SMMA

Project Management

April 18, 2024

Veatriki Dagkalakou
Project Manager
Massachusetts School Building Authority
40 Broad Street, Fifth Floor
Boston, Massachusetts 02109

Re: Wildwood Early Childhood Center **Wilmington, Massachusetts**

Preliminary Design Program Submission to the MSBA *SMMA No. 22127*

Dear Veatriki:

Attached please find the Module 3 Preliminary Design Program (PDP) package submission to the MSBA. The team has followed the guidelines set forth in Module 3 to develop this submission.

As Owner's Project Manager, we certify that we have reviewed and coordinated the materials, the submittal is complete and confirm that the District has approved the materials for submission to MSBA.

We look forward to reviewing the information contained in this submission with you and your team to move toward the Preferred Schematic Study submission.

Please contact me at 781-910-2793 if you have any questions, comments, or would like to schedule a meeting.

Very truly yours,

SMMA

Julie Leduc
Director of OPM Services

cc: Dr. Glenn Brand, Superintendent of Schools, Dennis Kelley (MF)

enclosures: Preliminary Design Program (PDP)

1000 Massachusetts Avenue
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JL/sat /Https://Smma365.Sharepoint.Com/Sites/22127/22127_Projectdocs/B DESIGN/B1 DESIGN PROGRAM, DATA/B1-03 Feasibility Study/Preliminary Design Program Report - April 18, 2024 Submission/Opmdeliverable - WILMINGTON - DRAFT/00 - Transmittal Letter/L_Veatriki Dagkalakou@MSBA_Pdpsubmission_18April2024.Docx

WILMINGTON WILDWOOD EARLY CHILDHOOD CENTER

18 APRIL 2024

PRELIMINARY DESIGN PROGRAM

VOLUME 1 OF 2

DORE + WHITTIER | SMMA

Massachusetts School Building Authority

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Town of Wilmington
Louis Cimaglia IV – Temporary Town Administrator
Susan Inman – Assistant Town Manager
Dennis Kelly – Town Director of Facilities

Wilmington Public Schools Administration
Dr. Glenn Brand - Superintendent of Schools
Paul Ruggiero - Assistant Superintendent of Administration and Finance
Alice Brown-LeGrand – Dir. of Student Support Services
Kate Bissell - Principal, Wildwood Early Childhood Center
Stacey Scott – Principal, Woburn Street Elementary School
Diane Carreiro – Principal, North Intermediate School
Tracy Ingersol – Exec. Assist. to the Superintendent

School Committee
David Ragsdale, - Chair
Jesse Fennelly - Vice Chair
Jennifer Bryson - Member
Mary Jane Byrnes – Member
Michael Mercaldi- Member
Jay Samaha- Member
Stephen Turner- Member

Owner's Project Manager (OPM) – SMMA
Julie Leduc – Director of OPM Services
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School Building Committee
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Vivian Varbedian, North Side Parent, Committee Vice Chair
Louis Cimaglia IV, Temporary Town Manager
Susan Inman, Assistant Town manager
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David A. Ragsdale, School Committee
George W. Hooper II, Permanent Building Committee
Dennis Kelley, Public Buildings Superintendent (as of 1/12/23)
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Stacey Scott, Woburn Street School Principal
Kate Bissell, Wildwood School Principal
Alice Brown-LeGrand, Director of Student Support Services
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INTRODUCTION

OVERVIEW

In May of 2020, Wilmington Public Schools submitted a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA) for the Wildwood Early Childhood Center, the primary focus of this study. That SOI, included in Appendix X.01, identified the following priorities:

- The school is in very poor physical condition including but not limited to ceiling tiles containing asbestos that impact the replacement of classroom projectors, installation of smartboards and updating wiring for electronics and communication systems;
- There are space limitations to house a social-emotional program for students and other programs like ELL and other Special Education programs have overcrowding and lack proper educational spaces;
- The school is not fully accessible;
- HVAC and electrical systems are outdated and at the end of their useful life;
- Need to provide educational spaces that will provide a full range of programs to meet the District's Education Plan.

The Wildwood Early Childhood Center was opened in 1955. There have been no additions or renovations.

All of the infrastructure components consist of original equipment that has reached the end of its useful life. This is causing issues of imminent failures, poor interior air quality and climate control, code compliance issues, and an educational delivery system that is in poor condition.

In addition, there are several accessibility issues, exterior walls with very little insulation, relief vents are a source of significant building heat loss, deteriorating exterior brick work due to water dripping down off of fascia, discolored windows to the point of becoming difficult to see through, clerestory windows have broken or become extremely cracked, boarded up, or replaced with Plexiglass are in very poor condition. The wood framing of the building structure is adequate for supporting gravity loads (live and snow) they are weak at distributing the lateral load from wind.

Space needs were identified as follows:

- Undersized classrooms;
- Appropriate space for SPED programs;
- Accessible storage space;
- Dedicated classroom for differentiated instruction;
- Nurses' office with separate examination area;
- Lack of appropriate lab and computer spaces.

However, Wilmington's five other elementary schools are of similar vintage —and also have very similar facility, capacity, and programmatic needs, as documented in the 2018 Master Plan Study prepared by

Harriman in 2018. As a result, the MSBA and the District defined the scope of this study to also include the two other schools located in the north catchment area, Woburn Street and North Intermediate schools, and potential consolidation of two or three buildings. The agreed upon enrollment for a PK-K grade configuration is 130+ PK students. A combined enrollment of 510+ PK students for PK-3 or 755+ PK students for a PK-5 consolidation will also be studied. The inclusion of the Pre-Kindergarten program is an additional enrollment of approximately 100 pre-K students, for a total of 230, 610, and 855 students respectively.

The proposed program for the building, as outlined in the Space Summary documents included in Section 3.1.3 of this report, based upon the three study design enrollments is as follows:

- Grades PK-K (130+ 100 PreK students) – 66,810 GSF
- Grades PreK-3 (510+ 100 PreK students) – 117,318 GSF
- Grades PreK-5 (755+ 100 PreK students) – 167,855 GSF

The purpose of this Preliminary Design Program is to:

- Perform the review and investigation required to clearly define the existing facility & site deficiencies for Wildwood, Woburn Street and North Intermediate buildings,
- Define the programmatic, functional, spatial, and environmental requirements necessary to meet the District's educational program for the three agreed-upon enrollments,
- Prepare a range of design alternatives and conceptual cost estimates for each enrollment scenario that addresses the District's defined needs, and
- Identify a recommended 'short list' of alternatives for further development in the Preferred Schematic Report.

This submission communicates the District's and the design team's successful completion of each of the tasks listed above, ultimately exploring eighteen (18) options ranging from base repair, addition/renovation, to all-new construction, and identifying five alternatives for the 'short list', carrying forward at least one alternative for each construction and enrollment scenario.

STUDY PROCESS

Wilmington Public Schools and the design team executed a process characterized by transparency and broad stakeholder participation. It involved a series of public information sessions outlining the process to be undertaken and soliciting goals and objectives for the project from those in attendance. The process included two parts: completing a comprehensive visual assessment of the existing facilities and evaluating educational space needs.

D+W conducted interviews with the building principals to identify educational needs and to define the District's programmatic, functional, spatial, and environmental requirements. The District sponsored a series of visioning workshops, facilitated by D+W, to generate guiding principles for the project vision.

The assembled attendees, which included community members, faculty, staff, and students, were consistently checked in with to ensure the relevance of the previous visioning work and outcomes, and solicited feedback and input from attendees on their visions for the future of elementary education in Wilmington, and how a re-envisioned facility might address those requirements.

Members of the School Building Committee and the District's leadership team participated in tours of seven comparable, recently completed MSBA school projects. These tours were highly instructive to the attendees, who asked a lot of questions and gleaned a lot of information from the district superintendents, building principals or key personnel serving as their tour guides. A summary of the tours and key take-aways were incorporated in a video titled "What is and What can be" to share with School Building Committee members unable to participate in tours, as well as the community at large.

The conclusion to the process included an evaluation of design alternatives, which was reviewed, discussed, and deliberated by the School Building Committee, presented to the public for feedback, and ultimately voted on by the SBC. A complete list of meetings and activities is provided in the Local Actions and Approvals section.

SUMMARY OF FACILITY & EDUCATIONAL DEFICIENCIES

As stated above, the design team performed a comprehensive visual inspection of Wildwood, Woburn Street and North Intermediate schools and their sites to assess the conditions of all the major systems and site features. D+W also performed a regulatory assessment of the buildings to assess their compliance with current building codes and other regulatory requirements. Highlights of those assessments are described below, and details are available in the Evaluation of Existing Conditions section.

In addition, D+W conducted interviews and performed analyses to identify spatial, functional, and programmatic deficiencies for each of the three buildings (educational deficiencies). Highlights of those findings are described below. More information on these deficiencies is communicated in the Educational Program narrative and in the Space Summary Deviations narratives.

TABLE 1 - WILMINGTON SCHOOLS in this Study - VITAL STATISTICS

SCHOOL	GRADES	ENROLL Fall 2023	AREA TOTAL (SF)	BUILD DATE	BUILD AGE	SITE ACRES
Wildwood Early Childhood Center	PK-K	144	29,302	1955	69	7.5
Woburn Street School	1-3	358	53,771	1963/ 1968	61	10
North Intermediate School	4-5	249	54,541	1962	62	14

Wildwood Early Childhood Center

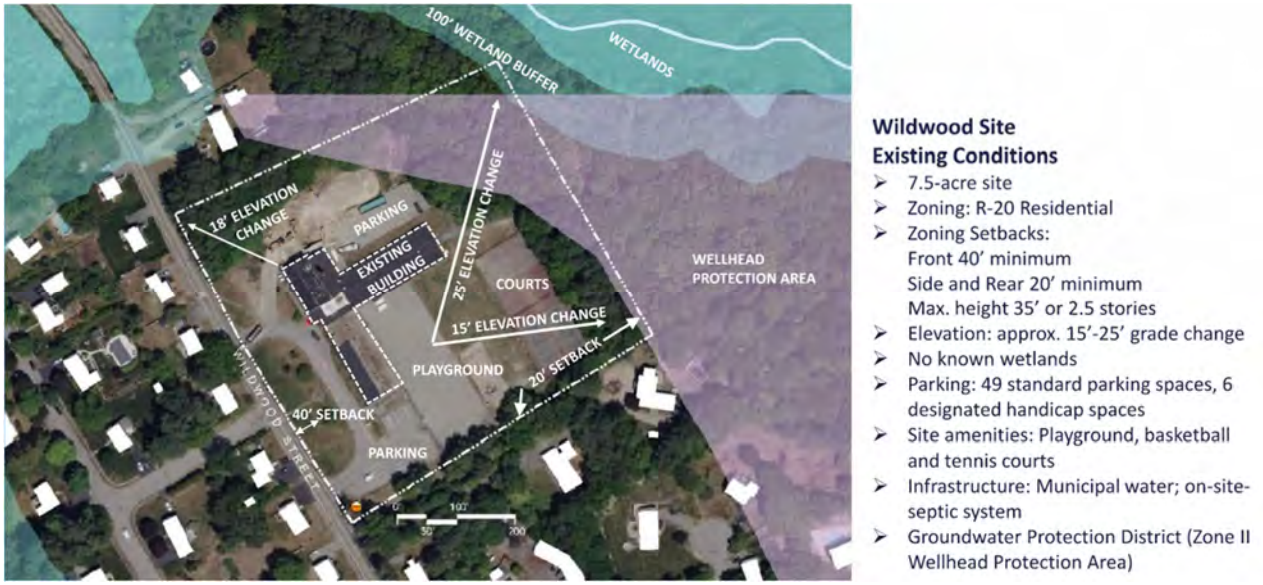

Image 1 – Wildwood Early Childhood Center Site and context

The one-story, Wildwood Early Childhood Center was constructed in 1955. The existing school 29,302 sq. ft. and currently serves 144 students in grades PK-K as of October 1st, 2023.

Facilities & Site Deficiencies

- Insufficient parking spaces for staff and visitors
- Insufficient site circulation
- Pavement and Curbs warrant repair/replacement
- Interior finishes warrant replacement and updating
- Antiquated HVAC, Electrical, Plumbing systems
- Lack of fire suppression systems
- Several barriers to accessibility throughout the building and site
- Deteriorated single pane steel framed windows and doors
- Portions of roof are in need of replacement
- Insufficient insulation in exterior envelop

Educational Deficiencies

- Undersized classrooms
- Insufficient space for collaborative group work
- Insufficient dedicated space for special education programs
- Insufficient space for OT / PT
- Insufficient/ non-suitable space for art and music programs
- Insufficient storage space

- Limited space for staff or parent IEP meetings
- Limited space for special education meetings
- Inadequate space for administration needs
- Insufficient space for support service professionals – both professional home bases and places to deliver supports

Woburn Street Elementary School

Image 2 – Woburn Street Elementary School Site and context

The two-story Woburn Street Elementary School was constructed in 1963 with addition in 1968. The existing school is a total of 53,771 sq. ft. and currently serves 358 students in grades 1-3 as of October 1st, 2023.

The two schools have been maintained and treated in a very similar fashion, so the list of deficiencies is virtually identical, like the buildings. There are some peculiarities with the age of some mechanical and electrical equipment, and differing replacement dates, but in general, the issues are the same.

Facilities & Site Deficiencies

- Insufficient parking spaces for staff and visitors
- Insufficient site circulation
- Tired interior finishes warrant updating
- Antiquated HVAC, Electrical, Plumbing systems

- Lack of fire suppression system
- Numerous barriers to accessibility throughout the building and site
- Deteriorated single pane steel framed windows and doors
- Portions of roof are in need of replacement
- Insufficient insulation in exterior envelop

Educational Deficiencies

- Limited geographic clustering into grade level teams
- Insufficient space for collaborative group work
- Insufficient dedicated space for special education programs
- Insufficient space for OT / PT
- Insufficient storage space
- Limited space for staff or parent IEP meetings
- Limited space for special education meetings
- Inadequate space for administration needs
- Insufficient space for support service professionals – both professional home bases and places to deliver supports

North Intermediate School

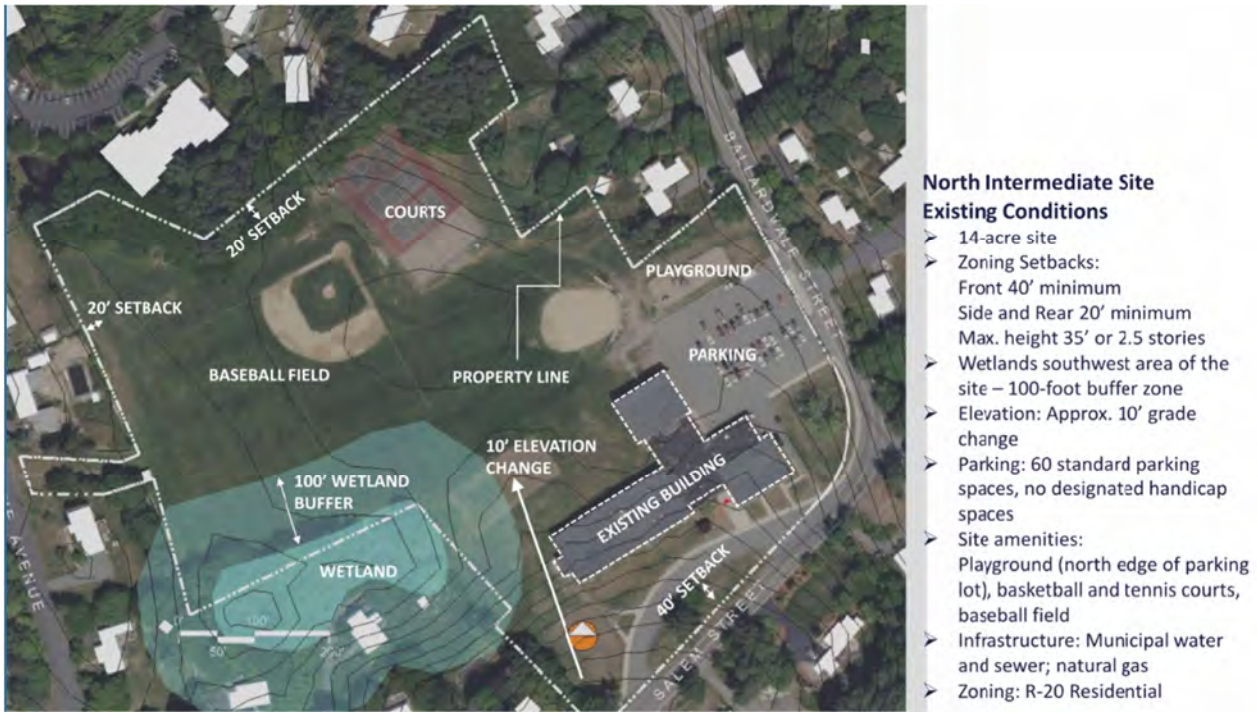

Image 3 – North Intermediate Site and context

The two-story, North Intermediate School was constructed in 1962. The existing school 55,541 sq. ft. and currently serves 249 students in grades 4-5 as of October 1, 2023.

Facilities & Site Deficiencies

- Insufficient parking spaces for staff and visitors
- Insufficient site circulation and safe drop-off zones from parking lot
- Pavement and Curbs warrant repair/replacement
- Tired interior finishes warrant updating
- Antiquated HVAC, Electrical, Plumbing systems
- Lack of fire suppression systems
- Numerous barriers to accessibility throughout the building and site
- Insufficient insulation in exterior envelop

Educational Deficiencies

- Undersized classrooms
- Limited geographic clustering into grade level teams
- Insufficient space for collaborative group work
- Insufficient dedicated space for special education programs
- Insufficient space for OT / PT
- Insufficient space for collaborative group work
- Insufficient space for art program
- Insufficient storage space
- Limited space for staff or parent IEP meetings
- Limited space for special education meetings
- Inadequate space for administration needs
- Insufficient space for support service professionals – both professional home bases and places to deliver supports

DATE OF INVITATION

On June 22, 2022, the Board of the Massachusetts School Building Authority invited the Town of Wilmington to conduct a Feasibility Study for the Wildwood Early Childhood Center. A copy of that Board action letter has been provided in Appendix X.02.

AGREED-UPON DESIGN ENROLLMENT

On April 22, 2022, the Massachusetts School Building Authority issued its Study Enrollment Certification letter to the Town of Wilmington. That letter identified the following agreed-upon enrollment scenarios:

- Grades K: 130 students (plus Pre-K students*)
- Grades PreK-3: 510 students (plus Pre-K students*) in a consolidation of Wildwood and Woburn Street Schools
- Grades PreK-5: 755 students (plus Pre-K students*) in a consolidation of Wildwood, Woburn Street and North Intermediate Schools

  * The letter does acknowledge inclusion of PreK students in the project, but does not mention or prescribe a specific number. The District wishes to study the configurations + 100 (+-) PreK students.

A copy of this Study Enrollment Certification Letter has been provided in Appendix X.06. Supporting documentation is included in Appendix X.03-X.07.

EDUCATIONAL PROGRAM & GUIDING PRINCIPLES FOR DESIGN

District leadership shard the Educational Plan with the Wilmington School Committee for review on February 13, 2024 and again on March 27, 2024 for approval by the School Committee.

The Educational Program narrative synthesized and translated the outcomes of visioning into a description of the District's educational intent across all its elementary schools, a document that provided the Design Team with a clear set of programmatic, pedagogical, operational, and staffing goals on which to base conceptual designs, referred to as the Guiding Principles.

Key Features, Programs, and Services

- Accommodate Strides program for all grade levels within project to resolve need to transition students to multiple schools and multiple sides of town
- Extend the school day for all kindergarten students across all elementary schools to algin with the school day of first through fifth grade
- Introduce a new STEM program as a special across all elementary schools district-wide
- Expand the capacity and choices of the pre-kindergarten program district-wide to reintroduce a full-day option
- Alter the daily school schedule and cycle of specials from a 5-day cycle to a 6-day cycle to both introduce a new STEM program and to improve opportunities for common planning time
- Expand the variety and flexibility of spaces within the project to support a wide range of student needs, new and yet to emerge instructional practices, to support the District's multi-tiered system of supports (MTSS), and to provide students with some voice and choice over their learning environment

Visioning Results: Guiding Principles for Design

- Education methodologies will change over the life span of the building. The project should be designed flexibly enough to allow the educational method to evolve without significant changes to the building, itself.
- Zone the building into Public and Private spaces
- Organize building into PreK to 2nd grade and 3rd grade to 5th grade with shared core spaces in between
- Reduce travel distances between classrooms and shared core space to the greatest extent possible
- Organize building into grade level learning communities, but in such a way that limits isolation of any one grade level and allows grade level learning communities to expand in bubble years
- Position Pre-Kindergarten and Kindergarten on the ground level
- Separation of site circulation – cars, buses, pedestrians – to the greatest extent possible
- Create a dedicated PreK entry with a dedicated PreK parking area, if possible
- Appropriate faculty, staff, and visitor parking
- Integrate special education spaces throughout the facility
- Position stage between Gymnasium and Cafeteria to maximize the flexibility to create performance/event experiences
- Position some of the administration offices within classroom groupings
- Remainder of administrative spaces adjacent to the main entry of the building
- Provide a wide variety of instructional spaces including traditional classrooms, small group rooms, and extended learning spaces (XLAs) with strong visual and physical connections between these experiences to facilitate a wide variety of instructional practices, varying group sizes, and opportunities for inclusionary practices for student support services.
- Provide lower grades with access to calming areas with sensory options; upper grades access XLAs/outside classroom areas
- Create teacher collaboration spaces capable of supporting day to day planning activities, diagnostic student data meetings, and professional development experiences
- Create an environment that positions office and service-delivery spaces for student support services near and distributed amongst grade level classrooms
- Position grade-level specific playgrounds adjacent to grade-level classroom areas and without the need to cross any vehicular roadways
- Provide all instructional spaces, offices, and extended learning spaces with direct access to natural daylight and exterior views to the greatest extent possible
- Provide a small group room between every pair of grade level classrooms to support general classroom instructional activities and as a place for student support services when appropriate.
- Create an environment where PreK students can dine in close proximity to their classrooms
- Zone the cafeteria in such a way to create a variety of dining experiences and smaller zones to reduce student anxiety

- Create a new Science, Technology, Engineering, and Mathematics program and support it with purpose-built and dedicated instructional space.
- Prioritize durability and ease of maintenance for materials and systems over lowest first cost.
- Position custodial closets with consideration for operational practicalities of daily cleaning activities.
- Position general receiving close to the kitchen, gymnasium, and with the ability to move materials, equipment, and supplies throughout the project.

Refer to Appendix X.12

DESIGN ALTERNATIVES & 'SHORT-LIST'

The agreed upon enrollments translated into a need to explore:

- Existing Wildwood site: A series of design alternatives including a Base Repair (CIP) alternative, a renovation / addition alternative*, and all-new construction alternatives.
- Existing Woburn Street site: A series of design alternatives including a Base Repair (CIP) alternative, a renovation / addition alternative*, and all-new construction alternatives.
- Existing North Intermediate site: A series of design alternatives including a Base Repair (CIP) alternative, a renovation / addition alternative*, and all-new construction alternatives.
- Town Hall Site: All-new construction alternatives.

**It was determined that the agreed upon enrollment for the consolidated school would not fit within the existing school buildings without placing an addition. As a result, no renovation-only alternatives were explored.*

TABLE 2 - LIST OF ALTERNATIVES EXPLORED

*(Preferred 'short list' identified in **bold**)*

Number	Alternative	Cost ($ Millions)
130+ Students – Grades PK-K		
PK-K R.1	Repair-Only (CIP) – Wildwood	**$27.7 M - $30.6 M***
PK-K AR.1	Addition Renovation at Wildwood	$78.0 M – 86.2 M*
PK-K N.1	New Construction at Wildwood	**$79.3 M - $87.6 M***
PK-K N.2	New Construction at Town Hall	$80.0 M - $88.5 M*

510+ Students – Grades PK-3		
PK-3 R.1	Repair-Only (CIP) at Woburn Street	**$36.3 M - $40.1 M***
PK-3 AR.1	Addition Renovation at Woburn St	$135.0 M - $149.2 M*
PK-3 AR.2	Addition Renovation at Wildwood	$130.1 M - $143.9 M*
PK-3 N.1	New Construction at Woburn St	**$135.7 M - $150.0 M***
PK-3 N.2	New Construction at Wildwood	$131.2 M - $145.1 M*
PK-3 N.3	New Construction at Town Hall	$132.2 M - $146.1 M*
755 Students + 100 PreK – Grades PreK-5		
PK-5 R.1	Repair-Only (CIP) at North Int	**$29.5 M - $32.6 M***
PK-5 AR.1	Addition Renovation at North Int	**$193.2 M - $213.6 M***
PK-5 AR.2	Addition Renovation at Woburn St	$188.9 M - $208.8 M*
PK-5 AR.3	Addition Renovation at Wildwood	$188.2 M - $208.0 M*
PK-5 N.1	New Construction at North Int	**$194.1 M - $214.5 M***
PK-5 N.2	New Construction at Woburn St	$188.1 M - $208.0 M*
PK-5 N.3	New Construction at Wildwood	$188.8 M - $208.7 M*
PK-5 N.4	New Construction at Town Hall	$187.6 M - $207.3 M*

** Total project costs noted above are conceptual in nature, for comparison purposes only and are not intended for use in construction. They are based on construction market conditions in April 2024 and may be subject to adjustment for inflation and construction market conditions and further revision. MSBA reimbursement amounts are not factored into these costs. Potential MSBA reimbursement to the Town of Wilmington and the Town's actual share of the total Project Cost shall be determined at a later date. More information about how total project costs were estimated is provided in the Preliminary Evaluation of Alternatives section.*

The process to evaluate the alternatives is described in detail in the Evaluation of Preliminary Alternatives section of this report and includes a set of evaluation criteria developed by the Leadership Working Group with the input and approval of the full School Building Committee.

Careful scoring of each alternative and considerations for total project cost resulted in the School Building Committee identifying the bolded alternatives above as its 'short list' for further development in the PSR.

CAPITAL BUDGET STATEMENT

The preliminary estimated project cost ranges from approximately $27.7 million to $215.2 million depending on the final preferred alternative chosen. The local share of debt service is planned to be funded via debt exclusions supported by the tax levy of the Town.

The base reimbursement share for this project from MSBA is 47.84% of eligible costs. The following are the incentive points that are being considered: Renovation (dependent upon which alternative chosen), High Efficiency Green School Program, Best Practices for Routine and Capital Maintenance, and Use of CM-at-Risk. The remaining percentage would be locally funded as explained above.

The overall goal of the Capital Budget Statement is to document the total change in operational costs that the district expects as a result of the proposed project.

In 2022 an article was approved at the Town Meeting to appropriate $17,264,561 to build a new Senior center, including transfer of $6,000,000 from stabilization fund and borrowing the remaining $11,246,561. The groundbreaking for this project was November 2023 with an expected opening date of December of 2024; project is on schedule.

In 2022 an article was approved at the Town Meeting to appropriate $36,880,561 to build a new Town Hall/Schol Administration building. Funding includes transfer of $12,000,000 from free cash and the balance of $24,880,766 borrowed. This building will break ground in April 2024 and has an estimated completion date of fall of 2025.

PROJECT DIRECTORY

A complete project directory has been provided as Appendix X.09.

PROJECT SCHEDULE

The Project Schedule anticipates MSBA Board of Director's approval to proceed into Schematic Design at their October 30, 2024 meeting and MSBA Board of Director's approval of the Project Scope and Budget Agreement at their April 30, 2025 meeting. District-wide appropriation voting will take place during the period of March through May 2025.

The Project Schedule has been provided as Appendix X.10.

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EDUCATIONAL PROGRAM

OVERVIEW

The following educational program narrative is the result of collaborative efforts between Wilmington Public Schools and their designer, Dore + Whittier. It communicates the district's existing and future educational program offerings, defines expected educational activities, and provides an in-depth description of the district's position on key curriculum goals, objectives, and policies, specifically at the elementary level. Information contained in this section is organized to align with the expectations identified in the MSBA Module 3, Section 3.1.2 and the MSBA's updated Educational Program Requirements published in December of 2023. The educational program applies to a new or renovated facility serving one of three agreed-upon enrollments:

- Enrollment 1
    - Wildwood Early Childhood Center
        - 130 Kindergarten Students (Plus Pre-K students)
- Enrollment 2
    - Wildwood Early Childhood Center + Woburn Street School
        - 510 K-3 Students (Plus Pre-K students)
- Enrollment 3
    - Wildwood Early Childhood Center + Woburn Street School + North Intermediate
        - 755 K-5 Students (Plus Pre-K students)

Ultimately, the intent of this section of the Preliminary Design Program document is to establish a clear roadmap for the development of three space summaries (one for each agreed upon enrollment), conceptual design alternatives, and a basis for evaluation to identify a preferred alternative. Much of what's described in the following document applies to all three design enrollments; therefore, the district has structured this as a single narrative with subsections documenting any programs, services, teaching methodologies, and preferred instructional practices that differ within the existing facilities and/or may change based on the agreed-upon enrollments.

Any new or renovated school building will require a modernized school facility that is fully accessible, climate-controlled with air-conditioned spaces, has natural light, modern security features, outdoor play area/spaces, and accommodates traffic flow and adequate parking for both staff and visitors.

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Wilmington Public Schools Educational Program Narrative

March 24, 2024

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Educational Program Requirements

There are a number of central guiding principles that align with the vision that our community has for educational delivery in a new school facility. As such, these also serve as part of the overall guiding principles for design in the new facility (regardless of the grade/enrollment span):

- As a result of the fact that education methodologies will change over the life span of the new school, we believe that the facility should be flexible to accommodate the evolution of programming that is necessary to meet student needs.
- We intentionally seek to create grade-level learning communities for students and staff.
- We want to shape the educational program that intentionally integrates special education services throughout the school to ensure that we can support the integration of all children into the learning environment.

The educational program described in this document represents the school district's current vision of an ideal teaching and learning environment for a new school. However, it is challenging to predict educational requirements beyond the immediate future due to the ever-changing nature of student populations and needs, teaching approaches, and technology. Despite this challenge, the district has made every effort to present its best projection of the future educational program for a new school in Wilmington.

District Mission

The mission of the Wilmington Public Schools is to educate and develop students academically, socially, and emotionally to be active, civic-minded contributors to our global society.

District Vision

The vision of the Wilmington Public Schools is to provide an inclusive, respectful, and collaborative learning environment where all stakeholders are engaged in the development of the whole child.

Strategic Plan

To achieve this vision, the district has developed a plan for Strategic Improvement, organized into five main objectives:

Objective 1:

All Students Reach Their Fullest Potential: Provide challenging, engaging, relevant instruction that is responsive to each learner's academic, social, emotional, and behavioral needs.

Initiatives:

- [1.1] Use data to assess student achievement and inform instruction to best meet the academic needs of students through a multi-tiered system of support that provides both remediation and extension as needed for students. Ensure curricula and intervention materials are evidence-based and relevant.
- [1.2] Enhance the integration of social-emotional learning competencies into daily instruction across all curricular areas and measure student growth in the competencies through Panorama screening data.
- [1.3] Establish district-wide practices and protocols to monitor discipline and attendance to determine the social, emotional, and behavioral needs of students.
- [1.4] Implement a district-wide multi-tiered system of support to ensure that students receive appropriate social, emotional, and behavioral interventions to support their well-being and enable them to fully access learning.
- [1.5] Engage educators in data-based and relevant ongoing professional development. Increase opportunities for coaching support and feedback to support the implementation of new instructional practices.

Objective 2:

Caring and Safe for All: Foster school communities where all students and staff experience a sense of belonging and safety.

Initiatives:

- 2.1] Utilize ongoing feedback cycles (e.g., surveys, focus groups, forums) from students, parents/guardians, community partners, and staff to make data-driven improvements and refine strategies to build inclusive, positive school communities.
- [2.2] Increase the availability and accessibility of student support services for mental health, such as counseling, mentoring, and peer support programs.
- [2.3] Create opportunities for student involvement and leadership within the schools and community as active and engaged members of the WPS.

- [2.4] Ensure programming for Positive Behavior Instructional Supports (PBIS), Bullying Prevention, and SEL integration is implemented consistently across all grade levels.
- [2.5] Develop a multi-year school safety improvement plan for all schools. Regularly assess and update safety protocols to ensure a physically safe environment for students and staff.

Objective 3:

Equitable and Inclusive Schools: Create a vision for equitable and inclusive schools with students, staff, families, and community members

Initiatives:

- [3.1] Provide professional development on culturally responsive instructional practices that value and respect diverse backgrounds, experiences, and perspectives of students.
- [3.2] Implement a comprehensive data collection and analysis system to track key diversity, equity, and inclusion metrics and regularly disseminate information and resources to all stakeholders, including students, parents/guardians, and the wider community.
- [3.3] Establish ongoing processes for recruiting, hiring, retaining, and advancing highly qualified and diverse staff with strong equity commitments, understanding, and skills.
- [3.4] Enhance culturally responsive communication with families by ensuring communication is accessible in parents'/guardians' home language.

Objective 4:

Enhanced and Updated School Facilities: Improve school facilities and design learning spaces to promote student success and support family and community involvement.

Initiatives:

- [4.1] Partner with the Massachusetts School Building Authority and Wilmington town government to establish long-term plans for the development of school facilities and grade-level configurations that best support the needs of the Wilmington Community.
- [4.2] Establish a new 5-year Technology Plan to ensure that infrastructure, hardware, and software meet the needs of students and staff.

- [4.3] Create flexible and adaptable learning spaces to accommodate various instructional methods, individual learning needs, and collaboration among students and staff.
- [4.4] Create welcoming spaces within schools for parents/guardians, staff, and community members to participate in school activities and community events.

Objective 5:

We are One Community: Strengthen partnerships amongst students, families, staff, and the community that promote a sense of pride, connectedness, and inclusiveness.
Initiatives:

- [5.1] Assess current communication practices to identify areas in need of improvement and develop district-wide communication guidelines.
- [5.2] Develop enrichment opportunities, programs, and initiatives that actively involve families and community members in school activities, including opportunities to contribute their skills, expertise, and resources to enrich the educational experience of students.
- [5.3] Develop opportunities, programs, and partnerships with external institutions, organizations, corporations, etc., that serve to enhance the educational experiences of Wilmington students.
- [5.4] Create structured transition support programs that provide targeted assistance for students moving between schools (i.e., orientation sessions, transition workshops, peer mentoring, personalized support plans, etc.) and develop a monitoring and evaluation framework to assess the effectiveness of transition initiatives.

Contributors to the Program Narrative

This document was developed through a collaborative effort from the following staff members:

Name	Role
Glenn Brand	Superintendent
Christine Elliott	Assistant Superintendent for Curriculum and Staff Development
Paul Ruggiero	Assistant Superintendent of Administration and Finance
Ken Lord	Director of Technology and Digital Learning
Alice Brown LeGrand	Director of Student Support Services
Andrea Stern Armstrong	Director of Human Resources
Christine Murray	Coordinator of Behavioral Health and Social Emotional Support
Maura Kilbride	Coordinator of Special Education
Rebecca Brown	Coordinator of Nursing Services
Kate Bissell	Wildwood Principal
Kristen Walsh	Boutwell Principal
Heather Peachey	K-12 Library Coordinator
Colleen Billings	ESL Curriculum Team Leader
Melissa Bettencourt	Elementary Literacy Coordinator and Title I Director
Amy Iascone	Elementary Science Lead Teacher
Michelle LeVesque	Elementary STEM Coordinator
Robert Mauriello	Elementary Social Studies Lead Teacher
Michael Ferrara	Performing Arts Liaison
Lena Philips	Visual Arts Liaison
Laura Stinson	Health/Physical Education Liaison
Mary Palen	Administrator of Food Services
Lisa Faretra	Director of Transportation

Patty Boggia	CARES Program Coordinator

Grade And School Configuration Policies

Current Grade Configuration

The Wilmington Public Schools currently operates six (6) elementary schools, supporting grades K-5. The district's current (2023-2024) enrollments per building are as follows:

- Boutwell Early Childhood Center (Pre-K-K): 144
- Wildwood Early Childhood Center (Pre-K-K): 144
- Shawsheen Elementary (1-3): 342
- Woburn Street Elementary (1-3): 358
- North Intermediate (4-5): 249
- West Intermediate (4-5): 208

Wilmington's elementary schools are currently organized into two catchment areas: one comprising the Wildwood Early Learning Center, Woburn Street Elementary School, and the North Intermediate School which are the focus of this study and one comprising the Boutwell Early Childhood Center, the Shawsheen Elementary School, and the West Intermediate School.

The district operates a stand-alone middle school and a high school with 2023-2024 enrollment as follows:

- Wilmington Middle School (6-8): 702
- Wilmington High School (9-12+): 619

Proposed Grade Configuration

The district's future educational program includes the possibility of consolidation of the schools on the North side of town. Under consideration is the consolidation of Wildwood Early Childhood Center, Woburn Street Elementary School, and North Intermediate School in a new Pre-K-5 facility or the consolidation of Wildwood Early Childhood Center and Woburn Street Elementary School in a Pre-K-3 building. A third option would be to keep the current grade configuration as is, with Wildwood Early Childhood Center continuing to serve just Pre-K and Kindergarten.

After extensive analysis and discussion, we believe a consolidated Pre-K-5 school will provide the best solution to address the students' academic and social-emotional needs. The consolidation of schools will minimize the number of transitions students make throughout their time in the Wilmington Public Schools, which has proven to be a significant challenge for many students. Currently, our students transition from Wildwood Early Childhood Center (Pre-K-K) to Woburn Street School (Grades 1-3), to North Intermediate School (Grades 4-5), to Wilmington Middle School (Grades 6-8), and finally to Wilmington High School (Grades 9-12). These transitions can be disruptive for our students socially, emotionally, and academically.

Consolidation will also naturally enhance collaboration among staff through proximity as well as the ability to plan and organize cohesive professional development. It is much easier for staff to collaborate and plan together when in the same building. In our current configuration, multiple schools have different start and end times, limiting collaboration time and the opportunity for combined professional development sessions. We also anticipate that consolidation will lead to many efficiencies in both cost and time, such as staffing, ease of programming, facility maintenance, transportation, etc.

Class Size Policies

Currently, all three elementary schools considered as part of this project (Wildwood, Woburn Street, and North) maintain approximately five (5) to seven (7) sections per grade level (K-5), which fluctuates year to year as students matriculate through the grades.

The Wilmington School Committee and the Wilmington Teachers' Association recognize that class size is an important factor in good education and will, whenever possible, subject to space availability and all other educational considerations, ensure that class size is of the most effective nature for both teacher and pupils. Therefore, as stated in the current contract agreement, the ideal maximum class size should be as follows:

- Pre-Kindergarten/Kindergarten - a ratio of one teacher per 20 students
- Grades 1 - 3 - a ratio of one teacher per 20 students
- Grades 4 & 5 - a ratio of one teacher per 25 students

These guidelines are followed whenever possible. Enrollment fluctuations have resulted in years when the guidelines were exceeded, and at other times class sizes have been smaller than the guideline. Because the MSBA guidelines for class size differ from the District's, we

have directed the Design Team to use the following assumptions and algorithms to determine the needed number of classrooms for this project.

- Pre-Kindergarten and Kindergarten = 18 students per classroom
    - Some Sections of Pre-Kindergarten are half day, some are full-day, and some are self-contained special education programs
- Grades 1st - 3rd = 20 students per classroom
- Grades 4th - 5th = 23 students per classroom

Pre-K-K Grade Configuration (130 Students + Pre-K)

- 100 Pre-Kindergarten Students ÷ 18 Students per Classroom = 5.6 Sections or 6 Classrooms
- 130 Kindergarten Students ÷ 18 Students per Classroom = 7.2 Sections or 7 Classrooms

Pre-K-3rd Grade Configuration (510 Students + Pre-K)

- 510 Students ÷ 4 Grade Levels = 127.5 Students per Grade Level
- 100 Pre-Kindergarten Students ÷ 18 Students per Classroom = 5.6 Sections or 6 Classrooms
- 128 Kindergarten Students ÷ 18 Students per Classroom = 7.1 Sections or 7 Classrooms
- 1st Grade = 128 Students ÷ 20 Students per Classroom = 6.4 Sections or 6 Classrooms
- 2nd Grade = 127 Students ÷ 20 Students per Classroom = 6.4 Sections or 6 Classrooms
- 3rd Grade = 127 Students ÷ 20 Students per Classroom = 6.4 Sections or 6 Classrooms

Pre-K-5th Grade Configuration (755 Students + Pre-K)

- 755 Students ÷ 6 Grade Levels = 126 Students per Grade Level
- 100 Pre-Kindergarten Students ÷ 18 Students per Classroom = 5.6 Sections or 6 Classrooms
- 130 Kindergarten Students ÷ 18 Students per Classroom = 7.2 Sections or 7 Classrooms
- 1st Grade = 126 Students ÷ 20 Students per Classroom = 6.3 Sections or 6 Classrooms

- 2nd Grade = 126 Students ÷ 20 Students per Classroom = 6.3 Sections or 6 Classrooms
- 3rd Grade = 126 Students ÷ 20 Students per Classroom = 6.3 Sections or 6 Classrooms
- 4th Grade = 126 Students ÷ 23 Students per Classroom = 5.5 Sections or 6 Classrooms
- 5th Grade = 125 Students ÷ 23 Students per Classroom = 5.5 Sections or 6 Classrooms

Proposed Class Size

No changes to class size are proposed at this time as class size guidelines are contractual as determined by the Wilmington School Committee and the Wilmington Teachers' Association.

School Scheduling Method

Current Scheduling Methodology

The building schedule is created under the direction of the building principal in each school with input from general education teachers, special education teachers, and instructional specialists. The principals follow the district schedule guidelines to ensure consistency across the schools within the district. When principals work to develop building schedules, many variables must be considered, such as special education service delivery schedules, lunch schedules, shared staffing, etc.... Whenever possible, principals try to provide uninterrupted blocks of instructional time, but that is not always the reality due to the aforementioned variables. Therefore, some subjects may be split at times, but the goal is to meet the recommended minutes per subject.

Below you will find the Elementary Scheduling Guidelines.

Elementary Scheduling Guidelines

Kindergarten	Minutes		Grade 1	Minutes
Morning Work	10		Reading	60
Morning Meeting	25		Writing	40
Fundations	30		Fundations	30

Heggerty	10		Math	60
Snack	15		Science/Social Studies	30
Reading	45		Specialists	45
Specialist	30		Lunch	30
Lunch	30		Recess	20
Recess	20		Morning Meeting	15
Writing	20		Intervention	20
Science/Social Studies	30		Read Aloud/Working Snack	10
Math	45		Arrival/Dismissal/Transitions	20
Free Play	20			
Arrival/Dismissal/Transitions	20			

Grade 2	Minutes		Grade 3	Minutes
Reading	60		Reading	55
Writing	40		Writing (includes Grammar)	50
Fundations	30		Fundations	30
Math	60		Math	60
Science/Social Studies	30		Science/Social Studies	30
Specialists	45		Specialists	45
Lunch	30		Lunch	30
Recess	20		Recess	20
Morning Meeting	15		Morning Meeting	15
Intervention	20		Intervention	20
Read Aloud/Working Snack	10		Read Aloud/Working Snack	10
Arrival/Dismissal/Transitions	20		Arrival/Dismissal/Transitions	20

Grade 4	Minutes		Grade 5	Minutes
Reading	60		Reading	55
Writing (includes Grammar)	55		Writing (includes Grammar)	45

Language Word Study	20		Language Word Study	20
Math	60		Math	60
Science/Social Studies (2/3)	45		Science/Social Studies 2Xs wk.	60
Specialists	45		Specialists (Art, Music, PE, Library, Chorus) 1X/wk	45
Lunch	30		Health 1x/wk.	30
Recess	20		Lunch	30
Morning Meeting	15		Recess	20
Intervention	20		Home Rm./Morning Meeting	15
Read Aloud/Working Snack	10		Read Aloud/Working Snack	10
Arrival/Dismissal/Transitions	20		Arrival/Dismissal/Transitions	20

Specialist subjects provide contractual preparation time for classroom teachers each day, with specific schedules varying by grade level as detailed below. Unfortunately, due to our current configuration, smaller schools such as Wildwood Early Childhood Center and North Intermediate School have shared specialists who travel to 2 or 3 buildings weekly. Their varied schedules inhibit providing common planning time for classroom teachers in schools with shared specialists. Woburn Street School and Shawsheen Elementary (grades 1-3) for the most part, have full-time specialists in their buildings and, therefore, can schedule more opportunities for teams of teachers to plan and collaborate.
The current time allotments for core academic subjects at Wildwood Early Childhood Center, Woburn Street School, and North Intermediate School are as follows:

Core Academic Subjects

ELA:	105-135 minutes daily
Math:	45-60 minutes daily
Science	30-60 minutes every other day*
Social Studies:	30-60 minutes every other day*

*Throughout the school year, most teachers alternate between social studies and science daily or by unit.

Specialized Subjects

Specialist Subject by Grade Level, Minutes Per Week

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5

Art	30	45	45	45	45	45
Chorus	NA	NA	NA	NA	NA	45
Health	NA	45	45	45	45	30
Library	30	45	45	45	45	45
Music	30	45	45	45	45	45
Physical Education	60 (two 30 minute sessions)	45	45	45	45	45

School	Staff Start & End Time	Length of Student Day	Student Start and End Time
Wildwood K	7:30-2:05	5 hrs. 30 mins.	7:45-1:15
Wildwood Integrated Pre-K	7:30-2:05	2.5 hrs. per session	7:45-10:15 AM 10:50-1:20 PM
Woburn Street	8:55-3:30	6 hrs. 20 mins.	9:05-3:25
North Int.	8:55-3:30	6 hrs. 20 mins.	9:05-3:25

Proposed Changes to Future Scheduling Methodology

The district proposes to increase the length of the Kindergarten school day by 50 minutes to align with the schedules of grades 1-5. This would allow students a longer school day, providing additional time for academic content and more time for play and exploration. Specialist subjects for Kindergarten would increase from thirty (30) minutes to forty-five (45) minutes as is scheduled for grades 1-5. The additional thirty-five (35) minutes would be allocated throughout the school day with input from teachers and administration. The district will explore adding a Health block for Kindergarten instead of offering Physical Education twice a week.

In all three grade configurations (Pre-K-K, Pre-K-3, and Pre-K-5), the core academic programming and specialized subjects for grades 1-5 will remain the same in terms of instructional minutes for grades 1-5. Kindergarten specialist subjects would increase from

30-45 minutes to align with grades 1-5. Providing dedicated space for Art, Music, Physical Education, Health, and Library will be a priority.

Science Technology Engineering & Mathematics (STEM)

In addition, we would like to introduce a new specialist subject, STEM. A STEM specialist class would provide opportunities for practical application of science and math concepts incorporating technology, engineering, and design elements. STEM education creates an opportunity for all students to explore and create by promoting innovative thinking and problem-solving, fostering collaboration and communication, and building social-emotional competencies. As a district, we have begun implementing district-wide STEM challenges a few times a year for K-5 students. Students find these STEM challenges to be exciting and engaging activities that offer challenging problem-solving and cooperative learning opportunities. In addition to practicing academic skills during these challenges, we have observed the growth of fine motor skills, student resilience, perseverance, creativity, communication, and teamwork. The district feels that adding STEM as a specialist subject would be an excellent addition to the current curriculum. Students would continue to receive direct instruction in Math and Science as a part of their core programming, but this new specialist subject would add more technology and engineering instruction and provide the opportunity for more hands-on practical application of the curriculum taught. Therefore, we want to ensure an appropriate space is included in the plan.

The district envisions this type of project-based, investigative learning taking place in a dedicated STEM space. The STEM classroom would be staffed by a full-time STEM teacher providing forty-five (45)--minute classes to students within the overall specialist rotation. The curriculum would incorporate elements and experiences such as (but not limited to):

- Digital Communication
- Robotics
- Circuitry
- Mechanics and Structures
- Design Thinking
- 3-D Printing
- Scientific Data and Analysis
- Makerspace Exploration
- STEM Challenges

A dedicated STEM space should include the following:

- Ample teacher-accessible storage space for equipment, tools, kits, and new and recycled materials, both durable and consumable
- Student-accessible storage (at a child's scale) to support student ownership in the gathering and manipulating of materials
- Abundant and appropriate shelving/organization to safely store or display student work
- Water available with a sink deep enough to facilitate cleaning specimens and glassware equipment and the filling of large basins of water for experiments
- Access to and storage/organization of robust, interactive technology with applications and software used to support curricular access and application
- Flexibility in space and furniture to support various instructional strategies, activities, group sizes, and learning modalities (i.e., adjustable height tables, stools, white-board tables, castors on furniture, etc.)
- Adequate horizontal work surfaces that allow for the creation of various-sized projects and/or for set-up purposes between classes
- A rug area and/or presentation area to facilitate guest speakers or hold whole class meetings

To add another specialist subject for grades K-5, we will need to adapt our current specialist schedule. Currently, we follow a 5-day cycle (Monday-Friday), and students have one of the five current special subjects each day. Given that we typically have more than five classroom sections per grade level, we cannot schedule special subjects to allow all classroom teachers to have their planning period simultaneously. Shifting to a longer specialist cycle (more than five days) would enable us to add the STEM special and create the opportunity for increased common planning time for grade-level teams.

Specialized Subjects with the Addition of STEM

The table below depicts the specialist schedule by grade level if we add a STEM specialist class. This is based on the projection of the new school being a Pre-K-Grade 5 building. If a Pre-K-3 or Pre-K-K configuration is selected, this chart will be adjusted, and the schedule must be reconsidered. Given that this projection is based on a Pre-K-5 configuration, we would also extend the Kindergarten school day; therefore, the weekly minutes for specialist classes will increase from thirty (30) to forty-five (45) to align with the other grade levels.

Subject	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Art	45	45	45	45	45	45

Chorus	NA	NA	NA	NA	NA	45
Health	* 45 TBD	45	45	45	45	30
Library	45	45	45	45	45	45
Music	45	45	45	45	45	45
Physical Education	45	45	45	45	45	45
STEM	45	45	45	45	45	45

**Currently, Kindergarten students have physical education twice per week but the district is considering adjusting that to provide one health class and one physical education class when a new building is opened, should staffing allow.*

Teaching Methodology And Structure

This section of the program narrative documents current and proposed administrative structures, academic structures, and teaching methods for each existing school and design enrollment.

Administrative and Academic Organization/Structure

Current Organization

Wildwood Early Childhood Center, Woburn Street Elementary School, and North Intermediate School are all currently led by a full-time building principal, each of whom oversees teaching and academic support staff for students in their school. The Woburn Street School also has a full-time assistant principal. Below is a chart depicting the 2023-2024 school year staffing.

Current Staffing

Personnel	Wildwood Grades: Pre-K-K 144 Students	Woburn Street Grades: 1-3 358 Students	North Intermediate Grades: 4-5 249 Students
Principal	1.0 FTE	1.0 FTE	1.0 FTE
Assistant Principal	0	1.0 FTE	0
Secretary/Administrative Assistant	1.0 FTE	1.0 FTE	1.0 FTE

Nurse	1.0 FTE	1.0 FTE	1.0 FTE
Classroom Teachers Pre-K-5	7.0 FTE K 2.0 Pre-K (2 Inclusion & 2 Strides)	19.0 FTE	11.0 FTE
Special Education Teachers	2.0 FTE	5.0 FTE	5.0 FTE
School Counselors	1.0 FTE	1.0 FTE	1.0 FTE
School Psychologists	0.3 FTE	0.5 FTE	0.5 FTE
Family Engagement Specialists	0.25 FTE	0.25 FTE	0.25 FTE
Occupational Therapists/OTA^	0.3 FTE	0.3 FTE	0.3 FTE
Physical Therapist^	0.3 FTE	0.2 FTE	0.1 FTE
Speech and Language Therapists^	1.6 FTE	1.0 FTE	0.6 FTE
English Learner Teachers	0.1 FTE	0.5 FTE	0.4 FTE
Art Teachers	0.2 FTE	1.0 FTE	0.6 FTE
Music Teachers	0.2 FTE	1.0 FTE	0.8 FTE
Physical Education Teachers	0.4 FTE	1.0 FTE	0.4 FTE
Health Teachers	0	1.0 FTE	0.4 FTE
Library/Media Specialists	0.2 FTE	0.8 FTE	0.8 FTE
Technology Integration Specialists*	0.09 FTE	0.25 FTE	0.17 FTE
Reading Specialists	1.0 FTE	3.0 FTE	1.5 FTE
Math Tutors	0.5 FTE	1.5 FTE	1.5 FTE
Educational Assistants	18.0 FTE	4.0 FTE	4.0 FTE
Literacy Coordinator/Coach*	0.09 FTE	0.25 FTE	0.17 FTE

STEM Coordinator/Coach*	0.09 FTE	0.25 FTE	0.17 FTE

**This FTE was determined by dividing the total enrollment of 1443 (Pre-K-5) by the number of students in each school to determine the approximate FTE per school for the full-time staff members we currently have supporting 6 schools.*
^ This FTE is determined by student service delivery of IEPs and can change from year to year.

To date, the district has directed the design team to plan for the following personnel dependent on the selected consolidation plan.

Proposed Staffing

Personnel	Renovated/ New School: Kindergarten 130 Students (Plus Pre-K)	Potential Consolidated School: Pre-K-3 Projected Enrollment: 510 Students (Plus Pre-K)	Potential Consolidated School: Pre-K-5 Projected Enrollment: 755 Students (Plus Pre-K)
Principal	1.0 FTE	1.0 FTE	1.0 FTE
Assistant Principal	0	1.0 FTE	2.0 FTE
Secretary/ Administrative Assistant	1.0 FTE	2.0 FTE	3.0 FTE
Nurse	1.0 FTE	2.0 FTE	2.0 FTE
Classroom Teachers	7.0 FTE K 3 Pre-K	26.0 FTE K 3 Pre-K	37.0 FTE 3.0 Pre-K
Special Education Teachers	4.0 FTE	9.0 FTE	14.0 FTE
School Counselors	1.0 FTE	2.0 FTE	3.0 FTE
School Psychologists	.3 FTE	.8 FTE	1.3 FTE
Family Engagement Specialists	0.2 FTE	.4 FTE	.5 FTE
Occupational Therapists/OTA^	.2 FTE	.5 FTE	1.0 FTE

Physical Therapist^	.3 FTE	.5 FTE	.75 FTE
Speech and Language Therapists	1.6 FTE	2.6 FTE	3.2 FTE
English Learner Teachers	0.1 FTE	0.6 FTE	1.2 FTE
Art Teachers	0.2 FTE	1.0 FTE	1.5 FTE
Music Teachers	0.2 FTE	1.0 FTE	1.5 FTE (plus 27 sections of instrumental music- approx. 0.9 FTE)
Physical Education Teachers	0.2 FTE	1.0 FTE	1.5 FTE
Health Teachers	0.2 FTE	1.0 FTE	1.5 FTE
Library/Media Specialists	0.2 FTE	1.0 FTE	1.5 FTE
STEM Teacher	TBD	TBD	1.5 FTE
Technology Integration Specialists*	.09 FTE	.34 FTE	0.5 FTE
Reading Specialists	1.0 FTE	4.0 FTE	6.0 FTE
Math Tutors	0.5 FTE	2.0 FTE	4.0 FTE
Educational Assistants	18.0 FTE	26 FTE	28.0 FTE
Literacy Coordinator/Coach*	.09 FTE	.25 FTE	.5 FTE
STEM Coordinator/Coach*	.09 FTE	.25 FTE	.5 FTE

**This FTE was determined by dividing the total enrollment of 1443 (Pre-K-5) by the number of students in each school to determine the approximate FTE per school for the full-time staff members we employ.*

^ This FTE is determined by student service delivery of IEPs and can change from year to year.

Curriculum Delivery Methods & Practices

Current Practices

Guided by a shared commitment to meet the needs of a wide range of student learners, classroom teachers at Wildwood Early Childhood Center, Woburn Street School, and North Intermediate School plan and provide developmentally appropriate, student-centered, rigorous, and engaging instruction. Teachers employ a combination of whole-class and small-group instruction during all academic subjects. The curricula in grades K-

5 are aligned and consistent across grade levels and within all elementary schools in the district. Our math program, Envisions by Savvas, has been in place the longest, but this year, we are providing professional development on implementing a math workshop model in grades K-5 to create structures and routines that allow for more opportunities for differentiation and individualized, small-group instruction. We adopted a new science program that prioritizes hands-on experiments and exploration a few years ago. Two years ago, we adopted a new social studies program that is now fully implemented. This year, we piloted two different literacy programs and selected Into Reading for a full K-5 implementation in the fall. The district has worked hard to choose programs and implement an updated curriculum that is relevant, rigorous, and evidence-based with pedagogically sound instructional practices.

Most classrooms lack dedicated space to have the whole class together in one area of the room in front of the display board for a group lesson separate from the desks. There is limited room for tables for small group work. To increase classroom differentiation, teachers create centers for students to rotate through while the teacher works with a small group. The current classroom sizes and outdated furniture often inhibit the ability to be flexible with instructional approaches such as this. Due to size limitations, the current configuration is often reminiscent of a classroom from long ago, with rows of desks all facing in the same direction.

Additionally, the district employs a formalized Multi-Tiered System of Support (MTSS) model for academics, which includes intervention support for reading and mathematics. Universal screening and data meetings occur several times yearly for each grade level to identify students needing intervention. Reading and math interventionists provide small group sessions typically 3-5 times a week with students in grades K-5. Reading intervention is provided by reading specialists, and math tutors provide math intervention. Currently, these sessions take place in various locations because space is limited. Some services are push-in services in the general classroom. Given the classroom size, this service does not always have room or a dedicated space. Therefore, intervention often happens in the hallway. Some services are pull-out services; in this case, students often have to walk to another part of the building for this intervention, and the distance often impedes instructional time.

Data meetings occur three times per year, and progress meetings occur a minimum of twice a year for each grade level, K-5. The district elementary literacy coordinator and elementary STEM coordinator lead these meetings. The data meetings are full-day

meetings where the grade-level team, administrators, and interventionists collaborate to analyze data and develop instructional plans for students needing reading and math intervention. There are typically about 12-15 participants in the meeting, and finding a location for these meetings is extremely difficult. Conference rooms are typically booked for special education meetings and, even if available, are usually too small to accommodate the group. In addition, the team needs the ability to project during the meetings, and currently, not all conference rooms are equipped with projectors. Often, the meeting ends up being scheduled in a specialist classroom if there is no class scheduled that day, and sometimes, the meeting has to change locations mid-way through because the space is not available all day. This MTSS process is a critical part of the district's work to provide targeted instruction to our students. Not having a dedicated space for this teacher collaboration is quite challenging.

Proposed Changes

The Wilmington Public Schools has invested significantly in programs, materials, and professional development to ensure the curricula at the elementary level are updated and aligned. Our current classrooms inhibit the ability of our teachers to maximize the curricular resources provided fully. Ideally, new classroom spaces should allow for multiple zones where whole-group and small-group instruction can fluidly transition without stopping and moving furniture. There should be room for whole-class demonstrations, small-group instruction, student collaboration, and independent work. There should be space for stations or center activities where students can explore and practice skills in math workshops and ample room for science demonstrations and hands-on experiments. In addition, having an extended learning area shared by a couple of classrooms or an entire grade would allow for more grade-level collaboration and opportunities for enrichment activities. The current configuration inhibits classrooms from coming together for activities or grade-level events. An extended learning area would create opportunities for grade-level community meetings, cultural enrichment activities, student work showcases, group instructional demonstrations, reader’s theater presentations, etc.

Given the amount of intervention and progress monitoring provided for both academics in reading and math and related services such as speech, OT, or SEL supports, additional small group rooms accessible by both the classroom and hallway would allow greater flexibility for student screening, administering assessments to students who need a small group setting, and differentiated instruction in the classroom with students working in small groups.

As noted above, the MTSS process is integral to how we operate in all of our K-5 school buildings. Therefore, a dedicated space to accommodate 15 adults for data meetings is needed. This collaboration space should be designed so all participants can see what is projected and have space to work and develop intervention plans.

English Language Arts/Literacy

Current Practices

Wilmington Public Schools just recently made the recommendation to adopt Into Reading from Houghton-Mifflin-Harcourt. A Literacy Committee selected this new program following a rigorous selection process and pilot experience. The program will be fully implemented in the fall of 2024. We are committed to providing an evidence-based and comprehensive core literacy program as a district. This program provides comprehensive, explicit, and systematic instruction in foundational literacy skills, aligned with a research-based scope and sequence that gives students a foundation to become confident, independent readers and writers.

A typical literacy block will include:

- Explicit instruction and practice on foundational reading skills
    - Phonemic awareness
    - Phonics
    - Decoding
    - Encoding
- Targeted, whole-class reading or writing instruction in a teacher-led lesson
    - Mini-lesson with prior connection and explicit instruction
    - Modeling and explanation of teaching point
    - Student partners practice the teaching point
    - Restate teaching point and send off for independent practice and small-group work
- Small-group instruction
    - Targeted instruction for students with similar needs in small groups using a variety of resources to target grade-level skills and strategies
- Interactive and independent reading and writing activities
    - Read alouds with modeling
    - Vocabulary instruction

- Writing independently or with a partner
- Independent reading

Proposed Changes

Given that the district is currently poised to implement this new program, there are no other anticipated changes in the area of English Language Arts.

Mathematics

Current Practices

Wilmington Public Schools has used the Envision Math program as our primary tool to deliver math instruction aligned with the MA Frameworks. This program is used in grades K-8, ensuring vertical alignment, a shared vocabulary, and easy transitions for students moving from grade to grade. Envisions helps students develop a deep conceptual understanding of grade-level math concepts. Lessons include problem-based, interactive learning activities that build critical thinking skills and develop a concrete understanding of math concepts. Visual instruction then deepens students' understanding of the concept. The program also provides additional activities and resources to reinforce learning through videos, practice activities, and games.

After implementing the MTSS model, we used a universal screener to assess students' math skills. The data we collected from the screener helped us identify students' mathematical abilities, allowing us insight into the diverse math needs of all students. However, teachers struggled to find the time to address these needs during the math block. We realized we needed to re-think how math was being taught, so we provided professional development on implementing a math workshop model for grades K-5. The math workshop model enabled us to create routines and a structure, allowing more opportunities for differentiation and individualized, and small-group instruction. Teachers continue to use the Envisions program but have restructured how it is delivered to create more opportunities to meet with small groups of students for reteaching or extending a lesson. This workshop model also maximizes student collaboration through partner work and incorporates math centers for practice and reinforcement of skills.

Proposed Changes

The district has recently focused on shifting the instructional model for the math block to provide opportunities and time for classroom teachers to differentiate instruction for all

learners. In every elementary classroom, there is a wide range of math skills; some students need extra support, and some extend their thinking to mathematical concepts beyond grade-level expectations. Restructuring the model has helped teachers and support staff differentiate instruction more consistently and offer more intervention opportunities for students in class. These changes have resulted in more student movement throughout the classroom. Students may work collaboratively in small groups, independently or with a partner, and/or at a table receiving teacher support. In addition, the district has been assisting teachers in developing a more nuanced understanding of mathematics instruction to incorporate procedural fluency, conceptual understanding, and problem-solving. As part of that effort, classroom teachers are utilizing more games and activities that promote student engagement during the math workshop time.

The availability of flexible seating and furniture, breakout spaces within and near classrooms, and the clustering of grade-level classrooms will enhance the district's ability to continue implementing this model. Finally, the district is interested in collaborating with the design team to explore ways that the building itself might be used to support math learning. We envision interactive architectural features that support the development of critical mathematical skills like early numeracy, pattern recognition, spatial reasoning, and problem-solving.

Science

Current Practices

Wilmington public schools adopted the Elevate Science program as our core instructional tool for grades K-5. The phenomena-based science curriculum immerses students in the inquiry process and hands-on learning experiences. The program organizes science learning around phenomena-based, real-world storylines called Quests. The storyline of the Quests leads to hands-on labs. Students then synthesize lab experiences and present their explanations. The program uses text, inquiry notebooks, and digital learning. The district adopted this program just before the pandemic, and therefore, the hands-on components of the program were minimally used. Since then, we have prioritized the hands-on lab experiences for our students because we recognize the value of learning by doing.

The MA Science and Technology/Engineering (STE) Curriculum Frameworks are an adaptation of the NGSS standards based on the Framework for K-12 Science Education.

The Frameworks put forth a vision for all students to have access to quality science experiences. To support learning experiences with phenomena, classrooms must provide opportunities for students to collaborate, investigate, design, observe, react, inquire, formulate questions, gather data, gather, collect, and use evidence, and make connections to their prior experiences.

Phenomena-based science instruction is hands-on, inquiry-based, and exploratory, with the goal of developing in students the knowledge, skills, and habits of scientists and engineers. At the elementary level, formal science instruction typically occurs during 30-60-minute blocks two or three times a week. While teachers have been very resourceful in using the existing classrooms and common spaces for science instruction, the limitations of those current spaces pose significant challenges. Due to a lack of a designated science space, teaching models and manipulatives must be dismantled and rebuilt between science lessons, which often means a loss of continuity, time on learning, and teacher prep time.

Proposed Changes

Wilmington's science curriculum assumes a teacher's ability to set up differentiated, inquiry-based, material-intensive science experiments that children can implement and observe in the classroom. It also assumes the ability to teach in cooperative, small-group learning teams. Currently, classroom space limitations and a lack of break-out space often necessitate using the hallway, gym, or cafeteria for science instruction. A goal for the district is to have educational facilities that allow staff and students to fully realize this kind of science learning.

The district envisions this type of project-based, investigative learning taking place in classrooms and extended learning spaces, both equipped with the following.

- Storage space for science kits being used for a particular unit, including both durable materials and consumables
- Water available with a sink deep enough to facilitate cleaning equipment and filling large basins of water for activities like buoyancy experiments
- Access to robust, interactive technology with applications and software used to support curricular access and application
- Flexibility in space and furniture to support various instructional strategies, activities, group sizes, and learning modalities
- Ample counter space to display student work, place ongoing works in progress, and/or for set-up purposes

Social Studies

Current Practices

The district recently completed a review of elementary (K-5) social studies curriculum and instruction in June 2022. The goal was to ensure more consistent practices and to align with the recently revised *Massachusetts History and Social Science Frameworks* (2018).

At the elementary level, social studies instruction typically takes place during 30-60-minute blocks of daily time. Most teachers alternate between science units and social studies units during the school year. Grades K-2 and 4-5 implement McGraw-Hill's *Impact Social Studies (2020)*, and Grade 3 uses Gibbs-Smith's *Massachusetts, Our Home (2020)* as the basis for Social Studies instruction.

The current social studies units are aligned with the grade-level content prescribed in the Massachusetts curriculum frameworks. While engaging with the content, the curriculum focuses on developing the students' critical skills necessary to become engaged, informed, responsible citizens.

IMPACT Social Studies teaches the art and strategy of inquiry as teachers model how to ask questions and do research. Students learn how to analyze sources and consider multiple perspectives as they think critically about problems, events, places, and people. Each chapter inquiry project is designed to engage students by encouraging them to ask questions and look for answers while providing opportunities for students to work together collaboratively.

Both programs, Impact, and Massachusetts Our Home, require students to work in various instructional settings: whole class, small group, and with partners. It will be important to ensure classrooms are designed to accommodate all settings.

Proposed Changes

We do not anticipate any changes to the social studies programming in the next five years that would impact the planning of the design phase of this building project.

World Languages

There are currently no world languages offered as part of the Wilmington Public School elementary curriculum. If a world language program were to be added in the future,

instruction would take place within the general education classroom, so designated space would not be required.

Academic Support Programming Spaces

English Language Education (ELE)

Current Practices

Wilmington is committed to equity for all learners and provides instruction that honors and draws upon students' and families' cultural and linguistic assets. We are proud to be a multilingual community of learners who speak over thirty-five home languages. The English Language Education (ELE) program model is Sheltered English Immersion (SEI), which includes direct English language instruction with licensed ESL teachers and content area instruction in the general education classroom with teachers who have earned the SEI endorsement.

Educators use grade-level Massachusetts Curriculum and WIDA ELD Standards frameworks to provide English language instruction and assessment for multilingual students. WIDA Prime has reviewed ESL Curriculum resources (Reach, Inside, and The Edge) for correlation to WIDA Standards. ESL instruction in Wilmington also uses supplemental texts and materials aligned to grade-level content themes and curricula. Through shared responsibility and collaboration, educators in grades Pre-K -12 provide rigorous instruction for multilingual learners at all levels of English language proficiency to meet the program's primary goal: *to provide quality, research-based English language instruction that ensures multilingual learners develop the advanced social and academic language skills necessary to succeed in school and become active, involved members and leaders in the community.*

Wilmington Public Schools envision maintaining the ELE program at all locations and providing appropriate resources and staffing for the enrolled English learners. Two full-time teachers currently support four elementary and two early childhood schools. The ESL Curriculum Team leader teaches English learners in grades 6-12 at the middle and high schools. English learner rosters at each school may fluctuate according to English language proficiency assessment results on the ACCESS, MODEL, or WIDA Screener. ESL teachers adapt their schedules and time at each school to accommodate the number of students who enter and exit the program.

ESL is its own content area and requires a designated instructional environment conducive to language acquisition and sociolinguistic growth. The current ESL program at each building consists of multi-age pull-out instruction in small, often shared, spaces, such as offices, storage areas, and sectioned-off areas of classrooms. With limited space and background noise, ESL teachers cannot provide the range of instructional activities necessary for active language practice, such as multisensory experiences, kinesthetic activities, and tasks that involve choral language production.

In addition to limited instructional space, there is currently no designated area for one-on-one screening for students new to the district. There is also no area for parent-teacher meetings with interpreters present nor a specific space to assist multilingual families with the registration process.

