LEC

WETLANDS WILDLIFE WATERWAYS

Freshwater Wetlands Permit Application

February 11, 2025

Subject Property
Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

Property Owner/Applicant
Ana C. Riley, Superintendent
Bristol Warren Regional School District
235 High Street
Bristol, RI 02809

LEC Environmental Consultants, Inc.

680 Warren Avenue, Suite 3
East Providence, RI 01914
401-685-3109

www.lecenvironmental.com

February 11, 2025

Email/Hand Delivery

Rhode Island Department of Environmental Management
Office of Water Resources & Freshwater Wetland Program
235 Promenade Street
Providence, RI 02908

Re: Application for a Freshwater Wetlands Permit [LEC File #: PEB\23-168.01]
Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

To Whom it May Concern:

On behalf of the Applicant and Property Owner, Bristol Warren Regional School District, c/o Ana C. Riley (Superintendent), LEC Environmental Consultants, Inc., (LEC) is submitting this Freshwater Wetlands Permit Application for demolition of the existing Mt. Hope High School building and construction of a new high school and associated appurtenances at 199 Chestnut Street in Bristol, Rhode Island. The proposed project has been designed to achieve compliance with the Rhode Island *Fresh Water Wetlands Act* (*Act*; Sections 2-1-18 through 2-1-15 of the R.I.G.L.), its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* (*Act Regulations*; 250-RICR-150-15-3), and the *RI Stormwater Management Design and Installation Rules* (250-RICR-150-10-8).

The proposed project involves demolition of the existing school, including two causeways crossing Silver Creek. The new school will be constructed in the northern portion of the property, further from Freshwater Wetlands, and athletic fields will be relocated. Three existing stream crossings will be repurposed, and Buffer restoration is proposed along Silver Creek, where feasible. Stormwater management structures are proposed throughout the property to support the proposed development. Overall, the proposed project will result in a net decrease of impervious areas within Buffer Zones.

Portions of the proposed work activities are located within the floodplain. Additionally, portions of the proposed work activities are located within the 100-foot Jurisdictional Area and Buffer Zones associated with FWs, and the 200-foot Jurisdictional Area and Buffer Zone associated with Silver Creek.

The Freshwater Wetland boundaries, Jurisdictional Areas, and proposed project details are depicted on the attached *Preliminary Plan Submission*, dated January 10, 2025, prepared by Pare Corporation (under separate cover). Pare Corporation prepared the *Stormwater Management Report*, dated January 2025 (under separate cover), to accompany the *RIPDES Application for Stormwater Construction Permit*

(under separate cover) and demonstrates the project's compliance with applicable stormwater standards. Since the Bristol Warren Regional School District is the Applicant (i.e,. public or quasi-public entity), the Application fee is waived.

Thank you for your consideration of this Application. If you have any questions or require additional information, please do not hesitate to contact me at 401-685-3109 or at choogeboom@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

Claire A. Hoogeboom
Wetland Scientist

Mark L. Manganello
Assistant Director of Ecological Services

Enclosures [Freshwater Wetlands Permit Application]

cc: Perkins Eastman; Pare Corporation; Traverse Landscape Architects

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE
OF WATER RESOURCES - Groundwater and Freshwater Wetlands Protection
FRESHWATER WETLANDS PROGRAM

235 Promenade Street, Providence, Rhode Island 02908
Telephone: 401-222-6820; Rhode Island Relay 711
www.dem.ri.gov/wetlands

Place Date Stamp Here

Application No.:

APPLICATION FOR A FRESHWATER WETLANDS DETERMINATION OR PERMIT

PART A - APPLICATION TYPE (See Tables 2, 3, and 4 in 250-RICR-150-15-3.8.9 for more information)

- ☐ Request to Determine the Presence of Jurisdictional Area [250-RICR-150-15-3.9.2] (JADETREC)
- ☐ Request to Verify Wetland Edges [250-RICR-150-15-3.9.3] (WETEDGE)
- ■ New Freshwater Wetlands Permit [250-RICR-150-15-3.11] (FWWAPPREC)
  - ■ with Variance (VARREC) **OR**
  - ☐ with Joint On-Site Wastewater Treatment System (single-family lot only) (JOINTREC)
- ☐ Application for Significant Alteration [250-RICR-150-15-3.12] (SIGAPPREC)
- ☐ Permit Modification [250-RICR-150-15.3.14.3] (MODIFY)- Existing Permit #: _____

FEE INFORMATION:
To determine your project type and fee amount, use the Fee Assistant Tool.

Select One

Permit Fee Amount:
Exempt

Check No.:
Exempt

PART B - APPLICANT INFORMATION AND CERTIFICATION (Note: The applicant must be the owner of the property or easement which is the subject of this application or must be the government agency or entity with power of condemnation over such property or easement):

Name of Applicant/Organization: Bristol Warren Regional School District — RIDOT PTSID (if applicable): N/A

Name and Title of Organization Representative (if applicable): Ana Riley

Applicant's Mailing Address: 235 High Street
Street Number and Name or P.O. Box

Bristol (City/Town) | RI (State) | 02809 (Zip Code)

Applicant's Email Address: ana.riley@bwrsd.org

Applicant's Phone Number: 401-253-4000

CERTIFICATION/AUTHORIZATION OF APPLICANT:
I hereby certify that I have requested and authorized the investigation, compilation, and submission of all of the information, in whatever form, contained in this Application; that I have personally examined and am familiar with the information submitted herein; and that such information is true, accurate, and complete to the best of my knowledge. I hereby authorize RIDEM personnel access to the property ("site") for purposes of observing conditions pertinent to this application and assessing compliance with any permit or determination resulting from this Application; including any sampling, monitoring, or surveying that may be deemed appropriate, consistent with the RIDEM Administrative Inspection Guidelines.

Applicant's Signature — Date (mm/dd/yyyy): 01/28/2025

If more than one property owner is applying, please use the Supplemental Document: Additional Applicant Information and Certification.

PART C - PROPERTY LOCATION SUBJECT TO THIS APPLICATION:

Primary City/Town: Bristol

Street Abutting Site, with Address (if applicable): 199 Chestnut Street

Nearest Intersecting Street: Naomi Street

Distance (in feet) and Direction to Property from nearest street intersection: Abutting the southwest corner of the property

Tax Assessor's Plat(s) and Lot Number(s): Plat 117, Lots 2, 3, 4, 5, 6 & 7

Closest Utility Pole Number: 21-84

Secondary City/Town (if applicable):

Secondary Tax Assessor's Plat(s) and Lot Number(s) (if applicable):

Has a Freshwater Wetlands application been previously submitted for this property? ☐ No ■ Yes 10-0119
If yes, Previous Permit Application #

Have there been previous enforcement actions for this property? ■ No ☐ Yes _____
If yes, Previous Enforcement Action File #

PERMIT HISTORY AND APPLICABILITY **Please check ALL boxes that apply to the proposed project.** | **RIDEM USE ONLY**

Permit History

Provide all other application or file numbers associate with this site:

RI CRMC Assent:	US Army Corp. of Engineers:	RIDEM Program Name & File Number: No.10-01119

Click to Reset Options

Stormwater Construction Activity

Select all that apply. [Stormwater submissions must comply with all requirements of the Stormwater Management, Design and Installation Rules.] Click links below to refer to other applicable Rules.]

There are Freshwater Wetlands on the subject or adjacent property, AND the project proposes:

- ☑ New or increased impervious cover for property other than a single family home; or
- ☑ Disturbance of more than 10,000 sq. ft. of existing impervious cover; or
- ☐ To fill in any amount of floodplain or alter storm flowage to a river, stream or wetland on any lot.

Refer to Freshwater Wetland Rules

Freshwater Wetlands Application # Required

The project proposes an infiltration system listed in 8.21 of the *Stormwater Rules* (i.e. infiltration trench, infiltration basin, UIC chamber or drywell) that receives stormwater from:

- ☐ A residential impervious area that is more than 10,000 sq. ft.; or
- ☑ A non-residential roof area greater than 10,000 sq. ft.; or
- ☐ A non-residential (commercial, industrial, institutional...) road or parking area of any size.

Indicate if the treatment system discharges:

- ☑ **Below** the ground (UIC); or
- ☑ Above the ground and infiltrates (not UIC), but must be reviewed for compliance with the RISDISM to be protective of groundwater. *Refer to Groundwater Discharge Rules*

STW/WQC Application # Required

The project proposes **discharge of stormwater** to waters of the State [including a Separate Storm Sewer System (MS4)], AND:

- ☐ Disturbs less than 1 acre, but the activity is part of a larger common plan resulting in more than 1 acre of disturbance.
- ☑ Disturbs more than 1 acre of property. *Refer to RI Pollutant Discharge Elimination System General Permit*

UIC/GWD Application # Required

Water Quality Certification (WQC)

Select all project type(s):

ⓘ Discharge that requires a Federal Permit Check all that apply:

Federal Energy Regulatory Commission (FERC)

- ☐ Marinas-New Construction or Expansion
- ☐ Fill Waters of the U.S.
- ☐ ACOE Individual Permit
- ☐ ACOE Fill in Coastal Waters
- ☐ Other
- ☐ Harbor Management Plan
- ☐ Flow Alterations/Water Withdrawals
- ☐ Stormwater Master Plan

Refer to Water Quality Rules and Application Guidance

RIPDES Application # Required

Submission Requirements

Please submit separately bound documents, as required. Additional copies are required when submitting concurrently with a Freshwater Wetlands Application.

1 Site Plan(s)

1 Appendix A Checklist/LID Planning Assessment

1 Stormwater Management Plan (Includes SESC Plan, O&M Plan, and SW Plan (Includes SESC Plan, ⓘ O&M Plan, and SW

Appropriate Fee: New Permit = $400; Permit Modification = $200.

Amt. Paid:

Check No:

Date Received:

Remember to notify RIDEM, in writing, of the anticipated start date and of the contractor's contact information by submitting the Notice of Start of Construction form prior to the commencement of any site alterations or construction activity.

1. Introduction

On behalf of the Applicant and Property Owner, Bristol Warren Regional School District, LEC Environmental Consultants, Inc., (LEC) is submitting this Freshwater Wetlands Permit Application for demolition of the existing Mt. Hope High School building and construction of a new high school and associated appurtenances at 199 Chestnut Street in Bristol, Rhode Island. The proposed project has been designed to achieve compliance with the Rhode Island *Fresh Water Wetlands Act* (*Act*; Sections 2-1-18 through 2-1-15 of the R.I.G.L.), its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* (*Act Regulations*; 250-RICR-150-15-3), and the *RI Stormwater Management Design and Installation Rules* (250-RICR-150-10-8).

The proposed project involves demolition of the existing school, including two causeways crossing Silver Creek, and construction of a new building and associated internal driveways, parking lots, athletic fields, utilities, and stormwater infrastructure. The new school will be constructed in the northern portion of the property, further from Freshwater Wetlands (FWs). Three existing stream crossings will be repurposed, and Buffer restoration is proposed along Silver Creek and associated FWs. Stormwater management structures are proposed throughout the property to support the proposed development. Overall, the proposed project will result in a net decrease of impervious area and increase of natural Buffer within Buffer Zones.

Portions of the proposed work activities are located within the floodplain. Additionally, portions of the proposed work activities are located within the 100-foot Jurisdictional Area and Buffer Zones associated with FWs, and the 200-foot Jurisdictional Area and Buffer Zone associated with Silver Creek. The proposed project involves Buffer creation and cannot meet the minimum 25-foot Buffer width throughout the site. As such, the Applicant requests a Variance from the Freshwater Wetland Buffer Standard at Part 3.7.1(B)(4) of the *Act Regulations*.

The FW boundaries, Jurisdictional Areas, and proposed project details are depicted on the attached *Preliminary Plan Submission*, dated January 10, 2025, prepared by Pare Corporation. Pare Corporation prepared the *Stormwater Management Report* (*Stormwater Report*), dated January 2025 to accompany the *RIPDES Application for Stormwater Construction Permit* and demonstrates the project's compliance with applicable stormwater standards.

1.1 Project Scope

1.1.1 Project Purpose

As part of the Rhode Island Department of Elementary and Secondary Education (RIDE) program and the RIDE Necessity of School Construction process, the Applicant, Bristol Warren Regional School District (BWRSD), embarked on a multi-stage effort to determine the suitability of current school facilities to provide educational needs of the BWRSD's students. The multi-stage study included numerous schools within Bristol and Warren, including Mt. Hope High School. On behalf of the Applicant, the project team conducted a series of assessments of the building, which was originally constructed in 1965, along with the site and associated infrastructure. It was determined that the existing building does not support the modern educational programing and considering projected student enrollment, lacks sufficient space for students to learn and thrive to the standards of 21st century education. The northern portion of the building is located within the 100-year floodplain and two building corridors extend over culverted sections of Silver Creek. The close proximity and overlap of the building with these resources subject the infrastructure to inundation following large storm events. At the time of design and construction, the building may have been an innovative and unique design intertwined with natural resources; however, it is not feasible or practical to reconstruct the project in the current footprint or renovate the existing building in place in such close proximity to natural resources and floodplain. Due to the poor condition of the existing building and its location within the floodplain, the project team and BWRSD determined that a new high school building was the most feasible approach to support the community and future students.

