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Countryside Elementary School
Newton, MA

March 2024

Summary

The Applicant, the City of Newton, proposes to reconstruct the Countryside Elementary School located at 191 Dedham Street in Newton, MA. The new school construction will include a three-story school building to replace the existing two-story school and modular units, along with a reconfiguration of the driveways and drop-off areas, parking lot, utility infrastructure, play spaces, athletic fields, landscaping, and stormwater management. The existing Countryside Elementary School and associated parking and play areas will remain operational while the new school building is constructed and be demolished upon its completion as part of the second phase of the project.

Proposed redevelopment activities will unavoidably occur within jurisdictional areas protected under the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131 § 40) and its regulations (310 CMR 10.00), including Bordering Land Subject to Flooding and Riverfront Area. Additionally, work is proposed within overlapping state and local buffer zones to freshwater resources. Wetland resource area boundaries were approved by the Newton Conservation Commission through an Order of Resource Area Delineation issued under MassDEP File #239-951.

Concurrent with this project, the City is undertaking a parallel project, approved under MassDEP File #239-967, designed to improve the ecological health of the wetland resource areas by managing invasive species and planting native plant species within the buffer zone to the intermittent stream along the western property boundary. These efforts in conjunction with other site improvements will improve overall site conditions by helping to reestablish native plant communities and will serve as an asset to future outdoor learning when the new school opens.

Proposed mitigation includes compensatory flood storage, green stormwater infrastructure, and implementation of an erosion and sedimentation control program. Provisions for additional flood storage are proposed to improve the site's climate resiliency.

1.0 Introduction

The City of Newton proposes to construct a new Countryside Elementary School building and associated driveways and drop-off areas, parking, grading, utility infrastructure, play spaces, athletic fields, landscaping, and stormwater management at the current site of the existing elementary school located at 191 Dedham Street in Newton, MA. The existing two-story Countryside Elementary School and associated parking and play areas will remain operational while the new school building is constructed and will be demolished upon its completion.

The existing building is located on the southern portion of the property closest to South Meadow Brook and its associated wetlands, where the water table is nearly at the surface level, and the terrain does not provide significant drainage away from the site. The resulting chronic flooding has resulted in significant burdens to the school, including damage to the main electric panel and flooding in the basement that threatens HVAC systems and storage areas. Additionally, the lack of sufficient off-street bus loading and vehicle drop-off/pick-up spaces creates traffic congestion and pedestrian safety issues.

With support from the Massachusetts School Building Authority (MSBA) as well as robust project team including the School Building Committee, the Superintendent of Schools, the City Administration, and several City Boards and Committees, this project was initially guided by a Feasibility Study. This study evaluated the conditions of the existing school and the surrounding schoolgrounds with consideration for a changing student enrollment and curriculum updates. The Feasibility Study also evaluated potential alternative solutions to address the City's school needs.

The project design then proceeded through the Schematic Design phase, evaluating various options for design and configuration of a new building at the site, with the caveat that the existing 56,150 square foot (SF) two-story school building needs to remain operational during construction of a new building. Additionally, the project site faces several design constraints associated with wetland resource areas that are jurisdictional under the Massachusetts *Wetlands Protection Act* (M.G.L. Ch. 131 § 40) and its implementing Regulations (310 CMR 10.00).

During the Design Development phase of the project, the Schematic Design was further developed into the proposal for a new three-story school at the Countryside site, along with the proposed site amenities, which is the basis of this Notice of Intent (NOI) application presented to the Newton Conservation Commission.

2.0 Existing Conditions

The Countryside Elementary School is situated on an approximately 7.39-acre parcel that contains the school building, driveways, parking areas, athletic fields, basketball court, playground, walkways, and landscaping. An approximately 4-foot-high fence runs along the western property boundary in this area. In general, the site slopes away from Dedham Street to the west and south.

The northern portion of the site contains a parking lot in the northeast corner, along Dedham Street at the intersection of Dedham Street and Walnut Street, with access to and from Dedham Street to the north only. An approximately 5-foot-wide pedestrian path runs east-west along the southern edge of the playground and basketball court, from the Andrew Street neighborhood to the site. A baseball field, athletic field, and adjacent grassy areas are located to the west of the parking area, extending to the northwest corner of the site. South of the parking lot is an access driveway to Dedham Street. A United States Geological Survey (USGS) topography map and an aerial photograph of the site are provided in Figures 1 and 2 of **Attachment A**. A street view of the existing school building is provided in Image 1.

