirm the Wakefield Conservation Commission's Unanimous vote to Deny the Northeast Metropolitan Regional Vocational School (NEMT) Project Notice of Intent (NOI)

Dear Ms. Provencal,

On June 6, 2023, the Wakefield Conservation Commission (the Commission) submitted to the Massachusetts Department of Environmental Protection (the Department) a Wetlands Protection Act (the Act or WPA) Form 5 and Final Decision Document summarizing its findings on the Northeast Metropolitan Regional Vocational School (the Project or NEMT) located at 100 Hemlock Rd in Wakefield, Massachusetts (DEP Project # 313-620). The Commission found that the work proposed by the Project cannot be conditioned to meet the performance standards set forth in the wetland regulations and unanimously voted to DENY the Project.

Pursuant to the provisions in 310 CMR 10.05(7)(a), we ten (10) residents of Wakefield, Massachusetts, the town where the Project is located, along with additional supporters, together submit this Request for Department Action and request the Department to affirm the Commission's decision to deny the Project and to issue a Superseding Order of Conditions denying the Project in accordance with the Commission's decision. We ten residents have standing to make this Request pursuant to 310 CMR 10.05(7)(a). This Request is filed in a timely manner, within ten business days after the issuance of the Commission's decision.

Please find the following attachments to this letter:

1. Request for Departmental Action Form
2. Basis for Superseding Order of Conditions to Deny the Project
3. Citizens' signatures and addresses
4. Copy of check to Commonwealth of Massachusetts
5. Copy of Certified mail numbers

Per 310 CMR 10.05(7)(i), should there be an inspection of the site by the Department, representatives of our group wish to attend the site walk.

The Commission found that the areas in which work is proposed are significant to the following interests of the Massachusetts Wetlands Protection Act (the Act or WPA):

- Public water supply
- Prevention of pollution
- Private water supply
- Protection of wildlife habitat
- Groundwater supply
- Storm damage prevention
- Flood control

The Commission's Final Decision Document provides statements of fact and findings under the Act and Wetland Regulations (310 CMR 10.00) that substantiate their decision. The facts and findings are based on review of Project Documents of Record (listed on p. 2 of the Final Decision), knowledge of the project area, scientific evidence, and expert judgment. Here we provide additional materials in support of the Commission's decision based on our own in-depth review of the Documents of Record, our knowledge of the project area, scientific evidence and the expert judgment of several of our signers who have professional expertise in the engineering and scientific fields related to this Project. We urge your review of the information we provide here, as well as during and after the site visit, and throughout your review process in recognition of the efforts and scientific scrutiny we have brought to the public hearing process as dedicated stewards of the land of Wakefield.

As you review the Project proponent's submissions, please recognize the falsity of claims they have put forth that the Project was designed using environmentally sensitive site design, a requirement for demonstrating compliance with the Stormwater Management Standards to the maximum extent practicable, which they have claimed for Standard 3: Groundwater Recharge (Massachusetts Stormwater Handbook Vol 1, Ch 1, Overview of Massachusetts Stormwater Standards. p.3).

The very location of this project and the requirement for mass tree clearing and rock-blasting activities invalidate any claim to environmentally sensitive design. This project will replace a designated native forest core habitat with over 8 acres of impervious surface on the hilltop. Wildlife habitat will be maximally disturbed with over 14 acres of land alteration just on the hilltop alone, resulting in habitat fragmentation and alteration of wetlands as a result of changes in hydrology; drainage characteristics and flow patterns; vegetation, topography, soils and surface cover; the physical, chemical and biological characteristics of the wetlands and buffer zones, and a change in the wetlands' ability to support aquatic and terrestrial habitat.

The Massachusetts Stormwater Handbook Documenting Compliance offers several criteria for judging whether credit for environmentally sensitive design is warranted, including but not limited to:

- The total impervious cover footprint must be less than 15% of the base lot area (here it is more than 50%);
- No alteration may occur in BVW or IVW (alteration of several wetlands found in Commission's decision);
- A minimum of 25% of the site must be protected as a natural conservation area (not in proposed plan); and
- No work may be proposed in a buffer zone that contains estimated wildlife habitat which is identified on the most recent Estimated Habitat Map of State-listed Rare Wetlands Wildlife prepared by the Natural Heritage and Endangered Species Program (violated)

The project meets none of these criteria and, therefore, should not be given any credit for achieving the Stormwater Standard 3 to the maximum extent practicable on the basis of environmentally sensitive design.

We understand your mandate is to protect wetlands and your focus during this review will be on matters relevant to the interests of the WPA. We expect that in their appeal the Project will claim overwhelming support for their project, and that the location on the hilltop is the only option. It is essential to provide you with the context and facts that are contrary to these assertions.

Owing to a severe and well-documented lack of transparency by the Building Committee across the history of the project, voters in the Northeast Metro Tech school district were overwhelmingly unaware of the planned hilltop site for the new school when they approved the funding for the new building in the January 2022 Special Election. The public ballot did not include a description or depiction of the planned hilltop site for the school, nor a link to where information about the new school could be found. Accordingly, it was not the will of the voters to have the school sited on the forested hill - the vote simply asked residents to approve the cost of the new school. An Open Meeting Law complaint against the School Building Committee documented a pervasive lack of transparency leading up to the committee's vote on the hilltop site (December 2020) and continuing through the public vote on the funding (January 2022). In response, the Building Committee provided no evidence contradicting the complaint and the complainant has appealed the matter to the Attorney General.

Over the past several months since more district residents have become aware of the hilltop building site, over 6,700 people have signed a petition (www.change.org/saveforest) asking for the building site to be changed to one of the available alternative sites on the same campus. The public discourse has been overwhelmingly in support of our efforts. Friends of the Northeast Metro Tech Forest have developed a website for citizen scientists to share information on the historic hilltop forest and impacts of the Project (https://www.nemtforest.org/). In March 2023, 278 written public comments about the project were submitted to MEPA, with over 90% in support of our request for MEPA environmental review and for the school to be built on one of the nearby alternative building sites. The Project was deemed to be just barely under the review threshold for land alteration (24.5 vs 25-acre threshold). Updated Project plans now show more land alteration than was reported to MEPA, which we believe could trigger review thresholds.