Proposed Changes

Regardless of the configuration of a new building, Pre-K-K, Pre-K-3, or Pre-K-5, staffing, and scheduling will continue to be determined based on the number of English learners at each school and grade level. If the school configuration is Pre-K-K or Pre-K-3, it will be essential to have one dedicated ESL classroom where students can receive small-group instruction. The space would also serve as an office and storage space for the ESL teacher. If the configuration is a Pre-K-5 school, two dedicated ESL classroom spaces will be necessary: one in the Pre-K-2 area and one in the grade 3-5 area.

Each space dedicated to ESL instruction would accommodate small group instruction for 1-15 students. A flexible learning environment will allow the ESL teacher to provide English language instruction activities that may include groups of multi-age learners and heterogeneous groups of English learners and peer models. English language instruction often involves observations, discussions, and reports on the outside atmosphere. An appropriate space would include one with plenty of natural light and windows to facilitate language practice related to temperature, wind speed, weather, and changing seasons. A sink, projector/Smart Board, plenty of electrical outlets, and movable furniture would also support learning and flexible instructional groups.

In addition, Wilmington Public Schools strives to provide engaging academic and social-emotional learning for all learners. Many multilingual learners may require additional social-emotional considerations, such as those new to English who have recently moved or have experienced cultural dissonance or trauma. An instructional space that allows some anonymity and considers the mental well-being of multilingual learners would be

located in an area of the building with less foot traffic but convenience to other classrooms, the health office, counselors, and restrooms. The learning space could also be an alternative meeting place for social activities, student lunch, and after-school activities. English learners require a quiet space for English proficiency assessments (WIDA Screener, MODEL, and ACCESS) but also room to make noise and take risks with social and academic language. Proximity to other classrooms and offices should be a consideration as they should be a part of the learning community.

Wilmington's ELE parent/family collaboration and professional learning opportunities are evolving and ongoing. Therefore, the ESL space would also serve as a meeting place for small groups of parents to meet as a school-based English learner parent advisory council (ELPAC) or for educators to conduct data reviews and professional learning groups.

Student Counseling and Support Services

Current Practices

The Counseling staff at the Wilmington Public Schools are integral to a student's educational experience across all domains. Specifically, the counseling staff at the elementary level promotes the academic achievement and social/emotional development of all students through the use of data-informed tiered interventions, which include large group, classroom, small group, and individual interventions. The clinical staff at the elementary level consists of school counselors, school psychologists, and social-emotional learning (SEL)/family engagement specialists.

Each student has access to the School Counselor in each elementary building who provides counseling to students (individual, small group, whole group). The School Counselors also consult and collaborate with parents, staff, and outside care providers, providing crisis response services and family outreach. Currently, there are six School Counselors at the elementary level, one per building, three being on the Northside of town as follows:

- 1.0 School Counselor at the Wildwood ECC
- 1.0 School Counselor at the Woburn Street
- 1.0 School Counselor at the North Intermediate

We currently have three district School Psychologists, shared among the six elementary schools, who are available to assist with educational and psychological evaluations and

provide individual counseling to students on Individualized Education Programs (IEP) and crisis intervention at each elementary school. Therefore, the North side of town has the equivalent of 1.5 FTE School Psychologists.

The district has 2.0 Social Emotional Learning (SEL)/Family Engagement Specialists who provide wellness support, case management services, and resources to students and families, including assisting families navigating the medical, mental health & social service systems with district-wide alignment, providing acute mental health intervention for students & short-term crisis counseling with high-need students, supporting district-wide SEL programming and coaching to staff and Intensive/high-need student & family case management district-wide.
Currently, there are:

- 1.0 allocated to 6 elementary schools (.5 at Wildwood, North, and Woburn Street)
- 1.0 allocated to the middle school and high school

Proposed Changes

The clinical staff are key members of a multidisciplinary team that is able to work with students in the office setting, in classrooms, and small groups throughout the building. Creating welcoming and confidential spaces with designated areas for students to have sensitive discussions with clinical staff members is imperative at the elementary level. Having specific counseling offices and areas to provide small peer social groups allows designated safe spaces for students to go to for social, emotional, or behavioral support. These areas would allow for staff consults and parent/outside provider phone calls and meetings.

The following options below provide for the recommended spaces needed for clinical staff based on FTEs, as each individual would need their own space:

Pre-K - Grade 5 (755 students + Pre-K):
School Counselor: 3.0 FTE
School Psychologist: 1.3 FTE
SEL/ Family Engagement Specialist: 0 .5 FTE

Pre-K- Grade 3 (510 students plus Pre-K):
School Counselor: 2.0 . FTE
School Psychologist: 0.8 FTE
SEL/Family Engagement Specialist: 0 .4 FTE

Pre-K- Kindergarten (130 students + Pre-K):
School Counselor: 1.0 FTE
School Psychologist: 0.3 FTE
SEL/Family Engagement Specialist: 0 .2 FTE

Social Emotional Learning

The Wilmington Public Schools is committed to providing a comprehensive, inclusive, evidence-based social-emotional learning model to incorporate the five (5) core competencies from the Collaborative for Academic, Social, Emotional, and Learning (CASEL) framework. The social and emotional environments of the classroom at the elementary level profoundly impact a student's ability to learn. Creating affirming and safe environments for students to develop the essential competencies is vital for all students to feel successful. A supportive classroom environment includes:

- Community-building
- Creating a sense of belonging and emotional safety
- Student-centered discipline

Resource: CASEL SEL in the Classroom

Below is a sample of some of the evidence-based practices that are integrated into most of the elementary classrooms and/or small group settings:

Positive Behavioral Interventions and Supports (PBIS): PBIS is a prevention framework for establishing and sustaining effective school-wide and individual behavior supports needed to enhance academic, social, and behavioral outcomes for all students. The district supports capacity building, implementation, and sustainment of PBIS across a multi-tiered support system (MTSS).
Tier 1: Tier 1, or Universal Level, refers to environmental, social-emotional, behavioral, and academic supports provided schoolwide to all students. These supports are delivered by all staff in the building to all students and include:

- Use of a common language and clear positive expectations of a behavior such as responsibility, respect, safety, and kindness
- Defined expectations for specific locations and routines such as arrival, recess, classrooms, hallways, and cafeteria, that are explicitly taught using lesson plans and student activities

- A common academic curriculum and additional social, emotional, and problem-solving skills taught throughout the year
- A common acknowledgment system to reinforce the expected behaviors and celebrate as a community
- The use of a consistent response system with a clear flow chart for responding to unexpected behaviors with distinctions and definitions for staff-managed vs. administrative-managed behaviors and a system for staff to collect data on behavioral incidents
- Data (behavior, surveys, attendance, academics, etc.) is collected, reviewed, and used to action plan throughout the school year to improve the environment and supports for students, staff, and families
- A representative building-level team reviews data, creates student practices, and builds systems to train, coach, and support staff with implementing PBIS in the building

Tier 2: Tier 2 or Targeted Level refers to extra targeted support for struggling students. These include:

- Specialized groups or "check-ins" that provide students with increased structure, frequent feedback, acknowledgment, and enhanced teaching of self-management, organizational, relationship, and decision-making skills.
- Students receiving Tier 2 support continue to receive all of the support and interventions at the Tier 1 level as well.

Tier 3: Tier 3, or Intensive Level, is focused on individual students who need individualized support and services due to ongoing academic, behavioral, or social-emotional concerns.

- Students receiving Tier 3 support receive all of the support and interventions at the Tier 1 and 2 levels as well.

Resource: Step 1.1 Design a Safe Environment (Pg. 11): **Supporting and Responding to Students' Social, Emotional, and Behavioral Needs: Evidence-Based Practices for Educators**

The Center on PBIS Positive Behavioral Interventions and Supports

Panorama Education: The district has partnered with Panorama Education, a universal SEL assessment tool and data system to help educators understand student's SEL competencies and provide the appropriate tiered interventions. Universal screening occurs at the elementary level two times a year to monitor district, school, and student SEL data in an

ongoing way to target trends and themes. Staff utilizes a professional learning library "playbook" with targeted classroom strategies/lessons to enhance the classroom environment. The following domains are available in the playbook to support students across all the tiers to improve student outcomes:

- Attendance
- Behavior
- Climate
- ELA
- Mathematics
- Social Emotional Learning

Resource: Panorama Education

The Massachusetts Aggression Reduction Center (MARC): MARC, out of Bridgewater State University, provides prevention programs, services, research, and resources to schools and families. Preventative lesson plans are used to create a school climate that promotes safety, civil communication, and respect for differences and for others. This curriculum also builds on the skills of staff members to prevent, identify, and respond to bullying. The focus of the MARC program is on:

- Supporting social and emotional adjustment in children, including ways to eliminate bullying and cyberbullying
- Fighting
- Bias and diversity
- Peer relationships
- Screen and social media use

Resource: Massachusetts Aggression Reduction Center Bridgewater State University

Responsive Classroom (RC) Morning Meeting: RC is an evidence-based approach to teaching and student-centered discipline that fosters social-emotional development and focuses on four key domains:

- Engaging academics
- Positive community
- Effective management
- Developmental awareness

Explicit teaching practices and lessons are developmentally interactive, use common language, provide students with choices, establish routines, and build a sense of

community within the classroom setting. These practices foster cooperation, responsibility, self-control, empathy, and independence to increase learning. Starting the day with a structured morning meeting is essential to create a safe learning environment and to practice appropriate social skills. The following four (4) components are incorporated into the morning meeting:

- Greeting
- Sharing (around the circle, partner or dialogue)
- Group activity (song, chant, poem game or other)
- Morning message

Resource: Responsive Classroom

Zones of Regulation: A curriculum to foster self-regulation and emotional control to help students think and talk about their feelings. Students learn to identify how they are feeling and use strategies to regulate their emotions to help meet their goals and task demands. The curriculum, including supplementary resources and visual, uses the four (4) Zones of Regulations to sort feelings, states of alertness and energy levels:

- **Blue** Zone: Sad, Bored, Tired, Sick
- **Green** Zone: Happy, Focused, Calm Proud
- **Yellow** Zone: Worried, Frustrated, Silly, Excited
- **Red** Zone: Overjoyed/Elated, Panicked, Angry, Terrified

Resource: Zones of Regulation

Health Services

Current Practices

School nurses, grounded in ethical and evidence-based practice, are the leaders who bridge health care and education, provide care coordination, advocate for quality student-centered care, and collaborate to design systems that allow individuals to develop their full potential. Care is provided during regular school hours following the guidelines for policy and practice outlined in the MA DPH Comprehensive School Health Manual. Each elementary school has a full-time nurse. Nurses address the three main components of school health: health services, health education, and a healthy school environment. Through these critical components, school nurses support the school's academic mission while promoting and improving students' health. Nurses provide skilled care based on

assessment of student and staff complaints of illness and injury. Nurses create healthcare plans for students with identified medical issues to address their specific needs. Nurses serve as key support for families seeking resources for concerns such as food insecurity, mental health issues, and substance use. Throughout the course of a day, nurses distribute medications, perform diabetic testing, perform vision and other medical screenings, and address immediate health needs. There is limited or no space to allow for needed resting areas in the current nurses' offices. In addition, space is lacking for confidential health discussions or phone calls.

Proposed Changes

The provision of larger, purposefully designed health office space with identified storage, student rest areas, and nurse work areas that are both calming and confidential will allow the nurses in the building to provide efficient and student-centered nursing care. Nurses will have increased visibility of students of all ages while resting. Wilmington envisions integrating school-based health services, along with collaboration with staff, families, and outside care providers, to maximize student health and learning. In addition to space for traditional nursing tasks, students with medical conditions such as type 1 diabetes will have an allocated space specifically designed for their care needs. The newly designed building will allow for greater communication, space for family outreach, and student health education. Consideration will be given to the ever-increasing role of technology in the delivery of care and will include space for data entry into student medical records.

Staffing Levels	FTE
Pre-K-K	1.0 FTE
Pre-K-3	1.0. FTE
Pre-K-5	2.0 FTE

Extended Day Learning

Extended Day Program: CARES

The Wilmington Public Schools provides a tuition-based before and after-school Extended Day Program (CARES) for children enrolled in the Wilmington Public Schools. The program is open five (5) days a week when school is in session. The Before School program begins at 6:45 a.m., and the After-School program is open from school dismissal to 5:30 p.m.

The CARES Program also offers February and April programs during school vacations at the Woburn Street School and a seven (7)-week Summer Program at the North Intermediate School. Historically, the school vacation weeks have averaged 120 students per day. The 2023 Summer Program had 226 students enrolled, with an average of 130 students per day.

The Before School program exists at five of the six elementary school sites. It serves a relatively smaller number of children (ranging from thirteen (13) students at Boutwell to seventy (70) students at Woburn Street) in their home school. Currently, Wildwood has no students enrolled in the before-school program since this school day starts at 7:45 a.m.

Before School Extended Day Site	# of students enrolled
Boutwell	13
Wildwood-pre closure/time change	42
Shawsheen	46
Woburn Street	70
North Intermediate	33
West Intermediate	24

The After-School program serves approximately 403 students and is housed at (five) 5 sites:

After School Extended Day Site	School Population Served	# of students enrolled
Boutwell	Boutwell	44
Wildwood @ North	Wildwood	43
Shawsheen	Shawsheen	119

Woburn Street	Woburn Street	118
North Intermediate	North Intermediate	34
West Intermediate	West Intermediate	45

The after-school program is offered at each school location except for the Wildwood school; those students are transported to the North Intermediate School by a yellow school bus.

The extended day program provides opportunities for children to participate in various activities such as arts and crafts, dramatic play, group games, gross motor play, and sensory and science activities. The program also provides quiet spaces for reading and completing homework. The program uses a combination of dedicated spaces, such as classrooms, the gym, the cafeteria, the art room, the music room, the library, athletic fields, and playgrounds.

The extended day program is overseen by the Program Coordinator, Assistant Program Coordinator, five (5) Site Coordinators, and two (2) Site Apprentices. The Program Coordinator and Assistant Program Coordinator have dedicated office space at the North Intermediate School on the lower level of the building and an adequate size storage room.

Site Coordinators/Apprentices currently use shared space on the stage of each building that is used as office and storage space. Since it is a shared space, CARES personnel are often required to relocate staff equipment to accommodate school meetings, assemblies, and programs. The program employs approximately 54 part-time staff members, including Group Leaders and Leaders in Training.

Currently on the North Side of Wilmington:

The Before School program is held at the Wildwood Early Childhood Center, Woburn Street School, and North Intermediate School. The before-school program at Wildwood Early Childhood Center currently has no student enrollment due to its early start time.

The CARES Program service ranges from thirty-three (33) students at the North Intermediate School to seventy (70) students at Woburn Street School in their home schools. The program employs two (2) full-time Site Coordinators, three (3) full-time Site Coordinator Apprentices, and eleven (11) part-time staff that consist of Group Leaders.

Current Daily Staffing:

North Intermediate and Wildwood CARES programs share personnel and rotate staffing throughout the day.

Wildwood School, Grade K- One (1) full-time Site Coordinator that oversees the one (1) full-time Site Coordinator Apprentice, three (3) part-time Group Leaders, and two (2) part-time Leaders in Training , for seven (7) total staff.

Woburn Street School Grades 1- 3- One (1) full-time Site Coordinator that oversees, two (2) full-time Site Coordinator Apprentices, six (6) part-time Group Leaders, ten (10) part-time Leaders in Training, for 19 total staff.

North Intermediate School, Grades 4 - 5- One (1) Site Coordinator, four (4) part-time Group Leaders, and two (2) part-time Leaders in Training, for seven (7) total staff.

Proposed Changes

The ideal configuration would be the Pre-K-5 configuration but the following information applies to all possible building configurations.

Building Access:

In consideration of safety, monitoring, and access, in the new building, the CARES Program would ideally be in a dedicated area. The location would require a parent pin pad entry in the program wing for parents dropping off and picking up their children.

Secure Office and Meeting Spaces:

Office space is needed that is large enough for the Program Coordinator and Assistant Coordinator. Shared office/workspace is needed for Site Coordinators and Apprentices,to allow for storage of supplies and equipment as well as private meeting space.

The program also requires a large storage area (8x8) to accommodate CARES-specific program equipment and supplies for vacation programs:

- Nursing/first aid supplies
- Water play equipment
- Sports/recreation equipment
- Arts and crafts materials

Program Space Requirements:

The program will continue to use shared spaces such as the art room, library, gym, and cafeteria. The continual use of classroom spaces are needed for students to do homework, read, and participate in quiet/calm activities.

CARES is a year-round program that requires seasonal HVAC support, including air conditioning, a designated area for CARES students during check-in at dismissal with access to the outdoors away from buses and car riders, and outdoor space that includes a canopied area for shade and picnic tables, a playground, ball field and field space for free play.

Pre-K–5 Building Student and Staff Population:

The North side extended day program currently serves approximately 103 students before school and 195 students after school. To operate the program successfully, the program requires:

Program Coordinator, Assistant Program Coordinator, two (2) Site Coordinators, two (2) Site Coordinator Apprentices, approximately 13 Group Leaders, and 14 Leaders in Training for 33 total staff.

Pre-K–3 Building

The North side extended day program for a Pre-K-3 would serve approximately 70 students before school and 161 students after school. To operate the program successfully, the program requires:

- 1 (one) Site Coordinator, 2 (two) Site Coordinator Apprentices, 7 (seven) Group Leaders, and 7 (seven) Leaders in Training for 17 total staff.

The Program Coordinator and Assistant Program Coordinator will continue to reside in the North Intermediate School.

Pre-K-K Building

The North side extended day program for a Pre-K-K building would serve approximately 40 students before and after school. To operate the program successfully, the program requires:

- One (1) Site Coordinator, three (3) Group Leaders, and two (2) Leaders in Training six (6) total staff.

The Program Coordinator and Assistant Program Coordinator will continue to reside in the North Intermediate School.

Summer Enrichment Programs

Current Practices

Wilmington Public Schools currently offers a summer enrichment program primarily for intermediate and secondary-level students. The summer enrichment program is housed in the high school and middle school.

The Wilmington Recreation Department provides program offerings housed within many schools in the district throughout different times in the summer. Offerings and locations vary from year to year.

While the CARES program typically runs at several schools in the mornings and afternoons during the school year, the program moves to the North Intermediate School for all Wilmington students who are enrolled in the summer program.

Proposed Changes

A new building will likely be the facility that houses the summer CARES program, particularly if the configuration is either Pre-K-3 or Pre-K-5. As identified in the section above, a consolidated building would provide an ideal space to house the CARES program throughout the year and during the summer as well. The facility would ideally be climate-controlled since it will house students throughout the summer months.

Teacher Planning

Teacher Planning Spaces and Planning Times

Current Practices

Each elementary teacher by contract receives five (5) unassigned periods of 45 minutes duration, per week. The unassigned preparation time is typically provided when the elementary specialists meet with students.

Ideally, specialist subjects are scheduled to provide common planning time for grade-level teachers and the opportunity for teachers to collaborate with colleagues. Currently, this is only successful in buildings that maintain full-time specialist teachers. Woburn Street School and Shawsheen Elementary (on the West side of town) are the two buildings with enrollment that support the assignment of full-time specialists. The other schools, Wildwood and North Intermediate, share specialists, which significantly limits the scheduling flexibility and does not allow for common planning time.

When considering teacher planning, several activities must be considered. These include, but are not limited to:

- Extensive and frequent data meetings throughout the year
- Special Education Team meetings

- Consultation with curriculum coordinators and special education team chairs
- Professional Learning Community (PLC) work
- Spaces to facilitate teacher collaboration

Teacher collaboration and preparation spaces are severely limited in all three schools at the current time. The Wildwood Early Childhood Center is currently housed in two locations, the Middle School and West Intermediate School. Given the relocation of Wildwood after the school closure, space for teacher planning and collaboration is minimal, and staff are physically located in two separate buildings. There is one conference room primarily utilized for special education team meetings. Teacher lunch and work spaces are shared with the host schools. Collaboration space is non-existent.

Woburn Street School has a small conference room that is also used for special education meetings. The teachers' lunchroom doubles as a workspace. There is no dedicated space for teacher collaboration. When data meetings are held, the multiple teachers rearrange furniture within their shared classroom to accommodate the dozen-plus adults who sit in primary student-sized chairs and tables.

North Intermediate School has a conference room, but there are offices off of the space, so students and staff need to walk through the space where the conference table is during meetings. Additionally, North Intermediate School has a classroom space that was formerly a computer lab, now used as a space for data meetings. The space also houses the district K-5 STEM Coordinator and K-5 Literacy Coordinator. In addition, the laminator, die-cut machine, paper cutters, etc., reside in the space. Even though it is multi-purpose, the space is well-suited for holding data meetings at North Intermediate School. Overall, the district has limited space for meetings, collaboration, and preparation.

Proposed Changes

In the future, we hope to increase the opportunity for teacher collaboration time through increased specialist offerings and dedicated space. If we move forward with a consolidated building project, reducing specialists' travel time will also allow for more flexibility in scheduling, increasing opportunities for grade-level common planning time. Having dedicated space for teams to plan and collaborate will be important. In addition, there is a need for a private, professional space where teachers can make a phone call or participate in a virtual meeting. Teacher collaboration space should be in the general

area of their grade-level classrooms. Well-equipped teacher workrooms will also be necessary to allow for efficient planning and material preparation.

Professional Development Practices

Current Practices

Professional Development (PD) in the Wilmington Public Schools is designed to support all staff's continuous professional growth and development. A Professional Development Committee (PDC) is formed each year. This committee is a representative group of Wilmington Educators that meets monthly to plan and monitor professional development activities and serve as a conduit between educators and the district's curriculum leadership team relative to professional development needs. In addition to planning the full-day professional development program, the PDC gathers feedback and approves professional development requests. A Wilmington educator and the Assistant Superintendent for Curriculum and Staff Development co-chair the PDC.

The district typically has two full professional days prior to the arrival of students at the beginning of the school year. The first day is related to the opening of schools and the kick-off of the school year. The second day is dedicated to PD, which is planned by the PDC. Four early release days throughout the year are referred to as Curriculum Improvement Time (CIT) Days. Staff are required to stay for an additional hour on these days. Because of the eight schools' varied start and end times, there are approximately two hours of common time shared by all schools that can be used for district-wide professional development. In addition to the four (4) CIT days, one (1) additional early release day each year is dedicated to professional development. However, unlike the CIT days, this day is not extended by an hour, so there is minimal time when all district staff is available at the same time. Therefore, this early release day is typically for building-based professional development.

Professional development is sometimes embedded in the school day to support implementing new initiatives and/or curriculum programming. This type of professional development requires significant substitute coverage, but given our limited time for PD, it is the most effective way to ensure the teachers receive the required training. Given our limited substitute pool, this is especially challenging to support within the district. Additional challenges include finding a spot for the trainer and the team because classrooms are full when school is in session. We sometimes reserve a large instructional

space at the high school, but that often displaces students, and time is wasted traveling to and from the site.

The district also provides a great deal of optional professional development sessions after school. Teachers who participate earn inservice credit. These sessions are both in-person and virtual, and many are now asynchronous. The district also runs a comprehensive induction and mentoring program that supports teachers new to Wilmington during their first three years. Finally, the district supports teachers' growth by sending individual educators and teams to high-quality workshops and courses offered by outside organizations.

Proposed Changes

A consolidated school would reduce the number of schools with different start and end times, allowing for early release time to be used far more efficiently. Ideally, a new school building would have a space dedicated to professional development that could accommodate approximately forty (40) people. If it had the option of a retractable wall that could divide the space into two sections, each seating twenty (20), it would allow the space to be used simultaneously for more than one purpose. A data meeting and a special education meeting could happen concurrently during the day, or the partition could be opened to accommodate a professional development training or staff meeting. Space for professional development should also be well-equipped with appropriate technology for adult learning.

In addition, it will be important that professional development be provided to ensure staff know how to fully access and utilize the features of a new building. We are currently providing professional development related to math workshops, incorporating stations and small group rotations. The new classroom sizes, configuration, break-out spaces between classrooms, and extended learning spaces will allow this to happen more readily, but teachers will need coaching on how to best utilize the new space. They will need support in reenvisioning curriculum delivery in other subjects as well. Discussions are ongoing about this topic, and more information will be provided in the PSR submission.

Pre-Kindergarten

Wilmington Public Schools’ plan for preschool programming is to have two half-day preschool classrooms with one full-day preschool classroom, ensuring a continuum of services for the students of Wilmington.

Current Practices

Wilmington Public Schools currently offers half-day integrated preschool programming for students aged three to five. The program is designed to expose students to school readiness, pre-academic skills, opportunities for language development, and social interactions with peers. As with other district elementary and early childhood programming, students are assigned to a school based on their home address. The two schools currently offering preschool are the Boutwell Early Childhood Center and the Wildwood Early Childhood Center. The program utilizes a district-wide academic curriculum aligned with state standards. Related services staff, such as speech-language pathologists, occupational therapists, BCBAs, and physical therapists, can consult with classroom teachers and provide services.

Each of these schools currently has two integrated preschool classrooms running two sessions each. The classes are taught by special education teachers, each supported by an educational assistant. Sessions run 2.5 hours daily, Monday through Thursday, with sessions offered in the morning or afternoon. Classroom composition includes both students with identified disabilities who receive special education services as well as typical peer models. These community peers are selected for the program through a lottery system and pay monthly tuition. Class sizes ranges do not exceed fifteen students.

Proposed Changes

Before the pandemic, the Wilmington Public Schools offered families half-day and full-day Integrated Preschool options. The full-day program was designed primarily for those students aged four turning five in their pre-kindergarten year who might require more exposure to school readiness and/or oral language skills and additional peer interaction. These classes ran for five and one-half hours, four days per week, with one class at each Early Childhood center.

The district proposes reinstating this model as one component of the Integrated Preschool Program. This would involve the addition of one full-day classroom with a teacher and an educational assistant serving students with disabilities as well as typical peers from the community. Adding this program would ensure that Wilmington provides various options to best meet the student population's needs.

Kindergarten

Current Practices

Wilmington Public Schools offers free, full-day kindergarten for all students in the district who will be five years of age before September 1st of that school year. Students are assigned to one of the district's two Early Childhood Centers (ECC) based on their address. At the Wildwood ECC, there are currently seven kindergarten classrooms. Each classroom has a full-time teacher and educational assistant.

Within the school day, in addition to academic instruction, students participate in various play-based learning activities with their peers. Some of these are within the classroom setting, requiring additional furniture and materials, including but not limited to dramatic play, blocks/building, STEM, and sensory spaces. Outdoor play is an important component of the program, with students accessing outdoor play space each day, weather permitting. At times, students also utilize outdoor spaces for learning, participating in lessons with classroom and/or specialist teachers.

All students receive their core instruction within their assigned homeroom class, including English language arts, mathematics, science, social studies, and social-emotional curriculum. Content is provided through a mix of whole and small-group instruction and station-based activities. Station-based activities include activities that reinforce concepts taught in various subjects, providing time for practice and application of skills. Early literacy and early numeracy data collected throughout the year help teachers determine what types of stations would be most beneficial for students. These stations occur at tables where small groups of students can rotate through. These stations typically change weekly. Intervention supports are available for all students, with a full-time reading specialist and half-time math interventionist providing services for kindergartners at each ECC. These services are provided through a mix of push-in and pull-out sessions based on student needs. Tier II support for students is also available through the school counselor in the areas of social-emotional learning and behavioral support.

Special education services are available to those students who qualify and require assistance in areas such as speech and language, occupational therapy, or academic support. Each ECC has one special education teacher who supports students through an inclusion-based model. Additionally, there are sub-separate programs for those students with disabilities who require intensive programming to make effective progress, which is described in more detail in the Special Education sub-section below. Currently, there are

three of these classrooms at the Wildwood ECC.

Kindergarten students participate in instruction within the unified arts, including Physical Education, Music, Art, and Library. Students access each program once weekly, with Physical Education programming offered to kindergarten students twice weekly. Unified Arts instruction takes place within specialist-specific classrooms, including the gymnasium and library.

Proposed Changes

The Wilmington Public Schools plans to lengthen the school day for kindergarten students should the district move to a consolidated elementary school model, bringing the school day in line with the time for students in grades 1-5. This would add fifty (50) minutes to the current kindergarten schedule, resulting in a school day totaling six hours and twenty minutes. This would allow students a longer school day, providing additional time for academic content and more time for play and exploration. Kindergarten specialist subjects would increase from 30-45 minutes to align with grades 1-5. The additional 25 minutes would be allocated throughout the school day with input from teachers and administration. Not only would this increase the time on learning for students, but it would most efficiently utilize the bussing system, running the elementary school route only once for all students enrolled on the North side. This change would impact only the Pre-K-3 and Pre-K-5 school models, with the five-hour thirty-minute day remaining in place should the district decide to maintain a Pre-K-only building. Providing dedicated space for Art, Music, Physical Education, Health, and Library will be a priority in a new building.

Lunch Programs

Current Practices

The Wilmington Public Schools food services department is dedicated to advancing children's health and physical well-being by providing nutritious meals and encouraging a lifetime of healthy nutritional choices and habits. The elementary cafeterias offer a grab-and-go breakfast that is eaten in the child's classroom. During lunchtime, all meals are consumed in the cafeteria, and there are various healthy lunch options, typically including an entrée, alternate choices, such as whole grain pizza, a vegetarian lunch option, and assorted fresh fruits and vegetables. Gluten-free meals are available upon request.

As a participant in the National School Lunch Program (NSLP) and School Breakfast Program (SBP), the Wilmington Public Schools must serve meals that meet federal meal requirements. Currently, all meals are free for all children. However, we still maintain records if a child qualifies for free or reduced-priced meals. Cashiers utilize the Point of Sale (POS) system to maintain the record of meal counting in the correct category.

Students access their meal account by either using a student ID card or inputting their student ID on the pin pad. Wilmington Public Schools must offer lunch meal components, including a meat/meat alternative, whole grain products, low fat milk, fruits/juice, and vegetables. A reimbursable meal must contain three of the five components, and one component must be a fruit/juice or vegetable.

Current Meals Served Daily by School

School	Breakfast	Lunch	% Before Universal Free Lunch
Wildwood ECC	60 meals (55%)	80 meals (72%)	43%
Woburn Street	132 meals (39%)	256 meals (75%)	48%
North Intermediate	112 meals (47%)	200 meals (84%)	60%

The current staffing for each school consists of Wildwood- two (2) staff totaling seven (7) hours of labor, North Intermediate- four (4) staff totaling 18.5 hours of labor and Woburn Street- five (5) staff members and a total of 27.5 hours of labor.

Wildwood utilizes one serving line and one POS system for two lunch periods. North Intermediate School uses two serving lines and one POS system for two lunches. The Woburn Street School uses two serving lines and two POS systems for three lunch periods. Additionally, they are the only school with a dish machine. In addition, during lunch, all three (3) schools sell a la carte items for purchase.

All three (3) locations use the cafeteria for lunch. Outside of lunchtime, the cafeteria space is utilized for bus arrival, dismissal, or as an auditorium as needed. It is also used for the CARES program before and after school activities.

Proposed Changes

The future educational program prioritizes a cafeteria that can accommodate all students for lunch service in two (2) seatings (per MSBA guidelines, serving 50% of the student population at one time). The district could benefit from a cafeteria sized according to this methodology in order to allow it to be multi-functional. Still, the district proposes a lunch model that differs slightly from this one, depending on the selected grade configuration. The cafeteria should allow for the rapid flow of student traffic through the point of sale, as well as consider the recycling bins, bottle fillers that students can access, and sinks for hand washing before and after eating. It is extremely important that the new or renovated project provide a dining experience that is inclusive of an acoustically separate yet visually connected dining space adjacent to the cafeteria to support all students' emotional needs.

Pre-K-Grade 5

A school that accommodates children from Pre-K to Grade 5 will have a population of approximately 755 students plus Pre-K students. The recommendation would be to have at least three lunch periods, and the cafetorium would need to be able to accommodate seating for 300 students. Serving this number of students would require at least three separate serving lines with at least three POS stations to adequately service the children. The number of serving lines and POS stations would ultimately be determined by the amount of time allotted for each lunch period.

Staffing hours always reflect the number of meals served during the school day, including equivalent ala carte purchases. Based on current staffing, a Pre-K- 5 school would need to have approximately 48.5 hours of labor each day and an estimated 12 staff members.

Serving Pre-K in a different location rather than the serving area adjacent to the kitchen would create challenges for staffing and proper meal-serving practices. If this is a consideration, a portable serving line and POS station would be needed in that location. Also, hot portable water would be needed for the board of health requirements.

Pre-K-3

A school that accommodates children from Pre-K to Grade two (2) will have a population of approximately 510 plus Pre-K students. The recommendation would be to have at least two (2) lunch periods, and the cafetorium would need to be able to accommodate seating for 250 students. Serving this number of students would require three separate serving lines with three POS stations to adequately service the children. The number of serving lines and POS stations would ultimately be determined by the amount of time allotted for each lunch period.

Staffing hours always reflect the number of meals served during the school day, including equivalent ala carte purchases. Based on current staffing, a Pre-K- 3 school would need to have approximately 33.5 hours of labor each day and an estimated 6-7 staff members.

Serving Pre-K in a different location rather than the serving area adjacent to the kitchen would create challenges for staffing and proper meal-serving practices. If this is a consideration, a portable serving line and POS station would be needed in that location. Also, hot portable water would be needed for the board of health requirements.

Pre-K – Kindergarten

A school that accommodates Pre-K and Kindergarten students will have a population of approximately 130 kindergarten students and Pre-K students. The recommendation would be to have two (2) lunch periods and the cafetorium would need to be able to accommodate seating for 130 kindergarten students and Pre-K students. Serving this number of students would require one (1) serving line and one (1) POS station.

Staffing hours reflect the number of meals served during the school day, including equivalent ala carte purchases. Based on current staffing, a Pre-K and Kindergarten school would need to have approximately seven (7) hours of labor each day and an estimated 2-3 staff members.

All scenarios should have a commercial dishwasher in the kitchen to reduce waste. All scenarios should have sufficient seating for all children in an area where they can feel comfortable and sufficient staffing, serving lines, and POS stations to expedite serving all children in a timely manner.

In all the scenarios, students will continue to eat lunch in the cafeteria as they currently do, with the exception of Pre-K, which will eat in an extended learning space. The configuration traffic for the serving area should stay as lanes as they currently have, having all options available in each lane to not confuse young students. The population of the building determines the number of staff members, serving lines, and POS stations.

Technology Instruction Policies And Program Requirements

Current Practices

Hardware

Carts of Chromebooks are supplied to each elementary school. The North Intermediate School has a cart of twenty-five (25) for each classroom. The Woburn Street School has ten (10) shared Chromebook carts. The Wildwood Early Childhood Center has approximately fifty (50) Chromebooks, some set up as centers in classrooms while others are in carts. Chromebooks do not go home with the students. A pilot program of a cart of touchscreen Chromebooks was deployed this year at the Woburn Street 1st grade. Special Education Program classrooms have their own Chromebooks and iPads. Some students in program classrooms have iPads specifically assigned to them.

Faculty and administration are assigned a PC laptop with a docking station, external monitor, keyboard, and mouse. Administrative assistants have a desktop PC. Classrooms are equipped with interactive projectors and document cameras. Shared access to some robotic hardware is coordinated through the Instructional Technology Specialist. Educational Assistants are assigned a Chromebook.

Black and white networked Multifunction Printers (copiers) are located in each school, providing duplication and scanning. Additional black and white laser printers are scattered in various locations. Each building has one color laser printer, and some have a poster printer.

Classrooms requiring assisted listening access are provided portable units with a teacher-worn microphone and speaker. Larger display Chromebooks are provided to students with vision issues. In some cases, Google Meet or Zoom has been used to display information on a projector to the vision-impaired student's Chromebook.

Staffing

We currently have one dedicated Instructional Technology Specialist who supports the six elementary schools. This staff member collaborates with teachers to support technology integration through co-teaching, model teaching, and lesson planning support. The Instructional Technology Specialist brings coding, robotics, STEM, and Internet safety lessons into the classroom through the classroom teacher. The faculty schedules time with the Instructional Technology Specialists on an as-needed basis.

Technical support is handled by shared district staff with Desktop Technicians (3), a System Administrator, a Network Administrator, and a Director of Technology & Digital Learning managing their needs.

Networking

The Wildwood Early Childhood Center, Woburn Street School, and North Intermediate School have a fully wired and wireless network. Wireless access points are installed in each classroom and common areas. A limited number of wired network drops are located in classrooms, offices, and other locations. The buildings connect to the town fiber optic network via a 10 GB connection. Internet access is shared with other schools in the district via multiple load-shared 1 GB connections. Internet filtering is managed at the firewall level and through Google Management controls.

Proposed Changes

The design of the new building should provide for the following additional features:

- One cart of Chromebooks per classroom at all grades K-5 with a designed location for the cart with electrical power
- Additional Chromebooks and iPads for special education classrooms and programs with dedicated charging/storage stations
- Built-in classroom amplification systems and sound field systems with wireless teacher microphones
- Each classroom and learning space should have an interactive display panel like ClearTouch Panels. The district would like to explore mobile display options and maximize vertical display options to allow for flexible learning environments
- Sufficient space and equipment for STEM learning
- Large spaces such as the extended learning areas, cafe, and gymnasium should have built-in sound systems with support for hearing impairment and available connection to technology and projectors
- The district would like to explore emerging technologies to incorporate into the classroom environment such as interactive/immersive learning experiences
- The district is currently in the process of creating a new 5-year technology plan. We have surveyed staff, students, and families and will use this information and the new technology plan to help guide us in technology planning for a new building

Media Center/Library

Current Practices

Wilmington has six (6) very busy elementary school libraries. Over the 2022-2023 school year, students borrowed over 70,000 books. Highly qualified and certified librarians staff all libraries. The only library that is staffed five days a week is the Woburn Street School. The Shawsheen Elementary School has a librarian Monday through Thursday. The North Intermediate School is staffed Monday through Wednesday. The West Intermediate School is staffed Tuesday through Thursday. The Wildwood Early Childhood Center is staffed Thursday through Friday. The Boutwell is staffed on Fridays only.

Wildwood students are currently housed in the Middle School and the West Intermediate School (across the street) and receive library instruction in what was the Middle School library. Wildwood students housed at the West Intermediate use the West library in inclement weather. The old Middle School library was relocated to another part of the building. The old space was converted into a multi-use space for library, art, music, special education, and other purposes. The space is often shared while library classes are taught, which causes some privacy issues for those receiving special education services. Parent volunteers are no longer allowed to assist in the library due to this issue. The space is not flexible, as the shelving is too heavy to move around. There is a teaching area with a ClearTouch panel and bookshelves surround it.

The Woburn Street School library is undersized and not conducive to interactive teaching. Their room is surrounded by bookshelves, leaving no space for a whiteboard. The room has a large-screen TV, but it is not interactive. The floor-to-ceiling shelves are too high for students to use. The library is regularly used for recess clubs, staff meetings, the after-school CARES program, MCAS testing, and occasional small group support. There is no defined teaching space due to the shelving arrangement and the room size.

The North Intermediate School library is also undersized and lacks sufficient shelving. There is not enough room for STEM activities, and the shelves are too high for the students' size. Due to the size of the room, there is little space for activities outside of the small student desks. The room is equipped with an interactive projector. The library is regularly used for small group support, special education services, MCAS testing, meetings, and health classes.

The libraries are open during school hours. The mission of the Wilmington Public School libraries is to provide students with access to a collection of skillfully selected and organized curriculum-supportive resources in all formats; promote a love of reading and encourage the appreciation of fine literature; teach research and presentation skills

utilizing multiple technologies and resources; foster critical inquiry and create life-long learners.

The librarians' roles are multifaceted, encompassing teaching, administrative duties, and support for classroom activities. All the elementary librarians teach each class once a week. Grades 1-5 have 45-minute classes. Kindergarten has 30-minute classes. The Wildwood Pre-K has a 30-minute class once a month. Boutwell has no Pre-K library class at this time. In addition to these teaching duties, all the elementary librarians support regular classrooms by providing some related services such as Response to Intervention (RTI) blocks, assisting with classroom coverage, and normal building duties such as assisting with arrival and dismissal activities.
When the librarians are not teaching, providing classroom support and interventions, or on duty, they are engaged in the following tasks:

- Collection Development: Librarians continuously assess, acquire, and curate materials that align with the curriculum, cater to students' interests and support diverse populations, learning styles, and abilities.
- Cataloging and Organization: Librarians ensure the library's resources are properly cataloged, shelved, and accessible, employing a slightly modified Dewey Decimal Classification System.
- Collaboration with Teachers: Librarians collaborate with classroom teachers to integrate library resources into lesson plans, provide guidance on research projects, and support literacy development and information literacy skills.
- Technology Integration: Librarians explore and incorporate new technologies into the library setting, offering guidance on their use to students and faculty.
- Promotion of Reading: Librarians organize and host events like book fairs and reading challenges to foster a love for reading and literature among students.
- Administrative Tasks: Librarians manage budgets, coordinate volunteers, maintain records, and ensure the smooth operation of the library.
- Professional Development: Librarians are often engaging in continuous learning themselves, attending workshops and conferences, or pursuing further education to stay updated with evolving teaching methods, technologies, and literature.
- Student Support: Librarians provide individualized assistance to students seeking help with research, book recommendations, or utilizing library resources effectively.
- The library collection differs from the classroom libraries and reading resource libraries. Although the librarian assists and advises classroom teachers with their classroom libraries, the collections are not cataloged or managed by the librarian.

Proposed New Library Plan:

A new library should include:

- A large, open space with natural lighting and flexible furniture that is appropriately sized
- Space large enough to accommodate two (2) classes simultaneously. When two classes are in the library, there will still be enough room for the students to spread out into different areas: quiet reading nooks, tables for Chromebook work, flexible seating areas, a circulation area, and a rug area
- Two (2) teaching zones, one for the Pre-K-2 and one for grades 3-5. The book collection will be housed in the perimeter of each area. For example, the picture books will surround the Pre-K-2 area, the chapter books will be in the grades 3-5 area, and the nonfiction will be the middle section between the two areas
- A large workroom with two desks, a sink, ample storage, a long countertop, and windows into the library
- A display case in the hallway
- Sufficient outlets with storage for Chromebook carts
- The district would like to explore options for connecting the classroom libraries with the library collection

Library will continue to be offered as a special subject in the new 6-day cycle. Grades 1 through 5 will continue to have library time 45 minutes per cycle, with kindergarten moving to 45 minutes per cycle. Pre-K library sessions will remain 30 minutes. A 1.5 FTE librarian would staff the library in a Pre-K-5 building. A 1.0 FTE would staff a PK-3 library, and a 0.2 FTE Librarian would staff a Pre-K-K library.

Visual Arts Program

Current Practices

In accordance with the MA Curriculum Framework for the Visual Arts, the elementary art program aims to foster artistic literacy in students by actively involving them in the arts. The goal is to enable students to express creative ideas with confidence, skill, and artistic intent. High-quality arts education encourages students to take artistic risks and address their social, emotional, and learning needs. By engaging in creating, presenting, performing, responding, and connecting activities, students gain insights into the role of the arts in their lives and interests. While acknowledging the inherent value of the arts,

students also discover meaningful connections between the arts and other disciplines, understanding how the arts contribute to communities and cultures globally. An effective arts education makes connections with other disciplines and bodies of knowledge.

Curriculum maps are thoroughly developed for our Visual Arts programs, ensuring students are exposed to the visual arts frameworks and that instruction is aligned both horizontally and vertically through the grade progression. Units are developed to incorporate craftsmanship, creativity, concept development, and critical response.

Various mediums are used throughout the curriculum, including but not limited to paper, pencil, crayon, chalk, ink, paint, clay, and various textiles.

A district-wide art show is held each spring to showcase student work created throughout the year.

Before our Wildwood students were relocated, Wildwood kindergarten students participated in art class in the library space, which served as a multi-purpose room for all specialist subject lessons. Wildwood students are split between West Intermediate School and Wilmington Middle School, and they are sharing space in each of those buildings for art class. Wildwood students located in the middle school participate in art in a multi-purpose space. Woburn Street School and North Intermediate School both have dedicated Art classrooms. Current classroom setups in existing buildings lack storage, prep space, and space to store artwork that is in progress. In addition, the sinks and surrounding counter areas are small, making clean-up very difficult.

Current Schedule

Grade	Frequency	Duration
K	1x per week	30 min
1	1x per week	45 min
2	1x per week	45 min
3	1x per week	45 min
4	1x per week	45 min
5	1x per week	45 min

Proposed Changes

A new school should include dedicated space to support the level of robust visual arts instruction desired in the district. In addition, ample space would be required to store supplies. Art classrooms would also need to have spaces to house student work while in progress and display areas to showcase finished projects. Large sinks and counter areas would also be needed for appropriate setup and clean-up.

Proposed Schedule

Grade	Frequency	Duration
K	1x per cycle	45 min
1	1x per cycle	45 min
2	1x per cycle	45 min
3	1x per cycle	45 min
4	1x per cycle	45 min
5	1x per cycle	45 min

If the school is consolidated into a Pre-K-3 or Pre-K-5 building, the length of the kindergarten art class may vary. Regardless of configuration, sufficient art room space would be needed to house the corresponding number of sections and students accordingly.

The following algorithm describes the calculations to determine the appropriate number of art rooms, assuming all grade levels except Pre-K will receive art once per cycle, assuming a six-day cycle, and assuming each room can accommodate six sections per day.

- (7) K Sections
- (6) 1st Grade Sections
- (6) 2nd Grade Sections
- (6) 3rd Grade Sections
- (6) 4th Grade Sections
- (6) 5th Grade Sections

- (37) Total Sections Needed ÷ 6 Sections per Day per Room ÷ 6 Days per Cycle = 1 Room and one additional Section = 2 Rooms

Performing Arts Program/Music Programs

Current Practices

The goal of the performing arts program is to provide opportunities for students to explore the various areas of the performing arts, while at the same time developing skills related to the life-long learning and appreciation of the arts. The elementary performing arts experience should provide a comprehensive foundation of both skills and concepts of music in which every child can achieve measurable attainment of personal success and develop the intellectual and emotional basis to foster a lifetime of musical participation and enjoyment. The current PA curriculum is aligned with the MA Curriculum Framework.

The cycle of all specials is currently organized around a 5-day cycle. All students in grades 1-5 have one 45-minute general music class per cycle. Kindergarten students have a 30-minute music class. All students in 5th grade have one chorus class per week in addition to one general music class per week. Once students enter 4th grade, they can elect to take a band or string instrument. Band and strings students are pulled out of class for lessons, while general music and chorus occur within their class schedule. Electing to be in band or strings adds a second music class per week to 4th grade and a third music class per week to 5th grade.

Elementary Music Goals:

- Sing and play instruments, learn a repertoire of traditional, folk, patriotic, and other songs and pieces
- Move to music, explore creative and structured movement
- Read music and write music using music skills learned in music classes and lessons
- Listen to music, explore the purpose and expression and composers of a variety of musical styles
- Create original music in small and large groups (both composition and improvisation)
- Think about, evaluate, and write about music performance, style and expression
- Make connections between music with other arts and/or other curriculum subjects
- Participate in "informances," (in class performances) or in other school and public venues

Grade	Frequency	Duration
K	1x per week	30 min
1	1x per week	45 min
2	1x per week	45 min
3	1x per week	45 min
4	1-2x per week (general + opt. instrumental music – *band or strings*)	45 min each
5	2-3x per week (general music + chorus + opt. instrumental music)	45 min each

In addition, with performance at the center of the national and state arts standards, the many concerts and performance opportunities throughout the year are an integral part of the elementary program.

Elementary students across all the schools in Wilmington have multiple opportunities for performance.

- In the late winter/spring, Kindergarten students perform a chorus/music concert for parents/staff.
- In the spring, grades 1-4 perform “informances'' for the class/parents. At these “informances” only the students and parents from that one general music class are present – this is in an attempt to prepare students for more formal performances in the future. This takes place during the school day at the school (inside the general music classroom).
- In the fall & spring, the grade 5 chorus performs for their parents and school community. This takes place during the school day at the school.
- Band & Strings: 4th-grade students perform once yearly in the spring (outside of school). 5th grade students perform three times per year (fall & spring concerts outside of school) and a school concert (during the school day) at their school.

In addition, students participate in school plays, talent shows, and ceremonies. Each of these performances typically involves between 50 and 100 performers. Audience sizes range from 100 to 350 audience members.

Proposed Changes

Currently, at the North Intermediate School and Woburn Street School, one general music classroom per school accommodates the music classes taught throughout the day (not including performance-based instrumental classes and band and string lessons). To meet the current schedule for general music, music & chorus, if a new building were Pre-K-5, two classes would need to be taught concurrently, necessitating two general music/chorus classrooms. The instrumental classes are taught in a separate instrumental music room. This room will not be able to double as a general music/chorus teaching space, as it is used for 45 classes per week.

Grade	Frequency	Duration
K	1x per cycle	45 min
1	1x per cycle	45 min
2	1x per cycle	45 min
3	1x per cycle	45 min
4	1-2x per cycle (general + opt. instrumental music – *band or strings*)	45 min each
5	2-3x per cycle (general music + chorus + opt. instrumental music)	45 min each

(7) K Sections
(6) 1st Grade Sections - general music
(6) 2nd Grade Sections - general music
(6) 3rd Grade Sections - general music
(6) 4th Grade Sections - general music
(6) 5th Grade Sections - general music
(6) 5th Grade Sections - chorus

(43) Total Sections Needed ÷ 6 Sections per Day per Room ÷ 6 Days per Cycle = 1 Room and seven (7) additional Sections = 2 Rooms

In addition to these sections, instrumental lessons require additional space. Twenty-nine sections would be available in one of the full-sized music classrooms per cycle. Two practice rooms of varying sizes that could accommodate approximately 17 and 9 musicians, respectively, at any one time.

This ensemble room should be able to seat 50-60 students for full/combined rehearsals. As a result of this, we would need a minimum of three music rooms/spaces – two (2) general music and one (1) instrumental music classroom.

These rooms should be ground floor if possible for the following reasons:

- To make transporting equipment (both students & staff) easier – instrument cases, risers, percussion equipment, classroom instruments, etc..
- To eliminate the need for an elevator to transport equipment/instruments.
- To create easier accessibility for inviting parents from the community into the general music classes. These rooms being on the ground floor would make it easier for the public to have handicapped access to these spaces and would better enable us to follow visitor safety protocols.
- To be on the same floor as the main performance space (auditorium) – ideally adjacent to the main performance space.

The space should also provide:

- Adequate instrument storage in the general music classrooms (2) and ensemble room (1).
- Enough space to store classroom instruments (percussion, keyboards/mallets, recorders, etc.) and sheet music/lesson books.
- Choral risers for the chorus classroom (grade 5 only)
- Audio/visual capabilities - built-in speakers
- Whiteboards (both with music staff and plain)
- A sink for cleaning wind instruments *(in the ensemble room)*

In all concepts, the district seeks to maintain its level of performing arts program, supported by dedicated music rooms, music storage, and a performance space capable of accommodating current performances.

The new consolidated school should include dedicated spaces to support the robust performing arts instruction in the district. Students would continue receiving the same amount of music instruction as currently allotted in a dedicated classroom that supports singing, movement, vocal and instrumental performance, and reading and writing traditional music notation. The band, chorus, and orchestra programs would also continue.

Physical Education and Health

The Wilmington elementary physical education and health programs are working to align with the newly released MA Comprehensive Frameworks for Health and Physical Education. According to the MA Curriculum Frameworks for Health and Physical Education, the guiding principles for effective comprehensive health and physical education programs are as follows:

Guiding Principle 1:
Students come from racially, culturally, and socially diverse backgrounds. Partnering with educators, families, and community stakeholders representing students' backgrounds provides essential support for implementing a successful Comprehensive Health and Physical Education program, in which all are invested in supporting students' personal health and the overall health of their community.

Guiding Principle 2:
Effective Comprehensive Health and Physical Education programs are developmentally and age-appropriate, inclusive, trauma-sensitive, and culturally sustaining, and provide a safe and supportive learning environment so that all students, without exception to ability or circumstance, are supported as individuals, and can achieve the learning goals.

Guiding Principle 3:
Effective Comprehensive Health and Physical Education programs incorporate diverse perspectives and acknowledge that attainment of equity and optimal health are individualized, contextual, and affected by intersections of race, ethnicity, culture, religion, education, economic condition, gender identity, sexual orientation, dis/ability, personal experience, and many other factors.

Guiding Principle 4:

Every student deserves equitable access to effective Comprehensive Health and Physical Education programming, including dedicated courses for physical education and health education every year from Pre-Kindergarten (Pre-K) through grade 12, facilitated by qualified educators (e.g., licensed and/or trained in this health and/or physical education).

Guiding Principle 5:

Effective Comprehensive Health and Physical Education programs foster equity-focused and trauma-informed approaches through school-wide collaboration to support and promote a sense of belonging, mental health and well-being, and the development of social and emotional skills, including self-awareness, self-management, self-care, social awareness, responsible decision-making, and relationship skills in a wide variety of contexts and situations.

Guiding Principle 6:

Comprehensive Health and Physical Education programs use a variety of effective implementation and assessment strategies such as scaffolding, collaboration, application, relevance and authenticity, differentiation and adaptation, and authentic performance-based assessment, and provide multiple opportunities for learning and demonstrating competency.

Guiding Principle 7:

Effective Comprehensive Health and Physical Education programs develop students' skills for research, reasoning, decision-making, critical thinking, problem-solving, and the habits of mind needed to be healthy across their lifespan. This includes being able to differentiate among a variety of factors affecting behavior, such as culture, community, peers, and group dynamics.

Guiding Principle 8:

Effective Comprehensive Health and Physical Education programs require a school-wide culture that promotes equity, health and well-being, integration and collaboration among education leaders and health professionals, and coherent district-wide support for implementation to improve each student's cognitive, physical, social, and emotional development.

Physical Education

Current Practices

Currently, students in grades one to five (1-5) participate in a physical education class for 45 minutes once in a five-day cycle. Kindergarten students participate in a 30-minute class twice in a five-day cycle. At Wildwood, we have the equivalent of a .4 FTE PE teacher who then travels to another school in the district the other four (4) days. We have a 1.0 FTE PE teacher at Woburn Street School, and North Intermediate has a .4 FTE PE teacher. Currently, North Intermediate School and Woburn Street School have gymnasiums. Wildwood students share the gymnasiums at West Intermediate and Wilmington Middle School.

Current Physical Education Schedule

Grade	Frequency	Duration
K	2x per week	30 min
1	1x per week	45 min
2	1x per week	45 min
3	1x per week	45 min
4	1x per week	45 min
5	1x per week	45 min

Proposed Changes

Should the plan be to build a consolidated school, either Pre-K-3 or Pre-K-5, a dedicated gymnasium to support physical education instruction will be required. Students in grades K-5 would receive physical education instruction 45 minutes per week in a six-day cycle. This would be an increase from 30 to 45 minutes for Kindergarten students, which would better align with their peers and would be manageable due to the lengthened school day. The district would investigate adding a health session for kindergarten in lieu of the extra physical education class each week.

If the decision is made to build a new Wildwood School housing Pre-K and Kindergarten students only, students would receive physical education classes twice weekly for 30 minutes unless the district decides to lengthen the Kindergarten school day regardless of the building project.

Proposed Physical Education Schedule

Grade	Frequency	Duration
K	1x per cycle	45 min
1	1x per cycle	45 min
2	1x per cycle	45 min
3	1x per cycle	45 min
4	1x per cycle	45 min
5	1x per cycle	45 min

(7) K Sections
(6) 1st Grade Sections
(6) 2nd Grade Sections
(6) 3rd Grade Sections
(6) 4th Grade Sections
(6) 5th Grade Sections
(37) Total Sections Needed ÷ 6 Sections per Day per Room ÷ 6 Days per Cycle = 1 Room and 1 additional Section = 2 Teaching Stations*

*A typical elementary school-sized gymnasium can serve as two teaching stations.

Given the amount of educational and community use envisioned for a new gymnasium, the district seeks a larger gymnasium capable of including a competition-sized court with two (2) middle school cross courts plus telescoping bleachers on the long side. A gym of this size would support the idea of schools as an educational and community-wide investment, with a gym appropriately sized to serve as a community resource for youth athletics, large public meetings, voting, etc. Regardless of the reconfiguration plan, all versions should have a dedicated gymnasium space large enough to accommodate the enrollment size of the students to participate in physical education classes for forty-five (45) minutes once in a six-day cycle.

Health Education

Current Practices

Health is considered a specialist subject in grades 1-5 in Wilmington. Students in grades 1-4 have a forty-five 45-minute health class once a week. In grade 5, Health class is thirty

(30) minutes once a week due to schedule conflicts incorporating chorus into the schedule. Health is taught by a licensed health teacher in a dedicated classroom space when available. In some years, the health teacher travels and delivers instruction in the general classroom due to space limitations. Health instruction is aligned with the MA Health and Physical Education Frameworks. In addition, we strategically incorporate units on Social Emotional Learning competencies (SEL) from CASEL within the health units of study to ensure students receive explicit instruction in the areas of self-management, self-awareness, social awareness, decision-making, and relationship skills. Currently, students are taught health by a full-time Health teacher at Woburn Street School and by a .4FTE health teacher at North Intermediate School.

Current Health Schedule

Grade	Frequency	Duration
K	Not currently offered	N/A
1	1x per week	45 min
2	1x per week	45 min
3	1x per week	45 min
4	1x per week	45 min
5	1x per week	30 min

Proposed Changes:

The district intends to continue providing a health class to grades 1-5 students. With the recent adoption of newly updated frameworks in MA, we anticipate aligning our instruction with the new frameworks. If the Kindergarten school day is extended, we will evaluate whether a health specialist subject class is warranted or whether we will continue incorporating the Kindergarten health frameworks into other curriculum areas. As previously noted, the district is considering whether to reduce PE to once a week and add a health class. Ideally, a new school building should have a dedicated classroom for health instruction regardless of grade configuration. Staffing should reflect the necessary FTEs to allow for students in grades K-4 to participate in health for 45 minutes once in a 6-day cycle and for students in Grade 5 to participate for 30 minutes once in a 6-day cycle.

Proposed Health Schedule (re-K-5 Configuration)

Grade	Frequency	Duration
K	1x per cycle	*45 min
1	1x per cycle	45 min
2	1x per cycle	45 min
3	1x per cycle	45 min
4	1x per cycle	45 min
5	1x per cycle	30 min

*If a different configuration is selected, the schedule might vary.

Special Education Programming

The Wilmington Public Schools adheres to the federal and state laws that guarantee the rights of all students access to the general education curriculum. The philosophy of the Wilmington Public Schools is to embrace the inclusion of students with disabilities in all aspects of the community and school life, including the general education environment, to the fullest extent possible. Special education services are provided to eligible students. They are designed to remediate deficit areas, support the development of new skills, and allow students to gain the skills to access the general education curriculum in the least restrictive environment possible. The services and staffing available at all schools are allocated annually based on the service delivery needs identified by the Individualized Education Programs (IEPs) of the special education population being served. Currently, the Wildwood Elementary School serves 58 students with documented special needs. Woburn Street School serves 49 students, and North Intermediate Elementary serves 52 students with an IEP. This approach is actualized via significant investment over many years in the development of a broad spectrum of in-district programming, represented by the schematic below:

Special Education Programming by School for 2023-2024 School Year

Boutwell ECC Pre-K & K	Wildwood ECC Pre-K & K	Shawsheen Grades 1-3	Woburn grades 1-3	West Intermediate grades 4&5	North Intermediate grades 4 & 5	Middle School grades 6-8	High School grades 9-12

Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center	Inclusion & Learning Center
		Language-Based	Language -Based	Language-Based	Language-Based	Language-Based (4)	Language-Based (3)
		Stepping stones	STAGES	Stepping Stones	STAGES	Student Support (1) & Transitions (1)	Evolution (2)
Strides	Strides (3)	Strides (2)		Strides		Strides	Strides
Drive in services	Drive In services						
						Lifeskills	Lifeskills
							Postgrad
Integrated Preschool	Integrated Preschool						

This range of programming and services has enabled the district to educate 98.1 % of students in the district. The small number (1.9 % of the student population) of students who are educated in out-of-district placements is indicative of the success of this approach. It reflects our commitment to creating an inclusive educational environment that, to the maximum extent feasible, educates students in their home community, with access to typical peers. The specialized district programming that exists for students with disabilities in the current Wildwood, Woburn Street, and North Intermediate Schools include the following:

- STAGES, a social-emotional program strand,
- Language-Based program for learning-disabled students, and
- STRIDES, a program for students with Autism that require Applied Behavioral Analysis (ABA).

All schools also provide services to students in the inclusive classroom environment (inclusion and learning center) and pull-out support for those that require such. Additionally, most students with an Individualized Education Program receive services via an inclusion/learning center model. This includes receiving special education services in the

general education classroom, with or without some degree of service delivery in a small setting for some pull-out services.
In order for these programs to be successful and for students to be educated in the least restrictive environment, flexible, dedicated spaces are essential to meet the ever-evolving student needs. Examples of these spaces include extended learning spaces adjacent to the general education classrooms, close proximity to related service providers, and small calming spaces in our therapeutic social, emotional, and STRIDES classrooms. Additionally, as the STRIDES program will continue to begin in pre-k on the Northside of town, as it has historically been, the opening of a new building will present the opportunity for these students to remain with their peers in the new building and not have to move across town due to lack of accessibility. In order for this program to be housed on the Northside of town, dedicated spaces will be required for the numerous service providers that support these students. A dedicated Occupational Therapy and Physical Therapy space will be required to meet our program students' sensory and motor needs. Additionally, a number of speech and language pathologists and BCBAs also work with programs, teachers, and students.

The services offered at each specific school are outlined below.

Current Programs & Services as of January 2024

Wildwood School

Program	Number of Rooms	Students Per Class	Total Students	Number of FTE Faculty/Staff
Learning Center/Inclusion	1	Up to 8	17	1.0 Special Education Teacher
Integrated preschool (2 half-day programs)	3	Up to 15	15 per session	4.0 Educational Assistants 2.0 Special Education Teachers
STRIDES	3	Up to 8	14	3.0 Special Education Teachers 7.0 Educational Assistants
Occupational Therapy	1	1-3	19	0.5
Physical Therapy	Shared space	1:1	9	0.2
Speech	1.6	1-3	42	1.6
BCBA	Shared office space	n/a		0.6

Current Programs & Services as of January 2024

Woburn Street School

Program	Number of Rooms	Students Per Class	Total Students	Number of FTE Faculty/Staff
Learning Center/Inclusion	3	3-5	41	3.0 Special Education Teachers
Occupational Therapy	1	1-3	10	0.5
Physical Therapy	Shared space	1:1	3	0.1 (district)
Speech	1	1-3	20	1.0
BCBA	Shared office space	n/a	n/a	0.3
Language-Based	1	Up to 8	4	1.0 Special Education TEacher 1.0 Educational Assistant
STAGES	1	Up to 8	4	1.0 Special Education Teacher

				2.0 Educational Assistant

Current Programs & Services as of January 2024

North Intermediate School

Program	Number of Rooms	Students Per Class	Total Students	Number of FTE Faculty/Staff
Learning Center/Inclusion	2	3-5	43	3.0 Special Education Teacher
STAGES	1	Up to 8	5	1.0 Special Education Teacher 2.0 Educational Assistant
Language-Based	1	Up to 8	5	1.0 Special Education Teacher 1.0 Educational Assistant
Occupational Therapy	1	1-3	3	.5
Physical Therapy	Shared space	1:1	4	.1
Speech	1	1-3	24	.6 SLP
BCBA	Shared office space	n/a	n/a	.3

Special Education Program Descriptions

Pre-K- DRIVE-in Services--Wildwood School and Boutwell School

Both the Boutwell and Wildwood Early Childhood centers provide services for preschool children who do not attend preschool in the district but who are eligible for related services under their IEP. These services are provided by related service providers such as physical

therapists, occupational therapists, and speech and language therapists. These students are brought to the building by their parents for their services on a weekly basis throughout the school day.

Integrated Preschool-Wildwood School and Boutwell School

Our Boutwell and Wildwood Early Childhood centers support children who are typically developing and children with delays across the developmental spectrum through the use of an integrated approach. Each early childhood class has one Lead Teacher (who is a special educator) and a program educational assistant. The early childhood curriculum is aligned with the Massachusetts Early Childhood Learning Guidelines and Curriculum frameworks. Our integrated preschool provides a range of related services based on identified individualized student IEP needs, and related services are also provided for many of these students. Currently, each school has two half-day integrated preschool classrooms. The district is proposing to add a full-day classroom as the full-day classroom was removed following COVID-19. This would include one additional teacher and one educational assistant. Spaces serving our integrated preschool program should meet the MBSA guidelines for pre-kindergarten classrooms, contain the same basic features and functions as kindergarten classrooms, and be customized to preschool students' developmental and physical characteristics. Ideally, they would be located in a Preschool-level learning community with classrooms serving the Strides program.

Learning Center Program - All schools

Students receiving support through the Learning Center model have mild to moderate learning needs, including but not limited to specific learning disabilities, developmental delays, and/or health impairments. Learning Center teachers may support students in the general education classroom and/or through direct service or a consultation model. Learning Center teachers provide specialized instruction in a wide range of areas, including reading, language arts, mathematics, academic support in curriculum areas (science and social studies), and study and organizational skills. Teachers collaborate closely with classroom teachers and related service providers to develop comprehensive, integrated services for children. There is a special education teacher at each grade level fulfilling this role at each elementary school with the assistance of one additional educational assistant per school. Students may require related services and learning center/inclusion support based on service delivery on their IEP. At the Middle School, there is one special education teacher per grade level per house. In WHS, three inclusion teachers also support learning centers. Spaces serving Learning Center Teachers should be outfitted to serve as the

professional home base of the educator and as a small group instructional environment. Ideally, they would be located within grade-level learning communities.

Language-Based Learning Disability Program – Woburn and North Intermediate

Students in grades 1-5 receiving support through the language-based program are primarily identified with Specific Learning Disabilities and/or Communication disorders, including Dyslexia. The Language-Based Program is for students in an Individualized Education Program whose team has determined that they have been identified with a Specific Learning disability in Reading, Written Language, or a Communication disability that requires support to access the general education curriculum. The Language-Based Learning Disabilities program provides multi-modal and explicit instruction with a multi-sensory approach to support students reading, writing, listening, speaking, and organizational skills in reading and written language. In all content areas, students are provided with a consistent instructional methodology, which is highly structured and focuses on verbal and visual modalities to support language processing and production. Study and executive functioning skills are emphasized throughout all classes. The mission of the Language Based Program is to provide students with literacy instruction in all areas impacted by their language-based disability. The goal is explicitly teaching strategies to empower students to become more independent learners. Additionally, the goal is to move students into the least restrictive environment as deemed by data support and progress monitoring. The students in this program have Individualized Education Programs that guide the individualization of their curriculum, their services, the skills they need to develop to progress in school, and the needed skills to succeed academically. Intensive literacy and written language practice are part of this programming. Currently, Wilmington Public Schools Language-Based programs for grades 6-12 are receiving multi-year training and coaching through the Landmark Outreach PD program, which will expand to the Intermediate schools in the coming year. Spaces serving our Language-based program should meet the MBSA guidelines for general classrooms, contain the same basic features and functions as general classrooms, and include access to a small group room. Ideally, they would be located in a grade-level learning community with classrooms serving their grade-level peers.

STRIDES - Wildwood, Shawsheen, West, Middle School, and High School

The STRIDES Applied Behavioral Analysis (ABA) programs provide intensive structure and support for students whose IEP teams have determined that an intensive level of programming and structure based on ABA methodology is necessary for the student to

make effective progress. This program uses various instructional methods guided by the principles of ABA with a focus on reinforcement systems, consistent behavior management, and skill generalization. The methodology and/or supports may include Applied Behavior Analysis (ABA), discrete trial, direct teaching, small group functional academics, communication skills, daily living skills, orientation and mobility, functional vision use, and highly specialized assistive technology. Inclusive opportunities, through inclusion and purposeful participation within general education environments, allow students to be a part of the school community. Data collection and careful progress monitoring determine the method of instructional practice. Skills are approached in a variety of settings in order to promote the generalization of skills. These students typically have severe needs, and a team has determined that they require this intensive setting with a high staff-to-student ratio and BCBA consultation with ABA programming. Staffing includes a licensed special education teacher and two or more educational assistants based on student needs and program numbers. A number of related service providers also support programming for the students in this program, including OT, PT, SLP, and BCBAs.

Priority goals and focus areas for students in this program include communication, functional academics, and independence. Students are instructed in the Massachusetts Frameworks and Common Core standards through access and entry-level skills. All students have highly individualized educational programs, and all of the curriculum content is specialized and/or modified. Assessments are highly individualized, and many students participate in the MCAS Alternative portfolio for statewide testing. The program also uses the ACE curriculum, which was developed by the New England Center for Children, for programming, data collection, and ongoing assessment.

Currently, this program begins in Pre-K at the Wildwood Early Childhood Center, and students then transition in first grade to the Shawsheen School on the West side of town. This is the result of a lack of accessibility at the North Side elementary schools. The district will be including this program strand in the new building to reduce the need to transition students across town to a new grade-level peer group. This will enable our students who are enrolled in the program to have minimal transitions, access to a building that is fully accessible, and access to play structures that are accessible and developmentally appropriate. Currently, there are three STRIDES classrooms at the Wildwood, two at the Shawsheen, one at the West, one at the Middle School, and one at the High School level. Spaces serving our STRIDES program should meet the MBSA guidelines for general classrooms, contain the same basic features and functions as general classrooms, and include access to a small group room, a calming space, and a single-user toilet room from

within the classroom environment. Ideally, they would be located in a grade-level learning community with classrooms serving their grade-level peers.