Image 1. Existing Countryside Elementary School (Photo credit: Google Street View, July 2022)

2.1 FEMA Designation

The current effective Federal Emergency Management Act Flood Insurance Rate Map (FEMA FIRM) for Middlesex County (Community Panels 25017C0554EC & 25017C0562E, effective date 6/4/2010), shows that the majority of the site is within Zone AE, *Special Flood Hazard Areas with Base Flood Elevations Determined*. A narrow portion of the site along its northeastern boundary is mapped as Zone X, *areas of 0.2% annual chance of flood*, which includes *areas of 1% annual chance with averaged depths less than one foot or with drainage areas of less than one square mile* (Figures 3 and 3A, **Attachment A**). Preliminary FEMA data, revised as of August 13, 2023, shows that the updated flood zones and elevation of the flood zone are consistent with the effective map at this site.

2.2 State-listed Rare Species Habitat

According to the most recent version of the *Massachusetts Natural Heritage Atlas* (15th Edition, August 01, 2021), the site does not occur within areas of *Estimated Habitat of Rare Wildlife, Priority Habitat of Rare Species, or Certified Vernal Pools,* as designated by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) (Figure 4, **Attachment A**).

2.3 Wetland Resource Areas

The site supports freshwater resource areas, as defined under the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131 § 40). Resource areas occurring at or near the project site include Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding (BLSF), Riverfront Area, Inland Bank, and Land Under Water Bodies and Waterways (LUWW). MassDEP data provided by MassGIS depicts the limits of the wetland resource areas identified

through desktop evaluation of the site (Figure 4, **Appendix A)**. Natural Resources Conservation Service (NRCS) soils data are provided in Figure 5 of **Attachment A**.

As part of the Schematic Design phase, the City received an Order of Resource Area Delineation (ORAD) issued by the Conservation Commission on March 24, 2023 (MassDEP File No. 239-951) (**Attachment B).** Approved resource area boundaries include BVW, Riverfront Area, Inland Bank, and LUWW, as well as associated Buffer Zones.

3.0 Proposed Project

3.1 General Description

The project involves the construction of a new Countryside Elementary School on the site of the existing elementary school. The existing school and play areas will remain operational while the new school building is being constructed. Therefore, the project is proposed to occur in two phases, with Phase 1 involving construction of the new school followed by demolition of the old school and its associated amenities in Phase 2, and installation of the new softball field. A temporary fence will be installed to separate the active construction area from the active school grounds during both phases of construction. A brief overview of the activities proposed during each phase is provided below, and additional details and construction sequencing are provided on the attached project plans, entitled "Countryside Elementary School – Notice of Intent, Newton, MA," prepared by DiNisco Design, Horsley Witten Group, Inc., and Brown Sardina, Inc., dated March 2024 (**Attachment C**). A rendering of the overall site design developed during the Site Design phase is provided in Image 2.

Image 1. Overall proposed site design.

3.1.1 Phase 1

Construction activities proposed to occur in Phase 1 include site preparation; construction of the new school building and foundation walls; installation of stormwater structures and underdrain system; installation of utilities and connections to existing infrastructure; completion of the Phase 1 compensatory flood storage; final grading of the new access driveway, loading dock area, and parking lot; paved walkway re-surfacing to porous pavement; and completion of the outdoor recreational areas. These activities will occur within 6.1 acres of the northern part of the property, leaving undisturbed areas along Dedham Street where a stand of mature trees will be protected, and the smaller wetland connected to the unnamed intermittent stream along the western site boundary. The 25 foot NVB will remain mostly undisturbed as well, with the exception of two small areas encompassing approximately 17 SF. Additional details regarding project components are provided in the following subsections.

School Building, Parking, and Circulation

The new school will be an approximately 75,500 square feet (sf) three-story building with a footprint of approximately 34,735 sf that can accommodate 465 additional students in grades K-5. The building is designed to be a Net Zero Energy Building[1] as discussed in the following section.

Vehicular access to the side includes a parent drop off area located along Dedham Street East, a van drop-off lane within the staff parking lot, and a protected bus drop off lane along Dedham Street North. The new staff parking lot will be in the northwest portion of the site with driveway access from Dedham Street North. A loading dock area will be located at the southeast corner of the school with access from Dedham Street East. A new path to Andrew Street will be built and connect to Dedham Street East.