The purpose of this project is to replace the existing building with a new school located outside the floodplain and further away from Silver Creek and at a higher elevation.

1.1.2 Project Description

The project area includes five parcels under common ownership (Plat 117, Lots 3, 4, 5, 6 and 7) comprising the property at 199 Chestnut Street (Appendix A, Figures 1 and 2). The new 168,364 gross square foot building will be a comprehensive educational facility that blends the career technical education and academic programs into a 21st century environment, serving the programmatic needs of all students in the school district. The carbon neutral building will be a high energy performing two-story structure, including an auditorium, cafeteria, and gymnasium; all of which will be available for public use. The career technical program will be dispersed with the core academic classrooms to create a comprehensive full inclusion model desired by BWRSD. The construction trades program

is linked directly to an outdoor work area. Outdoor learning environments will be distributed around the exterior of the building. The proposed building will be located within the center of the property outside of the 100-year floodplain and away from Silver Creek, thereby reducing development within close proximity to natural resource areas.

1.1.2.1 Mobilization and Site Preparation

The proposed project will involve phased construction and demolition on the property. Phase I activities include the Limit of Disturbance (LOD) located west of Silver Creek, and Phase II of the project includes the LOD to the east of Silver Creek. Temporary work may occur within each phasing area depending on the selected Contractors Construction Sequencing Plan. All utilities, including water, sewer, drainage, gas, and other miscellaneous utilities servicing existing utilities will remain active throughout construction until the new building and utilities are constructed.

Construction is expected to begin May 2025. Prior to the start of construction, the contractor will install erosion and sedimentation controls consisting of compost filter socks/silt fencing along the LOD, identified as "LOD/CFS" on Sheets C2.1 – C2.9 and throughout the *Plan* (details on Sheet C8.1 of the *Plan*). Temporary inlet protection (silt sacks) will also be installed within existing catch basins throughout the site, indicated as "TIP" on Sheets C2.1 – C2.9 of the *Plan*. Erosion and sedimentation control measures will remain in place and regularly monitored/maintained during the 30± month estimated on-site project duration to control the release of sediment and construction debris into the adjacent wetlands and/or Buffers. Erosion control barriers also shall function as an indication of the LOD and will remain in place until the site is stabilized.

Sheets C2.1-C2.9 of the *Plan* also depict temporary stormwater measures to be implemented during construction. Temporary diversion swales/berms are depicted with dashed linework and arrows indicating the direction of flow towards temporary sediment trap areas ("TST-#" shown on the *Plan*). Construction entrances, stockpile areas, vehicle fueling areas, and concrete washout areas are depicted on Sheets C2.2, C2.3, C2.5. Special instruction is given to locate stockpile areas outside Buffer Zones, the floodplain, and any areas that may potentially flood during large storm events.

1.1.2.2 Building and Outdoor Amenities

Work will begin with demolition of existing features within the Phase I area and re-grading to accommodate construction of the proposed building and new athletic fields. The building will be constructed while students attend school at the existing building to avoid disrupting the academic schedule. The western driveway entrance will be

constructed to provide vehicular access to the new building following completion of construction while the contractor demolishes the existing building and constructs the secondary driveway entrance (Phase II footprint). The building finished floor will be at elevation 62.9 with a small portion of the southern section at 60.9, above and outside the 100-year floodplain. A network of ADA-compliant concrete sidewalks will be installed throughout the site to provide and encourage pedestrian access and passive recreation. As documented in Table 1 below, a small portion of the building will be located within the previously disturbed Buffer Zone to Silver Creek and associated wetlands. However, a significant portion of the proposed building footprint will be outside the Buffer Zone and no naturally vegetated Buffer will be impacted.

The existing track and field will be improved within the same general footprint, shifted slightly south from the existing footprint, including resurfacing the rack and installing a synthetic turf field within the interior of the track. The synthetic turf will be located within the 75-foot Buffer Zone to the B-series FW; however, it will not impact natural Buffer. A subsurface drainage system will be installed beneath the synthetic field to collect and direct stormwater to an underground infiltration system. The Applicant and project team will work closely with the supplier to ensure that the synthetic field material is free of polyfluoroalkyl substances (PFAS), with public health and protection of downgradient FWs as a primary purpose. All the remaining athletic fields throughout the site will be comprised of natural grass/sod.

Demolition of the existing building will be carefully conducted, as two corridors cross Silver Creek. As noted on Sheet C3.4 of the *Plan*, the contractor will remove the corridors without disturbing existing culverts and/or downgradient FWs. Following demolition of the existing building, the contractor will construct the secondary driveway at the second stream crossing (Sheet C4.4 of the *Plan*) along with parking spaces, baseball field, tennis courts, stormwater management system components, and utilities. Additionally, the existing driveway crossing at the third (southern) stream crossing will be repurposed as a sidewalk with fencing on each side for safety purposes.

1.1.2.3 Stormwater Management

The existing site contains approximately 10.54 acres of impervious area (i.e., pavement and building), 3.16± acres of which is located within the Buffer Zone. Existing stormwater treatment is generally comprised of riprap swales and catch basins connected to a network of subsurface culverts directing stormwater towards Silver Creek. One stormwater basin is located within the western portion of the site and was constructed on/around 2015 in association with the recent improvements and expansion to athletic

fields. Presently, there is limited existing infrastructure to pretreat and store stormwater prior to discharging to Silver Creek.

Pare Corporation designed the stormwater management system in accordance with the *RI Stormwater Management Design and Installation Rules* (250-RICR-150-10-8) and *State of Rhode Island Storm Water Design and Installation Standards Manual* (dated December 2010, amended March 2015), to accommodate approximately 12.54 acres of impervious area within the LOD. However, it is noteworthy that impervious area within Buffer Zone will be reduced by 2.3± acres. The proposed stormwater management system incorporates a combination of low-impact development (LID) strategies and stormwater best management practices (BMPs) to convey, treat, and recharge stormwater prior to discharging towards Silver Creek and other FWs. BMPs include sediment forebays, bioretention areas, sand filters, a wet swale, an infiltration basin, an underground infiltration system, and detention basins. The underground infiltration system will be installed south of the track and field and will receive stormwater from the network of subsurface drainage pipes beneath the synthetic turf field. The existing detention basin in the western portion of the site will be retrofitted and upsized to accommodate the increase in impervious area and will include a sediment forebay and sand filter. Details of the proposed stormwater management design are depicted on Sheets C6.1-C6.9 of the *Plan* and further summarized in the attached *Stormwater Report*.

Areas Subject to Storm Flowage (ASSF) are present within the building courtyard and along Silver Creek and convey stormwater from the building and surrounding development into Silver Creek. Existing ASSF will generally be demolished and will be replaced with the comprehensive stormwater management system. The proposed project will not result in an adverse impact to ASSF and/or downgradient FWs, as the stormwater management system has been designed to accommodate the new construction and will essentially replace existing ASSF.

In an effort to match existing overflow conditions, four (4) 48-inch-diameter reinforced concrete pipes (RCPs) are proposed upstream of the central (second) and southern (third) Silver Creek crossings to function as bypass culverts. The RCP inverts are all set 4 feet above the inverts of the first set of existing twin 48-inch-diameter culverts (Sheet C6.4 of the *Plan*) and the second set of existing twin 48-inch-diameter culverts (Sheet C6.4 of the *Plan*). The proposed bypass RCPs are designed to avoid impacts or alteration to surficial flow in Silver Creek under normal conditions. During large storm events when Silver Creek exceeds the capacity of the existing culverts, the proposed bypass RCPs will function as an alternate route for floodwater to flow downstream and reduce potential for on-site flooding which may impact the new roadway and school operations. The bypass

RCPs meet north of the proposed tennis courts (Sheet C6.3 of the *Plan*), and discharge floodwater to the downstream pond with flared end sections and riprap level spreaders to promote sheet flow and reduce erosion and sedimentation (Sheet C6.2 of the *Plan*).

Surficial stormwater management features (i.e. bioretention areas, detention basins, and swales) will be installed and seeded with wildflower seed mix, open channel seed mix, and/or detention basin seed mixes. Details of the planting plan are provided on Sheets LP-121 through LP-127 and LP-301 of the *Plan*, with enlargement details on Sheets LP-141 through LP-142.

1.1.2.4 Buffer Zone Impacts and Mitigation

The proposed project has been designed to avoid temporary and/or permanent impacts to FWs, Silver Creek, Pond, and/or naturally vegetated Buffer. The proposed redevelopment will result in permanent impacts to Buffer Zone, as indicated below in Table 1. Notably, the proposed project will result in an overall decrease in impervious area within the Buffer Zone and will increase natural Buffer within the Buffer Zone.

Table 1: Buffer Zone Existing and Proposed Conditions

Feature	Existing (sf)	Proposed (sf)	Change
Pavement	82,762± (1.89± ac)	35,408± (0.81± ac)	- 47,354 (-1.08± ac)
Building	55,214± (1.27± ac)	2,230± (0.05± ac)	- 52,984 (-1.22± ac)
Athletic Field (Turf)	8,513± (0.20± ac)	23,920± (0.55± ac)	+ 15,408 (+0.35± ac)
Athletic Field (Synthetic)	-	5,000± (0.11± ac)	+ 5,000 (+0.11± ac)
Athletic Field (Impervious)	11,576± (0.27± ac)	19,966± (0.46± ac)	+ 8,390 (0.19± ac)
Manicured Lawn	223,294± (5.13± ac)	175,007± (4.02± ac)	- 48,287 (-1.11± ac)
Natural Buffer	7,512± (0.17± ac)	82,901± (1.9± ac)	+ 75,389 (+1.73± ac)
Stormwater Management Features	11,257± (0.26± ac)	48,185± (1.11± ac)	+ 36,928 (+0.85± ac)
TOTAL	**392,617±**	**392,617±**	**-**

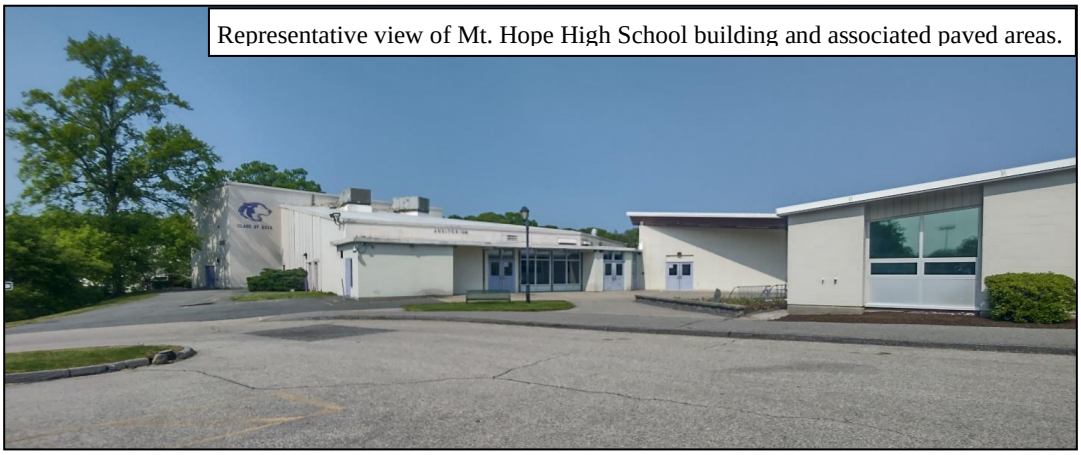
Since the project is not random, and is designed to protect the FWs and Buffers, the Applicant is requesting that RIDEM review the proposed work and information provided herein, and issue a Freshwater Wetlands Permit granting a Variance for work within Buffer Zone that cannot create a continuous Buffer at least 25 feet wide.

The following report provides a general site description, a description of the FWs, Buffer Zones, and Jurisdictional Areas, and Regulatory Compliance including a Variance Request.

2. General Site Description

The approximately 44.4-acre site at 199 Chestnut Street is comprised of five parcels commonly owned by BWRSD, located immediately north of Chestnut Street and east of Naomi Street in the central portion of Bristol, Rhode Island (Appendix A, Figures 1 and 2). Residential development associated with Naomi Street, Dartmouth Street, and Leila Jean Drive is located to the west, north, and east, respectively, and the St. Mary's Cemetery is situated south of the Site.

The southeastern portion of the Site is occupied by five separate school buildings connected via enclosed corridors. The school buildings are surrounded by paved parking lots, paved driveways, manicured lawn, and landscaped areas (photo below).



Representative view of Mt. Hope High School building and associated paved areas.

A courtyard is situated within the interior of the school complex and includes a greenhouse, paved walkways, benches, an educational rain garden, and stormwater confluences ultimately discharging into Silver Creek (photo below).

Representative view of stormwater confluence within courtyard.

The stormwater confluences meet the criteria for Areas Subject to Storm Flowage (ASSF); however, they primarily convey stormwater from the existing building into Silver Creek.