STAGES (Woburn and North)

The STAGES (Students Accessing Guidance for Emotional Support) Program is for students with identified emotional disabilities who, as a result of their disability, do not have well-developed coping mechanisms or emotional regulation strategies to appropriately interact with other students and meet the academic demands of the general education classroom. Program services can range from pull-out services providing direct instruction in the core curriculum to a supported full-inclusion program. The STAGES program staff are involved with all teachers and educational assistants working with the students across settings to monitor progress and academic performance. Staff connected with this program receive ongoing professional development and training from McLean's Hospital Anxiety Mastery Program. Students typically transition to the Transitions program at Wilmington Middle School. Students work towards grade-level curriculum using Massachusetts Curriculum Frameworks, including accommodations and modifications as needed. Staffing includes one special education teacher and two educational assistants. Spaces serving our STAGES program should meet the MBSA guidelines for general classrooms, contain the same basic features and functions as general classrooms, and include access to a small group room, a calming space, and a single-user toilet room from within the classroom environment. Ideally, they would be located in a grade-level learning community with classrooms serving their grade-level peers.

Stepping Stones- Shawsheen and West Intermediate

The Stepping Stone program is at the Shawsheen and West Elementary Schools. Stepping Stones services students with multiple social, emotional, and behavioral needs, and a team has determined that they require smaller, intensive special education services with a high staff-to-student ratio, a therapeutic component, and a highly structured day. In accordance with education in the least restrictive environment, students' access to inclusive opportunities in this program depends on individual student progress toward IEP goals. BCBA support and consultation are provided as part of this program. Staff connected with this program receive ongoing professional development and training from McLean's Hospital Anxiety Mastery Program. Related Services may be provided in this setting or a separate setting in groups or one-to-one: Cognitive Behavioral Therapy, Dialectical Behavioral Therapy Training, Social Skills Training, Speech and Language Therapy, Physical

Therapy, Occupational Therapy, Vision Services, Counseling/School Psychologist, Applied Behavior Analysis, Orientation and Mobility, Adapted Physical Education, and Deaf/Hard of Hearing Services. Students typically transition to the Student Support Program at Wilmington Middle School. Students work towards grade-level curriculum using Massachusetts Curriculum Frameworks, including accommodations and modifications as needed. Staffing includes one special education teacher and two educational assistants.

Student Support Program at Wilmington Middle School

The Student Support program provides instruction in a smaller setting with additional therapeutic support for student's emotional needs and maladaptive behaviors. This program includes varied amounts of time in the inclusive setting based on the student's ability to access the curriculum. This program is targeted to provide services to students with multiple social-emotional needs, and a team has determined that they require this intensive setting with a high staff-to-student ratio, therapeutic component, and a structured day. In accordance with education in the least restrictive environment, students' access to inclusive opportunities in this program depends on individual student progress toward IEP goals. The curriculum is based on the Massachusetts Standards and the curriculum of Wilmington Public Schools. The students in this program have Individualized Education Programs that guide the individualization of their curriculum, their services, and the skills they need to develop and make progress in school. A Social Worker consults with the program and provides services to students as needed. The teaching and clinical staff receive ongoing consultations in CBT through McLean's Hospital Anxiety Mastery Program. Related Services may include and may be provided in this setting or a separate setting in groups or one-to-one: CBT/DBT Training, Social Skills Training, Speech and Language Therapy, Physical Therapy, Occupational Therapy, Vision Services, Counseling/School Psychologist, Applied Behavior Analysis, Orientation and Mobility, Adapted Physical Education, and Deaf/Hard of Hearing Services. Staffing includes one Special education Teacher and one to two educational assistants based on student enrollment.

Transitions- Wilmington Middle School

Transitions is a program for students at Wilmington Middle School. The Transitions Program is for students on an individualized education plan whose Team has determined that they require intensive support with transitions, large groups, and sensory and emotional regulation. These students present with weaknesses in social thinking, self-awareness, executive functioning, and emotional and sensory regulation. Academic skills are typically average for these students, and they are able to access the inclusive classroom environment for academics. The Transitions program allows students to be fully integrated

into the general education setting with support across curriculum areas and a safe place to go for support as needed. The special education program staff are available to the students as needed to help them progress in the general education setting. The special education teacher in the program consults extensively with the student's general education teachers and may attend classes with the students as needed. The mission of The Transitions Program is to provide students with intensive instruction and support as needed for academics, organization, self-regulation, and social-emotional skills and to help students access the curriculum and the life of the middle school.

The curriculum is based on the Massachusetts Standards and the curriculum of Wilmington Public Schools. The students in this program have Individualized Education Programs that guide the individualization of their curriculum, their services, and the skills they need to develop and make progress in school. A Social Worker consults with the program and provides services to students as needed. The teaching and clinical staff receive ongoing consultations in CBT through McLean's Hospital Anxiety Mastery Program. Related Services may include and may be provided in this setting or a separate setting in groups or one-to-one: CBT/DBT Training, Social Skills Training, Speech and Language Therapy, Physical Therapy, Occupational Therapy, Vision Services, Counseling/School Psychologist, Applied Behavior Analysis, Orientation and Mobility, Adapted Physical Education, and Deaf/Hard of Hearing Services. Staffing includes one special education teacher and two educational assistants.

Evolution- Wilmington High School

The Evolution program provides instruction in a smaller setting with additional support for student's emotional needs and maladaptive behaviors. The program includes varied amounts of time in the inclusive setting based on the student's ability to access the curriculum. This program is targeted to provide services to students with multiple social-emotional needs, and a team has determined that they require this intensive setting with a high staff-to-student ratio, therapeutic component, and a structured day. In accordance with education in the least restrictive environment, students' access to inclusive opportunities in this program depends on individual student progress toward IEP goals. A Social Worker consults with the program and provides services to students as needed. The teaching and clinical staff receive ongoing consultations in CBT through McLean's Hospital Anxiety Mastery Program. Related Services may include and may be provided in this setting or a separate setting in groups or one-to-one CBT/DBT Training, Social Skills Training, Speech and Language Therapy, Physical Therapy, Occupational Therapy, Vision Services, Counseling/School Psychologist, Applied Behavior Analysis, Orientation and Mobility,

Adapted Physical Education, and Deaf/Hard of Hearing Services. This program has two classrooms, with a Special Education teacher and one educational assistant in each.

Life Skills- Wilmington Middle and High Schools

The Life Skills Program teaches academics at the student's level, functional skills, transition skills, pre-vocational, and vocational skills. A licensed nurse may support this program if needed for a student's medical needs. A typical student profile is a student with intellectual, neurological, or medical needs that require significant modification to the grade level curriculum and a focus on functional life skills. Staffing includes one special education teacher and two educational assistants. Students are instructed in the Massachusetts Frameworks and Common Core standards through access and entry-level skills. All students have highly individualized educational programs, and all of the curriculum content is specialized and/or modified. Assessments are highly individualized, and many students participate in the MCAS Alternative portfolio for statewide testing.

Post Grad- Wilmington High School

Provides experiential and educational opportunities in daily living, employment, community inclusion, recreation, leisure, and real-world academic skills to promote a successful transition to adulthood. The program's main goal is for young adults to gain the necessary skills to become confident, independent, and integrated members of our community. This program has a full-time job coach to support students' work experience. This program includes off-site job training and job placements for students within the community. Staffing consists of one Special education teacher, one job coach, and an educational assistant (based on student enrollment).

Current Program Challenges

All three schools identified in the potential project require significant improvement in the physical space to provide all related services. Currently, many related service providers do not have dedicated workspaces or shared spaces for servicing students, including our school psychologists, occupational therapists, physical therapists, and speech and language providers. While services are being provided in compliance with student IEPs in all settings, significant improvements in the amount and quality of space for staff offices, student services, and staff/parent consultation are needed. Additionally, in all three buildings, there is limited space for facilitating in-person IEP meetings and virtual and phone conferences to meet with parents and caregivers. Currently, service

providers at all three schools share one classroom for both their office and service delivery space. Making confidentiality of student services, collaboration, and case management an ongoing challenge.

As the Wildwood Early Childhood Center is currently split among two schools, the special education teacher that supports these enrolled students is now providing inclusion and pull-out services in two schools. Given the age of all three elementary schools, there are no extended learning spaces, no small rooms or spaces to provide services near student classrooms, and in most cases, services are not provided in the same space every time due to demands on open spaces by multiple staff. While the Wildwood houses three specialized classrooms for students with Autism, there is no sensory room and no motor space for students who receive such services, causing OT and PT to occur in classrooms and hallways. Additionally, there are currently no dedicated calming spaces for students who may be dysregulated.

Specialized Programs and Collaborative Spaces

Current specialized programs

Wildwood:
- 2 integrated preschool classes
- 3 STRIDES classrooms

Woburn Street:
- 1 Language-Based Classroom
- 1 STAGES classroom

North Intermediate:
- 1 Language Based
- 1 STAGES classroom

The Wilmington Public Schools is a member of the SEEM Collaborative and also participates in other collaboratives as a non-member, including Valley and CREST. While the district is a member and participates in collaboratives, the District does not plan to house any collaborative programs nor provide dedicated space to collaboratives as part of the project for any of the agreed-upon enrollments.

Proposed Programs/Services Needed

The new consolidated school will support the district's goal of an inclusive learning environment for all. Additionally, designing spaces for student services that are adjacent to classrooms and integrating related service provider offices and spaces near the students they service would improve service delivery, collaboration, and services for students. Specific space requirements of a new facility include the development of a motor room as well as dedicated PT/OT space. In addition, a new facility will provide specially designed spaces that are ADA compliant and employ Universal Design features to be accessed by the students who most require these supports. As such, the District proposes changes in the location of one specialized district-wide special education program as follows:

Programs/Services to Continue in a New Project

Current Configuration

	Wildwood	**Shawsheen**	**West**
STRIDES	Pre-k & K (3 classrooms)	Grades 1-3 (2 classrooms)	Grade 4 & 5 (1 classroom)

Proposed Configuration

Pre-K-K, Pre-K-3, and Pre-K-5 Consolidation

	Shawsheen if a Pre-K-3 or Pre-K-5 option	**West if a Pre-K-3 or Pre-K-5 option**	**Wildwood Only**	**Wildwood and Woburn Configuration**	**Wildwood, Woburn and North Configuration**
STRIDES	none	Pre-K-3:one Pre-K-5: none	Pre-K & K (3 classrooms)	Pre-K-grade 3 (5 classrooms)	Pre-K-grade 5 (6 classrooms)

The STRIDES program currently has three programs at the Wildwood School. Upon entering first grade, these students then transition to Shawsheen Elementary on the other side of town, as a result of the lack of accessibility in the current elementary schools on the north side of town. This requires these students and families who have established social relationships within their community to start over with an entirely new group of peers after kindergarten. This is the only group of students in the Wilmington Public Schools required to do such. The proposed new consolidated school move will ensure that these students experience continuity of school location for Kindergarten - grade 5, consistent with grade

level peers. This will also allow for the significant ADA investments and Universal Design features of a newly built or fully renovated building to be accessed by the students who most require these supports. The district also proposes including a purposefully built space with sufficient equipment storage adjacent to physical therapy (PT) space. Occupational therapy space should be housed in its own dedicated space but adjacent to the motor space.

Finally, the consolidated school will increase the re-designed school's capacity to host Extended School Year (ESY) programming in an accessible, climate-controlled, and less restrictive setting. The district will likely move all K-5 ESY programming to the newly designed school location to maximize access for all students and maintain continuity of schooling for students with the most significant disabilities.

In 2019, the district had Walker Consulting review Wilmington Public Schools' special education services and supports. One of the recommendations emerging from this report was to move towards a co-teaching model of special education service delivery. Over the last few years, the district has made a number of steps towards this work, including but not limited to hiring a shared inclusion coach together with SEEM collaborative, utilizing district staff to serve as in-district Inclusion coaches, providing Administrator professional development in Universal Design for Learning, and creating a focus on inclusion in the district Strategic Plan. This work will continue over the coming years, including further piloting of co-teaching throughout the district. Using Student Opportunity Act funds, the district will be providing high-quality professional development and piloting co-teaching in classrooms throughout the district. Furthermore, the proposed building design includes collaborative workspaces and extended learning spaces that would allow for seamless co-teaching and collaboration.

The Language-Based program and STAGES program will continue to be offered on the Northside of town schools, with a continuum of Special Education services ranging from full inclusion to substantially separate being offered. Hence, students are able to remain with community peers.

Programs/Services Removed in a New Project

No programs on the North side of town schools will be removed.

Program Additions/Enhancements with a New Project

As noted above, the STRIDES program will remain on the North side of town with this proposal. Additionally, the extended school year program through grade 5 will be offered at the new building in order to provide consistency in student programming, limit transitions, and give accessibility to all students.

Program/Services Eliminated with a New Project

Currently, students in our STRIDES strand begin at the Wildwood school (currently three classrooms) due to a lack of accessibility in the North side schools; these students then transition to first grade at the Shawsheen School. These students then continue at the West Intermediate. Given a new building will have accessibility throughout the school, this program strand will remain at the new building. It will allow students to continue with their peers, negating the need to move the cohort across town after kindergarten. Please see the chart provided above.

Tiered Focus Monitoring/Coordinated Program Review

Previously, every six (6) years, the District participated in a Coordinated Program Review (CPR) from the Massachusetts Department of Elementary and Secondary Education (MADESE). Currently, this audit process has been split into an every three-year Tiered Focus Monitoring (TFM) process. The last Coordinated Program Review (CPR) that included special education facilities was held in the 2017 - 2018 school year, and the findings under Special Education Indicator #55 “Facilities” were found to be partially implemented.

The DESE requires that District buildings meet the following regulatory requirements:

Special Education Facilities and Classrooms

The school district provides facilities and classrooms for eligible students that:

- Maximize the inclusion of such students into the life of the school;
- Provide accessibility in order to implement fully each student’s IEP;
- Are at least equal in all physical respects to the average standards of general education facilities and classrooms;
- Are given the same priority as general education programs in the allocation of instructional and other space in public schools in order to minimize the separation

or stigmatization of eligible students and are not identified by signs or other means that stigmatize such students.

Wilmington Special Education CPR findings in 2018 included:

- SE 3 Special requirements for determination of specific learning disability- Partially Implemented
- SE 6 Determination of transition services -Partially Implemented
- SE 7 Transfer of parental rights at age of majority and student participation and consent at the age of majority- Partially Implemented
- SE 47 Procedural requirements applied to students not yet determined to be eligible for special education- Partially Implemented
- SE 54 Professional development- Partially Implemented
- SE 55 Special education facilities and classrooms- Partially Implemented
- SE 56 Special education programs and services are evaluated-Partially Implemented

During this review, SE 55 Special Education facilities and classrooms were identified for corrective action. Noted was that the Middle School STRIDES classroom needed to be relocated to be more in the life of the school environment. Additionally noted was, “At the Boutwell Early Childhood Center, observations indicated that two speech and language therapists, one school adjustment counselor, and one occupational therapist share an office. A review of schedules indicated that four to six students simultaneously receive services from three to four different staff, which creates auditory and visual distractions.” These were remedied during the corrective action stage of the process.

This year, the District is participating in the Tiered Focus Monitoring (TFM), and the onsite component of this process will be completed on February 6, 2024. The District anticipates receiving the report by the summer of 2024. All proposed design elements would allow the District to meet the current MADESE regulatory requirements and provide for full compliance with the ADA and other requirements of the law.

Updates to Collaborative Spaces/Programs

Wilmington Public Schools does not have collaborative programs in the district, and the plan does not include such in the future.

Special Education Day School Programs

Wilmington Public Schools does not currently have any in-district Special Education day schools and does not plan to include such in the future.

Special Education Rubric and Regulations

The table below indicates the District's responses to DESE and MSBA's questions when reviewing existing facilities for students on IEPs.

Question	Y or N Comment
Ensuring Access	**Response**
1. Do the facilities and classrooms for eligible students maximize their inclusion into the life of the school?	Yes
2. Do all eligible students have access to school facilities, including, but not limited to, those areas necessary to implement the students' IEP?	Yes, for students that attend, however, we are unable to house specific programs at the North side schools due to lack of accessibility
3. Are resource rooms and separate classrooms for students with disabilities given the same priority as general education programs for access to and use of instructional and other spaces in public schools?	Yes
4. Is the school providing whatever equipment and making whatever physical adaptations are necessary, including acoustical and lighting treatments to remove physical communication barriers for students who are visually impaired, deaf, or hard of hearing?	Yes
Ensuring Equality	
5. Are the facilities and classrooms serving only students with disabilities at least equal in all physical respects to the average standards of general education facilities and classrooms?	Yes
Minimizing Stigmatization	
6. Specifically, does the plan place a classroom serving only older students with disabilities in a part of the school building in which all the classrooms are occupied by elementary school students? Vice versa? (if yes, it's a violation)	No
7. Does the plan place all, or a significant proportion, of special education facilities together in one part of a school building? (if yes, it's a violation)	No
8. During a school construction project, is the plan to move classrooms of students with disabilities to locations apart from the	No

general education program? (if yes, it's a violation)	
9. Is the plan to place a sign saying "special class" or "resource room" on the front of a substantially separate classroom? (if yes, it's a violation)	No

Vocations and Technology Programs

STEM

As noted in the Scheduling Section of this document, the district would like to introduce a new specialist subject, STEM. A STEM special would provide opportunities for practical application of science and math concepts taught in class and incorporate technology, engineering, and design elements. STEM education creates a level playing field in which all students have access to explore and create something new by promoting innovative thinking and problem solving, fostering collaboration and communication, and building social-emotional competencies. As a district, we have begun implementing district-wide STEM challenges a few times a year for K-5 students. On the days these challenges take place, students are excited and engaged. In addition to practicing academic skills during these challenges, we have observed the growth of fine motor skills, student resilience, perseverance, creativity, communication, and teamwork. The district feels that adding STEM as a special would be an excellent addition to the current curriculum, and therefore, we would like to ensure an appropriate space is included in the plan.

The district envisions this type of project-based, investigative learning taking place in ~~a~~ dedicated STEM room. The STEM room would be staffed by a full-time STEM Teacher who would provide 45-minute classes to students on a 6-day cycle. The curriculum would incorporate elements and experiences such as (but not limited to):

- Digital Communication
- Robotics
- Circuitry
- Mechanics and Structures
- Design Thinking
- 3-D Printing
- Scientific Data and Analysis

- Makerspace Exploration
- STEM Challenges

A dedicated STEM space should include the following:

- Ample teacher-accessible storage space for equipment, tools, kits, and new and recycled materials, both durable and consumable
- Student-accessible storage (at a child's scale) to support student ownership in the gathering and manipulating of materials
- Abundant and appropriate shelving/organization to safely store or display student work
- Water available with a sink deep enough to facilitate cleaning specimens and glassware equipment and the filling of large basins of water for experiments
- Access to and storage/organization of robust, interactive technology with applications and software used to support curricular access and application
- Flexibility in space and furniture to support various instructional strategies, activities, group sizes, and learning modalities (i.e., adjustable height tables, stools, white-board tables, castors on furniture, etc.)
- Adequate horizontal work surfaces that allow for the creation of various-sized projects and/or for set-up purposes between classes
- A rug area and/or presentation area to facilitate guest speakers or hold whole class meetings

To add another specialist subject for grades K-5, we will need to employ a schedule with a 6-day cycle. Currently, we follow a 5-day cycle (Monday-Friday), and students have one of the five current special subjects each day. Given that we typically have six classroom sections per grade level, we cannot schedule special subjects to allow all six classroom teachers to have their planning period simultaneously. A 6-day cycle would enable us to add the STEM special and create the opportunity for increased common planning time for most grade-level teams.

Wilmington Public Schools does not have an existing Chapter 74 Program.

Transportation Policies

Current Practices

Wilmington Public Schools transports over 1,800 regular education students daily, utilizing 17 buses, to provide our families with a free, safe, and consistent means of transportation to and from school. Wilmington also provides transportation for over 50 in-town special

education students, students on hardships, some out-of-district students, and McKinney-Vento students on our minibus routes that are owned and operated by the district. Aside from home to school, transportation is also provided for academic field trips to support the curriculum and co-curricular programs such as athletics. Wilmington Public Schools has a unique time structure servicing eight (8) schools, some sharing start and end times. Uncommon to many districts of this size, Wilmington has five (5) different start and end times, and our elementary students are split amongst several smaller buildings (currently, our high and middle are closely aligned and riding together, so it is considered as a single start/ end time).

Eligibility for the school bus is based on the distance between a student's residence and school. Wilmington School Committee Policy states transportation for students will be provided as follows:

- Kindergarten: All students, except those living in immediate proximity to the school, as determined by the Superintendent
- Grades 1 – 3: Students living more than one mile from the school.
- Grades 4 – 6: Students living more than one and one-half miles from the school.
- Grades 7 – 12: Students living more than two miles from school.
- Exceptions to these guidelines may be made at the discretion of the Superintendent. This will apply particularly to any student who must travel in a hazardous area to and from school. These students will be transported regardless of the mileage limits listed.

It has been the District's practice to transport all kindergarten students, all students in grades 1-8 with the exception of those within immediate proximity to their school, and high school students typically outside of a mile. Bus stops are designed to be centralized whenever it is safe to do so and are reviewed by the Traffic & Safety Division of the Wilmington Police Department. All families that wish to utilize the school bus must register for transportation, but there is no cost for this service.

School	School Hours	Approximate # of Bus Riders Compared to Total Enrollment	Approximate # of Designated Walkers	# of Buses Utilized in the Morning	# of Buses Utilized in the Afternoon	# of Minibusses
Wildwood	7:45 – 1:15	81 of 100	0	4	4	4

Boutwell	8:35 – 2:05	57 of 97	0	4	4	3
Middle School	8:05 – 2:30	564 of 703	15	16	17	2
High School	8:05 – 2:35	258 of 620	80	16	17	6
Shawsheen	8:40 – 3:00	260 of 342	0	10	9	4
West Intermediate	8:40 – 3:00	149 of 206	1	10	9	4
Woburn Street	9:05 – 3:25	275 of 358	0	13	10	3
North Intermediate	9:05 – 3:25	196 of 249	2	13	10	3

Our two Pre-K- K schools, Wildwood & Boutwell, have their own separate start and end times, and four (4) buses are used for each school to transport students to and from home. Currently, the Wildwood School is housed on the opposite side of town from where the students reside at the Wilmington Middle School and the West Intermediate School, both buildings located across from each other on Carter Ln. Kindergarten routes for both schools have very minimal riders. While only two vehicles are needed to service each of these school populations, four (4) vehicles are used to cover the large area they serve to reduce the amount of time students are aboard the bus so the buses have adequate time to get students to/from school and make it to their next route. These four (4) buses, used for two (2) of our five (5) start and end times, cover the same amount of area our elementary buses cover but for a small fraction of the student population. With most of these buses running at or under 25% capacity, transportation for these schools is extremely inefficient.

We have two (2) separate elementary tiers or start and end times, one (1) for each side of town, with a combined total of four (4) elementary buildings. There are two (2) buildings for grades 1-3 on each side and an additional two (2) intermediate buildings for grades 4-5. The Shawsheen School & West Intermediate share start and end times, and the Woburn Street School and the North Intermediate share start and end times on the other side. The elementary & intermediate buses will pick up and drop off at one school before heading to the corresponding school to load and unload. With our elementary campuses being 1.2-1.5 miles apart, imposing walk zones has no real impact on transportation because what is within a walk zone for some students isn't for others at the corresponding school.

Therefore, a bus must travel to the area anyway. This also makes it challenging for many car rider families, with students at each school having to be in multiple locations at once.

For our secondary schools, we began this school year with start time adjustments to improve the start time for our secondary students based on recommendations made by the American Academy of Pediatrics. To be able to change the start times without drastically increasing our fleet size, it was necessary to reduce our current tiers, or the number of start and end times, from 6 to 5 by combining our secondary students on buses together and having them share similar start and end times so buses would pick/ drop at one school before proceeding to the other.

We utilize seven (7) minibusses to service all in-town special education students, some regular education students whose residence cannot be accessed with a large bus, and some Pre-K students who have no other means of transportation. Whenever possible, we also transport some of our McKinney-Vento students residing in other districts and some of our out-of-district students who attend a school in or within close proximity to Wilmington. Most of our in-town special education students in grades K-5 attend the Wildwood for Pre-K- K, then the Shawsheen for grades 1-3, and the West for grades 4-5 before entering Middle & High School. While there is only a small fraction of students utilizing minibusses at the Boutwell, Woburn Street & North Intermediate schools, several minibusses are still needed to cover the distance between these students. Our minibusses are running home-to-school and school-to-home trips consistently throughout the day, with half-day Pre-K students coming and going in the midday. Aside from home-to-school transportation, the minibusses also support the outings for our post-grad program, Life Skills & Strides at the Middle & High School, and academic field trips directly supporting the curriculum and for co-curricular programs such as clubs.

The average length of each bus route is approximately 20 minutes once all students are loaded; however, an additional 5-12 minutes are spent on each tier driving in between the many schools, which raises the average route time to about 32 minutes. One of the longest routes is 43 minutes, but if the bus did not have to travel between 2 schools to pick up students, the time to load and complete the route would be reduced to 33 minutes. Approximately 35 minutes every morning and another 35 minutes every afternoon are spent traveling between our many small buildings to load and unload students. It can take anywhere between 7-17 minutes to load and travel to the corresponding school before a bus can even begin to start dropping students at their bus stop. All schools keep bus and car rider traffic separate to assist the buses in moving as quickly as possible on and off campus, but some of our schools are unable to support all the buses at once. Currently, 17

buses are used to service our many buildings, but only 12 are needed to service the population of bus riders. The reason for the additional vehicles is to accommodate the many start and end times and the travel time amongst each of the small buildings. Even with the additional vehicles, some of our vehicles continue to struggle to get to school at the scheduled end time.

Proposed Changes

Outlined are some different scenarios and the impact they will have on transportation. From a transportation standpoint, reducing the number of elementary buildings and the number of start and end times will allow the district to provide better service as more time will be available between routes. It will reduce the number of late vehicles in the afternoon, and additional time will no longer be needed for loading and transporting between our multiple buildings. Reducing the number of start and end times could also allow us to improve our current start times and impose reasonable walk zones. Currently, our elementary schools are 1.2 to 1.5 miles apart. Therefore, the buses must service every street because what may be a walk zone for a student in grades 1-3 isn't for students in grades 4-5, so service is provided in every area, even the ones close to a school. To optimize school bus efficiency, buses should be filled to capacity whenever possible, the number of campuses in which they need to load and unload needs to be reduced, and also the number of times they need to enter into the same neighborhoods throughout the day with each school having different start and end times.

New School for Wildwood Only (PreK-K) w/ Separated Times from North Intermediate & Woburn Street

A new school to replace the current Wildwood School will have no impact on transportation for the District; it would not drastically reduce the number of buildings, as Wildwood is currently utilizing two (2) buildings that are directly across from each other, nor would it reduce the amount of start and end times. The new building for Wildwood students would bring a slight positive change in transportation for Wildwood families only. A new building would reduce the number of places the current Wildwood vehicles would have to load and unload at and make it more centrally located to where the students are residing. This would minimally reduce the amount of time some students would be on the bus and allow for slightly later pickup times in the morning. The overall impact would only be a couple of minutes gained for Wildwood families.

The new building would require a driveway or lot that could accommodate at least four (4) buses but ideally five (5) if an additional vehicle needs to be added to assist in timing, along with space for up to 4 minibusses. Ideally, the bus area would be separated from the car

rider traffic to ensure the vehicles can move in and out quickly and have closer access to the main road. Each big bus measures 40 feet long and can be parked side by side or lined up in a single row. Minibusses measure approximately 18 feet in length, and it would be preferred that they are lined in a single row next to the curb to avoid students having to walk in between vehicles or in their own separate areas.

School	Approximate # of Bus Riders	Approximate # of Buses Needed	Approximate # of Minibusses Needed
Wildwood	81	4	4
North/ Woburn	471	12	3

New School for PreK – 3 (Combining Wildwood and Woburn St with an aligned start & end time)

A new school to replace the current Wildwood and Woburn St Schools and aligning the kindergarten start and end times with elementary will have a positive impact on the community. Due to a reduction in the number of buildings and bringing our total number of start and end times down from 5 tiers to 3, the current four (4) buses that are being used to service kindergarten can be used to assist on other elementary routes for faster service.

The new building would require a driveway or lot that could accommodate twelve (12) buses and five (5) minibusses. Ideally, the bus area would be separated from the car rider traffic to ensure the vehicles can move in and out quickly and have closer access to the main road. Each big bus measures 40 feet long and can be parked side by side or lined up in a single row. Minibusses measure approximately 18 feet in length, and it would be preferred that they are lined up in a single row next to the curb to avoid students having to walk in between vehicles or in their own separate areas.

School	Approximate # of Bus Riders	Approximate # of Buses Needed	Approximate # of Minibusses Needed
New Wildwood/ Woburn PreK- 3	356	12	5

New School for PreK – 5 (Combining Wildwood, Woburn Street, and North Intermediate with aligned start & end times)

A new school to replace the Woburn Street School, North Intermediate School, and Wildwood School would have the greatest impact on transportation for the District by reducing the number of buildings and start and end times. The four (4) buses used solely

to transport kindergarten students, which are at minimal capacity, could be used to assist on the elementary routes for faster service. Most routes would save 5-8 minutes every morning and an additional 5-8 minutes every afternoon by not having to travel between campuses and load & unload twice. It will also allow families who wish to drive their own students the ability to do so without running the risk of being late by having to travel to multiple campuses and through multiple car rider lines. The greatest impact on the District occurs with a combined Pre-K-5.

The only impact for Wildwood Families, specifically, would be a more centralized building where the students reside and no longer a need to load and unload at two buildings, slightly reducing the amount of time these kindergarten students are currently on the bus.

The new building would require a driveway or lot to accommodate 13 buses and up to 6 minibusses. Ideally, the bus area would be separated from the car rider traffic to ensure the vehicles can move in and out quickly and have closer access to the main road. Each big bus measures 40 feet long and can be parked side by side or lined up in a single row. Minibusses measure approximately 18 feet in length, and it would be preferred that they are lined up in a single row next to the curb to avoid students having to walk in between vehicles or in their own separate areas.

School	Approximate # of Bus Riders	Approximate # of Buses Needed	Approximate # of Minibusses Needed
New PreK- 5	552	13	5

In closing, to optimize the transportation system's efficiency, we need a reduction in the number of buildings and start/ end times. This would allow us to fill the vehicles and travel fewer times to the same neighborhoods on multiple trips. In doing so, the number of vehicles needed to service the community could be reduced, which would have a positive impact on the annual operating budget. Students would have faster service both to and from school, and the ability to further adjust school start and end times would be available.

Functional And Spatial Relationships And Adjacencies

Visioning session #3 focused on the functional and spatial relationships desired for this project. In small groups, participants prepared an overall building diagram for one of the three grade configurations under consideration. Those overall planning illustrations are depicted and described below. Each illustration communicates both the desired overall

conceptual organization and information about how individual spaces relate to one another. Finally, visioning participants articulated their preferred functional and spatial relationships as statements to be included in a set of guiding principles for design. While the illustrations for each grade configuration vary slightly, all three have several commonalities.

Building Features and Adjacencies

Overall, the District desires to organize the building into two major zones. One zone is the “public” zone, which accommodates spaces that may be accessed by students, staff, and/or the community during and/or after school hours. These spaces include the cafeteria, gymnasium, music rooms, art rooms, library, nurse, and administrative offices. The second "private" zone includes all the remaining spaces.

Within the public zone, any design alternative should express the following:

- Administrative suite immediately adjacent to the main entry of the facility with direct visual access to the building approach and the main entry
- Medical Suite in proximity to the main office administrative suite
- Cafeteria/ stage near music such that the equipment from the music room can be easily moved into the cafeteria for performances
- Kitchen located immediately adjacent to the cafeteria and in close proximity to site service entry
- Programmed custodial/maintenance spaces located near kitchen and service entry
- Possess the ability to be secured from the remainder of the building during off-school hours, special events, or lockdown.

Within the private zone, any design alternatives should express the following:

- Academic areas organized into seven grade-level neighborhoods, each with:
    - Extended learning space
    - Small Group Rooms located between pairs of classrooms
    - Special education-related rooms as required by District Program
    - Pre-Kindergarten and Kindergarten located on the ground floor in proximity to outdoor learning environments
- Special education spaces distributed throughout all grade level teams to maximize inclusive practices, allow for effective delivery of related services
- Possess the ability to be secured from the remainder of the building during off-school hours, special events, or lockdown.

- Provide a wide variety of instructional spaces, including traditional classrooms, small group rooms, and extended learning spaces (XLAs) with strong visual and physical connections between these experiences to facilitate a wide variety of instructional practices, varying group sizes, and opportunities for inclusionary practices for student support services.
- Provide lower grades with access to calming areas with sensory options; upper grades access XLAs/outside classroom areas
- Create teacher collaboration spaces capable of supporting day-to-day planning activities, diagnostic student data meetings, and professional development experiences
- Create an environment that positions office and service-delivery spaces for student support services near and distributed amongst grade level classrooms
- Organize building into lower elementary and upper elementary grade level groupings with shared core spaces in between
- Organize building into grade level learning communities, but in such a way that limits isolation of any one grade-level and allows grade-level learning communities to expand in bubble years
- Reduce travel distances between classrooms and shared core space to the greatest extent possible

<u>Site Features and Adjacencies</u>

Dedicated site circulation for each of the following:

  - Parent vehicles
  - Buses/Vans
  - Pedestrians
  - Specialized transportation (requires a dedicated and separate loading/unloading zone, but may not require complete separation from bus circulation)

- Any proposed project should include the installation of age-appropriate fully accessible playgrounds located near the cafeteria to best facilitate the daily recess/lunch sequence. Additionally, the district would like to provide the following types of outdoor educational-based activities in either enrollment option:
  - Collection, examination, and analysis of soil, water, and plant samples
  - Offering of artistic and/or informational presentations in an amphitheater setting
  - Planting, maintenance, and harvesting of vegetable gardens

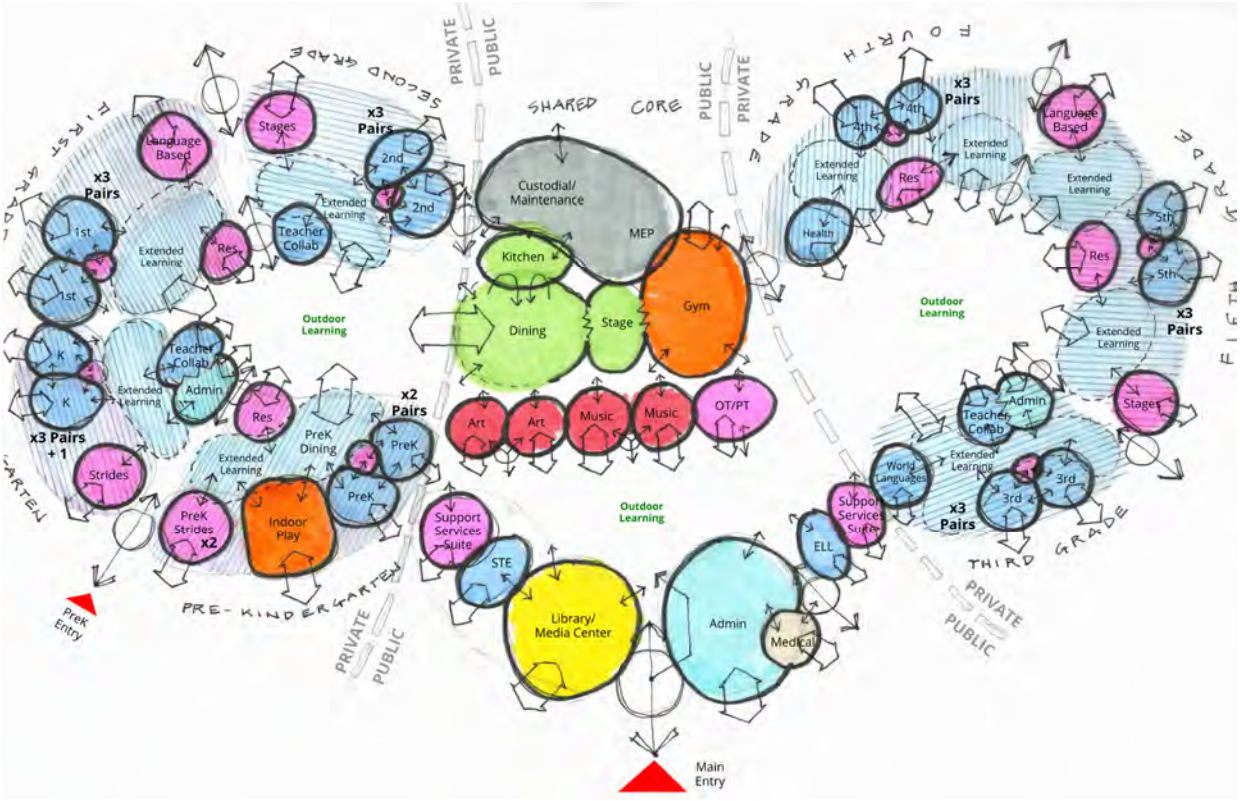
Design alternatives should express the following:

- All playgrounds in proximity to grade level classrooms and the cafeteria. This close geographic relationship will help to easily manage the transition from classroom to recess, from recess to the cafeteria, and from the cafeteria back to the classroom. Additionally, this relationship will support the capability of outdoor learning opportunities.
- A hardscape play area adjacent to playgrounds
- Emergency vehicle access to be coordinated with public safety requirements and positioned at the outermost edge of site planning to allow access to playgrounds and outdoor learning areas without the need to crossover the emergency vehicle pavement
- A paved service yard capable of supporting deliveries in a wide variety of vehicles
- Appropriate number of faculty and staff parking near the academic areas of the building and capable of doubling as event parking near public areas of the building (gym & cafeteria).
    - 140 spaces minimum (180 spaces preferred) for PreK-5th enrollment
    - 120 spaces minimum (150 spaces preferred) for PreK-3rd enrollment
    - 60 spaces minimum (100 spaces preferred) for PreK-K enrollment
- Physical education exercise, games, dance, and general movement activities
- Exploration of the wetlands on the property via paths and boardwalks

<u>Conceptual Overall Building Diagram</u>

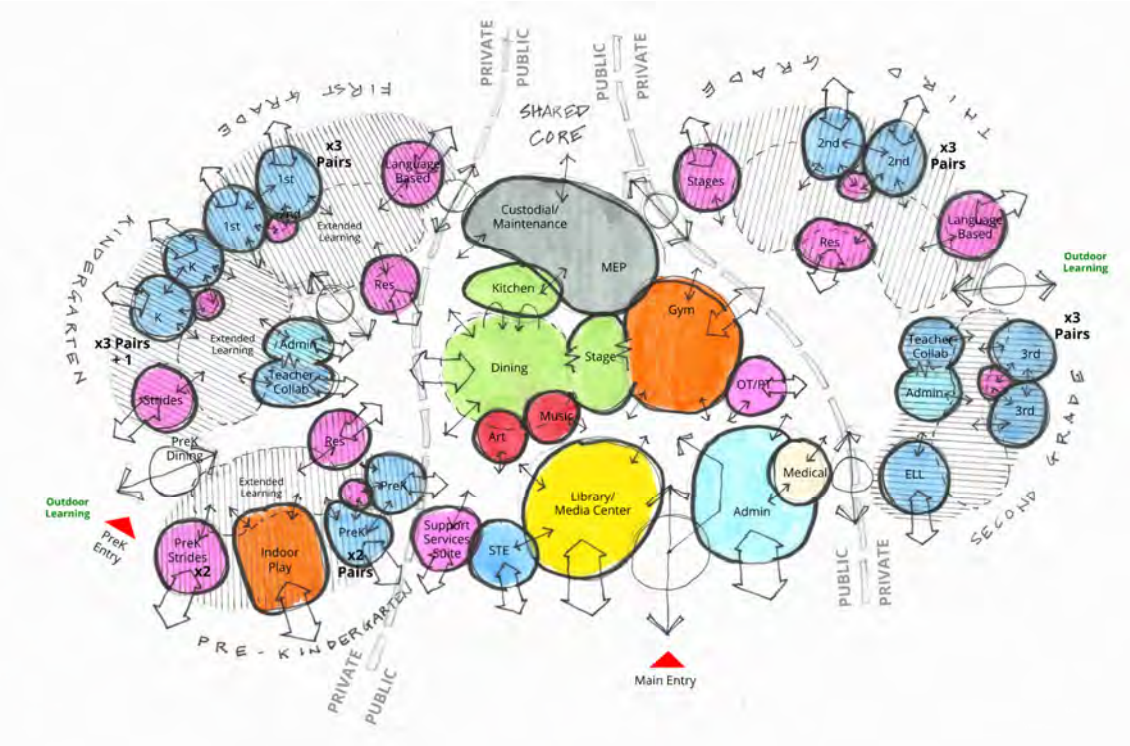
The overall building diagrams below express the District's idealized building layout and programmatic adjacencies. Although expressed as a single story in the diagram, an understanding exists that site characteristics and constraints may dictate a multi-story building design. Also expressed in the diagram is a need to separate parent vehicles and buses in the site circulation pattern, to allow access to playing fields and playgrounds without the need to cross parking or roadways, and an overall orientation of the building along a general East/West axis to maximize opportunities for natural daylight and other sustainability strategies.

Pre-K 5th


SHARED CORE
PRIVATE
PUBLIC
SECOND GRADE
FIRST GRADE
FOURTH GRADE
FIFTH GRADE
THIRD GRADE
PRE-KINDERGARTEN
Custodial/ Maintenance
MEP
Kitchen
Dining
Stage
Gym
Art
Art
Music
Music
OT/PT
Library/ Media Center
Admin
Medical
STE
Support Services Suite
ELL
Outdoor Learning
Main Entry
PreK Entry
Stages
Language Based
Strides
PreK Strides
Indoor Play
PreK Dining
Teacher Collab
Admin
Res
Extended Learning
Health
World Languages
x3 Pairs
x2 Pairs
x3 Pairs + 1
1st
2nd
3rd
4th
5th
K
PreK
x2

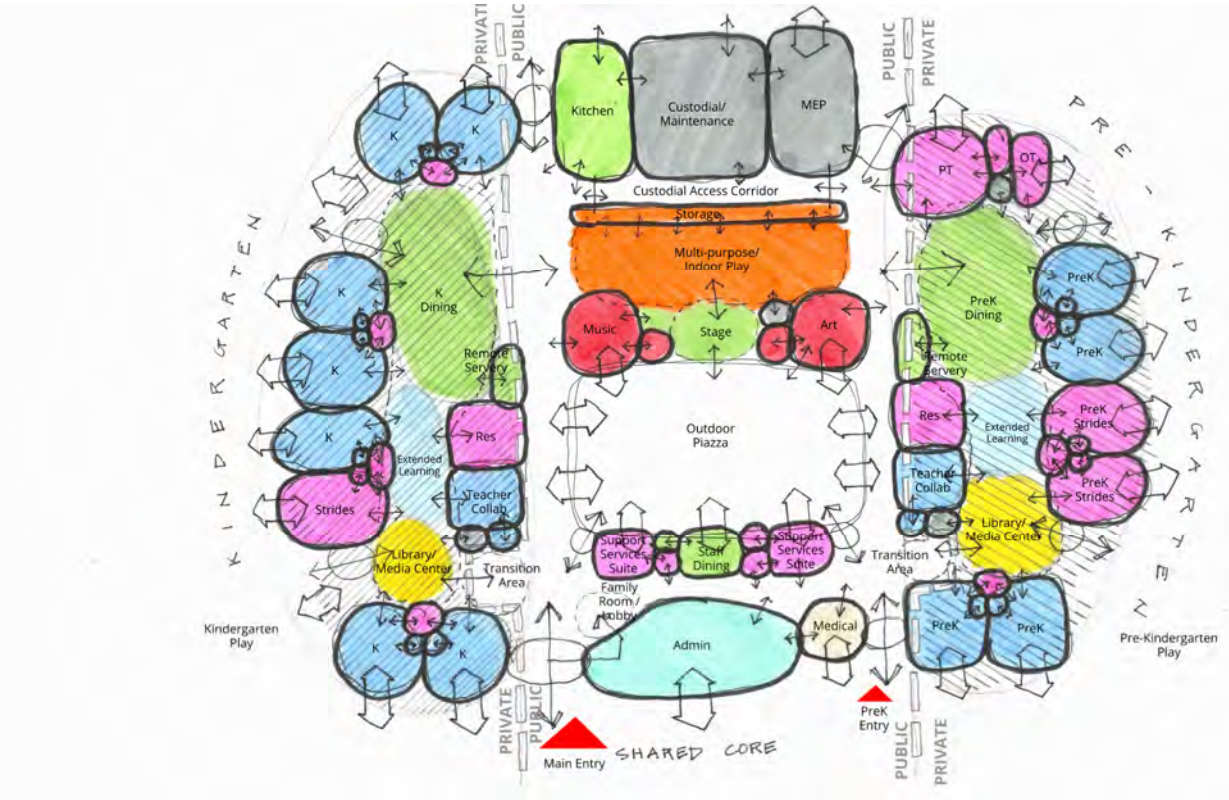
- Organize building into Pre-K to 2nd grade and 3rd grade to 5th grade with shared core spaces in between

Pre-K-3rd



- Organize building into Pre-K to 1st grade and 2nd grade to 3rd grade with shared core spaces in between

Pre-K-K



Security And Visual Access Requirements

Current Practices

Each school building is equipped with an access control system and one security camera at the front door. The front door is also equipped with an AiPhone doorbell intercom system to speak with visitors and control door access. Staff members all have a proximity swipe card/ID to access the building. Doors are manually unlocked or propped open at the time of student arrival. A panic button was recently installed in the main office of each school that contacts the police through the alarm company in case of an emergency.

Faculty are provided classroom keys. The keys are required to lock the door handle from the outside and cannot be locked from the inside of the room in an emergency. Interior communicating doors between classrooms often only lock from one side if they are equipped with a lock and need to be barricaded in an emergency. Window shades or blinds are not all present or operational to shield the view in an emergency situation.

Recent improvements to the VoIP system now allow intercom access from any classroom phone.

A district Safety Committee meets several times yearly to discuss and collaborate on safety procedures. Membership in the committee includes district Leadership, Police, Fire, School Resource Officers, Faculty and Staff. Operational requirements for fire drills, ALICE Lockdown drills/procedures, and reunification procedures. The most recent Medical Emergency Response Plan was submitted to DESE on November 30, 2023.

Proposed Changes

The design of the new building should provide for the following additional features

- Access control system on all exterior doors
- A sufficient number of security cameras to maintain operational views of the building, playgrounds, interior hallways, bathroom entrances, and public spaces such as the library, gymnasium, and cafeteria
- Interior doors should be equipped with locking systems that allow doors to be secured from the inside of the room. All communicating doors must be able to lock from both sides
- Additional panic buttons in the principal’s office and nurse's office
- A card reader that can activate a shutdown and lock of all access control system doors
- Ability to separate and secure public and private areas of the school

Summary of Visioning and Development of Guiding Principles For Design

This educational program narrative was informed by a series of visioning workshops. Outcomes of these workshops are communicated in detail in the appendix. This report documents the process, tools, resources, and outcomes of several visioning, planning, and programming activities used by the Design Team to define a direction and set of goals for the project. Ultimately, this process culminated in a set of Guiding Principles for Design that served as the basis for all design work and against which all alternatives were evaluated.

PROCESS

- Workshop #1: District-wide Issues
  Focused on potential grade configurations, school size, and the number of elementary schools
- Workshop #2: Learning and Teaching Issues
  Focused on what, how, where, and when students learn; how students are organized; and the types of learning experiences any project needs to accommodate
- Workshop #3: Overall Building Planning
  Focused on the conceptual spatial relationships between interior program elements, between exterior program elements, and between interior and exterior program elements
- Workshop #4: Individual Space Planning
  Focused on the conceptual features in individual spaces and/or suites of spaces

OUTCOMES

Visioning Workshop #1

- Acknowledgement by the District that needs exist at all six elementary facilities. What's the plan?
- Advantages and disadvantages to each grade configuration, but preference for PreK-5th.
- Design to allow both school within school models and single school models with grade level sub-groups if possible.

Visioning Workshop #2

- Students' and teachers' greatest needs and greatest strengths are different today compared to when current buildings were built.
- Any new construction or renovation project should look and perform differently than existing facilities.
- Variety and flexibility of space are key to meeting their needs and celebrating strengths.
- Educational models will change over time. Project should support one model on opening day but allow other models, too.

Visioning Workshop #3

- Organize into PreK-2 and 3rd-5th, with shared core
- Organize into grade level learning communities
- Distributed and purpose-built special education spaces
- Consider new/expanded programs for ELL and STEM
- Create a welcoming and safe environment that encourages curiosity and independence

Visioning Workshop #4

- Spatial relationships are critical
- Purpose-designed spaces are needed, especially for special education programs and student support services
- Varied learning environments are necessary, both within single spaces and adjacent to them
- Flexible, varied, and mobile furniture is needed
- Internal connections and interior views between spaces are critical to flexibility, curiosity, and independence

Guiding Principles for Design

- Education methodologies will change over the life span of the building. The project should be designed flexibly enough to allow the educational method to evolve without significant changes to the building, itself.
- Zone the building into Public and Private spaces
- Organize building into PreK to 2nd grade and 3rd grade to 5th grade with shared core spaces in between
- Reduce travel distances between classrooms and shared core space to the greatest extent possible
- Organize building into grade level learning communities, but in such a way that limits isolation of any one grade level and allows grade level learning communities to expand in bubble years
- Position Pre-Kindergarten and Kindergarten on the ground level
- Separation of site circulation – cars, buses, pedestrians – to the greatest extent possible
- Create a dedicated PreK entry with a dedicated PreK parking area, if possible
- Appropriate faculty, staff, and visitor parking
- Integrate special education spaces throughout the facility
- Position stage between Gymnasium and Cafeteria to maximize the flexibility to create performance/event experiences
- Position some of the administration offices within classroom groupings
- Remainder of administrative spaces adjacent to the main entry of the building
- Provide a wide variety of instructional spaces including traditional classrooms, small group rooms, and extended learning spaces (XLAs) with strong visual and physical connections between these experiences to facilitate a wide variety of instructional practices, varying group sizes, and opportunities for inclusionary practices for student support services.
- Provide lower grades with access to calming areas with sensory options; upper grades access XLAs/outside classroom areas
- Create teacher collaboration spaces capable of supporting day to day planning activities, diagnostic student data meetings, and professional development experiences
- Create an environment that positions office and service-delivery spaces for student support services near and distributed amongst grade level classrooms
- Position grade-level specific playgrounds adjacent to grade-level classroom areas and without the need to cross any vehicular roadways
- Provide all instructional spaces, offices, and extended learning spaces with direct access to natural daylight and exterior views to the greatest extent possible
- Provide a small group room between every pair of grade level classrooms to support general classroom instructional activities and as a place for student support services when appropriate.
- Create an environment where PreK students can dine in close proximity to their classrooms

- Zone the cafeteria in such a way to create a variety of dining experiences and smaller zones to reduce student anxiety
- Create a new Science, Technology, Engineering, and Mathematics program and support it with purpose-built and dedicated instructional space.
- Prioritize durability and ease of maintenance for materials and systems over lowest first cost.
- Position custodial closets with consideration for operational practicalities of daily cleaning activities.
- Position general receiving close to the kitchen, gymnasium, and with the ability to move materials, equipment, and supplies throughout the project.

Our design team used all the information contained in the above educational program narrative and the visioning report to develop each of the conceptual alternatives communicated later in this document.

Typical Day and Week in the Life of a Student

Teachers at Wildwood Early Childhood Center, Woburn Street School, and North Intermediate School plan their lessons with a focus on the students, utilizing a hands-on and inquiry-based approach in the general education classroom setting. Students work in small groups, collaboratively, independently, and as a whole class. Movement around the classroom is expected to accommodate the various instructional settings and approaches.

Current class sizes and configurations limit the ability of students to move fluidly within the classroom setting.

For science and mathematics instruction, flexible classroom layouts and tables for experiments and lab work are necessary while allowing for ample storage for teaching materials, consumables, and ongoing project work. Due to limited space, experiments and projects often need to be broken down to make room for other types of learning, and students cannot add to or display their projects. Unfortunately, classrooms do not have enough storage for science materials, limiting spontaneous science instruction. Teachers must travel to a central storage area to gather equipment and supplies.

General education teachers, special education teachers, and interventionists share students across classrooms, pulling students to shared intervention spaces and pushing them into classrooms throughout the day. Students may sometimes leave the classroom to receive occupational therapy, physical therapy, speech and language therapy, and social-emotional learning services. Special education staff may also push into the classroom to provide their services when required.

The active and authentic learning described above requires a flexible teaching environment that can accommodate a variety of scales, paired classroom adjacency, attached small group rooms, and extended learning space immediately outside classrooms. Unfortunately, the current buildings lack this kind of accessibility.

As indicated in the School Scheduling Method of this document, the allocated minutes for subjects/activities at each grade level are clearly identified. The student day is structured to provide lessons and activities aligned with the MA frameworks utilizing evidence-based approaches and materials. Below is a sample of a typical 2nd-grade schedule.

Typical Life in the Day of a Student (Grade 2)	Program Details and Educational Benefit
Arrival and Morning Meeting	Some students participate in the CARES before-school program in the cafeteria. When other students arrive by bus or car, they enter the building and proceed directly to class. Morning meetings are an important part of the day as they set the tone and help the teacher and students build and nurture relationships with each other. SEL and PBIS lessons can be reinforced during this time.
Foundational Literacy Skills	Literacy subjects are scheduled in a connected block whenever possible. Our district has shifted to evidence-based literacy programs; Universal screening and progress monitoring are critical components of our literacy program.
Reading	
Read Aloud/Working Snack	
Writing	
Specialist Subject (Art, Music, P.E., Health, and Library)	The district is proud of the variety of specialist subjects we can offer. We have wonderful performing arts and visual arts programs at our secondary level and believe that our younger students acquire great foundational skills during their elementary experience to prepare them. We are also proud to offer Health as a specialist subject for our elementary students. Many districts struggle to include that subject matter, which often gets folded into other curricula. We are excited about the potential opportunity to add a STEM specialist subject going forward. This would round out and nicely complement the course offerings at the elementary level. We know how important STEM education is in preparing students for the secondary level and, more importantly, in preparing them for their world outside of school.
Lunch/Recess	
Intervention Block	Although we struggle to build an intervention block into daily instruction in all grade levels, we aim to create this dedicated

	time for students to get the services they need, such as reading or math intervention. Some grade levels are able to dedicate time for this type of intervention. Those who don't get creative with scheduling to ensure that students aren't missing core instruction. Our reading and math interventionists provide both pull-out and push-in services for students based on their level of need, schedules, and space availability.
Math	Our math program has been in place for several years, and our teachers are well-versed in the content. To better differentiate for our students, we have implemented a math workshop model allowing students to rotate through stations. In a typical lesson, they experience explicit instruction, guided practice, and independent practice.
Science or Social Studies (alternates daily)	Students typically alternate between Science or Social Studies each day. Both our science and social studies programs were purchased within the last few years, and teachers received a great deal of training in these two programs. Both programs require significant technology to fully utilize the available resources. Our Science program promotes hands-on learning through lab experiments.
Dismissal	At dismissal, students are gathered in different locations and are dismissed by groups (walkers, pick-up, or specific busses)

In addition to daily scheduled activities. students might experience grade-level community meetings or enrichment experiences at different times throughout the year.

Students go outside for recess, weather permitting. Although recess is not academic instruction per se, it is a critical part of our students' day. During recess, students can increase physical activity, burn off energy, get exercise, and develop SEL skills through collaborative play and problem-solving. It is important to have outdoor play space and developmentally appropriate play structures easily accessible from each grade-level cluster in the building.

Teachers take students outside for lessons as well when the weather cooperates. Ideally, a new school would have an outdoor classroom or picnic tables for students to use for lessons.

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PROPOSED SPACE SUMMARY – WILDWOOD EARLY CHILDHOOD CENTER (130 STUDENTS + PreK)

The space summary on the following pages contains an itemization of the existing spaces at the Wildwood Early Childhood Center and of the proposed spaces needed to deliver the District's educational program for 130 kindergarten students and the Pre-Kindergarten students who attend the Wildwood Early Childhood center. Existing classrooms of varying sizes are communicated as separate line items. Room labels unique to the District and/ or that vary from MSBA room names are identified with a light yellowish highlight. Total gross square foot areas are shown at the bottom of the table for both the existing and proposed conditions.

The District and the Design Team worked together to align proposed spaces with MSBA room area guidelines for individual program areas and the total gross floor area to the greatest extent possible. However, several deviations do exist. All deviations were deemed necessary by the District to serve the educational program and are explained in detail on the pages following the space summary.

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Proposed Space Summary - Elementary School

PreK-K Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
				EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
CORE ACADEMIC			6,182			0			12,175			12,175			3,775			8,400	STE Guidelines Policy
(List rooms of different sizes separately)																			
Kindergarten Classroom with Toilet			0			0	1,100	7	7,700	1,100	7	7,700	-100	0	-700	1,200	7	8,400	1,100 NSF (minimum size) - 1,300 NSF (maximum size); Minimum of (2) sinks required per Kindergarten Classroom
Kindergarten Classroom	873	1	873																
Kindergarten Classroom	877	1	877																
Kindergarten Classroom	874	1	874																
Kindergarten Classroom	886	1	886																
Kindergarten Classroom	884	1	884																
Kindergarten Classroom	893	1	893																
Kindergarten Classroom	895	1	895																
General Classroom (Grades 1-6)			0			0	0	0	0	0	0	0	-950	0	0	950	0	-	900 NSF (minimum size) - 1,000 NSF (maximum size); Minimum of (2) sinks required per General Classroom
Science, Technology, Engineering (STE) Room (Grades 3-6) (if applicable)			0			0	0	0	0	0	0	0	-1,080	0	0	1,080	0	-	1,080 NSF (minimum size); Refer to the 2018 STE Guidelines for additional information.
STE Storage Room (if applicable)			0			0	0	0	0	0	0	0	-120	0	0	120	0	-	Minimum of (1) 120 NSF STE Storage Room required per STE Room; Refer to the 2018 STE Guidelines for additional information.
ELL Classroom			0			0	475	1	475	475	1	475	475	1	475				
Health Classroom			0			0	900	1	900	900	1	900	900	1	900				
Teacher Collaboration			0			0	450	2	900	450	2	900	450	2	900				
Extended Learning K							300	4	1,200	300	4	1,200	300	4	1,200				
Extended Learning PK			0			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
SPECIAL EDUCATION			3,769			0			7,480			7,480			5,470			2,010	Special Education spaces require DESE review and approval.
(List rooms of different sizes separately)																			
Self-Contained Special Education Classroom			0			0	1,100	3	3,300	1,100	3	3,300	150	2	2,350	950	1	950	900 NSF (minimum size) - 1,300 NSF; equal to the size of the proposed General Classrooms that serve the same student population.
Strides ProgramPK-K	860	1	860			0	1,100	3		1,100	3	0	1,100	3	0				
Strides ProgramPK-K	852	1	852			0													
Strides ProgramPK-K	895	1	895			0													
Self-Contained Special Education Toilet Room			0			0			0	0	0	0	-60	-1	-60	60	1	60	
Strides Program PK-K Toilet			0			0	120	3	360	120	3	360	120	3	360				
Learning Center			0			0	200	1	200	200	1	200	-300	0	-300	500	1	500	1/2 size of a General Classroom
Small Group Room			0			0	150	7	1,050	150	7	1,050	-350	6	550	500	1	500	1/2 size of a General Classroom
Calming			0			0	100	3	300	100	3	300	100	3	300				
OT Classroom/Office	318	1	318			0	250	1	250	250	1	250	250	1	250				
PT Classroom			0			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
PT Storage			0			0	150	1	150	150	1	150	150	1	150				
School Psychologists			0			0	150	1	150	150	1	150	150	1	150				
BCBA Office/Team Chairs			0			0	320	1	320	320	1	320	320	1	320				
Speech & Language	844	1	844			0	200	2	400	200	2	400	200	2	400				

Proposed Space Summary - Elementary School

PreK-K Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
				EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
Public Day Education Spaces (List rooms separately below)																			
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
Collaborative Program Spaces (List rooms separately below)																			
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
ART & MUSIC			**660**			**0**			**2,575**			**2,575**			**2,500**			**75**	
Art Classroom (25 seats)			0			0	1,000	1	1,000	1,000	1	1,000	0	1	1,000	1,000	0	-	Assumed schedule: 2 times per week per student
Art Workroom with Storage and Kiln			0			0	200	1	200	200	1	200	50	1	200	150	0	-	
Music Classroom / Large Group (25-50 seats)			0			0	1,200	1	1,200	1,200	1	1,200	0	1	1,200	1,200	0	-	Assumed schedule: 2 times per week per student
Music Practice / Ensemble (Storage)			0			0	175	1	175	175	1	175	100	0	100	75	1	75	
Music Practice / Ensemble			0			0	0	0	0	0	0	0	0	0	0				
Multipurpose Library/Music/Art	660	1	660			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
HEALTH & PHYSICAL EDUCATION			**779**			**0**			**5,620**			**5,620**			**-680**			**6,300**	Excess Physical Education Spaces Policy
Gymnasium			0			0	5,000	1	5,000	5,000	1	5,000	-1,000	0	-1,000	6,000	1	6,000	
Gym Storeroom / Cares Storage	779	1	779			0	500	1	500	500	1	500	350	0	350	150	1	150	
PE Office ~~with Shower and Toilet~~			0			0	120	1	120	120	1	120	-30	0	-30	150	1	150	
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
MEDIA CENTER			**0**			**0**			**2,020**			**2,020**			**0**			**2,020**	
Media Center / Reading Room			0			0	1,570	1	1,570	1,570	1	1,570	-450	0	-450	2,020	1	2,020	
STEM / Maker Space			0			0	450	1	450	450	1	450	450	1	450				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-K Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
				EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
DINING & FOOD SERVICE			**3,476**			**0**			**5,250**			**5,250**			**1,275**			**3,975**	
Cafeteria / Dining	2,647	1	2,647			0	1,950	1	1,950	1,950	1	1,950	975	0	975	975	1	975	Based on 2 lunch seatings - 15 NSF per seat
Stage			0			0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	
Chair / Table / Equipment Storage	183	1	183			0	200	1	200	200	1	200	0	0	0	200	1	200	
Kitchen	646	1	646			0	1,600	1	1,600	1,600	1	1,600	0	0	0	1,600	1	1,600	1,600 NSF for first 300 students + 1 NSF per additional student
Staff Lunch Room			0			0	200	1	200	200	1	200	0	0	0	200	1	200	20 NSF per student
Quiet café area			0			0	150	2	300	150	2	300	4	600	300				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
MEDICAL			**187**			**0**			**510**			**510**			**100**			**410**	
Medical Suite Toilet			0			0	130	1	130	130	1	130	70	0	70	60	1	60	
Nurses' Office / ~~Waiting Room~~			0			0	120	1	120	120	1	120	-130	0	-130	250	1	250	
Examination Room / ~~Resting~~			0			0	100	1	100	100	1	100	0	0	0	100	1	100	
Waiting Area			0			0	60	1	60	60	1	60	60	1	60				
Resting Area			0			0	100	1	100	100	1	100	100	1	100				
Multipurpose Medical	187	1	187			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
ADMINISTRATION & GUIDANCE			**1,876**			**0**			**2,290**			**2,290**			**425**			**1,865**	
General Office / Waiting Room with Toilet			0			0	300	1	300	300	1	300	0	0	0	300	1	300	
Teachers' Mail and Time Room			0			0	100	1	100	100	1	100	0	0	0	100	1	100	
Copy Room	58	1	58			0	150	1	150	150	1	150	0	0	0	150	1	150	
Records Room			0			0	110	1	110	110	1	110	0	0	0	110	1	110	
Principal's Office with Conference Area	238	1	238			0	375	1	375	375	1	375	0	0	0	375	1	375	
Principal's Secretary / Waiting	181	1	181			0	0	0	0	0	0	0	-125	-1	-125	125	1	125	
Assistant Principal's Office			0			0	0	0	0	0	0	0	-120	0	0	120	0	-	
Supervisory / Spare Office			0			0	0	0	0	0	0	0	-120	-1	-120	120	1	120	
Conference Room	359	1	359			0	250	1	250	250	1	250	0	0	0	250	1	250	
School / Adjustment Counselors	171	1	171			0	150	1	150	150	1	150	0	1	150	150	0	-	
Guidance Storeroom			0			0	35	1	35	35	1	35	0	0	0	35	1	35	
Teachers' Work Room	251	1	251			0	300	1	300	300	1	300	0	0	0	300	1	300	
Reading Specialists	181	1	181			0	200	1	200	200	1	200	200	1	200				
Math Tutors	437	1	437			0	200	1	200	200	1	200	200	1	200				
IT Technician Office			0			0	120	1	120	120	1	120	120	1	120				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-K Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
				EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
CUSTODIAL & MAINTENANCE			**215**			**0**			**1,900**			**1,900**			**0**			**1,900**	
Custodian's Office			0			0	175	1	175	175	1	175	25	0	25	150	1	150	
Custodian's Workshop			0			0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Custodian's Storage			0			0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Storage	46	1	46																
Storage	29	1	29																
Storage	34	1	34																
Storage	106	1	106																
Recycling Room / Trash			0			0	0	0	0	0	0	0	-400	-1	-400	400	1	400	
Receiving and General Supply			0			0	1,525	1	1,525	1,525	1	1,525	1,325	0	1,325	200	1	200	
Storeroom			0			0	0	0	0	0	0	0	-200	-1	-200	200	1	200	
Network / Telecom Room			0			0	200	1	200	200	1	200	0	0	0	200	1	200	
[insert room type here]			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0	0	0	0	0	0	0				
OTHER			**1,742**			**0**			**4,720**			**4,720**			**4,720**			**0**	
(List rooms separately below)																			
Pre-Kindergarten Classroom with Toilet (if applicable)	834	1	834			0	1,100	4	4,400	1,100	4	4,400	-100	4	4,400	1,200	0	-	1,100 NSF (minimum size) - 1,300 NSF (maximum size)
Pre-Kindergarten Classroom with Toilet (if applicable)	908	1	908																
Teacher Wellness Room			0			0	100	2	200	100	2	200	100	2	200				
CARES Site Coordinator Office							120	1	120	120	1	120	120	1	120				
[Enter room type here]			0			0			0	0	0	0	0	0	0				
Total Building Net Floor Area (NFA)			**18,886**			**0**			**44,540**			**44,540**			**17,585**			**26,955**	**Total Building Net Floor Area (NFA)**
Proposed Student Capacity / Enrollment																# of Grades	1	**130**	**Total Enrollment (Enter Design Enrollment)**
																K	1	**130**	Kindergarten Enrollment
																Grade 1	0	**0**	Lower Elementary School Enrollment (Grades 1-2)
																Grade 2	0	**0**	Upper Elementary School Enrollment (Grades 3-6)
																Grade 3	0		
																Grade 4	0		
																Grade 5	0		
																Grade 6	0		

Proposed Space Summary - Elementary School

PreK-K Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools **Wildwood Early Childhood Center**	**EXISTING CONDITIONS**			**PROPOSED PROGRAM**									**VARIATION TO MSBA GUIDELINES**			**MSBA GUIDELINES (DO NOT MODIFY)** **(Refer to Educational Facility Planning for additional information)**			
				EXISTING TO REMAIN / RENOVATED			**NEW CONSTRUCTION**			**TOTAL**									
ROOM TYPE	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**COMMENTS**
NON-PROGRAMMED SPACES					% of GFA	**0**		% of GFA	**22,270**		% of GFA	**22,270**							Complete this category with Schematic Design Submittal
Other Occupied Rooms (List rooms separately below)																			
[Enter room type here]				-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]				-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]				-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]				-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]				-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied MEP / FP Spaces				-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied Closets, Supply Rooms, and Storage Rooms				-	#DIV/0!		-	0.0%		-	0.0%	0							
Toilet Rooms				-	#DIV/0!		-	0.0%		-	0.0%	0							
Circulation (corridors, stairs, ramps and elevators)				-	#DIV/0!		-	0.0%		-	0.0%	0							
Remaining[3]				-	#DIV/0!	**0**	-	33.3%	**22,270**	-	33.3%	**22,270**							
Total Building Gross Floor Area (GFA)[2]			**29,302**			**0**			**66,810**			66,810			**43,410**			**23,400**	**Total Building Gross Floor Area (GFA)[2]**
Grossing Factor (GFA / NFA)			**1.55**			**#DIV/0!**			**1.50**			**1.50**			**0.63**			**0.87**	**Grossing Factor (GFA / NFA)**

40,433

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls.

[3] **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architecture Firm: _____

Name of Principal Architect: _____

Signature of Principal Architect: Donald M Walter

Digitally signed by Donald M Walter
DN: C=US, E=dwalter@doreandwhittier.com, O="Dore + Whittier", CN=Donald M Walter
Date: 2024.03.13 13:46:13-04'00'

Date: _____

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PROPOSED SPACE SUMMARY – PreK-3 Configuration (510 STUDENTS + PreK)

The space summary on the following pages contains an itemization of the existing spaces at the Wildwood Early Childhood Center and Woburn Street School of the proposed spaces needed to deliver the District's educational program for 510 kindergarten through grade three students and the Pre-Kindergarten students who attend the Wildwood Early Childhood center. Existing classrooms of varying sizes are communicated as separate line items. Room labels unique to the District and/ or that vary from MSBA room names are identified with a light yellowish highlight. Total gross square foot areas are shown at the bottom of the table for both the existing and proposed conditions.

The District and the Design Team worked together to align proposed spaces with MSBA room area guidelines for individual program areas and the total gross floor area to the greatest extent possible. However, several deviations do exist. All deviations were deemed necessary by the District to serve the educational program and are explained in detail on the pages following the space summary.