Geothermal System

As part of the Net Zero Energy programming, the HVAC system in the new school will employ a heat recovery type ground source heat pump (aka geothermal) system. This system uses multiple air handling units with energy recovery, which allow for multiple zones for off-hour use, and induction systems (aka active chilled beams) in classrooms, which reduces both installation and operation costs. System chilled and hot water will be achieved using a closed-well geothermal system utilizing water-to-water heat pumps. This system will reduce the building's total energy consumption by 27% compared to other high efficiency HVAC systems evaluated.

Outdoor Recreational Areas

The proposed project design achieves the educational and programmatic needs for the elementary school, including maximizing the site for outdoor learning and play. The site features many recreational and outdoor learning opportunities including a painted asphalt play area, playground structures, full basketball court, wall ball zone, pollinator garden, outdoor classrooms, and raised garden beds. A new softball practice field will occupy the southeast corner of the site to maximize play area. Outdoor classroom space incorporates stormwater

[1] A zero net energy building (ZNEB) is one that is optimally efficient, and over the course of a year, generates energy onsite, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed onsite as defined by the Massachusetts Department of Energy Resources, Energy Efficiency Division (https://www.mass.gov/info-details/what-is-a-zero-net-energy-building).

elements, as discussed in the following section, to provide students with practical educational opportunities regarding the design and utilization of Green Stormwater Infrastructure (GSI). Stormwater improvements will also include resurfacing the existing paved walkway with a porous pavement.

Stormwater Management

The proposed project has been developed to incorporate green stormwater infrastructure (GSI) practices into the overall site and landscape design. The various GSI facilities proposed include two drywells, a subsurface infiltration chamber system, a subsurface infiltration trench, a porous pavement for the existing walkway and new parking lot, a bioretention area/pollinator garden, and a rain garden. These features will provide recharge and water quality management for the stormwater runoff from impervious surfaces, as detailed in the Stormwater Management Report provided in **Attachment D**.

In accordance with the City of Newton Stormwater Management and Erosion Control Rules and Regulations, the project is designed to retain two inches of runoff over the total impervious surfaces. The proposed stormwater controls will be maintained during and after construction as part of regular landscape maintenance and as described further in the Stormwater Management Operation and Maintenance Plan (**Attachment E**).

3.1.2 Phase 2

Phase 2 construction activities will commence once the new Countryside Elementary School is constructed and operational. At this time, topsoil within the remaining ball fields will be stockpiled, all utilities and playground equipment will be removed, and the entire school building will be razed. Following removal of all remaining structures, this portion of the site will be rough graded, and the remaining stormwater management system will be constructed. In the later stages of Phase 2, water and electrical services will be installed and connected to City services, and final grading and paving for the access drive, parking lot, and sidewalks will be completed. Phase 2 will conclude with the remaining site stabilization necessary and the installation of landscaped areas and plantings, as well as the new softball field.

3.2 Alternatives Considered

3.2.1 No Build or No Action

After evaluating the existing conditions of a changing student enrollment, its programming needs and updates to the curriculum, the Newton School Building Committee determined that replacing the existing outdated school building, which is also currently in need of renovations, is necessary to meet current and projected education demands. While the no build alternative would not result in the expense or disruption to the students and staff, the no build alternative would not meet the project goals and objectives. For these reasons, this alternative was dismissed.

3.2.2 Project Alternatives

Multiple concepts were developed to explore the full range of possible configurations to serve the Countryside Elementary School population of 372[2] students in grades K–5 with a goal of serving up to 465 students in the future. The various site configurations were presented to the Conservation Commission during a preliminary permitting discussion on August 17, 2023, as shown in Image 3.