The northeastern undeveloped portion of the Site is occupied by a forested swamp (>10-acres) that extends off-site to the north. Silver Creek, depicted in dashed blue line-work as intermittent on the USGS Topographic Map (Appendix A, Figure 1), flows within a well-defined channel through the forested swamp in a westerly direction. Silver Creek continues meandering within the southeast developed portion of the Site, notably flowing through twin 48-inch concrete culverts beneath three stream crossings, two school corridors, and one driveway (photos below).

South view of Silver Creek at northern (first) high school corridor crossing.

East view of Silver Creek at second high school corridor crossing.

West view of Silver Creek at driveway crossing.

From the driveway crossing, Silver Creek flows into a Pond located within the southern-central portion of the Site, discharging from the Pond through a vertical concrete dam, and continues flowing off-site through twin culverts located beneath Chestnut Street (photos below). Fringing natural vegetation occurs along portions of Silver Creek although generally, manicured lawn extends up to the edge of the stream (photos below).

North view of Silver Creek with manicured lawn extending to stream edge.

Southwest view of the Pond. Upstream segment of Silver Creek to the right. Chestnut Street in background.

North view of concrete dam. Pond in background.

A forested swamp (>1-acre and <10-acres) is located within the southwestern portion of the Site at the Chestnut Street/Naomi Street intersection. The remaining central and northern portions of the Site include athletic fields (track and field, soccer, baseball, etc.).

Fringing forested upland vegetation is comprised of a moderately dense canopy layer of red oak (*Quercus rubra*), white oak (*Quercus alba*), red maple (*Acer rubrum*), and red cedar (*Juniperus virginiana*). The moderately dense understory includes patches and individuals of sweet pepperbush (*Clethra alnifolia*), multiflora rose (*Rosa multiflora*), Tartarian honeysuckle (*Lonicera tatarica*), and glossy buckthorn (*Frangula alnus*). Common greenbrier (*Smilax rotundifolia*), poison ivy, and Asiatic bittersweet (*Celastrus orbiculatus*) are present in the liana layer.

Upland meadow vegetation that is more routinely mowed and maintained is comprised of various grasses (*Gramineae* spp.), clover, plantain (*Plantago* spp.), and individuals and patches of landscape shrubs and trees.

3. Freshwater Wetlands, Buffer Zone, and Jurisdictional Area

On February 12, 2024 and February 28, 2024, Claire A. Hoogeboom of LEC conducted site evaluations to identify and characterize existing on-site and nearby FWs to determine the boundaries of jurisdictional areas on the site. The edges of FWs were determined through observations of the physical characteristics including the demarcation between the presence of 50% or more hydrophytes/hydrophytic vegetation, the presence of hydric soils, visual observations of hydrology, demarcation between terrestrial and aquatic vegetation, shelving, permanent watermarks and stains on vegetation or other fixed objects, changes in the character of the soil, the presence of water-borne natural litter and debris, evidence of surface scouring, and/or other appropriate notable features defining the ordinary high water mark in accordance with Part 3.21 of the *Act Regulations*, the *Field Indicators for Identifying Hydric Soils in New England* (June 2020), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (January, 2012).

The edge of Silver Creek was demarcated in the field with blue surveyor's tape numbered 1-1 through 1-16, 1-100 through 1-102, 1-200 through 1-210, 1-300 through 1-307, 1-310 through 1-313, 2-1 through 2-7, 2-100 through 2-103, 2-200 through 2-209, 2-300 through 2-309, and 2-316 through 2-318.

The edge of Pond was demarcated in the field with blue surveyor's tape numbered 1-307 through 1-309 and 2-309 through 2-315.

The edge of forested Swamp FWs associated with Silver Creek was demarcated in the field with blaze orange surveyors' tape embossed with the text "LEC WETLAND RESOURCE AREA" and/or orange pin flags embossed with the text "LEC." FW flagging associated with the forested swamps in the northeastern and southwestern portions of the Site is numbered A1 through A41, B1 through B21/B100 through B110, respectively. FW flagging associated with fringing wetlands along Silver Creek is numbered C1 through C3, D1 through D5, E1 through E4, F1 through F4, G1, and H1 through H3.

3.1 Freshwater Wetlands

Freshwater Wetland is defined at Part 3.4(A)(32)(a) of the *Act Regulations* as *those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions including, but is not limited to, marshes, swamps, bogs, emergent and submergent plant communities, rivers, streams, ponds, and vernal pools or any combination thereof.*

The landward edge of FWs was identified in accordance with criteria set forth at Part 3.21.1(A) as *the landward edge of vegetated freshwater wetlands (i.e., bogs; marshes; swamps; emergent wetlands; or similar types, including complexes of these types), shall, under normal conditions, be identified as the place where the plant community associated with the vegetated wetland is no longer dominated by hydrophytes/hydrophytic vegetation (i.e., the plant community is composed of less than or equal to fifty percent (50%) hydrophytes/hydrophytic vegetation).*

Swamp is defined at Part 3.4(A)(71) as an area *where groundwater shall be near or at the surface of the ground for a significant part of the growing season, or where runoff water from surface drainage shall collect frequently, and/or where a vegetational community shall be made up of a significant portion of one (1) or more of, but not limited to nor necessarily including all of the following: red maple (Acer rubrum), elm (Ulmus americana), black spruce (Picea mariana), white cedar (Chamaecyparis thyoides), ashes (Fraxinus), poison sumac (Rhus vernix), larch (Larix laricina), spice bush (Lindera benzoin), alders (Alnus), skunk cabbage (Symplocarpus foetidus), hellebore (Veratrum viride), hemlock (Tsuga canadensis), sphagnums (Sphagnum), azaleas (Rhododendron), black alder (Ilex verticillata), coast pepperbush (Clethra alnifolia), marsh marigold (Caltha palustris), blueberries (Vaccinium), buttonbush (Cephalanthus occidentalis), willow (Salicaceae), water willow (Decodon verticillatus), tupelo (Nyssa sylvatica), laurels (Kalmia), swamp white oak (Quercus bicolor), or species indicative of marsh.*

An emergent plant community is defined at Part 3.4(A)22. of the *Act Regulations* as *a wetland characterized by erect, rooted, herbaceous hydrophytic vegetation that is present for most of the growing season in most years, and that may be persistent or non-persistent in nature.*

Two (2) forested swamps occur within proximity to the proposed project, as further described below.

1. The A-series FW flags demarcate the boundary of a deciduous wooded Swamp located within the northeastern and eastern portions of the Site. The Swamp continues off-site to the north and measures greater than 10 acres in size. The Swamp is associated with Silver Creek and is subject to inundation from a high groundwater table and flooding. Topography descends moderately in a southerly direction from the northern portion of the Site towards Silver Creek with pit-and-mound microtopography throughout. Larger depressions generally lacking woody vegetation occur within the densely vegetated Swamp, appearing to hold approximately 4-6 inches during the spring hydroperiod. A finger-like projection of the Swamp extends along the northern property boundary. The Swamp continues off-site to the southeast on private property and is depicted on the *Plan* as approximate.

Predominant vegetation observed includes mature and sapling red maple (*Acer rubrum*), tupelo (*Nyssa sylvatica*), American elm (*Ulmus americana*), sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), silky dogwood (*Cornus amomum*), ironwood (*Carpinus caroliniana*), arrowwood (*Viburnum dentatum*), glossy buckthorn (*Rhamnus frangula*), Tartarian honeysuckle (*Lonicera tatarica*), multiflora rose (*Rosa multiflora*), cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), sphagnum moss (*Sphagnum* sp.), and various goldenrod (*Solidago* spp.). The liana layer is comprised of poison ivy (*Toxicodendron radicans*), common greenbrier (*Smilax rotundifolia*), and fox grape (*Vitis labrusca*).

2. The B-series FW flags demarcate a deciduous wooded swamp/emergent marsh measuring >1-acre and <10-acres within the southwestern portion of the Site at the Chestnut Street/Naomi Street intersection. The FW occurs within a subtle topographic depression that descends in a south direction from a stormwater management basin towards the roadway intersection. Wetland hydrology appears to be primarily influenced by a high groundwater table, and secondarily influenced by stormwater discharges from the stormwater management basin and outfall from the athletic fields. A subtle hydrologic gradient within the wetland directs surface water towards a catch basin at the roadway intersection.

   Predominant wetland vegetation in the western portion of the wetland includes mature and sapling red maple, willow (*Salix* sp.), ash (*Fraxinus* sp.), silky dogwood, arrowwood, elderberry (*Sambucus nigra*), sweet pepperbush, highbush blueberry (*Vaccinium corymbosum*), soft rush (*Juncus effusus*), sensitive fern (*Onocleus sensibilis*), and various goldenrod (*Solidago* spp.). The emergent marsh is dominated with tussock sedge (*Carex stricta*), cattail (*Typha* sp.), and the aforementioned herbaceous vegetation.

A series of fringing FWs occur along the Silver Creek embankments between the northern (first) high school corridor and Chestnut Street. The E-series FW located west of the existing driveway crossing receives stormwater discharge from the existing development. The FWs are situated on relatively flat shelves along the stream channel and are generally comprised of soft rush, sensitive fern, cattail, poison ivy, and various grasses (*Gramineae* spp.).

3.2 Edge of Stream and Pond

Stream is defined at Part 3.4.A.67. of the *Act Regulations* as *any flowing body of water or watercourse other than a river that flows long enough each year to develop and maintain a channel and that may carry groundwater discharge or surface runoff. Such*

watercourses may not have flowing water during extended dry periods but may contain isolated pools or standing water.

Pond is defined at Part 3.4.A.54. of the *Act Regulations* as *a place, natural or manmade, wholly or partly within the State of Rhode Island, where open standing or slowly moving water shall be present for at least six (6) months a year. For the purpose of these Rules, ponds exclude those places within the State of Rhode Island that meet the definition of vernal pool.*

The landward edge of Silver Creek was identified in accordance with criteria set forth at Part 3.21.2.A.1. as *the ordinary high water mark is the line separating land flooded at high water and land exposed at high water. This line may be determined and documented by using recorded hydrologic data (e.g., data obtained from site specific planning and design documents; in-stream flow studies; stream gauge data; the Department's file data; or flood data), or, in the absence of these, by observing physical characteristics, such as evidence of a clear demarcation line between terrestrial and aquatic conditions as a result of standing or flowing water; shelving; permanent watermarks and stains on woody vegetation or other fixed objects, such as bridges, stones, walls, docks, or piers; changes in the character of the soil; the presence of water-borne natural litter and debris; evidence of surface scouring; or other appropriate means.*

The landward edge of the Pond was identified in accordance with criteria set forth at Part 3.21.2.A.2. as *any pond and incoming or outgoing flowing body of water shall be that location where characteristics associated with a lentic ecosystem and a lotic ecosystem are both present.*

Silver Creek is depicted as an intermittent stream (dashed blue linework) on the most recent USGS Topographic Map – Bristol, RI, dated 2024 (Appendix A, Figure 1). As documented in photos in Section 2, Silver Creek flows in a southerly direction within a well-defined channel measuring approximately eight feet to 15 feet wide. The edge of Silver Creek is defined by undercut Banks, scouring, shelving, water marks, and changes in vegetation. Silver Creek originates north of the Site from a wetland system, flows beneath Gooding Avenue, continues in the A-series FW, flows through three culverts within the Site, enters a Pond, and discharges from the Pond via a vertical concrete dam. Silver Creek continues flowing south beneath Chestnut Street and ultimately discharges into Bristol Harbor. The circular Pond is defined by scouring, changes in vegetation, prevalent herbaceous vegetation (lentic characteristics), and lack of surficial water flow, with manicured lawn generally reaching the Pond edge.

Vegetation observed within Silver Creek and the Pond includes cattail (*Typha* sp.), arrow arum (*Peltandra virginica*), various rushes (*Carex* spp.), smartweed (*Polygonum*

pensylvanicum), nasturtium (*Nasturtium officinale*), duckweed (*Lemna minor*), and whorled water-milfoil (*Myriophyllum verticillatum*).

Vegetation observed along the stream and Pond edges includes individual and small patches of wetland shrubs listed in Section 3.1 and herbaceous vegetation including joe-pye weed (*Eutrochium maculatum*), blue vervain (*Verbena hastata*), jewelweed (*Impatiens capensis*), purple loosestrife (*Lythrum salicaria*), beggar tick (*Bidens vulgate*), and various grasses (*Gramineae* spp.) and rushes.

3.3 Area Subject to Storm Flowage

Area subject to storm flowage (ASSF) is defined at Part 3.4(7) as *areas that include drainage swales and channels that lead into, out of, pass through or connect other freshwater wetlands or coastal wetlands, and that carry flows resulting from storm events, but may remain relatively dry at other times.*

Numerous stormwater conveyances that meet the criteria for ASSF occur within the Site. Notably, a series of riprap-lined drainage swales located within the school courtyard direct stormwater from the existing building into Silver Creek. Additionally, two conspicuous swales, appearing to have developed from high frequency storm events resulting in scouring, direct stormwater from the northern parking lot into Silver Creek. ASSF located on-site will be improved or eliminated/replaced as a result of the proposed project.