The only proper and reasonable course of action is for the Department to uphold the Wakefield Conservation Commission's decision and issue a Superseding Order of Conditions to Deny the Project to protect the interests of the wetlands, wildlife, environment, and our community for future generations.

Sincerely,

Christine L. Rioux, MS, PhD (person making Request for Department Action)

(Signatures and addresses of Ten Wakefield Residents and supporters provided on Attachment 3)

Attachment 1

Request for Departmental Action Form

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Request for Departmental Action Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

4
DEP File Number:

313-620
Provided by DEP

A. Request Information

1. Location of Project

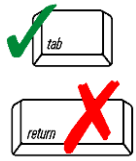
100 Hemlock Rd
a. Street Address

Wakefield, 01880
b. City/Town, Zip

104
c. Check number

$245
d. Fee amount

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



2. Person or party making request (if appropriate, name the citizen group's representative):

Christine L. Rioux
Name

22 Woodland Rd
Mailing Address

Wakefield
City/Town

MA
State

01880
Zip Code

7815870419
Phone Number

Fax Number

christinerioux2017@gmail.com
Email Address

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

Northeast Metropolitan Regional Vocational School
Name

100 Hemlock Rd
Mailing Address

Wakefield
City/Town

MA
State

01880
Zip Code

Phone Number

Fax Number

Email Address

4. DEP File Number:

313-620

B. Instructions

1. When the Departmental action request is for (check one):

☒ Superseding Order of Conditions – Fee: $120.00 (single family house projects) or $245 (all other projects)

☐ Superseding Determination of Applicability – Fee: $120

☐ Superseding Order of Resource Area Delineation – Fee: $120

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Request for Departmental Action Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

4
DEP File Number:

313-620
Provided by DEP

Send this form and check or money order, payable to the *Commonwealth of Massachusetts,* to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

B. Instructions (cont.)

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see https://www.mass.gov/service-details/massdep-regional-offices-by-community).

4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Attachment 2

Basis for Superseding Order of Conditions to Deny the Project
Northeast Metropolitan Regional Vocational School (NEMT) Project
Notice of Intent (NOI)

Basis for Superseding Order of Conditions to Deny the Project
Northeast Metropolitan Regional Vocational School (NEMT) Project Notice of Intent (NOI)

Project Description

The proposed Project includes the construction of a new 382,000 square foot school, 24-foot wide and 0.5-mile-long driveway, parking areas, pedestrian walkways, utilities, landscape areas, and a stormwater management system. Wetland resources at the site include land under water, inland bank, bordering vegetated wetlands (BVW), and riverfront area. Other resources include a certified vernal pool and isolated vegetated wetland (IVW) (Final Decision Document, Wakefield Conservation Commission, June 6, 2023). The Project involves cutting over 14 acres of trees, followed by topsoil removal, blasting approximately 140,000 cubic yards of rock across 10 acres, and creation of over 8 acres of impervious surface.

Significant alteration of wetlands and buffers that cannot be conditioned.

The Project will impact a significant proportion of buffer zone on the site (takes of over 110,000 ft^2), which can be expected to result in alteration of the wetland characteristics that provide important functions and values associated with the BVW Interests of the WPA. The Project will therefore result in adverse impacts to the adjacent BVW. The proposed work in these locations cannot be conditioned.

Mitigation measures such as the creation of replacement areas for those that would be destroyed were discussed in several meetings and draft documents and found to be inadequate given their size and location. These proposals were then withdrawn from subsequent documents. The project has suggested mitigation by removal of invasive species from a limited area in the northern portion of the property where native soils have largely been replaced by fill during previous construction. This portion of the northern region adjacent to the riverfront area and power line cut is dominated by invasive species and restoration of a small area for a limited period does not mitigate the impacts to the wetland-buffer zone complex of rare species core habitat in the southern portion of the property. These measures may now be resurrected by the Project in appeal documents as new ideas when, in fact, most have been summarily rejected before. The project has proposed including a “tree farm,” in which students would grow tree saplings and distribute them around the towns. Such an operation is no substitute for the self-sustaining mature forest, as isolated trees do not support wildlife or provide ecosystem services in remotely the same manner as a whole forest would. In addition, the Project rejected several requests made by the Conservation Commission, e.g., sampling plans, monitoring plans, and the use of non-chloride deicers on the driveway, which they may also now present as new ideas or willing concessions.

We wish to point out that the Project’s refusal to address these concerns when made during the public-hearing process was likely to reserve these as negotiating points with the Department.
It is our firm evidence-based position, as discussed below, that none of these concessions would provide conditions that would protect the resources under your stewardship and protection. Preventing alteration of the resource areas subject to protection, including wetlands and buffers, is at the heart of the Wetlands Protection Act. We urge the Department to issue a Superseding Order of Conditions to deny the project based on the extent and magnitude of alteration that will result from the Project if built in the proposed location.

As presented in the Wetlands Regulations:

> *Alter means to change the condition of any Area Subject to Protection under M.G.L. c. 131, § 40. Examples of alterations include, but are not limited to, the following:*
> *(a) the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns and flood retention areas;*
> *(b) the lowering of the water level or water table;*
> *(c) the destruction of vegetation;*
> *(d) the changing of water temperature, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of the receiving water.*

Based upon the evidence, the Commission determined in their ruling that proposed work in the Buffer Zone, including the stormwater management system(s), will not only alter the adjacent BVW, but also will adversely affect the ability of the wetland to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

The type and extent of Project work in the buffer zones will have a significant impact on the protected wetlands as this work will involve loss of vegetation; generation of pollutants and excess nutrients from runoff; changes in shading from trees; changes in leaf litter, woody debris and organic matter inputs to the resource areas; and creation of hazards and barriers to wildlife movement (Davies 2019).

This Basis for Denial demonstrates that wetland buffers at the site are essential for the protection of the resource areas. Wetland buffers at the site provide the following functions essential for climate adaptation and resilience, a priority for our Commonwealth (Davies 2019):

- Provide shade and protecting resources area microclimates and temperature/humidity gradients;
- Increase landscape connectivity;
- Support biodiversity;
- Reduce stressors from the influx of waterborne contaminants and nutrients, and limiting invasive species intrusion;
- Provide flood control capacity under flood and heavy precipitation conditions;

The Project will irreversibly undermine these functions with takes of over 2.5 acres across seven wetlands.