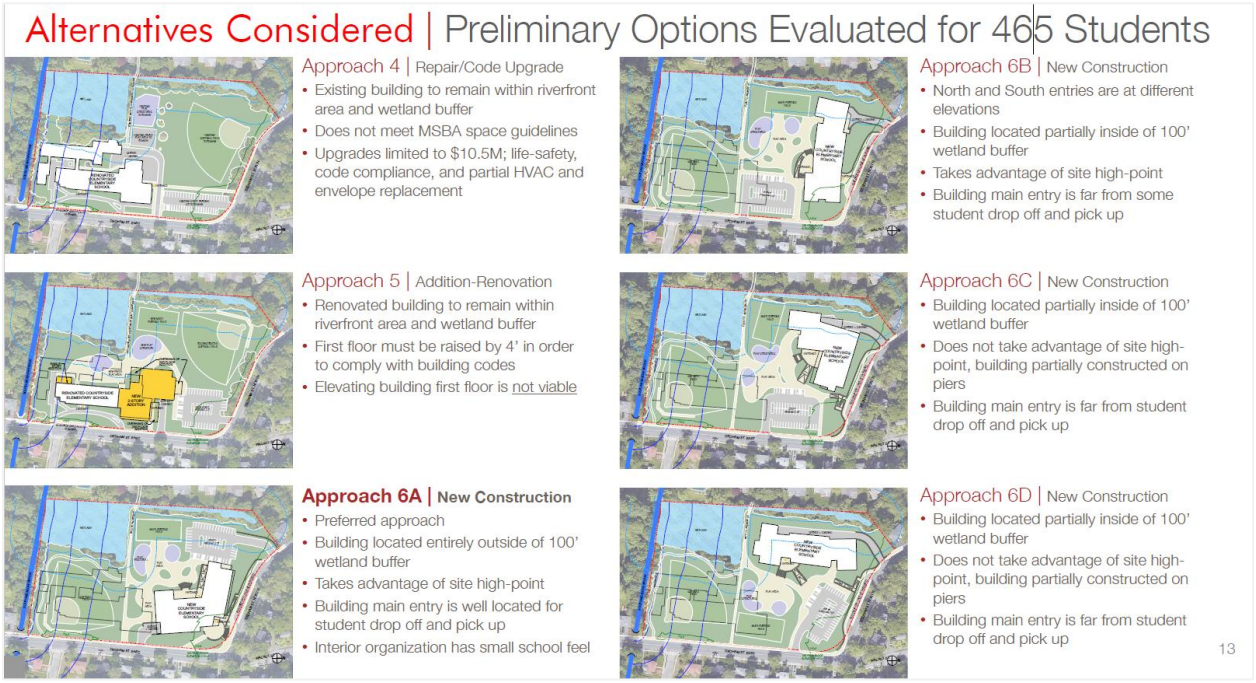

Image 3. Alternative configurations considered for Countryside Elementary School (image borrowed from presentation to the Newton Conservation Commission August 17, 2023).

3.2.3 Preferred Alternative and Proposed Project

The construction of a new, 3-story school at the site of the existing Countryside Elementary School was determined to the best solution to address the educational program requirements of the school and community, while resulting in the least amount of adverse environmental impacts. The new proposed school is the most cost-effective and educationally sound solution.

Alternative site configurations were also considered during design development, factoring in the location and extent of protected wetland resource areas with the programming needs of the school. The preferred alternative and proposed project, including the building orientation, new traffic patterns, and infrastructure, as well as the location and orientation of playing fields and outdoor learning spaces, results in minimal resource area impacts and provides opportunities to provide additional flood storage to improve the sites' resiliency to climate change.

[2] 2022-2023 school year

3.3 Affected Jurisdictional Areas

The proposed project will occur within jurisdictional areas which are protected and regulated by the WPA, as well as within local and state Buffer Zones. The anticipated extent of alteration to each resource area is summarized in Table 1.

- Temporary Impacts. During construction, some temporary impacts to resource areas will be necessary to complete the work required. Temporary impacts include equipment staging, material stockpiling, and clearing and grubbing of vegetation. All areas where temporary impacts are proposed will be restored to their pre-construction conditions. Construction entrances will be removed, and all disturbed areas will be revegetated once machine access to the site is no longer necessary.
- Permanent Impacts are associated with construction of the school building and its associated amenities, including stormwater infrastructure.

Table 1. Affected Jurisdictional Areas

Resource Area		Existing Conditions[1] (SF)	Impacts (SF)	Post Construction Conditions	Notes
Riverfront Area	0-100 ft	Impervious: 11,682 Total: 43,295	11,355	2,191 (remaining impervious)	Reduction in impervious area: 9,491 SF
	0-200 ft	Impervious: 29,092 Total: 88,407	30,438	3,578 (remaining impervious)	Reduction in impervious area: 25,514 SF
Bordering Land Subject to Flooding		1,001,062 CF	260,493	1,013,458 CF	Additional 12,396 CF compensatory flood storage provided
0-25 ft Naturally Vegetated Buffer		1,150	849	355 (remaining impervious)	822 SF converted from impervious to pervious; 27 SF new impervious
0-100 ft Buffer Zone			37,288	29,831 (remaining impervious)	6,963 SF converted from impervious to pervious; 29,476 remains impervious

Notes: SF = square feet; LF = linear feet; CF = cubic feet; resource areas overlap and are not additive
[1]Total SF within Project area