ASSF is a jurisdictional area; however, Buffer Zone does not apply to these areas and the proposed stormwater management design will adequately support the proposed conditions in accordance with applicable state and local requirements.

3.4 Natural Heritage Area

According to the *Natural Heritage Area* layer provided on the Rhode Island Department of Environmental Management (RIDEM) Environmental Resource Map, the central and eastern portion of the Site is located in a *Natural Heritage Area* (ID #: 100; Appendix A, Figure 3). Correspondence with RIDEM revealed one (1) species of State Concern observed within a 0.5 mile radius of the site. The Northern Leopard Frog (*Lithobates pipiens*) was last observed in 1985 east of the Site.

The Northern Leopard Frog is a medium sized, spotted frog with variable coloration, notably with black or brown spots encircled with a lighter colored halo over the back and sides of the body. Throughout its lifecycle, Northern Leopard Frogs utilize aquatic habitats consisting of floodplain marshes or large and semi-permanent to permanently inundated shrub swamps, and terrestrial habitats consisting of upland fields, grassland, wet meadows, and forested areas. The species typically utilizes aquatic habitats for overwintering and breeding and terrestrial habitats between late spring to early fall.

On September 13, 2024, Brian Madden, LEC Senior Wildlife/Wetland Scientist, and Claire Hoogeboom, LEC Wetland Scientist, with LEC conducted a site evaluation to evaluate whether the entire site contains viable habitat to support the Northern Leopard Frog during sunny conditions with an average temperature of 75°F. At the time of LEC's site evaluation, a drought declaration was not made for the eastern region of Rhode Island[1]. Representative photographs are provided following this written analysis.

In addition to evaluating all habitats, LEC waded through Silver Creek and the Pond, and utilized a dip net numerous times to observe wildlife within the watercourse. Vegetation along and within the stream and Pond is described above in Section 3.2. LEC also conducted a transect and meandering survey of the forested Swamp within the northeastern portion of the Site. The forested Swamp is comprised of a moderately dense canopy layer and a dense understory, as described above in Section 3.1.

LEC did not observe Northern Leopard Frogs within the LOD, stream, Pond, or forested Swamp. Wildlife observed within the stream and Pond includes orb snails (*Mollusca gastropoda*), unidentified fish, crawfish (*Procambarus acutus*), green frogs (*Lithobates clamitans*), one snapping turtle (*Chelydra sepentina*), and mature dragonflies (Order: *Odonata*). Canadian geese are prevalent around the Pond and Site.

The limiting habitat to sustain a remnant Northern Leopard Frog population on-site is the presence/absence of overwintering habitat. Adult Northern Leopard Frogs require streams/rivers, pond, and/or lake habitats with sufficient hydrology for overwintering. The species specifically overwinters within shallow, excavated "pits" at the bottoms of ponds, slow-moving waterways, and/or other permanent wetlands. Under existing conditions, only the Pond and portions of Silver Creek located immediately north of the school and outside of the LOD may provide potential overwintering habitat with sufficient substrate and/or hydrology. However, the Pond and associated aquatic habitat is degraded due to the surrounding conditions and likely, the extent of goose activity. Other portions of the northeasterly FW and southwesterly FW do not provide potential overwintering habitat.

As noted above in Section 1.1.3 and Section 2, the majority of the LOD is developed and comprised of impervious areas (buildings and pavement), manicured lawn, and landscaping with little natural groundcover. Four narrow swaths of natural vegetation are present in the northern portion of the site along an existing athletic field and are surrounded by manicured lawn, within the LOD. Fringing FWs occur along Silver Creek as it flows through the property (outside the LOD), both of which are confined within relatively steep vegetated embankments, riprap, or vertical concrete walls. Proposed work

[1] http://www.wrb.ri.gov/work_programs_drought/Sep_2024_Assessment_of_Drought_Conditions.pdf

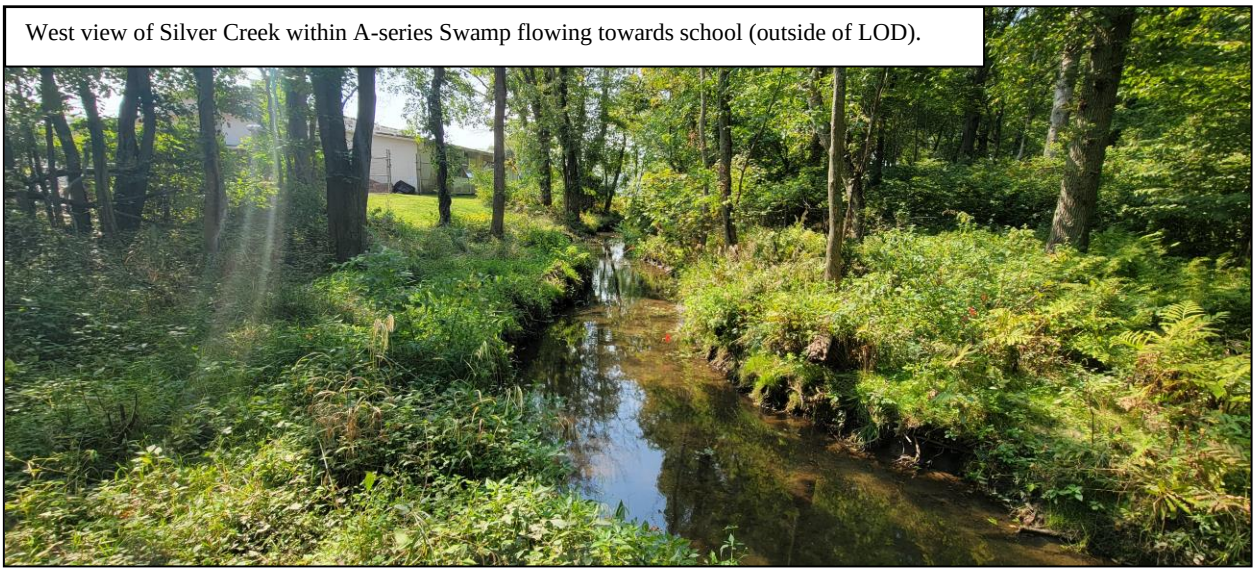
within proximity to Silver Creek and associated fringing FWs will create naturally vegetated Buffer, resulting in an improvement to existing conditions.

In order to deter amphibians from entering the LOD, LEC recommends installing erosion and sedimentation controls, consisting of entrenched silt fencing, upgradient of the Pond and northeasterly A-series FW/Silver Creek.

As proposed, the project is not anticipated to result in an adverse impact to a potential population or individuals of Northern Leopard Frog.

Southwest view of Silver Creek flowing towards first corridor crossing.

West view of Silver Creek within A-series Swamp flowing towards school (outside of LOD).



Dip net survey of pond in southern portion of the site.

Crawfish (*Procambarus acutus*).

Green frog (*Lithobates clamitans*) and fish.

3.5 **Floodplain/Floodway**

Floodplain is defined at Part 3.4.A.29 as *land area adjacent to a river or stream or other body of flowing water which is, on the average, likely to be covered with flood waters resulting from a one hundred (100) year frequency storm. A "one hundred (100) year frequency storm" is one that is to be expected to be equaled or exceeded once in one hundred (100) years; or may be said to have a one percent (1%) probability of being equaled or exceeded in any given year.*

Part 3.21.3.A of the *Act Regulations* states *the one hundred (100) year floodplain elevation shall be determined by the most recently available flood profile data prepared*

under the National Flood Insurance Program of the Federal Emergency Management Agency (FEMA);

Floodway is defined at Part 3.4.A.30 as *the channel of a river or stream and any immediately adjacent areas that must be kept free of encroachment to allow one hundred (100) year flood waters to be carried without increase in flood heights or flows and without endangering life or property.*

Part 3.21.4.A.2 of the *Act Regulations* states *where no FEMA floodway has been established for a river or stream, the edge of the channel as identified in § 3.21.2(A) of this Part shall also be considered the edge of the floodway.*

According to the July 7, 2014 FEMA Flood Insurance Rate Map (FEMA FIRM) for the Town of Bristol, Rhode Island (*Community Panel 44001C0011H*) the eastern portion of the Site and Silver Creek are located within a Zone AE (el. 41.8 - 60) – *Special Flood Hazard Areas Subject to Inundation by the 1% annual chance flood (base flood elevation determined)* (Appendix A, Figure 4). The 100-year floodplain elevation increases from Chestnut Street towards the northeastern portion of the Site.

As a result, portions of the site mapped within the Zone AE are protectable as floodplain, and areas below the edge of Silver Creek are protectable as floodway.

3.6 Buffer Zone and Vegetated Buffer

Buffer Zone is defined at Part 3.4.A.10 as *an area of land within a jurisdictional area that is contiguous to a freshwater wetland and the width of which is designated in § 3.23 of this Part.*

Buffer is defined at Part 3.4.A.11 of the *Act Regulations* as *an area of undeveloped vegetated land adjacent to a freshwater wetland that is to be retained in its natural undisturbed condition or is to be created to resemble a naturally occurring vegetated area. For the purpose of defining buffer in these Rules, "adjacent to" means land area within the buffer zone.* Part 3.4.A.73 continues to define Undeveloped Vegetated Land as *an area of land that does not consist of buildings, impervious surfaces, bare gravel, lawn or landscaped areas (underline emphasized).*

According to the FWs Buffer Region Map provided at Part 3.24 of the *Act Regulations,* the Site is located within a River Protection Region 2. As such, according to Part 3.23.H.3. of the *Act Regulations,* the following Buffer Zones are applied to on-Site FWs:

- A-series FW (>10 acre Swamp): 75-foot Buffer Zone, plus an additional 25 feet where Silver Creek is located within 50 feet of the FW boundary.
- B-series FW (<10 acre, >1 acre Swamp/emergent marsh): 75-foot Buffer Zone, accounting for a wetland subtype.

- C through H-series FWs (<1 acre): 50' Buffer Zone, accounting for Silver Creek within 50 feet of the FW boundaries.
- Silver Creek: 100' Buffer Zone (in accordance with Part 3.23.H.10. of the *Act Regulations*). Buffer Zone associated with Silver Creek exceeds Buffer Zones associated with the C through H-series FWs.

Buffer Zone associated with the aforementioned FWs is generally comprised of developed areas including buildings, pavement, parking lots, a track & field, manicured lawn, and individual landscape plantings. Buffer Zone is largely developed and there is limited naturally vegetated Buffer within the Site. Vegetated areas not routinely maintained or mowed within the Buffer Zones are considered Buffer, as designated by the treeline depicted on the *Plan.*

3.7 Jurisdictional Area

According to Part 3.5.2 of the *Act Regulations, Jurisdictional area includes freshwater wetlands, buffers, floodplains, areas subject to storm flowage, areas subject to flooding, and contiguous areas that extend outward two hundred feet (200') from the edge of a river or stream, two hundred feet (200') from the edge of a drinking water supply reservoir, and one hundred feet (100') from the edge of all other freshwater wetlands, except as otherwise provided for in R.I. Gen. Laws § 2-1- 22(k) for farmers conducting normal farming and ranching activities.*

Portions of the proposed project are located within ASSF, floodplain/floodway, and within the 100-foot and 200-foot Jurisdictional Areas extending from all FWs and Silver Creek in proximity to the project area. The proposed project has been carefully designed to avoid impacts to the fringing Buffer and FWs.

4. Regulatory Compliance

Pursuant to Parts 3.11.2 and 3.11.3 of the *Act Regulations*, the following provides information for RIDEM consideration regarding the following applicable Application requirements: Freshwater Wetlands and Buffer Protection Standards [Part 3.7.1], Review Criteria [Part 3.7.2], Variance Request [Part 3.7.3], Engineering Requirements [Part 3.11.6], and a Significant Alteration Determination [Part 3.11.3.C]. While the project does not fully comply with the Freshwater Wetland Buffer Standard at Part 3.7.1.B, the proposed bridge wingwalls will result in a negligible impact and the Buffer work is necessary to construct a high-quality bridge span with an extended useful life.

4.1 Freshwater Wetlands and Buffer Protection Standards [Part 3.7.1]

Pursuant to this Part of the *Act Regulations*, the following provides a response to the project's compliance with applicable Standards at Part 3.7.1.

General Freshwater Protection Standard

(A) All projects and activities subject to this Rule shall be designed and carried out to avoid alteration of freshwater wetlands.

The proposed project does not propose any alterations to FWs. The project complies with this Standard.

Freshwater Wetlands Buffer Standard

(B)(3) All projects and activities shall be designed and carried out to avoid alteration of buffers within buffer zones, except as provided for in § 3.7.1(B)(5) of this Part, Residential Infill Lot Buffer Standard. The buffer within a designated buffer zone shall consist of: a. All undeveloped vegetated land; and b. Any area to be newly created to resemble buffer pursuant to § 3.7.1(B)(4) of this Part.