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Proposed Space Summary - Elementary School

PreK-3rd Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street ES)			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
							EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
CORE ACADEMIC			**6,182**			**19,832**			**0**			**32,475**			**32,475**			**7,925**			**24,550**	STE Guidelines Policy
(List rooms of different sizes separately)																						
Kindergarten Classroom with Toilet	varies	7	6,182			0			0	1,100	7	7,700	1,100	7	7,700	-100	0	-700	1,200	7	8,400	1,100 NSF (minimum size) - 1,300 NSF (maximum size); Minimum of (2) sinks required per Kindergarten Classroom
General Classroom (Grades 1-6)	873	1				0			0	900	18	16,200	900	18	16,200	-50	1	50	950	17	16,150	900 NSF (minimum size) - 1,000 NSF (maximum size); Minimum of (2) sinks required per General Classroom
General Classroom	877	1		509	1	509																
General Classroom	874	1		911	1	911																
General Classroom	886	1		906	1	906																
General Classroom	884	1		904	1	904																
General Classroom	893	1		917	1	917																
General Classroom	895	1		904	1	904																
General Classroom			0	904	1	904																
General Classroom			0	905	1	905																
General Classroom			0	904	1	904																
General Classroom			0	999	1	999																
General Classroom			0	905	1	905																
General Classroom			0	904	1	904																
General Classroom			0	902	1	902																
General Classroom			0	905	1	905																
General Classroom			0	905	1	905																
General Classroom			0	905	1	905																
General Classroom			0	907	1	907																
General Classroom			0	907	1	907																
General Classroom			0	884	1	884																
General Classroom			0	908	1	908																
General Classroom			0	907	1	907																
Science, Technology, Engineering (STE) Room (Grades 3-6) (if applicable)			0	222	1	222			0	0	0	0	0	0	0	-1,080	0	0	1,080	0	-	1,080 NSF (minimum size); Refer to the 2018 STE Guidelines for additional information.
STE Storage Room (if applicable)			0			0			0	0	0	0	0	0	0	-120	0	0	120	0	-	Minimum of (1) 120 NSF STE Storage Room required per STE Room; Refer to the 2018 STE Guidelines for additional information.
ELL Classroom			0			0			0	475	1	475	475	1	475	475	1	475				
Health Classroom			0	908	1	908			0	900	1	900	900	1	900	900	1	900				
Teacher Collaboration			0			0			0	500	4	2,000	500	4	2,000	500	4	2,000				
Extended Learning K										300	4	1,200	300	4	1,200	300	4	1,200				
Extended Learning PK			0			0			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
Extended Learning 1st-3rd			0			0			0	1,000	3	3,000	1,000	3	3,000	1,000	3	3,000				

Proposed Space Summary - Elementary School

PreK-3rd Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street ES)			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
							EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
SPECIAL EDUCATION			**3,769**			**3,058**			**0**			**14,440**			**14,440**			**8,400**			**6,040**	Special Education spaces require DESE review and approval.
(List rooms of different sizes separately)																						
Self-Contained Special Education Classroom	Varies	3	2,607			0			0			0	0	0	0	-950	-4	-3,800	950	4	3,800	900 NSF (minimum size) - 1,300 NSF; equal to the size of the proposed General Classrooms that serve the same student population.
Strides ProgramPK-K	860	1				0			0	1,100	3	3,300	1,100	3	3,300	1,100	3	3,300				
Strides Program 1st-3rd	852	1				0			0	900	2	1,800	900	2	1,800	900	2	1,800				
Stages Program 1st-3rd	895	1		907	1	907			0	900	1	900	900	1	900	900	1	900				
Language-Based Program 1st-3rd			0	908	1	908			0	900	1	900	900	1	900	900	1	900				
Self-Contained Special Education Toilet Room			0			0			0			0	0	0	0	-60	-4	-240	60	4	240	
Strides Program PK-K Toilet			0			0			0	120	3	360	120	3	360	120	3	360				
Strides Program 1st-3rd Toilet			0			0			0	120	2	240	120	2	240	120	2	240				
Stages Program 1st-3rd Toilet			0			0			0	120	1	120	120	1	120	120	1	120				
Learning Center			0	915	1	915			0	200	4	800	200	4	800	-300	1	-700	500	3	1,500	1/2 size of a General Classroom
Small Group Room			0			0			0	150	18	2,700	150	18	2,700	-350	17	2,200	500	1	500	1/2 size of a General Classroom
Calming			0			0			0	100	6	600	100	6	600	100	6	600				
OT Classroom/Office	318	1	318	132	1	132			0	250	1	250	250	1	250	250	1	250				
PT Classroom			0	196	1	196			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
PT Storage			0			0			0	250	1	250	250	1	250	250	1	250				
School Psychologists			0			0			0	150	2	300	150	2	300	150	2	300				
BCBA Office/Team Chairs			0			0			0	320	1	320	320	1	320	320	1	320				
Speech & Language	844	1	844			0			0	200	3	600	200	3	600	200	3	600				
Public Day Education Spaces (List rooms separately below)																						
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
Collaborative Program Spaces (List rooms separately below)																						
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
ART & MUSIC			**660**			**1,860**			**0**			**2,575**			**2,575**			**0**			**2,575**	
Art Classroom (25 seats)			0	903	1	903			0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	Assumed schedule: 2 times per week per student
Art Workroom with Storage and Kiln			0			0			0	200	1	200	200	1	200	50	0	50	150	1	150	
Music Classroom / Large Group (25-50 seats)			0	957	1	957			0	1,200	1	1,200	1,200	1	1,200	0	0	0	1,200	1	1,200	Assumed schedule: 2 times per week per student
Music Practice / Ensemble (Storage)			0			0			0	175	1	175	175	1	175	100	-2	-50	75	3	225	
Music Practice / Ensemble			0			0			0	0	0	0	0	0	0	0	0	0				
Multipurpose Library/Art/Music	660	1	660			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
HEALTH & PHYSICAL EDUCATION			**779**			**3,928**			**0**			**6,300**			**6,300**			**0**			**6,300**	Excess Physical Education Spaces Policy
Gymnasium			0	3,751	1	3,751			0	6,000	1	6,000	6,000	1	6,000	0	0	0	6,000	1	6,000	
Gym Storeroom	779	1	779	177	1	177			0	180	1	180	180	1	180	30	0	30	150	1	150	
PE Office ~~with Shower and Toilet~~			0			0			0	120	1	120	120	1	120	-30	0	-30	150	1	150	
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-3rd Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street ES)			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
							EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
MEDIA CENTER			**0**			**1,248**			**0**			**2,965**			**2,965**			**0**			**2,965**	
Media Center / Reading Room			0	1,248	1	1,248			0	1,965	1	1,965	1,965	1	1,965	-1,000	0	-1,000	2,965	1	2,965	
STEM / Maker Space			0			0			0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
DINING & FOOD SERVICE			**3,476**			**3,871**			**0**			**7,232**			**7,232**			**0**			**7,232**	
Cafeteria / Dining	2,647	1	2,647	2,545	1	2,545			0	2,875	1	2,875	2,875	1	2,875	-950	0	-950	3,825	1	3,825	Based on 2 lunch seatings - 15 NSF per seat
Stage			0	337	1	337			0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	
Chair / Table / Equipment Storage	183	1	183	108	1	108			0	370	1	370	370	1	370	0	0	0	370	1	370	
Kitchen	646	1	646	881	1	881			0	2,310	1	2,310	2,310	1	2,310	500	0	500	1,810	1	1,810	1,600 NSF for first 300 students + 1 NSF per additional student
Staff Lunch Room			0			0			0	227	1	227	227	1	227	-1	0	-1	228	1	228	20 NSF per student
Quiet café area			0			0			0	150	3	450	150	3	450	6	900	450				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
MEDICAL			**187**			**238**			**0**			**610**			**610**			**0**			**610**	
Medical Suite Toilet			0	42	1	42			0	130	1	130	130	1	130	70	0	70	60	1	60	
Nurses' Office / ~~Waiting Room~~			0	196	1	196			0	120	1	120	120	1	120	-130	0	-130	250	1	250	
Examination Room / ~~Resting~~			0			0			0	100	1	100	100	1	100	0	-2	-200	100	3	300	
Waiting Area			0			0			0	60	1	60	60	1	60	60	1	60				
Resting Area			0			0			0	200	1	200	200	1	200	200	1	200				
Multipurpose Medical	187	1	187			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
ADMINISTRATION & GUIDANCE			**1,876**			**1,738**			**0**			**4,085**			**4,085**			**1,710**			**2,375**	
General Office / Waiting Room with Toilet			0	234	1	234			0	405	1	405	405	1	405	0	0	0	405	1	405	
Teachers' Mail and Time Room			0			0			0	100	1	100	100	1	100	0	0	0	100	1	100	
Copy Room	58	1	58			0			0	150	1	150	150	1	150	0	0	0	150	1	150	
Records Room			0			0			0	110	1	110	110	1	110	0	0	0	110	1	110	
Principal's Office with Conference Area	238	1	238	158	1	158			0	200	1	200	200	1	200	-175	0	-175	375	1	375	
Principal's Secretary / Waiting	181	1	181			0			0	125	1	125	125	1	125	0	0	0	125	1	125	
Assistant Principal's Office			0	290	1	290			0	200	2	400	200	2	400	80	2	400	120	0	-	
Supervisory / Spare Office			0			0			0	120	2	240	120	2	240	0	1	120	120	1	120	
Staff Office				289	1	289																
Staff Office			0	269	1	269																
Conference Room	359	1	359			0			0	200	2	400	200	2	400	-50	1	150	250	1	250	
School / Adjustment Counselors	171	1	171	130	1	130			0	200	2	400	200	2	400	50	0	100	150	2	300	
Guidance Storeroom			0			0			0	35	1	35	35	1	35	0	0	0	35	1	35	
Teachers' Work Room	251	1	251			0			0	200	1	200	200	1	200	-205	0	-205	405	1	405	
Reading Specialists	181	1	181	129	1	129			0	200	4	800	200	4	800	200	4	800				
Math Tutors	437	1	437	239	1	239			0	200	2	400	200	2	400	200	2	400				
IT Technician Office			0			0			0	120	1	120	120	1	120	120	1	120				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-3rd Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools **Wildwood Early Childhood Center**	**EXISTING CONDITIONS (Wildwood ECC)**			**EXISTING CONDITIONS (Woburn Street ES)**			**PROPOSED PROGRAM**									**VARIATION TO MSBA GUIDELINES**			**MSBA GUIDELINES (DO NOT MODIFY)** **(Refer to Educational Facility Planning for additional information)**			
							EXISTING TO REMAIN / RENOVATED			**NEW CONSTRUCTION**			**TOTAL**									
ROOM TYPE	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**ROOM NFA[1]**	**# OF ROOMS**	**AREA TOTALS**	**COMMENTS**
CUSTODIAL & MAINTENANCE			**215**			**1,066**			**0**			**2,110**			**2,110**			**0**			**2,110**	
Custodian's Office			0			0			0	175	1	175	175	1	175	25	0	25	150	1	150	
Custodian's Workshop			0			0			0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Custodian's Storage	Varies	4	215			0			0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Custodial Storage	46	1		98	1	98																
Custodial Storage	29	1		58	1	58																
Custodial Storage	34	1		479	1	479																
Custodial Storage	106	1		52	1	52																
Custodial Storage			0	49	1	49																
Recycling Room / Trash			0			0			0	1,735	1	1,735	1,735	1	1,735	1,335	0	1,335	400	1	400	
Receiving and General Supply			0			0			0	0	0	0	0	0	0	-270	-1	-270	270	1	270	
Storeroom			0			0			0	0	0	0	0	0	0	-340	-1	-340	340	1	340	
Network / Telecom Room			0			0			0	200	1	200	200	1	200	0	0	0	200	1	200	
External Storage			0	330	1	330			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0			0	0	0	0	0	0	0				
OTHER			**1,742**			**115**			**0**			**5,420**			**5,420**			**5,420**			**0**	
(List rooms separately below)																						
Pre-Kindergarten Classroom with Toilet (if applicable)	834	1	834			0			0	1,100	4	4,400	1,100	4	4,400	-100	4	4,400	1,200	0	-	1,100 NSF (minimum size) - 1,300 NSF (maximum size)
Teacher Wellness Room	908	1	908	115	1	115			0	100	4	400	100	4	400	100	4	400				
CARES Site Coordinator Office			0							120	1	120	120	1	120	120	1	120				
CARES program Storage			0			0			0	500	1	500	500	1	500	500	1	500				
						0			0			0	0	0	0	0	0	0				
Total Building Net Floor Area (NFA)			**18,886**			**36,954**			**0**			**78,212**			**78,212**			**23,455**			**54,757**	**Total Building Net Floor Area (NFA)**
Proposed Student Capacity / Enrollment																			# of Grades	4	**510**	**Total Enrollment (Enter Design Enrollment)**
																			K	1	**128**	Kindergarten Enrollment
																			Grade 1	1	**255**	Lower Elementary School Enrollment (Grades 1-2)
																			Grade 2	1	**128**	Upper Elementary School Enrollment (Grades 3-6)
																			Grade 3	1		
																			Grade 4	0		
																			Grade 5	0		
																			Grade 6	0		
NON-PROGRAMMED SPACES								% of GFA	**0**		% of GFA	**39,106**		% of GFA	**39,106**							Complete this category with Schematic Design Submittal
Other Occupied Rooms (List rooms separately below)																						
[Enter room type here]							-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]							-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]							-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]							-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]							-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied MEP / FP Spaces							-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied Closets, Supply Rooms, and Storage Rooms							-	#DIV/0!		-	0.0%		-	0.0%	0							
Toilet Rooms							-	#DIV/0!		-	0.0%		-	0.0%	0							
Circulation (corridors, stairs, ramps and elevators)							-	#DIV/0!		-	0.0%		-	0.0%	0							
Remaining[3]							-	#DIV/0!	0	-	33.3%	**39,106**	-	33.3%	**39,106**							
Total Building Gross Floor Area (GFA)[2]			**29,302**			**53,771**			**0**			**117,318**			**117,318**			**38,013**			**79,305**	**Total Building Gross Floor Area (GFA)[2]**
Grossing Factor (GFA / NFA)			**1.55**			**1.46**			**#DIV/0!**			**1.50**			**1.50**			**0.05**			**1.45**	**Grossing Factor (GFA / NFA)**

Proposed Space Summary - Elementary School

PreK-3rd Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street ES)			PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
							EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured fı Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square foc Includes the entire building gross square footage measured from the outside face of exterior walls.

[3] **Remaining** Includes exterior walls, interior partitions, cl Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architecture Firm: _____

Name of Principal Architect: _____

Signature of Principal Architect: Donald M Walter Digitally signed by Donald M Walter DN: C=US, E=dwalter@doreandwhittier.com, O="Dore + Whittier", CN=Donald M Walter Date: 2024.03.13 13:46:37-04'00'

Date: _____

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DEVIATIONS FROM MSBA GUIDELINES – PreK-3rd Configuration (510 STUDENTS + PREKINDERGARTEN)

The proposed space summary identifies a need of 117,318 GSF at a net to gross multiplier of 1.5 to serve the educational program, a deviation of +38,013 GSF from the MSBA guidelines for a school population of 510 kindergarten through grade three students and approximately 100 prekindergarten students. The narrative that follows offers evidence and support for these deviations.

Below is a summary of the initial proposed PreK-3rd Configuration Space Summary:

	Net Floor Area	Gross Floor Area
Existing Wildwood ECC	18,886	29,302
Existing Woburn Street ES	36,954	53,771
Total Existing Buildings	55,840	83,073
Proposed New School	**78,212**	**117,318**
MSBA Guidelines	54,757*	79,305*

* *The MSBA guidelines for an elementary school with an enrollment of this size has a net to gross multiplier of 1.45.*

The deviations communicated are based on the MSBA's space summary template for an elementary school. However, it is important to note that the template assumes no space for prekindergarten classrooms.

CORE ACADEMIC

The core academic program category totals 32,475 NSF, a deviation of +7,925 NSF from the MSBA guideline. The proposed space summary deviates from MSBA guidelines in five key ways: an additional general classroom, two ELL classrooms, a dedicated Health classroom, dedicated teacher collaboration spaces, and extended learning areas.

Wilmington's class size guidelines differ from MSBA guidelines. Wilmington requests on additional classroom to align with their local guidelines and to ensure an opportunity for the same number of sections in each grade level. Wilmington is experiencing a demographic shift that has resulted in more students who qualify for English Language Learner services and programs. The proposed space summary deviates from MSBA guidelines by providing two half-

sized classroom space to accommodate these services. As a result of visioning and proposed changes to the number of specials received by students, the District proposes continuing to offer Health as a dedicated special and requested a dedicated health classroom to deliver this program. The District requests four 500 NSF Teacher Collaboration Spaces located in proximity to grade levels. These spaces are to serve for common planning time, data meetings, and professional development spaces. They may also house a few hoteling desks for volunteers and itinerant staff if they don't have a professional home base elsewhere in the project. The final factor in the deviation between the proposed space for Core Academics and the MSBA guidelines for this category is the additional space requested for Extended Learning. The needs and intent for this space are explained in the educational program narrative. The proposed Core Academic area includes four spaces at 300 NSF each to serve kindergarten, a 1,000 NSF space to serve Prekindergarten, and five 1,000 NSF spaces to serve each of first, second, and third grade.

SPECIAL EDUCATION

The Special Education program category totals 14,440 NSF, a deviation of +8,400 NSF from the MSBA guidelines. Several District-specific programs and services contribute to much of this deviation, including dedicated space to support programs like the substantially separate, self-contained Strides program and services such as Occupational Therapy and Physical Therapy all outlined in the Special Education sub-section of the Educational Program Narrative.

The remaining deviation in square footage is a result of the District's request for eighteen (18) small group rooms and a request for a series of spaces associated with support service professionals: School Psychologists, Speech and Language Pathologists, and Board Certified Behavioral Analysists all of which exclusively serve students with special needs. Small group rooms are expected to be located between pairs of classrooms to serve as supplemental instructional environments that are physically and visually connected directly to, but acoustically separate from, the general classroom. These spaces would primarily serve students who receive supports from professionals beyond the general classroom teacher, but would also be a critical resource to general education teachers for small group activities and differentiated instruction consistent with Universal Design for Learning.

ART & MUSIC

The art and music program category totals 2,575 NSF, which aligns with MSBA guidelines for this category. It is important to note, however, that some of the music square footage as been reimagined as a single ensemble space meant to serve individual and small group instrumental instruction rather than three small practice rooms.

HEALTH & PHYSICAL EDUCATION

The health & physical education program category totals 6,300 NSF, which aligns with MSBA guidelines for this category.

MEDIA CENTER

The media center program category totals 2,965 NSF, which aligns with MSBA guidelines for this category. It is important to note, however, that the District intends to create a new STEM instructional environment within this square footage to support a new STEM special.

DINING & FOOD SERVICE

The dining and food services program category totals 7,232 NSF, which aligns with MSBA guidelines for this category. As articulated in the Educational Program Narrative, the District directed the Design Team to size the dining room to accommodate all kindergarten through 3rd grade students in two seatings in a manner as close to MSBA's recommended square feet per student algorithm as possible. However, the number of students participating in lunch (and, therefore, going through the serving lines) has significantly increased over time with the free lunch for all programs initiated by the Commonwealth. Specific data is provided in the educational program narrative. As a result, the District has directed the Design Team to allocate more NSF within this category to the kitchen and serving lines by reducing some of the square footage associated with the dining room.

MEDICAL

The medical program category totals 610 NSF, which aligns with MSBA guidelines for this category. It is important to note, however, that the Design Team has reallocated square footage from within this category to create spaces that better align with the District's needs and priorities.

ADMINISTRATION & GUIDANCE

The administration & guidance program category totals 4,085 NSF, a deviation of +1,710 NSF from the MSBA Guidelines. It is important to note that the District has relocated the NSF associated with some spaces to tune this category for its specific local needs. Much of the

deviation is related to providing office and instructional spaces for student support service providers who serve both general and special education students.

CUSTODIAL AND MAINTENANCE

The custodial and maintenance program category totals 2,110 NSF, which is equal to the MSBA Guidelines.

OTHER

Items in the "other" category total 5,420 NSF, a deviation of +5,420 NSF from the MSBA Guidelines. The vast majority of this deviation results from providing Prekindergarten general education classrooms. The other deviations are the result of providing four teacher wellness spaces which are meant to accompany teacher collaboration spaces and serve places to conduct a private/confidential phone call and double as a lactation space. The final deviation is associated with the after-school program, CARES.

SUMMARY

In summary, the District and the Design team are proposing 78,212 NSF and 117,318 GSF to satisfy the educational program of the project with an enrollment of 510 kindergarten through grade three students plus approximately 100 prekindergarten students. These square footages deviate from the MSBA guidelines by +23,455 NSF and +38,013 GSF respectively*.

* *The MSBA guidelines for an elementary school with an enrollment of this size has a net to gross multiplier of 1.45.*

PROPOSED SPACE SUMMARY – PreK-5th Configuration (755 STUDENTS + PreK)

The space summary on the following pages contains an itemization of the existing spaces at the Wildwood Early Childhood Center, Woburn Street and North Intermediate Schools and of the proposed spaces needed to deliver the District's educational program for 755 kindergarten through grade five students and the Pre-Kindergarten students who attend the Wildwood Early Childhood center. Existing classrooms of varying sizes are communicated as separate line items. Room labels unique to the District and/ or that vary from MSBA room names are identified with a light yellowish highlight. Total gross square foot areas are shown at the bottom of the table for both the existing and proposed conditions.

The District and the Design Team worked together to align proposed spaces with MSBA room area guidelines for individual program areas and the total gross floor area to the greatest extent possible. However, several deviations do exist. All deviations were deemed necessary by the District to serve the educational program and are explained in detail on the pages following the space summary.

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Proposed Space Summary - Elementary School

PreK-5th Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street)			EXISTING CONDITIONS (North Intermediate)			Existing Totals	PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
											EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS		ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
CORE ACADEMIC			6,182			19,832			10,990	37,004			0			47,600			47,600			12,350			35,250	STE Guidelines Policy
(List rooms of different sizes separately)																										
Kindergarten Classroom with Toilet	varies	7	6,182			0			0				0	1100	7	7,700	1,100	7	7,700	-100	0	-700	1,200	7	8,400	1,100 NSF (minimum size) - 1,300 NSF (maximum size); Minimum of (2) sinks required per Kindergarten Classroom
Kindergarten Classroom	873	1																								
Kindergarten Classroom	877	1																								
Kindergarten Classroom	874	1																								
Kindergarten Classroom	886	1																								
Kindergarten Classroom	884	1																								
Kindergarten Classroom	893	1																								
Kindergarten Classroom	895	1																								
General Classroom (Grades 1-6)			0	Varies	21	18,702	Varies	13	10,990				0	900	30	27,000	900	30	27,000	-50	3	1,350	950	27	25,650	900 NSF (minimum size) - 1,000 NSF (maximum size); Minimum of (2) sinks required per General Classroom
General Classroom			0	509	1		1,046	1																		
General Classroom			0	911	1		801	1																		
General Classroom			0	906	1		1,046	1																		
General Classroom			0	904	1		820	1																		
General Classroom			0	917	1		822	1																		
General Classroom			0	904	1		822	1																		
General Classroom			0	904	1		801	1																		
General Classroom			0	905	1		802	1																		
General Classroom			0	904	1		802	1																		
General Classroom			0	999	1		802	1																		
General Classroom			0	905	1		802	1																		
General Classroom			0	904	1		822	1																		
General Classroom			0	902	1		802	1																		
General Classroom			0	905	1																					
General Classroom			0	905	1																					
General Classroom			0	905	1																					
General Classroom			0	907	1																					
General Classroom			0	907	1																					
General Classroom			0	884	1																					
General Classroom			0	908	1																					
General Classroom			0	907	1																					
Science, Technology, Engineering (STE) Room (Grades 3-6) (if applicable)			0	222	1	222			0				0	1,080	1	1,080	1,080	1	1,080	0	0	0	1,080	1	1,080	1,080 NSF (minimum size); Refer to the 2018 STE Guidelines for additional information.
STE Storage Room (if applicable)			0			0			0				0	120	1	120	120	1	120	0	0	0	120	1	120	Minimum of (1) 120 NSF STE Storage Room required per STE Room; Refer to the 2018 STE Guidelines for additional information.
ELL Classroom			0			0			0				0	450	2	900	450	2	900	450	2	900				
Health Classroom			0	908	1	908			0				0	900	1	900	900	1	900	900	1	900				
Teacher Collaboration			0			0			0				0	450	6	2,700	450	6	2,700	450	6	2,700				
Extended Learning K														300	4	1,200	300	4	1,200	300	4	1,200				
Extended Learning PK			0			0			0				0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
Extended Learning 1st-5th			0			0			0				0	1,000	5	5,000	1,000	5	5,000	1,000	5	5,000				

Proposed Space Summary - Elementary School

PreK-5th Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street)			EXISTING CONDITIONS (North Intermediate)			Existing Totals	PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
											EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS		ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
SPECIAL EDUCATION			**3,769**			**3,058**			**4,473**	**11,300**			**0**			**19,260**			**19,260**			**10,200**			**9,060**	Special Education spaces require DESE review and approval.
(List rooms of different sizes separately)																										
Self-Contained Special Education Classroom	Varies	3	2,607	Varies	2	1,815	Varies	2	1,603				0	Varies	10	9,600	Varies	10	9,600	Varies	4	3,900	950	6	5,700	900 NSF (minimum size) - 1,300 NSF; equal to the size of the proposed General Classrooms that serve the same student population.
Strides ProgramPK-K	860	1											0	1100	3		1,100	3								
Strides ProgramPK-K	852	1																								
Strides ProgramPK-K	895	1																								
Strides Program 1st-2nd			0	907	1								0	900	1		900	1								
Strides Program 3rd-5th			0										0	900	2		900	2								
Stages Program 1st-2nd			0										0	900	1		900	1								
Stages Program 3rd-5th			0				801	1					0	900	1		900	1								
Language-Based Program 1st-2nd			0	908	1								0	900	1		900	1								
Language-Based Program 3rd-5th			0				802	1					0	900	1		900	1								
Self-Contained Special Education Toilet Room			0			0			0				0	120	7	840	120	7	840	60	33	480	60	6	360	
Strides Program PK-K Toilet			0			0			0				0	120	3		120	3								
Strides Program 1st-2nd Toilet			0			0			0				0	120	1		120	1								
Strides Program 3rd-5th Toilet			0			0			0				0	120	2		120	2								
Stages Program 1st-2nd Toilet			0			0			0				0	120	1		120	1								
Learning Center			0	915	1	915	802	1	802				0	200	6	1,200	200	6	1,200	-300	2	-800	500	4	2,000	1/2 size of a General Classroom
Small Group Room			0			0			0				0	150	26	3,900	150	26	3,900	-350	24	2,900	500	2	1,000	1/2 size of a General Classroom
Calming			0			0			0				0	100	8	800	100	8	800	100	8	800				
OT Classroom/Office	318	1	318	132	1	132			0				0	250	1	250	250	1	250	250	1	250				
PT Classroom			0	196	1	196			0				0	1,000	1	1,000	1,000	1	1,000	1,000	1	1,000				
PT Storage			0			0			0				0	250	1	250	250	1	250	250	1	250				
School Psychologists			0			0			0				0	150	2	300	150	2	300	150	2	300				
BCBA Office/Team Chairs			0			0	Varies	2	851				0	320	1	320	320	1	320	320	1	320				
Speech & Language	844	1	844			0	1,217	1	1,217				0	200	4	800	200	4	800	200	4	800				
Public Day Education Spaces (List rooms separately below)																										
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
Collaborative Program Spaces (List rooms separately below)																										
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
ART & MUSIC			**660**			**1,860**			**3,795**	**6,315**			**0**			**5,075**			**5,075**			**0**			**5,075**	
Art Classroom (25 seats)			0	903	1	903	1,023	1	1,023				0	1,000	2	2,000	1,000	2	2,000	0	0	0	1,000	2	2,000	Assumed schedule: 2 times per week per student
Art Workroom with Storage and Kiln			0			0	176	1	176				0	150	2	300	150	2	300	0	0	0	150	2	300	
Music Classroom / Large Group (25-50 seats)			0	957	1	957	1,246	1	1,246				0	1,000	2	2,000	1,000	2	2,000	-200	0	-400	1,200	2	2,400	Assumed schedule: 2 times per week per student
Music Practice / Ensemble			0			0	1,141	1	1,141				0	500	1	500	500	1	500	425	-4	125	75	5	375	
Music Practice / Ensemble			0			0	209	1	209				0	275	1	275	275	1	275	275	1	275				
Multipurpose Library/Art/Music	660	1	660			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
HEALTH & PHYSICAL EDUCATION			**779**			**3,928**			**5,065**	**9,772**			**0**			**12,300**			**12,300**			**6,000**			**6,300**	Excess Physical Education Spaces Policy
Gymnasium			0	3,751	1	3,751	4,791	1	4,791				0	12000	1	12,000	12,000	1	12,000	6,000	0	6,000	6,000	1	6,000	
Gym Storeroom			0	177	1	177	140	1	140				0	180	1	180	180	1	180	30	0	30	150	1	150	
Gym Storage	779	1	779			0	80	1	80																	
PE Office ~~with Shower and Toilet~~			0			0	54	1	54				0	120	1	120	120	1	120	-30	0	-30	150	1	150	
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-5th Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools Wildwood Early Childhood Center	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street)			EXISTING CONDITIONS (North Intermediate)			Existing Totals	PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
											EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS		ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
MEDIA CENTER			**0**			**1,248**			**1,017**	**2,265**			**0**			**4,068**			**4,068**			**0**			**4,068**	
Media Center / Reading Room			0	1,248	1	1,248	1,017	1	1,017				0	4,068	1	4,068	4,068	1	4,068	0	0	0	4,068	1	4,068	
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
														307												
DINING & FOOD SERVICE			**3,476**			**3,871**			**6,273**	**13,620**			**0**			**9,458**			**9,458**			**0**			**9,458**	
Cafeteria / Dining	2,647	1	2,647	2,545	1	2,545	3,442	1	3,442				0	4,612	1	4,612	4,612	1	4,612	-1,051	0	-1,051	5,663	1	5,663	Based on 2 lunch seatings - 15 NSF per seat
Stage			0	337	1	337	812	1	812				0	1,000	1	1,000	1,000	1	1,000	0	0	0	1,000	1	1,000	
Chair / Table / Equipment Storage	183	1	183	108	1	108	229	1	229				0	452	1	452	452	1	452	0	0	0	452	1	452	
Kitchen	646	1	646	881	1	881	1,790	1	1,790				0	2,655	1	2,655	2,655	1	2,655	600	0	600	2,055	1	2,055	1,600 NSF for first 300 students + 1 NSF per additional student
Staff Lunch Room			0			0			0				0	289	1	289	289	1	289	0	0	0	289	1	289	20 NSF per student
Quiet café area			0			0			0				0	150	3	450	150	3	450	6	900	450				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
MEDICAL			**187**			**238**			**178**	**603**			**0**			**710**			**710**			**0**			**710**	
Medical Suite Toilet			0	42	1	42			0				0	130	1	130	130	1	130	70	0	70	60	1	60	
Nurses' Office / ~~Waiting Room~~			0	196	1	196	178	1	178				0	120	1	120	120	1	120	-130	0	-130	250	1	250	
Examination Room / ~~Resting~~			0			0			0				0	100	1	100	100	1	100	0	-3	-300	100	4	400	
Waiting Area			0			0			0				0	60	1	60	60	1	60	60	1	60				
Resting Area			0			0			0				0	300	1	300	300	1	300	300	1	300				
Multipurpose Medical	187	1	187			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
ADMINISTRATION & GUIDANCE			**1,876**			**1,738**			**1,968**	**5,582**			**0**			**5,308**			**5,308**			**2,418**			**2,890**	
General Office / Waiting Room with Toilet			0	234	1	234	182	1	182				0	528	1	528	528	1	528	0	0	0	528	1	528	
Teachers' Mail and Time Room			0			0			0				0	100	1	100	100	1	100	0	0	0	100	1	100	
Copy Room	58	1	58			0	94	1	94				0	150	1	150	150	1	150	0	0	0	150	1	150	
Records Room			0			0			0				0	110	1	110	110	1	110	0	0	0	110	1	110	
Principal's Office with Conference Area	238	1	238	158	1	158	224	1	224				0	200	1	200	200	1	200	-175	0	-175	375	1	375	
Principal's Secretary / Waiting	181	1	181			0	47	1	47				0	125	1	125	125	1	125	0	0	0	125	1	125	
Assistant Principal's Office			0	290	1	290	404	1	404				0	200	2	400	200	2	400	80	1	280	120	1	120	
Supervisory / Spare Office			0	289	1	289			0				0	120	2	240	120	2	240	0	1	120	120	1	120	
Staff Office			0	269	1	269																				
Conference Room	359	1	359			0	166	1	166				0	250	2	500	250	2	500	0	1	250	250	1	250	
Conference Room			0			0	297	1	297																	
School / Adjustment Counselors	171	1	171	130	1	130	206	1	206				0	200	3	600	200	3	600	50	0	150	150	3	450	
School / Adjustment Counselors			0			0	200	1	200																	
Guidance Storeroom			0			0	varies	4	148				0	35	1	35	35	1	35	0	0	0	35	1	35	
Teachers' Work Room	251	1	251			0			0				0	200	1	200	200	1	200	-328	0	-328	528	1	528	
Reading Specialists	181	1	181	129	1	129			0				0	200	6	1,200	200	6	1,200	200	6	1,200				
Math Tudors	437	1	437	239	1	239			0				0	200	4	800	200	4	800	200	4	800				
IT Technician Office			0			0			0				0	120	1	120	120	1	120	120	1	120				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
CUSTODIAL & MAINTENANCE			**215**			**1,066**			**1,373**	**2,654**			**0**			**2,355**			**2,355**			**0**			**2,355**	
Custodian's Office			0			0	226	1	226				0	175	1	175	175	1	175	25	0	25	150	1	150	
Custodian's Workshop			0			0			0				0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Custodian's Storage	Varies	4	215	Varies	5	736	Varies	3	1,147				0	0	0	0	0	0	0	-375	-1	-375	375	1	375	
Custodian Storage	46	1		98	1		116	1																		
Custodian Storage	29	1		58	1		107	1																		
Custodian Storage	34	1		479	1		924	1																		
Custodian Storage	106	1		52	1																					
Custodian Storage			0	49	1				0																	
Recycling Room / Trash			0			0			0				0	0	0	0	0	0	0	-400	-1	-400	400	1	400	
Receiving and General Supply			0			0			0				0	1,980	1	1,980	1,980	1	1,980	1,628	0	1,628	352	1	352	
Storeroom			0			0			0				0	0	0	0	0	0	0	-503	-1	-503	503	1	503	
Network / Telecom Room			0			0			0				0	200	1	200	200	1	200	0	0	0	200	1	200	
External Storage			0	330	1	330			0				0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0				0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0				0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0				0			0	0	0	0	0	0	0				
[insert room type here]			0			0			0				0			0	0	0	0	0	0	0				

Proposed Space Summary - Elementary School

PreK-5th Configuration - Revised 12/11/23

Date: 4/18/2024 Preliminary Design Program

Wilmington Public Schools **Wildwood Early Childhood Center**	EXISTING CONDITIONS (Wildwood ECC)			EXISTING CONDITIONS (Woburn Street)			EXISTING CONDITIONS (North Intermediate)			Existing Totals	PROPOSED PROGRAM									VARIATION TO MSBA GUIDELINES			MSBA GUIDELINES (DO NOT MODIFY) (Refer to Educational Facility Planning for additional information)			
											EXISTING TO REMAIN / RENOVATED			NEW CONSTRUCTION			TOTAL									
ROOM TYPE	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS		ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	ROOM NFA[1]	# OF ROOMS	AREA TOTALS	COMMENTS
OTHER			**1,742**			**115**			**0**	**1,857**			**0**			**5,800**			**5,800**			**5,800**			**0**	
(List rooms separately below)																										
Pre-Kindergarten Classroom with Toilet (if applicable)	834	1	834			0			0				0	1100	4	4,400	1,100	4	4,400	-100	4	4,400	1,200	0	-	1,100 NSF (minimum size) - 1,300 NSF (maximum size)
Pre-Kindergarten Classroom with Toilet (if applicable)	908	1	908																							
Teacher Wellness Room			0	115	1	115			0				0	100	6	600	100	6	600	100	6	600				
CARES program Coorinator Office			0			0			0				0	150	1	150	150	1	150	150	1	150				
CARES Site Coorinator Office														150	1	150	150	1	150	150	1	150				
CARES program Storage			0			0			0				0	500	1	500	500	1	500	500	1	500				
[Enter room type here]			0			0			0				0			0	0	0	0	0	0	0				
Total Building Net Floor Area (NFA)			**18,886**			**36,954**			**35,132**	**90,972**			**0**			**111,934**			**111,934**			**36,768**			**75,165**	**Total Building Net Floor Area (NFA)**
Proposed Student Capacity / Enrollment																							# of Grades	6	**755**	**Total Enrollment (Enter Design Enrollment)**
																							K	1	**126**	Kindergarten Enrollment
																							Grade 1	1	**252**	Lower Elementary School Enrollment (Grades 1-2)
																							Grade 2	1	**378**	Upper Elementary School Enrollment (Grades 3-6)
																							Grade 3	1		
																							Grade 4	1		
																							Grade 5	1		
																							Grade 6	0		
NON-PROGRAMMED SPACES												% of GFA	**0**		% of GFA	**55,967**		% of GFA	**55,967**							Complete this category with Schematic Design Submittal
Other Occupied Rooms (List rooms separately below)																										
[Enter room type here]											-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]											-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]											-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]											-	#DIV/0!		-	0.0%		-	0.0%	0							
[Enter room type here]											-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied MEP / FP Spaces											-	#DIV/0!		-	0.0%		-	0.0%	0							
Unoccupied Closets, Supply Rooms, and Storage Rooms											-	#DIV/0!		-	0.0%		-	0.0%	0							
Toilet Rooms											-	#DIV/0!		-	0.0%		-	0.0%	0							
Circulation (corridors, stairs, ramps and elevators)											-	#DIV/0!		-	0.0%		-	0.0%	0							
Remaining[3]											-	#DIV/0!	0	-	33.3%	**55,967**	-	33.3%	**55,967**							
Total Building Gross Floor Area (GFA)[2]			**29,302**			**53,771**			**55,541**	**138,614**			**0**			**167,900**			**167,900**			**58,425**			**109,475**	**Total Building Gross Floor Area (GFA)[2]**
Grossing Factor (GFA / NFA)			**1.55**			**1.46**			**1.58**				**#DIV/0!**			**1.50**			**1.50**			**0.04**			**1.46**	**Grossing Factor (GFA / NFA)**

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured fr Includes the net square footage measured fr Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square foo Includes the entire building gross square foo Includes the entire building gross square footage measured from the outside face of exterior walls.

[3] **Remaining** Includes exterior walls, interior partitions, ch Includes exterior walls, interior partitions, ch Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architecture Firm: _____

Name of Principal Architect: _____

Signature of Principal Architect: Donald M Walter Digitally signed by Donald M Walter DN: C=US, E=dwalter@doreandwhittier.com, O="Dore + Whittier", CN=Donald M Walter Date: 2024.03.13 13:45:52-04'00'

Date: _____

DEVIATIONS FROM MSBA GUIDELINES – PreK-5th Configuration (755 STUDENTS + PREKINDERGARTEN)

The proposed space summary identifies a need of 167,900 GSF at a net to gross multiplier of 1.5 to serve the educational program, a deviation of +58,425 GSF from the MSBA guidelines for a school population of 755 kindergarten through grade five students and approximately 100 prekindergarten students. The narrative that follows offers evidence and support for these deviations.

Below is a summary of the initial proposed PreK-5th Configuration Space Summary:

	Net Floor Area	Gross Floor Area
Existing Wildwood ECC	18,886	29,302
Existing Woburn Street ES	36,954	53,771
Existing North Intermediate School	35,132	55,541
Total Existing Buildings	90,972	138,614
Proposed New School	**111,934**	**167,900**
MSBA Guidelines	75,165*	109,475*

* *The MSBA guidelines for an elementary school with an enrollment of this size has a net to gross multiplier of 1.46.*

The deviations communicated are based on the MSBA's space summary template for an elementary school. However, it is important to note that the template assumes no space for prekindergarten classrooms.

CORE ACADEMIC

The core academic program category totals 47,600 NSF, a deviation of +12,350 NSF from the MSBA guideline. The proposed space summary deviates from MSBA guidelines in five key ways: an ELL classroom, a dedicated Health classroom, dedicated teacher collaboration spaces, and extended learning areas.

Wilmington is experiencing a demographic shift that has resulted in more students who qualify for English Language Learner services and programs. The proposed space summary deviates from MSBA guidelines by providing a half-sized classroom space to accommodate these services. As a result of visioning and proposed changes to the number of specials received by students, the District proposes offering Health as a dedicated special, even at these early grades and has requested a dedicated health classroom to deliver this program. The District requests six 450 NSF Teacher Collaboration Spaces located in proximity to grade levels. These spaces are to serve for common planning time, data meetings, and professional development spaces. They may also house a few hoteling desks for volunteers and itinerant staff if they don't have a professional home base elsewhere in the project. The final factor in the deviation between the proposed space for Core Academics and the MSBA guidelines for this category is the additional space requested for Extended Learning. The needs and intent for this space are explained in the educational program narrative. The proposed Core Academic area includes 4 spaces at 300 NSF each to serve kindergarten, a 1,000 NSF space to serve Prekindergarten, and five 1,000 NSF spaces to serve each of the grades first through fifth grades.

SPECIAL EDUCATION

The Special Education program category totals 19,260 NSF, a deviation of +10,200 NSF from the MSBA guidelines. Several District-specific programs and services contribute to much of this deviation, including dedicated space to support programs like the substantially separate, self-contained Strides program and services such as Occupational Therapy and Physical Therapy all outlined in the Special Education sub-section of the Educational Program Narrative.

The remaining deviation in square footage is a result of the District's request for twenty-six (26) small group rooms and a request for a series of spaces associated with support service professionals: School Psychologists, Speech and Language Pathologists, and Board Certified Behavioral Analysists all of which exclusively serve students with special needs. Small group rooms are expected to be located between pairs of classrooms to serve as supplemental instructional environments that are physically and visually connected directly to, but acoustically separate from, the general classroom. These spaces would primarily serve students who receive supports from professionals beyond the general classroom teacher, but

would also be a critical resource to general education teachers for small group activities and differentiated instruction consistent with Universal Design for Learning.

ART & MUSIC

The art and music program category totals 5,075 NSF, which aligns with MSBA guidelines for this category. It is important to note, however, that some of the music square footage has been reimagined to create two ensemble spaces to serve individual and small group instrumental instruction rather than five small practice rooms.

HEALTH & PHYSICAL EDUCATION

The health & physical education program category totals 12,300 NSF, a deviation of +6,000 NSF from the MSBA guidelines. The entirety of this deviation is attributable to a request for a 12,000 NSF gymnasium. Each of the existing buildings have either multipurpose rooms or gymnasiums…a total of three spaces capable of supporting both instructional activities during the school day and youth sports and other community activities after school hours. In several meetings with the public, an oversized gym to replace and exceed their current capabilities was expressed as added community value, even if the difference is ineligible for MSBA reimbursement.

MEDIA CENTER

The media center program category totals 4,068 NSF, which aligns with MSBA guidelines for this category.

DINING & FOOD SERVICE

The dining and food services program category totals 9,458 NSF, which aligns with MSBA guidelines for this category. As articulated in the Educational Program Narrative, the District directed the Design Team to size the dining room to accommodate all kindergarten through 5th grade students in three seatings. However, the number of students participating in lunch (and, therefore, going through the serving lines) has significantly increased over time with the free lunch for all programs initiated by the Commonwealth. Specific data is provided in the educational program narrative. As a result, the District has directed the Design Team to allocate more NSF within this category to the kitchen and serving lines by reducing some of the square footage associated with the dining room. Given the plan to operate three seatings rather than two, the reduced square footage in the dining room will still be able to accommodate enrollment growth in the future.

MEDICAL

The medical program category totals 710 NSF, which aligns with MSBA guidelines for this category. It is important to note, however, that the Design Team has reallocated square footage from within this category to create spaces that better align with the District's needs and priorities.

ADMINISTRATION & GUIDANCE

The administration & guidance program category totals 5,308 NSF, a deviation of +2,418 NSF from the MSBA Guidelines. It is important to note that the District has relocated the NSF associated with some spaces to tune this category for its specific local needs. Much of the deviation is related to providing office and instructional spaces for student support service providers who serve both general and special education students.

CUSTODIAL AND MAINTENANCE

The custodial and maintenance program category totals 2,355 NSF, which is equal to the MSBA Guidelines.

OTHER

Items in the "other" category total 5,800 NSF, a deviation of +5,800 NSF from the MSBA Guidelines. The vast majority of this deviation results from providing Prekindergarten general education classrooms. The other deviations are the result of providing six teacher wellness spaces which are meant to accompany teacher collaboration spaces and serve as places to conduct a private/confidential phone call and double as a lactation space. The final deviation is associated with the after-school program, CARES.

SUMMARY

In summary, the District and the Design team are proposing 111,934 NSF and 167,900 GSF to satisfy the educational program of the project with an enrollment of 755 kindergarten through grade five students plus approximately 100 prekindergarten students. These square footages deviate from the MSBA guidelines by +36,768 NSF and +58,425 GSF respectively*.

* *The MSBA guidelines for an elementary school with an enrollment of this size has a net to gross multiplier of 1.46.*

1 LEVEL 1 - MSBA
1/16" = 1'-0"

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WILMINGTON WILDWOOD ECC

182 WILDWOOD ST.
WILMINGTON, MA 01887

PROJECT NUMBER: 23-0847

SEAL AND SIGNATURE:

REVISIONS:

NO.	DATE	TITLE

ISSUE TITLE AND DATE:
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KEY PLAN

ORIENTATION AND SCALE:

N
TRUE NORTH
0 8' 16' 32'
SCALE: 1/16"=1'-0" GRAPHIC SCALE
PROJECT NORTH

SHEET TITLE:
LEVEL 1 - MSBA

SHEET NUMBER:
A1.11

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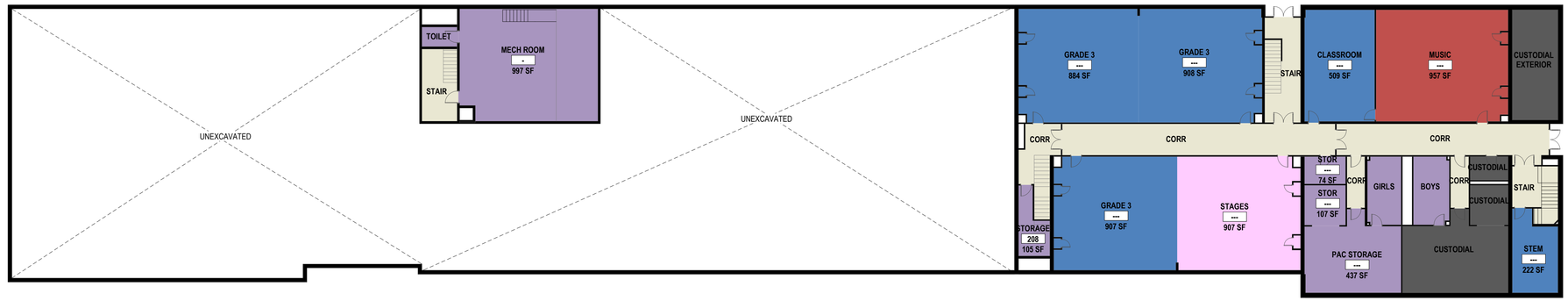

1 BASEMENT - MSBA
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WOBURN STREET SCHOOL

227 Woburn St, Wilmington, MA 01887

PROJECT NUMBER: 23-0847

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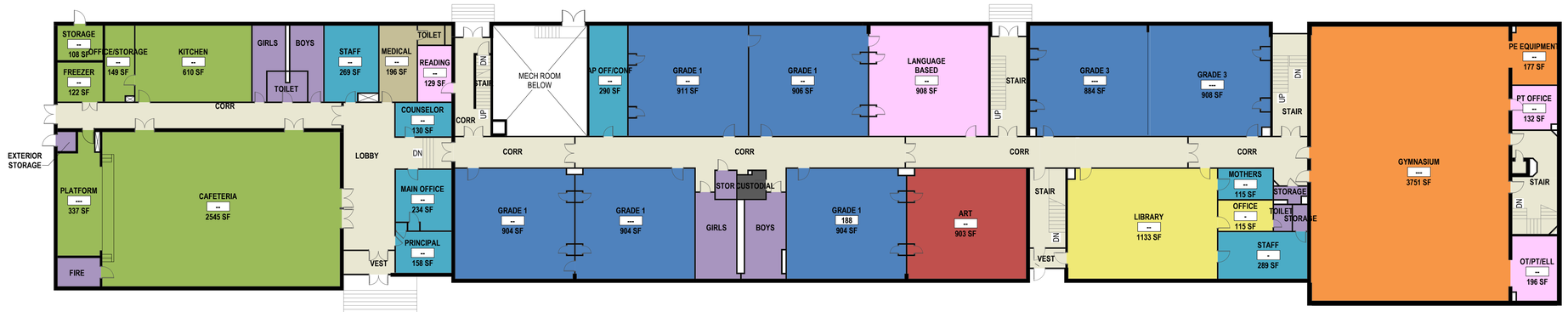

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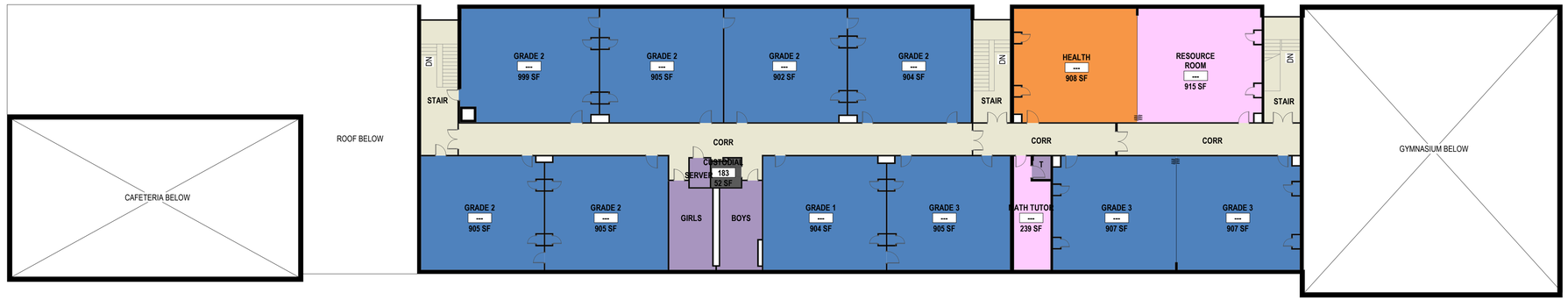

1 LEVEL 2 - MSBA
1/16" = 1'-0"

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SHEET NUMBER:
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NORTH INTERMEDIATE SCHOOL

320 Salem St, Wilmington, MA 01887

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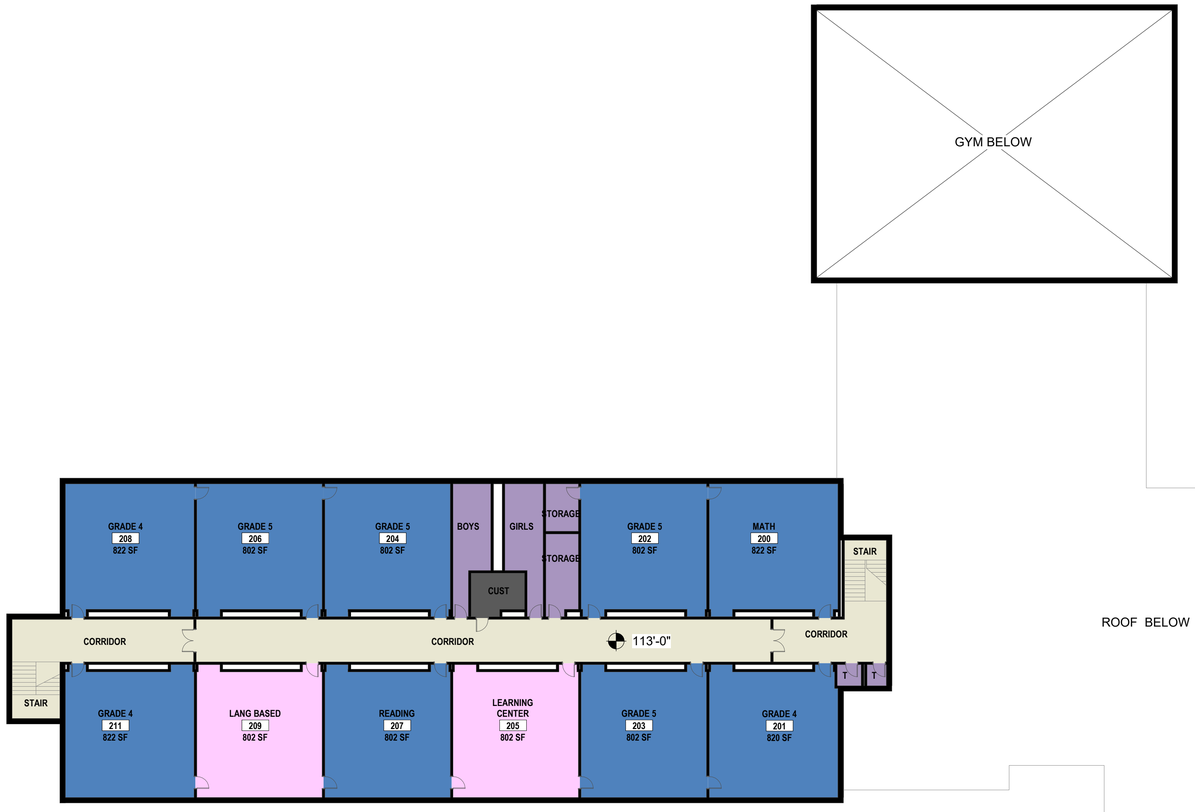

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EXISTING CONDITIONS: REGULATORY OVERVIEW

APPLICABLE REGULATIONS

Buildings undergoing repairs, alterations, additions, changes in use, or relocation will be evaluated under the 9th edition of the Massachusetts State Building Code (780 CMR). The base code for the 9th Edition is comprised of the following 2015 International Code Council family of codes with Massachusetts amendments:

- International Building Code (IBC)
- International Energy Conservation Code (IECC) (2018)
- International Existing Building Code(IEBC)
- International Mechanical Code (IMC)

Additional building regulations, included by reference in the base code or enforceable under Massachusetts General Law include:

- Massachusetts Fire Code (527CMR)
- Massachusetts Elevator Code (524 CMR)
- Massachusetts Plumbing Code (248 CMR)
- Massachusetts Electrical Code (NFPA 70 – NEC)
- Massachusetts Energy Code 2020 (IECC 2018 as amended)

Accessibility regulations applicable to the project are the Massachusetts Architectural Access Board Rules (MAAB) (521 CMR), and the 2010 Americans with Disabilities Act Architectural Guidelines. Where these two regulations are in conflict, the regulation that provides the greater accessibility should be provided.

Finally, in addition to the sprinkler protection requirement found in the building codes, certain Massachusetts General Laws (M.G.L.s) require sprinkler protection in certain types of new and existing non-residential buildings over 7,500 gross square feet.

SCOPING REQUIREMENTS AND THRESHOLDS FOR COMPLIANCE

Of the regulations described above, three of them require special consideration since they contain specific thresholds for full compliance with the regulation. These threshold-defining regulations are:

- The International Existing Building Code (IEBC)
- 521 CMR , or the Architectural Access Board (MAAB)
- M.G.L. c.148 s.26G, or the Automatic Sprinkler System Requirements

Compliance thresholds are based on either the area or cost of proposed work in comparison the existing building area or building value and are defined in greater detail under each specific regulation description below. Generally, when the proposed scope of work does not exceed a defined threshold, only the work being performed is required to comply with the current edition of the codes. The Americans with Disabilities Act (ADA) also contains requirements for incorporating improvements to an accessible path to Primary Function areas where alterations to that area are undertaken.

INTERNATIONAL EXISTING BUILDING CODE (IEBC)

When considering changes to an existing building, the principal guiding regulation is the International Existing Building Code (IEBC), which is enforced by the local building official. The IEBC requires that any proposed work on an existing building or portion thereof first undergo an evaluation to determine the effect of the proposed work on at least the following systems: structural, means of egress, fire protection, energy conservation, lighting, hazardous materials, accessibility, and ventilation for the space under consideration. Because no specific scope of work is being proposed as part of an existing conditions survey, this report includes a Regulatory Assessment for each building under consideration in order to determine to what degree the existing building[s] and systems comply with current regulations. It should be understood that non-compliance with current regulations does not compel corrective action. Only when a scope of work is defined can the Existing Building Code be applied to determine the applicable requirements.

Following completion of an evaluation for a proposed scope of work, a *compliance path* needs to be selected for the application of building code requirements. Owners must choose either the Prescriptive, Work Area, or Performance Compliance path and apply only the provisions of the chosen compliance path to the project. *The Prescriptive Compliance Path* provides a broad-brush approach to existing buildings and could result in requiring additional work that may not be necessary under the other compliance paths and will not be employed for this assessment.

The *Performance Compliance Path* uses a calculation-based methodology to determine the general level of life safety of a building. This path assigns numeric values to various life safety features of a building to arrive at an overall building “score”. Different building types require different scores to determine compliance or non-compliance with this path. This numeric value approach can be useful to evaluate the general life safety performance of an existing building as compared to current building regulations; because of this the Performance Compliance Path will be used to evaluate the general life safety condition of the existing facilities. Again, it should be noted that a non-compliant score does not compel corrective action – this methodology will be used to convey only how the existing building compares to current regulations.

The *Work Area Compliance* path typically offers the most advantageous approach to defining the code requirements for each portion of a building undergoing a scope of work because it most closely correlates the required upgrades to building systems and components to that specific defined scope of work; for this reason, the Work Area compliance path will be the assumed compliance path for sake of any proposed work on the facilities, should they be pursued.

Work Area Compliance relies on identifying the type of work that is occurring throughout the building, and then applying the requirements for that type of work to the *Work Area*. The *Work Area*, as defined by the IEBC is:

> *That portion or portions of a building consisting of all reconfigured spaces as indicated in the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed…*

Using the definitions provided in the Code, the scope of work identified for existing buildings or portions thereof is categorized as follows:

Repairs:"…include the patching or restoration or replacement of damaged materials, elements, equipment, or fixtures for the purpose of maintaining such components in good or sound conditions with respect to loads or performance requirements…"(IEBC s. 502.1) Examples of repair would be repair or replacement of damaged plaster finishes, tiled or wood floors, replacement of wood trim, replacement of door hardware, replacement of any plumbing, heating, electrical ventilating, air conditioning, refrigerating, and fire protection equipment as well as the repair of any exterior masonry or roofing system, and repair of damaged structural elements with "in kind" elements or equipment. Chapter 6 of the IEBC is applicable to all Repairs.

Level 1 Alterations: "…include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose." This classification could be described as replacement with different systems, materials, or equipment, but providing the same function. Replacing wood flooring with a tile floor system, or proving all new kitchen equipment to replace outdated equipment would be considered Level 1 Alterations. (IEBC s. 503.1). Chapter 7 of the IEBC is applicable to all Level 1 alterations.

Level 2 Alterations: "…include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment." (IEBC s. 503.1). Chapter 7 and Chapter 8 of the IEBC is applicable to all Level 2alterations.

Level 3 Alterations: "…apply where the work area exceeds 50 percent of the *building area*."

Change of Occupancy: "A change in the use of the building or a portion of the building. A change of occupancy shall include any change of occupancy classification, any change from one group to another group within an occupancy classification or any change in use within a group for a specific occupancy classification."

Additions: "An extension or increase in floor area, number of stories, or height of a building structure."

Under the work area compliance path, each of the classifications of work described above require increasing levels of compliance with the building code. Repairs have the least restrictive requirements, essentially permitting replacement-in-kind for any repaired elements. Additions require the highest level of compliance and require that the addition comply with the building code as for new construction. The other classifications require increasing compliance and, for each classification, define prescriptive requirements for specific systems and elements such as means of egress, mechanical, electrical and fire protection systems, building materials, fire resistance ratings, and structural systems.

Work Areas, including Level 2 Alterations and Additions would be required to be identified on the construction documents. Repairs and Level 1 alterations, because they do not include reconfigured spaces, are not considered part of the "Work Area" defined by the code. Although there may be substantial repairs and Level 1 alterations throughout the building, this distinction is important; when the Work Area exceeds 50% of the floor area, the provisions for Level 3 alterations become applicable.

In addition to alterations that affect the building spaces and areas, it is necessary to understand how alterations affect the building structural system and elements. Where alterations change individual gravity or lateral load resisting elements, each element requires evaluation to determine if the alteration will result in additional loads and, if so, the element must be altered or replaced. For buildings with concrete or unreinforced masonry walls, when the work area exceeds 50 percent of the floor area, than all of the structural concrete or masonry walls (both gravity and lateral load resisting walls) are required to be secured to the floor or roof deck above.

Sprinkler Protection Requirements

There are two separate regulations that govern the requirements for sprinkler protection: the IEBC and M.G.L. c.148 s.26G.

IEBC requirements, enforced by the building official, would require sprinklers where the *work area* (defined previously) exceeds 50 percent of the floor area and the work area is required to be provided with sprinklers in accordance with the International Building Code, Chapter 9.

M.G.L. c.148 s.26G, which is enforced by the fire official, requires enhanced sprinkler protection in certain buildings which total more than 7,500 gross square feet in aggregate (adding all stories) floor area. This requirement is applicable when "major" alterations or modifications are occurring to a building. Because the statue is not specific about the definition of a "major" alteration, a memo issued on October 14, 2009 by the Fire Safety Commission's Automatic Sprinkler Appeals Board provides additional guidance on this subject.

This memo indicates two factors that are used to determine whether "major" alterations are taking place: a Nature of Work factor and a Scope of Work factor.

If the **Nature of the Work** is such that the effort to install sprinklers is substantially less than if the building was intact, or is the nature of work merely minor repairs and cosmetic work, or is the Nature of the Work "major" in its scope. There is no specific definition of "major", but the memo offers examples including: the demolition of existing ceiling or installation of suspended ceilings; the removal and installation of subflooring, exposing the building framing (not merely the replacement of finished flooring); the reconstruction or repositioning of walls; and the removal or relocation of a significant portion of the buildings HVAC, plumbing, or electrical systems involving penetrations of walls, floors, or ceilings.

If the **Scope of Work** affects a substantial portion of the building, or the cost of work is moderate in comparison to the total cost of work, than the Scope of Work criteria would be applicable to a project. The Scope of Work Thresholds defined in the memo are as follows:

1. Alterations or modifications are reasonably considered major when the work affects ***33 percent or more of the total gross square footage of the building*** (all floor levels combined). Again, no specific definition of alterations or modifications is provided, but we can infer from other codes and definitions that alterations relate specifically to the reconfiguration of spaces, or the "major" Nature of Work examples above.
2. Alterations or modifications are reasonably considered major when the total cost of the work (excluding costs related to sprinkler expenditure) is equal to or greater than ***33 percent of the assessed value of the subject building.***

The memo then indicates that if the Nature and Scope of work criteria and the Scope of Work (either 1 or 2) is satisfied, than the Board would consider the alterations "major" and thus require the installation of a sprinkler system.

ACCESSIBILITY

STATE REQUIREMENTS

In Massachusetts, the state developed Architectural Access Board Regulations (521 CMR) replace the accessibility provisions of the building code. Like the other sections of the building code, the accessibility regulations are enforced by the building official. However, waivers or variances to 521 CMR cannot be granted by the building official. Rather, any such appeal or variance request needs to be reviewed and accepted by the Architectural Access Board.

Chapter 3 of the Architectural Access Board Regulations outlines the scoping thresholds for the applicability of accessibility guidelines for a project. Specifically, section 3.3 describes three different dollar value thresholds for any proposed *additions to, reconstruction, remodeling*, and *alterations* or *repairs* to existing buildings as compared to the buildings “full and fair cash value”. The full and fair cash value is generally the assessed value of the building as recorded with the town assessor’s office. This section then lists the applicability requirements for each dollar value threshold:

- For work costing less than $100,000, only the work being performed is required to comply with Accessibility regulations.
- A scope of work that is more than $100,000, but less than 30% of the full and fair cash value requires the incorporation of an accessible public entrance, toilet, telephone, and drinking fountain.
- When a scope of work costing more than 30% of the full and fair cash value is proposed, the entire facility is required to be brought into compliance with the accessibility guidelines. This threshold also clarifies that additions costing more than 30% of the current building value would require the entire existing facility to be brought into compliance.

Three additional sections in Chapter 3 require special consideration. Section 3.4 requires that when a building undergoes a change from a private use to a public use, an accessible entrance must be provided, even if no work is being performed. This is significant because it is the *only compulsory requirement* found in the building or accessibility codes when no other work is proposed or

anticipated.

Section 3.5 titled *Work Performed Over Time* requires that when work has been divided into separate phases or projects under separate building permits, the total of all work performed in a 36-month period be added together when considering the dollar value scoping thresholds of Section 3.3.

Finally, 521 CMR section 3.9 allows for variances to the accessibility guidelines for Historic Structures listed on the State or National Register of historic places. The process of documenting and being granted variances for a broad range of accessibility requirements based on historic status is a complicated and nuanced process that requires careful coordination with the Access Board. The Board reviews the proposed variances to ensure that people with disabilities are granted dignified access to the primary function spaces of the building with as little influence on the historic fabric of the building as is feasible.

FEDERAL REGULATIONS

The Americans with Disabilities Act Architectural Guidelines (ADAAG 2010) is part of a federal civil rights regulation that is also applicable to work on existing buildings depending on their intended users. ADA applicability would be under Title II for any state or local government entity, program, service, or facility whereas Title III is applicable for any places of public accommodation or commercial facilities that fall into specifically defined categories. The requirements for buildings under the ADA are enforced by the US Department of Justice, and enforcement is typically through investigations or civil lawsuits resulting from complaints filed by individuals or organizations for perceived violations of the Act. These actions can be brought against a building Owner at any time, as opposed to building codes which are typically enforced when an building permit is granted for a proposed scope of work.

Title II (State and Local Governments) of the ADA requires that all services, programs, and activities provided by state and local government entities be accessible to people with disabilities. This does not require that all existing facilities be brought into compliance, but that barriers be removed in existing buildings such that all public services or programs, when viewed in their entirety, are accessible. Any proposed work on an existing building under Title II would be required to comply with ADA guidelines to the maximum extent feasible and new facilities would be required to comply completely with the guidelines. Additionally, when work is proposed that affects a primary function of an existing facility, the path of travel to that area, including the bathrooms, drinking fountain, and telephones on that path would need be made accessible as well. There are exceptions in Title II for structural impracticability, historic buildings, certain types of spaces, and disproportionality of cost for alterations to an accessible path serving a primary function area which all require close consideration for each scope of work in each building under consideration.

Title III facilities are privately owned buildings that are either defined as places of public accommodation (business open to the public and fall into one of 12 categories listed in the ADA) or as commercial facilities (non-residential facilities that are not defined as places of public accommodation). The requirements for alterations to these facilities are similar to those as for Title II facilities, including the provisions for an accessible path serving a space that is considered a primary function. The most significant difference is that Title III existing facilities are not held to the same "removal of existing barriers" standard or program and service access standards as Title II facilities.

Still, any proposed work in a Title III building would be required to comply to the maximum extent feasible, taking all of the applicable exceptions into consideration.

ENERGY CONSERVATION

The 2018 International Energy Conservation Code (IECC) replaces the Chapter 13 requirements of the building code. This specialized code, also enforced by the building official, is intended to regulate the design and construction of facilities with respect to the use and conservation of energy over the life of the building. Chapter 5 of the IECC controls the alteration, repair, addition, and change of occupancy of existing buildings and has no authority to require the removal, alteration, or prevent the continued use of any existing buildings. For communities that have adopted the Massachusetts STRETCH Code, increased reductions in energy consumption beyond the baseline thresholds established in the base Code would be required for new buildings and additions to existing buildings meeting certain project type and size criteria described in 780 CMR Appendix AA. Alterations to existing buildings in these communities would be subject to the requirements of Chapter 5 of the 2015 IECC, described below.

Section C501.6, states that no provisions of the code relating to the repair, alteration, restoration or change of occupancy shall be mandatory for historic structures provided a report is submitted to the building official demonstrating that compliance with the provision would threaten, degrade, or destroy the historic fabric function of the building. While this is not a categorical exemption to the energy conservation code, it does place a high degree of value on the historic fabric of the building.

Proposed additions to existing structures would be required to comply with the IECC as for new construction. Alterations to existing buildings also need to comply with the IECC as for new construction and cannot make the existing building less conforming to the code than it was prior to the alteration. In general, this means that when a building envelope or mechanical system or piece of equipment is modified as part of a scope of work, the replacement elements or systems are required to comply with the IECC for new construction. There is no provision, based on the work area or dollar value of alterations, which would require an existing facility to be brought into full compliance with the energy code.

Certain specific scopes of work that may be limited to one portion of the building, whether considered as additions or alterations to existing facilities, are required to consider the effect on the entire facility. The addition of windows or other fenestration, including skylights, needs to incorporate all of the building fenestration areas in the total allowable fenestration area. Alternatively, a project could pursue the Total Building Performance method, requiring energy modeling, but would then need to demonstrate full compliance with the IECC as for new construction. Otherwise, alteration and addition compliance requirements are limited to the work performed.

Although not part of the energy conservation code, it is important to note that in Massachusetts, M.G.L. chapter 7C, section 29 requires that for any new construction or renovation of a public facility where the cost exceeds $25,000 and includes systems or elements that affect energy or water consumption, a life-cycle cost analysis (LCCA) would be required to be performed. This analysis is

required to determine the short and long term costs and feasibility of different technologies or systems considered as part of the scope of work. These systems and components would include both energy consuming equipment as well as building envelope elements or systems, since all of these elements affect energy consumption.

Fire Safety Code

In addition to the building code (780 CMR), there is also a Massachusetts Comprehensive Fire Safety Code (527) which is enforced by the local Fire Official. The Fire Code is generally enforced as a safety maintenance code, intended to prevent or remedy any conditions that may be fire hazards and to provide safety requirements to protect the public in the event of a fire. This code also regulates the installation and maintenance of fire safety equipment such as sprinkler systems and fire detection systems.