Here we enumerate and provide site-specific and science-based evidence of the ways the Project would permanently alter hydrology; drainage characteristics and flow patterns; vegetation, topography, soils and surface cover; and change the physical, chemical and biological characteristics of the wetlands and buffer zones. These alterations will undermine the climate adaptation and resiliency functions of this system. Blasting well over 200,000 tons of rock across 10 acres will impact all of these functions.

1. Proposed work will alter the hydrology and hydrologic regime of the entire area and multiple wetlands.

Based upon the evidence we provide below, the Project will adversely affect the ability of the on-site wetlands to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

The Project will dramatically change topography, blast rock, clear-cut trees, create 8 acres of impervious surface, grub soil layers, remove the vegetation, leaf litter, and mycorrhizal network presently serving as conduits and barriers for water flow to wetlands. The drainage system associated with the entire site,

including the proposed road, will significantly alter the course of water that reaches BVWs-1, 3, and 9, concentrating flow into discharge points that will alter the hydrology of the wetlands. Blasting of over 140,000 cy of rock across 10 acres of extremely hard, water-filled bedrock will disrupt on-site hydrology, alter fracture networks in the bedrock, and alter groundwater flow in the entire area.

Project documents describe the presence of high groundwater and bedrock throughout the site.

> "Groundwater flowed out of the borehole at boring B-102 (in the center of the proposed building footprint) upon completion of drilling for 24 hours before the borehole was sealed, possibly indicating an artesian condition" (Lahlaf, 2022. p.16).

Water flow to these wetlands will be altered as extensive dewatering will be required during blasting and construction to accommodate the drastic change in topography. The final finished elevation will be below the level of the groundwater in several locations as indicated by test pit and boring data (Lahlaf, 2022. In Nitsch Stormwater Report, May 9, 2023. Appendix G. Tables 1 and 2, pp. 42-43 and p. 196-201).

Intermediate and major fractures in the bedrock were found at all depths in the two geophysical logs obtained at the site (B-206 from 3 ft to 16.3 ft) and (B-208 from 4 to 33.4 ft) (Hager-Richter Geoscience, Inc. 2022. Borehole Geophysical Logging - Data Report. Appendix E in Lahlaf, 2022. In Nitsch Stormwater Report, May 9, 2023. Appendix G). In order to characterize the full suite of discontinuity sets at the site, outcrop mapping data (n=153) was conducted that indicated various joint sets (groups of fractures) were found to dip in all directions indicating groundwater flow through the fractures flows to wetlands located in the north (BVW-9), east (BVWs-6 and 10) and south (BVWs-3 and 1) directions (Scarpec 2022 p. 6 and Figures 4F and 4G. Appendix J in Lahlaf, 2022. In Nitsch Stormwater Report, May 9, 2023. Appendix G).

More detail is provided below on water table and blasting impacts including a discussion of the contamination of groundwater by blasting chemicals and the migration of this groundwater to wetlands through overland flow and through the groundwater fracture network.

2. Proposed work will change pre-existing drainage characteristics, flow patterns and the water budget of on-site wetlands.

Based upon the evidence we provide below, the Project will adversely affect the ability of the on-site wetlands to protect flood control, prevent storm damage, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

The Project will create over 8 acres of roads, parking lots, driveways, patios, roofs, walkways, and other impervious surfaces which will reduce the amount of water infiltrating into the ground surface, and thus increase the volume of direct surface runoff with potential flooding risks and economic as well as environmental consequences. The Project Stormwater report describes the "increase of impervious area and infeasibility of infiltration for the majority of the project site" (p.12). Work in the proposed work area, including in the buffer zones, will alter natural infiltration, surface runoff, subsurface flow, and groundwater flow to and within the wetlands. Drainage characteristics across the site will be drastically altered with concentrated discharge points altering the natural filtering and replenishment systems of the buffer zones.

Runoff Volumes - The Project reports significant changes in post-development runoff volumes in the vicinity of several wetlands including DP-1 (up to 32% increase in runoff with a buffer zone take of 42,000 ft^2), DP-3 (up to 37% increase in runoff with a buffer zone take of 31,000 ft^2), DP-9 (up to 86% increase in runoff with a buffer zone take of 20,000 ft^2) and DP-10 (up to 37% decrease in runoff with a buffer zone take of 8053

ft^2. The Project did not report 25-year and 100-year runoff volumes as required by Town of Wakefield bylaw https://ecode360.com/15403856#15403856.

The bylaw states "the stormwater management system shall be designed as to not increase the peak rate of runoff OR volume of stormwater in the two-, ten-, and twenty-five-year storm events. In addition, the applicant shall evaluate stormwater generated from the one-hundred-year storm event to ensure no net increase in the peak rate of runoff or volume of stormwater."

The combination of increased runoff volume and loss in area of functioning buffer zones indicates that, despite mitigation measures such as the use of level spreaders, the flood control and stormwater damage prevention interests identified in M.G.L. c. 131, § 40 of on-site wetlands will be severely impacted, with cumulative impacts overtime. Alterations in the wetland water budget will impact the wildlife protection functions of the wetlands as well.

3. Proposed work will lower the water table and impede groundwater recharge.

Based upon the evidence we provide below, the Project will adversely affect the ability of the wetlands to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

Lowering of the water table

Clear evidence is presented in the Geotechnical report (Lahlaf, 2022. In Nitsch Stormwater Report, May 9, 2023. Appendix G) that proposed Project plans and activities, including blasting and changes in topography would result in lowering of the water table. Groundwater underlying the entire area flows through fractured bedrock and recharges the wetlands. The water surface for the wetlands, like for other surface-water bodies, is a surface expression of the water table and groundwater levels. During storms, there is likely to be some overland flow to the wetlands. However, groundwater is the main source of water in the wetlands most of the time. A considerable volume of groundwater will be permanently displaced and diverted to build the school with site-wide impacts including impacts on all downgradient wetlands dependent on groundwater. A reduction in the groundwater volumes going to wetlands will both alter and adversely impact the ability of the wetland to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

Blasting will result in lowering of the water table since significant volumes of groundwater will be encountered and require dewatering and disposal, as indicated in the Geotechnical Report:

> *"Based on the groundwater levels encountered in our explorations, we anticipate that groundwater control procedures will be needed during removal of the subsoil and after rock blasting. We anticipate that significant quantities of water will be generated at the bottom of the rock excavation. Accordingly, we recommend that a groundwater control plan be designed and implemented that disposes of the groundwater by gravity. The contractor should be prepared to install multiple deep sump pumps to maintain a dry subgrade." (*Lahlaf, 2022. *p. 37).*

Groundwater is higher than the final finished elevation (FFE). The summary of boring logs and test pit data (Lahlaf, 2022.Tables 1 and 2, pp. 42-43 and p. 196-201) clearly show the final finished elevation (FFE) of the school (Nitsch Civil Plan Set May 9, 2023, Driveway Layout and Grading Plans I and II, Figures C-601 and 602) will be below current groundwater levels. In several locations, groundwater is close to the surface and 4-14 ft. HIGHER than the FFEs. Except for the north entrance with an FFE of 143 ft, the remainder of the proposed building is at 163 ft FFE. Boring hole B-1-0W near the northwest corner of the proposed building shows groundwater encountered at 174.5 ft elevation. Several other adjacent borings confirm

groundwater elevation well above the building FFE including B-101-OW (groundwater elevation 167.4 ft), B-4 (groundwater elevation 179 ft), and B-103 (groundwater elevation 174.5 ft).

Cuts of 30 ft on the west side and filling in the eastern side up to 20 ft for the driveway loop (Lahlaf, 2022. p. 6) will have an undeniable and permanent impact on groundwater levels as well as underground streams/seeps that feed multiple wetlands. In addition, the slope stability analysis indicates a very steep slope (20-ft tall) with rip rap at the top which drops off from the East side of the driveway loop. This grading will reduce infiltration and accelerate surface run-off.

Recharge Models Inadequate

Project documents state “due to the presence of high groundwater and bedrock throughout the site, recharge is considered unfeasible at most locations” (Nitsch Engineering *Stormwater Report*. May 9, 2023, p. 16). While the Project’s recharge models and groundwater mounding analyses purport to show adequate recharge, these models (including the HydroCAD model) are based on assumptions rather than field calibrated measurements. Soil types and depth to groundwater vary considerably across the site even in adjacent test pits and borings. The most sensitive input to the groundwater recharge model is infiltration rate that is dependent on soil type, and the most sensitive input to the groundwater mounding analysis is hydraulic conductivity that is based on infiltration rate, multiplying the potential error.

These models **are not sufficiently robust for a project of this size and complexity. Prior rulings by MADEP acknowledge the need for more** robust methods to estimate hydraulic loading, such as the USGS MODFLOW, rather than the Hantush method (Carleton, 2010; Hantush, 1967) used by the Project. This is especially true for complicated, large-scale sites such as this one, with shallow groundwater and large amounts of runoff. In violation of Volume 3 of the Massachusetts Stormwater Handbook (Vol 3, Ch 1, Documenting Compliance), the Project states that runoff from less than 65% of the impervious surface would be captured by the proposed stormwater system (Stormwater Report, p. 16).

4. Proposed work will destroy vegetation, alter soils, surface cover, and topography by removal of native soil and trees, replacement with fill, and changes in grade across the site.

Based upon the evidence we provide below, the Project will adversely affect the ability of the wetlands to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

Over 2.5 acres of trees and other vegetation (110,000 ft^2) will be removed from wetland buffers (10,000 ft^2 within the 0-25 ft buffer). This represents the loss of over 250 trees from buffer zones, with over 2000 mature trees lost site-wide. The proposed work will eliminate over an acre of vegetation from the buffer zone of Wetland 1 and 50% of the vegetated buffer zone of Wetland 3.

The Conservation Commission’s Final Decision documents the impacts and wetland alteration that will likely occur as a result of this extensive loss of forest canopy, vegetation and changes to surface cover across several resource areas. Among these are thermal impacts. The forest canopy provides local cooling while paved surfaces create heat islands. Removal of forest canopy and vegetative matter with soil microbes will irreversibly alter the microclimate of the forest which affects plant regeneration and growth, soil respiration, rates of litter decomposition, carbon sequestration and microbial activity, nutrient cycling, wildlife habitat selection, and consequently will irreversibly alter the ecosystem services of the associated buffers and wetlands (de Frenne et al., 2021, Lustenhouwer et al., 2012). Vegetated surfaces have substantially lower

runoff temperature and heat export than paved surfaces, asphalt and commercial rooftops (Herb et al., 2007).

Removal of native soils and replacement with fill will occur throughout the site. Both within and adjacent to buffer zones, the creation of steep slopes will increase the potential for adverse impacts on Resource Areas per 310 CMR 10.53. The amount of grading, filling, and "cuts" across the site is staggering, with cuts up to 34 feet and fills of up to 20 feet, as described in this excerpt from the Project's Geotechnical report:

> *"Based on the Grading Plan, cuts of up to 34 feet will be required to achieve the proposed FFE grade of the proposed building and the proposed paved areas around the proposed building. Cuts of up to 30 feet will be required to achieve the proposed grades on the western portion of the proposed driveway loop and fills of up to 20 feet will be required to achieve the proposed grades for the eastern portion of the proposed driveway loop. The grades within the proposed southern parking area will require up to 12-foot cuts on the northern side and fills of up to 13 feet on the southern side. The grade will drop from the southern side of the southern parking lot to meet the existing grades via a riprap slope currently designed as a 1H:1V slope. Other riprap slopes are proposed in the fill areas along the eastern portion of the proposed driveway loop. A nearly vertical rock cut is proposed on the western side of the western portion of the proposed driveway loop. The cut will range up to 33 feet in height."* (Geotechnical Report. Lahlaf, 2022. *p. 7).*

5. Proposed work will change the physical, biological and chemical characteristics of the wetlands.

Based upon the evidence we provide below, the Project will adversely affect the ability of the wetland to protect groundwater supply, flood control, prevent storm damage, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

<u>Change in Physical Characteristics</u>

The physical alteration in the form of "takes" for construction is planned for over 110,000 ft^2 of wetland buffers, including:

- 30% of the 0-100 ft buffer of Wetland 1
- 50% of the 0-100 ft buffer of Wetland 3
- 40% of the 0-100 ft buffer of Wetland 7
- 32% of the 0-100 ft buffer of Wetland 9
- 50% of the 0-100 ft buffer of Wetland 10.