4.0 Protection of Resource Area Interests

4.1 Riverfront Area

Proposed activities within Riverfront Area are required to meet the performance standards for redevelopment within previously developed Riverfront Area in accordance with 310 CMR 10.58(5):

> *The issuing authority may allow work to redevelop a previously developed riverfront area, provided the proposed work improves existing conditions. Redevelopment means replacement, rehabilitation, or expansion of existing structures, improvement of existing roads, or reuse of degraded or previously developed areas. A previously developed riverfront area contains areas degraded prior to August 7, 1996 by impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, or abandoned dumping grounds.*

Approximately 29,092 SF (0.67 acres) of existing impervious area is located within Riverfront Area. The work required to redevelop this previously developed Riverfront Area is required to conform to the criteria listed at 310 CMR 10.58(5)a-h as follows.

(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L. c. 131 40. When a lot is previously developed but no portion of the riverfront area is degraded, the requirements of 310 CMR 10.58(4) shall be met.

The proposed project will improve existing conditions by reducing impervious cover in the Riverfront Area by approximately 25,514 SF. Additionally, flood storage capacity will be increased by 12,396 CF and water quality will be improved through the installation of GSI.

(b) Stormwater management is provided according to standards established by the Department.

The Project is designed to meet the Massachusetts Stormwater Standards to the extent practicable, as described in the Stormwater Management Report provided in **Attachment C.**

(c) Within 200 foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less, or not closer than existing conditions within 25 foot riverfront areas, except in accordance with 310 CMR 10.58(5)(f) or (g).

Under existing conditions, modular classrooms are located within approximately 20 feet of the MAHW to South Meadow Brook. Work proposed to occur during Phase 2 to demolish these buildings accounts for temporary impacts that will ultimately result in long term benefits to the riparian buffer. Under proposed conditions, impervious surfaces will be reduced and impacted portions of the Riverfront Area will be twice as far from the MAHW line compared to existing conditions.

(d) Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river, except in accordance with 310 CMR 10.58(5)(f) or (g).

New structures will be positioned outside of the Riverfront Area. Other project activities are located farther away from the river compared to existing conditions.

(e) The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% of the riverfront area, except in accordance with 310 CMR 10.58(5)(f) or (g).

The proposed work (30,438) will exceed the amount of degraded area, which includes the previously paved area (29,092 SF), which is greater than the allowable 10% of the total Riverfront Area at this site (88,407 SF). Proposed work will be performed in accordance with 301 CMR 10.58(5)(f).

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

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

Restoration will involve all four of the restoration activities noted above, the majority of which will occur within the inner 0-100 foot Riverfront Area and primarily within the first 40 feet of the Riverfront Area boundary. Impervious areas will be reduced by 25,514 SF, leaving 3,578 SF remaining impervious area, resulting in a restoration to alteration ratio of 7.1:1, thereby significantly exceeding the required standard. Restoration areas and activities are depicted on the Project Plan Set provided in **Attachment C**.

(g) When an applicant proposes mitigation either on-site or in the riverfront area within the same general area of the river basin, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), or (e) at a ratio in square feet of at least 2:1 of mitigation area to area of alteration not conforming to the criteria or an equivalent level of environmental protection where square footage is not a relevant measure. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Mitigation may include off-site restoration of riverfront areas, conservation restrictions under M.G.L. c. 184, §§ 31 through 33 to preserve undisturbed riverfront areas that could be otherwise altered under 310 CMR 10.00, the purchase of development rights within the riverfront area, the restoration of bordering vegetated wetland, projects to remedy an existing adverse impact on the interests identified in M.G.L. c. 131, § 40 for which the applicant is not legally responsible, or similar activities undertaken voluntarily by the applicant which

will support a determination by the issuing authority of no significant adverse impact. Preference shall be given to potential mitigation projects, if any, identified in a River Basin Plan approved by the Secretary of the Executive Office of Energy and Environmental Affairs.

Not applicable. No off-site or alternative equivalent of Riverfront Area mitigation is proposed as part of this Project.

(h) *The issuing authority shall include a continuing condition in the Certificate of Compliance for projects under 310 CMR 10.58(5)(f) or (g) prohibiting further alteration within the restoration or mitigation area, except as may be required to maintain the area in its restored or mitigated condition. Prior to requesting the issuance of the Certificate of Compliance, the applicant shall demonstrate the restoration or mitigation has been successfully completed for at least two growing seasons.*

The Operation and Maintenance Plan provided in **Attachment E** includes maintenance beyond the first two growing seasons to ensure the proper function and effectiveness of GSI that will compose much of the planned restoration activities. The Applicant requests that the Commission include this condition in the OOC to be issued for this project.