The Fire Code does apply to both new and existing conditions, but this code states that all installations of equipment completed prior to the adoption of the code are deemed to be in compliance. However, the fire official still has the authority to require compliance with the code for any condition which constitutes an imminent danger.

For the purposes of this report, it is important to note that the Fire Code also states that any provision related to the construction, alteration, movement, enlargement, replacement, repair, equipment, use, occupancy, removal, or demolition of buildings shall effectively be regulated by the building code and is subject to the jurisdiction of the Building Official. As such, this report contains minimal references to the Fire Code and will rely on the IEBC requirements outlines above for evaluation and consideration of existing conditions and any proposed scope of work.

Historic Structures

Massachusetts General Laws require that any project that requires funding, licensing, or permitting from a state agency to be reviewed by the Massachusetts Historical Commission (MHC). This review and the regulations that guide the review are designed to identify historic properties, evaluate the impact of a proposed project, and consult with the invested parties to avoid, minimize, or mitigate any adverse effects of the project. Once a general scope of work is defined, a Project Notification Form should be filed with the MHC to determine if any historical or archeological considerations will need to be addressed as part of the project.

Beyond the State of Massachusetts regulations, the US Department of the Interior has developed a set of standards and guidelines related to the maintenance, repair, replacement of historic materials, and the design of alterations or additions to historic structures. The *Standards* are a set of concepts related to these different treatments, whereas the Guidelines offer design and technical recommendations in applying the Standards.

In order to determine which Standards and Guidelines are applicable, it is necessary to determine which treatment of a historic structure would be pursued for a given facility. A proposed scope of work outlined in a Capital Improvements Plan generally falls into work that could be classified as one of the following Treatments:

- **Preservation**: the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
- **Rehabilitation**: recognizing the need to alter or add to a historic property to meet continuing or changing uses while retaining the properties historic character.

In working to develop a defined scope of work as well as a sustainable capital improvement plan for the future, the Standards for Preservation and Rehabilitation as well as the Guidelines for the Treatment of Historic Properties will serve as guiding documents in the development of such plans. Compliance with the Guidelines is not obligatory, but will provide the best practice approach to both maintaining the building and allowing for alterations to serve the intended end use. It also serves to demonstrate that the Owner values and wishes to maintain the historic integrity of a building, reinforcing the appropriate application of any historic structure exceptions to accessibility and building code regulations.

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WILDWOOD EARLY CHILDHOOD CENTER – EXISTING SITE CONDITIONS

Property Data

Address: 182 Wildwood Street
Wilmington, MA 01887

Use:	PK -K Early Childhood Center
Site Area:	7.5 Acres
Date Built:	1955
Renovations:	NA
Additions:	NA
Occupancy Group:	Educational
Construction Class:	III-B
Zoning District:	R20, Municipal Open Space, Ground Water Protection District (Zone II Wellhead Protection Area)

Building Data

No. of Floors:	1 Main Floor
Gross Area:	29,302 +/- GSF
Foundation / Frame:	Cast-in-place Concrete
Exterior Walls:	Masonry with uninsulated masonry back-up.
Sprinklers:	None
HVAC:	Oil fueled steam plant; unit ventilators.
Sewer:	On Site Septic System

Introduction

The purpose of this section is to report on and analyze – the condition of the existing building and systems in order to identify what is in acceptable condition via current building codes, best practices, accessibility, and where there may be deficiencies. The assessments are based on site visits by the design team in conjunction with Town and School staff, as well as facilities maintenance personnel. There were no intrusive investigations or test openings performed as part of this review. Given the era the building was constructed, previous Hazardous Materials reports on file, as well as observations by the design team consultant – some materials are known to exist and others are assumed to be uncovered during construction and / or demolition.

General

The Wildwood Early Childhood Center is one of (6) elementary schools in Wilmington. The Wildwood School is in similar condition to Woburn Street School – in that only preventative maintenance and repairs have been made in the last 30 years but for its age and construction type is in fair condition. The interior ceiling aesthetics and lack of thermal insulation are among the challenges. Infrastructure is functioning but in need of replacement as systems are antiquated and inefficient.

Legal Title to the Property / Determination of Development Restrictions

The Town of Wilmington has legal title to the property and the property is available for development with no restrictions. The deed and associated legal back up is included in Appendix Section X.08

Historic Registrations / Preservation

The Wildwood School is not listed on the Town's Historic Bylaw register. The building is not historically or architecturally significant.

Soils Exploration & Geotechnical Evaluation

A preliminary Soils Resource Report is provided in Section 3.1.4.C.1- Civil Assessment. Further soils exploration and geotechnical investigation of the Wildwood site will occur if the site is selected as the preferred option in the Schematic Design Phase. Soils will be tested for permeability for stormwater management design. The size of the parcels and potential new school will merit detailed geotechnical investigation.

Impact of Preliminary Findings on Alternatives

The Wildwood site is currently unoccupied and there would be no issue for disruption to an active school. The site is situated in a residential neighborhood with two access points into the site. However if a larger enrollment of PK-3 or PK-5 is selected, increased traffic in the neighborhood is likely to be disruptive to residents. The grade changes will impact the site design and need for retaining walls. Concessions with parking and play/open field space is a consideration if a larger enrollment is to be situated on the site.

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EXISTING CONDITIONS: CIVIL/SITE

EXECUTIVE SUMMARY

CDW Consultants has performed an updated assessment of the existing site conditions at the Wildwood School located at 178 Wildwood Street in Wilmington, Massachusetts. This assessment included a site visit on July 26, 2023, and a review of the following drawings/documents:

- Record site, utility, and building drawings provided by the Client;
- 2008 Master Planning Study;
- 2018 Facility Master Plan Report;
- Town of Wilmington Assessor's Maps; and
- Mass Geographic Information System (GIS) Data/Maps.

GENERAL SITE CONDITIONS

The Wildwood School property at 178 Wildwood Street is 7.5 acres and has approximately 600 feet of frontage on Wildwood Street. The site borders residential properties to the south, west, and north, and a town-owned parcel to the north and east that contains mostly woods, wetlands, and Maple Meadow Brook with an associated floodplain. The Wildwood School building contains approximately 29,000 square feet and houses approximately 158 Pre-K and Kindergarten students. See Figure 1 for the Aerial Locus Map and Figure 2 for the USGS Locus Map.

Vehicular access to the site consists of two curb cuts on Wildwood Street. The entrance driveway is located near the southern corner of the site. The exit driveway is further north and is located west of the main building entrance. The driveways are connected via a loop road that runs along the west side of the building. There is a sidewalk on the west side of Wildwood Street that connects to an onsite walkway via a striped crosswalk. The onsite walkway leads to a flagpole west of the building but does not connect directly to the walkway adjacent to the building.

There are two parking lots on the property. Parking Lot #1 is located south of the building and adjacent to the entrance driveway. It contains 25 standard parking spaces and one handicap parking space. The handicap parking space appears to be relatively flat but does not have a properly dimensioned access aisle per 521 CMR 23.4.6.b. (too narrow) nor does it have "Van Accessible" signage per 521 CMR 23.4.7.b. It does have handicap parking signage mounted on a post at the head of the space. Parking Lot #2 is located north of the building. It contains 24 standard parking spaces, and no handicap parking spaces. It is accessed by a driveway off the north end of the loop road.

Along the front loop road are three handicap parking spaces and two bus spaces. The north handicap parking space has both handicap parking and van accessible signage. The south handicap parking spaces have handicap parking signage. All the signage is mounted too low (<5') and none of the spaces have access aisles.

East of the building is a large, paved area that is used as a play area. There is an adjacent playground along the east edge of this paved play area. Further east along the rear edge of the property are basketball and tennis courts. The paved play area is separated from Parking Lot #1 by a black vinyl chain link fence with a double swing gate.

Asphalt pavement in the parking lots and play area is in fair to poor condition depending on the location with some areas showing noticeable cracking and deterioration. Asphalt pavement in the basketball and tennis courts is in a similar condition and exhibits minor ponding due to low spots throughout the pavement. Some sections of the asphalt curb are in poor condition and/or damaged. A timber guard rail along the north and east sides of Parking Lot #2 is in poor condition.

A ridgeline runs through the middle of the site in a northwest/southeast direction. The site slopes to the west, north, and east. Most of the site is relatively flat (<5%) except at the northwest corner and exit driveway.

SITE UTILITIES

WATER

Water service adjacent to the site includes a 6-inch water main in Wildwood Street. A 6-inch water line extends off this main and heads east into the site north of the exit driveway and building. It provides service to a fire hydrant in Parking Lot #2 north of the building and domestic water service to the building via a 3-inch pipe that enters the east side of the building at the utility room. The water meter is located in the utility room along the east wall. The building does not have fire protection service.

An additional fire hydrant north of the exit driveway was recently installed and tied into the onsite 6inch water line.

SEWER

Sewer service exits the north end of the building via an 8-inch vitrified clay (VC) pipe and discharges to an onsite septic system with a septic tank, dosing chamber, two distribution boxes, and a leaching field. The system is gravity fed with no pumps. There is an interior grease trap for kitchen waste. There is no exterior grease trap.

Image 1 – South Entrance Driveway

Image 2 – North Exit Driveway

Image 3 – Flagpole Walkway

Image 4 – Walkway and Crosswalk

Image 5– Parking Lot #1 – East View

Image 6– Parking Lot #1 – H/C Parking

Storm Drainage

There is limited storm drainage infrastructure onsite and adjacent to the site. There is no closed drainage system in the portion of Wildwood Street adjacent to the site. Roof runoff from the building discharges to the east via a 15-inch VC pipe to a leaching catch basin. This catch basin is located just inside the tree line and is constructed of open concrete masonry unit (CMU) blocks. Discharge from this catch basin continues to flow overland to the northeast.

There is a catch basin in the lawn area just west of the basketball/tennis courts. The outlet pipe from this catch basin, which appears to be a 15-inch corrugated metal pipe (CMP), heads east under the courts and discharges to the woods east of the courts.

There are no storm drainage systems in the paved play area, either parking lot, or in the front loop road. It is assumed stormwater runoff follows the topography of the site and eventually flows offsite or into Wildwood Street. Runoff from Parking Lot #2 has caused erosion of the grass slope north of the parking lot. Some stone was placed at the edge of the parking lot, presumably to minimize this erosion.

Gas/Oil

There is no gas service onsite or in Wildwood Street. The building is heated with No. 2 fuel oil, which is stored in a 10,000-gallon underground storage tank located on the north side of the building. Due to a recent leak in the tank, the older tank was removed and replaced.

Electric/Telecom

Electric and telecom service to the building is provided via overhead lines from utility poles on Wildwood Street. The electric meter is located on the north face of the building. See the MEP section for additional information on the electric and telecom services.

SOILS

The site soils consist primarily of Udorthents-Urban land complex with Montauk fine sandy loam around the perimeter of the site. The Udorthents-Urban land complex soil does not have a hydrologic soil group designation due to its variation as a fill material, slopes range from 0 to 15 percent, and depth to water table is more than 80 inches. The Montauk fine sandy loam is a Hydrologic Soil Group C soil (slow infiltration rate), is well drained, slopes range from 0 to 8 percent, and depth to water table is 18 to 37 inches. Soil maps are included with this report.

Record boring information shows primarily sand and gravel, fine sand, and little clay and boulders. Some borings did hit refusal at shallow depths (5 to 8 feet below grade), which could indicate either large boulders or ledge.

Image 7 – Parking Lot #2 – West View

Image 8 – H/C Parking at Loop Drive

Image 9 – H/C Parking at Loop Drive

Image 10 – Paved Play Area – North View

Image 11 – Paved Play Area – South View

Image 12 – Swing Gate at Chain Link Fence

Specific Issues	Recommendations
Asphalt pavement and curb is damaged or in poor condition.	Replace asphalt pavement and curb. (78,000 sq.ft., 1,000 LF)
Timber guard rail is broken/ damaged along the north and east sides of Parking Lot #2.	Replace the timber guard rail. (30-ft)
Parking lots and H/C parking do not meet MAAB/ ADA standards.	Regrade, sign, and stripe handicap parking spaces as needed to meet the requirements of 521 CMR (Architectural Access Board) and ADA Accessibility Standards. (4 spaces)
Crosswalk signage missing for the painted crosswalk on Wildwood Street.	Provide crosswalk signage. (2 signs)
The front loop road is not designated as a one-way circulation for vehicular traffic (south to north) and would be safer if it were.	Designate the front loop road as one-way for vehicular traffic (south to north) via signage and striping. (2 signs)
No separation provided between Parking Lot #1 and the loop road.	Provide separation between Parking Lot #1 and the loop road using curbing (preferred) or striping. (50-LF)
Proper crosswalks missing.	Provide a painted and signed crosswalk across the loop road to connect the walkway from Wildwood Street to the walkway in front of the building. Provide a pedestrian ramp at the walkway in front of the building. (25-ft long, 8-ft wide crosswalk)

Image 13 – Basketball Court – East View

Image 14 – Courts – North View

Image 15 – Tennis Court – East View

Image 16 – Timber Guard Rail – East View

Image 17 – New Fire Hydrant

Image 18 – Leaching CB - West

Existing domestic water service to the building lacks a dedicated gate valve.	Replace the existing domestic water service with cement-lined ductile iron pipe and a dedicated gate valve. (150-ft)
Building lacks a sprinkler system.	Assuming a sprinkler system will be required, provide fire protection service to the building with a new cement-lined ductile iron pipe and a dedicated gate valve. (150-ft)
Two fire hydrants are provided.	Assess in coordination with the Wilmington Fire Department if any additional site fire hydrants are required.
Existing septic system is aging and may be out of compliance.	Inspect the existing septic system to confirm compliance with 310 CMR 15.00 (Massachusetts State Environmental Code, Title V) and the Wilmington Board of Health Regulations. Upgrade the system as needed to meet the regulations and/or to support any building expansion.
The existing building lacks an exterior kitchen waste grease trap per current codes.	Provide an exterior grease trap for kitchen waste that is sized and designed to meet the requirements of 310 CMR 15.00 (Massachusetts State Environmental Code, Title V), 248 CMR 10.00 (Massachusetts Uniform Plumbing Code), and Wilmington Board of Health Regulations.
Existing storm drainage piping system is aging and should be inspected.	Clean and video inspect the storm drainage system to confirm its condition. Any pipes and/or structures that are damaged or compromised should be replaced.
The flow discharge path from the leaching catch basin is eroded.	Line the flow discharge path from the leaching catch basin with stone to prevent erosion. (200 sq.ft.)

Image 19 – Flow Discharge - Northeast

Image 20 – Catch Basins at Courts

Image 21– Outlet from Catch Basin

Image 22– Stone at North Edge of Lot #2

Erosion is occurring on the grass slope north of Parking Lot #2.	Repair erosion of the grass slope. (200 sq.ft.)
General stormwater operations practices:	Establish a stormwater operations and maintenance plan for the site/property.
New development or impervious area:	The addition of new impervious area, either pavement or building roof, may require stormwater best management practices (BMPs) to mitigate impacts. Those BMPs would need to be designed to meet the MassDEP Stormwater Management Standards, including requirements for discharges to Zone II Wellhead Protection Areas.

PERMITTING

TOWN OF WILMINGTON ZONING BYLAW

The property is in a Residence 20 (R20) zoning district. A portion of the property along the eastern and northern sides, which is primarily undeveloped wooded area, falls within a Groundwater Protection District (Zone II, Wellhead Protection Area). The Zoning Bylaw indicates that Educational use in a R20 zoning district does not require Site Plan Review. This assumption should be confirmed with the Planning Department. Any work within the Groundwater Protection District would need to comply with the requirements of Section 6.6 of the Zoning Bylaw and the MassDEP Stormwater Management Standards. See Figure 3 for the Zone II Wellhead Protection Area Map.

WETLAND PROTECTION ACT (310 CMR 10.00) AND TOWN OF WILMINGTON WETLANDS ENFORCEMENT BYLAW AND POLICIES

The Wetlands Protection Act ensures the protection of Massachusetts' inland and coastal wetlands, tidelands, great ponds, rivers, and floodplains. It regulates activities in coastal and wetland areas and contributes to the protection of ground and surface water quality, the prevention of flooding and storm damage, and the protection of wildlife and aquatic habitat. The Town of Wilmington also has a Wetlands Enforcement Bylaw and Policies which establish additional requirements for work that will impact a wetland resource area. The Policy includes a 25-foot "No Structure" zone and a 15-foot "No Disturbance" zone around all jurisdictional wetland resource areas except for land subject to flooding (100-year floodplain).

Based on MassGIS data there is a state regulated wetland on the adjacent property to the north and east. It is approximately 75 feet from the east property line and has a 100-foot Buffer Zone. Maple Meadow Brook, a perennial stream, also runs through this adjacent property. It is approximately 100 feet from the east property line and has a 200-foot Riverfront Zone. The 100-foot Buffer Zone and 200-foot Riverfront Zone extend into the northeast corner of the Wildwood School property, which is currently undeveloped woods. The developed portion of the site is over 200 feet away from the nearest wetland resource area. Unless work is proposed in the northeast wooded area, it is unlikely any wetland permitting would be required. See Figure 4 for the MassDEP Wetlands Map.

Natural Heritage and Endangered Species Program

A review of the 15th Edition of the Massachusetts Natural Heritage Atlas prepared by the Natural Heritage and Endangered Species Program (NHESP), dated August 1, 2021, indicates that the site is NOT a Priority Habitat of Rare Species or an Estimated Habitat of Rare Wildlife. Therefore, any redevelopment or new construction would not trigger a permit through the NHESP. See Figure 5 for the NHESP Map.

Floodplain

Floodplain information was obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) community map number 25017C0292E dated June 4, 2010. The site is within a Zone X, which is identified as an area outside of the 0.2% chance (500-year) annual floodplain. Therefore, any redevelopment or new construction would not trigger a permit with respect to the floodplain. See Figure 6 for the FEMA Flood Hazard Map.

Attachments:

Figure 1 – Aerial Locus Map

Figure 2 – USGS Locus Map

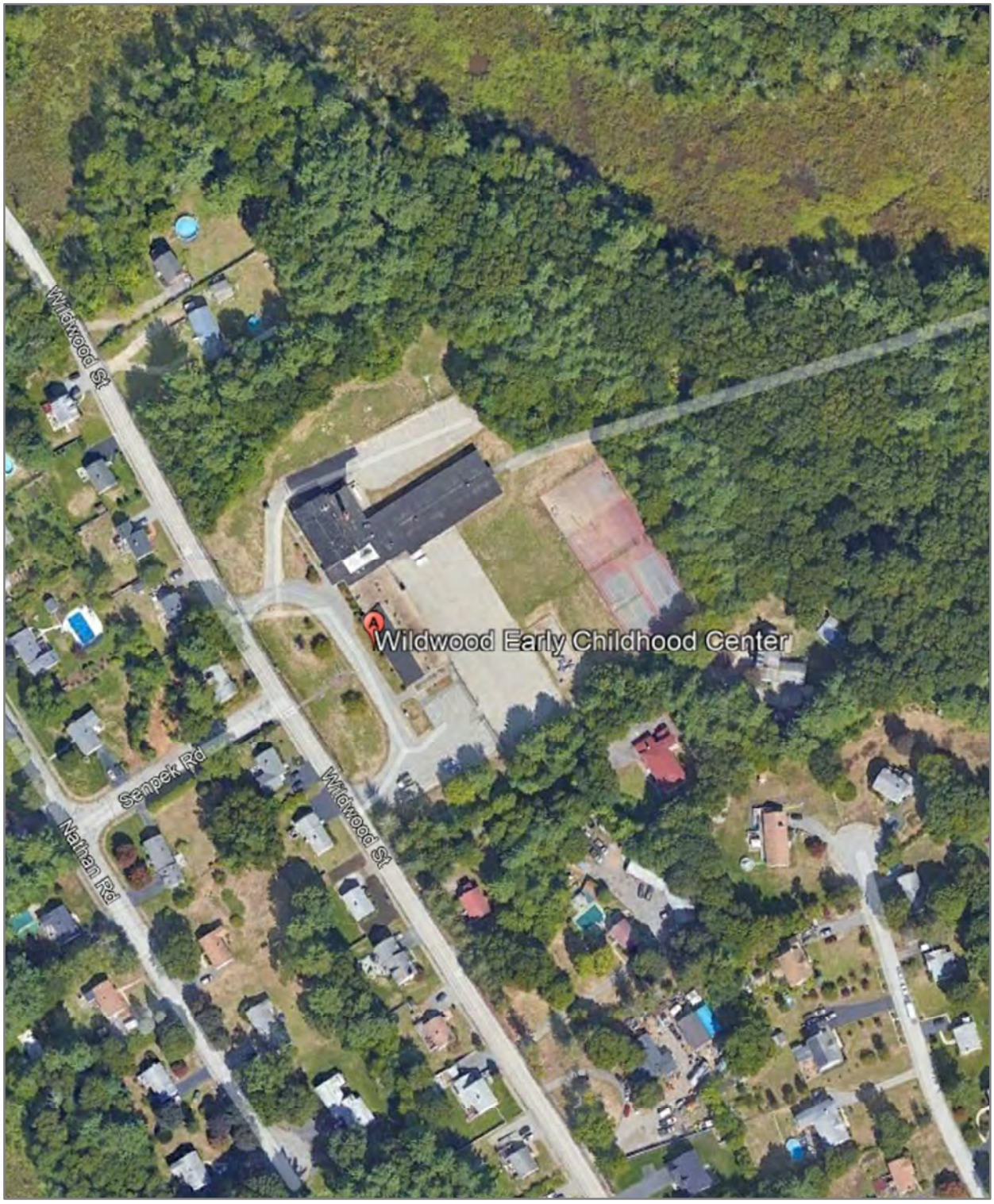
Figure 3 – Zone II Wellhead Protection Area Map

Figure 4 – MassDEP Wetlands Map

Figure 5 – NHESP Map

Figure 6 – FEMA Flood Hazard Map

Soil Report



CDW CONSULTANTS, INC.

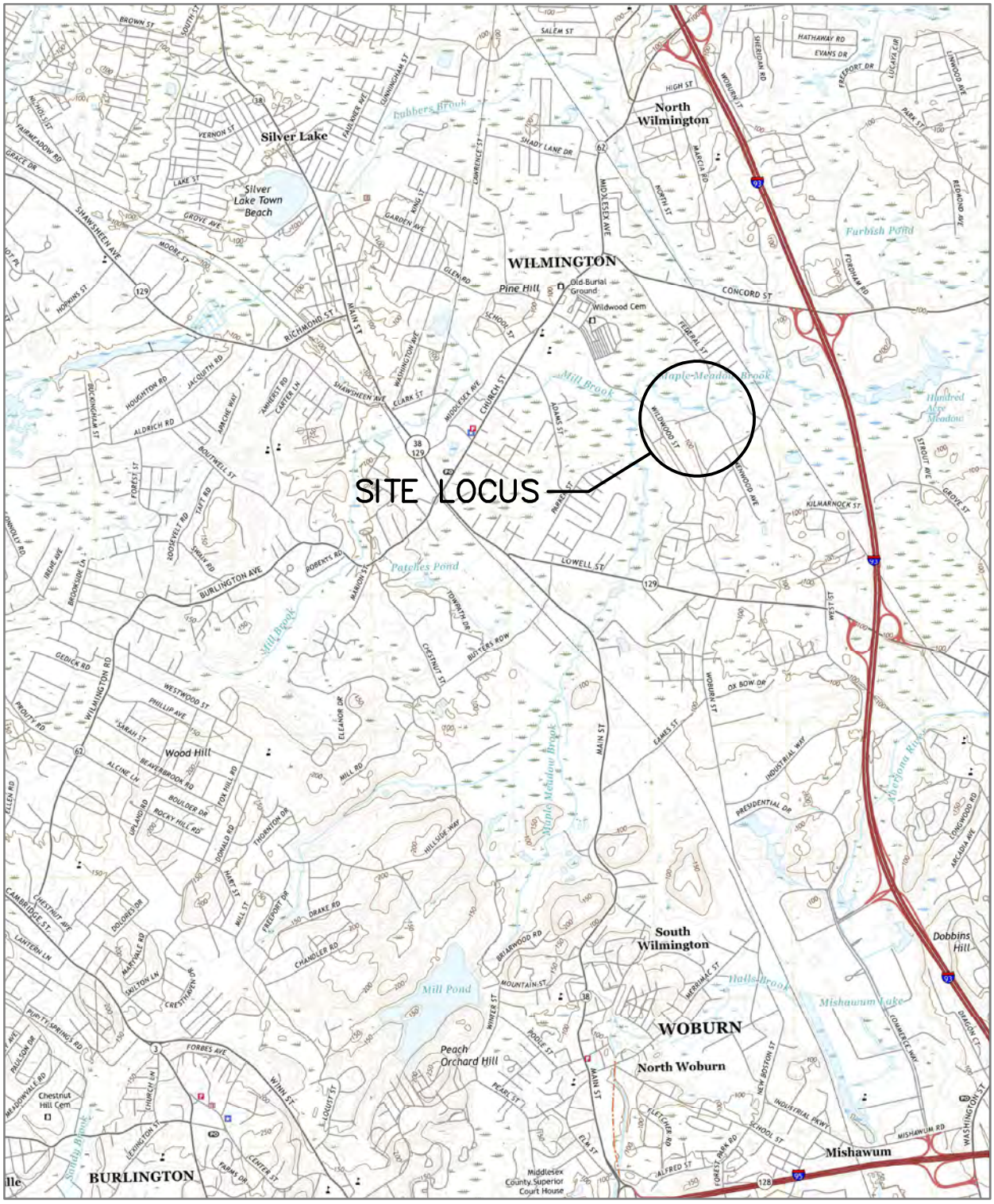
AERIAL LOCUS MAP

NORTH INTERMEDIATE SCHOOL
320 SALEM STREET
WILMINGTON, MA 01887

N

DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS



CDW CONSULTANTS, INC.

USGS LOCUS MAP

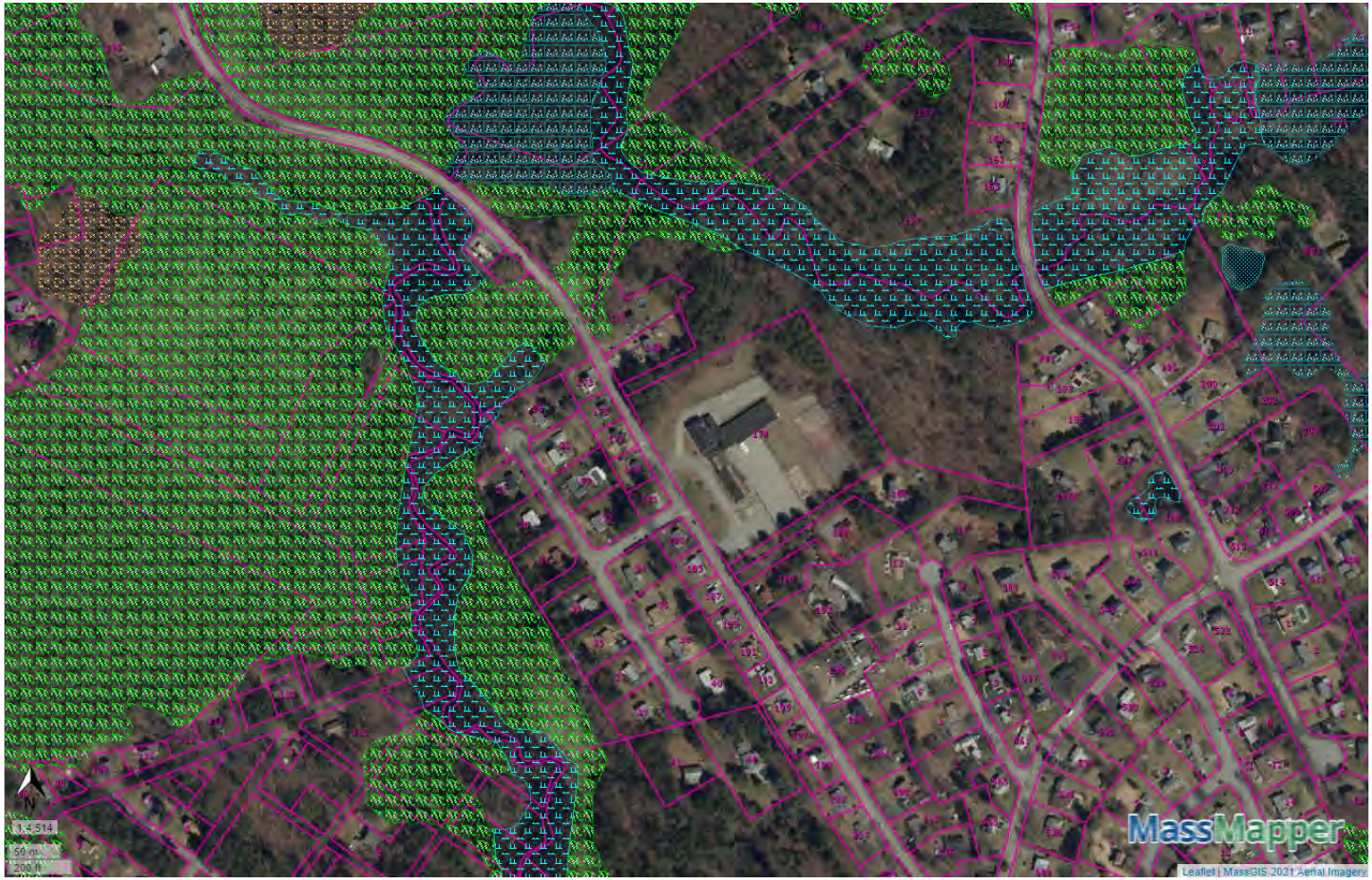
WILDWOOD EARLY CHILDHOOD CENTER
182 WILDWOOD STREET
WILMINGTON, MA 01887

DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS

Zone II Wellhead Protection Area Map

MassDEP Wetlands Map



DEP Wetlands Detailed With Outlines

- Barrier Beach System
- Barrier Beach-Deep Marsh
- Barrier Beach-Wooded Swamp Mixed Trees
- Barrier Beach-Coastal Beach
- Barrier Beach-Coastal Dune
- Barrier Beach-Marsh
- Barrier Beach-Salt Marsh
- Barrier Beach-Shrub Swamp
- Barrier Beach-Wooded Swamp Coniferous
- Barrier Beach-Wooded Swamp Deciduous
- Bog
- Coastal Bank Bluff or Sea Cliff
- Coastal Beach
- Coastal Dune
- Cranberry Bog
- Deep Marsh
- Barrier Beach-Open Water
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Shrub Swamp
- Tidal Flat
- Wooded Swamp Coniferous
- Wooded Swamp Deciduous
- Wooded Swamp Mixed Trees

Property Tax Parcels

Natural Heritage and Endangered Species Program

Potential Vernal Pools

NHESP Priority Habitats of Rare Species

NHESP Natural Communities

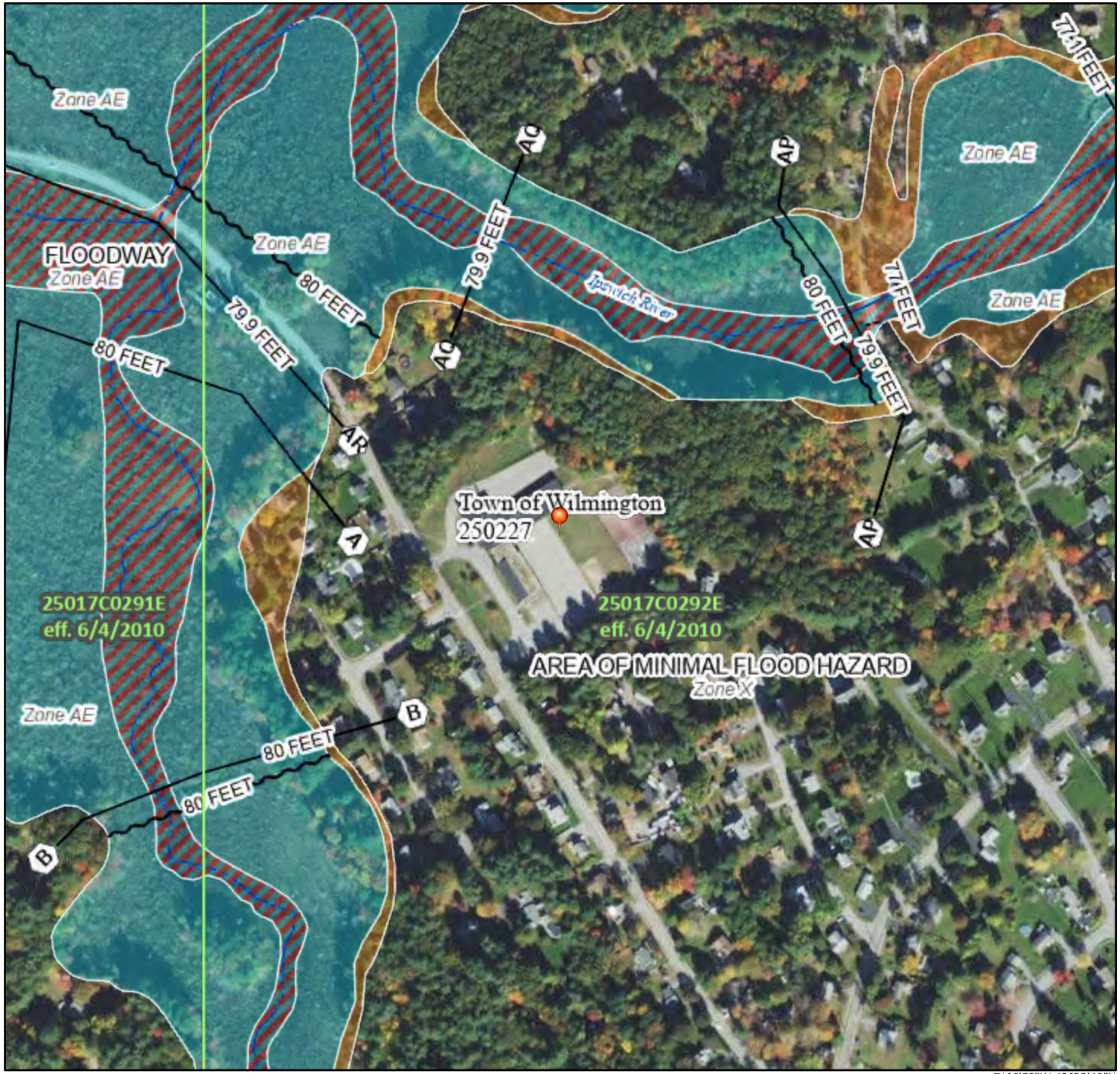
NHESP Estimated Habitats of Rare Wildlife

NHESP Certified Vernal Pools

National Flood Hazard Layer FIRMette

FEMA

71°9'29"W 42°33'16"N



71°8'52"W 42°32'49"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 / 17.5 Cross Sections with 1% Annual Chance 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 8/11/2023 at 12:04 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.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts

August 11, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
36A	Saco mucky silt loam, frequently ponded, 0 to 1 percent slopes, frequently flooded	0.7	1.7%
52A	Freetown muck, 0 to 1 percent slopes	6.9	17.3%
255A	Windsor loamy sand, 0 to 3 percent slopes	1.0	2.5%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	4.2	10.5%
302B	Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony	19.4	48.9%
656	Udorthents-Urban land complex	7.6	19.2%
Totals for Area of Interest		**39.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

36A—Saco mucky silt loam, frequently ponded, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2zvfl
Elevation: 30 to 500 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Saco and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saco

Setting

Landform: Terraces, alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty alluvium

Typical profile

H1 - 0 to 13 inches: mucky silt loam
H2 - 13 to 30 inches: silt loam
H3 - 30 to 45 inches: silt loam
H4 - 45 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Ecological site: F144AY016MA - Very Wet Low Floodplain
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 8 percent

Landform: Bogs, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 8 percent
Landform: Depressions, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Limerick

Percent of map unit: 4 percent
Landform: Terraces, alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

52A—Freetown muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2q9
Elevation: 0 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Freetown and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Depressions, depressions, swamps, kettles, marshes, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Whitman

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 5 percent
Landform: Bogs, swamps, marshes, depressions, depressions, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

255A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash plains, outwash terraces, deltas, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

256A—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand

Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, kame terraces, outwash deltas, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Kame terraces, outwash plains, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

302B—Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w80t
Elevation: 30 to 1,120 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Montauk, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Extremely Stony

Setting

Landform: Ground moraines, drumlins, recessionial moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, extremely stony
Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, extremely stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 2 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

656—Udorthents-Urban land complex

Map Unit Setting
National map unit symbol: 995k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Udorthents and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Terraces, plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

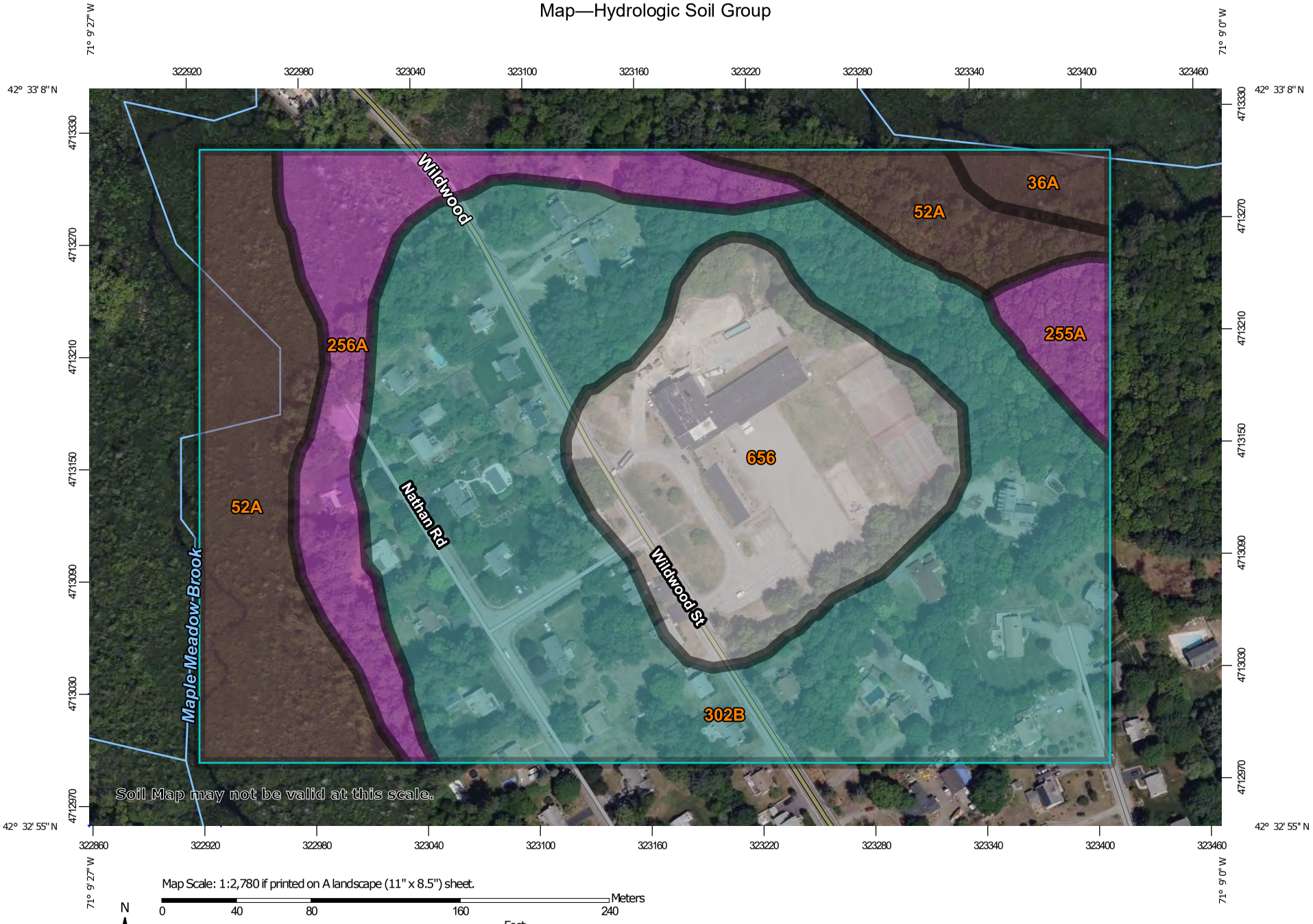
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:2,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
36A	Saco mucky silt loam, frequently ponded, 0 to 1 percent slopes, frequently flooded	B/D	0.7	1.7%
52A	Freetown muck, 0 to 1 percent slopes	B/D	6.9	17.3%
255A	Windsor loamy sand, 0 to 3 percent slopes	A	1.0	2.5%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	4.2	10.5%
302B	Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony	C	19.4	48.9%
656	Udorthents-Urban land complex		7.6	19.2%
Totals for Area of Interest			**39.7**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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EXISTING CONDITIONS: LANDSCAPE

LANDSCAPE SUMMARY

The Wildwood Early Childhood Center enjoys a location in a quiet residential area surrounded on three sides by a wooded buffer. Visitors may enjoy convenient vehicular travel into and out of the site. Few trees are present within the developed area of the property, which poses a challenge to its current environmental, aesthetic, and health value but creates a greater opportunity to reconfigure the site as needed without disrupting mature trees. Site constraints include considerable grade change that may create challenges for drainage and accessibility, the presence of a protected Municipal Open Space, the presence of a Wellhead Protection Area that may limit improvement options, and aged and/or lacking infrastructure (vehicular, pedestrian, play and athletics, and site furnishings).

ENVIRONMENT

Context and Natural Resources

The Wildwood Early Childhood Center is in a predominantly residential area of Wilmington. The property is located just east of the Central Park Conservation Area, a large expanse of marsh surrounding the confluence of Mill Brook and Maple Meadow Brook, both tributaries of the Ipswich River. The regulatory buffers around these wetlands may slightly overlap the northern corner of the site. The property is bordered by Wildwood Street to the southwest and a mixed deciduous and coniferous forest edge on the remaining three sides. This forested buffer separates the property from homeowners to the northwest and southeast. The buffer to the northeast is more expansive, extending roughly 500 feet before reaching the residential properties off Federal Street. Over half of the property is categorized as Municipal Open Space with Limited Protection, including the playground, the sport courts, and the grassy hillsides wrapping around the school building to the east, west, and north. The northern corner of the site falls in a DEP Approved Wellhead Protection Area (Zone II).

Specific Issues	Recommendations
The protected Municipal Open Space status of a large portion of the property may limit site improvement opportunities. Similarly, the Wellhead Protection Area designation of the	It is recommended that the Project Design Team closely collaborate with all applicable regulatory agencies to clarify restrictions to site modifications pertaining to protected municipal

northern corner of the site may constrain development.	Open Space and Wellhead Protection Areas.

Landscape and Drainage

The school building occupies the highest ground on the site. Visitors approaching from Wildwood Street traverse a moderate slope to reach the school's front entrance. Relatively flat ground extends to the asphalt play area behind the school, beyond which the grades step down to the town-owned sport courts along the northeastern edge of the property. The landscape drops steeply within the woodland buffer beyond these courts. The parking lot to the north of the school sits several feet below the school building. From here, the terrain slopes down to the north, west, and east, plateauing to its lowest elevations in the site's northern corner. Several erosion-control measures were observed within this unprogrammed grassy hillside, including aged riprap and wattles (Image 1). The site lacks a stone drip edge where the foundation meets turf or planted area, except for sparse length of rocks alongside the front façade.

Apart from the dense forest edge wrapping around the property, there are few other trees on site. Four ornamental, deciduous trees stand in the sloped lawn in front of the school's main entrance. One deciduous tree appears to be dead, and another appears to be in very poor condition (Image 2). A large, mature Oak tree (*Quercus sp.*) stands just inside the southeastern property line fence, offering shade to the south end of the playground. Five mature trees, including two Spruce trees (*Picea sp.*), one Pine tree (*Pinus sp.*), one Maple tree (*Acer sp.*), and one Cherry tree (*Prunus sp.*) line the southeastern side of the south parking lot. However, these trees appear to fall outside of the school's property line (Image 3). Various woody, deciduous shrubs in mulch beds and turf adorn the front façade the school building, most densely surrounding the main entrance and school sign (Image 4). To the left of the main entrance is a concrete curb planter of Yew hedges (*Taxus sp.*), and to the right is a raised wood planter with naturalized growth. Turf blankets the interstitial spaces on site. The turf appears to be in fine condition, except for damaged areas alongside vehicular pavements that are lacking curbs (Image 5). One fieldstone boulder sits at the corner of a lawn panel at the front of the school building, and two additional boulders sit at the end of a vehicular drive behind the building (Image 6).

Specific Issues	Recommendations
The significant grade changes across the site may present challenges for accessible travel throughout.	It is recommended that the school building and significant site amenities be placed in an arrangement that allows for ADA access.

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

The steep hillsides beyond the northern parking lot may present drainage and erosion control challenges.	It is recommended that drainage infrastructure be evaluated and improved as necessary to prevent pooling of water and ensure slope stability. Is further recommended that green infrastructure drainage solutions are considered.
Stone drip edge adjacent the building foundation is lacking.	Installation of stone drip edge wherever building façades meet turf or planted area is recommended, to protect the building foundation.
One tree on site appears to be dead. One tree appears to be in very poor condition. The site contains very few trees.	It is recommended that the two trees in poor condition be removed. Replacement of these trees and the planting of additional trees may be required by Open Space, Parking Lot Landscaping, and/or Site Design Standards of the Town of Wilmington. Tree replacement and additional tree planting is recommended, regardless of requirements, to provide environmental, aesthetic, and health benefits.
Turf areas appear damaged in a few locations adjacent vehicular pavements lacking curbs.	It is recommended that all vehicular surfaces be lined with cast-in-place or granite curbs.

ACCESS AND CIRCULATION

VEHICULAR

A looped, asphalt drive off Wildwood Street provides vehicular access to the site. Vehicles enter the site from the south. Then they may proceed straight into the south parking lot or continue along the loop to the drop off area outside the main entrance. Beyond the main entrance, vehicles may turn right onto a vehicular drive and fire lane leading around the north side of the school building to the loading dock and north parking lot (Image 7). Otherwise, they may follow the loop to back to Wildwood Street. One additional asphalt drive stretches from the northeastern façade of the school building to the wooded edge, ending in a few fieldstone boulders. While this drive appears wide enough for vehicular travel it does not connect to any vehicular routes.

Along the looped drive, near the main entrance, are two bus parking spaces and three car parking spaces marked as accessible. One is marked as van accessible (Image 8, above). However, none appear to be adjacent to an accessible route to the entrance. The south parking lot appears to

Image 7

Image 8

Image 9

Image 10

Image 11

Image 12

accommodate approximately 26 vehicles, with one space marked as ADA accessible (through pavement marking; the signpost is missing its sign; Image 9, above). The north parking lot appears to accommodate approximately 26 vehicles, with one space adjacent an access aisle but not marked as ADA accessible. It appears that both parking lots are not meeting ADA/MAAB requirements to provide two accessible spaces for parking facilities offering 26-50 spaces. The addition of the accessible parking spaces near the entrance could potentially make up for this lack. However, all accessible spaces on site would need to be improved with even, level surfacing and connection to clearly marked accessible routes to the nearest building entrance.

All vehicular drives and parking areas are surfaced in asphalt. The vehicular asphalt is in poor condition, with extensive cracking observed (Image 10, above). The one exception is a recently paved area outside the northwestern façade. Vehicular pavement on site is either lacking stone curbs or are lined with Cape Cod berm asphalt curbs (Image 11, above). The one outlier is a length of granite curb between the looped drive and asphalt sidewalk along the front façade. While this granite curb appears to be in fine condition, the asphalt curbs have cracked and deteriorated in numerous locations. A guard fence with concrete posts and a wood rail delineates the border between the north parking lot and the steep hillside beyond. The fence is in very poor condition, with several posts leaning, rails detached and decaying, and paint severely chipped. The loading dock connected to this parking lot is in poor condition, with crumbling concrete observed.

Specific Issues	Recommendations
Asphalt vehicular pavement is in poor condition. Curbs are generally lacking or in poor condition.	It is recommended that all asphalt vehicular pavement be replaced. It is recommended that all vehicular pavements be edged with granite or cast-in-place concrete curbs to best maintain the vehicular pavement and adjacent sidewalks and turf panels.
Accessible parking provided on site appears to be disconnected from any accessible routes to the building entrances.	ADA/MAAB requirements for accessible parking spaces connected to even, level, accessible routes to building entrances must be met.
The vehicular guard fence providing a barrier between the north parking lot and hill below is in poor condition.	It is recommended that the vehicular guard fence be replaced.

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

PEDESTRIAN

Wildwood Street includes a pedestrian sidewalk on its western side but lacks a sidewalk on its eastern side, adjacent the school property. A break in the vehicular curb marks the beginning of a narrow asphalt walkway at the western corner of the site leading to the vehicular drive leading to the north parking lot. No crosswalk exists across this drive. The walkway continues to the main entrance in the form of an asphalt berm along the looped drive, joining an asphalt path that traverses the front façade of the building, from the north parking lot drive to the south parking lot. Visitors may branch off this path onto a short asphalt path leading to a secondary entrance at the southeastern façade of the school building. An asphalt berm brings users of the north parking lot to this secondary entrance (Image 12, above).

Another narrow, asphalt walkway leads from a crosswalk across Wildwood Street at Senpek Road to the school's flagpole in the front lawn panel, encircles the flagpole, and continues to the looped drive (Image 13 and Image 14). Curbs obstruct both ends of this walkway, and no crosswalk exists to provide safe passage to the school building. The asphalt walkways on site fail to meet ADA requirements for multiple reasons, including the severely cracked surfacing, narrow widths, curb obstructions, and inaccessible longitudinal and cross slopes.

The entry plaza at the main entrance is surfaced with worn stone pavers that no longer create an even surface (Image 15, above). The entry plaza at the secondary entrance consists of a concrete pad and appears to be accessible (Image 16, above). While the one entrance to the building adjacent the asphalt play area (Door 11) is flush with the surrounding pavement, another sits above a raised concrete pad (Door 10). The doors next to the loading dock may only be accessed by a stair (Doors 7, 8, and 9). Door 5, on the northwest façade, sits above crumbling concrete stairs lacking sufficient handrails. One must step atop a raised concrete pad to access Doors 2 and 3, north of the main entrance on the front façade. A plastic ramp connects the asphalt play area to the playground (Image 17, above). However, grass has grown around the entrance to the ramp, compromising its accessibility. No accessible routes through the turf exist to connect visitors to the city-owned sport courts at the base of the eastern hillside.

Specific Issues	Recommendations
Pedestrian routes throughout the site are not accessible.	Replace all pedestrian routes with new, accessible routes connecting visitors to all site amenities.
Several entrances to the school building are not accessible.	It is recommended that all public entrances raised above grade receive ADA-compliant sloped walks or ramps.

Image 19

Image 20

Image 0

Image 0

Image 0

Image 0

Crosswalks are missing where pedestrian routes cross vehicular routes in two locations.	It is recommended that crosswalks and the associated curb cut ramps and detectable warning panels are added in these two locations.

AMENITIES

Play and Athletics

A large asphalt area extends northeast of the school building. It is mostly unprogrammed but contains four hopscotch courts in faded paint (Image 18, above). The asphalt maintains extensive cracking and weedy growth. The protected Municipal Open Space further northeast includes a playground surfaced with Engineered Wood Fiber Mulch (EWFM) with a plastic border. No accessible paths exist to bring children to the play equipment. The playground features an aged play structure and swing set and a dysfunctional plastic sand box (Image 19, above). At the base of the adjacent turfed slope lies a large complex of sport courts that includes two tennis courts (one missing its net), two pickleball courts, and one full basketball court (Image 20, above). The sport courts are showing multiple signs of age: the wooden stairs and retaining wall are deteriorating; the surrounding chain link fence is severely rusted, and the gates no longer swing open properly (Image 21, above); the surfacing is worn and suffers cracks and puddling; and the two basketball goals appear intact but heavily rusted (Image 22, above).

Specific Issues	Recommendations
The playground surfacing is not ADA compliant. The play equipment is aged and may require updated equipment for safety and accessibility.	It is recommended that the school receive a new, ADA-compliant playground with accessible poured-in-place surfacing and updated play equipment.
The asphalt play area is in poor condition and appears under programmed. The painted hopscotch courts are faded.	It is recommended that this asphalt expanse be replaced with new play infrastructure (play equipment and/or surface play).
The sport court is non-ADA compliant and the basketball goals are in poor condition.	Should this area of the property be included in the project, it is recommended that the sport courts be replaced with new, accessible courts.

Site Furnishings

A tall chain link fence with a painted finish separates the south parking lot from the adjacent asphalt play area. This fence appears to be in good condition. The fence meets an uncoated chain link fence at the southeast forested edge of the property that appears aged, with a rusted and warped posts and rails. One plastic bench sits in a concrete pad just south of the playground (Image 23, above). It appears to be in good condition. A dumpster sits alongside the vehicular drive leading to the north parking lot (Image 24, above). A plastic "Wildwood School" sign mounted on plastic posts greets visitors at the main entrance. A tall flagpole without a flag stands in a prominent position atop the hill above Wildwood Street. No tables, litter and recycling receptacles, bicycle racks, or site lighting fixtures were observed.

Specific Issues	Recommendations
The chain link fence at the southeast property line is aged.	It is recommended that this chain link fence be replaced, if its function is deemed necessary, or removed.
The site contains very few site furnishings, providing only one bench and no tables, litter and recycling receptacles, bicycle racks, or site lighting fixtures.	It is recommended that the site receive new benches, picnic tables, litter and recycling receptacles, bicycle racks, and site lighting fixtures to provide ample opportunities to sit and gather, to maintain a tidy campus, to support alternative modes of transportation to the site, and to improve safety.

EXISTING CONDITIONS: REGULATORY ASSESSMENT

INTRODUCTION

This Regulatory Assessment will convey to what degree the Wildwood Early Education Center (EEC), in its current condition, complies with current building codes and regulations. The Assessment does not attempt to define a scope of work, but rather highlight specific non-complying conditions and identify which conditions would require correction if a repair, alteration, addition, or change of use were to be proposed for the facility.

It is important to note that a building or a portion of a building does not require correction simply because it does not comply with current codes; any building that is legally occupied and adequately maintained can remain so without bringing the building into full compliance with codes and regulations. This *principal of non-conforming rights* (that a newly adopted regulation cannot impose the undue burden of compliance on legally existing occupancies) is reflected in how the codes identify to what degree existing buildings must be brought into compliance when a scope of work is proposed. The greater the scope of work, the greater the burden of compliance with a given code or regulation will be required.

For some regulations, such as 521 CMR Accessibility Rules or the Massachusetts special sprinkler provisions of MGL c.148 s.26G, these compliance thresholds are “hard lines” comprised of specific dollar value thresholds. When determining the dollar value thresholds for compliance, the cash value of the building is used as the basis for determining the requirements for compliance. The full and fair cash value of the *building*, as determined from the Town Assessor's online database is calculated as follows:

Property Value	**$ 6,625,600**
Land Value	**($ 1,353,300)**
Other Improvements or outbuildings	**($ 26,000)**
Full and Fair Cash Value	**$ 5,246,300**

This value will be used later in this Assessment to calculate the applicable compliance thresholds. The Existing Building Code uses the type of work and the affected area to determine when increasing levels of compliance are required. When considering a proposed scope of work for the building, a careful consideration of the various degrees of compliance will need to be considered. Refer to the Regulatory Overview section of this report for a more detailed description of the various compliance paths outlined in the Existing Building Code.

THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)

The Performance Compliance path provides a simple yet comprehensive overview of the general life safety aspects of a building. Although designed as a building code compliance path, it can also be used as an assessment tool. This assessment will utilize the value and scoring based method of the Performance Compliance path to assign a score to the building as it is currently configured and maintained. Similar to previous comments, a failing score in any category as part of an assessment does not compel any corrective action - it simply indicates how the building would be viewed under current codes. It is intended to illustrate the relative general and life safety performance of the existing building.

The building is constructed of combustible and non-combustible materials. Specifically, the floors are constructed of cast in place elevated slabs and wood framing, the roof is constructed of wood framing supported by steel beams, exterior walls are non-combustible brick over CMU with ribbon strips of windows and glass block, and interior partitions are masonry. Because the structure is not protected and exterior walls are not load bearing, the building would best be described as type III-B construction.

The building does incorporate some life safety assets; specifically, the non-combustible construction type, the single-story configuration, the number and arrangement of exits, and the provision of a compliant fire alarm system. However, many life-safety features are antiquated, non-functioning, or simply missing, resulting in deficits in nearly every category. Many of these missing or incomplete features are further compounded by the lack of a sprinkler system, which affords relief to buildings that do include them. While this list is not exhaustive, noted code deficiencies include

- No sprinkler system
- Fire area more than that permitted for the Construction Type. While the building is relatively small, it still exceeds the allowable area for the building type with no sprinkler system.
- Lack of 1-hour rated corridor walls without a sprinkler system (classroom doors are not provided with closers)
- Non-compliant door hardware throughout the facility.
- Inadequate exit signage and exterior egress lighting.

The table and evaluation scores on the following page summarize the facility under the Performance Compliance path of the IEBC. In each category (Fire Safety, Means of Egress, and General Safety), the building does not achieve the minimum score required to be considered compliant.

Table 1401.7 Summary Sheet - IEBC PERFORMANCE GRADE - WILMINGTON WILDWOOD EEC

Existing Occupancy	**Educational**	Proposed Occupancy	**Educational**		
Year building was constructed	**1955**	Number of Stories	**1**	Height in feet	**25**
Type of construction	**III-B**	Area per floor	**28,225**		
Percentage of open perimeter increase	**100%**				
Completely Supressed	**No**	Corridor wall rating	**0 hr.**		
		Type	**N/A**		
Compartmentation	**No**	Required door closers	**No**		
Fire resistance rating of vertical opening enclosures	**N/A**				
Type of HVAC system	**Unit Vent / duct exh.**	, serving number of floors	**1**		
Automatic fire detection	**Yes**	Type and location	**Smoke/heat in classrooms & corr.**		
Fire alarm system	**Yes**	Type	**Addressable, adequate notification**		
Smoke control	**No**	Type	**N/A**		
Adequate exit routes	**Yes**	Dead ends	**No**	Length in feet	**0**
Maximum exit access travel distance	**146 feet**	Elevatory controls	**No**		
Means of egress lighting	**No**	Mixed Occupancies	**Yes**		
Standpipes	**No**	Patient abilty for self preservation	**N/A**		
Incidental use	**Yes**	patient concentration	**N/A**		
Smoke compartment less than 22,500 sq. ft.	**Yes**	Attendant-to-patient ratio	**N/A**		

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
1401.6.1 Building Height	1	1	1
1401.6.2 Building Area	-2	-2	-2
1401.6.3 Compartmentation	0	0	0
1401.6.4 Tenant and Dwelling Unit Separations	0	0	0
1401.6.5 Corridor Walls	-5	-5	-5
1401.6.6 Vertical Openings	2	2	2
1401.6.7 HVAC Systems	5	5	5
1401.6.8 Automatic Fire Detection	8	8	8
1401.6.9 Fire Alarm System	0	0	0
1401.6.10 Smoke Control	****	0	0
1401.6.11 Means of Egress	****	10	10
1401.6.12 Dead Ends	****	2	2
1401.6.13 Maximum Exit Access Travel Distance	****	5	5
1401.6.14 Elevator Control	0	0	0
1401.6.15 Means of Egress Emergency Lighting	****	****	0
1401.6.16 Mixed Occupancies	0	0	0
1401.6.17 Automatic Sprinklers	-12	-6	-12
1401.6.18 Standpipes	0	0	0
1401.6.19 Incidental Use	-1	-1	-1
1401.6.20 Smoke Compartmentation	0	0	0
1401.6.21.1 Patient Ability for Self-preservation	****	0	0
1401.6.21.2 Patient Concentration	****	0	0
1401.6.21.3 Attendant-to-patient Ratio	****	0	0
Building Score - total value	-4	19	13

Table 1401.9 Evaluation Formula

Wildwood Early Education Center Evaluation:

				Score	Pass	Fail
-4	(FS) -	*29*	(MFS)=	-33		X
19	(MS) -	*40*	(MMS)=	-21		X
13	(GS) -	*40*	(MGS)=	-27		X

Sprinkler Protection Requirements

The building does not include a sprinkler system and therefore is not in compliance with M.G.L. c.148 s.26G. Because the building is larger than 7500 Gross Square Feet (GSF), any scope of work meeting the criteria of a "major alteration" would require a sprinkler system to be installed throughout the facility. In Massachusetts, a building's *fire area* includes all portions of the building enclosed by the exterior walls regardless of interior sub-division with fire walls or fire barriers. This is important to understand because the sub-division of a building into separate fire areas (with fire walls and fire barriers, for example) would not be considered a compliance strategy in Massachusetts.

To be considered a "major alteration" the scope of work would have to meet both the "nature of work" and "scope of work" criteria. For the scope of work criterion, the Division of Fire Services provides two separate thresholds - if the project exceeds one of these thresholds, then the project is considered "major" in scope. For the Wildwood Early Education Center, if the work area exceeds **9,409** square feet (33% of the total building area of **28,225** square feet) ***OR*** if the cost of work exceeds **$1,731,279** (33% of the value of the building, calculated above), the project *scope* would be considered "major". (The square footages used here are the *Building Area* as defined in the Code, not the more conventional Gross Square Footage area.)

The "nature of work" criterion is less specific, but essentially if any work is being done that would not make the installation of sprinklers substantially more difficult, it would be considered “major” in nature. Examples include the demolition of ceilings, walls, or floor decking exposing the structural framing.

Accessibility

Any proposed work will be required to comply with the accessibility requirements of 521 CMR (The Massachusetts Architectural Access Board, or MAAB Rules).

If the cost of the proposed work exceeds $100,000, an accessible entrance, toilet room, drinking fountain, and telephone (if drinking fountains and telephones are provided) will be required in addition to the compliance requirements of the proposed work.

When the cost of work exceeds 30% of the full and fair cash value (calculated above), than the entire facility will be required to comply with the MAAB Rules. For the Wildwood Early Education Center, this 30% threshold dollar value would be **$1,573,890.**

Because the building is a public school, owned and operated by the local municipality, it is considered a Title II facility under the Americans with Disabilities Act (ADA). As such, any proposed work to the facility would be required to comply to the maximum extent feasible with the ADA Architectural Guidelines (the ADAAG) except where it would be structurally impractical. The ADA does not have a threshold for requiring full facility compliance, but does require that when there are alterations to an area of "primary function" (including classrooms, gymnasium, cafeteria, and administration areas), than the path of travel as well as the restrooms, telephones, and drinking fountains serving the areas of primary function are also accessible.

Specific deficiencies or non-compliant conditions were noted at the Wildwood Early Education Center. If a major alteration exceeding the 30% threshold were undertaken, all of these items would require correction.

SITE FEATURES

- Two accessible parking spaces are provided near the main entrance, on the bus drop-off loop. A curb cut is provided ahead of the spaces, but this would require persons to move within the travel lane of the bus loop, not using a protected walkway as is preferred.
- A signed van-accessible space is provided ahead of the two car spaces, which has a continuous flush walk with no curb transition, but this walk's running and cross slopes are greater than 5% or 1:20 slope and pavement is in poor condition.
- One additional accessible space is provided south of the south wing but it is some distance from the (inaccessible) main entrance, and has no signage directing users to the rear door which is accessible. This route would take users into a fenced area through the hardscape playground, not an ideal situation.
- The wood-chip surface of the playground does not provide for an accessible path to playground equipment. A curb cut was provided but it appears to exceed 5% slope and is an uneven surface. There is no accessible playground equipment.

ENTRANCES

- The main entry is accessed by a gently sloping paved area. While the paved surface is in fair condition, the sloping approach to the doors may be greater than a 1:20 slope. The main entry doors do not have the required 32" minimum width clearance, do not have a motorized operator which could aid the situation, and thus are not accessible. The main entrance to public buildings should be accessible.
- The "recess door" labeled #11 is the only truly accessible entrance to the building, with 36" clear width and a motorized operator, but it is completely hidden around the rear of the structure with no signage indicating how to get there from the accessible parking spaces in front.
- Egress doors from some corridor exits to the exterior include a landing with a single step, or multiple steps and are not accessible. The doors are not accessible and therefore, the minimum number of *accessible means of egress* is not provided for the facility.

DOORS

- Doorways to classrooms located in corridor alcoves do not have required pull-side clearance.
- Many doors are narrower than the required minimum 32" clear when the door is opened to 90 degrees to the frame.
- Door hardware throughout the school building consists primarily of doorknobs, which require grasping and turning rather than lever operation.
- At all locations of double-leaf egress doors (front entrance, south exit, north exit, and east exit), neither leaf provides a minimum 32-inch clearance.

Accessible Route

- The only publicly-accessed stairway in the building—at the gymnasium stage—has no handrails, which is a code and accessibility requirement.
- There is no means of traversing the level change (platform lift or stair lift) at the gymnasium stage, making it not accessible.
- Along the corridors and aisles of the school, there are numerous objects hung from walls that protrude more than the 4-inch maximum from the wall surface, which is a hazard to blind persons.
- No accessible lockers are provided.

Toilet Rooms & Plumbing Fixtures

- Doorways to gang toilet rooms are narrower than the required 32 inches. Pull-side accessible clearances are not provided at doors.
- Toilet rooms do not provide an accessible route with a minimum width of 36 inches; for example, the "blinder" partitions at toilet room entries greatly constrict the route.
- There are no accessible toilet partition stalls: minimum size, doorway dimensions, clear floor space, toilet position, grab bars, and/or accessories are not provided or are non-compliant.
- Sinks in gang toilet rooms are mounted at 25-1/2 inches above the floor, which is too low for accessible sinks for elementary age students. Accessible knee space is not provided.
- Urinals are mounted with a rim height at 24 inches which is higher than the accessible elementary-age mounting height of 17 inches.
- In gang toilet rooms, one mirror is typically provided on a partition or wall, but it is mounted too high above the floor.
- One single user toilet room accessed off the south corridor appears to be provided as an "accessible" toilet room for the facility. However, this toilet room has similar non-compliant conditions as listed above. If this toilet room is intended to serve student populations, none of the plumbing fixtures or elements are mounted within the acceptable heights and locations for the elementary age group, such as: grab bars and toilet fixture too high, toilet paper dispenser mounting height, mirror mounting height, and sink mounting height/ lip dimensions, and misplaced accessories.
- Other single user toilet rooms accessed off corridors, PK and K classrooms, and in the Kitchen include many non-compliant conditions, such as inadequate room size, inadequate fixture clear floor areas, missing grab bars, barriers around the toilet fixture, and non-compliant accessories.
- The nurse's toilet in the office, even though it has seat bars installed on the fixture itself, is not accessible per the code requirements. It is also doubtful that a toilet, even though screened with partitions, is allowable by code within a health office space.
- Drinking fountains within the school are not compliant; there are no dual-height mounted fixtures, they do not provide adequate knee space or approach clearances and may have other obstructions.
- Classroom sinks, where provided, do not include the required knee space clearance below the sink and include faucets that require tight grasping and turning. Most sinks do not have the

ability to be adapted for proper clearances due to their design and construction.

Controls & Miscellaneous

- Fire alarm pull stations are not mounted within the allowable reach range in some cases.
- Accessible room identification signage is not provided throughout the school.
- The main office admin workstation transaction desk does not provide an accessible counter – it appears to be higher than 36" off the floor.

Standards for the Treatment of Historic Structures

The building and property is not listed on, nor is it eligible for listing on the National Register of Historic Buildings. Refer to the Regulatory Overview portion of this report for Historical Regulations.

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Roughly 80% of the exterior brick are in fair to good condition, but the remaining 20% lower down near grade or in other weathered locations have mortar joints severely degraded in great need of repointing all the way around the building. There are a few places where impacts at corners have chipped away pieces of brick. Most shaded or continually wetted areas have some form of vegetative growth on the brick, the mortar, or both. There are a couple conditions at corners where minor settling has occurred and there are diagonal cracks at joints zig-zagging up through the veneer. Loose steel lintels are typically quite rusted, with paint failed and peeling; their expansion from rusting has opened up mortar joints at opening heads (Images 11-12).

Windows are typically configured of large horizontal openings with continuous precast concrete sills. Almost universally, the vertical mortar joints between sill pieces have failed, with no repairs evident.

Remarkably, the sills are holding together and in fair condition, with very little spalling, but all are covered with vegetative growth to varying degrees (Images 13 - 14). The windows themselves will be discussed later in this report.

The tops of walls are capped with a continuous horizontal trim element, or a horizontal roof projection, of painted plywood fascias and soffits, all in poor condition. In many spots the paint is so peeled and degraded, hardly any remains attached to the wood. A few lengths of fascia have gotten a coat of paint, but much remains virtually untouched. Pieces of soffit and fascia are warped, separated, delaminated, gapped, and in some places rotted (Images 15-16).

Generally, between the lack of insulation in opaque walls and the very poor thermal performance of the single-pane steel windows, there is virtually no thermal R-value of this wall enclosure system.

The brick chimney that serves the boiler flues on the rear of the cafetorium wing is also severely degraded, with very little mortar remaining between bricks near the chimney top. The precast cap also appears degraded, with no mortar left in its vertical joints. There does not appear to be a metal cap or bird screen on the flue itself.

Specific Issues	Recommendations
20% of brick down low near grade or in other weathered conditions have mortar joints severely degraded in great need of repointing.	Repoint brick veneer.
Much brick has vegetative growth.	Carefully clean brick with non-abrasive, mild cleaners and hand tools approved for use with brick materials.
Some zig zag cracking was observed.	Remove any cracked mortar and re-tool/ repoint brick.