These takes will include the loss of soil, vegetation, leaf litter, woody debris, and organic matter and will result in alteration of the wetlands' capacity to detain, filter, transform, and infiltrate runoff, pollutants and excess nutrients.

<u>Change in Chemical Characteristics</u>

Several pollutants routinely used on site will be present in runoff including chloride-based deicing salts, nitrogen- and phosphorus-containing fertilizers, pesticides, asphalt for (and from) streets and parking lots, gasoline, diesel fuel and kerosene during construction, and in run-off from roads and parking areas after construction. Stormwater systems will not control or treat these pollutants. The extent and magnitude of newly introduced pollutants in stormwater runoff resulting from construction activities and ongoing operations will exceed the capacity of wetlands and buffers to protect water quality.

Here we emphasize two of the most problematic activities planned by the proposed Project that would likely permanently alter the functioning wetlands - deicing with chloride-based chemicals and blasting of rock with ammonium nitrate and other toxic chemicals.

A. Chloride Impacts to BVW-1, BVW-3, and BVW-9 based on the NEMT Stormwater Report

We concur with the Wakefield Conservation Commission (the Commission) that there is a high potential for toxic chloride pollution of BVW-1, BVW-3 and BVW-9, all of which are currently in pristine condition. The stormwater management system is designed to remove suspended solids but cannot remove soluble salts.

The Project plans to use Mass DOT's reduced salt policy for applying NaCl road salt, which is 40 percent sodium and 60 percent chloride by volume. Based on this policy, it is possible to estimate the amount of chloride that will enter each wetland after each winter storm. As noted by the Commission in their June 6, 2023 Decision, the chloride will dissolve in the stormwater runoff and flow into the wetlands because the treatment systems do not filter out chloride.

Mass DOT's reduced salt policy states that salt can be applied at a rate of 240 pounds per lane-mile instead of the usual rate of 300 pounds per lane-mile. Under this policy, road salt and pavement also can be pretreated with liquid calcium chloride ($CaCl_2$), liquid magnesium chloride (MgCl), or blended brine. This is in addition to the 240-pound loading rate.

However, the Mass DOT policy was designed to reduce sodium levels in drinking-water reservoirs (e.g., the Cambridge Reservoir) and wellhead protection areas that have dilution capacities enormously greater than the fragile site wetlands. Under Mass DOT's policy, the proposed loading of chloride from deicers will far exceed what these wetlands can tolerate and will result in violations of the Massachusetts Wetlands Protection Act and Surface Water Quality Standards for chloride.

A substantial amount of chloride will be applied throughout the project area during and following every winter storm. The current NEMT High School parking lot is heavily salted before and after each winter storm and that runoff is highly contaminated with chloride. For example, during and after a storm on February 24, 2023, Hydrologist Douglas Heath, one the 10 signatories on this request to affirm the Commission's Decision, measured conductance using a professional-grade data sonde, which he field-calibrated both before and after measurements using a buffer solution.

The highest measurement taken near the parking-lot outfall (DP-7), but outside the NEMT boundary, equated to 14,909 mg/l chloride, which is 17 times the acute federal and state Surface Water Quality Standard for chloride (860 mg/l) and nearly as saline as the Atlantic Ocean! This gives an indication of the high level of chloride possible in runoff from the proposed hilltop parking area.

Regarding the wetlands of most concern to the Commission, Wetland 1 (BVW-1), Wetland 3 (BVW-3), and Wetland 9 (BVW-9), NEMT's *Stormwater Report* provides the information needed to calculate chloride loadings. Tables showing contributing areas (called inflow areas) from the swale and the subsurface treatment systems are given in Appendix C, page 73 for the swale, and pages 75-96 for SS-1 through SS-8. Although these tables are for a NOAA 2-year rainfall event of 3.30 inches, these contributing areas are the same for all storm events.

BVW-1, the largest wetland, will receive chloride-contaminated runoff from four sources: three that drain the access road (swale, SS-1, and SS-2) and one (SS-4) that drains part of the proposed 3-acre parking area. Specifically, SS-4 drains 31 percent of the proposed parking area and flows directly into BVW-3 before flowing overland into BVW-1. The four sources (swale, SS-1, SS-2, and SS-4) together capture 11 percent

of the total project runoff. Although SS-1, SS-2, and SS-4 will capture up to 80 percent of total suspended solids (TSS), none of the dissolved chloride will be captured and essentially all will flow directly into BVW-1 (see p. 14-15 of the Wakefield Conservation Commission's June 6, 2023 Decision). Snow clearing on the proposed driveway will inevitably push chloride-contaminated snow into the wetland adjacent to the road.

According to the Nitsch *Stormwater Report*, the contributing paved areas of the four sources equal 78,963 ft^2 (*Stormwater Report*, Appendix C, pp. 73, 75, 78, and 84). Dividing this area by one pound of chloride per 403.3 ft^2 of pavement, one application of road salt will contain about 196 pounds of chloride. This amount of chloride is enough to poison BVW-1 (as well as BVW-3), alter its water quality, hydrologic flow regime, and kill all freshwater aquatic plants and animals sensitive to chloride in violation of the Massachusetts Wetlands Protection Act and in likely violation of Surface Water Quality Standards for chloride. In addition, the increased volume of water in BVW-1 caused by the inflow of stormwater runoff into this wetland will greatly increase the risk of flooding of the June Circle in Wakefield, a neighborhood already vulnerable to flooding.

BVW-3, which is smaller than BVW-1, will receive all the runoff from SS-4, which drains 30,783 ft^2 of the proposed parking area (Appendix C, p. 84 in *Stormwater Report*). According to Mass DOT's policy, each application of deicing chemicals to this area can contain up to 76 pounds of chloride, much of which will be dissolved into runoff and discharged into BVW-3, which will then drain into BVW-1, altering the chemistry and hydrology of both wetlands and likely resulting in violations of the Massachusetts Wetlands Protection Act and Surface Water Quality Standards for chloride.