4.2 Bordering Land Subject to Flooding

The majority of proposed project activities are located within BLSF. However, the proposed project will not impact the WPA performance standards for BLSF. The regulations at 310 CMR 10.57(4)(a) state:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

Compensatory flood storage is proposed at one-foot increments for all areas of proposed work within BLSF. A detailed description of the flood storage provided under existing and proposed surface conditions is provided in the Stormwater Management Report in Attachment D, a visual representation of which is provided in Image 4. The project will result in an increase of 12,396 cubic feet (cf) of flood storage capacity at the site.

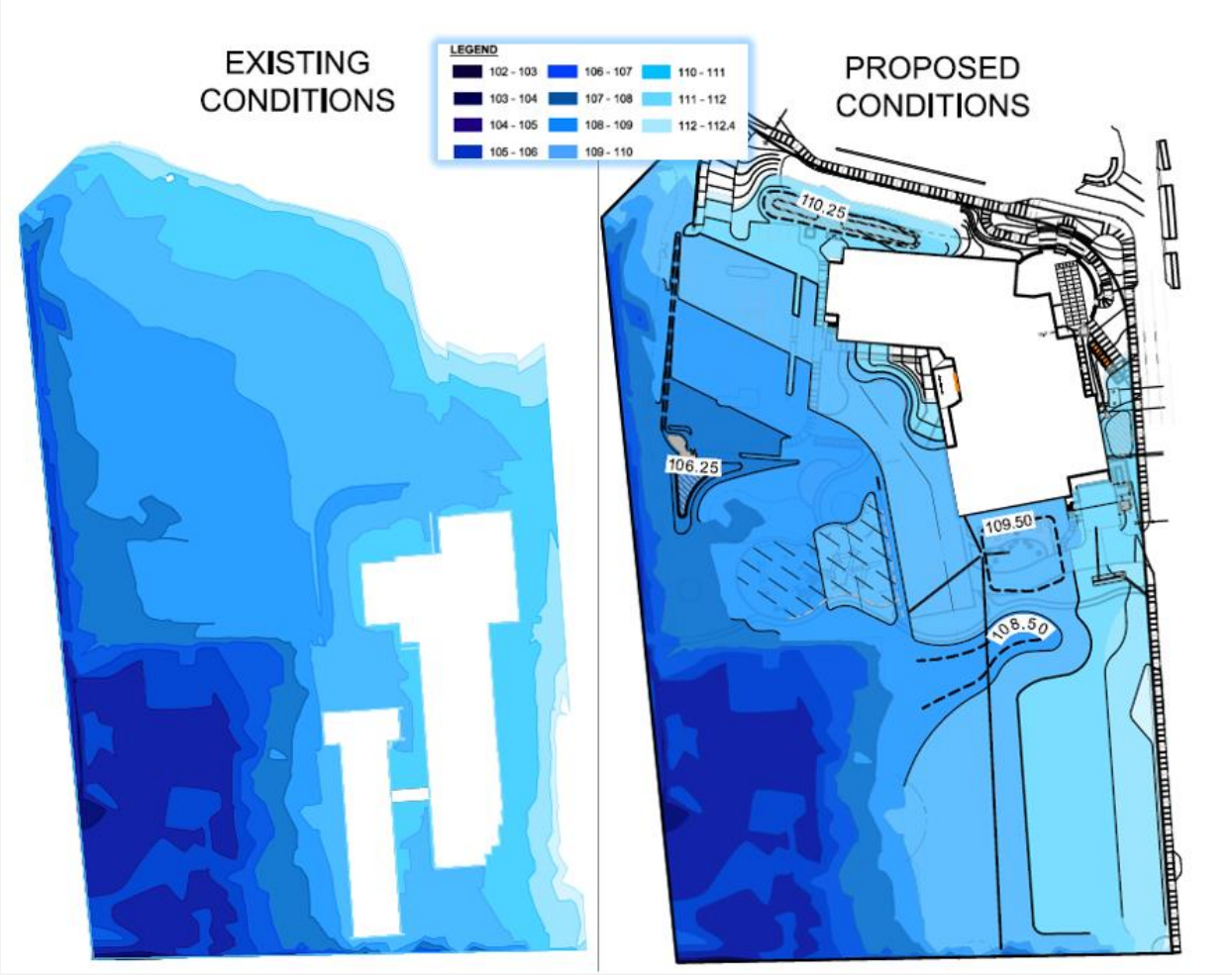

Image 4. Existing and proposed flood storage

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

The proposed work will have a contiguous connection to existing flood prone areas and will not restrict flows that would cause an increase in flood stage or velocity.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions.*