(B)(3)b. A project or activity that cannot, due to site constraints, avoid intrusion into the buffer zone shall be designed and carried out to avoid alteration of the existing buffer as well as meet the following minimum targets for creation of new buffer contiguous to freshwater wetlands or existing buffer on the subject property:

(2) For proposed projects or activities on property that is greater than or equal to three (3) acres, that is not a single-family residential lot of record, that contains one (1) or more existing structures, and where the proposed land disturbance total is greater or equal to ten thousand square feet (10,000'), the minimum target for total buffer width is: (AA) Twenty-five feet (25') in the non-urban River Protection Regions 1 and 2 (see § 3.24 of this Part).

The proposed project does not propose any alterations to naturally vegetated Buffer and complies with Part 3.7.1(B)(3)b. However, the proposed work within Buffer Zone exceeds the 10,000 square foot threshold and as such, the proposed project includes a robust planting plan to revegetate portions of the Buffer Zone. As summarized in Table 1 (Section 1.1.2.4), approximately 7,512 sf of existing Buffer is present on the property, located along the A-series FW in the northeastern portion of the site. The proposed landscaping plan includes 82,901 sf of Buffer creation within the 75-100 foot Buffer Zone, including a restoration seed mix and 196 saplings and shrubs. Proposed Buffer creation will result in an increase of 75,389 sf of naturally vegetated Buffer on the property. Proposed stormwater management features and programmatic needs limit the opportunity to propose a contiguous 25-foot-wide Buffer along FWs and Silver Creek; however, Buffer width is maximized wherever feasible to make up the difference. Generally created Buffer ranges between 19-40 feet wide. Notably, a large area of Buffer measuring 37,090 square feet is proposed in the southeastern portion of the site between the proposed baseball field and Silver Creek.

Additionally, approximately 25,366 square feet of the Buffer Zone will be improved with herbaceous mixes in proposed stormwater management features, including a wildflower seed mix, open channel seed mix, and detention basin seed mix.

The project partially complies with this Standard, as Buffer restoration is proposed but cannot provide a minimum 25-foot-wide Buffer. As such a Variance Request is provided at Section 4.3.

Setback Standards

(C)(1) Primary structures (e.g. residential dwellings, commercial/industrial structures, schools, churches, etc.) must be located to meet a setback distance of no less than the buffer width plus twenty feet (20'). Accessory structures must be located to meet a setback distance of no less than the buffer width plus five feet (5').

The closest portion of the proposed building is 45 feet from the nearest FW boundary. This is a significant improvement in comparison to existing conditions, where the existing building is at least 13 feet from the nearest FW boundary and crosses Silver Creek in two locations. All accessory structures have been carefully designed to avoid encroaching closer than five feet from Buffers and/or FW boundaries and the proposed project does not place structures, pavement, or impervious areas closer to FWs than at existing conditions. The project complies with this standard.

Rare or Endangered Species Standard

(D) No project or activity may result in degradation of the natural characteristics of any rare freshwater wetland type; likewise, no project or activity may reduce the ability of a freshwater wetlands or buffer to ensure the long-term viability of any rare or endangered animal or plant species incorporated by reference in §§ 3.3(A) and (B) of this Part or under the Federal Endangered Species Act.

The proposed project does not involve work within any FW and/or rare FW type and the proposed project is not anticipated to result in an adverse impact to nearby FWs. Proposed activities are located entirely within existing developed areas and/or manicured lawn, and are not anticipated to result in an adverse impact to nearby FWs or limited existing vegetated Buffer.

While the proposed project is located within proximity to an off-site, 40-year-old (1985) known observation of the Northern Leopard Frog (species of State Concern), the entire LOD is located within existing development and will not result in disturbance to any identified important habitat for the species. A detailed description of the habitat evaluation conducted by LEC is provided in Section 3.4. Implementation of the erosion and sedimentation plan will enclose the project area and demarcate the LOD to ensure that if Northern Leopard Frog is present within proximity to the Site they will be unable to migrate into the LOD.

To deter amphibians from entering the LOD, LEC recommends installing erosion and sedimentation controls, consisting of entrenched silt fencing, upgradient of the Pond and northeasterly A-series FW/Silver Creek.

The project complies with this standard.

Flood Protection Standard

(E)(1) Projects and activities taking place in a floodplain shall not result in any net reduction in flood storage capacity and shall not reduce the rate at which floodwater is stored by the floodplain.

Proposed activities will occur within the floodplain; however, none of the proposed conditions will result in a net reduction of flood storage capacity within the site, nor will it reduce the rate at which floodwater is stored.

The proposed project involves demolishing the existing building located within the floodplain. The building finished floor will be at elevation 62.9 with a small portion of the southern section at 60.9, above and outside the 100-year floodplain.

Grading within the 100-year floodplain is minimized to the extent practicable and includes stormwater BMPs, removal of the existing building, and establishment of naturally vegetated areas, resulting in an overall cut of 966 cubic yards and no increase in fill. Compensatory storage volume calculations provided in the *Stormwater Report* are depicted in Table 2 below.

Table 2: Compensatory Storage Volumes (from Stormwater Report)

Stage Elevation	Existing Available Storage Volume (CY)	Proposed Available Storage Volume (CY)	Change
58-59	85 CY	87 CY	+2 CY
59-60	1,343 CY	1,343 CY	0 CY
60-61	2,683 CY	3,667 CY	+994 CY

Based on the information provided, the project complies with this standard.

(E)(2) Floodway obstruction: Projects and activities taking place within or adjacent to rivers or streams shall not encroach into floodway limits with any fill, structure or other development.

No proposed activities occur at or below the edge of Silver Creek. The proposed project has been carefully designed to avoid impacts to the floodway associated with Silver Creek. Instead, four (4) 48-inch-diameter reinforced concrete pipes (RCPs) are proposed upstream of the central (second) and southern (third) Silver Creek crossings to function as stormwater bypass culverts. The RCP inverts are all set four feet above the inverts of the first set of existing twin 48-inch-diameter culverts (Sheet C6.4 of the *Plan*) and the second

set of existing twin 48-inch-diameter culverts (Sheet C6.4 of the *Plan*). The proposed bypass RCPs are designed to avoid impacts or alteration to surficial flow in Silver Creek under normal conditions. During large storm events when Silver Creek exceeds capacity of the existing culverts, the proposed bypass RCPs will function as an alternate route for floodwater to flow downstream and reduce potential for on-site flooding. The bypass RCPs meet north of the proposed tennis courts (Sheet C6.3 of the *Plan*), and discharge floodwater to the downstream pond with flared end sections and riprap level spreaders to promote sheet flow and reduce erosion and sedimentation (Sheet C6.2 of the *Plan*).

No fill, structure, or development is proposed within the floodway and as such, the project complies with this standard.

Surface Water and Groundwater Diversion Standard

(F) Projects and activities shall not adversely affect the flow of groundwater or surface water into or out of any freshwater wetlands and shall not result in obstruction of, or the reduction in storage capacity of, any area subject to flooding or area subject to storm flowage.

The proposed project includes a comprehensive stormwater management system, including new and improved features. The *Stormwater Report* summarizes that groundwater recharge will be provided by providing qualifying pervious areas (QPAs), two bioretention areas, four sand filters, an infiltration basin, and an underground infiltration system. Existing ASSF throughout the site (i.e., stormwater swales and channels) will be replaced with components of the new design to match the proposed developed conditions. The proposed stormwater management system has been designed to improve storage capacity provided on-site and provide groundwater recharge. The project complies with this standard.

Stormwater Management Standard

(G) Projects and activities shall meet the minimum standards in the Stormwater Management, Design and Installation Rules, Subchapter 10 Part 8 of this Chapter, or for single-family lots of record, the "RI Stormwater Management Guidance for Individual Single Family Residential Lot Development" for the recommended and primary means to achieve this standard.

Pare Corporation has prepared a *Stormwater Report* (under separate cover), to document the projects compliance with the minimum standards provided in the *Stormwater Management, Design and Installation Rules* (250-RICR-150-10-8). The project meets this Standard.

Erosion and Sedimentation Control Standard

(H) Projects and activities shall be designed and carried out in a manner that prevents soil erosion and sedimentation consistent with the Stormwater Management, Design and Installation Rules, § 10-8.16 of this Chapter.

The LOD has been restricted to the greatest extent possible while balancing reasonable construction access for redevelopment in an effort to limit the proposed land disturbances and mitigate the risk of on-site and/or off-site erosion. Sheets C2.1 – C2.9 of the *Plan* provide details for catch basin inlet protection and erosion and sedimentation control through the implementation of silt sacks and compost filter socks/silt fencing along the LOD, respectively (details on Sheet C8.1 of the *Plan*). Pare Corporation has prepared a *Soil Erosion and Sediment Control Plan*, dated January 2025 (under separate cover) to provide guidance for complying with the terms and conditions of the RIPDES CGP. The project meets this standard.

Water Quality Standard

(I) Projects shall not cause or contribute to a violation of any State water quality standard for surface water or groundwater or contribute to significant degradation of surface water or groundwater resources.

The proposed project does not involve impacts to surface waters. The proposed project will increase impervious area within the LOD2 acres; however, impervious areas within Buffer Zone will be decreased by 1.32 acres. The implementation of the stormwater management system has been designed as to avoid the potential for the site to increase a potential contribution to further degradation of surface or groundwater resources to the adjoining FWs and downgradient wetlands. The project meets this standard.

4.2 Review Criteria [Part 3.7.2]

Pursuant to this Part of the *Act Regulations*, RIDEM reviews criteria to confirm that proposed projects incorporate "*best management practices, best available technologies, and any maintenance or inspection schedules necessary to comply with the applicable criteria.*" The following provides the project's compliance with the twenty-six (26) review criteria at Part 3.7.2(B). Review Criteria that are not applicable to the project has been consolidated.

1. Significant reduction in the overall wildlife production or diversity of a freshwater wetland or buffer; 2. Significant reduction in the ability of a freshwater wetland or buffer to satisfy the needs of a particular wildlife species; 3. Significant displacement or extirpation of any wildlife species from a freshwater wetland or surrounding areas due to the alteration of the freshwater wetland or buffer; 4. Any reduction in the ability of the freshwater wetland or buffer to ensure the long-term

viability of any rare animal or rare plant species; 5. Any degradation in the natural characteristic(s) of any rare freshwater wetland type; 6. Significant reduction in the suitability of any freshwater wetland or buffer for use by any resident, migratory, seasonal, transient, facultative, or obligate wildlife species, in either the short or long term as a travel corridor; feeding site; resting site; nesting site; escape cover; seasonal breeding or spawning area; 7. Any more than a minimal intrusion of, or increase in, less valuable, invasive or exotic plant or animal species in a freshwater wetland or buffer; 8. Significant reduction in the wildlife habitat functions and values of any freshwater wetland or buffer which could disrupt the management program for any game or non-game wildlife species carried out by State or Federal fish, game, or wildlife agencies;

The proposed project does not involve work within FWs or Buffer and as such, is not anticipated to reduce the ability of FWs or Buffer to support wildlife species; will not displace wildlife species; will not reduce the ability of FW or Buffer to support rare animal or plant species; and will not degrade natural characteristics of FW or Buffers. Portions of the site are mapped within a Natural Heritage Area for the Northern Leopard Frog; however, the proposed project will not impact natural habitat which may support the Species of Concern. Instead, the proposed project is proposed within existing developed areas and will increase natural Buffer by 75,389± square feet (1.73± acres).

9. Significant reduction in overall current or potential ability of a freshwater wetland or buffer to provide active or passive recreational activities to the public;

The site is a town-owned property open to the public. The proposed project is designed to be inclusive of passive recreational opportunities through outdoor classrooms, walking paths, and ADA compliant sidewalks. FWs will not be impacted and Buffer will be increased as a result of the proposed project.

10. Significant disruption of any on-going scientific studies or observations performed by or in cooperation with Federal, State, or municipal agencies or educational institutions;

The proposed project is within a town-owned property and will not disrupt scientific studies. The Applicant is aware of potential studies of Silver Creek and associated flooding that may be conducted by the U.S. Army Corps of Engineers in the future. The proposed project will not directly impact Silver Creek and will not disrupt any potential future studies.

11. Elimination of, or severe limitation to traditional human access to, along the bank of, up or down, or through any rivers, streams, ponds, or other freshwater wetlands or buffers;

The project will not result in a physical limitation for human access to FWs or Buffers that doesn't already exist.

12. Any reduction in water quality functions and values or negative impacts to natural water quality characteristics, either in the short or long term, by modifying or changing: water elevations, temperature regimes, volumes, velocity of flow regimes of water; increasing turbidity; decreasing oxygen; causing any form of pollution; or modifying the amount of flow of nutrients so as to negatively impact freshwater wetland functions and values;

The proposed project will not result in any direct impacts to the functions and values of FWs. As stated in the *Stormwater Report*, the proposed stormwater management system will improve water quality functions and values on-site. The proposed bypass RCPs have been designed to be installed above the edge of Silver Creek and above surface water levels under normal conditions. The bypass RCPs will not impact the flow or velocity of Silver Creek during normal conditions, and are anticipated to reduce impacts to the proposed improvements during flooding events.