BVW-9 is a stream and wetland combination on Wakefield High School property adjacent to the existing NEMT baseball field. According to data on SS-7 in the *Stormwater Report* (Appendix C, p. 93) BVW-9 could receive as much as 219 pounds of chloride from SS-7 (located under the baseball field) following each winter storm. After discharge from SS-7, this polluted runoff will flow north along an existing stream and into a wetland (stream and wetland are both part of BVW-9), altering the chemistry and hydrology of BVW-9 and likely resulting in violations of the Massachusetts Wetlands Protection Act and Surface Water Quality Standards for chloride.

Although the Commission focused on BVW-1, BVW-3, and BVW-9, the project site contains other wetlands and a vernal pool. Based on data in the NEMT's *Stormwater Report*, under the Mass DOT's policy, a total of 1,517 pounds of chloride could be spread over the project's impervious surfaces during just one application. During a typical winter, multiple loadings would occur. These repeated chloride loadings will far exceed the capacity of these wetlands to absorb them without chemical and physical alteration and severe impacts to aquatic life.

The increased chloride concentrations in the wetlands will alter wetland biogeochemistry and the cycling of various elements including carbon, nitrogen, phosphorus, sulfur, iron, and silicon, leading to decreased inorganic nitrogen removal, decreased carbon storage, and affecting nutrient cycling and sustenance of wetland life. Heightened salinity levels will cause physiological stress on wetland biota causing large shifts in wetland communities, altering their ecosystem functions and leading to the disruption of existing interactions between species (Herbert et al., 2015).

To avoid using NaCl, the Commission and NEMT considered using calcium magnesium acetate (CMA), the only viable non-chloride-based deicing chemical. However, this option was rejected for the driveway because it is too expensive (up to 30 times the cost of NaCl) and may not always be available or available in large enough quantities. Acetate-based deicers dissociate in water and degradation of the acetate ion consumes oxygen, thus depleting oxygen in the waterbody (Minnesota Stormwater Manual, 2022. Environmental impacts of road salt and other deicing chemicals; LaPerriere, J. D., & Rea, C. L. 1989; Brenner and Horner, 1992).

Even if a permit condition requiring use of CMA was established, it would be virtually impossible to enforce over the years of operation of the new school. School officials will use cheaper and more available rock salt and they will argue the necessity of its use to ensure safety.

The Commission also considered requiring NEMT to establish a monitoring program to detect chloride in the wetlands of concern. However, we understand that NEMT indicated to the Commission that they did not want to do monitoring. Regardless of NEMT's position, it does not appear that a monitoring program would serve any purpose in protecting the wetlands. Although a monitoring program can be an effective way of showing pre-development conditions and post-development changes, in this situation, it is virtually a scientific certainty that post-development changes will significantly alter the wetlands. In addition, this alteration is likely to occur too quickly for a monitoring program to be effective for evaluating water-quality trends and developing mitigation measures. During a single winter, multiple chloride loadings are likely to occur. As discussed above for BVWs 1, 3, and 9 (and similar analyses also have been done for other wetlands within the project area), these loadings of chloride will far exceed the capacity of the wetlands to absorb them without significant and irreversible chemical and physical alteration and severe impacts to aquatic life.

Numerous studies show that deicing chemicals negatively affect species at all trophic levels including biofilms, photosynthetic organisms, zooplankton, and macrophytes. Deicing chemicals alter nutrient and energy flow at the ecosystem level, reduce biodiversity, increase communities of salt-tolerant species such as mosquitoes (Hintz et al., 2019), alter hydrology and oxygen dynamics and alter carbon storing ability of wetlands (Nahlik et al., 2016). Due to these reasons, wetland plant and wildlife exposure to concentrated deicing chemicals from roadside runoff, stagnant stowed snow, and direct dumping of snow into BVWs 3 and 1, the overall viability of wetland resource areas will be adversely impacted.

Deicing salts irreversibly disrupt osmoregulation and adversely impact amphibian egg mortality, larval stages, metamorphosis, interspecific competition, survivability, populations, and these severe impacts leading to local extinction of protected species such as the spotted salamander (Karraker and Gibbs, 2010). From studies of amphibian populations in New England, Brady et al. (2022) concluded that roadside populations of amphibians were maladapted to the deicing salts which caused delayed developmental rates and edema.

Since, due to serious safety concerns, it is not possible for the project to not use deicers on the access driveway and parking areas, the use of deicers for this project cannot be conditioned to protect the interests of the Massachusetts Wetlands Protection Act.

B. **Blasting Impacts - Physical and Chemical**

The NEMT Early Blasting Plan (April 25, 2023) lists ammonium nitrate as the primary component (60-90%) of the explosives planned for blasting at the site, with warnings on several safety data sheets stating, ***"Avoid release to the environment"; "This material is hazardous to the aquatic environment"; "Keep out of sewers and waterways"; and "Harmful to aquatic life with long lasting effects*****."** Blasting this site, characterized by high bedrock and groundwater close to the surface, with ammonium nitrate explosives will likely be the source of nitrate contamination of wetlands through runoff and groundwater. Well over 200,000 tons of hard to extremely hard rock will be blasted at the site which will require from 50,000 pounds of explosives (for low rock breakage difficulty) to 200,000+ pounds of explosives (high rock breakage difficulty). As described in Section 3 above, significant volumes of groundwater will be encountered during blasting and require disposal "by gravity". The Geotechnical Report also describes a mapped fault feature located within the limits of the overall project site, which, if exposed within the limits of the proposed cut during construction, may require additional drainage or slope stabilization elements.

Ammonium (NH_4+) oxidizes to nitrate (NO3) during detonation of explosives (Moloantoa, et al. 2022), and when mobilized in water and disposed of “by gravity”, as recommended in the Geotechnical Report (excerpt above) can cause eutrophication of receiving waters including nearby wetlands and streams.

Blasting in close proximity (40 feet away for this project) to wetland resource areas poses a significant risk of contamination to groundwater and studies have shown that these contaminants are consistently detected up to 200 feet away from blast sites (Degnan et. al., 2016). Because of the extremely hard, brittle and extensively fractured bedrock, and abundant groundwater, the probability is high that substances injected into blasting boreholes will intersect one of the many fracture networks and be transported from the blasting area. Blasting of crystalline bedrock as present throughout the site can contaminate water resources through leaching and release of soluble substances in groundwater through improper and incomplete combustion of detonators and explosives; injection of substances into blasting boreholes that intersect a fracture network resulting in the release of substances beyond the influence of blasting area; poor storage, handling, and transfer and residual substances associated with blasting occurring on the face of blasted rock materials located at the blasting site; or when a stockpile of waste rock comes into contact with precipitation (Kernan 2019, NHDES).