The proposed project will result in an overall improvement to the condition and capacity of the flood zone, as detailed in the Stormwater Management Report (**Attachment D**) and depicted in Image 4. By relocating the building, parking, and play areas closer to the Zone X flood zone boundary the proposed development provides a larger buffer zone between the resource area and the impervious areas and shifts the proposed school building further outside of the 100-year flood plain. Areas closer to the river that are currently developed will be revegetated with native plantings and a conservation wildlife seed mix, which will enhance the wildlife habitat over

existing conditions. The proposed GSI in the northern portion of the site that will be constructed in Phase 2 will also be seeded with a native conservation wildlife seed mix, which will enhance the wildlife habitat over existing conditions as well.

The project has also been designed in accordance with the local floodplain ordinance, and meets the applicable provisions listed in Part (b)(2)a-f, as follows:

(b)(2) *Subsection (b)(1) notwithstanding, after a public hearing the conservation commission may issue an order of conditions for the following uses in the Floodplain/Watershed Protection District:*

a) Any building or structure for which compensatory storage is provided and for which certification is submitted by a registered professional engineer demonstrating that such building or structure shall not result in any increase in flood levels during the 100-year flood.

On-site attenuation and infiltration are proposed to match or reduce peak runoff conditions for the 2-, 10-, 25-, and 100-year storm events, as demonstrated in the Stormwater Management Report provided in **Attachment D**.

b) Compensatory storage shall mean a volume not previous used for flood storage, and shall be incrementally equal to the theoretical volume of flood water at each elevation which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or wetland being affected by the proposed project. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the waterway.

Compensatory storage is provided within the same reach of wetland resources or closer to them and is incrementally equal to the theoretical volume of flood water at each elevation, as demonstrated in Table 2. A detailed description of the flood storage provided under existing and proposed surface conditions is provided in the Stormwater Management Report in **Attachment D**, a visual representation of which is provided in Image 3. The project will result in an increase of 12,396 cubic feet (cf) of flood storage capacity at the site.

Additionally, the lowest levels of the structures are situated at or above the pertinent flood elevation, in accordance with the provisions specified in Part (c)(1 and 2), as follows:

Table 2: Compensatory Flood Storage

ELEVATION	EXISITING CONDITIONS		PROPOSED CONDITIONS	
(FT)	AREA (SF)	VOLUME (CF)	AREA (SF)	VOLUME (CF)
103	107		107	
		485		485
104	862		862	
		12,824		12,824
105	24,785		24,785	
		33,535		33,535
106	42,285		42,285	
		48,130		48,130
107	53,974		53,974	
		65,048		68,804
108	76,122		83,633	
		104,206		107,971
109	132,289		132,309	
		164,361		167,202
110	196,432		202,094	
		219,439		221,399
111	242,445		240,703	
		249,591		249,307
112	256,737		257,911	
		103,446		103,804
112.4	260,493		261,111	
TOTAL		1,001,062		1,013,458

(c) The construction, reconstruction or enlargement of any building or structure in the Floodplain/Watershed Protection District shall also be subject to the following provisions:

a) All construction of residential structures shall have the lowest floor (including the basement) at or above the pertinent flood elevation established within subsection (g) hereof, and all construction of non-residential structures shall have either the lowest floor (including the basement) at or above the pertinent flood elevation of said subsection (g), or along the attendant utility and sanitary facilities shall be floodproofed, i.e. designed so that below the established flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

b) Where watertight floodproofing of a structure is permitted, a registered professional engineer or architect shall certify that the methods used are adequate to withstand the flood depths, pressures and velocities, impact and uplift forces and other factors associated with the pertinent flood levels.

4.3 Buffer Zone

As a redevelopment project and due to the site constraints and the need to maintain an operational school while the new school is built, the project will necessarily result in alterations within buffer zones. The proposed project will minimize disturbance to Buffer Zone throughout the site, which consists of the WPA protected 100 foot Buffer Zones and overlapping locally protected 25 foot NVBs to BVW and Bank. Portions of both buffers overlap with Riverfront Area and BLSF and are currently developed as the existing playground area, basketball court, a small portion of the existing school building, and nearly half of the modular classrooms. Approximately 37,288 SF of the 100 foot Buffer Zone, including 849 SF of the 25 foot NVB is proposed for alteration. Under proposed conditions, 6,963 SF of the 100 foot Buffer Zone will be converted from impervious to pervious land, including 822 SF in the NVB. The existing tree canopy will be retained to the maximum extent practicable. All disturbed areas will be permanently stabilized with native vegetation upon completion of the project.