Image 7

Image 8

Image 9

Image 10

Image 11

Image 12

At precast concrete sills, almost universally, the vertical mortar joints between sill pieces have failed.	Completely remove all failed mortar joints and install backer rod and sealant.
Much precast concrete window sill material has vegetative growth.	Carefully clean concrete with non-abrasive, mild cleaners and hand tools approved for use with concrete materials.
Wall horizontal trim element, or horizontal roof projections of painted plywood fascias and soffits, have failed paint systems and are all in poor condition.	Remove rotted wood elements and replace in kind with rot-resistant materials. Repair and prep non-replaced wood surfaces, caulk all cracks and holes, and repaint all fascias, soffits, and trim.
Mortar joints at top of chimney and at precast concrete cap have failed, and there is no metal cap or bird screen on the boiler flue.	Clean, repair, and repoint brick. Repoint concrete cap. Install metal cap and bird screen over the boiler flue opening.

Exterior Windows

The Wildwood school has its original steel sash, single-pane, wet-putty-glazed windows on nearly all openings. These windows were very popular in the postwar period and provided a durable way of glazing large modern openings with options for operable sash, in this case in-swing “hopper” type sash at the bottoms and out-swing “awning” type sash in the middle-top of large window areas. Most sash still operate, but not smoothly, and they do not close tightly. While providing ample daylight for classroom spaces, the glazing system has dismal thermal properties, with members made of conductive solid steel and no thermal break or barrier. In many cases, primarily on the rear playground side, when glass panes were broken, they were replaced with Plexiglas, which has become etched, milky, and translucent over time due to UV light exposure, and is impossible to see through. The glazing putty is universally in very poor condition: it is cracked, dried and in many placed entirely missing. The paint system over top of it has also failed and is cracked wide open and peeling in many places. Caulk joints around the perimeter of these openings are also in poor condition: dried up, cracking, or entirely missing with an open joint as the result (Images 10, 13, 14, 17 - 19).

On the east and south facades of the classroom wings, the upper two sections of the window system are blocked off with paneling on the interior and painted plywood or MDO on the exterior. School staff were not able to say why, but it is suspected this was a move to reduce solar heat gain and/or save energy in winter. On some rooms, self-contained air conditioner units have been installed within plywood panels replacing panes of glass. Like the rest of the window system, the paint on all this paneling is in fair to poor condition.

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

Clerestory windows at the pop-up roof over classrooms in the south wing appear to have never been painted and are in the worst shape of all windows. Associated wood trim around them is also in very poor condition. Clerestories in the gym were originally glass block—the east side still remains (Image 30)—but the west side was replaced with Kalwall (Image 11). The glass block is in poor condition with broken cells, and the Kalwall is in good condition, being newer.

Specific Issues	Recommendations
Original steel window systems are in poor to very poor condition, with numerous fundamental issues requiring great remedial attention, with very poor thermal performance and air-tightness. Windows have reached the end of their useful lifespan.	Demolish and recycle (scrap salvage) existing windows and replace with new thermally-broken, heavy commercial aluminum curtain wall systems, with dual-pane Low-E insulating glass, and operable sash similar to existing operation. Caulk in place with new caulk joints.
Glass block on gym east side is in poor condition.	This wall was blocked off on the inside, so remove the glass block and replace with an insulated metal panel system.

Exterior Doors

The building has flush heavy commercial wood doors with full single pane glazing with wood-framed sidelights and transoms on entry doors. Wood entry doors are painted, and generally are in fair condition with some poor spots. The main entry doors also have wood sidelights with single pane wired glass, which present a safety concern if the glass is broken, due to the jagged pattern of breakage and thin, sharp wire. Doors and sidelights have some rotting/ rusting at the bottoms. Some have been reinforced with metal plates at wear spots. Doors have what appears to be original crash bar egress hardware (with a few units replaced with newer exit devices), and newer weather stripping at meeting edges. There are no bottom sweeps—it appears they were removed—and daylight can be seen under entrance doors from the interior. Recess door #11 to the playground from the interior lobby area is more updated and appears to have replaced two narrower doors with one accessible door on an automatic opener. We noted that the main entrance #1 is not accessible as the door is narrow and has no power-assisted door opener (Images 21,22).

Service or utility openings typically have flush, hollow metal exterior doors. Many do not have exterior hardware as they are for internal egress only. Some are placed in wood-paneled infill of the larger masonry opening, possibly replacing a wood and glass entry system similar to the main entrance. All are in fair to poor condition with peeling paint, rusting hinges, little or no weatherstripping, and antiquated hardware. Most have rusting and/or rotting bottoms of doors and

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

surrounds. The egress doors from the Gym have a corrugated infill material in the transom that is in poor condition with peeling paint and serious degradation. A pair of doors serving exterior restrooms off the playground are newer, with more complete hardware packages, in much better repair (Images 11, 12, 23, 24). Service doors off the loading dock appear to have been half-glass but were painted over at some point (Image 8).

Specific Issues	Recommendations
Main entrance doors have numerous serious deficiencies and have reached the end of their useful lifespan.	Replace exterior entry systems with new, thermally-broken heavy commercial storefront entry systems, with full glass doors and dual-pane, Low-E insulating glass.
Service and utility doors have numerous serious deficiencies and have reached the end of their useful lifespan.	Replace exterior door systems with new, thermally-improved insulated hollow metal doors in steel frames (for punched openings). Infill transom and sidelight areas as needed with thermally-improved storefront systems, similar to above.

Louvers and Other Openings

There are several small intake and exhaust louvers at classroom exterior walls serving unit ventilators around the building, generally in fair to poor condition. Exhaust louvers are rusted, with peeling or no remaining paint. Intake louvers are dented and misshapen, and many have been replaced with improvised solutions of expanded metal lath held by a wood frame, and most of these are coming apart and rusted. Larger intake louvers for AHU's up higher on the building at the Stage area have fared a bit better but still have damage. Some basement-level louvers provide ventilation to the crawl space. (Images 25-28)

Specific Issues	Recommendations
Louvers throughout the building have several fatal issues and have reached the end of their useful lifespan.	Replace all building louvers with correct type for required function.

Image 25

Image 26

Image 27

Image 28

Image 29

Image 30

ROOF

The roofs are three different materials. No records were provided indicating ages of roof segments but based on our previous 2008 study and judging by appearance there are two general ages represented: older - (A1) Gym sloped and (A2) south flat ballasted; and newer - (B1) south pop-up sloped and (B2) central/east wing flat. (Image 29)

(A1) The Gymnasium roof is medium-slope and appears to be of a hot-mopped asphaltic variety, reportedly installed in the early 1990's making it over 30 years old. It is in very poor condition, with bubbles apparent around roof vents. The metal edge trim is also in poor condition with peeling paint, separated seams, and peeling wood facias, soffits, and trim with some rotting. The roof is well beyond its expected service life (Image 30).

(A2) The flat roof portion of the south wing is a hot-mopped asphalt roof with stone ballast laid into the asphalt and over top of it, reportedly installed in the late 1980's, making it over 35 years old. It is in fair to poor condition, and has no present leaks but has leaked in the past, according to staff. Ballast is spread unevenly, and there are places where it has been removed, probably to repair previous leaks. Slope to drains is uneven, resulting in aread of ponding; there was rain in the preceding days before our visit. Roof drains are geneally in poor shape but reasonably clear. Roof flashings are asphaltic and are aged, bubbled, and cracked/crazed. Flashings on the building wall transitions and mechanical fans, etc. are copper and are in poor condition. Thought it is not currently leaking, this roof is living on borrowed time (Images 31-32).

(B1) The sloped pop-up section of the south wing is roofed with asphaltic roll roofing with a fine aggregate surface laid in a hot asphaltic base. This segment was re-roofed in 2012 and is in very good condition. The rolls are laid parallel with the slope, not shingled perpendicular to it. There are numerous small bubbles under the roofing. We also did not note any flashing boots around vent pipe penetrations. The perimeter edge metal is in very good condition and neatly done.

(B2) The remaining part of the roof is clad with the same roll roofing laid in a hot asphaltic base as B1 roof, and is sloped to several drains. This re-roofed segment was reportedly also installed in 2012, but appears older than the pop-up roof, and has more cracked asphalt bubbling from under seams. While most of the roof areas slope (barely adequately) to drains, the central area at the "crossing" over the main lobby has a large ponded area with no nearby drains that is the probable source of the recent leaking in this space reported by staff. Ballast stone in the neighboring ballasted area was moved aside to create a channel to help drain water from the crossing area to a roof drain. A white liquid roofing coating has been applied over top of the roll roofing, but that has not solved the leaking issue (Image 34). The Facilities Director reported that this roof is still under warranty and being addressed by the roofer who installed it. There are other small ponded areas around the boiler chimney and at the east end of the east wing (Image 35). There are many bubbles, some quite

Image 31

Image 32

Image 33

Image 34

Image 35

Image 36

large, under the roll roofing, and some of the edges of the roll material are starting to fray with wear (Image 36). In sum the roof is in fair condition and is already starting to show its age.

Specific Issues	Recommendations
A1 Gym roofing has reached the end of its lifespan and should be replaced.	Replace roof with white TPO fully adhered membrane roof, with FRT wood blocking and metal edge trim. Provide code-minimum insulation on existing deck. Replace wood soffits and fascia with brake metal trim formed over top of new pressure-treated plywood to mimic present trim profiles, with MDO soffits.
A2 south wing roofing has reached the end of its lifespan and should be replaced.	Replace roof with white TPO fully adhered membrane roof, with FRT wood blocking and metal edge trim, and new drains and baskets. Provide code-minimum insulation on existing deck. Replace existing copper base flashings with new in existing reglets. Replace wood soffits and fascia with brake metal trim formed over top of new pressure-treated plywood to mimic present trim profiles, with MDO soffits.
B2 roofing is problematic and actively leaking with an endemic slope issue in its center section over the Lobby area.	Follow up with warranty work; if not successful, replace roof with white TPO fully adhered membrane roof, same scope as A2 above.
B1 Roof is laid with seams parallel to slope. This may be a future liability.	Though this roof is in good condition, it is such a small area, consider replacing with white TPO fully adhered membrane roof, same scope as A2 above, at same time.

INTERIOR

FLOORS

A range of flooring materials are present in the Wildwood School building:

Terrazzo is present on floors in the central crossing/ lobby and corridors, and associated toilet rooms. Being a very durable material with a long lifespan, it is in good to very good

Image 37

Image 38

Image 39

Image 40

Image 41

Image 42

condition aside from some dinginess and minor wear that comes with its age (Image 37). Toilet rooms have a bit more wear and staining from plumbing drips, rust, etc.

Vinyl Asbestos Tile (VAT) is present in the gym space, some corridors, some toilet rooms, and some classrooms and support spaces. Condition is generally good in the gym space, with a few missing tiles having been replaced and no apparent loose tiles (Image 38). In corridors conditions are variable, with numerous tiles replaced and mismatched, and a section that has since been abated (Image 39). In smaller spaces, condition is fair with lots of built-up grime in corners and hard to clean places. Generally, VAT has been replaced by VCT in most high-traffic and pivot wear areas.

Vinyl Composition Tile (VCT) is present in some corridors and most of the classrooms. In several rooms there are sections of tight tiles surrounded by gaps at joints due to shrinkage. In others there is pervasive edge curling, and beginnings of delamination (Image 40). Conditions are variable in corridors—good to fair—with numerous VCT tiles replacing VAT areas. A few damaged tile are present here and there.

The platform/stage of the Gym is hardwood strip T&G flooring, in poor condition. The finish is severely worn, and the wood is worn as well in many spots (Image 41).

The kitchen has quarry tile on floors, in good condition, but with the typical built-up grease in grout joints from many years of use (Image 42).

One classroom had vinyl plank flooring installed. The plank has a pillowed effect, and it's not clear why the material is not laying down flatter. This appears to be a nearly new installation (Image 43).

In three or four locations around the school there are trapdoors in the floor that gain access to the crawlspace under the building. These openings are framed out with a metal edging material that in most cases is not flush with the floor finish—sharp corners have been taped with duct tape—and in one case, the edging is bent up presenting a sharp point and potential safety hazard. The trapdoors are very heavy, not hinged or counterweighted, and thus may present occupational safety issues (Image 44).

The Principal's Office has carpet floor finish, which is in relatively good condition, except the area under the desk has been stretched by the movement of the wheeled office chair and is worn.

The VAT in the gymnasium is not a resilient material and inappropriate for developing young children as a sport floor material.

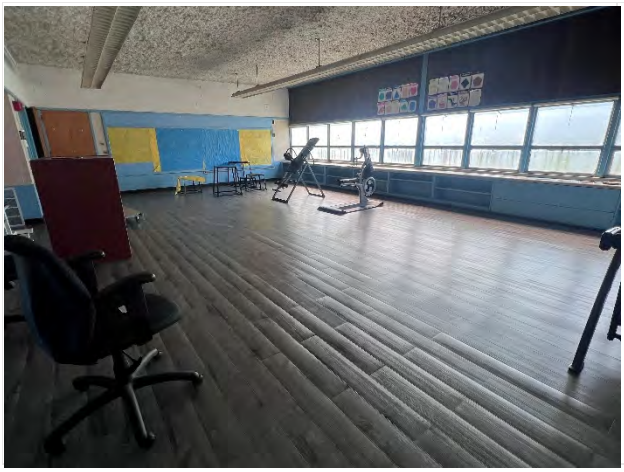

Image 43

Image 44

Image 45

Image 46

Image 47

Image 48

Specific Issues	Recommendations
Terrazzo has some dinginess and minor wear.	Provide a good deep cleaning of the terrazzo with mildly abrasive cleaners suitable for the job that will remove stains.
Small amounts of VAT in corridors and spaces are loose or cracked.	Abate and replace any loose or damaged VAT with VCT, or consider a low-maintenance monolithic material such as linoleum or flocked flooring such as Flo-Tex.
VCT floors are in fair condition in classrooms, with some edge curling, beginning delamination and a few damaged tiles.	Remove and replace any loose or damaged VCT, or consider a low-maintenance monolithic material such as linoleum or flocked flooring such as Flo-Tex.
Platform/stage of the Gym is hardwood strip T&G flooring, in poor condition.	Refinish wood flooring.
Kitchen quarry tile has built-up grease in grout joints.	Deep-clean floor tile and seal grout.
Trapdoors accessing crawlspace have several hazardous components.	Replace wood trapdoors with new metal, counterweighted hinged floor access doors, with recess to allow finishing over the top of and flush with the door.
Carpet in Principals office is worn.	Replace carpet with durable flocked flooring.
The VAT in the gym is not a resilient material and inappropriate for developing young children as a sport floor material.	Abate and replace the gym flooring with a resilient elementary school grade sport flooring such as a rubberized system.

Walls, Partitions, and Wall Finishes

Partition walls throughout the Wildwood school are generally concrete masonry units (CMU), and in most cases, there are glazed terra cotta masonry units in corridors and larger spaces with painted or plastered CMU above the tile, and painted CMU where it is showing in classrooms (Images 45, 46).

Image 49

Image 50

Image 51

Image 52

Image 53

Image 54

Generally, CMU and glazed terra cotta masonry unit walls are in good condition, with a few cases of localized cracking due to minor settlement or movement. In the gym, the southwest corner had a more serious cracking issue that appears to have been addressed with an added steel angle in the corner (Image 47). Some minor cracks in CMU or plaster have been repaired and others have not (Image 48). In many places paint is peeling off plaster (Image 49).

Toilet rooms and the kitchen have glazed tile units all the way to the ceiling. These spaces have a little more wear and tear, and built-up grime at the wall base, but are generally in good condition.

In classrooms the wall areas above the visual displays are covered with mineral composition acoustical tile. This material is in fair to poor condition with most rooms having at least some tile loose, many with missing or damaged tile (Images 46, 50).

Specific Issues	Recommendations
Plaster in corridor walls is cracked in some locations.	Repair cracks and repaint walls.
Paint is peeling on various walls.	Remove peeling paint, prep, and repaint walls.
There are minor cracks in CMU walls.	Fill cracks with caulk and repaint walls.
Acoustic wall tile is coming off walls.	Test wall tile adhesive for haz mat. Consider removing all acoustic wall tile and replacing with new painted surface.

INTERIOR DOORS

Interior doors are flush wood slab doors with clear finish. Doors to more public spaces are half-glass with three horizontal lites on the top half (Image 53, 54). Classroom doors are typically solid with a larger vertical vision lite in the upper half near the latch. Doors between classrooms and at toilet rooms are solid flush type (Images 55, 56). Doors are generally in fair to poor condition with many dings and scrapes, and showing their age. Most door hardware is original or an older replacement, and not compliant with accessibility regulations (Image 56). Frames are in good to fair condition, with a few scrapes, chipped paint, and minor dents here and there.

The entryways into classrooms do not have the required maneuvering clearances for accessibility on the pull-side of the door: 18 inches minimum clearance is required at the latch. This is a partition layout issue, not with the door itself (image 56).

Image 55

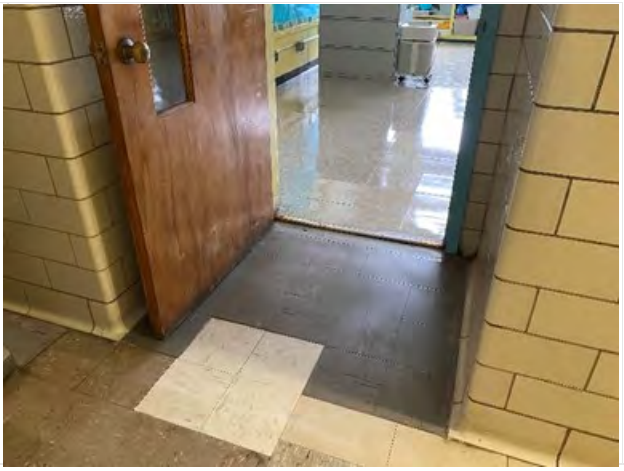

Image 56

Image 57

Image 58

Image 59

Image 60

Specific Issues	Recommendations
Doors are in fair to poor condition.	Replace all interior doors with comparable flush commercial grade wood doors. Provide ADA-accessible hardware.
Frames in good to fair condition.	Repaint all frames.
Doorways to classrooms are not accessible.	Reconfigure doorways to be accessible, which will require structural work to widen door alcoves.

CEILINGS

According to the record drawings provided, and confirmed by the Facilities Director, the original ceilings in the school were suspended wire lath and plaster, with loose-laid mineral fiber "Rock Wool" insulation sitting above them which is still present. The plaster (in corridors only) was determined to have asbestos ingredients and it was decided to encapsulate all ceilings rather than abate and remove them. The product selected was a spray-applied cellulose-based coating, which was installed in the late 1980's. Apparently, it could have been troweled smooth after application, which was not done, leaving a highly variable and somewhat friable surface. This finish is what remains in most areas of the school today, except the Kitchen and toilet rooms (Images 5, 6, 37, 38, 50-52).

Due to its surface characteristics, the finish is impossible to clean. As such this material has accumulated years of airborne particles propelled from unit ventilators onto ceilings throughout the school. Ceilings are in very poor condition as a result and give the impression of a very grimy unclean place to almost every space in the building (Images 6, 51).

On top of that, when leaks have occurred in the roof, the water has accumulated above the ceiling, slowly wetting the plaster and the cellulose coating until, in one case, there was a small but sudden failure of a small section of ceiling. This has been very disconcerting to staff in the building.

There has also been an ongoing issue with pipes freezing above some corridor ceilings. As a work-around the maintenance staff have opened access ways in the ceiling and run a fan

Image 61

Image 62

during freezing weather to propel warm air into the attic plenum that keeps the pipes from freezing.

Specific Issues	Recommendations
Original plaster ceilings contain asbestos, and were encapsulated with an incorrectly installed cellulose coating which has now become dirty with age and is uncleanable.	Abate and remove all ceilings and cellulose coating on structure, and replace with all new ACP ceiling systems.
Pipes above ceilings freeze in winter.	Relocate pipes to warmer space; or construct a warm plenum around them; or add heat trace to pipes; or reconfigure/replace mechanical system to avoid pipes in ceiling altogether. See also Mechanical section of this report.

Accessories, Fixtures, and Equipment

Classrooms are outfitted with visual display devices: numerous tack boards and typically one white marker board that is paired with a short-throw smart projector, all generally in good to very good condition (Images 6, 51).

Classrooms also typically contain metal built-in shelving units along the exterior window wall, forming a broad sill that is finished with linoleum—some of which is original and in poor to very poor condition, and some which has been replaced (Images 57-58). These units are integrated with the unit ventilators and heating, with grilles in the backs to admit heat onto the windows. Paint on the metal is severely chipped and peeling in most rooms, in poor condition (Image 57).

Classrooms also have sink alcoves with base and overhead cabinets and enameled steel sink decks. These one-piece sink units are virtually indestructible and aside from minor chips and scratches are in good to very good condition. The cabinets they sit on, however, are not so durable and are in fair to poor condition, with chipped paint, delaminating or sagging doors, broken surfaces, and semi- to non-functional hardware. The countertops the sinks sit in and their backsplashes are finished with the original linoleum, in fair to poor condition. The sink units, faucets, and soap and paper dispensers are not handicapped-accessible (Image 59).

Toilet rooms feature enameled metal partition dividers and vision screens, typically tired from years of use and abuse. Paint is chipped, stained, scratched, and high-use areas are rusted. Almost none of the features of these toilet rooms meet accessibility standards, from the entryway to the stalls, and the accessories on walls (Image 60).

Corridors are lined with lockers which are no longer used. Locks and handles have been removed. The factory enamel finish is severely scratched on all lockers, and the metal is rusting under the paint. Locker bottoms are rusty with some having rusted through and perforated (Image 61).

The Nurse's office is shoehorned into what appears to have been a toilet room where all the fixtures except one toilet and one sink were removed. The Nurse has various built-in wood storage cabinets for supplies, all in fair condition. There are metal partitions around the toilet, in fair condition (Image 62).

Many storage rooms and Janitor rooms have wood built-in shelving, painted, in good condition.

The Library has a wall of wood built-in shelving and the typical classroom metal shelving under the window wall. Both are in fair condition.

Recessed fire extinguisher cabinets are present in various locations around the building and are in good condition. Wall signage indicating fire extinguisher locations is not present. The school has an AED mounted on the wall in the main lobby. Surface mounted extinguishers on brackets were noted in other locations.

The kitchen features equipment of a wide range of ages and conditions. It was noted that several work surfaces are made of wood, which is a health code violation. The employee restroom is tiny and not handicap accessible, with a deep sink doubling as a handwashing sink. Metal partitions are in fair condition. The kitchen uses the adjacent corridor as a servery and the space is opened via two overhead coiling doors which appear to be in working order. Built-in pull-down lunch tables in the walls of the gym were removed due to potential safety issues, and the alcoves are blocked off now.

Specific Issues	Recommendations
Built-in metal classroom shelving is in fair to poor condition.	Replace shelving with new custom built-in wood units.
Built-in wood classroom cabinetry is in fair to poor condition.	Replace cabinetry with new custom built-in accessible wood units with solid surface countertops.
Toilet partitions and accessories are not accessible and in fair to poor condition.	Remove and replace partitions with new. Reconfigure toilet rooms to be accessible, which may require reconfiguring doorways and structural work.

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EXISTING CONDITIONS: STRUCTURAL

STRUCTURAL ASSESSMENT

The purpose of this report is to describe, in broad terms, the structure of the existing building, comment on the existing structure, comment on the structural integrity of the building and comment on the structural code issues related to the future renovation and expansion of the existing building.

SCOPE

- Description of existing structure.
- Evaluation of the structural integrity of the building.
- Comments on the existing condition.
- Discussion of primary structural code issues that would influence the renovations and design of new additions.

BASIS OF THE REPORT

This report is also based on the our visual observations during our site visit on July 26, 2023, review of the study Wildwood School Study prepared by Dore + Whittier in 2022 and review of the drawings of the original construction prepared by Thomas Hixon Company Architects & Engineers, dated February 1953 and the assessment report for the school from assessment conducted in 2007.

During our visit, we did not remove any finishes; so, our understanding of the structure is limited and may have to be further evaluated as the design evolves.

BUILDING DESCRIPTION

The school is located on Wildwood Street in Wilmington, Massachusetts. The school is unoccupied currently as it was vacated due to the fuel leak from the exterior damaged underground fuel tank. The school is essentially a one story wood, steel masonry and concrete structure with crawl spaces under various portions of the school. The school structure was constructed in 1954 and no major renovations or additions have been constructed since the original construction.

The foundations are traditional cast-in-place concrete spread footings.

The multipurpose room floor is a 7” deep concrete “flat slab” while the floors of the common areas and the central areas of the academic wings are 4 ½” deep single span concrete slabs. The slabs are supported on exterior concrete walls and interior cast-in-place pilasters.

The classroom floors are framed with 2x10 wood joists above a crawl space.

The typical flat roof framing is 2 x 14 wood joists supported on wide flange beams, wide flange columns at the exterior and circular lally columns at the interior.

The sloped roof at the multi-purpose room is framed with rigid steel bents supporting 10" deep wide flange purlins and 2" deep concrete plank. The mechanical room roof is a 5" deep cast-in-place concrete slab.

The exterior wall is brick veneer with strip windows at the academic wings. There are clerestory windows at the multi-purpose room.

The interior walls are concrete block while the corridor walls at the academic wing appear to be interlocked with closets in the classrooms.

The multi-purpose room has infill block around the entire perimeter.

The demising walls between the classrooms are typically 4" thick masonry whereas the walls elsewhere are 8" masonry.

EXISTING CONDITIONS

Based on our observations, the school structure is functioning adequately based on the age of the school.

- We observed that the non-structural masonry walls are slender and not adequately connected to the structure.
- We observed several cracks in the interior masonry walls and exterior masonry façade. We did not observe any control joints in the exterior masonry façade. The masonry at the chimney is in poor condition.
- We observed the exterior concrete at the boiler room, loading dock and steps to the multi-purpose room is in poor condition due to impact damage and subsequent damage from moisture at the spalled areas.

We did not observe any signs of foundation settlement, or any undue vibrations from footfall and traffic on the supported floor slab though the wood framed areas a bit more susceptible to vibrations from the footfall.

Image 1 – Typical classroom wood framed floor viewed from the Crawl Space

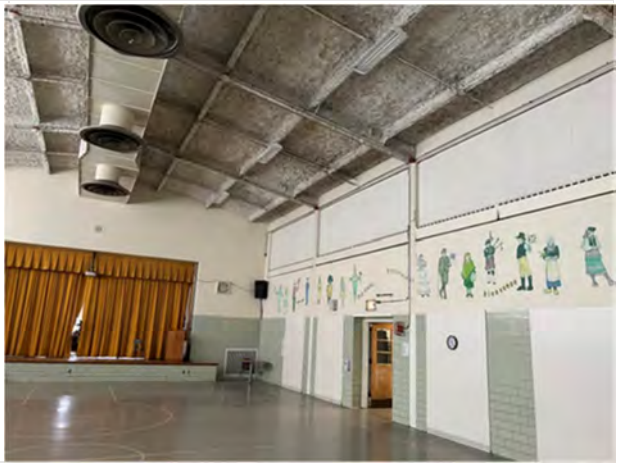

Image 2 - Multipurpose Room Roof Framing

Image 3 – Typical example of repairs to exterior masonry facade

PROPOSED SCHEMES

Based on the requirements of the code, no structural upgrades are triggered for any proposed renovations of limited scope that do not invoke any required structural modifications. The extent of the code required structural upgrades is dependent on the extents of the proposed renovations. The following is a description of the compliance methods that may be triggered depending on the extents of the proposed schemes as dictated by other disciplines.

GENERAL CODE CONSIDERATIONS

If any repairs, renovations, additions or change of occupancy or use are made to the existing structure, an evaluation of the structure is required to demonstrate compliance with 780 CMR, Chapter 34 “Existing Building Code” (Massachusetts Amendments to The International Existing Building Code 2015). The intent of the IEBC and the related Massachusetts Amendments to IEBC is to provide alternative approaches to alterations, repairs, additions and/or a change of occupancy or use without requiring full compliance with the code requirements for new construction.

The IEBC provides three compliance methods for the repair, alteration, change of use, or additions to an existing structure. The three compliance methods are as follows:

1. Prescription Compliance Method.
2. Work Area Compliance Method.
3. Performance Compliance Method.

For more information on these compliance methods, refer to the Regulatory Overview section of this report. A summary of the structural implications of the various compliance methods follows.

PRESCRIPTIVE COMPLIANCE METHOD

In this method, compliance with Chapter 4 of the IEBC is required. As part of the scope of this report, the extent of the compliance requirements identified are limited to the structural requirements of this chapter.

ALTERATIONS

- If the proposed alterations of the structures increase the demand-capacity ratio of any lateral load resisting element by more than 10 percent, the structure of the altered building or structure shall meet the requirements for the code for new construction.
- Where alterations increase the design gravity loads by more than 5 percent on any structural members, those members would have to be strengthened, supplemented, or replaced.

ADDITIONS

Additions can be designed to be structurally separate or structurally connected to the existing building. Based on the project scope, the following structural issues must be addressed: The requirements applicable to the existing structure for connected additions are similar to those for altered structures.

- All construction of all addition areas must comply with the code requirements for new construction in the IBC.
- For additions that are not structurally independent of an existing structure, the following rules apply to the existing building:
  - The existing structure and its addition - acting as a single structure - must meet the requirements of the code for new construction for resisting lateral loads. Exceptions allow that structural elements that only resist lateral forces whose demand-capacity ratio is not increased by more than 10 percent may remain unaltered.
  - Any load-bearing structural element for which the addition or its related alterations causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced. This may invoke or cause additional renovation work to access the structure.

In order to avoid invoking required structural modifications to the existing building, any planned additions should be designed as structurally separate buildings.

WORK AREA COMPLIANCE METHOD

In this method, compliance with Chapter 5 through 13 of the IEBC is required. The extent of alterations has to be classified into LEVELS OF WORK based on the scope and extent of the alterations to the existing building. Refer to the Regulatory Overview section of this report for an explanation of the Levels of Work.

This report assumes that planned renovation schemes would affect more than 50 percent of the floor area and invoke Level 3 Alteration requirements, and the following analysis is based on that assumption. In addition, there are requirements that have to be satisfied for additions to the existing structure.

LEVEL 3 ALTERATIONS

- Any existing load-bearing structural element for which an alteration causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- If the proposed structural alterations of an existing structure exceed 30 percent of the total floor and roof areas of an existing structure, we have to demonstrate that the altered structure complies with the IBC for wind loading and with reduced IBC level seismic forces.

- Existing anchorage of all unreinforced masonry walls to the structure have to be evaluated. If the existing anchorage of the walls to the structure is deficient, the tops of the masonry walls will require new connections to the structure.
- If the proposed structural alterations of an existing structure are less than 30 percent of the total floor and roof areas of the existing structure, the project must demonstrate that the altered structure complies with the loads applicable at the time of the original construction (or the most recent major renovation) and that the seismic demand-capacity ratio is not increased by more than 10 percent on any existing structural element. Those structural elements whose seismic demand-capacity ratio is increased by more than 10 percent must be strengthened, supplemented, or replaced in order to comply with reduced IBC level seismic forces.

ADDITIONS

- All additions shall comply with the requirements for the code for new construction in the IBC.
- Any existing gravity, load-carrying structural element for which an addition or its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For additions that are not structurally independent of any existing structures, the existing structure and its additions, acting as a single structure, shall meet the requirements of the code for new construction in the IBC for resisting wind loads and IBC Level Seismic Forces (may be lower than loads from the Code for New Construction in the IBC), except for small additions that would not increase the lateral force story shear in any story by more than 10 percent cumulative. In this case, the existing lateral load resisting system can remain unaltered.

PERFORMANCE COMPLIANCE METHOD

Following the requirements of this method for the alterations and additions may be onerous on the project because this method requires that the altered existing structure and the additions meet the requirements for the code for new construction in the IBC.

SUMMARY

The existing school structure appears to be performing adequately. All of the structural components that are visible appear to be in sound condition. The cracks in the exterior masonry facade and interior masonry walls are not a structural part concern and they should be repaired or masonry repointed as part of an on-going maintenance program.

The compliance requirements of the two Prescriptive and Work Area Compliance methods are very similar in most respects for a major renovation. The Prescriptive Compliance Method would be more restrictive, as it would likely require that the existing lateral load resisting systems of the existing

building meet the requirements of the code for new construction of the IBC, even for small increases of design lateral loads. Based on this, we would recommend the Work Area Compliance Method for the project.

Any major proposed renovations and additions would likely require that the structure be updated to meet the requirements for the Code for New Construction. This may require addition of reinforced masonry shear walls with new reinforced concrete foundations, connecting the floor and roof diaphragms to the existing masonry walls. All of the existing masonry walls would have to be adequately connected to the roof and floor structure.

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EXISTING CONDITIONS: MECHANICAL

EXECUTIVE SUMMARY

The Wildwood Early Childhood Center services Pre-K and Kindergarten students. The 29,160 square foot school was constructed in 1955. Presently, the HVAC systems serving the Wildwood Elementary School are an oil-fired steam plant, unit ventilators with steam heating coils, both general and dedicated exhaust systems communicating to roof and inline exhaust fans, terminal steam heating units, and a deprecated pneumatic control system.

Most of the building HVAC systems are in poor operating condition, missing components, show signs of leakage, and need replacement. The pneumatic temperature control system has been abandoned due to failed pneumatic components. The overall HVAC system has become inefficient and costly to operate and maintain. Systems have deteriorated to a point of exceeding their maximum serviceable life. Ventilation rates and acceptable air-quality are likely compromised due to the surface contamination on many systems as well as inoperable or poorly operating outside ventilation controls.

HEATING HOT WATER PLANT:

The Wildwood Early Childhood Center building is heated by a boiler plant consisting of two (2) oil-fired steam boilers installed in 1998 and appear to be in satisfactory condition. The boilers are forced draft utilizing room air for combustion and directly venting flue gases to the outdoors. Fuel oil was previously supplied from a 10,000-gallon double wall below ground tank which appears to have recently been removed.

The steam plant consists of two cast iron boilers manufactured by Weil McLain, with Carlin Combustion Technologies Inc. burners, Model 1150FFD *(Images 1, 2)*, with maximum capacity of 35 GPH (4,900 MBH). The flue gases for the Weil McLain boilers are combined into a single insulated galvanized venting system. The mechanical room has a high/low make-up combustion air system to allow for the forced draft boilers to operate.

The steam distribution system serves several terminal unit ventilators, fin tube radiation, cabinet unit heaters, and a pair of heating and ventilation units. Several sections of the steam piping and insulation located within the boiler room show signs of water damage, indicative of leaking pipe connections. Much of the steam pipe is in a crawl space with insulation that has rips, tears, and punctures. In some cases, pipe is bare. *(Images 3, 4)*

Specific Issues	Recommendations
Currently, no fuel oil tank installed.	Consider new HVAC system that does not require fuel oil (see issues and recommendations below.
Main heating hot water boilers are not high efficiency and provide a max of approximately 82% efficiency.	Convert to hot water and replace entire heating system with a new high efficiency condensing boiler plant with electronically commutated motors (ECM) pump arrays for increased energy savings. Save existing high efficiency condensing boiler and reuse for renovation or at other Town location. Alternatively, consider new fossil fuel free heating system replacement such as air source variable refrigerant flow (VRF) heat pump system.
Signs of corrosion on piping and flanges. Pipe integrity unknown. Water damaged and/or missing insulation.	Replace entire piping system with a combination of schedule 40 black steel and copper piping and utilize dielectric fitting for dissimilar materials. Replace insulation. Alternatively, consider new fossil fuel free heating system replacement such as air source variable refrigerant flow (VRF) heat pump system.

ATC CONTROLS

The building heating and ventilation systems are controlled by minimalistic direct digital control systems. There is an inoperable pneumatic control air compressor manufactured by Speedaire that is in the boiler room *(Image 5)*. The direct digital controls are limited primarily to two zones, controlled by a wall mounted thermostat. *(Image 6)* There is no building management system for centralized control or management. The system is antiquated and in need of replacement due to its limited capability with equipment control and overall decreased thermal comfort.

Image 1: Weil McLain Cast Iron Boilers

Image 2: Carlin Oil Fired Burner

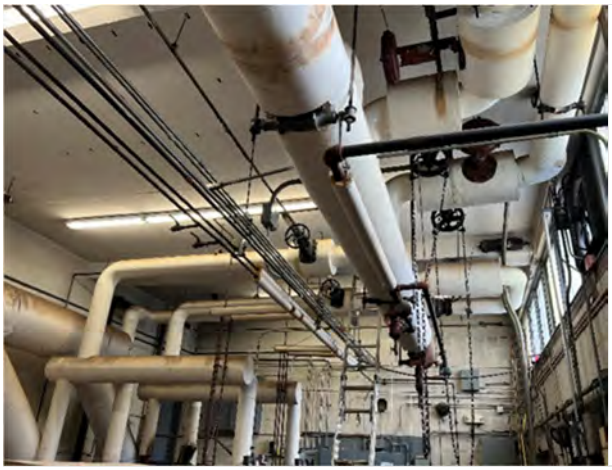

Image 3: Boiler Room Pipe with Signs of Leaking

Image 4: Crawl Space Piping with Improper Insulation

Image 5: Abandoned Pneumatic Controls Compressor

Image 6: Digital Control Thermostat Located in Corridor

Specific Issues	Recommendations
Pneumatic control systems are generally considered inefficient, and unreliable. Many of the existing pneumatic thermostats are damaged and non-operational. Space comfort is extremely limited with limited, newer, digital control strategy.	Replace the entire Pneumatic control system with current direct digital control (DDC) technologies for improved reliability, controllability, and the ability for a web-based building management system (BMS).

CLASSROOMS:

The classrooms are heated and ventilated by steam unit ventilators *(Image 7)* manufactured by Herman Nelson, Model JDC8541. The steam coil valve and dampers are pneumatically actuated, and therefore do not operate. Ventilation air brought in thru the unit ventilators is relieved via a low-wall grille typically located near the entryway of the classroom, connected to a central exhaust system with fans located on the roof. The unit ventilators appear to be originally installed equipment, are in poor condition and are beyond, their expected service life. Control of the unit ventilators is by the unit mounted on/off toggle switch. Older unit ventilators are inherently noisy, and as a result some faculty turn fans off, which effectively stops the flow of ventilation air. Additionally, books and other classroom materials are occasionally placed in front of or on top of unit ventilator grilles which creates noise and reduces ventilation effectiveness. The classrooms are generally provided with window air conditioners for cooling needs *(Image 8)*.

Specific Issues	Recommendations
Currently, installed Unit Ventilators have far-exceeded their expected service lives and are therefore noisy & approaching failure.	Provide new HVAC equipment & associated control systems to provide the classroom spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).

Image 7: Typical Classroom Unit Ventilator

Image 8: Typical Window Air Conditioner

Image 9: Ceiling Suspended Heating and Ventilation Unit

Image 10: Low Wall Exhaust/Relief Grilles (Note: Left Grille Damaged, Right Grille Covered/Blocked)

Image 11: Supplemental Fin Tube at All Purpose Room

Image 12: Supply Ductwork

There are not any sources of supplemental heating currently installed for maintenance of unoccupied space temperatures; this requires the unit ventilators to run at a greater energy cost to the building.	Provide supplemental hot water heating terminal units within all spaces as the primary occupied and unoccupied heating source. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Window air conditioners typically produce noise above newer noise criteria standards, are generally considered inefficient versus other types of terminal cooling, or central plants, and do not distribute cool air evenly throughout a space.	Provide new supplemental cooling terminal units such as min-split, or variable refrigerant flow (VRF), systems. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).

ADMINISTRATION AREAS:

The administration area is heated and ventilated via steam fin tube radiation, convectors, and general exhaust fans. Air conditioning is provided via window, or through-wall, air conditioners.

Control for all of the administration spaces is provided by one of the previously mentioned wall mounted thermostat located in the general area. Overall, there is no individual control of space temperatures which decreases thermal comfort.

Specific Issues	Recommendations
Natural Ventilation is code compliant; however, ventilation is only available when the windows are opened.	Provide Mechanical Ventilation Systems to serve all spaces that currently include natural ventilation via operable windows. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Currently, installed convectors and fin tube radiation have far-exceeded their expected service life.	Provide new HVAC equipment & associated control systems to provide the classroom spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable

Image 13: Kitchen Unit Ventilator and Hood

Image 14: Dedicated Kitchen Unit Ventilator

	refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
There is no individual temperature control for each office/space.	Provide a new direct digital control system.

ALL PURPOSE ROOM (GYM/STAGE):

The All Purpose Room is heated and ventilated by two pneumatically controlled H&V units suspended from the ceiling. *(Image 9)*. All units supply directly to the space. Return air is also brought directly back to the H&V through a low wall mounted return air grilles. *(Image 10)* The H&V units are provided with a steam heating coil, supply fan, filters, and a mixing box. The outside air intakes are routed from the ceiling suspended unit, directly to sidewall louvers. The All Purpose area is provided with supplemental steam fin tube radiation. *(Images 11, 12)*.

Specific Issues	Recommendations
Currently, installed heating & ventilating unit has exceeded its expected service life and is in poor condition.	Provide new HVAC equipment & associated control systems to provide the gym with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

KITCHEN AND CAFETERIA/STAGE:

The kitchen appears to be a warming type kitchen with a larger stainless steel island-type range exhaust hood *(Images 13, 14)* that is ducted to dedicated roof-mounted exhaust fan. There are no grease filters or fire suppression system installed for the hood. Make-up air for the kitchen appears to be provided by a space mounted unit ventilator. There is no commercial dishwasher.

Specific Issues	Recommendations
Currently, installed unit ventilator units have exceeded their expected service life and is in poor condition.	Provide new HVAC equipment & associated control systems to provide the kitchen with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

EXISTING CONDITIONS: ELECTRICAL

EXECUTIVE SUMMARY

In general, the existing electrical systems of this facility have reached their life expectancy and are in poor condition. The facility has systems that do not reflect, nor do they meet the needs of a modern-day facility. Code changes over the years have resulted in some existing systems that do not meet today's electrical codes. Most of the existing systems are not suited for expansion due to the incompatibility of modern technologies and age of the equipment. We recommend replacement of the older electrical systems for this facility.

ELECTRICAL DISTRIBUTION SYSTEM

The primary electrical service to the building generates in existing pole #33/35 *(Image 1)* located at Wildwood Street that runs overhead to a pole mounted transformer *(Image 2)* located at the northside of the main entrance of the building.

The secondary electrical service to the building originates from the pole mounted transformer and runs overhead via another pole to a building mounted weather head *(Image 3)*.

The main electrical switch is rated at 400A, 120/208V, 3 Phase, 4 Wire and is in the boiler room of the basement and is manufactured by GE *(Image 4)*. Also, a 400A main distribution panel and panels are in the boiler room; the equipment is manufactured by Westinghouse and Murray *(Image 5)*. The electrical service is undersize and there is no room for expansion on this system.

Other remote existing subpanels are of the breaker type and generally full. Most of these panels are original to the building and in poor condition *(Image 6, 7 & 8)*.

The Utility Company meter is located outside of the boiler room *(Image 9)*.

Specific Issues	Recommendations
Existing electrical service is undersized and there is no room for expansion.	The existing electrical service should be updated due to age and capacity
Most of the existing panels are original to the building.	Replace existing panels during any major renovation.

INTERIOR LIGHTING

Existing lighting throughout the building generally provided poor light levels and consists of fluorescent and old incandescent light fixtures. This type of lighting is inefficient and expensive to operate. The existing light fixtures are out of date and in fair to poor condition. Lighting is locally switched with a single pole toggle light switch.

Corridor lighting consists of surface 1'x4' wraparound fixtures *(Image 10, 11, & 12)*.

Typical classrooms have 1'x4' pendant parabolic switch (2) T12 lamps *(Image 13, 14 & 15)*.

The open space in the Cafetorium consists of surface 1'x4' wraparound with (2) T8 lamps *(Image 16)*.

Some office lighting consists of 1'x4' pendant parabolic with (2) T12 lamps *(Image 17)*.

The bathroom lighting consists of surface 1'x4' wraparound fixtures *(Image 18 & 19).*

There are some incandescent light fixtures installed in the building *(Image 20 & 21)*.

Fluorescent lighting should be changed to LED type.

Specific Issues	Recommendations
No occupancy sensors exist in the classrooms.	Add occupancy sensors in classrooms to conserve energy.
No daylight harvesting.	Add daylight harvesting in all areas with outside exposure to conserve energy.
Lighting is not efficient.	Upgrade to LED type light fixtures with automated lighting control.

EXTERIOR LIGHTING

Some of the exterior lighting consist of high pressure sodium wall packs *(Image 22)*, jelly jars *(Image 23)*, flood lights *(Image 24)* and also some ceiling mounted light fixtures located at entrances *(Images 25, 26 & 27)*.

Image 1:

Image 2:

Image 3:

Image 4:

Image 5:

Image 6:

Most fixtures are fluorescent or incandescent type.

All exterior lighting should be LED type.

Specific Issues	Recommendations
Some lighting is fluorescent and incandescent type.	Replace fluorescent type lighting with LED.

EMERGENCY STANDBY SYSTEM

The building does not have an emergency stand-by generator.

The emergency lighting system consists of battery type fixtures with self-contained heads *(Image 28, 29 & 30)*.

The existing system appears not to meet the present code due to lack of coverage. A minimum of one-foot candle is required.

Some of the exterior doors appear not to have an exterior emergency lighting.

Most exit signs have battery back-up *(Images 31 & 32)*. Exit sign coverage appears adequate. Exit signs seem to be in poor condition.

Outside door for storage Art Room is missing an exit sign. Also, there is a paper type exit sign at the doorway inside storage Art Room *(Image 33)*.

Specific Issues	Recommendations
Exterior doors have no exterior emergency lighting in the form of remote heads.	Add remote heads at exterior doors.
Lack of coverage for emergency battery units.	Add additional emergency battery units.

Image 7:

Image 8:

Image 9:

Image 10

Image 11:

Image 12:

The facility does not have an emergency standby generator.	Add generator and automatic transfer switches under a major renovation.

FIRE ALARM SYSTEM

The existing fire alarm system consists of an addressable Notifier control panel located in the Main Vestibule *(Image 34)*. The graphic annunciator is also located in the Vestibule *(Image 35)*.

Speaker/strobes are installed throughout the building *(Image 36)*.

Pull stations are located at the exit doors *(Images 37 & 38)*.

There is a fire alarm annunciator located at the Reception Area.

Typically, smoke detectors are installed in corridors and classrooms *(Image 39)*.

The toilet rooms have speaker/strobes and smoke detectors *(Image 40)*.

An existing master box is installed at the front entrance of the building *(Image 41)*.

The fire alarm system appears to provide adequate detection and notification to occupants.

Specific Issues	Recommendations
The existing fire alarm system appears to provide adequate detection and notification to occupants.	No additional work is required at this moment.

MISCELLANEOUS

The facility does not have lightning protection system.

The quantity of receptacles is not adequate in some of the spaces, resulting in the use of extension cords *(Images 42*). Extension cords can overheat and cause fires when used improperly. Overheating is usually caused by overloading or connecting devices that consume more watts than the cord can handle. Every cord has a maximum amperage rating, or a limit of electrical current it can safely conduct.

Typical classrooms have as few as two duplex receptacles per room.

Image 13:

Image 14:

Image 1

Image 2

Image 3

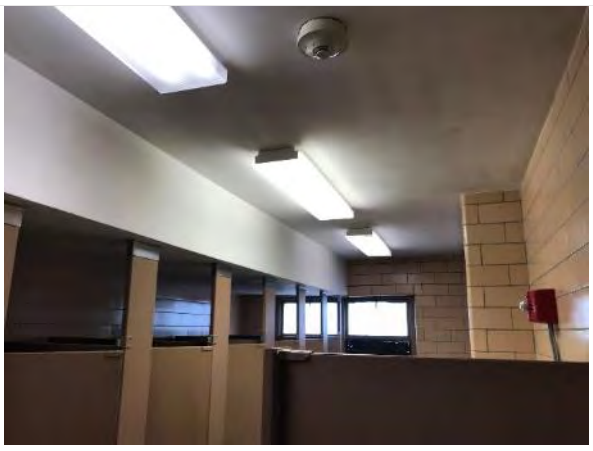

Image 18

Specific Issues	Recommendations
The facility does not have lightning protection system.	Add lightning protection system.
The receptacle coverage is inadequate in some spaces.	Provide additional receptacles to eliminate the use of extension cords.

Image 19

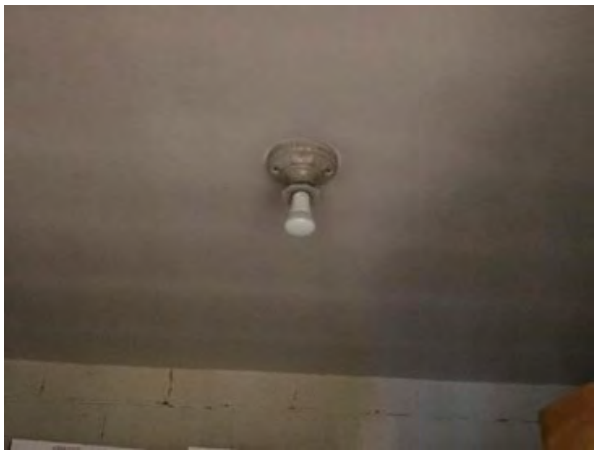

Image 20

Image 21

Image 22

Image 23

Image 24

Image 25

Image 26

Image 4

Image 28

Image 5

Image 30

Image 31

Image 32

Image 33

Image 34

Image 35

Image 36

Image 37

Image 38

Image 39

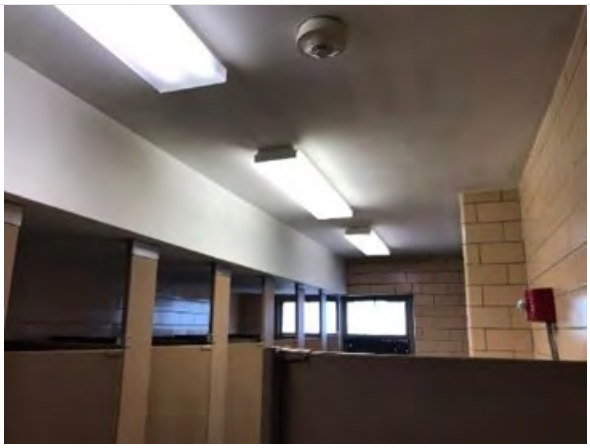

Image 40

Image 6

Image 42

EXISTING CONDITIONS: PLUMBING

GENERAL

The existing plumbing systems serving the school consist of the domestic water system (cold, hot, and hot water return) domestic water heaters, sanitary system (waste and vent piping systems), acid waste system (acid waste, venting, and neutralizing tank), storm system (roof drains, storm piping), and the plumbing fixtures. The systems, in general, appear original to the building. Some systems/equipment have been upgraded/replaced; however, most plumbing systems and equipment are approaching or are beyond their useful life.

DOMESTIC WATER SYSTEMS

Domestic water for the facility is fed from 3" main which enters the building through the boiler room. The water connection is disconnected from the service to the building main (image 1) and at present there is no water in the building. No backflow preventer and meter are present at the building service. Domestic water (hot, cold, and recirculation) is supplied throughout the building in the crawl space, which is accessible from the basement and floor hatches (image 2). The domestic water consists of copper pipe with soldered fittings (image 3) and it is expected that the solder used in the system has significant lead content. In addition, the existing domestic water piping is original and in poor condition, and is not expected to last more than a few years without exhibiting possible failures.

Domestic Hot water (image 4) for the facility is supplied from a single electric storage tank water heater, Bradford white (MII50-12-1SF), which has a capacity of 50 gallons, with electrical input of 12KW. The water heater in general is in fair condition but is nearing its life expectancy. A tempering valve is provided for the domestic hot water system (image 5). The hot water recirculation pump is provided and controlled via aqua-stat (image 6).

The majority of the piping is not insulated and where insulated, the insulation is original to the building and in poor condition (image 7). Due to the poor condition of the piping, it is recommended that, in the event of a major alteration, the entire domestic water system be replaced including piping, valves, fittings, hangers and insulation.

Specific Issues	Recommendations
No backflow preventer and water meter on domestic service.	Provide new backflow preventer and water meter assembly.

Domestic water piping, valves, hangers and insulation have outlived its useful life.	Provide new domestic water piping, insulation, hangers, and valves.
No two-temperature hot water system and thermostatic mixing valve.	Provide 120°F hot water to fixtures via thermostatic mixing valve and 140°F hot water to kitchen appliances.
Domestic water heater reaching its life expectancy	Provide a new water heater with a thermostatic mixing valve, recirculating pump, and accessories.

SANITARY WASTE AND VENT

The sanitary drainage pipe in the facility exits the building through the boiler room and goes to a septic tank. Sanitary piping where visible was observed to be cast iron with hub and spigot joints (image 8). The smaller pipe sizes (less than 3") are copper with soldered joints. The sanitary piping in general appears to be in fair condition but is not expected to last more than a few years without exhibiting problems and possible failures. The vent piping is cast iron and appears to be in fair condition (image 9).

Storm Drainage

The majority of the storm conductors were not visible but where visible the piping appears to be in fair condition. Piping where visible is cast iron with hub and spigot joints (image 10). Roof drains consist of metal dome tops, and flashing clamps and appear to be in fair condition (image 11). Horizontal storm piping above the ceiling may not be insulated. Confirmation was not possible. Storm piping in general appears to be in fair condition but is not expected to last more than a few years without exhibiting problems and possible failures.

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Gas

There is no gas supply to this building.

Specific Issues	Recommendations
Sanitary, waste and vent piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Storm piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Roof drain covers nearing its life expectancy.	New roof drains dome covers are recommended.

Fixtures

Plumbing fixtures throughout the facility are in fair condition, except mop sinks, many are antiquated and not employing current water saving features.

Water closets are primarily wall-hung (few floor-mounted) vitreous china with manual flush valves. Most of the valves are either partially or fully removed from the fixtures. Overall, the water closets are in fair condition (image12). Urinals are wall-mounted, vitreous china with manual flush valves. Most of the valves are either partially or fully removed from the fixtures (see image 13).

Lavatories are wall-hung, vitreous china with manual faucets, generally in fair condition, hot water handles are removed for almost all the lavatories (image 14).

Mop receptors are wall hung cast iron with 3” inch trap, generally in poor condition. Faucets are removed for most of the mop receptors but where the faucets are in place, faucets are not equipped with vacuum breakers (image 8 & 15).

Classroom sinks are enamel on steel, with cold and hot water faucets, hot water handles are removed for almost all the classroom sinks (image 16).

Drinking fountains are surface mounted, stainless steel, wall hung push button type, generally in fair condition and not ADA compliant (image 17).

Image 7

Image 8

Image 9

Image 10

Image 11

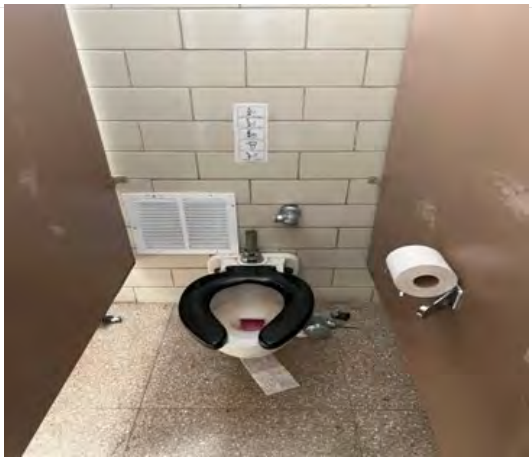

Image 12

Kitchen fixtures appear to be in fair condition, pot sink and dishwasher originally piped to the above ground grease interceptor but it appears that the inlet to the grease interceptor has been cut and capped and waste from pot sink and dishwasher is discharging directly to sewer system which is a code violation (image 18,19). The dishwasher has a booster heater for 180^{o}F hot water image (20). Separate kitchen waste systems are not present in the facility other than the point-of-use grease interceptor (which is not used anymore) and there is no evidence of exterior grease interceptor.

Specific Issues	Recommendations
Existing plumbing fixtures are antiquated, non-ADA compliant and not water-conserving.	During a substantial renovation and addition project, the code would require that all the water closets, lavatories, etc. be modified to be accessible water conservation-type fixtures. Replace all electric water coolers with new handicap-accessible fixtures. Replace all mop receptors and janitor sinks with new fixtures and provide backflow protection for soap dispensers to comply with the code.
No separate kitchen waste system or exterior grease trap	Replace all point-of-use grease interceptors and provide a new exterior grease trap.

Image 13

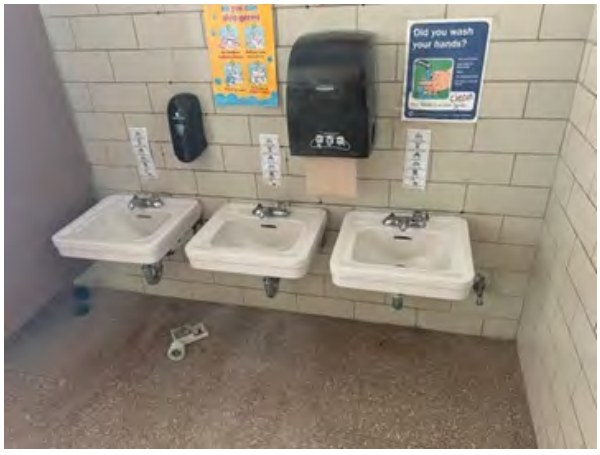

Image 14

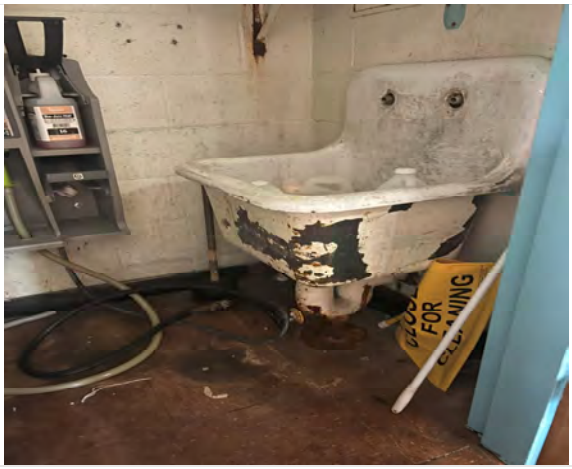

Image 15

Image 16

Image 17

Image 18

Image 19

Image 20

EXISTING CONDITIONS: FIRE PROTECTION

There is no active fire suppression system in the school building. The building has no automatic sprinklers, no hose cabinets, no corridor fire extinguishers, or fire department standpipes present.

Recommendations:

- If the existing building is renovated to any substantial degree, the entire building needs to be upgraded with fire suppression system per latest Massachusetts Building Code 780 CMR Chapter 9.
- The existing site water service and capacity needs to be evaluated for new requirements and to comply with the latest Commonwealth of Massachusetts building code and the National Fire Protection Association (NFPA).
- A new dedicated fire service to the building will be required within the site and to feed the automatic fire sprinkler system covered throughout the building.
- NFPA-13 standard would require that all areas of the building shall be protected with wet fire suppression sprinklers. Unheated areas will require a dry system. The system will include sprinklers and a standpipes throughout the building to comply with current code.

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EXISTING CONDITIONS: FOOD SERVICE

SUMMARY

The Wildwood Early Childhood Center kitchen is not in use and the original kitchen is intact with most of the equipment, stored files, and utensils sitting as they were the day the school was evacuated. Dry goods and food were removed but small utensil and equipment remains as they were at that time.

The original finishes are of high-quality and have held up well over many years of hard use. The walls are finished in a glazed block with a majority of the floors being the traditional quarry tile finish. Both types are in fair condition. However, the remaining finishes are outdated and no longer appropriate for a foodservice environment. For example, the ceilings are a rough plater finish which is impossible to clean. Modern ceiling systems must be smooth and easily cleaned.

Overall, the kitchen equipment is worn with little to no usable equipment within it. The plumbing and electrical infrastructure is outdated and no longer code complaint. Much of the existing plumbing infrastructure is not Health Codes complaint and likely not up to modern standers in general.

One plumbing example is the food preparation sink drains. The Health Code asks for air gapped drains. This is a feature that prevents waste backups from contaminating the food contact surface. The sinks at the Wildwood are direct plumbed (Image 1). Additionally, there is no dedicated hand washing sink within the kitchen. A kitchen of this size requires at least two hand washing stations. The last missing Health Code related plumbing item is a three-compartment sink for washing, rinsing, and sanitizing pots, pans, and utensils.

The kitchen does have natural light which is a benefit however, artificial lighting levels are poor. The required lighting within the exhaust hood is not sufficient nor is constructed to modern standards for water tight construction and fire prevention (Image 2).

Wood toped table can be seen in in (Image 3). Wood topped work surfaces are not allowed in a kitchen unless it is being used in a baking of breads and other dough baking. Wood surfaces are difficult to maintain in the long term and they require frequent oiling. If not oiled the wood shrinks and splits causing health code violation since the gap fill with debris and it is not possible to clean and sanitize. All materials in a kitchen should be stainless steel or other appropriate material. Materials must be durable and easy to clean. Wood does not meet this characteristic if not continuously maintained.

There are a few items within this kitchen that we feel can be salvaged such as shelving units and pots and pans (Image 4). It's possible that some of these items may fill a need at one of the other schools.

Please refer to the following images for additional details.

Image 1

Image 2

Image 3

Image 4

EXISTING CONDITIONS: TECHNOLOGY AND COMMUNICATIONS

EDVANCE TECHNOLOGY DESIGN

EXECUTIVE SUMMARY

Technology and communication systems for this facility range from those that are original to more current systems such as the wireless network and the instructional ultrashort projection technology and interactive displays. However, the newer systems, although functional, have been added to a building that was never designed to adequately support these systems. There is a lack of controlled and dedicated space, power, and environmental conditioning for core network equipment. Furthermore, many of the core communication systems, including but not limited to the public address system and master clock systems cannot be upgraded or expanded due to the age of the equipment. The telephone system, although based on current technology, should be extended into all spaces including classrooms. We recommend that the older equipment be replaced and that the classroom technology, network infrastructure, audio visual systems of large assembly spaces, and the building security systems be upgraded to current standards.

STRUCTURED CABLING

Wildwood Elementary School appears to have network cabling installed in surface mounted raceway throughout the school (Image 1). It is run from a central location or main distribution in an old phone booth located in the lobby. This area is not properly cooled or ventilated. Older preexisting network cabling is exposed in many locations (Image 2) and in many locations the raceway system containing the structured cabling is failing to support cabling. Most of the elementary school cable is Cat 5e.

Specific Issues	Recommendations
Cabling is run to wall mounted wireless access points and other network device locations using surface mount raceway. Cabling originates from an antiquated phone booth that is not properly treated for power and environmental conditioning. This is common when networks are implementing in older existing facilities.	Dedicated network closets should be established as part of any building renovation project, with new Cat 6A cabling installed from outlets to closets within walls if possible or with the use of more permanent metallic raceway technology

Exposed older surface mount raceways and cabling exists throughout. Existing cabling will be unable to support newer classroom technology.	Remove and replace older existing surface mount raceways and cabling as part of any renovation project. Replace existing Cat 5e cabling with Cat 6a.

NETWORK SWITCHES

In the main distribution location, an old phone booth within the school's lobby, there is a chassis-based switch installed in a wall mount equipment rack along with patch panels, patch cords and UPS equipment. K. Lord discussed having new Cisco switches on hand to roll out into the elementary schools this Summer.

Specific Issues	Recommendations
Network switches are installed in a rack that is confined and inadequate. Switches are exposed to the elements of a shared closet, without proper ventilation, power distribution and conditioning.	Dedicated network closets should be established as part of a building renovation project, where network switches can be secured, properly supported with adequate power and environmental conditioning.

WIRELESS NETWORK

Wireless access points were observed throughout the facility in most of the classrooms. Large assembly spaces also appear to be equipped with wireless access points. These devices appear to be dated (Image 3). K. Lord indicated that the transition to Cisco Meraki access points was imminent.

Specific Issues	Recommendations
Older wireless network equipment is being relied on to achieve network connectivity.	New hard-wired data outlets in addition to cabling for wireless should be installed in all educational spaces as part of any building renovation project so that teachers and staff can make use of a hardwired connection to the Network when required.

Image 1

Image 2

Image 4

Image 3

Image 5

PUBLIC ADDRESS AND CLOCK SYSTEM

The main public address system is in the main office, which is an older analog public address system. The original central wired clock system does not appear to be functioning, with most rooms being equipped with battery secondary clock of various types and sizes (Image 3).

Specific Issues	Recommendations
There is an antiquated public address system. The clock system does not appear to be working.	Install new public address main equipment including new speakers as part of any facility renovation or upgrade project.

TELEPHONE SYSTEM

The Telephone System, although limited, appears to serve the main office administration area and remote office locations. The handsets that are present appear to be in working order. There are no telephone handsets in any of the classrooms. K. Lord confirmed Yealink Zoom system will be rolled out in the Summer.

Specific Issues	Recommendations
	Equip all classrooms with their own voice over IP handset.

AUDIO-VISUAL SYSTEMS FOR LARGE ASSEMBLY SPACES

The large assembly space is the cafeteria, which is equipped with older audio-visual technology. There is a projector mounted in the ceiling used with the pull- down screen on the stage (Image 4). Sound equipment was not observed and is likely to be portable and stored elsewhere.

Specific Issues	Recommendations

Audio-Visual Systems for large assembly spaces such as the Cafetorium depend on older equipment.	Upgrade all built in Audio-Visual systems in large assembly spaces as part of any facilities renovation and upgrade project
Projection screen may not be appropriately sized for the room.	Include a new large format projection screen with a permanently installed high lumen projector and sound system in the Cafetorium.

INSTRUCTIONAL AUDIO-VISUAL SYSTEMS

Classroom instructional technology appears to have previously been ultra-short throw projector based (Image 5). There is no audio reinforcement system to supplement the display technology in any classrooms, and the projectors have all been removed from their mounts aside from the cafeteria.

Specific Issues	Recommendations
Functional but older Instructional Audio-Visual display systems were observed throughout the classrooms.	Replace older systems with newer interactive display technology to include either interactive flat panels and/or newer interactive ultrashort projectors.
	Include state of the art Voice Reinforcement systems to increase voice intelligibility for students and reduce teacher vocal fatigue during renovations or facility upgrades

NETWORK COMPUTERS AND PRINTERS

The district observes a 1:1 Student Chromebook relationship, with teachers receiving Dell Latitude laptops and teacher dock to make their connection to display technology. Copier/printers were observed in various strategic locations.

Specific Issues	Recommendations
Mobile charging carts are still relevant if the school is managing the student devices.	Design into the classroom a place where charging carts can be stored.

DIGITAL SIGNAGE

Wildwood does not currently appear to use any digital signage.

Specific Issues	Recommendations
Digital signage is not used at Wildwood.	Add digital signage in the main entrance and other spaces such as the cafeteria with easy to manage system software.

SECURITY

There does not appear to be an active security system for Wildwood.

Specific Issues	Recommendations
There is currently extremely limited security outside of locking doors.	Add additional surveillance cameras and necessary Network Video Recorder storage as part of any facilities upgrade project. If the surveillance system relies on any analog technology, the surveillance system should be upgraded to IP. Introduce an intrusion motion detection system for ground floor rooms with windows.

UEC universal environmental consultants

October 10, 2023

Ms. Rani Phillip
Dore & Whittier Architects
260 Merrimac Street
Newburyport, MA 01950

Reference: Hazardous Materials Determination Survey
Wildwood Elementary School, Wilmington, MA

Dear Ms. Phillip:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Hazardous Materials determination survey at Wildwood Elementary School, Wilmington, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

_____

Ammar M. Dieb
President

UEC:\223 514.00\Report.DOC

Enclosure

REPORT
FOR
HAZARDOUS MATERIALS DETERMINATION
SURVEY
AT THE
WILDWOOD ELEMENTARY SCHOOL
WILMINGTON, MASSACHUSETTS

PROJECT NO: 223 514.00

Survey Dates:
May 12, 2017, May 25, 2017, June 16, 2022
October 3, 2023

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS
12 BREWSTER ROAD
FRAMINGHAM, MA 01702

INTRODUCTION:
UEC has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty-five years of experience.

UEC was contracted by Dore & Whittier Architects to conduct the following services at the Wildwood Elementary School, Wilmington, MA:

- Inspection and Testing for Asbestos Containing Materials (ACM).
- Inspection for Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures.
- Inspection for PCB's-Caulking.
- Inspection for Lead Based Paint (LBP).
- Mercury in Rubber Flooring inspection and sampling.
- Airborne Mold inspection and sampling.
- Radon sampling.

A comprehensive survey per the Environmental Protection Agency (EPA) NESHAP regulation would be required prior to any renovation or demolition activities.

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination of types of ACM found and cost estimates for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Jason Becotte (AI-034963) and analyzed by a Massachusetts licensed laboratory EMSL, Woburn, MA.

Airborne mold samples were analyzed by an EPA trained laboratory EMSL, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

Refer to samples results.

FINDINGS:
Asbestos Containing Materials (ACM):
The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to be ACM based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount of 1 percent or greater in accordance with DEP regulations.

All suspect materials that contain any amount of asbestos must be considered asbestos if it is scheduled to be removed per the Department of Environmental Protection (DEP) regulations.