13. Any placement of any matter or material beneath surface water elevations or erection of any barriers within any ponds or flowing bodies of water which could cause any hazards to safety; 14. Significant loss of important open space or significant modification of any uncommon geologic or archaeological features; 15. Significant modification to the natural characteristics of any freshwater wetlands or buffer area of unusually high visual quality;

Review Criteria 13 through 15 do not apply, as the proposed project is not located within Ponds, flowing water, or FWs; the LOD is not comprised of important open space or uncommon geologic or archaeological features; and the FWs and Buffers do not have unusually high visual quality.

16. Any decrease in the flood storage capacity of any floodplain or area subject to flooding which could impair its ability to protect life or property from flooding or flood flows;

Portions of the proposed project are located within floodplain; however, the proposed grading will result in additional compensatory storage provided on-site. Refer to the compensatory storage volumes provided in Table 2. The proposed project will not decrease flood storage capacity.

17. Significant reduction of the rate at which flood water is stored by any floodplain or any area subject to flooding during any flood event;

As stated in the *Stormwater Report*, the improved and proposed components of the stormwater management system will result in an overall reduction to peak flow rates discharged from the site in all design storms and runoff volume discharged from the Site in the one-year and 10-year design storms. The *Stormwater Report* documents that there is a small increase in peak flows within two design points in the site; however, the decrease in peak flows within remaining four design points located upstream and downstream renders the increase negligible. The peak volumes of stormwater storage provided under proposed conditions will result in an increase of storage volume within the floodplain by 996 cubic yards.

18. Restriction or significant modification of the path or velocities of flood flows for the one (1) year, ten (10) year, or one hundred (100) year frequency, twenty-four (24) hour, Type III storm events so as to cause harm to life, property, or other functions and values provided by freshwater wetlands, buffers or floodplain;

The *Stormwater Report* includes an evaluation of the existing and proposed conditions for the 1.2 inch storm event, as well as the one-year, two-year, 10-year, 25-year, and 100-year frequency storms in accordance with state and local requirements. The existing and proposed Watershed Maps depicting the subwatersheds and associated stormwater flow paths are provided in Appendix D of the *Stormwater Report.* The proposed project is not anticipated to result in a harm to life, property, FWs, Buffers, or floodplain.

19. Placement of any structure or obstruction within a floodway so as to cause harm to life, property, or other functions and values provided by freshwater wetlands or their associated buffers;

The LOD does not occur within the floodway defined by FEMA. Work adjacent to the floodway includes improvements to reduce potential for erosion including riprap and vegetation.

Any increase in run-off rates over pre-project levels or any increase in peak flood elevations within freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage for the one (1) year, ten (10) year, or one hundred (100) year frequency, twenty-four (24) hour, Type III storm events which could impair their ability to protect life or property from flooding or flood flows;

As stated in the *Stormwater Report*, the proposed stormwater management system is designed to result in an overall net reduction of peak run-off rates and will not impair the above-referenced jurisdictional areas' ability to protect life or property from flooding.

20. Any increase in run-off volumes and discharge rates which could, in any way, exacerbate flooding conditions in flood-prone areas;

As stated in the *Stormwater Report*, the proposed project will result in additional impervious area and the proposed stormwater management system has been designed to reduce runoff volumes and peak flow discharge rates.

21. Significant changes in the quantities and flow rates of surface or groundwater to or from isolated freshwater wetlands (e.g., those freshwater wetlands without inflow or outflow channels); 23. Placement of any structural stormwater best management practices within freshwater wetlands, or proposal to utilize freshwater wetlands as a stormwater best management practice;

Review Criteria 22 and 23 do not apply, as there are no isolated FWs on-site or within the LOD and stormwater management features are not proposed within FWs.

24. Any more than a short-term decrease in surface water or groundwater elevations within any freshwater wetlands;

The proposed project is going to result in an increase in impervious areas. The stormwater management system has been designed to mitigate the increase in impervious area and is not anticipated to affect surface water or groundwater elevations within FWs.

25. Non-compliance with the Rhode Island Department of Environmental Management Water Quality Regulations, Subchapter 05 Part 1 of this Chapter; or

The proposed project does not involve temporary or permanent impacts to Waters of the U.S. and as such, the RIDEM Water Quality Regulations do not apply. Nonetheless, the *Stormwater Report* documents that the proposed stormwater management system will provide water quality treatment, exfiltration, and recharge. The stormwater management system has been designed to provide groundwater recharge and promote removal of total suspended solids (TSS), thereby improving the overall water quality directed to Silver Creek, FWs, and downstream areas.

26. Any detrimental modification of the ability of a freshwater wetland or buffer to retain or remove nutrients or act as natural pollution filter.

No portion of the project is located within a FW or Buffer. The proposed project includes creation of naturally vegetated Buffer on-site by 1.73± acres. Additionally, the proposed stormwater management system will increase the Buffers ability to retain and remove nutrients, and will improve the Buffers capacity to act as a natural pollution filter.

4.3 Variance from Standards [Part 3.7.3]

Part 3.7.3(A)(1) of the *Act Regulations* states that projects that cannot meet the Standards specified in Part 3.7.1(A) through (F) may apply for a Variance. As summarized in Section 4.1 of this narrative, the project cannot fully comply with Standard 3.7.1(B)(4) as the project design cannot accommodate a consistent minimum 25-foot target width of created Buffer. The following assessment of impact avoidance and minimization related to this project component is provided in accordance with Part 3.7.3(A)(2).

Avoidance [Part 3.7.3(A)(2)(a)]

(1) Whether the primary proposed activity is water-dependent or whether it requires access to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage as a central element of its primary purpose;

The proposed project is not water-dependent, nor does it require access to the above-referenced jurisdictional areas; however, the project purpose is to demolish an existing building within close proximity to FWs and partially in floodplain and rebuild the building further away and outside the aforementioned sensitive areas. Creation of Buffer is proposed to the extent practicable while balancing programmatic needs.

(2) Whether any areas within the same property or other properties owned or controlled by the applicant could be used to achieve the project purpose without altering the natural character of any freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage;

There are no properties owned by the Applicant within the Town of Bristol that could support the programmatic needs. The juxtaposition of Silver Creek within the south-central portion of the site and FWs limit opportunities to redevelop the site without encroaching into Buffer Zones or floodplain. Nonetheless, the proposed project does not include alteration to the natural character of FWs, Buffers, floodplains, ASF, or ASSF. The proposed project will result in an overall improvement to the site, as the entire LOD is currently disturbed and creation of Buffer is proposed to the extent practicable while balancing programmatic needs.

(3) Whether any other properties reasonably available to, but not currently owned or controlled by, the applicant could be used to achieve the project purpose while avoiding freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage alterations. A property is reasonably available if, in whole or in part, it can be acquired without excessive cost, taking individual circumstances into account, or, in the case of property owned or controlled by the same family, entity, group of affiliated entities, or local, State or Federal government, may be obtained without excessive hardship;

The proposed project involves demolishing and rebuilding a school within a property that has been owned and utilized for educational use since the 1960s. Purchasing private property, or properties, within the Town of Bristol that don't contain FWs and Jurisdictional Areas would create an exorbitant cost to the Applicant. It is likely that any available land for sale that can support the programmatic needs (i.e,. large acreage, centrally located, and buildable land) would be cost-prohibitive. The unique opportunity to redevelop the site for an existing use is preferred over developing another property.

(4) Whether alternative designs, layouts or technologies could be used to avoid freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage or impacts on functions and values on the subject property or whether the project purpose could be achieved on other property that is reasonably available and would avoid freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage;

The proposed project has been designed to avoid and/or improve the above referenced Jurisdictional Areas to the extent practicable while balancing programmatic needs. The project design cannot accommodate a continuous 25-foot-wide created Buffer due to the site constraints and design. The Applicant is proposing an increase of Buffer and decrease in impervious area within the Buffer Zone, resulting in an overall improvement to Buffer Zone.

(5) Whether the applicant has made any attempts (and if so what they were) to avoid alterations to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage by overcoming or removing constraints imposed by zoning, infrastructure, parcel size or the like; and

During the Feasibility Study through RIDE, a conceptual analysis was prepared comparing three options to improve Mt. Hope High School: 1. Repair/Renovation; 2. Addition/Renovation; and 3. New Construction. The project team provided conceptual models for consideration by BWRSD and the School Building Committee, including an analysis of building costs, site opportunities, overall costs, and contingencies. The School Building Committee selected the new construction due to several factors, notably that costs of new construction was the least expensive, the existing building was in poor condition, and the building was located within the floodplain. Repair, renovation, and/or addition options would result in spending money on a building that would remain in the floodplain and was determined to be a poor use of funding. New construction also presented the least impact on students as it would not interrupt the academic school year.

The project design for new construction took many factors into account to meet programmatic needs while avoiding impacts to naturally vegetated Buffer, FWs, and floodways. The building was specifically cited centrally within the site to avoid

floodplain and did not require relief from zoning requirements. The juxtaposition of Silver Creek and associated FWs limit opportunities to redevelop the site without encroaching into Buffer Zones, ASSF, or floodplain. Any project option (renovation, addition, or new construction) which would also achieve project goals would result in some level of impact to floodplain and ASSF. There are limited opportunities on-site to avoid alterations to ASSF and floodplain and the proposed project has been designed to improve conditions wherever feasible to mitigate impacts.

(6) Whether the feasible alternatives that would not alter the natural character of any freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage on the subject property or on property that is reasonably available, if incorporated into the proposed project would adversely affect public health, safety or the environment.

A no-build alternative would result in an adverse effect to the public interest, health, and safety, as the building is in poor condition, partially within the floodplain, and does not meet the 21st century educational programming needs. The building will be relocated out of the 100-year floodplain and is almost entirely removed from the Buffer Zone. Proposed stormwater management features will result in an improvement to water quality, storage, and discharge rates towards Silver Creek and FWs. For these reasons, the proposed project is a considerable improvement to the site conditions and is a benefit to the public interest.

<u>Minimization [Part 3.7.3(A)(2)(b)]</u>

(1) Whether the proposed project is necessary at the proposed scale or whether the scale of the alteration could be reduced and still achieve the project purpose;

The proposed project is necessary to rebuild Mt. Hope High School. The building design is based on a projected enrollment for the 2027-2028 year of 834 students at the high school. The building size is necessary to accommodate the projected student population, staff, and faculty. Two driveway entrances are required for safe ingress/egress to the site, and the Applicant has made use of an existing stream crossing to accommodate one driveway and avoid new impacts to Silver Creek. Surrounding athletic fields are necessary to support the recreational needs and field space cannot be minimized, as there are standard size requirements. The proposed stormwater management system is necessary to meet applicable stormwater requirements for redevelopment (both under state and local requirements) and improve post-construction stormwater treatment conditions as compared to existing conditions.

(2) Whether the proposed project is necessary at the proposed location or whether another location within the site could achieve the project purpose while resulting in less

impacts to the freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage;

There are no alternative site designs which would reduce the impacts to floodplain and ASSF. Notably, impervious areas in floodplain are reduced and replaced with vegetated areas and stormwater management features which directly infiltrate stormwater. Most importantly, the existing building, part of which is located within the floodplain, will be demolished and no portion of the proposed building will be located within the floodplain.

(3) Whether there are feasible alternative designs, layouts, densities or technologies, that would result in less impacts to the freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage while still achieving the project purpose; and

The project has been designed to reduce impervious areas within Buffer Zone and floodplain to the extent practicable while achieving the project goals. Athletic fields surround the proposed building and replace the existing building footprint in an effort to reduce the amount of impervious area within floodplain, Buffer Zone, and in close proximity to FWs. The project has been carefully designed to utilize existing developed areas and reduced the LOD to the extent practicable to avoid Buffer impact while balancing reasonable construction practices and compliance with stormwater regulations.

(4) Whether reduction in the scale or relocation of the proposed project to minimize impact to the freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage would result in adverse consequences to public health, safety or the environment.

This minimization issue is not applicable to this proposed project, as the proposed building and appurtenances (i.e. field space and parking spaces) must be designed to accommodate projected student enrollment in compliance with RIDE requirements. As noted above, the project has been carefully designed to utilize existing developed areas and reduce the LOD to the extent practicable to avoid Buffer impact while balancing programmatic needs, reasonable construction practices, and compliance with stormwater regulations.

Part 3.7.3(A)(3)

All applicable review criteria specified in § 3.7.2 of this Part have been satisfied.

See Section 4.2 of this Narrative for compliance with review criteria.

Part 3.7.3(A)(4)

Due to the conditions at the project site, the applicable standard(s) cannot be met.

As previously noted, the purpose of the proposed project is to construct a new building to replace the existing building which is in poor condition. This project requires a redesign of the entire site. The juxtaposition of Silver Creek, FWs, and Buffer Zones makes it

nearly impossible to redevelop the Site without all standards being applicable. The project team has taken all available means and measures to thoughtfully design the proposed project to avoid impacts to FWs and Buffers, and is proposing Buffer creation to the extent practicable.