A significant portion of buffer zone alterations described in Table 1 will occur within areas that consist of currently developed land associated with the existing school grounds and the modular classrooms. The majority of work proposed within the 0-25 foot buffer zone is restricted to the removal of the existing maintained playing fields and basketball court. As such, the project qualifies for an exemption to the NVB policy, in that it will remove or reduce existing disturbances adversely affecting the wetland resource area, as specified in Section V of the NVB Policy.

The proposed project upon completion of both Phase 1 and Phase 2 construction will result in an improved buffer zone that will increase the sites flood storage capacity and improve wildlife habitat provided by the restoration seed mix that will replace existing maintained grass fields with a meadow plant community that will improve wildlife habitat overall. Further, proposed stormwater management will result in improved water quality in the buffer zone and the downgradient resource areas.

5.0 Additional Mitigation Measures

5.1 Stormwater Management

The proposed project is subject to the stormwater requirements at 310 CMR 10.05(6)(k). As a redevelopment project, the project is designed to meet the Massachusetts Stormwater Management Standards (MASMS) to the maximum extent practicable. The proposed design reduces post-development runoff rates and volumes from pre-development conditions and provides water quality treatment. The system incorporates GSI practices and includes bioretention facilities, permeable pavers, and vegetated swales.

A detailed description of how the project will provide stormwater management in accordance with the MASMS is provided in the Stormwater Management Report in **Attachment D**.

5.2 Erosion and Sedimentation Control

The Applicant proposes to implement an erosion and sedimentation control (ESC) program prior to and throughout construction to prevent migration of sediments or materials, erosion, or other runoff-related impacts to downgradient resource areas. Before any construction activities begin, ESCs will be placed at the limit of work boundary as depicted in the project plans (**Attachment C**) and in accordance with the phasing as described above. ESCs will consist of the following measures:

> Silt Fence & Sediment Silt Sock Barrier will be installed prior to commencement of construction. This type of practice creates erosion control barriers to intercept sediment in diffuse runoff. The City will be informed upon installation so that they may inspect these barriers prior to construction. Portions of the erosion control barriers will be replaced and/or repaired as necessary to prevent erosion. Barriers will be installed parallel to land slope at the perimeter of the work site. In addition, silt fence barriers will be installed around the rain gardens and bioretention areas during construction.
>
> Silt Sacks (or approved equivalent) will be installed in existing catch basins and proposed catch basins/area drains following their construction. Catch basin inlet protections will be inspected regularly and maintained as needed.

The limit of clearing, grading, and disturbances will be minimized by phasing site work so only areas which are actively under construction are exposed. Earthmoving or other activities that may leave larger areas temporarily destabilized will be scheduled to avoid precipitation events that could increase the potential for runoff. Stabilization practices will be initiated on all disturbed areas as soon as possible.

All ESCs will be maintained in good condition until work is complete and all disturbed areas have been stabilized. ESCs will be inspected on a weekly basis and after each rainfall event of 0.25 inches or greater. Any problems identified will be repaired within 24 hours.

6.0 References

Federal Emergency Management Agency (FEMA) Flood Map Service Center. Accessed March 2024 via https://msc.fema.gov/portal/home.

Massachusetts Office of Geographic and Environmental Information (MassGIS). Accessed March 2024 via http://www.mass.gov/mgis/.

Massachusetts Wetlands Protection Act (WPA). Massachusetts Department of Environmental Protection. 2017. Accessed March 2024 via https://www.mass.gov/doc/310-cmr-1000-the-wetlands-protection-act/download.

Natural Resources Conservation Service Web Soil Survey. Accessed March 2024 via https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

Newton Conservation Commission 25-Foot Naturally Vegetated Buffer (NVB Policy. 2019. Accessed March 2024 via https://www.newtonma.gov/home/showpublisheddocument/31693.

Newton Floodplain Ordinance. Sec. 22-22. Floodplain/Watershed Protection Provisions. 2013. Accessed March 2024 via https://www.newtonma.gov/home/showpublisheddocument/31695.