Number of Samples Collected
May 12, 2017
Fifteen (15) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. Fluffy spray-on ceiling at OT/PT room
2. Fluffy spray-on ceiling at room 1
3. Fluffy spray-on ceiling at room 7

4. Fluffy spray-on ceiling at room 10
5. Fluffy spray-on ceiling at hallway
6. Fluffy spray-on ceiling at hallway
7. Fluffy spray-on ceiling at hallway
8. Wall plaster at hallway
9. Wall plaster at hallway
10. Wall plaster at hallway
11. Wall plaster at hallway
12. Wall plaster at hallway
13. Smooth ceiling plaster at storage by room 5
14. Smooth ceiling plaster at girl's bathroom
15. Smooth ceiling plaster at storage by room 7

Sample Results

Type and Location of Sample	**Sample Result**
1. Fluffy spray-on ceiling at OT/PT room	No Asbestos Detected
2. Fluffy spray-on ceiling at room 1	No Asbestos Detected
3. Fluffy spray-on ceiling at room 7	No Asbestos Detected
4. Fluffy spray-on ceiling at room 10	No Asbestos Detected
5. Fluffy spray-on ceiling at hallway	No Asbestos Detected
6. Fluffy spray-on ceiling at hallway	No Asbestos Detected
7. Fluffy spray-on ceiling at hallway	No Asbestos Detected
8. Wall plaster at hallway	No Asbestos Detected
9. Wall plaster at hallway	No Asbestos Detected
10. Wall plaster at hallway	No Asbestos Detected
11. Wall plaster at hallway	No Asbestos Detected
12. Wall plaster at hallway	No Asbestos Detected
13. Smooth ceiling plaster at storage by room 5	No Asbestos Detected
14. Smooth ceiling plaster at girl's bathroom	No Asbestos Detected
15. Smooth ceiling plaster at storage by room 7	No Asbestos Detected

May 25, 2017
Two (2) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. 1' x 1' Acoustical wall tile at room 2
2. 1' x 1' Acoustical wall tile at room 2

Sample Results

Type and Location of Sample	**Sample Result**
1. 1' x 1' Acoustical wall tile at room 2	No Asbestos Detected
2. 1' x 1' Acoustical wall tile at room 2	No Asbestos Detected

June 16, 2022
Thirty-nine (39) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. 9" x 9" Vinyl floor tile at cafeteria
2. 9" x 9" Vinyl floor tile at hallway by room 6
3. Mastic for 9" x 9" vinyl floor tile at cafeteria

4. Mastic for 9” x 9” vinyl floor tile at hallway by room 6
5. Cork 9” x 9” floor tile at library
6. Cork 9” x 9” floor tile at library
7. Brown mastic for cork 9” x 9” floor tile at library
8. Brown mastic for cork 9” x 9” floor tile at library
9. Grey 12” x 12” vinyl floor tile at hallway 7-14
10. Grey 12” x 12” vinyl floor tile at hallway 7-14
11. Mastic for grey 12” x 12” vinyl floor tile at hallway 7-14
12. Mastic for grey 12” x 12” vinyl floor tile at hallway 7-14
13. Brown 12” x 12” vinyl floor tile at custodian closet by room 7
14. Brown 12” x 12” vinyl floor tile at custodian closet by nurse
15. Mastic for brown 12” x 12” vinyl floor tile at custodian closet by room 7
16. Mastic for brown 12” x 12” vinyl floor tile at custodian closet by nurse
17. Black paper under hardwood floor at stage
18. Black paper under hardwood floor at stage
19. 2’ x 4’ acoustical wall tile at room 2
20. 2’ x 4’ acoustical wall tile at room 2
21. Masonite wall panel glue at room 11
22. Masonite wall panel glue at principal
23. Glue daub for 1’ x 1’ acoustical wall tile at room 8
24. Glue daub for 1’ x 1’ acoustical wall tile at room 1
25. Countertop laminate at room 11
26. Countertop laminate at room 1
27. Interior door glazing caulking at principal
28. Interior door glazing caulking at room 13
29. Interior window glazing caulking at lobby
30. Interior window glazing caulking at hallway 7-14
31. Exterior window framing caulking
32. Exterior window framing caulking
33. Exterior window framing caulking
34. Exterior window glazing caulking
35. Exterior window glazing caulking
36. Exterior window glazing caulking
37. Exterior door framing caulking
38. Exterior door framing caulking
39. Exterior door framing caulking

Sample Results

Type and Location of Sample	**Sample Result**
1. 9” x 9” Vinyl floor tile at cafeteria	3% Asbestos
2. 9” x 9” Vinyl floor tile at hallway by room 6	3% Asbestos
3. Mastic for 9” x 9” vinyl floor tile at cafeteria	No Asbestos Detected
4. Mastic for 9” x 9” vinyl floor tile at hallway by room 6	No Asbestos Detected
5. Cork 9” x 9” floor tile at library	No Asbestos Detected
6. Cork 9” x 9” floor tile at library	No Asbestos Detected
7. Brown mastic for cork 9” x 9” floor tile at library	No Asbestos Detected
8. Brown mastic for cork 9” x 9” floor tile at library	No Asbestos Detected
9. Grey 12” x 12” vinyl floor tile at hallway 7-14	No Asbestos Detected
10. Grey 12” x 12” vinyl floor tile at hallway 7-14	No Asbestos Detected
11. Mastic for grey 12” x 12” vinyl floor tile at hallway 7-14	No Asbestos Detected
12. Mastic for grey 12” x 12” vinyl floor tile at hallway 7-14	No Asbestos Detected
13. Brown 12” x 12” vinyl floor tile at custodian closet by room 7	No Asbestos Detected
14. Brown 12” x 12” vinyl floor tile at custodian closet by nurse	No Asbestos Detected

15. Mastic for brown 12” x 12” vinyl floor tile at custodian closet by room 7	No Asbestos Detected
16. Mastic for brown 12” x 12” vinyl floor tile at custodian closet by nurse	No Asbestos Detected
17. Black paper under hardwood floor at stage	No Asbestos Detected
18. Black paper under hardwood floor at stage	No Asbestos Detected
19. 2’ x 4’ acoustical wall tile at room 2	No Asbestos Detected
20. 2’ x 4’ acoustical wall tile at room 2	No Asbestos Detected
21. Masonite wall panel glue at room 11	No Asbestos Detected
22. Masonite wall panel glue at principal	No Asbestos Detected
23. Glue daub for 1’ x 1’ acoustical wall tile at room 8	No Asbestos Detected
24. Glue daub for 1’ x 1’ acoustical wall tile at room 1	No Asbestos Detected
25. Countertop laminate at room 11	No Asbestos Detected
26. Countertop laminate at room 1	No Asbestos Detected
27. Interior door glazing caulking at principal	2% Asbestos
28. Interior door glazing caulking at room 13	2% Asbestos
29. Interior window glazing caulking at lobby	2% Asbestos
30. Interior window glazing caulking at hallway 7-14	2% Asbestos
31. Exterior window framing caulking	2% Asbestos
32. Exterior window framing caulking	2% Asbestos
33. Exterior window framing caulking	2% Asbestos
34. Exterior window glazing caulking	2% Asbestos
35. Exterior window glazing caulking	2% Asbestos
36. Exterior window glazing caulking	2% Asbestos
37. Exterior door framing caulking	2% Asbestos
38. Exterior door framing caulking	2% Asbestos
39. Exterior door framing caulking	2% Asbestos

Observations and Recommendations:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition, or other activity.

1. Pipe insulation was assumed to contain asbestos. The ACM was found at various locations within the school including crawl space and tunnels. ACM debris was found in the crawl space.
2. Soft ceiling plaster was previously found to contain asbestos. The ACM was found covered with fluffy spray-on insulation.
3. 9” x 9” Vinyl floor tile and mastic were previously found to contain asbestos. The ACM was found under carpet and other types of flooring materials with plywood.
4. Flexible duct connector was assumed to contain asbestos.
5. Blackboard/tackboard glue was assumed to contain asbestos.
6. Interior windows glazing caulking was found to contain asbestos.
7. Interior doors glazing caulking was found to contain asbestos.
8. Exterior window framing caulking was found to contain asbestos.
9. Exterior window glazing caulking was found to contain asbestos.
10. Exterior door framing caulking was found to contain asbestos.
11. Exterior transite panels were assumed to contain asbestos.
12. Transite sewer pipe was assumed to contain asbestos.
13. Damproofing on exterior and foundation walls was assumed to exist and assumed to contain asbestos. A Non-Traditional Work Plan will be required to be prepared and submitted to the DEP for approval prior to start of demolition.
14. Roofing material was assumed to contain asbestos. Roofing material does not have to be removed by a licensed asbestos contractor. However, the Demolition/Roofing Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.

15. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures:
Observations and Conclusions
Visual inspection of various equipment such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs, and switches were assumed to contain mercury. It would be very costly to test those equipment and dismantling would be required to access. Therefore, the above-mentioned equipment should be disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking:
Observations and Conclusions
Caulking was assumed to contain PCB's.

Lead Based Paint (LBP):
Observations and Conclusions
LBP was assumed to exit on painted surfaces. A school is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

Mercury in Rubber Flooring:
Observations and Conclusions:
No rubber flooring exists in the school.

Airborne Mold:
Airborne mold testing was performed utilizing Zefon International Incorporated's Air-O-Cell® sampling device following all manufacturer supplied recommended sampling procedures.

The Air-O-Cell® is a direct read total particulate air sampling device. It works using the inertial impaction principle similar to other spore trap devices. It is designed for the rapid collection and analysis of airborne particulate including bioaerosols. The particulate includes fibers (e.g. asbestos, fiberglass, cellulose, clothing fibers) opaque particles (e.g. fly ash, combustion particles, copy toner, oil droplets, paint), and bioaerosols (e.g. mold spores, pollen, insect parts, skin cell fragments).[1]

The method involves drawing a known quantity of air through a sterile sampling cassette. Subsequent to sampling, the cassette is sealed and transferred to a microbiology laboratory under chain of custody protocol for microscopic analysis. This method counts both viable and nonviable mold spores.

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M^3	Pollen	Insect Fragment	Hyphal Fragments
132306375-0001	Room 14	200	ND	ND	20
132306375-0002	Room 11	90	ND	ND	ND

[1] Zefon International Inc. www.zefon.com

Lab ID #	Location	Total Mold Counts/M^3	Pollen	Insect Fragment	Hyphal Fragments
132306375-0003	Room 8	ND	ND	ND	ND
132306375-0004	Teacher's Lounge	1,260	ND	ND	ND
132306375-0005	Multipurpose Room	210	ND	ND	ND
132306375-0006	Staff Conference Room	770	ND	ND	ND
132306375-0007	Room 2	1,000	ND	ND	ND
132306375-0008	Room 3	300	ND	ND	ND
132306375-0009	Room 6	320	ND	ND	ND
132306375-0010	Outside	4,590	ND	ND	40

AIRBORNE MOLD and PARTICULATE
(Subjective Scales)

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
132306375-0001	Room 14	1	1	1
132306375-0002	Room 11	1	1	1
132306375-0003	Room 8	1	1	1
132306375-0004	Teacher's Lounge	1	1	1
132306375-0005	Multipurpose Room	1	1	1
132306375-0006	Staff Conference Room	1	1	1
132306375-0007	Room 2	1	1	1
132306375-0008	Room 3	1	1	1
132306375-0009	Room 6	1	1	1
132306375-0010	Outside	-	1	1

Legend:
ND - Not Detected

Observations:
There are currently no guidelines or standards promulgated by a government agency or widely recognized scientific organization for the interpretation of airborne mold spore levels. The most commonly employed tool used to assess if mold growth is occurring in a structure is to compare quantities and species of mold outdoors to indoor. If there were more mold indoor, and/or if species were present indoor which were not present outdoors, then growth is occurring, and remediation is recommended.

Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered average. Indoor mold spore counts in the fall are typically in the 1,500-3,500-spores/cubic meter range.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as "1" on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as "1" on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Radon:
Number of Samples Collected
Ten (10) air samples were collected at the following locations:

Location of Sample

1. Room 14
2. Room 11
3. Room 8
4. Teacher's lounge
5. Multipurpose room
6. Staff conference room
7. Room 2
8. Room 3
9. Room 6
10. Library

Location of Sample	**Sample Result**
1. Room 14	1.1 pCi\L
2. Room 11	1.3 pCi\L
3. Room 8	1.6 pCi\L
4. Teacher's lounge	1.5 pCi\L
5. Multipurpose room	1.6 pCi\L
6. Staff conference room	1.5 pCi\L
7. Room 2	1.9 pCi\L
8. Room 3	2.0 pCi\L
9. Room 6	1.9 pCi\L
10. Library	1.4 pCi\L

Observations and Conclusions:
The measured radon concentrations of the samples were found to be much lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). No further action is required based on the results.

COST ESTIMATES:
The cost includes removal and disposal of all accessible ACM, other Asbestos Containing materials and an allowance for removal and disposal of inaccessible or hidden ACM that may be found during the demolition project.

Location	Material	Approximate Quantity	Cost Estimate ($)
Interior	Flooring Materials	18,000 SF	90,000.00
	Pipe and Hard Joint Pipe Insulation	5,000 LF	150,000.00
	Hidden Hard Joint Pipe Insulation	Unknown	12,500.00
	Debris/Soil in Crawl Space	20,000 SF	60,000.00
	Soft Ceiling Plaster	10,000 SF	90,000.00
	Windows	55 Total	11,000.00
	Doors	47 Total	9,400.00

Location	Material	Approximate Quantity	Cost Estimate ($)
	Flexible Connecters	6 Total	1,200.00
	Hardwood Flooring/Paper	900 SF	9,000.00
	Chalkboards/Tackboards	42 Total	16,800.00
	Miscellaneous Hazardous Materials	Unknown	25,000.00
Exterior	Windows	230 Total	69,000.00
	Doors	15 Total	4,500.00
	Transite Panels	30 SF	900.00
	Transite Sewer Pipes	Unknown[1]	50,000.00
	Damproofing on Walls	2,000 Tons[1]	500,000.00
	Roofing Materials	Unknown	75,000.00
Estimated costs for NESHAP Inspection and Testing Services			17,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			153,700.00
		TOTAL:	***1,350,000.00***
		TOTAL:	***1,550,000.00***[2]

[1]: Part of total demolition and site work.

[3]: Work to be Performed by a C.M at Risk Contractor.

DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA /600/R-93/116 method.

Airborne Mold:

The samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

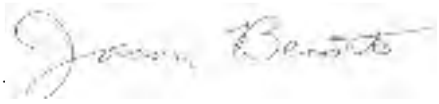
Radon:

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

LIMITATIONS AND CONDITIONS:
This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state, and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:



_____

Jason Becotte
Asbestos Inspector

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 22367

NVLAP®
Lab Code: 200919-0

May 19, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Wildwood School, Wilmington, MA

Date Sampled: 2017-05-12
Work Received: 2017-05-17
Work Analyzed: 2017-05-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

May 19, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Wildwood School, Wilmington, MA

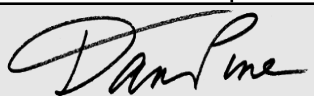
Date Sampled: 2017-05-12
Work Received: 2017-05-17
Work Analyzed: 2017-05-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 252183	Fluffy Spray-On Ceiling	OT PT Room	white	Cellulose 95 Non-Fibrous 5	None Detected
2 / 252184	Fluffy Spray-On Ceiling	Room 1	white	Cellulose 95 Non-Fibrous 5	None Detected
3 / 252185	Fluffy Spray-On Ceiling	Room 7	white	Cellulose 95 Non-Fibrous 5	None Detected
4 / 252186	Fluffy Spray-On Ceiling	Room 10	white	Cellulose 95 Non-Fibrous 5	None Detected
5 / 252187	Fluffy Spray-On Ceiling	Hall by Office	white	Cellulose 95 Non-Fibrous 5	None Detected
6 / 252188	Fluffy Spray-On Ceiling	Hall by Kitchen	white	Cellulose 95 Non-Fibrous 5	None Detected
7 / 252189	Fluffy Spray-On Ceiling	Hall by Room 8	white	Cellulose 95 Non-Fibrous 5	None Detected
8 / 252190	Wall Plaster	Hall by Room 8	multi	Non-Fibrous 100	None Detected
9 / 252191	Wall Plaster	Hall by Office	multi	Non-Fibrous 100	None Detected
10 / 252192	Wall Plaster	Hall by Kitchen	white	Non-Fibrous 100	None Detected
11 / 252193	Wall Plaster	Hall by Room 4	multi	Non-Fibrous 100	None Detected
12 / 252194	Wall Plaster	Hall by Room 5	white	Non-Fibrous 100	None Detected
13 / 252195	Hard Smooth Ceiling Plaster	Storage by Room 5	multi	Non-Fibrous 100	None Detected
14 / 252196	Hard Smooth Ceiling Plaster	Girls Bathroom	multi	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
15 252197	Hard Smooth Ceiling Plaster	Storage by Room 7	multi	Non-Fibrous 100	None Detected

Friday 19 May 2017 End of Report

Analyzed by: 

Batch: 22367

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM
48-hour TAT

Town/City: Wilmington, MA Building Name Wildwood School

Sample	Result	Description of Material	Sample Location
1		Fluffy Spray-on ceiling	OT PT Room
2			Room 1
3			Room 7
4			Room 10
5			Hall bg office
6			Hall bg kitchen
7			Hall bg room 8
8		Wall Plaster	Hall bg room 8
9			Hall bg office
10			Hall bg kitchen
11			Hall bg Room 4
12			Hall bg Room 5
13		Hard Smooth ceiling plaster	Storage bg room 5
14			Girls bathroom
15			Storage bg room 7

Reported By: Jason Becotte Date: 5-13-17 Due Date: ____

Received By: Adam Bitter Date: 5/17/17

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 22592

NVLAP®
Lab Code: 200919-0

May 26, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Wildwood School, Wilmington MA

Date Sampled: 2017-05-25
Work Received: 2017-05-25
Work Analyzed: 2017-05-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

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- Massachusetts Certification License: AA000208
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- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

May 26, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Wildwood School, Wilmington MA

Date Sampled: 2017-05-25
Work Received: 2017-05-25
Work Analyzed: 2017-05-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 254962	1 X 1 Acoustical Wall Tile	Room 2	brown	Cellulose 98 Non-Fibrous 2	None Detected
2 / 254963	1 X 1 Acoustical Wall Tile	Room 6	brown	Cellulose 95 Non-Fibrous 5	None Detected

Friday 26 May 2017
Analyzed by: Michael Thomas

End of Report

Batch: 22592

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM
24-hour TAT

Town/City: Wilmington, MA Building Name Wildwood School

Sample	Result	Description of Material	Sample Location
1		1x1 acoustical wall tile	Room 2
2		1 1	Room 6

Reported By: Jason Beaulieu Date: 5-25-17 Due Date:

Received By: Date: 5/25/17

OrderID: 132204181

132204181

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM

24-hour TAT

Town/City: Wilmington, MA Building Name Wildwood School

Sample	Description of Material	Sample Location
1	9x9 VFT	Cafeteria
2	" "	Hallway by Room 6
3	Black mastic	on # 1
4	" "	on # 2
5	Cork 9x9 Tile	Library
6	" "	" "
7	Brown mastic	" "
8	" "	" "
9	Gray 12x12 VFT	Hallway 7-14
10	" "	" "
11	Black mastic	" "
12	" "	" "
13	Brown 12x12 VFT	Custodian closet by Room 7
14	" "	Custodian closet by nurse
15	Black mastic	on #13
16	" "	on #14
17	Black paper under Hardwood	Stage
18	" "	" "
19	2x4 AT wall	Room 2
20	" "	" "

Reported By: Jason Becotte Date: 6-16-22 Due Date: **24-Hours**

Received By: Date:

REC'D EMSI - BOSTON JUN 17 2022

OrderID: 132204181

132204181

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM

Town/City: Wilmington, MA Building Name Wildwood School

Sample	Description of Material	Sample Location
21	masonite wallpanel Glue	Room 11
22	"	Principal office
23	1x1 wall AT Glue daub	Room 8
24	"	Room 1
25	Countertop Laminate	Room 11
26	"	Room 1
27	Interior door glass glaze	Principal
28	"	Room 13
29	Interior window glaze	Lobby
30	"	Hallway 7-14
31	window frame caulk	Exterior window
32	"	"
33	"	"
34	window Glass Glaze	"
35	"	"
36	"	"
37	Door Frame Caulk	Exterior door
38	"	"
39	"	"

Reported By: Jason Beaulieu Date: 6-16-22 Due Date: **24-Hours**

Received By: Date:

REC'D EMSL-BOSTON JUN 17 2022

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	132204181
Customer ID:	UEC63
Customer PO:	
Project ID:	

Attention:	Jason Becotte	**Phone:**	(603) 682-8109
	Universal Environmental Consultants	**Fax:**	(508) 628-5488
	12 Brewster Road	**Received Date:**	06/17/2022 11:20 AM
	Framingham, MA 01702	**Analysis Date:**	06/21/2022
		Collected Date:	06/16/2022
Project:	Wilmington MA / Wildwood School		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1 *132204181-0001*	Cafeteria - 2x2 VFT	Gray Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
2 *132204181-0002*	Hallway by Room 6 - 2x2 VFT	Gray Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
3 *132204181-0003*	On #1 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
4 *132204181-0004*	On #2 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
5 *132204181-0005*	Library - Cork 9x9 Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
6 *132204181-0006*	Library - Cork 9x9 Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
7 *132204181-0007*	Library - Brown Mastic	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
8 *132204181-0008*	Library - Brown Mastic	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
9 *132204181-0009*	Hallway 7-14 - Gray 12x12 VFT	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
10 *132204181-0010*	Hallway 7-14 - Gray 12x12 VFT	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
11 *132204181-0011*	Hallway 7-14 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
12 *132204181-0012*	Hallway 7-14 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
13 *132204181-0013*	Custodian Closet by Room 7 - Brown 12x12 VFT	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
14 *132204181-0014*	Custodian Closet by Nurse - Brown 12x12 VFT	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
15 *132204181-0015*	On #13 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
16 *132204181-0016*	On #14 - Black Mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 06/21/2022 16:09:56

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Tel/Fax: (781) 933-8411 / (781) 933-8412
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EMSL Order: 132204181
Customer ID: UEC63
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
17 *132204181-0017*	Stage - Black Paper Under Hardwood	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
18 *132204181-0018*	Stage - Black Paper Under Hardwood	Black Non-Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
19 *132204181-0019*	Room 2 - 2x4 AT Wall	Gray/White Fibrous Homogeneous	50% Cellulose 35% Min. Wool	15% Non-fibrous (Other)	None Detected
20 *132204181-0020*	Room 2 - 2x4 AT Wall	Gray/White Fibrous Homogeneous	50% Cellulose 35% Min. Wool	15% Non-fibrous (Other)	None Detected
21 *132204181-0021*	Room 11 - Masonite Wall Panel Glue	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
22 *132204181-0022*	Principle Office - Masonite Wall Panel Glue	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
23 *132204181-0023*	Room 8 - 1x1 Wall AT Glue Daub	Brown Non-Fibrous Homogeneous	2% Fibrous (Other)	98% Non-fibrous (Other)	None Detected
24 *132204181-0024*	Room 1 - 1x1 Wall AT Glue Daub	Brown Non-Fibrous Homogeneous	2% Fibrous (Other)	98% Non-fibrous (Other)	None Detected
25 *132204181-0025*	Room 11 - Countertop Laminate	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
26 *132204181-0026*	Room 1 - Countertop Laminate	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
27 *132204181-0027*	Principle - Interior Door Glass Glaze	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
28 *132204181-0028*	Room 13 - Interior Door Glass Glaze	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
29 *132204181-0029*	Lobby - Interior Window Glaze	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
30 *132204181-0030*	Hallway 7-14 - Interior Window Glaze	White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
31 *132204181-0031*	Exterior Window - Window Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
32 *132204181-0032*	Exterior Window - Window Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
33 *132204181-0033*	Exterior Window - Window Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
34 *132204181-0034*	Exterior Window - Window Glass Glaze	White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
35 *132204181-0035*	Exterior Window - Window Glass Glaze	White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile

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EMSL Order: 132204181
Customer ID: UEC63
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
36 *132204181-0036*	Exterior Window - Window Glass Glaze	White Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
37 *132204181-0037*	Exterior Door - Door Frame Caulk	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
38 *132204181-0038*	Exterior Door - Door Frame Caulk	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
39 *132204181-0039*	Exterior Door - Door Frame Caulk	Tan Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile

Analyst(s)
John McCarthy (39)

Steve Grise, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, ME LB-0039

Initial report from: 06/21/2022 16:09:56

OrderID: 132306375

UEC universal environmental consultants
12 Brewster Road
Framingham, MA 01702
Phone: 508.628.5486
Fax: 508.628.5488

132306375

CHAIN OF CUSTODY

BUILDING / SITE NAME: Wildwood Elementary
WORK AREA:
TOWN / CITY: Wilmington
STATE: MA

Analysis Type	Turnaround Time (x) 6-8 Hr	12 Hr	24 Hr	48 Hr	72 hr
TEM / AHERA					
TEM / Level II					
TEM / Dust					
TEM / Bulk					
TEM / Water					
PLM					
Mold			X		
Other:					

Specific Project Notes

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	START	STOP	TIME	L/MIN	VOLUME
1	3517 3769	Room 14	11:09	11:19	10	15	150
2	3517 3766	Room 11	11:16	11:26	10	15	150
3	3517 3767	Room 8	11:24	11:34	10	15	150
4	3517 3772	Teachers Lounge	11:29	11:39	10	15	150
5	3517 3785	Multipurpose Room	11:41	11:51	10	15	150
6	3517 3779	Staff Conference Room	11:42	11:52	10	15	150
7	3517 3789	Room 2	11:53	12:03	10	15	150
8	3517 3745	Room 3	11:55	12:05	10	15	150
9	3517 3760	Room 6	12:07	12:17	10	15	150
10	3517 3768	Outside	12:34	12:44	10	15	150

SAMPLED BY: Sydney Farrie DATE/TIME: 10/3/23 12:52PM
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:
RECEIVED IN LAB BY: DATE/TIME:

REC'D EMSL-BOSTON OCT 03 2023

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EMSL Order: 132306375
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/03/2023 01:55 PM
Analyzed Date: 10/04/2023

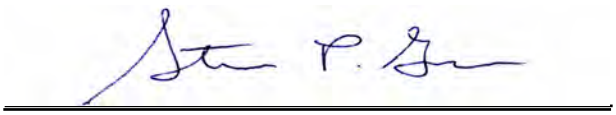
Project: Wildwood Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306375-0001			132306375-0002			132306375-0003		
Client Sample ID:	1			2			3		
Volume (L):	150			150			150		
Sample Location:	Room 14			Room 11			Room 8		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	20	10	-	-	-	-	-	-
Aspergillus/Penicillium	5	100	50	-	-	-	-	-	-
Basidiospores	2	40	20	4	90	100	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	20	10	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1	20	10	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	**10**	**200**	**100**	**4**	**90**	**100**	**-**	**None Detect**	**-**
Hyphal Fragment	1	20	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded, prohibiting accurate detection and quantification). High levels of background will obscure spores and other particulates, leading to underestimation. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 10/04/2023 12:41 PM

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EMSL Order: 132306375
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project: Wildwood Elementary; Wilmington, MA

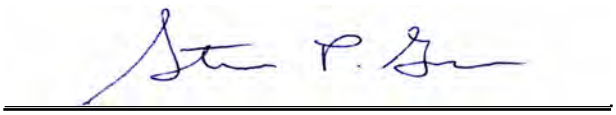
Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/03/2023 01:55 PM
Analyzed Date: 10/04/2023

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306375-0004			132306375-0005			132306375-0006		
Client Sample ID:	4			5			6		
Volume (L):	150			150			150		
Sample Location:	Teachers Lounge			Multi Purpose Room			Staff Conference Room		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	1	20	9.5	1	20	2.6
Aspergillus/Penicillium	19	410	32.5	5	100	47.6	7	100	13
Basidiospores	37	790	62.7	4	90	42.9	22	470	61
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	3	60	7.8
Curvularia	-	-	-	-	-	-	1	20	2.6
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	1	20	1.6	-	-	-	3	60	7.8
Myxomycetes++	2	40	3.2	-	-	-	2	40	5.2
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	**59**	**1260**	**100**	**10**	**210**	**100**	**39**	**770**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

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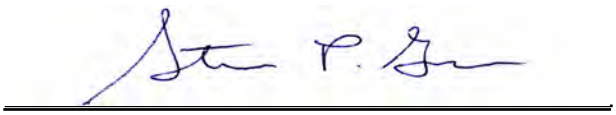
Collected Date: 10/03/2023
Received Date: 10/03/2023 01:55 PM
Analyzed Date: 10/04/2023

Project: Wildwood Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306375-0007			132306375-0008			132306375-0009		
Client Sample ID:	7			8			9		
Volume (L):	150			150			150		
Sample Location:	Room 2			Room 3			Room 6		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	1	20	6.3
Aspergillus/Penicillium	28	600	60	6	100	33.3	8	200	62.5
Basidiospores	9	200	20	9	200	66.7	2	40	12.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	8	200	20	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	3	60	18.8
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	**45**	**1000**	**100**	**15**	**300**	**100**	**14**	**320**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



Steve Grise, Laboratory Manager
or other Approved Signatory

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Initial report from: 10/04/2023 12:41 PM

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Analyzed Date: 10/04/2023

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	**132306375-0010**		
Client Sample ID:	**10**		
Volume (L):	**150**		
Sample Location:	**Outside**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	3	60	1.3
Ascospores	-	-	-
Aspergillus/Penicillium	3	60	1.3
Basidiospores	159	3390	73.9
Bipolaris++	1	20	0.4
Chaetomium++	-	-	-
Cladosporium	22	470	10.2
Curvularia	-	-	-
Epicoccum	4	90	2
Fusarium++	-	-	-
Ganoderma	5	100	2.2
Myxomycetes++	18	380	8.3
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Spegazzinia	1	20	0.4
Total Fungi	**216**	**4590**	**100**
Hyphal Fragment	2	40	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	21	-
Analyt. Sensitivity 300x	-	7*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	1	-
Background (1-5)	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager
or other Approved Signatory

Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded, prohibiting accurate detection and quantification). High levels of background will obscure spores and other particulates, leading to underestimation. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 10/04/2023 12:41 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

EPA Method #402-R-92-004
Liquid Scintillation
NRPP Device Code 8088
NRSB Device Code 12193

Laboratory Report for:

Universal Environmental Consultant
12 Brewster Road
Framingham MA 01702

Property Tested:

Wildwood Elementary
182 Wildwood Street
Wilmington MA 01887

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
8431114	4963288	10/03/2023	12:37 pm	10/06/2023	10:06 am	Room 14	1.1
8431115	4963289	10/03/2023	12:36 pm	10/06/2023	10:05 am	Room 11	1.3
8431116	4963290	10/03/2023	12:35 pm	10/06/2023	10:04 am	Room 8	1.6
8431117	4963291	10/03/2023	12:17 pm	10/06/2023	10:04 am	Teachers Lounge	1.5
8431118	4963292	10/03/2023	12:18 pm	10/06/2023	9:58 am	Multipurpose Room	1.6
8431119	4963293	10/03/2023	12:16 pm	10/06/2023	10:00 am	Staff Conference Room	1.5
8431120	4963378	10/03/2023	12:05 pm	10/06/2023	10:01 am	Room 2	1.9
8431121	4963379	10/03/2023	12:08 pm	10/06/2023	10:01 am	Room 3	2.0
8431122	4963380	10/03/2023	12:07 pm	10/06/2023	10:02 am	Room 6	1.9
8431123	4963381	10/03/2023	12:15 pm	10/06/2023	9:59 am	Library	1.4

Comment: Universal Environmental Consultant was emailed a copy of this report. A copy of this report was emailed to adieb@uec-env.com.

Test Performed By: Placed: Sydney Towne Retrieved: Sydney Towne

Distributed by: Universal Environmental Consultant

Date Received: 10/06/2023 Date Logged: 10/06/2023 Date Analyzed: 10/07/2023 Date Reported: 10/09/2023

Report Reviewed By: Elizabeth Negre Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

The counting uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interferences with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Laboratory personnel were not involved in the placement or retrieval of the samples. Analytical results relate to the samples as received by the laboratory. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

WOBURN STREET SCHOOL – EXISTING SITE CONDITIONS

Property Data

Address: 227 Woburn Street
Wilmington, MA 01887

Use:	Grades 1-3 Elementary School
Site Area:	10 Acres
Date Built:	1963
Renovations:	NA
Additions:	1968
Occupancy Group:	Educational
Construction Class:	II-B
Zoning District:	R20, Municipal Open Space, Ground Water Protection District (Zone II Wellhead Protection Area)

Building Data

No. of Floors:	Main Floor, Lower level, Upper Level
Gross Area:	53,771 +/- GSF
Foundation / Frame:	Cast-in-place Concrete
Exterior Walls:	Masonry with uninsulated masonry back-up.
Sprinklers:	None
HVAC:	Oil fueled hot water plant; unit ventilators.
Sewer:	On Site Septic System

Introduction

The purpose of this section is to report on and analyze – the condition of the existing building and systems in order to identify what is in acceptable condition via current building codes, best practices, accessibility, and where there may be deficiencies. The assessments are based on site visits by the design team in conjunction with Town and School staff, as well as facilities maintenance personnel. There were no intrusive investigations or test openings performed as part of this review. Given the era the building was constructed, previous Hazardous Materials reports on file, as well as observations by the design team consultant – some materials are known to exist and others are assumed to be uncovered during construction and / or demolition.

General

The Woburn Street School is one of (6) elementary schools in Wilmington. The Woburn Street School is in similar condition to Wildwood ECC – in that only preventative maintenance and repairs have been made in the last 50 years but for its age and construction type is in fair condition. The accessibility issues and exterior envelop, including lack of thermal insulation and windows, are among the challenges. Infrastructure is functioning but in need of replacement as systems are antiquated and inefficient.

Legal Title to the Property / Determination of Development Restrictions

The Town of Wilmington has legal title to the property and the property is available for development with no restrictions. The deed and associated legal back up is included in Appendix Section X.08

Historic Registrations / Preservation

The Woburn Street School is not listed on the Town's Historic Bylaw register. The building is not historically or architecturally significant.

Soils Exploration & Geotechnical Evaluation

A preliminary Soils Resource Report is provided in Section 3.1.4.C.1- Civil Assessment. Further soils exploration and geotechnical investigation of the Woburn Street site will occur if the site is selected as the preferred option in the Schematic Design Phase. Soils will be tested for permeability for stormwater management design. The size of the parcels and potential new school will merit detailed geotechnical investigation.

Impact of Preliminary Findings on Alternatives

The Woburn Street site is large enough to construct a new school building, parking, playgrounds and some open space. New Construction will have some disruption, especially to site access and circulation as both access points for the site are from Woburn Street. Adding to, and renovating the existing building is problematic and costly due to phasing and / or swing space required and disruption to instruction.

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EXISTING CONDITIONS: CIVIL/SITE

EXECUTIVE SUMMARY

CDW Consultants has performed an assessment of the existing site conditions at the Woburn Street School located at 227 Woburn Street in Wilmington, Massachusetts. This assessment included a site visit on July 26, 2023, and a review of the following drawings/documents:

- Record site, utility, and building drawings provided by the Client;
- 2008 Master Planning Study;
- 2018 Facility Master Plan Report;
- Town of Wilmington Assessor's Maps; and
- Mass Geographic Information System (GIS) Data/Maps.

GENERAL SITE CONDITIONS

The Woburn Street School property at 227 Woburn Street is 10.0 acres and has approximately 875 feet of frontage on Woburn Street. The site borders residential properties to the south, west, and north. A residential property to the north appears to include a small pond or wet area, per the Town's GIS maps. However, this area is not included on the Town's Wetland GIS layers. The Woburn Street School building contains approximately 53,540 square feet and houses roughly 400 Grades 1-3 students. See Figure 1 for the Aerial Locus Map and Figure 2 for the USGS Locus Map.

Vehicular access to the site consists of a curb cut on Woburn Street, and two additional curb cuts on High Street. The northern most curb cut on High Street, is an entrance/exit driveway. Just south of the northern most driveway, still on High Street, is the entrance to a loop road that runs north to south along the front of the school, exiting onto Woburn Street.

A sidewalk on the east side of Woburn Street is connected via a crosswalk at the loop road exit to the sidewalk that runs along the west side of the street at the front of the school. The east side sidewalk extends further north down High Street.

There are three striped parking lots on the property. Parking Lot #1 is located south of the building and adjacent to the exit driveway, it contains 10 standard parking spaces. Parking Lot #2 is located to the west, behind the building, and contains 25 standard parking spaces. The third parking area contains two handicap parking spaces, near the front entrance, on the opposite side of the loop road. Additionally, north of the building, between the building and the fenced tennis/basketball court(s), is a large paved area that appears to be used as a play area, and vehicle drop offs.

Asphalt pavement in the parking areas, driveways and play areas are in good condition overall. There are two asphalt sidewalk areas to the west of the site behind the building, that lead to

playground areas and the grass athletic fields that are in poor condition. Additionally, the sidewalk leading to the grass athletic fields has an area with an eroded grass slope, likely due to a concentration of stormwater runoff. Asphalt pavement in the basketball and tennis courts is in good condition.

The front of the school, at the main entrance and loop road, generally slopes towards Woburn Street, while the remainder of the site slopes to the west, toward the grassed athletic fields.

Image 1 – Northern Driveway

Image 2 – North Entrance Driveway

Image 3 – Exit Driveway onto Woburn Street

Image 4 – Parking Lot #1 – West View

Image 5 – Parking Lot #2 – South View

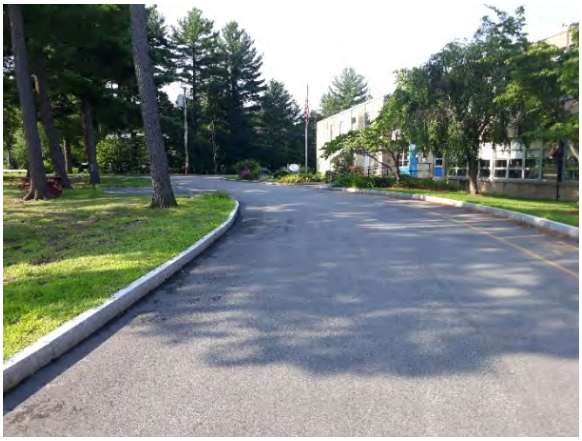


Image 6 – Parking Lot #3 – Handicap Spaces

Image 7 – North Pavement Area

Image 8 – Sidewalk to Playground

Image 9 – Sidewalk to Athletic Fields

Image 10 – Eroded Area along Sidewalk to Athletic Field

Image 11 – Basketball/ Tennis Courts

SITE UTILITIES

WATER

Water service to the building is provided by a 2-1/2 inch domestic water line off the 10" water main in the street. There is an existing fire hydrant by the entrance to the loop road. The building does not have an automatic sprinkler system.

SEWER

According to the Wilmington Facility Master Plan Study done in 2018, a new septic system including a grease interceptor, was recently installed. However, plans for this recent system have not been provided for review. The original septic system exited the west side of the building to a septic tank and then went to the on-site sewage infiltration system located under the athletic fields.

STORM DRAINAGE

There is limited storm drainage infrastructure onsite, primarily consisting of onsite leaching catch basins. It is assumed that some stormwater runoff flows to the west and on to the grassed athletic field. Runoff from the northern paved area has caused some erosion of the grass slope as previously mentioned. According to the Wilmington GIS database, a depression (BMP) is located on the southeast corner of the site, which seems to collect some water from the exit loop road and from a section of Woburn Street through a catch basin that has an outlet to the BMP.

GAS/OIL

There does not appear to be a gas service onsite or in Woburn Street. The building is heated with No. 2 fuel oil, which is stored in a 10,000-gallon storage tank.

ELECTRIC/TELECOM

Electric and telecom service to the building is provided via overhead lines from utility poles on Woburn Street. See the MEP section for additional information on the electric and telecom services.

Image 12 – Fire Hydrant

Image 13 – Utility Pole – West View

Image 14 – Utility Pole – East View

Image 15 – Drainage Structures on Paved Area

SOILS

The site soils consist primarily of Udorthents (sandy) with Hinckley loamy sand areas to the north, and Birchwood fine sandy loam to the south. To the east and west soil maps indicate Charlton-Hollis Rock outcrop soils. The Udorthents (sandy) soil does not have a hydrologic soil group designation due to its variation as a fill material, slopes range from 0 to 15 percent, and depth to water table is more than 80 inches.

Hinckley loamy sand is a Hydrological Group A soil, (fast infiltration rate), is excessively drained, slopes range from 3 to 8 percent, and depth to water table is more than 80 inches. The Birchwood fine sandy loam is a Hydrologic Soil Group A/D, with intermittent areas of soil with both fast (Group A) and slow (group D) infiltration rates, is moderately well drained, slopes range from 3 to 8 percent, and depth to water table is 18 to 24 inches. The Charlton Soils within the Charlton-Hollis Rock outcrop complex soil is a Hydrologic Soil Group A (fast infiltration rate), is well drained, slopes range from 3 to 8 percent, and depth to water table is more than 80 inches. The Hollis portions of the outcrop complex portion is a Hydrologic Soil Group D (slow infiltration rate), is well drained, slopes range from 3 to 8 percent, and depth to water table is more than 80 inches. Soil maps are included with this report.

Specific Issues	Recommendations
Asphalt pavement for rear sidewalks is in poor condition.	Replace asphalt sidewalks. (2,200 sq.ft.)
Erosion occurring at sidewalk down to grassed athletic field.	Consider adding addition drainage structures to capture and control the runoff. Or provide erosion protection to the affected area. (200 sq.ft.)
Crosswalk signage and stripping missing on entrance of loop road.	Provide crosswalk signage and stripping. (70-ft long crosswalk, 2 signs)
Existing septic system	Inspect the existing septic system to confirm compliance with 310 CMR 15.00 (Massachusetts State Environmental Code, Title V) and the Wilmington Board of Health Regulations. Upgrade the system as needed to meet the regulations and/or to support any building expansion.

Building lacks a sprinkler system.	Assuming a sprinkler system will be required, provide fire protection service to the building with a new cement-lined ductile iron pipe and a dedicated gate valve. (150-ft)
One fire hydrant is provided.	Assess in coordination with the Wilmington Fire Department if any additional site fire hydrants are required.
General stormwater operations practices:	Establish a stormwater operations and maintenance plan for the site/property.
New development or impervious area:	The addition of new impervious areas, either pavement or building roof, may require stormwater best management practices (BMPs) to mitigate impacts. Those BMPs would need to be designed to meet the MassDEP Stormwater Management Standards, including requirements for discharges to Zone II Wellhead Protection Areas.

PERMITTING

Town of Wilmington Zoning Bylaw

The property is in a Residence 20 (R20) zoning district. The north portion of the site falls within a Groundwater Protection District (Zone II, Wellhead Protection Area). The Zoning Bylaw indicates that Educational use in a R20 zoning district does not require Site Plan Review. This assumption should be confirmed with the Planning Department. Any work within the Groundwater Protection District would need to comply with the requirements of Section 6.6 of the Zoning Bylaw and the MassDEP Stormwater Management Standards. See Figure 3 for the Zone II Wellhead Protection Area Map.

Wetland Protection Act (310 CMR 10.00) and Town of Wilmington Wetlands Enforcement Bylaw and Policies

The Wetlands Protection Act ensures the protection of Massachusetts' inland and coastal wetlands, tidelands, great ponds, rivers, and floodplains. It regulates activities in coastal and wetland areas and contributes to the protection of ground and surface water quality, the prevention of flooding and storm damage, and the protection of wildlife and aquatic habitat. The Town of Wilmington also has a Wetlands Enforcement Bylaw and Policies which establish additional requirements for work that will impact a wetland resource area. The Policy includes a 25-foot "No Structure" zone and a 15-foot "No Disturbance" zone around all jurisdictional wetland resource areas except for land subject to flooding (100-year floodplain).

Based on MassGIS data as well as Wilmington's GIS information data there are no adjacent regulated wetland areas on or adjacent to the site.

Natural Heritage and Endangered Species Program

A review of the 15th Edition of the Massachusetts Natural Heritage Atlas prepared by the Natural Heritage and Endangered Species Program (NHESP), dated August 1, 2021, indicates that the site is NOT a Priority Habitat of Rare Species or an Estimated Habitat of Rare Wildlife. Therefore, any redevelopment or new construction would not trigger a permit through the NHESP. See Figure 5 for the NHESP Map.

Floodplain

Floodplain information was obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) community map number 25017C0284E, effect date June 4, 2010. The site is within a Zone X, which is identified as an area outside of the 0.2% chance (500-year) annual floodplain. Therefore, any redevelopment or new construction would not trigger a permit with respect to the floodplain. See Figure 6 for the FEMA Flood Hazard Map.

ATTACHMENTS:

Figure 1 – Aerial Locus Map

Figure 2 – USGS Locus Map

Figure 3 – Zone II Wellhead Protection Area Map

Figure 4 – MassDEP Wetlands Map

Figure 5 – NHESP Map

Figure 6 – FEMA Flood Hazard Map

Soil Report

CDW CONSULTANTS, INC.

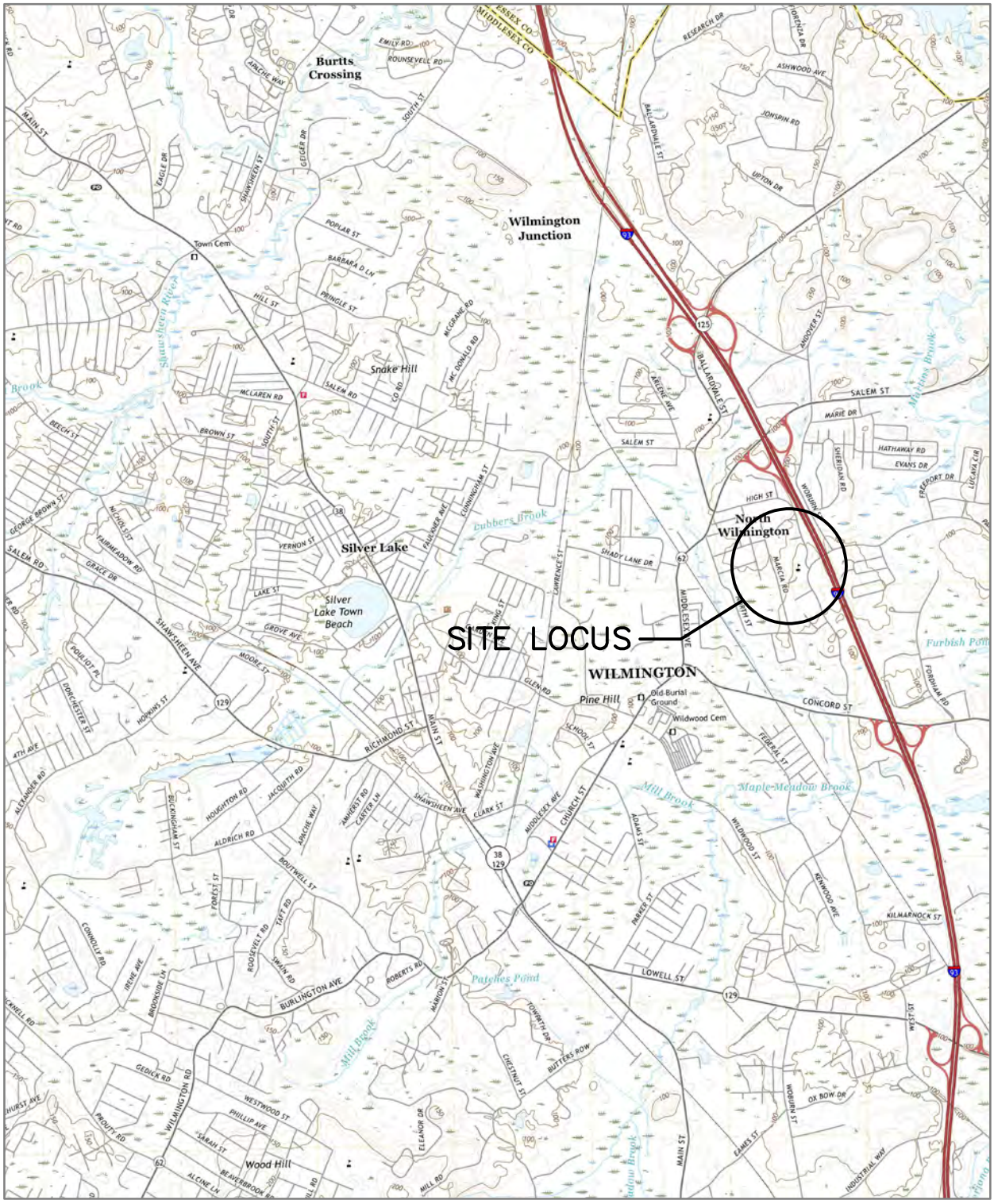
AERIAL LOCUS MAP

WOBURN STREET SCHOOL
227 WOBURN STREET
WILMINGTON, MA 01887

N

DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS



CDW CONSULTANTS, INC.

USGS LOCUS MAP

WOBURN STREET SCHOOL
227 WOBURN STREET
WILMINGTON, MA 01887

N

DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS

Zone II Wellhead Protection Area Map

Zone IIs

MassDEP Wetlands Map

DEP Wetlands Detailed With Outlines

- Barrier Beach System
- Barrier Beach-Deep Marsh
- Barrier Beach-Wooded Swamp Mixed Trees
- Barrier Beach-Coastal Beach
- Barrier Beach-Coastal Dune
- Barrier Beach-Marsh
- Barrier Beach-Salt Marsh
- Barrier Beach-Shrub Swamp
- Barrier Beach-Wooded Swamp Coniferous
- Barrier Beach-Wooded Swamp Deciduous
- Bog
- Coastal Bank Bluff or Sea Cliff
- Coastal Beach
- Coastal Dune
- Cranberry Bog
- Deep Marsh
- Barrier Beach-Open Water
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Shrub Swamp
- Tidal Flat
- Wooded Swamp Coniferous
- Wooded Swamp Deciduous
- Wooded Swamp Mixed Trees

Property Tax Parcels

Natural Heritage and Endangered Species Program NHESP Map

NHESP Certified Vernal Pools

NHESP Priority Habitats of Rare Species

NHESP Natural Communities

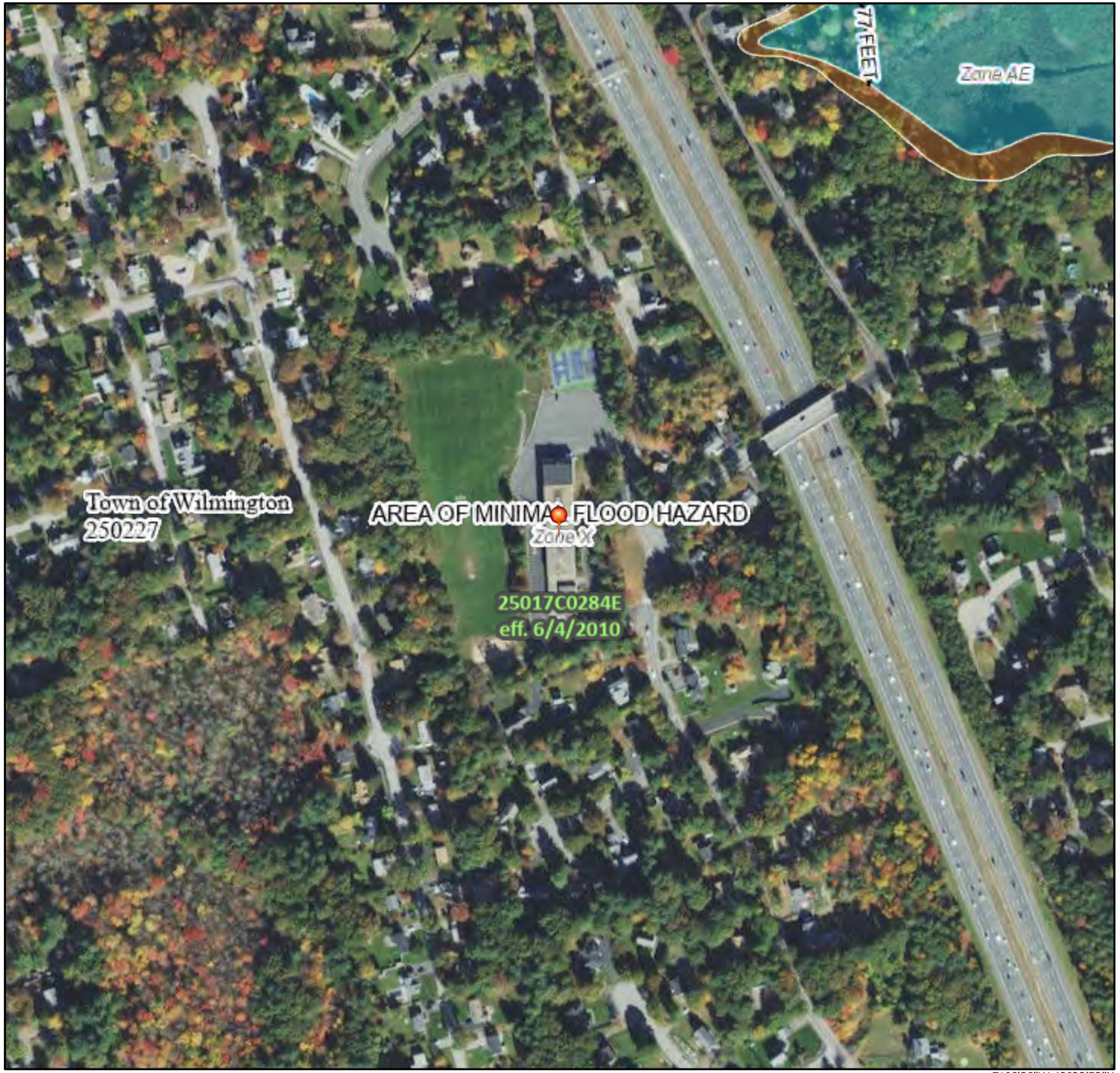
NHESP Estimated Habitats of Rare Wildlife

Potential Vernal Pools

National Flood Hazard Layer FIRMette

FEMA

71°9'15"W 42°34'20"N



71°8'38"W 42°33'53"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 / 17.5 Cross Sections with 1% Annual Chance / 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 8/1/2023 at 11:26 AM 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.

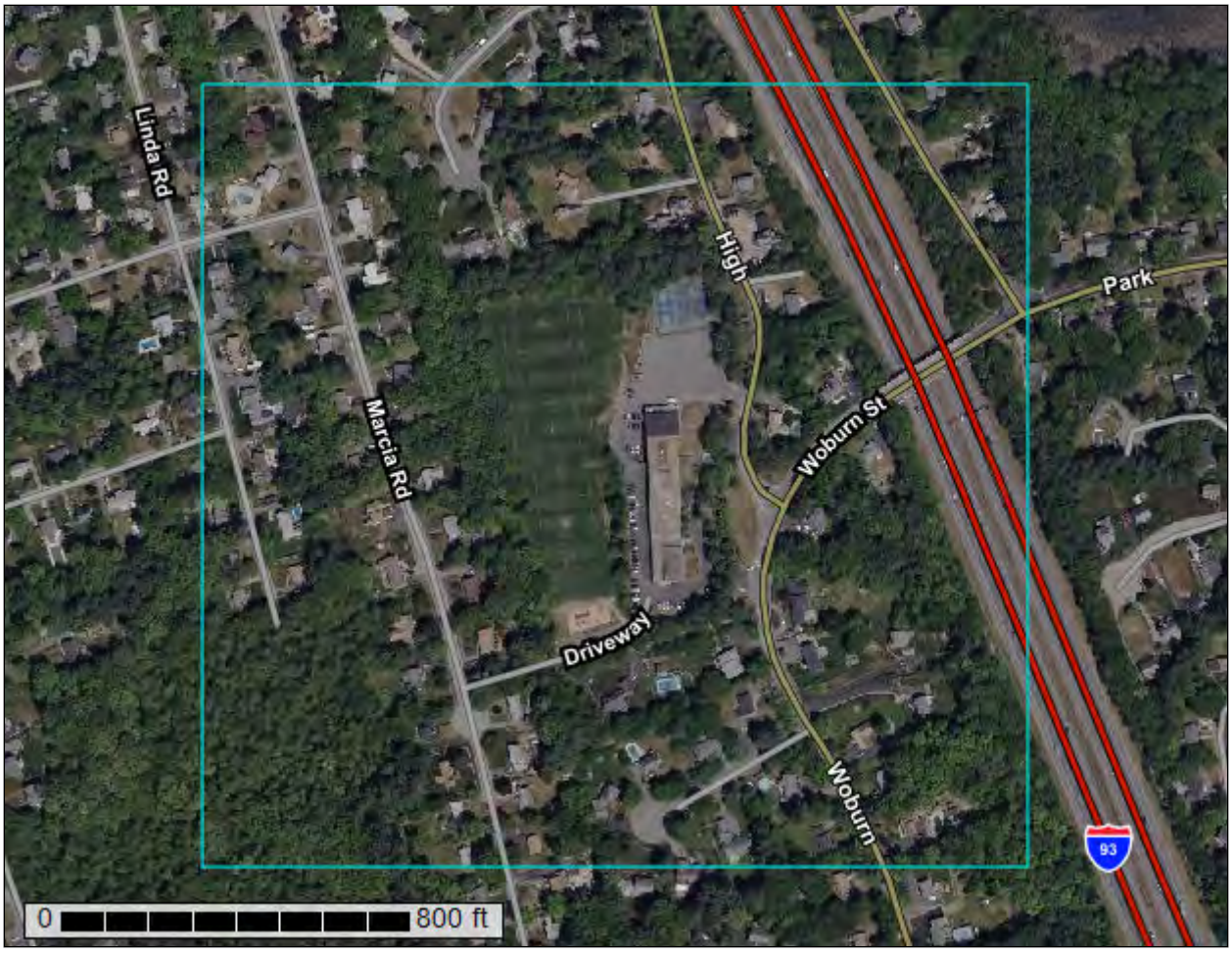
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



July 31, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:4,620 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
52A	Freetown muck, 0 to 1 percent slopes	7.9	10.1%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	27.6	35.4%
253B	Hinckley loamy sand, 3 to 8 percent slopes	5.7	7.3%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	0.1	0.2%
302B	Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony	10.9	13.9%
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	1.9	2.4%
320B	Birchwood fine sandy loam, 3 to 8 percent slopes	7.5	9.6%
420B	Canton fine sandy loam, 3 to 8 percent slopes	2.1	2.6%
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	0.7	0.8%
653	Udorthents, sandy	7.7	9.9%
656	Udorthents-Urban land complex	6.1	7.8%
Totals for Area of Interest		**78.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

52A—Freetown muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2q9
Elevation: 0 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Freetown and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Depressions, depressions, swamps, kettles, marshes, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Whitman

Percent of map unit: 5 percent
Landform: Drainageways, depressions

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 5 percent
Landform: Bogs, swamps, marshes, depressions, depressions, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

103B—Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 98yc
Elevation: 0 to 1,490 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton and similar soils: 50 percent
Hollis and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Ground moraines, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Hollis

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable, shallow loamy basal till over granite and gneiss

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Granite and gneiss

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Minor Components

Canton

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Narragansett

Percent of map unit: 2 percent
Landform: Hills, ridges
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, toeslope
Landform position (three-dimensional): Head slope, nose slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scituate

Percent of map unit: 2 percent
Landform: Depressions, hillslopes
Landform position (two-dimensional): Summit, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Montauk

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Head slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent

253B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, kames, kame terraces, moraines, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, moraines, outwash plains, kame terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope, base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

256B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, outwash plains, kame terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

302B—Montauk fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w80t
Elevation: 30 to 1,120 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Montauk, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Extremely Stony

Setting

Landform: Ground moraines, drumlins, recessionial moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, extremely stony

Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, extremely stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear

Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 2 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

302C—Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w80s
Elevation: 0 to 1,080 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Montauk, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Extremely Stony

Setting

Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, extremely stony
Percent of map unit: 8 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, extremely stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 2 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

320B—Birchwood fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 992s
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches

Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Birchwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birchwood

Setting

Landform: Drumlins
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loose sandy glaciofluvial deposits over dense loamy lodgment till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 25 inches: loamy fine sand
H3 - 25 to 38 inches: loamy sand
H4 - 38 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 10 percent
Landform: Terraces, plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

420B—Canton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w81b
Elevation: 0 to 1,180 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Landform: Hills, moraines, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 5 percent
Landform: Moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Swansea

Percent of map unit: 1 percent
Landform: Marshes, depressions, bogs, swamps, kettles
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

422C—Canton fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w815
Elevation: 0 to 1,310 feet
Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Scituate, extremely stony

Percent of map unit: 6 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear

Across-slope shape: Convex
Hydric soil rating: No

Montauk, extremely stony

Percent of map unit: 5 percent
Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Charlton, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Hollis, extremely stony

Percent of map unit: 4 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

653—Udorthents, sandy

Map Unit Setting

National map unit symbol: vr1k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, sandy, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Sandy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

656—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 995k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Terraces, plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

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EXISTING CONDITIONS: LANDSCAPE

LANDSCAPE SUMMARY

The Woburn Street School enjoys an advantageous location affording a quiet, residential environment while still accommodating efficient vehicular access for smooth drop off and pick up. Furthermore, the vehicular pavement, granite curb, and pedestrian curb cuts are in excellent condition. Deciduous forest hugging three sides of the property establishes a safe, beautiful, and healthy campus. Towering Pine and stately Oak trees create a picturesque arrival experience. The municipal athletic fields and sport courts enhance the site's recreational opportunities.

The site presents a few challenges to improvement efforts. The steep grade change bisecting the property generates erosion and drainage issues and hinders accessible pedestrian travel. The presence of the Municipal Open Space and the Zone II Wellhead Protection Area may limit development options. Many amenities require repair or replacement, including the sport court surfacing, playground, and pedestrian walkways, ramps, and stairs.

ENVIRONMENT

CONTEXT AND NATURAL RESOURCES

The Woburn Street School is located in a residential area on the east side of Wilmington, just east of Interstate 95 and the neighboring town of North Reading. Various small streams and deciduous wooded swamps of the Ipswich Watershed exist nearby but do not appear to approach the property. Homes surround the school to the north, west, and south, beyond a generous woodland buffer. The property abuts High Street and Woburn Street to the east. Much of the site is categorized as Municipal Open Space with limited protection. The northern portion of the property is categorized as a Zone II Wellhead Protection Area.

Specific Issues	Recommendations
The protected Municipal Open Space status of a large portion of the property may limit site improvement options. Similarly, the Wellhead Protection Area designation of the northern portion of the site may constrain development.	It is recommended that the Project Design Team closely collaborate with all applicable regulatory agencies to clarify restrictions to site modifications pertaining to protected municipal Open Space and Wellhead Protection Areas.

Landscape and Drainage

A steep slope cuts the property in two: the school building, parking lots, and sport courts to the east, and the athletic fields at a much lower elevation to the west. The school building and rear parking lot sit at the top of the hill. The front lawn slopes gently east away from the school towards Woburn Street. The north parking lot and sport courts slope gently away from the school north towards residential abutters. A playground near the southwest corner of the property sits roughly mid-slope. While the residential properties to the southwest lie below the athletic field, those to the north and northwest are situated above the field. The steep terrain has necessitated various means of stabilization, including a substantial retaining wall between the rear and north parking lots (Image 1) and a landscape retaining wall in the lawn panel northeast of the school building (Image 2). The weepholes of both appear to be full of sediment, and the safety railing on top of the landscape retaining wall are severely rusted. A concrete block retaining wall of variable height defines the south and east borders of the playground (Image 3). A low wood guard fence provides fall protection above this retaining wall. Vegetation helps stabilize to the steep slope between the parking lots and athletic fields. Nevertheless, rill erosion was observed in numerous locations (Images 4-6), most dramatically near the playground. This has created tripping hazards across the landscape. A large wet area was observed at the base of the asphalt path guiding visitors from the north parking lot to the athletic fields below (Image 7). A catch basin was observed further north within the turf. No stone drip strip was observed at the building's façade (Image 8).

Deciduous forest suffused with vines provides a dense buffer between the property and abutters to the north and west (Image 9). The forested buffer at the southeast corner of the site is likewise dense. However, this buffer thins to a single row of trees in the center of the property line, creating a more permeable border. Various deciduous trees, shrubs, and herbaceous plants vegetate the slope above the athletic fields. A grove of Pine Trees (*Pinus*) and Oak Trees (*Quercus*) line the northern portion of the property line along High Street, providing pleasant shade to the sport courts and an asphalt pedestrian path below. This grove of mature trees continues south in the lawn panels adjacent the school's front façade, creating a welcoming gathering space and entrance to the site (Image 11). Exposed ledge within these lawn panels provides additional interest. Andromeda (*Pieris*) and Yew (*Taxus*) shrubs define a corner of the lawn panel adjacent the main entrance to the school. Further south along the façade, this lawn panel is adorned with four ornamental trees and a variety of shrubs. Shrub and perennial gardens extend to either side of the main entrance (Image 12). A variety of shrubs and perennials sit in a depressed area at the southeast corner of the site, near the vehicular exit.

The lawn panels and athletic field turf appear to be in good condition, apart from areas that have suffered erosion. Landscape boulders guard the pedestrian cut through to Marcia Road, at the southwestern corner of the property (Image 13).

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Specific Issues	Recommendations
The significant grade changes across the site may present challenges for accessible travel throughout.	It is recommended that the school building and significant site amenities be placed in an arrangement that allows for ADA access.
Several retaining walls on site appear to require maintenance and repair.	It is recommended that the retaining walls be maintained and repaired or replaced as necessary.
The steep hillsides beyond the northern parking lot appear to present drainage and erosion control challenges.	It is recommended that drainage infrastructure be evaluated and improved as necessary to ensure slope stability and prevent pooling of water. Is further recommended that green infrastructure drainage solutions are considered.
Stone drip edge adjacent the building foundation is lacking.	Installation of stone drip edge wherever building façades meet turf or planted area is recommended, to protect the building foundation.
The forested buffers and magnificent pine and oak trees, while providing significant benefits to the site, present limitations to site development.	While trees on site appeared to be in good condition, it is recommended that a licensed arborist be consulted to evaluate their health, expected lifespan, and safety. It is recommended that, as able, the site be configured in a way that allows the maximum number of mature, healthy trees to remain. Replacement of any trees that are removed may be required by Open Space, Parking Lot Landscaping, and/or Site Design Standards of the Town of Wilmington.
The ledge on site may restrict grading on site.	It is recommended to limit significant lowering of grades where ledge is present, if possible.

Image 7

Image 8

Image 9

Image 10

Image 11

Image 12

ACCESS AND CIRCULATION

VEHICULAR

The current site configuration appears to accommodate efficient vehicular access. Visitors headed towards the north parking area may enter from the northernmost access point on High Street (Image 14). Visitors headed to the school's main entrance may enter a looped drive from the southernmost access point on High Street (Image 15), proceeding along the front façade and then to the exit on Woburn Street (Image 16). Vehicles may branch off this loop to enter the rear parking lot to the south and west of the building (Image 17). Two concrete bollards at the southwest corner of the parking lot block what may have once been a vehicular connection to Marcia Road to the west, but now is a narrow pedestrian path. A sloped drive connects the rear parking lot to the north parking lot. Two clearly marked accessible parking spaces with access aisles adjoin the looped drive, though no clearly marked accessible route connects users to the main entrance (Image 18). The north parking lot contains painted circulation arrows but lacks defined parking spaces. The rear parking lot provides approximately 35 spaces, none of which are marked as accessible. A low wood guard fence lines the entire western perimeter of the rear and north parking lots, above the steep slope to the athletic fields (Image 17). It appears to be in good condition. Vehicular pavement on site appears to be in great condition, free of cracking. Sturdy granite curb lines all vehicular pavements. The school's loading dock is located south of the school building. The concrete construction of the loading dock and accompanying stairs appear to be severely crumbling, and the handrails are not ADA-compliant (Image 19).

Specific Issues	Recommendations
Accessible parking provided on site appears to be disconnected from any accessible routes to the building entrances.	ADA/MAAB requirements for accessible parking spaces connected to even, level, accessible routes to building entrances must be met.
The north lot lacks line striping to organize vehicle circulation and parking.	It is recommended that this parking lot receive striping, including the required number of accessible parking spaces per ADA/MAAB code, access aisles, and crosswalks where necessary to facilitate pedestrian passage.

PEDESTRIAN

An asphalt walkway runs along the entire length of the property line along High Street and Woburn Street. The surface is generally in good condition, apart from the northernmost stretch adjacent the sport courts that has accumulated multiple bumps and cracks (Image 10). The walkway branches at the entrance to the looped drive to bring pedestrians closer to the building. However, this walk ends

Image 13

Image 14

Image 15

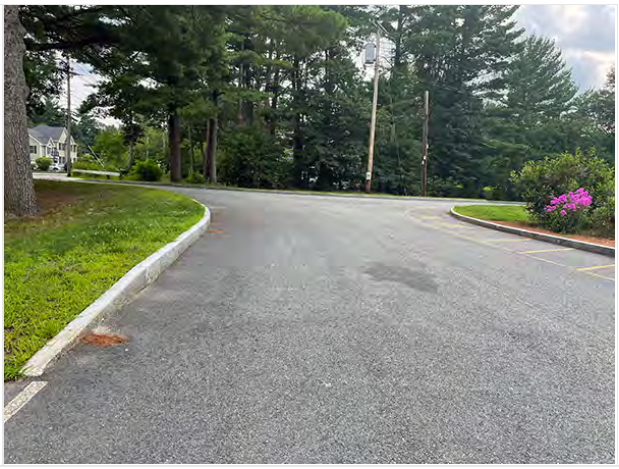

Image 16

Image 17

Image 18

partway, at which point pedestrians must walk in the vehicular drive (Image 20). Curb cuts and detectable warning panels are universal. However, no crosswalks are marked between the curb cuts at the entrance and exist of the north parking lot and looped drive (Images 14-16). Two asphalt paths lead pedestrians from the rear parking lot down the slope to the western property line (Image 21). One path, featuring a Cape Cod Berm on one side, aligns with a pedestrian cut-through to Marcia Road. Another path leads to the western end of the playground. However, no accessible ramp leads from this path into the playground (Image 22). A third asphalt path lined with Cape Cod Berm and attractive granite boulders winds down to the athletic fields from the north parking lot (Image 23). It seems that these three paths are not ADA accessible given they appear to be sloped at roughly 5-6 percent yet do not contain handrails or level landings.