Part 3.7.3(A)(5)

The relief requested by the applicant is the minimum variance to the applicable standard(s) necessary to allow a reasonable alteration or use of the site as required by §§ 3.7.3(A)(2)(a) and (b) of this Part.

The Variance request is being made as the Applicant proposes the creation of Buffer, but cannot create a Buffer of at least 25 foot in width. The project has been designed to minimize impacts to the extent practicable and no other impacts are proposed to Buffer or FWs to accommodate the project needs. The Applicant only seeks a Variance for one portion of a Standard in order for the project to move forward.

Part 3.7.3(A)(6)

The requested variance to the applicable standard(s) is not due to any prior action of the applicant or the applicant's predecessors in title.

To LEC's knowledge, no prior Variance requests, site developments, and/or property boundary reconfigurations have been approved or created since development of the current *Act Regulations* to result in a hardship to current or future development on-site.

Part 3.7.3(A)(7)

Due to the conditions of the project site in question, the standard(s) will cause the applicant an undue hardship. In order to receive relief from an undue hardship an applicant must demonstrate the nature of the hardship and that the hardship is shown to be unique or particular to the site. Mere economic diminution, economic advantage, or inconvenience does not constitute a showing of undue hardship that will support the granting of a variance.

As previously stated, the proposed project has been designed to meet programmatic needs and projected student enrollment. Requiring a 25-foot-wide natural Buffer throughout the site would significantly reduce the sites capacity to provide all necessary programmatic needs, such as athletic fields, available parking space for projected student enrollment, faculty, and staff, and the building. If the proposed project design is minimized to accommodate more created Buffer, undue hardship would be burdened to students. The proposed project is a public benefit and is necessary to support the educational needs of Bristol and Warren students.

4.4 Engineering Requirements [Part 3.11.2(6)]

In accordance with Part 3.11.2(A)(6), the following describes the projects compliance with applicable Engineering Requirements. At existing conditions, the property is occupied by slightly less than 40% impervious area and disturbance is greater than 10,000 sf. Per Section 3.2.6 of the RISDISM regulations, the proposed project does not qualify as redevelopment. The proposed project is not located on an individual residential lot and is not located within a floodplain or floodway. As such, Part 3.11.2(6)(b) does not apply.

In accordance with Parts 3.11.2(6)(a) and (c), Pare Corporation prepared a *Stormwater Report* including an Appendix A Checklist, a Soil Erosion and Sediment Control Plan, and supporting information to accompany the *RIPDES Application for Stormwater Construction Permit* (under separate cover) documenting compliance with applicable engineering and stormwater compliance. Since the proposed project increases impervious area and triggers the redevelopment standard [Part 3.11.2(6)(a)], and proposes fill within the floodplain [Part 3.11.2(6)(d)], a Functions and Values analysis is required in accordance with criteria at Part 3.12.2(A)(4)(d), as detailed below.

Wildlife and Wildlife Habitat

The site contains two relatively large FWs; one >10 acre forested Swamp in the northeastern portion of the site and one >1 acre/<10 acre Swamp/emergent marsh in the southwestern portion of the site. A series of non-contiguous, fringing FWs occur along Silver Creek within the developed portion of the site. Manicured lawn associated with the existing development is in close proximity to the wetland boundaries, leaving limited naturally vegetated Buffer on-site. Vegetated portions of the site that are not routinely mowed or maintained provide values for wildlife consisting of food, nesting, resting, escape cover, breeding, and over-wintering. The developed portions of the site occupied by buildings, pavement (sidewalks, parking lots, internal driveways, athletic field appurtenances), and riprap lined stormwater conveyances provide a considerably lesser value for wildlife. Landscaping vegetation (shrubs, large trees) throughout the site may provide wildlife habitat values listed above; however, the existing development surrounding the areas providing potential wildlife value are degraded. Existing buildings and chain link fencing function as physical obstructions to wildlife migration within the developed portion of the Site, in addition to the frequent human activity occurring during the academic year. Small to medium mammals such as mice, chipmunks, skunks, squirrels, or racoons may migrate between landscaping trees and shrubs and the fringing vegetated Buffer to nearby forested areas to the northeast and the southwest FW. However, it's worth noting that the site is generally isolated from adjacent wildlife habitat due to surrounding residential development, with exception of forested areas to the northeast where the expansive forested Swamp continues off-site. Additionally, migratory and/or songbirds may travel around the site regardless of the absence of vegetation,

utilizing existing structures to rest or foraging for various prey or insects. It's noticeable that Canadian geese are prevalent at the site, particularly around the Pond.

The proposed project is located entirely within developed portions of the Site and will not result in removal of vegetation or additional physical obstructions to wildlife migration. A robust planting plan is proposed to mitigate removal of existing landscape shrubs and trees, and incorporates a significant amount of non-cultivar plantings to encourage a native and diverse plant community that will benefit wildlife.

Recreation and Aesthetics

The site is largely developed for specific academic and athletic uses. FWs in the northeastern and southwester portions of the site are generally untouched and not utilized for recreational activities. Silver Creek flows through the site and provides a unique aesthetic value as it flows beneath building corridors. While this is an interesting building design that blends academics with nature, it is not a feasible building layout for current and future use with consideration to the floodplain and close proximity to FWs. Nonetheless, the presence of Silver Creek and FWs within the site provide unique and interesting opportunities for students and community members to be curious and learn more about the natural environment.

The proposed project will construct the new building outside of the floodplain and further away from Silver Creek, which will benefit the FWs in comparison to existing conditions. The unique juxtaposition of Silver Creek and FWs on-site will remain, perhaps serving an educational function through outdoor learning forums. The creation of Buffer will further protect these resources and the proposed project has been designed to provide the programmatic needs in unison with continued protection of the FWs and natural habitat.

Flood Protection

The eastern portion of the LOD is located within the 100-year floodplain (elevation 60). Remaining portions of the site are located above the floodplain, as the floodplain elevation descends as it continues southwest within the confines of Silver Creek. Topography within the site generally slopes from a highpoint in the north central portion of the property south to the east, south, and west. Topography within developed portions of the site (i.e. areas surrounding pavement and building) is generally flat. Stormwater runoff within the western portion of the site is currently directed to an existing stormwater detention basin in the western portion of the property via a network of subsurface drainage pipes. Remaining runoff from the eastern and southern portion of the site flows towards Silver Creek via a network of catch basins and subsurface drainage infrastructure or riprap stormwater conveyances. The northeast forested Swamp contributes hydrology into Silver Creek to an extent, where surface water flows southeast to an existing Pond and continues off-site to the south. The northeastern forested Swamp receives hydrology from a larger

land area to the north of the Site. The Applicant has received feedback from residential neighbors that flooding upstream of the Site is a concern. As such, the proposed stormwater management system and bypass RCPs have been designed to reduce peak flow rates and increase storage capacity under proposed conditions as to not exacerbate flooding issues up or downstream of the Site.

The proposed project does not involve direct impacts to the aforementioned FWs, Silver Creek, or Pond. Improvements to the existing detention basin and the proposed stormwater management system will improve the capacity to provide flood storage and function as intended. The proposed stormwater management system will provide 41,522 cubic feet (cf) of recharge volume (0.953 ac/ft), which is greater than the required 11,075 cf (0.254 ac/ft) for 543,156 sf (12.47 acres) of impervious area within the project area in accordance with the stormwater redevelopment standard. As depicted on the Watershed Maps included in Appendix D of the *Stormwater Report*, pre-overland and post-overland flow conditions and run-off volumes are anticipated to improve as a result of the proposed project.

Groundwater and Surface Water Supplies

The entire site is located within a Class GA groundwater Area (Appendix A, Figure 5), which indicates the groundwater resources are known or presumed to be suitable for drinking water use without treatment. Existing impervious areas within the site prevent direct groundwater infiltration; however, proposed stormwater infrastructure will address increase in impervious area and includes a series of bioretention basins, sand filters, and vegetated swales which will directly infiltrate water or redirect water towards downgradient FWs and in turn, the groundwater supply.

The proposed project includes improvements to one existing detention basin and new stormwater features including four bioretention areas, five sand filters, one wet swale, one surface infiltration basin, and underground infiltration basin; all of which will treat stormwater prior to discharging to downgradient FWs. The proposed project is anticipated to improve and reduce the amount of untreated on-site stormwater contributing to groundwater and/or surface water supplies.

Water Quality

Existing stormwater infrastructure mitigates the effects of stormwater generated from existing impervious areas; however, there is a proposed increase in impervious area by two acres. As previously noted, the proposed stormwater management system includes retrofitting an existing stormwater basin and construction of new stormwater management features. The proposed project does not meet the redevelopment requirements and therefore is considered “new development” and is required to incorporate stormwater management improvements which will provide recharge and water quality management

for at least 50% of the total disturbed impervious area. As summarized in the *Stormwater Report*, the project is not considered a Land Use with Higher Potential Pollutant Loads and as such, this minimum standard is not applicable to the project.

Soil Erosion and Sediment Control

The proposed project is located entirely within the confines of existing development associated with Mt. Hope High School. The LOD is currently comprised of impervious areas (sidewalks, pavement, and building), manicured lawn, landscaping, and stormwater management features (detention basin, catch basins, and riprap stormwater swales). The Site generally descends from a high point in the north-central portion of the property in a west, south, and east direction, with athletic fields and paved areas creating flat tiers within the Site. The project proposes an erosion and sedimentation control plan, including implementation of silt sacks within catch basins in the LOD and silt socks/silt fencing along portions of the LOD, as depicted on Sheets C2.1-C2.9 and throughout the *Plan*. Pare Corporation has prepared a *Soil Erosion and Sediment Control Plan* (under separate cover) submitted with the RIPDES CGP to provide guidance for complying with the RIPDES CGP. Erosion and sedimentation controls will be installed regularly during construction to ensure proper function and will be inspected regularly and repaired, as needed.

4.5 Significant Alteration Determination [Part 3.11.3(C)]

In determining whether a proposed project will result in a significant alteration to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage, RIDEM will consider the following criteria, as well as the review criteria in Part 3.7.2 (provided in Section 4.2 of this Narrative). The following responses explain that the project is not considered a significant alteration.

1. A project appears to propose a random, unnecessary, or undesirable alteration to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage;

The proposed project is not random or unnecessary, as it is necessary to achieve the project goal of constructing a new high school to serve necessary programmatic needs. The project has been minimized to the maximum extent possible to avoid any undesirable alterations to Buffer, and does not result in any impact to FWs. Work activities will result in impacts to floodplain; however, the proposed project has been designed to improve flood storage capacity and will not displace flow or velocity of floodwaters. Proposed activities within ASSF are necessary to redevelop the site and will be mitigated through implementation of the proposed stormwater management system.

2. A project appears to alter the character, functions or values of any freshwater wetlands, buffer, floodplain, area subject to flooding or area subject to storm flowage in a way that could result in the following:

a. More than a minimal change of any portion of any freshwater wetland, river or stream resulting in a conversion from wetland to upland; b. The detrimental modification of the biological, chemical or hydrologic characteristics of any freshwater wetlands or buffer areas which could reduce the natural values associated with the freshwater wetland or buffer; c. More than minimal displacement of any flood waters onto or into property owned by others; d. Increased flooding by a change in runoff characteristics or hydrology; e. Reduction of the groundwater recharge or discharge value of any freshwater wetland or buffer; f. Reduction of river or stream flows as a result of diversion or withdrawal of water; g. Permanent change or conversion from one (1) habitat type in a freshwater wetland or buffer to another; or h. The disturbance or destruction of any rare species or rare freshwater wetland type or the degradation of habitat for rare species.

The proposed project does not involve work within FW, River, or Stream; will not result in a detrimental modification to characteristics of FW or Buffer; will not result in displacement of floodwaters, as it proposes a comprehensive stormwater management system and floodplain bypass and increase of flood storage capacity; will not increase impervious areas resulting in an increase of flooding or change in runoff characteristics; will not further reduce reduction of groundwater recharge or discharge in comparison to existing conditions; and will not alter any rare species habitat or rare FW.

Portions of the site are mapped within a Natural Heritage Area for the Northern Leopard Frog; however, the proposed project will not degrade natural habitat which may support the Species of Concern. Instead, the proposed project is proposed within existing developed areas and will increase natural Buffer by 75,389± square feet (1.73± acres).

3. A project proposes temporary alterations which over time may cause significant permanent alterations to freshwater wetlands or buffers and their functions and values.

The temporary alterations include vegetation removal, demolition, and grading to accommodate construction of the proposed project. These project components will be constructed using Best Management Practices, including implementation of an erosion and sedimentation plan to avoid and minimize any potential impact to the functions and values of nearby FWs or Buffer. Temporarily disturbed areas will be revegetated with a robust planting plan including a diverse mix of large-diameter saplings, shrubs, herbaceous plugs, and seed mixes. The reduction of impervious area and increase of natural Buffer within Buffer Zones is anticipated to result in an improvement to the functions and values of on-site FWs and Buffers.