Blasting will alter the topography and can be expected to result in contamination of groundwater both through fracture networks and high volumes of water released at the surface that will require disposal both of which will subsequently flow to wetlands. These impacts to wetlands from blasting-related contamination will adversely affect the ability of the wetland to protect groundwater supply, prevent pollution, and protect wildlife habitat (Interests) as identified in M.G.L. c. 131, § 40.

6. Proposed work will change the wetlands’ ability to support aquatic and terrestrial habitat.

Based upon the evidence we provide below, the Project will adversely affect the ability of the on-site wetlands to protect wildlife habitat (Interest) as identified in M.G.L. c. 131, § 40.

Buffer Zones function to protect and contribute to the ecosystem services and functions provided by the adjacent resource areas that are associated with the eight protected interests of the Wetlands Protection Act (WPA) (Davies et al., 2019). Buffer zones at the Project site are integral to wetland functions and help preserve connectivity between naturally vegetated areas, thus facilitating wildlife movements across the landscape. Buffer Zone alterations will reduce important wildlife habitat features of the wetland-buffer zone complex on the site and will reduce the wildlife habitat value of the wetland itself as a result (Burne, 2022).

The Project will cause irreversible forest loss and habitat fragmentation, extensive road traffic, soil compaction and alteration, and introduction and growth of invasive species through landscaping, non-native vegetation (Mosher et al., 2009), and increased human activity which will destroy high-quality habitat in and around the wetland area and buffer zone, against the interests of the WPA. Project activities will alter and adversely impact *“the hydrologic regime, plant community composition and structure, soil composition and structure, topography, and water chemistry of bordering vegetated wetlands that provide important food, shelter, migratory and overwintering areas, and breeding areas for many birds, mammals, amphibians and reptiles,”* the value of which is described in 310 CMR 10.55.

The uprooting of more than 30% of trees, vegetation, leaf litter, fallen logs, and grubbing of pristine soil layers and mycorrhizal network of roots in the buffer zone of the BVW-1 and more than 50% of BVW-3 will lead to the significant reduction in canopy, increased solar exposure, altered shading, altered microclimate, altered soil composition, and altered hydrology, and hence changes in plant composition in the wetland.

Removal of trees, vegetation, leaf litter, fallen logs, and grubbing of pristine soil layers and mycorrhizal network of roots across the site (over 2.5 acres within buffer zones) will adversely impact the filtration capacity, rate of decomposition, temperature, and topography of the wetland resource areas and wetlands (Stoler and Relyea, 2020). These changes will irreversibly alter the capacity of these wetlands to provide wildlife habitat functions including food, shelter and migratory and breeding areas for wildlife including overwintering areas for mammals and reptiles as described in 310 CMR 10.55.

BVW-1 and BVW-3 and their buffer zones have “thick leaf litter, abundant coarse woody debris, loose soils, predominantly closed canopy tree cover, and abundant rodent tunnels” and “fallen trees, branches, leaves and other detritus on the forest floor”, which are high-quality microhabitat for salamander species as described by NHESP. These are also habitats for other amphibians, reptiles, small mammals, and provide nesting materials and habitats for bird species of Greatest Conservation Need as described by the State Wildlife Action Plan - including the MESA state-listed Eastern Whip-poor-will, the Scarlet Tanager, Prairie Warbler, Eastern Towhee, Indigo Bunting, Field Sparrow, Wood Thrush, and Brown Thrasher documented in the summer months at the NEMT Forest.

The multi-layered forested wetlands are an important migration stopover site for birds particularly in spring migration when the wetlands are filled with water. BVW-3 and Wetland Bank support large numbers of migrating birds sensitive to human disturbance, including wood warblers, foraging at the water’s edge. The changes to the buffer zone including installation of the 60 ft culvert and the access road will alter the ability of the wetland habitat to support species sensitive to human disturbance. Altering this important wetland-buffer zone complex will adversely impact the ability of the wetland to function as migratory stopover habitat.

The designation of BVW-1 within the Forest Core Habitat by the Mass Division of Wildlife, as well as the presence of high value vegetation in both BVW-1 and Buffer Zone indicate the importance of BVW-1 providing wildlife habitat (Interest) (Wakefield Conservation Commission Final Decision, 2023). The NEMT Forest is one of a *“small subset (14%) of Massachusetts forests that meet the criteria of BioMap Forest Core which capture the best and largest examples of intact forest interior habitats, maintain ecological conditions found only in unfragmented forests, and are critically important for species sensitive to forest fragmentation. These places are increasingly scarce in highly populated regions of the country like Massachusetts*” (MassWildlife and The Nature Conservancy, 2022).

The proposed 0.5-mile roadway from Farm St to Hemlock Rd includes blasting deeply crevassed elevated rock outcrops in a BioMap Rare Species Core Habitat at elevation 158 ft creating a steep rock slope up to 30 ft high within the buffer zone of the BVW-1. Destruction of these higher elevation forested rock outcrops above the wetland destroys shelter and wildlife habitat for amphibians and small mammals and increases the loss of canopy in the buffer zone of BVW-1. This rock outcrop is within Priority Habitat for Hentz’s Red-bellied Tiger Beetle, (documented in Wakefield in 2018, NHESP) as this MESA state-listed beetle species is endemic to Eastern Massachusetts and the larvae are thought to overwinter in rock crevices. Blasting, tree and vegetation clearing, and grubbing of soil layers will directly kill adults and young offspring of amphibians, mammals, reptiles, other cavity-dwelling, root-dwelling, burrowing, and rock dwelling wildlife.

The proposed roadway follows and eliminates intermittent water runoff pathways connecting wetlands 1, 2, 3 and 4 obstructing amphibian migration pathways and adversely altering habitat that supports wildlife. The entire 60 ft of intermittent stream adjacent to BVW-3 (Wetland Bank) will be enclosed by a three-sided culvert further obstructing wildlife migration and altering the entire vegetated bank area, as well as directing water flow away from BVW-1. The proposed roadway will cut off migratory pathways to forested upland habitat from BVW-3. The close proximity of the roadway to the wetlands, will cause vehicle-wildlife traffic

collisions, resulting in the injury and death of significant numbers of the wetland-buffer zone complex dependent species, therefore diminishing the viability to wetlands to further support wildlife.