4. Any individual alteration that may, when evaluated cumulatively with other alterations, cause significant impacts to freshwater wetlands, buffers or floodplains and their functions and values.

The proposed project involves an increase of 2± acres of impervious throughout the site; however, within the Buffer Zone, the proposed project will reduce impervious area by 2.30± acres and increase natural Buffer by 1.73± acres. Portions of the proposed project located within floodplain are not anticipated to result in a displacement of floodwaters, as the stormwater management system is designed to collect, treat, and store stormwater. Further, the proposed project includes installation of a bypass RCP system to alleviate floodwaters contributing to Silver Creek. While impervious areas increase overall, the mitigation provided within the Buffer Zone will improve functions and values of FWs, Buffers, and floodplain compared to existing conditions. As a result, the proposed project is anticipated to result in cumulative significant impacts to the functions and values of FW, Buffer, or floodplain.

5. A project involves a variance to standards and does not meet all the criteria to be granted a variance as specified in § 3.7.3 of this Part.

The Applicant respectfully requests a Variance for the Freshwater Wetlands Buffer Standard, and as summarized in Section 4.2 of this Narrative, the project complies with all applicable Review Criteria.

5. Summary

LEC identified and delineated the edges of FWs, stream, and Pond within 199 Chestnut Street in Bristol, Rhode Island. Additional FWs and/or Jurisdictional Areas present on-site include floodplain, floodway, ASSF, and Buffer Zone. A Natural Heritage Area polygon is located within the eastern portion of the Site.

The proposed project involves demolition of the existing school, including two causeways crossing Silver Creek, and construction of a new building and associated internal driveways, parking lots, athletic fields, utilities, and stormwater infrastructure. The new school will be constructed in the northern portion of the property, further from FWs and entirely outside the floodplain. Three existing stream crossings will be repurposed for a driveway crossing, a sidewalk, and riprap stormwater protection. A stormwater management system is proposed throughout the property to support the proposed development, including 2± acres of new impervious throughout the site; however, the project will result in a reduction of 2.3 acres of impervious area within the Buffer Zone. Buffer restoration is proposed along Silver Creek and associated FWs, resulting in 1.73± acres of new Buffer on-site. Overall, the proposed project will result in a net decrease of impervious area and increase of natural Buffer within Buffer Zones.

Portions of the proposed work activities are located within floodplain. Additionally, portions of the proposed work activities are located within the 100-foot Jurisdictional Area and Buffer Zones associated with FWs, and the 200-foot Jurisdictional Area and Buffer Zone associated with Silver Creek. The proposed project involves Buffer creation and cannot meet the minimum 25-foot Buffer width throughout the Site. As such, the Applicant requests a Variance from the Freshwater Wetland Buffer Standard at Part 3.7.1(B)(4) of the *Act Regulations*.

The aforementioned Freshwater Wetlands and Jurisdictional Areas are protected under the Rhode Island *Fresh Water Wetlands Act* (*Act*; Sections 2-1-18 through 2-1-15 of the R.I.G.L.), its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* (*Act Regulations*; 250-RICR-150-15-3), and the *RI Stormwater Management Design and Installation Rules* (250-RICR-150-10-8). The proposed project is not random or unnecessary and has been designed to avoid and minimize impacts to the extent practicable to protectable Freshwater Wetlands and Jurisdictional Areas. The Applicant respectfully requests that RIDEM issue a Freshwater Wetlands Permit granting a Variance.

Federal Emergency Management Agency Flood Insurance Rate Map, Town of Bristol, Rhode Island, effective July 7, 2014 (*Community Panel 44001C0011H*)

Rhode Island *Fresh Water Wetlands Act* ("*Act*"; Sections 2-1-18 through 2-1-15 of the R.I.G.L.) and its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* ("*Act Regulations*"; 250-RICR-150-15-3) https://risos-apa-production-public.s3.amazonaws.com/DEM/REG_12792_20220727111908245.pdf

RI Stormwater Management Design and Installation Rules (250-RICR-150-10-8) https://risos-apa-production-public.s3.amazonaws.com/DEM/REG_12464_20211221092446.pdf

State of Rhode Island 2014 303(d) List of Impaired Waters (RIDEM, 2014) http://www.dem.ri.gov/pubs/303d/303d14.pdf

Summary of Rhode Island Groundwater Classification and Groundwater Standards (September 2009) http://www.dem.ri.gov/programs/benviron/water/quality/prot/pdfs/gwclass.pdf

Appendix A

Locus Maps
Figure 1: USGS Topographic Map
Figure 2: Aerial Orthophoto
Figure 3: Natural Heritage Area Map
Figure 4: FEMA Flood Insurance Rate Map
Figure 5: Groundwater, Surface Water and Water Quality Map

LEC Environmental Consultants, Inc.

E. Providence, RI
401.685.3109
www.lecenvironmental.com

Figure 1: USGS Topographic Map

Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

N

July 24, 2023

LEC
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Figure 2: Aerial Map

Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

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July 24, 2023

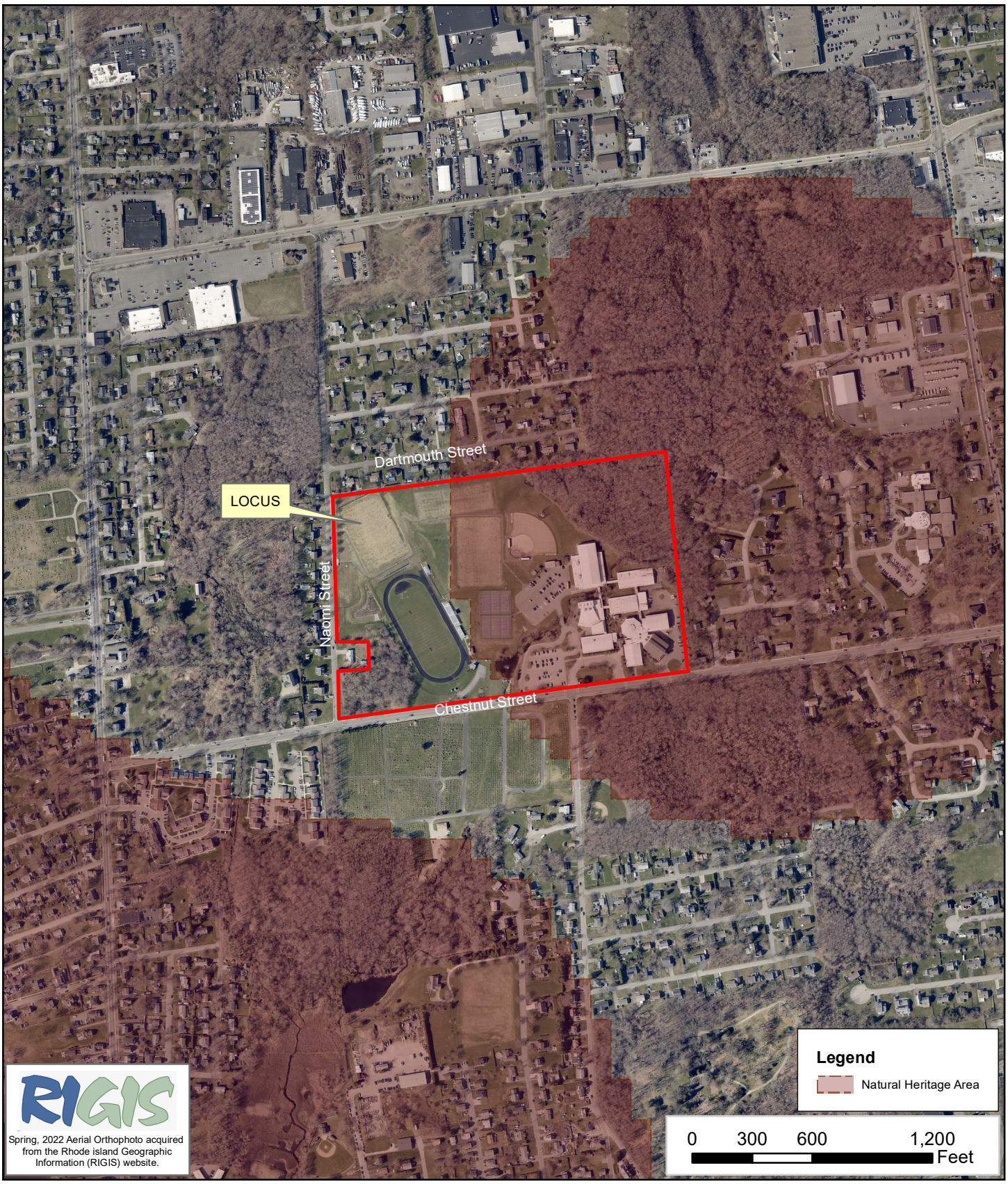

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Figure 3: Natural Heritage Area Map

Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

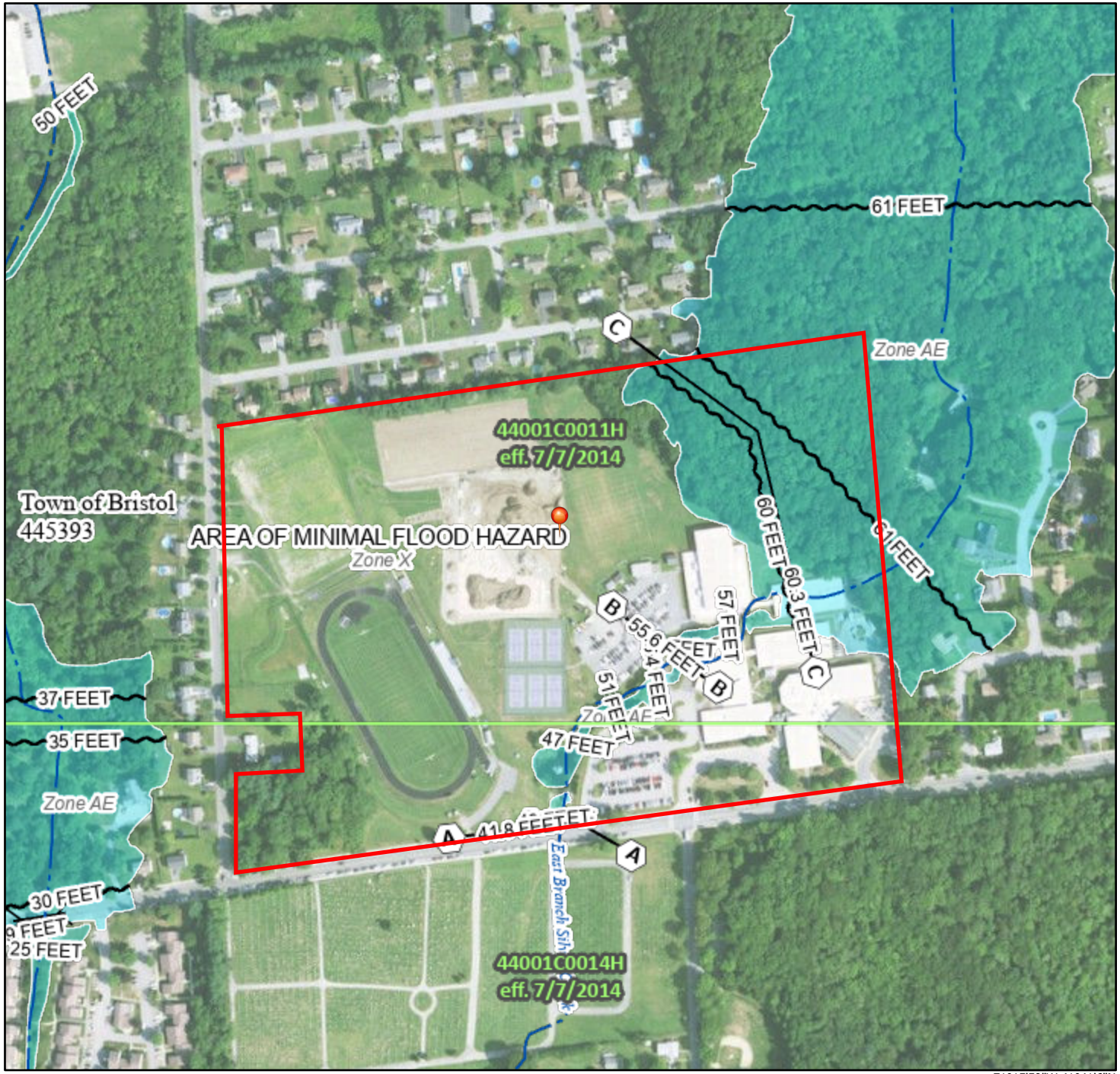
N

February 1, 2025

National Flood Hazard Layer FIRMette

FEMA

71°16'36"W 41°41'33"N



71°15'59"W 41°41'6"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/21/2023 at 1:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Figure 5: Groundwater, Surface Water and Water Quality Map

Mt. Hope High School
199 Chestnut Street
Bristol, Rhode Island

N

February 5, 2025

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