While the protection of wildlife habitat is an interest of the WPA, we wish to emphasize the symbiosis between habitats and mammals, birds, amphibians, and arthropods, among other wildlife, such that the presence and behavior of wildlife themselves is vital to sustaining these very habitat interests that wetlands provide. By burrowing and creating tunnels, small mammals provide habitat for snakes and amphibians to shelter from predators and to overwinter. They feed on plant material which then form part of leaf litter and detritus which are decomposed by arthropods and detritivores, returning nutrients to soil. They also help disperse seeds and facilitate plant growth which add leaves back to the leaf litter contributing to the carbon cycle. Their digging allows aeration of soils, growth of tree and plant roots and movement of water to the wetlands, and, thus, they perform a crucial role in the wetland ecosystem.

Birds, like the Eastern Whip-poor-will, provide ecosystem services to the wetlands. They nest on leaf litter and some of their eggs are eaten by snakes and small mammals. Birds feed on insects in and around the wetland and keep the wetland ecosystem in balance. Songbirds disperse seeds which contribute to the growth of plants and influence plant assemblages, which then provide organic matter to the wetland soils and wetland resource areas.

Arthropods are vital to the continued sustenance of the wildlife habitat functions of wetlands, as they are decomposers of fallen logs, fallen leaves, and other plant matter in and around wetlands, creating habitats, conditioning soil, performing nutrient cycling roles and are part of the food web. They also serve as pollinators for numerous species of plants in the wetland-buffer zone complex, and as such also influence plant assemblages. They are indicators of the health of wetland ecosystems (Batzer and Wu, 2020). Thus, all organisms within a native forested wetland ecosystem have interconnected roles and keep the wetland resource areas functioning.

Based on the foregoing, wildlife in the wetland-buffer zone complex provide ecosystem services necessary for the sustenance of the wildlife habitat interest of the wetland. It follows that the loss of wildlife will result in the loss of ecosystem services, hence the degradation and the loss of the wildlife habitat function of the wetland. Thus, to prove, in yet another way, that the project will alter the wetland resource areas BVW-1 and BVW-3 and will not protect the wildlife habitat interest of these two wetlands, we will show that the project will result in the significant loss of wildlife in ways elucidated below.

Project activities will introduce artificial light, traffic hazards, noise, vibration, particulates and human disturbance that will adversely impact sensitive species in wetlands 1 and 3, including breeding birds, insect, and bat populations. According to the Nuclear Regulatory Commission (2012): “Noise levels at 50 feet from impact equipment, including pile drivers, jackhammers, and rock drills can range from 79 to 110 dBA. Blasting may be associated with impact equipment use and that noise can reach 126 dBA.”

A review of numerous studies found that noise of human origin is detrimental to wildlife and natural ecosystems. Kunc and Schmidt (2019) provide comprehensive quantitative empirical evidence of noise impacts on species of all taxonomic groups and many aquatic and terrestrial species. Birds, mammals, reptiles, and amphibians experience “changes in hormone levels, changes in heart rate, immunosuppression, changes in flight-initiation distance, disturbed breeding success, altered mate choice, all as a result of stress associated with chronic anthropogenic noise (Barber et al., 2010).

Chronic noise generated from blasting, construction, traffic, and other human factors, and exacerbated by removal of vegetation will have deleterious impacts on a diverse array of taxa, including arthropods such as insects (Morley et al. 2014; Erbe et al., 2022), amphibians (Tenessan et al., 2014), birds (Senzaki et al., 2020) and mammals (Kight and Swaddle, 2011), interfering with their basic survival instincts.(Francis et al.,

2009, 2012). Traffic noise exceeding 60 dBA impacted vocal behavior of male frogs and traffic noise exceeding 80 dBA reduced foraging efficiency of bats. Between the range of 52–68 dBA, terrestrial mammals experienced increased levels of stress and decreased reproductive efficiency, and on average various taxa including humans were stressed by noise levels in the range 40–100 dbs. (Shannon et al., 2016). Blast-induced vibrations, overpressure and noise from construction activities will severely impact the breeding success (Mulholland et al., 2018, Dooling and Popper 2007), and harm offspring of birds nesting in the summer months at the NEMT Forest Core, Priority Habitat, and Significant Habitat. If not directly killed by impact, the hearing sensitivities and normal functioning of birds, mammals, amphibians, reptiles, and other wildlife will be severely impacted.

In conclusion, this project will alter wildlife habitat and significantly destroy the wildlife and biodiversity present in the wetlands and associated buffer zones. This project will significantly impact mammals, birds, amphibians, arthropods, and other wildlife around BVW-1, BVW-3 and their associated buffer zones. Consequently, it will impair the wildlife habitat interests provided by these two wetlands. Loss of biodiversity in the NEMT Forest Core wetlands is contrary to the interests of WPA.

We trust that MassDEP will be guided by the principle that the trees, shrubs, wetlands, soils, and biodiversity together comprise a mature forest ecosystem, the components of which are intricately dependent on one another, and acknowledge that for this project, the alteration of multiple BVWs characterized above cannot be permitted with any conceivable conditions to protect the interests that these wetlands provide.

Considering the scarcity of such forests, it would be in the best interests of the Commonwealth that the NEMT Forest[1] be saved as an intact and unfragmented forest to protect the wetlands not only for what they are now, but what they can be, to combat the crises of climate change and global warming and increasing need for carbon sequestration and protection of biodiversity.

[1] Another exceptional trait of the NEMT Forest is the unique diversity of environmentally sensitive plant life. “Floristic Quality Assessments are a proven ecological tool for providing scientific data on biodiversity. Using the tool generates a Floristic Quality Index (FQI) number which Indicates the overall vegetative quality of the site. Generally, 1–19 is low quality, 20–35 is high quality, and above 35 is exceptional. In my fifty years of surveying conservation areas in Northeastern Massachusetts I have never encountered an exceptional area. With an FQI of 46.6 the NEMT forest is not just incredibly exceptional, it is unheard of even in areas of high biodiversity like the nearby Middlesex Fells Reservation. The impact of building the Voke school at this site would thus represent a significant loss to local biodiversity.”

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