The main entrance to the school building features a concrete ramp and stairs. The handrails of both do not appear to be ADA-compliant (Image 24). The secondary front façade entrance, Door 11, may be accessed via a flush concrete pad (Image 25). None of the entrances along the upper portion of the west façade are accessible. The two maintenance doors (Doors 4 and 6) rest atop a raised concrete pad (Image 26). The two public entrances (Doors 5 and 7) require users to traverse stairs with failing concrete construction, variable riser heights, and non-compliant handrails (Image 27). Both doors at the lower level, adjacent the north parking lot, appear to be accessible via flush concrete pads (Image 28).

Specific Issues	Recommendations
Numerous pedestrian routes throughout the site are not accessible.	Replace all pedestrian routes with new, accessible routes connecting visitors to all site amenities.
Several entrances to the school building are not accessible.	It is recommended that all public entrances raised above grade receive ADA-compliant sloped walks or ramps.
Crosswalks are missing where pedestrian routes cross the looped vehicular drive in three locations.	It is recommended that crosswalks are added in these three locations.

AMENITIES

Play and Athletics

The site includes an Engineered Wood Fiber Mulch (EWFM) playground featuring a large climbing structure, a swing set, and a few free-standing play items (Image 29). No accessible entrances into

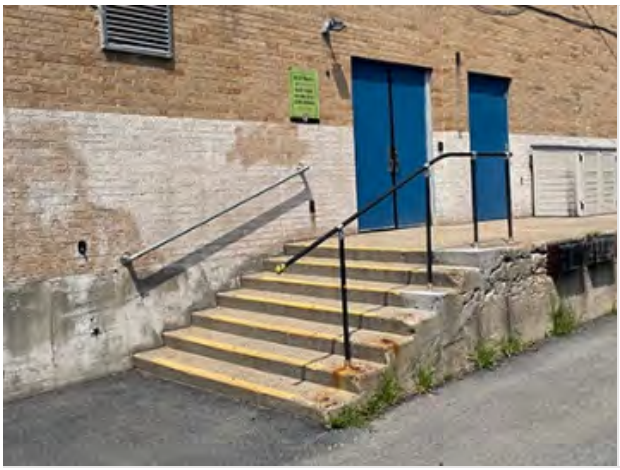

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

the playground or accessible routes within the playground are offered. The equipment appears aged. The swing set chains are rusted, and the plastic appears faded (Image 3).

The sport court complex at the northern end of the site features a full basketball court and two tennis courts. The pavement appears to be in very poor condition, grass pokes through the large cracks (Image 30). The basketball goals, tennis nets, and surrounding chain link fence are in fine condition. Two four square courts are painted atop the north parking lot asphalt.

Lush turf blankets the athletic fields, which appears to accommodate multiple uses. Two soccer goals were observed. One appears to receive active use while the second is shrouded in vegetation. An aged score board sitting at the northwest corner of the property appears dysfunctional (Image 31).

Specific Issues	Recommendations
The playground surfacing is not ADA compliant. The play equipment is aged and may require updated equipment for safety and accessibility.	It is recommended that the school receive a new, ADA-compliant playground with accessible poured-in-place surfacing and updated play equipment.
The sport court surfacing is in poor condition.	Should this area of the property be included in the project, it is recommended that the sport courts be resurfaced.
Surface play for children is limit, consisting of only two four square courts.	It is recommended that new surface play be provided.

SITE FURNISHINGS

The school's flagpole maintains a prominent position just south of the main entrance, amidst a colorful planting bed. Nearby stands the school sign, mounted on wooden posts (Image 32). Two wooden picnic tables, in good condition, sit underneath the grove of pine trees in front of the school (Image 11). A third picnic table is located northeast of the playground. None of the picnic tables appear ADA-compliant. Two Buddy Benches are located on site: one in the playground and another outside the sport courts (Image 33). A few landscape uplights with concrete covers were observed in the lawn panels adjacent the front façade (Image 34). Two clothing donation bins stand against the northeastern corner of the building. Two concrete block utility structures (Image 6) and two metal storage containers are nestled into the forested perimeter of the athletic fields. Various metal litter receptacles are scattered throughout the site. None appear to receive recycling. A large dumpster abuts the loading dock, while a smaller dumpster accompanies the playground picnic table. No bicycle racks were observed.

Image 25

Image 26

Image 27

Image 28

Image 29

Image 30

Specific Issues	Recommendations
The site lacks recycling receptacles, bicycle racks, and ADA-compliant picnic tables. Site lighting is scarce.	It is recommended that the site receive new recycling receptacles, bicycle racks, ADA-compliant picnic tables, and site lighting fixtures to maintain a tidy campus, to support alternative modes of transportation to the site, to provide inclusive opportunities to sit and gather, and to improve safety.

Image 31

Image 32

Image 33

Image 34

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EXISTING CONDITIONS: ARCHITECTURAL

ARCHITECTURAL SUMMARY

The Woburn Street Elementary School (Image 1) serves grades one through three (1-3) and has over 400 students enrolled. The building was constructed in 1963 with an addition and renovation in 1968, both designed by John Guarino Architect. It is approximately 53,450 SF and sits on a 10-acre lot.

The building is situated on the site, built on top of a hill, with three primary floor levels. The original 1963 building consists of 2 stories. The main floor exits to grade at the front of the school (facing east) with the cafeteria to the south and gymnasium to the north. There is a second floor classroom wing and a basement level boiler room that exits to grade via a stair to the rear of the site (facing west). Located north of the original building, the 1968 gymnasium addition includes a lower level with classrooms and lockers rooms.

Overall the building exterior is in fair condition considering the era of construction. Areas of concern include exterior materials overdue for maintenance, refurbishment, and repair, and where age has accumulated in envelope systems.

The interior, tired from many years of use, is also in generally fair condition. The HVAC, Plumbing and Electrical systems are all beyond the end of the expected service life cycle and do not comply with current codes and are extremely inefficient. The heating system utilizes pneumatic controls, original to the building. From a maintenance perspective, the systems have been maintained but are challenging as they become more difficult to service and find parts.

Minor improvements have been made over the decades - mainly in the form of maintenance and upkeep, but the building is essentially the same as when it was originally constructed in 1963 and 1968. Lack of accessibility is a significant concern throughout the building. Once inside the lobby space, one must descend several steps to get to the classroom wing or ascend a set of stairs to access the second floor with no lifts, elevators or ramps. There are numerous other accessibility issues throughout including doorknobs, the latch side pull clearances, toilet rooms, sinks, counters, signage, drinking fountains.

TERMINOLOGY

Building Condition scale of terms used throughout this report are as follows:

- “Excellent” : new or nearly new condition with few or no blemishes or compromises of quality or function.

- "Very Good" : highly functional condition with slight wear and tear and/or compromises of quality or function.
- "Good" : median functional condition with noticeable wear and tear and/or compromises of quality or function.
- "Fair" : below median functional condition with significant wear and tear and/or major compromises of quality or function. Seriously worn parts or elements, minor structural compromise. Possible near-future safety hazard.
- "Poor" : nearly or completely non-functional condition with major wear and tear and/or serious compromises of quality or usability. Missing parts or elements, major structural damage or condition. Immediate safety hazard or danger.

EXTERIOR

FOUNDATION

The foundation walls are twelve (12) inch cast-in-place (CIP) concrete walls on top of spread concrete footings. The footings are typically shown on existing drawings as twelve inches (12") deep by two foot (2'-0") wide. The lowest level is a concrete slab-on-grade.

Concrete appears to be in good to fair condition where exposed. There are a several localized areas of spalling and cracking with some exposed rebar, at the loading dock, stairs, retaining wall and foundation areas above grade. In general, all surfaces are worn and showing their age (Images 2-4).

Specific Issues	Recommendations
At exterior CIP foundation walls above grade, there is surface spalling at higher impact areas. Significant deterioration with exposed rebar and spalling concrete at loading dock and stairs.	Clean worst of the stains with gentle wash solution. Remove any vegetative material from concrete. Remove loose concrete. Remove any rust from rebar. Patch/repair concrete. (5'x perimeter of gym addition 280 LF) + (3'x perimeter of west façade 330 LF) + (4'x 40 LF at loading dock) +retaining walls

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

EXTERIOR WALLS

The exterior walls are brick veneer with CMU backup. In looking at existing drawings from the original 1963 building and 1968 addition, there does not appear to be an air space or insulation. Throughout the building the interior face of the CMU is painted out as the interior finish. Overall the brick appeared to be in good condition. Precast panels at north facade of gym (Image 5) and east facade of cafeteria (Image 6) are in good condition.

There are no visible or reported infiltration issues at the exterior brick walls.

Specific Issues	Recommendations
Discoloration at brick areas especially below some windows on the north and east facade, and extending down from the roof particularly on east-facing façade at cafeteria.	Provide brick cleaning for 40% of the brick area. =(8' x 300 LF) =2,400 SF of surface area

EXTERIOR WINDOWS

The exterior original steel frame system with single glazing windows are large horizontal openings with continuous precast concrete sills (Image 7-10). Although windows are providing ample daylight for classroom spaces, the glazing system has minimal thermal properties. Some sections of original glass lites have been replaced with Plexiglas which are now clouded and discolored. Residential air conditioners are installed at some windows.

Specific Issues	Recommendations
Original steel window systems are in poor to very poor condition, with numerous fundamental issues requiring great remedial attention, with poor thermal performance. Windows have reached the end of their useful lifespan.	As exterior window systems present the most significant issue regarding weather-tightness, and they represent a large percentage of the envelope, any renovation plan should include replacement of all windows with a new, energy efficient translucent glazing system. Selection criteria should include rain-screen principles and thermal efficiency. Approx 7,000 SF

Image 7

Image 8

Image 9

Image 10

Image 11

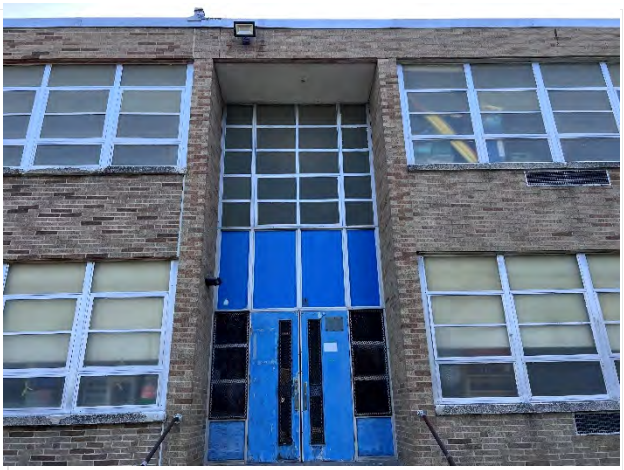

Image 12

At precast concrete sills, almost universally, the vertical mortar joints between sill pieces have failed.	Cover sills with aluminum during window replacement project (similar to North intermediate School). Approx 1,100 LF of sill.
Caulk joints around the perimeter of these openings are also in poor condition: dried up, cracking, or entirely missing with an open joint as the result	Caulk in place with new caulk joints.

EXTERIOR DOORS

The main entrance of the school is an aluminum storefront system with wired glass which a safety concern if it should be broken, due to the jagged pattern of breakage. (Image 11). The doors are in fair condition and are equipped with proper egress hardware. The ramp at the main entry is not ADA compliant and has no power-assisted door opener. There are a number of other exterior doors in fair to poor condition (Image 12-14) with wired glass, some with updated accessible hardware. Some of these doors have lites with metal grating over them to prevent vandalism (Image 14). Doors and sidelights have some rotting/ rusting at the bottoms. Storefront systems around the building include paneling and translucent glass above doors (Image 12).

Specific Issues	Recommendations
Entrance doors have numerous deficiencies and have reached the end of their useful lifespan.	Replace exterior entry systems with new, thermally-broken heavy commercial storefront entry systems, with full glass doors and dual-pane, Low-E insulating glass. (6 locations, openings are 9'x20')
Barrier-free access to the building should be included in renovation plans, with compliant ramps at the entrances.	Replace exterior entry systems with new, thermally-broken heavy commercial storefront entry system at main entry, with full glass doors and dual-pane, Low-E insulating glass. Provide new ramp and stair at main entry. (1 location with opening of 9'x15'; stairs: 4 risers)
Service and utility doors have numerous serious deficiencies and have reached the end of their useful lifespan.	Replace exterior door systems with new, thermally-improved insulated hollow metal doors in steel frames (for punched openings). (4) 4'x7' doors

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

LOUVERS AND OTHER OPENINGS

Classrooms and most other spaces are provided with through-wall unit ventilators, resulting in numerous louvers on most elevations of the building (Image 7-9, 12). Proper maintenance and sealing of louvers is critical for a facility of this age since there are so many locations where potential failure could result in water and air leakage and/or improper ventilator function. Most unit ventilator louvers are in fair shape. The louver at the boiler room is in fair condition as well (Image 15).

Specific Issues	Recommendations
Louvers throughout the building should be replaced with a renovation project	Replace louvers thoughout.

ROOF

The current rubber membrane roof is stone ballasted (noted as tar and gravel on original drawings). The age of the roof areas vary: The oldest roof at the cafeteria is from 1997 (Image 17). The main roof above classrooms was replaced in 2003 (Image 19-21) and the lower entry and kitchen roofs were done in 2004 (Image 18). No warranty remains on these sections of roofs. The gymnasium roof is modified bitumen, replaced in 2015 and still under warranty for about 5 more years (Image 22). Sections of the roof that have been replaced are overall in fair to good condition with no known issues for the interior of the school.

Specific Issues	Recommendations
Consider replacement for roofs no longer under warranty.	Replace roof EPDM rubber membrane, extend perimeter blocking and curbs for rooftop accessories and new metal fascia. This would be an ideal to replace exhaust fans or roof equipment at this time. Confirm existing insulation meets code. Replace existing copper base flashings with new in existing reglets. Provide soffits and fascia with brake metal trim to mimic present trim profiles. Approx 18,000 SF
Mortar joints at top of chimney and at precast concrete cap have failed, and there is no metal cap or bird screen on the boiler flue. (Image 23-24)	Clean, repair, and repoint brick as needed. Repoint concrete cap. Install metal cap and bird screen over the boiler flue opening.

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

OTHER EXTERIOR FEATURES

A few comments regarding the site are noted here; however, refer to the Site Assessment portion of the study for more information.

There is a large parking area on the north side of the school and parking is continued around the school on the western and southern faces in side-by-side manner (Image 6). The current drop-off / bus loop at the front of the school is tight and is accessed through an awkward intersection.

The drives and parking areas are all asphalt and in good condition. There are some playfields around the school that are in fair condition. There is also a playground space that appears to be in good condition (Image 7); however some erosion issues are present from water running off the steep walkway and the playground is not handicap accessible.

INTERIOR

FLOORS

The current flooring includes a mixture of Vinyl Asbestos Tile (VAT), vinyl composite tile (VCT), terrazzo and wood flooring (Images 25-28). Overall the flooring is in good to fair condition.

Terrazzo is present on floors in the central crossing/ lobby and corridors, and associated toilet rooms. Being a very durable material with a long lifespan (Image 25), it is in good condition aside from some dinginess and minor wear that comes with its age (Image 29). Toilet rooms have a bit more wear.

VCT is in good to fair condition.

Locker rooms have ceramic mosaic tile in good condition.

The gymnasium features a resilient wood flooring system that is in good condition and appears to be well maintained (Image 28).

Specific Issues	Recommendations
Terrazzo has some dinginess and minor wear.	Provide a good deep cleaning of the terrazzo with mildly abrasive cleaners suitable for the job that will remove stains. Patch any cracks.

Image 25

Image 26

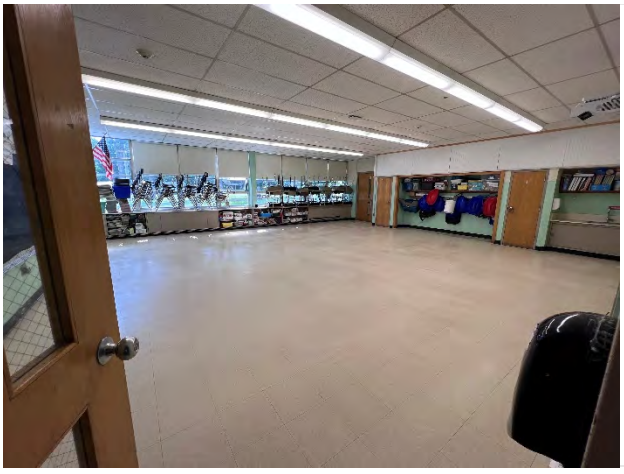

Image 27

Image 28

Image 29

Image 30

VCT floors are in good to fair condition in classrooms, with few damaged tiles.	Consider a low-maintenance monolithic material such as linoleum or flocked flooring such as Flo-Tex.

WALLS, PARTITIONS, AND WALL FINISHES

Majority of walls in the school are composed of concrete masonry units in fair condition. Paint is worn in many locations. A few walls indicate cracking, especially at the stairs to the addition (Image 30). The cracking at this location is not at an expansion joint. We were unable to verify if all walls throughout the building extend to the structure above and feature adequate bracing and fire-stopping per current codes, or present issues of acoustic separation.

The walls in the Multi-purpose space feature extensive artistic murals on nearly all surfaces (Image 26).

Some classrooms feature an operable partition between rooms (Image 31), all of which appear to be left closed the majority of the time. These are in fair condition, however they could present issues of acoustic separation, and limit flexibility in terms of classroom arrangement and location of equipment that require power and data. The walls at the opposite end of classrooms feature acoustic wall panels above the storage closets (Image 32).

Locker rooms feature glazed ceramic tile. Toilet rooms have painted CMU walls and in many places have been scarred by wall anchors for equipment that has since been removed. In these areas, cosmetic patching of CMU and selective replacement of tile would be needed to eliminate these conditions. Replacement of tile could also be entertained to provide an updated appearance when the toilet rooms are updated for accessibility.

Specific Issues	Recommendations
Most of the interior CMU walls are in good condition and require minimal repair work. Majority of cracks that do exist do not appear to be a serious structural concern but should be addressed with any renovation project.	A thorough review of all interior walls should be performed to determine whether they meet current code requirements for seismic bracing and support or life safety issues. Paint CMU surfaces throughout.
Provide improved acoustic separation between rooms if operable partitions are not utilized	Remove operable partitions between classrooms and replaced with steel stud framed walls that extend to the structure above. Provide power, data, and other services within the permanent wall. (5 locations, 29 LF each)

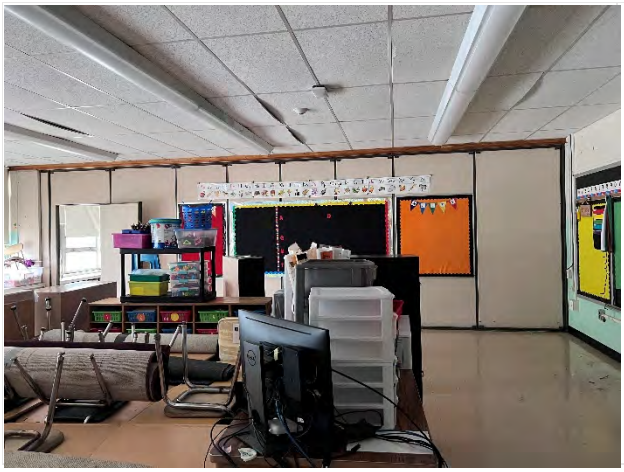

Image 31

Image 32

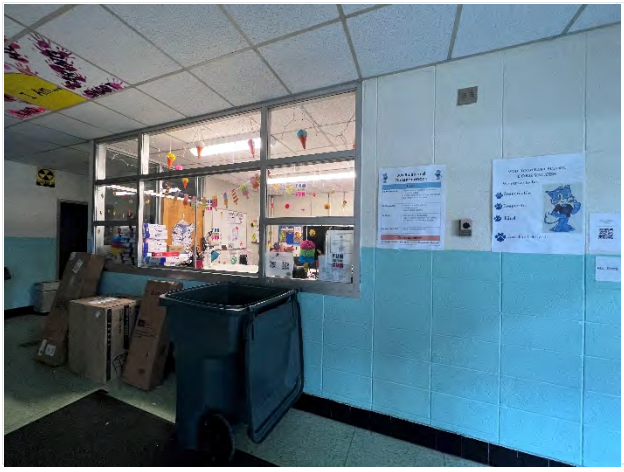

Image 33

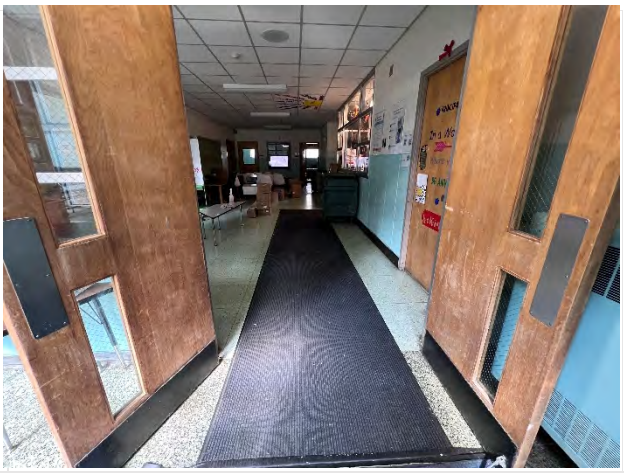

Image 34

Image 35

Image 36

Interior Windows

There are very few interior windows in the building. Large hollow metal windows are featured in the library and main office (Images 33). All of the frames are in very good condition. All frames feature clear vision glass with the exception of the frames around the administration offices, which includes wired glass.

Specific Issues	Recommendations
Interior windows (borrowed lites) include wired glass in some areas, which is safety concern.	Replace wired glass with clear vision glass or tempered safety glass in areas required by the building code. (50 SF)

Interior Doors

The existing interior doors vary in condition based on their location and frequency of use. Overall, the door leafs are solid core wood, and in fair to good condition. The doors feature a mix of styles, and some feature vision panels and louvers (Image 34-36).

Not all door locations feature fire rating labels and associated hardware as would be required by current codes. Hardware on the doors is not compliant with current barrier-free codes, as most feature knobs instead of lever trim (Image 35-36). Many of the corridor doors do feature closers.

Door frames at the interior are hollow metal, and frequently in need of repainting – especially those in high traffic. Overall the majority of frames are in good condition, without dents, corrosion, or other damage

Specific Issues	Recommendations
Refer to Regulatory Assessment for discussion of the corridor fire rating.	For any renovation project, all locations which require fire-rated doors should be reviewed to verify that existing doors feature appropriate construction, labels, and hardware. Doors not meeting code requirements should be replaced.
Doors are in fair condition.	Replace all interior doors with comparable flush commercial grade wood doors. Provide ADA-accessible hardware.
Frames in good to fair condition.	Repaint all frames.

Image 37

Image 38

Image 39

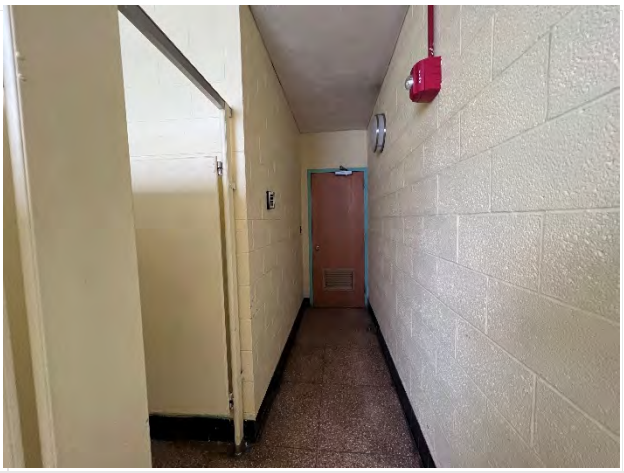

Image 40

Image 41

Image 42

CEILINGS

The majority of the spaces include suspended acoustic panel systems (ACP) with a 2' x 2' or 2' x 4' spacing and exposed tee system, replaced within the last 5 years and in good condition.

Specific Issues	Recommendations
None	Replacement acoustic panels and grids as needed as part of maintenance.

ACCESSORIES, FIXTURES, AND EQUIPMENT

The majority of the loose furnishings throughout the educational spaces appear to have been adapted to fit the need which they serve. Classroom desks, tables, and chairs are in fair condition overall, however they vary in color and type from room to room.

Storage in the classrooms is provided through built-in metal shelving integral to the exterior wall mechanical equipment (Image 39). Coat storage is provided by a series of "period" shelves and coat hooks in an open closet (Image 44). The hooks are stacked above each other, making access difficult for the lower rack. Additional classroom storage is provided in closets on each side of the coat alcove (Image 41).

At the gymnasium, the motor operated divider wall does not work. Wall mats are showing wear (Image 43).

At the Multi-purpose Room, the tables and chairs are in relatively good condition (Image 26). However there is no designated storage space for this equipment, so they are stored along the sides of the room.

In other spaces such as the library, nurses suite, administration offices and teacher planning rooms, equipment usage is also adapted. Most administrative spaces are cluttered and crowded. The library has various types of furniture (Image 42).

HANDICAP ACCESSIBILITY

We have found the multiple items that are not compliant with the Mass. AAB requirements. Refer to the regulatory assessment in this section for more information.

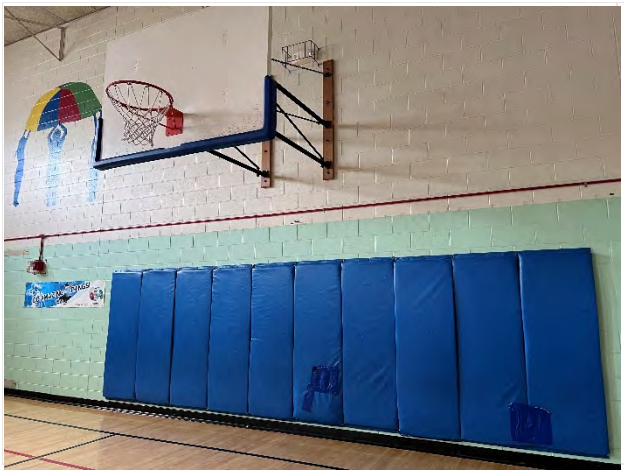

Image 43

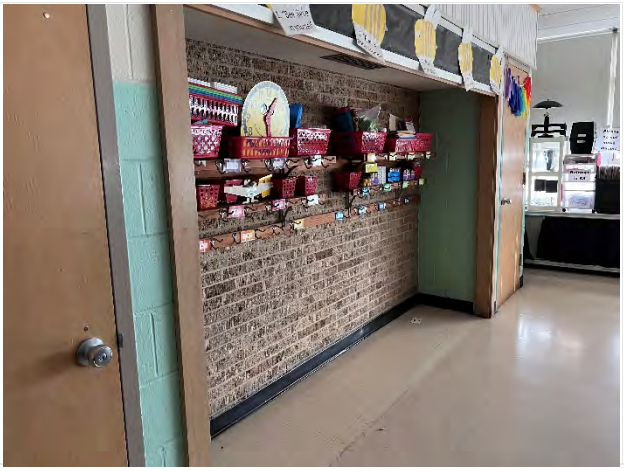

Image 44

Image 45

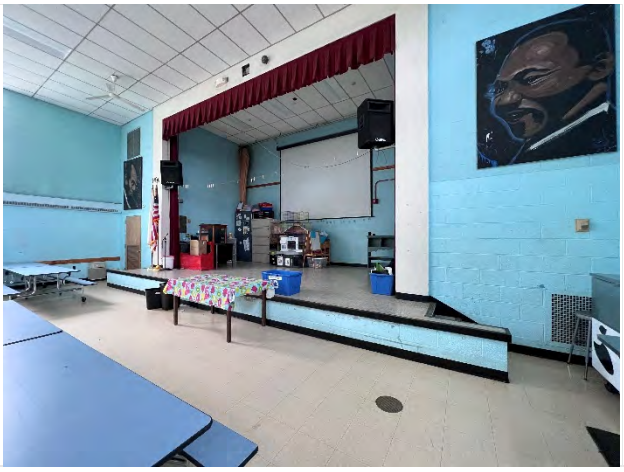

Image 46

Image 47

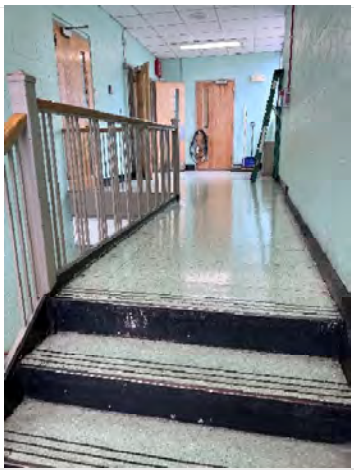

Image 48

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EXISTING CONDITIONS: REGULATORY ASSESSMENT

INTRODUCTION

This Regulatory Assessment will convey to what degree the Woburn Street School in its current condition, complies with current building codes and regulations. The Assessment does not attempt to define a scope of work, but rather highlight specific non-complying conditions and identify which conditions would require correction if a repair, alteration, addition, or change of use were to be proposed for the facility.

It is important to note that a building or a portion of a building does not require correction simply because it does not comply with current codes; any building that is legally occupied and adequately maintained can remain so without bringing the building into full compliance with codes and regulations. This *principal of non-conforming rights* (that a newly adopted regulation cannot impose the undue burden of compliance on legally existing occupancies) is reflected in how the codes identify to what degree existing buildings must be brought into compliance when a scope of work is proposed. The greater the scope of work, the greater the burden of compliance with a given code or regulation will be required.

For some regulations, such as 521 CMR Accessibility Rules or the Massachusetts special sprinkler provisions of MGL c.148 s.26G, these compliance thresholds are “hard lines” comprised of specific dollar value thresholds. When determining the dollar value thresholds for compliance, the cash value of the building is used as the basis for determining the requirements for compliance. The full and fair cash value of the *building*, as determined from the Town Assessor's online database is calculated as follows:

Property Value	**$ 7,700,400**
Land Value	**($ 1,804,300)**
Other Improvements or outbuildings	**($ 45,000)**
Full and Fair Cash Value	**$ 5,851,100**

This value will be used later in this Assessment to calculate the applicable compliance thresholds. The Existing Building Code uses the type of work and the affected area to determine when increasing levels of compliance are required. When considering a proposed scope of work for the building, a careful consideration of the various degrees of compliance will need to be considered. Refer to the Regulatory Overview section of this report for a more detailed description of the various compliance paths outlined in the Existing Building Code.

THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)

The Performance Compliance path provides a simple yet comprehensive overview of the general life safety aspects of a building. Although designed as a building code compliance path, it can also be used as an assessment tool. This assessment will utilize the value and scoring based method of the Performance Compliance path to assign a score to the building as it is currently configured and maintained. Similar to previous comments, a failing score in any category as part of an assessment does not compel any corrective action - it simply indicates how the building would be viewed under current codes. It is intended to illustrate the relative general and life safety performance of the existing building.

The building is constructed of non-combustible materials. Specifically, the floors are constructed on concrete slabs on metal deck supported by steel joists supported by steel beams and columns. Portions of the exterior walls are masonry and/or cast in place concrete and the roof is metal deck spanning between steel joists or precast concrete planks (at the gymnasium). Because the structure is non-combustible and is not protected, the building would best be described as type II-B construction.

The building does incorporate some life safety assets; the non-combustible construction type and relatively small building area for the construction type, short travel distances to exits, and the provision of a compliant fire alarm system are all relative safety assets. However, many life-safety features are antiquated, non-functioning, or simply missing, resulting in deficits in nearly every category. Many of these missing or incomplete features are further compounded by the lack of a sprinkler system, which affords relief to buildings that do include them. While this list is not exhaustive, noted code deficiencies include

- No sprinkler system or standpipes
- Non-compliant enclosure of exit stairs
- Lack of 1-hour rated corridor walls without a sprinkler system (classroom doors are not provided with closers)
- Non-compliant door hardware throughout the facility.
- Lack of dampers for HVAC systems through multiple floors

The table and evaluation scores on the following page summarize the facility under the Performance Compliance path of the IEBC. In each category (Fire Safety, Means of Egress, and General Safety), the building does not achieve the minimum score required to be considered compliant.

Table 1401.7 Summary Sheet - IEBC PERFORMANCE GRADE - WILMINGTON WOBURN STREET SCHOOL

Existing Occupancy	**Educational**	Proposed Occupancy	**Educational**		
Year building was constructed	**1963**	Number of Stories	**3**	Height in feet	**34.5**
Type of construction	**II-B**	Area per floor	**10,708 / 26,620 / 14,846**		
Percentage of open perimeter increase	**100%**				
Completely Supressed	**No**	Corridor wall rating	**0 hr.**		
		Type	**N/A**		
Compartmentation	**No**	Required door closers	**No**		
Fire resistance rating of vertical opening enclosures	**N/A**				
Type of HVAC system	**Unit Vent / duct exh.**	, serving number of floors	**3**		
Automatic fire detection	**Yes**	Type and location	**Smoke/heat in classrooms & corr.**		
Fire alarm system	**Yes**	Type	**Addressable, adequate notification**		
Smoke control	**No**	Type	**N/A**		
Adequate exit routes	**Yes**	Dead ends	**Yes**	Length in feet	**32**
Maximum exit access travel distance	**146 feet**	Elevatory controls	**No**		
Means of egress lighting	**No**	Mixed Occupancies	**Yes**		
Standpipes	**No**	Patient abilty for self preservation	**N/A**		
Incidental use	**Yes**	patient concentration	**N/A**		
Smoke compartment less than 22,500 sq. ft.	**Yes**	Attendant-to-patient ratio	**N/A**		

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
1401.6.1 Building Height	-4	-4	-4
1401.6.2 Building Area	15	15	15
1401.6.3 Compartmentation	0	0	0
1401.6.4 Tenant and Dwelling Unit Separations	0	0	0
1401.6.5 Corridor Walls	-5	-5	-5
1401.6.6 Vertical Openings	-11	-11	-11
1401.6.7 HVAC Systems	-5	-5	-5
1401.6.8 Automatic Fire Detection	8	8	8
1401.6.9 Fire Alarm System	0	0	0
1401.6.10 Smoke Control	****	0	0
1401.6.11 Means of Egress	****	0	0
1401.6.12 Dead Ends	****	0	0
1401.6.13 Maximum Exit Access Travel Distance	****	5	5
1401.6.14 Elevator Control	-2	-2	-2
1401.6.15 Means of Egress Emergency Lighting	****	****	0
1401.6.16 Mixed Occupancies	0	0	0
1401.6.17 Automatic Sprinklers	-12	-6	-12
1401.6.18 Standpipes	-12	-12	-12
1401.6.19 Incidental Use	-1	-1	-1
1401.6.20 Smoke Compartmentation	0	0	0
1401.6.21.1 Patient Ability for Self-preservation	****	0	0
1401.6.21.2 Patient Concentration	****	0	0
1401.6.21.3 Attendant-to-patient Ratio	****	0	0
Building Score - total value	-28	-17	-23

Table 1401.9 Evaluation Formula

Wilmington Woburn Street School Evaluation:

				Score	Pass	Fail
-28	(FS) -	*29*	(MFS)=	-57		X
-15	(MS) -	*40*	(MMS)=	-55		X
-21	(GS) -	*40*	(MGS)=	-61		X

Sprinkler Protection Requirements

The building does not include a sprinkler system and therefore is not in compliance with M.G.L. c.148 s.26G. Because the building is larger than 7500 Gross Square Feet (GSF), any scope of work meeting the criteria of a "major alteration" would require a sprinkler system to be installed throughout the facility. In Massachusetts, a building's *fire area* includes all portions of the building enclosed by the exterior walls regardless of interior sub-division with fire walls or fire barriers. This is important to understand because the sub-division of a building into separate fire areas (with fire walls and fire barriers, for example) would not be considered a compliance strategy in Massachusetts.

To be considered a "major alteration" the scope of work would have to meet both the "nature of work" and "scope of work" criteria. For the scope of work criterion, the Division of Fire Services provides two separate thresholds - if the project exceeds one of these thresholds, then the project is considered "major" in scope. For the Woburn Street School, if the work area exceeds **17,547** square feet (33% of the total building area of **53,174** square feet) ***OR*** if the cost of work exceeds **$1,930,863** (33% of the value of the building, calculated above), the project *scope* would be considered "major". (The square footages used here are the *Building Area* as defined in the Code, not the more conventional Gross Square Footage area.)

The "nature of work" criterion is less specific, but essentially if any work is being done that would not make the installation of sprinklers substantially more difficult, it would be considered “major” in nature. Examples include the demolition of ceilings, walls, or floor decking exposing the structural framing.

Accessibility

Any proposed work will be required to comply with the accessibility requirements of 521 CMR (The Massachusetts Architectural Access Board, or MAAB Rules).

If the cost of the proposed work exceeds $100,000, an accessible entrance, toilet room, drinking fountain, and telephone (if drinking fountains and telephones are provided) will be required in addition to the compliance requirements of the proposed work.

When the cost of work exceeds 30% of the full and fair cash value (calculated above), than the entire facility will be required to comply with the MAAB Rules. For the Woburn Street School, this 30% threshold dollar value would be **$1,755,330.**

Because the building is a public school, owned and operated by the local municipality, it is considered a Title II facility under the Americans with Disabilities Act (ADA). As such, any proposed work to the facility would be required to comply to the maximum extent feasible with the ADA Architectural Guidelines (the ADAAG) except where it would be structurally impractical. The ADA does not have a threshold for requiring full facility compliance, but does require that when there are alterations to an area of "primary function" (including classrooms, gymnasium, cafeteria, and administration areas), than the path of travel as well as the restrooms, telephones, and drinking fountains serving the areas of primary function are also accessible.

Specific deficiencies or non-compliant conditions were noted at the Woburn Street School. If a major alteration exceeding the 30% threshold were undertaken, all of these items would require correction.

Site Features

- Accessible parking spaces are not connected by an accessible route to the building entrances.
- The main entrance to the building does not appear to incorporate compliant handrails.
- There is no accessible path to the playground.
- The playground surfacing is not accessible, rendering all the playground equipment inaccessible.
- Numerous paths on site are not accessible and appear to slope at approximately 5 to 6 percent without handrails.
- The site does not include accessible picnic tables.

Entrances

- With the exception of the main entry, none of the building entrances are provided with accessible doorways; some include steps or changes in elevation and some are not provided with a level landing on the pull side of the door or accessible hardware.
- Entry vestibules do not provide 48 inches clear beyond the swing of the interior doors to the exterior doors.

Doors

- At all locations of double-leaf egress doors, neither leaf provides a minimum 32-inch clearance.
- Several doors do not have required pull-side clearance.
- Many doors are narrower than the required minimum 32” clear when the door is opened to 90 degrees to the frame.
- Door hardware throughout the school building consists primarily of doorknobs, which require grasping and turning rather than lever operation.

Accessible Route

- Stair access the stage in the gymnasium has no handrails, which is a life-safety code and accessibility requirement.
- There is no means of traversing the level change (platform lift or stair lift) at the gymnasium stage, making it not accessible.
- Various level changes throughout the school include stairs, but no ramp or other accessible means of changing levels.
- Stairs at level changes do not include compliant handrails.
- Along the corridors and aisles of the school, there are numerous objects hung from walls that protrude more than the 4-inch maximum from the wall surface, which is a hazard to blind persons.
- No accessible lockers are provided.
- There is no elevator in the building.

- Handrails at egress stairs do not comply with the required grasp-ability profile, nor do they include required top or bottom extensions.

Toilet Rooms & Plumbing Fixtures

- The doorways to gang toilet rooms are narrower than the required 32 inches. Pull-side accessible clearances are not provided at doors.
- There are no accessible toilet partition stalls in gang toilet rooms: minimum size, doorway dimensions, clear floor space, toilet position, grab bars, and/or accessories are not provided or are non-compliant.
- Sinks in gang toilet rooms are mounted too low for accessible sinks for elementary age students. Accessible knee space is not provided.
- In gang toilet rooms, mirrors are mounted too high above the floor.
- One single user toilet room appears to be provided as an "accessible" toilet room for the facility. However, this toilet room has similar non-compliant conditions as listed above. If this toilet room is intended to serve student populations, none of the plumbing fixtures or elements are mounted within the acceptable heights and locations for the elementary age group, such as: grab bars and toilet fixture too high, toilet paper dispenser mounting height, mirror mounting height, and sink mounting height/ lip dimensions, and misplaced accessories. Additionally, the room serves as storage.
- Other single-user toilet rooms in classrooms are similarly non-compliant.
- The nurse's toilet has one side grab bar but is not accessible per the code requirements. The nurse's toilet room does not contain a compliant sink or compliant dispensers.
- Drinking fountains within the school are not compliant; there are no dual-height mounted fixtures, they do not provide adequate knee space or approach clearances and may have other obstructions.
- Classroom sinks, where provided, do not include the required knee space clearance below the sink and include faucets that require tight grasping and turning. Most sinks do not have the ability to be adapted for proper clearances due to their design and construction.

Controls & Miscellaneous

- Fire alarm pull stations are not mounted within the allowable reach range in some cases.
- Accessible room identification signage is not provided throughout the school.
- The main office admin workstation transaction desk does not provide an accessible counter – it appears to be higher than 36" off the floor.

Standards for the Treatment of Historic Structures

The building and property is not listed on, nor is it eligible for listing on the National Register of Historic Buildings. Refer to the Regulatory Overview portion of this report for Historical Regulations.

EXISTING CONDITIONS: STRUCTURAL

STRUCTURAL ASSESSMENT

The purpose of this report is to describe, in broad terms, the structure of the existing building, comment on the existing structure, comment on the structural integrity of the building and comment on the structural code issues related to the future renovation and expansion of the existing building.

SCOPE

- Description of existing structure.
- Evaluation of the structural integrity of the building.
- Comments on the existing condition.
- Discussion of primary structural code issues that would influence the renovations and design of new additions.

BASIS OF THE REPORT

This report is also based on the our visual observations during our site visit on July 26, 2023, review of the original construction drawings prepared by John Guarino Architect dated August 19, 1963 and review of the drawings of the 1967 Addition prepared by John Guarino Architect.

During our visit, we did not remove any finishes; so, our understanding of the structure is limited and may have to be further evaluated as the design evolves.

BUILDING DESCRIPTION

The school is located on Woburn Street in Wilmington, Massachusetts. The school is essentially a one and two story steel and concrete structure. The school structure was constructed in 1963 and a substantial addition was constructed in 1967.

The foundations are traditional cast-in-place concrete spread footings.

The lowest level slab is a concrete slab on grade.

The typical supported floor is a concrete slab on steel form deck spanning between open web steel joists supported on wide flange steel girders and columns. Portions of the second floor fr4aming of the addition are supported on exterior reinforced concrete walls.

The typical roof is metal deck spanning between open web steel joists supported on wide flange steel girders and steel columns.

The exterior wall is brick veneer with strip windows at the academic wings. There are clerestory windows at the multi-purpose room.

The interior walls are concrete block..

The Gymnasium has infill block around the entire perimeter.

The demising walls between the classrooms are typically masonry walls.

EXISTING CONDITIONS

Based on our observations, the school structure is functioning adequately based on the age of the school.

- We observed that the non-structural masonry walls are slender and not adequately connected to the structure.
- We observed several cracks in the interior masonry walls and exterior masonry façade. We did not observe any control joints in the exterior masonry façade. The masonry at the chimney is in poor condition.
- We observed spalls and cracks in the exterior concrete walls and exposed reinforcement.

We did not observe any signs of foundation settlement, or any undue vibrations from footfall and traffic on the supported floor slab though the wood framed areas a bit more susceptible to vibrations from the footfall.

PROPOSED SCHEMES

Based on the requirements of the code, no structural upgrades are triggered for any proposed renovations of limited scope that do not invoke any required structural modifications. The extent of the code required structural upgrades is dependent on the extents of the proposed renovations. The following is a description of the compliance methods that may be triggered depending on the extents of the proposed schemes as dictated by other disciplines.

GENERAL CODE CONSIDERATIONS

If any repairs, renovations, additions or change of occupancy or use are made to the existing structure, an evaluation of the structure is required to demonstrate compliance with 780 CMR, Chapter 34 “Existing Building Code” (Massachusetts Amendments to The International Existing Building Code 2015). The intent of the IEBC and the related Massachusetts Amendments to IEBC is to

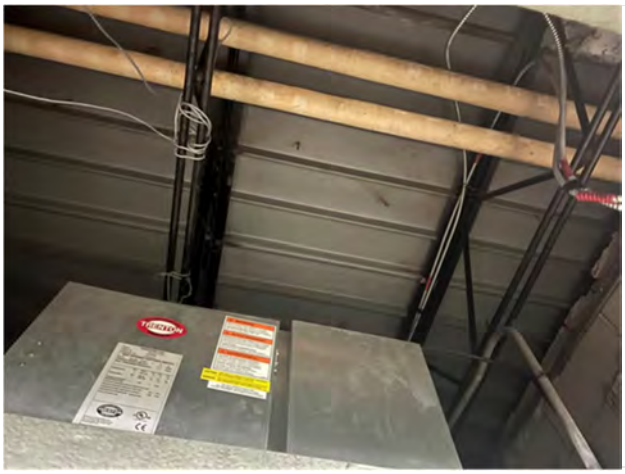

Image 1 – Typical roof framing

Image 2 - Gymnasium Roof Framing

Image 3 – Exposed reinforcement in exterior concrete walls

provide alternative approaches to alterations, repairs, additions and/or a change of occupancy or use without requiring full compliance with the code requirements for new construction.

The IEBC provides three compliance methods for the repair, alteration, change of use, or additions to an existing structure. The three compliance methods are as follows:

1. Prescription Compliance Method.
2. Work Area Compliance Method.
3. Performance Compliance Method.

For more information on these compliance methods, refer to the Regulatory Overview section of this report. A summary of the structural implications of the various compliance methods follows.

PRESCRIPTIVE COMPLIANCE METHOD

In this method, compliance with Chapter 4 of the IEBC is required. As part of the scope of this report, the extent of the compliance requirements identified are limited to the structural requirements of this chapter.

ALTERATIONS

- If the proposed alterations of the structures increase the demand-capacity ratio of any lateral load resisting element by more than 10 percent, the structure of the altered building or structure shall meet the requirements for the code for new construction.
- Where alterations increase the design gravity loads by more than 5 percent on any structural members, those members would have to be strengthened, supplemented, or replaced.

ADDITIONS

Additions can be designed to be structurally separate or structurally connected to the existing building. Based on the project scope, the following structural issues must be addressed: The requirements applicable to the existing structure for connected additions are similar to those for altered structures.

- All construction of all addition areas must comply with the code requirements for new construction in the IBC.
- For additions that are not structurally independent of an existing structure, the following rules apply to the existing building:
  - The existing structure and its addition - acting as a single structure - must meet the requirements of the code for new construction for resisting lateral loads. Exceptions allow that structural elements that only resist lateral forces whose demand-capacity ratio is not increased by more than 10 percent may remain unaltered.

- Any load-bearing structural element for which the addition or its related alterations causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced. This may invoke or cause additional renovation work to access the structure.

In order to avoid invoking required structural modifications to the existing building, any planned additions should be designed as structurally separate buildings.

WORK AREA COMPLIANCE METHOD

In this method, compliance with Chapter 5 through 13 of the IEBC is required. The extent of alterations has to be classified into LEVELS OF WORK based on the scope and extent of the alterations to the existing building. Refer to the Regulatory Overview section of this report for an explanation of the Levels of Work.

This report assumes that planned renovation schemes would affect more than 50 percent of the floor area and invoke Level 3 Alteration requirements, and the following analysis is based on that assumption. In addition, there are requirements that have to be satisfied for additions to the existing structure.

LEVEL 3 ALTERATIONS

- Any existing load-bearing structural element for which an alteration causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- If the proposed structural alterations of an existing structure exceed 30 percent of the total floor and roof areas of an existing structure, we have to demonstrate that the altered structure complies with the IBC for wind loading and with reduced IBC level seismic forces.
- Existing anchorage of all unreinforced masonry walls to the structure have to be evaluated. If the existing anchorage of the walls to the structure is deficient, the tops of the masonry walls will require new connections to the structure.
- If the proposed structural alterations of an existing structure are less than 30 percent of the total floor and roof areas of the existing structure, the project must demonstrate that the altered structure complies with the loads applicable at the time of the original construction (or the most recent major renovation) and that the seismic demand-capacity ratio is not increased by more than 10 percent on any existing structural element. Those structural elements whose seismic demand-capacity ratio is increased by more than 10 percent must be strengthened, supplemented, or replaced in order to comply with reduced IBC level seismic forces.

ADDITIONS

- All additions shall comply with the requirements for the code for new construction in the IBC.
- Any existing gravity, load-carrying structural element for which an addition or its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For additions that are not structurally independent of any existing structures, the existing structure and its additions, acting as a single structure, shall meet the requirements of the code for new construction in the IBC for resisting wind loads and IBC Level Seismic Forces (may be lower than loads from the Code for New Construction in the IBC), except for small additions that would not increase the lateral force story shear in any story by more than 10 percent cumulative. In this case, the existing lateral load resisting system can remain unaltered.

PERFORMANCE COMPLIANCE METHOD

Following the requirements of this method for the alterations and additions may be onerous on the project because this method requires that the altered existing structure and the additions meet the requirements for the code for new construction in the IBC.

SUMMARY

The existing school structure appears to be performing adequately. All of the structural components that are visible appear to be in sound condition. The cracks in the exterior masonry façade and interior masonry walls are not a structural part concern and they should be repaired or masonry repointed as part of an on-going maintenance program.

The compliance requirements of the two Prescriptive and Work Area Compliance methods are very similar in most respects for a major renovation. The Prescriptive Compliance Method would be more restrictive, as it would likely require that the existing lateral load resisting systems of the existing building meet the requirements of the code for new construction of the IBC, even for small increases of design lateral loads. Based on this, we would recommend the Work Area Compliance Method for the project.

Any major proposed renovations and additions would likely require that the structure be updated to meet the requirements for the Code for New Construction. This may require addition of reinforced masonry shear walls with new reinforced concrete foundations, connecting the floor and roof diaphragms to the existing masonry walls. All of the existing masonry walls would have to be adequately connected to the roof and floor structure.

EXISTING CONDITIONS: MECHANICAL

EXECUTIVE SUMMARY

The Woburn Street School (the school) services First to Third Grade students. The 53,450 gross square foot school was constructed in 1963. Presently, the HVAC systems serving the school are comprised of an oil-fired hot water plant, unit ventilators with hydronic heating coils, both general and dedicated exhaust systems communicating to roof and inline exhaust fans, terminal hydronic heating units, and an antiquated pneumatic control system.

Most of the building HVAC systems are in poor operating condition, are difficult to run, and need replacement. The pneumatic temperature control system is functioning and has had a recent compressor upgrade but the system is antiquated and inefficient in terms of energy consumption. The overall HVAC system is similarly inefficient and costly to operate and maintain. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment consuming unnecessary energy and incurring additional electrical cost. Overall, systems have deteriorated to a point of exceeding their maximum serviceable life. Modern code-required ventilation rates are not being met in many spaces and acceptable air-quality is likely compromised due to the surface contamination on many systems as well as inoperable or poorly operating outside ventilation controls. Interior zones are generally lacking ventilation entirely.

HEATING HOT WATER PLANT:

The school is heated by a boiler plant consisting of two (2) oil-fired hydronic boilers which appear to be original and in poor condition. The boilers are forced draft utilizing room air for combustion and directly venting flue gases to the outdoors. The combustion fluid is #2 Fuel oil which is supplied from a 10,000-gallon double wall below ground tank. Of note is that at the time of this report, another school of similar age and design in the Town experienced a failure in the fuel oil tank which ultimately played a large role in the abandoning of the school and required the Town to pay removal and remediation costs.

The heating plant consists of two cast iron boilers manufactured by HB Smith (Model #450 Mills Boiler). One unit uses a Power Flame burner (Model C3-0) and the other uses an Industrial Combustion Inc burner (Model MM 425). Two ¾ HP motor-driven fuel oil pumps feed fuel oil to the boilers. The flue gases for the Weil McLain boilers are vented into an insulated galvanized venting system. The boilers and the associated venting are insulated with what is likely asbestos containing materials. The mechanical room has a high/low make-up combustion air system to allow for the forced draft boilers to operate.

Hot water is circulated through schedule 40 black steel piping by means of six zone pumps having motors varying from approximately 5-20 years old. The body of the pumps all appear 50+ years old. The hydronic distribution system serves typical unit ventilators in classes, fin tube radiation, cabinet unit heaters, and several heating and ventilation units. In some cases, heating pipe is bare and where insulation is present it appears original to the building and in poor condition. This insulation is likely asbestos containing.

Specific Issues	Recommendations
60 year old oil tank is a failure liability.	Consider new HVAC system that does not require fuel oil (see issues and recommendations below).
Main heating hot water boilers are not high efficiency and provide a max of approximately 82% efficiency.	Replace entire heating system with a new high efficiency condensing boiler plant with electronically commutated motors (ECM) pump arrays for increased energy savings. Alternatively, consider new fossil fuel free heating system replacement such as air source variable refrigerant flow (VRF) heat pump system.
Signs of corrosion on piping and flanges. Pipe integrity unknown. Hazardous and/or missing insulation.	Replace entire piping system with a combination of schedule 40 black steel and copper piping and utilize dielectric fitting for dissimilar materials. Replace insulation. Alternatively, consider new fossil fuel free heating system replacement such as air source variable refrigerant flow (VRF) heat pump system.

ATC Controls

The building heating and ventilation systems are controlled by an antiquated pneumatic control system with an air compressor manufactured by Speedaire that is in the boiler room *(Image 5)*. The compressor appears less than 10 years old and in good condition. Analog thermostats are present to control the flow of hot water to each piece of terminal heating equipment in each space. There is no building management system for centralized control or management. The control system is antiquated and in need of replacement due to its limited capability with equipment control, high maintenance and energy requirements, and overall decreased thermal comfort.

Specific Issues	Recommendations
Pneumatic control systems are generally considered inefficient, and unreliable. Many of the existing pneumatic thermostats are likely damaged and inaccurate.	Replace the entire Pneumatic control system with current direct digital control (DDC) technologies for improved reliability, controllability, and the ability for a web-based building management system (BMS).

Image 1: Original Hydronic Boiler 1

Image 2: Original Hydronic Boiler 2

Image 3: Boiler & Flue Insulation

Image 4: Mechanical Room Insulation

Image 5: Pneumatic Controls Compressor

Image 6: Pneumatic Control Panel

CLASSROOMS:

The classrooms are heated and ventilated by hydronic unit ventilators. The heating coil valve and dampers are pneumatically actuated and tied to local thermostats in each space. Ventilation air brought in through the unit ventilators is relieved via a low-wall grille typically located near the entryway of the classroom, connected to a central exhaust system with fans located on the roof. The unit ventilators appear to be originally installed equipment, are in poor condition and are beyond, their expected service life. Control of the unit ventilators is by the unit mounted on/off toggle switch. Older unit ventilators are inherently noisy, and as a result some faculty turn fans off, which effectively stops the flow of ventilation air. Additionally, books and other classroom materials are occasionally placed in front of or on top of unit ventilator grilles which creates noise and reduces ventilation effectiveness. The typical classroom in this school is not air conditioned. At the time of the site visit during summer break, the fans for the unit ventilators were observed to be running. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment. There is also a Media Center in the school which appears to be a converted classroom and is heated and ventilated in an identical way. This space is also the only zone in the building with ductless cooling units provided for air conditioning.

Specific Issues	Recommendations
Currently, installed Unit Ventilators have far-exceeded their expected service lives and are therefore noisy & approaching failure. Additionally, the units are operated even during unoccupied hours, wasting energy and money.	Provide new HVAC equipment & associated control systems to provide the classroom spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
There are not any sources of supplemental heating currently installed for maintenance of unoccupied space temperatures; this requires the unit ventilators to run at a greater energy cost to the building.	Provide supplemental hot water heating terminal units within all spaces as the primary occupied and unoccupied heating source. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).

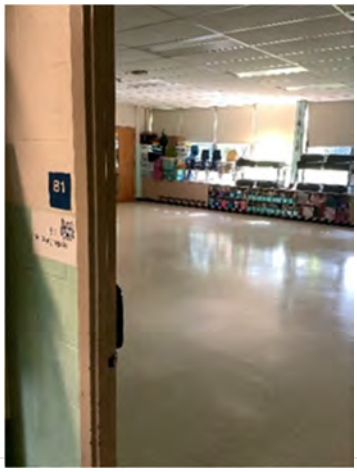

Image 7: Typical Classroom Unit Ventilator

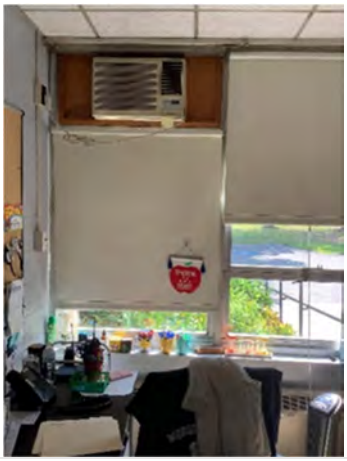

Image 8: Typical Window Air Conditioner

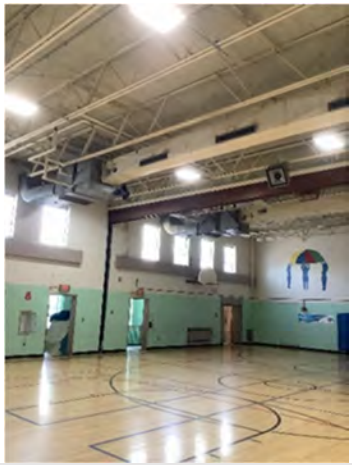

Image 9: Ceiling Suspended Heating and Ventilation Unit

Image 10: Ductless Cooling Unit in Media Center

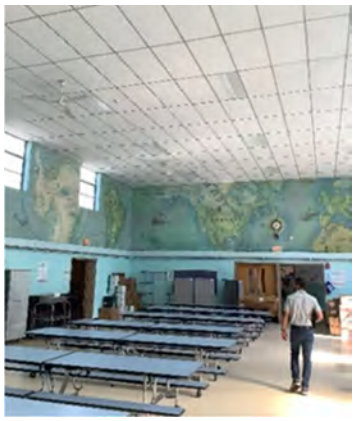

Image 11: Supplemental Fin Tube at Cafeteria

Image 12: Typical Thermostat

Classrooms lack air conditioning functionality.	Cooling is not a necessity but certain heating system options such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS) would inherently provide system-wide cooling as a benefit.

ADMINISTRATION AREAS:

The administration area is heated via hydronic fin tube radiation and convectors. Air conditioning is provided via window, or through-wall, air conditioners. Office and faculty spaces have no provided mechanical ventilation.

Specific Issues	Recommendations
Natural Ventilation is code compliant; however, ventilation is only available when the windows are opened.	Provide Mechanical Ventilation Systems to serve all spaces that currently include natural ventilation via operable windows. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Currently, installed convectors and fin tube radiation have far-exceeded their expected service life.	Provide new HVAC equipment & associated control systems to provide the classroom spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Individual temperature control for each office/space is lacking.	Provide a new direct digital control system.

GYMNASIUM:

The Gym is heated and ventilated by two pneumatically controlled H&V units suspended from the roof. *(Image 9)*. Both units supply air to the space through uninsulated ductwork high in the space. Return air is

Image 13: Kitchen Hood

Image 14: Kitchen Unit Heater

also brought directly back to the H&V through openings at the bottom of the unit. *(Image 10)* The H&V units are provided with a hydronic heating coil, supply fan, filters, and a mixing box. The outside air intakes are routed from the ceiling suspended unit, directly to sidewall louvers. The Multi-Purpose area is provided with supplemental hydronic fin tube radiation. *(Images 11, 12)*.

Specific Issues	Recommendations
Currently, installed heating & ventilating units have exceeded expected service life and are in poor condition.	Provide new HVAC equipment & associated control systems to provide the gym with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

KITCHEN AND CAFETERIA/STAGE:

The kitchen appears to be a warming type kitchen with a larger stainless steel island-type range exhaust hood *(Images 13, 14)* that is ducted to dedicated roof-mounted exhaust fan. There are no grease filters or fire suppression system installed for the hood. Make-up air for the kitchen appears to be provided by a ducted unit ventilator. There is no commercial dishwasher ductwork. At the time of the site visit during summer break, the fan for the exhaust hood was observed to be running. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment.

The cafeteria and stage are heated and ventilated by a ducted unit ventilator suspended from the roof above an adjacent storage room. *(Image 9)*. The unit supplies air to the space through uninsulated ductwork to a single diffuser high in the space. Air brought into the space is relieved to the exterior by a roof mounted exhaust fan. The cafeteria/stage area is provided with wall-mounted supplemental hydronic fin tube radiation.

Specific Issues	Recommendations
Currently, installed ventilation and exhaust hood units have exceeded their expected service life and is in poor condition. Hood is labeled as non-compliant upon last inspection. Additionally, the hood fan is operated even during non-cooking hours, wasting energy and money.	Provide new HVAC equipment & associated control systems to provide the kitchen with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

EXISTING CONDITIONS: ELECTRICAL

EXECUTIVE SUMMARY

The existing electrical systems of this facility range from original vintage, approximately 60 years old to more recent upgrades / add-ons installed including lighting retrofit, fire alarm, and emergency lighting (within 10-years old).

While the facility is well maintained and clean, the original systems are in poor / fair condition and have exceeded their intended useful life. Most of the existing systems are not suitable for renovation / expansion.

The electrical service is adequate in capacity and voltage characteristics for the present load demand of the building. However, the existing service will be required to be modified / relocated to accommodate renovation/addition.

Replacement parts are very difficult to find or no longer available for many of the electrical systems.

It is our recommendation, taking in consideration the age and general conditions of the existing equipment, that all electrical systems with exception to the fire alarm system should be replaced with new energy efficient code compliant systems under a renovation/addition program.

ELECTRICAL DISTRIBUTION SYSTEM

The primary service of the building is fed overhead from the utility pole a (3) pole mounted transformer adjacent to the building and next to the main electrical room. (Image #1)(Image #2)

The secondary service of the building consists of 600A, 120/208V, 3-Phase, 4 Wire manufactured by Westinghouse. (Image #3)

The building is on one secondary meter #68755787 located outside on the utility pole. (Image #4)

Also, there are electrical sub-panels located throughout the facility. The panels are circuit breaker type and without space available for additional circuit breakers. Most of the sub-panels are original to the building and in poor / fair condition. The panels are manufacturer by Westinghouse. (Image #5)

Specific Issues	Recommendations

Main Distribution Panels and all Sub-Panels are old and in poor condition.	Provide new pad mounted transformer, new primary service, and new secondary service. Replace all electrical distribution system with new. Existing branch circuits to connect to new panels.
Main Distribution Panels and all Sub-Panels are old and in poor condition.	Provide new pad mounted transformer, new primary service, and new secondary service. Replace all electrical distribution system with new. Existing branch circuits to connect to new panels.

INTERIOR LIGHTING

90% of the lighting has been upgraded to LED fixtures.

Corridor lights generally consists of 1'x4' surface mounted LED lighting with integral sensors. (Image #6)

Library and Classroom lighting consists of surface linear LED light fixtures controlled by (3) switches. (Image #7) (Image #8)

Gymnasium (Image #9) lighting consists of suspended 2'x4' LED high bays.

Kitchen has linear pendant LED wraparound fixtures. Fixtures are not vapor tight. (Image #10)

Cafetorium has 2'x4' pendant mounted LED high bays, some directional spotlights fixtures with wall mounted rotary dimmers for platform lighting. (Image #11)

The building does not contain occupancy sensors or daylight light sensors with exception to some corridor lights with integral sensors. The school does not have an automated lighting control system.

Specific Issues	Recommendations
School does not have automatic lighting control system. Manual line voltage switches are in really poor condition.	Provide automatic lighting control system in combination with automatic dimming sensors. In accordance with current energy code.
There are no dimming photo sensors	Provide dimming photo sensor within areas with natural daylight to dim fixtures automatically.

Image 1:

Image 2:

Image 3:

Image 4:

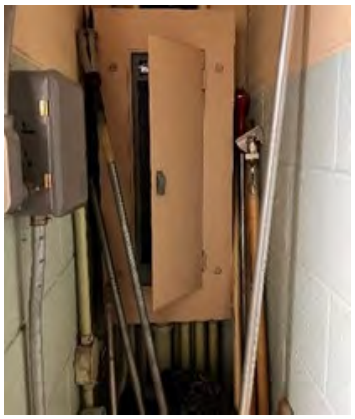

Image 5:

Image 6:

Not every space has occupancy sensors	Provide occupancy sensors within each space to conserve energy.

EXTERIOR LIGHTING

Exterior lighting consists of LED building mounted flood lights. The flood lights are not dare sky compliant. (Image #12)

Exit doors do not have egress lighting.

Specific Issues	Recommendations
Flood lighting is not dark sky compliant and not all doors contain egress lighting with battery back up	Provide pole mounted full cutoff energy efficient LED lighting for parking area and wall mounted LED lighting for general exterior building illumination.
There is no parking lot pole lighting.	Provide pole lighting to illuminate parking lot to minimum IESS standards.

EMERGENCY STANDBY SYSTEM

The facility does not contain an emergency generator. Emergency lighting is accomplished utilizing wall mounted emergency battery units. Emergency lighting is not sufficient at exterior egress paths. In general, the emergency lighting is in good condition (Image #13)

Existing exit signs are in fair condition. (Image #14)

Specific Issues	Recommendations
No exterior emergency lighting at some egress doors.	Add LED emergency egress lighting.

Image 7:

Image 8:

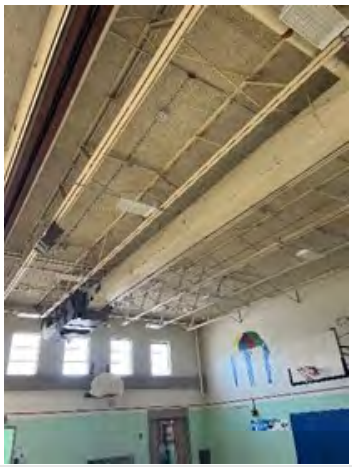

Image 9:

Image 10:

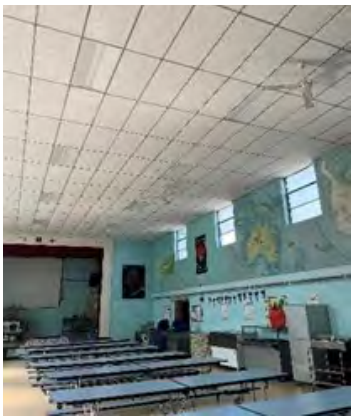

Image 11:

Image 12:

FIRE ALARM SYSTEM

The fire alarm consists of a Notifier NFS 3030 addressable panel with voice evacuation. The FACP is located in the main vestibule. (Image #15)

The method of transmission is via Sigcom Radio Box #64 (Image #16)

Currently, the fire alarm system is code compliant.

There is C.O. detection in the school and in the kitchen, as required by code

Specific Issues	Recommendations
None	None

Branch Circuits/Wiring Devices

The receptacle coverage is inadequate in most spaces. Typical classrooms have two or three receptacles.

Extension cords are used throughout classrooms and offices due to lack of receptacles. The use of extension cords for permanent wiring is a code violation. Equipment cords for projectors are being run above ceilings in classrooms which is also a code violation. (Image #17) (Image #18)

Typically branch circuits are not separate based upon load type. The existing receptacles are in fair/poor condition.

There are receptacles in the kitchen that are not GFCI type. (Image 19)

Specific Issues	Recommendations
Receptacle coverage in classrooms and offices is inadequate, cord and plugs are run above ceilings.	Provide additional receptacles in all classrooms and offices, remove cord and plug violations.
A number of receptacles in kitchen do not contain GFCI protection.	Provide GFCI receptacles in kitchen area.

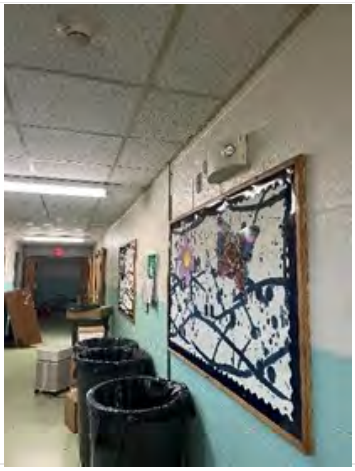

Image 13:

Image 14:

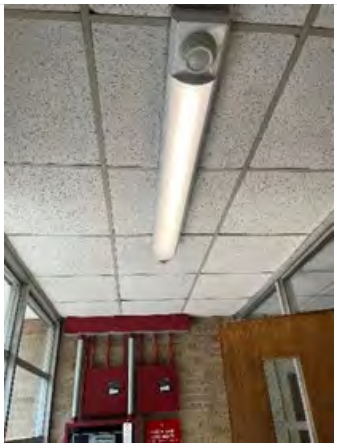

Image 1

Image 2

Image 3

Image 18

MISCELLANEOUS

The facility does not have a lightning protection system or lightning preventor system.

There is no emergency power off device in the kitchen to turn-off power to equipment under the hood.

Specific Issues	Recommendations
Building has no lightning protection	Provide lightning protection/preventor system.
Kitchen equipment has no emergency shutdown.	Provide emergency power off switch to shut down electrical equipment in kitchen in an emergency.

Image 19

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EXISTING CONDITIONS: PLUMBING

GENERAL

The existing plumbing systems serving the school consist of the domestic water system (cold, hot, and hot water return) domestic hot water heaters, sanitary system (waste and vent piping systems), acid waste system (acid waste, venting, and neutralizing tank), storm system (roof drains, storm piping), gas piping system, and the plumbing fixtures. The systems, in general, appear original to the building. Some systems/equipment have been upgraded/replaced; however, most plumbing systems and equipment are approaching or are beyond their useful life.

DOMESTIC WATER SYSTEMS

Domestic water for the facility is fed from the 2-1/2" main which enters the building in the storage of cafeteria and goes through the meter and the pressure reducing valve (image 1). No backflow preventer is present at the service, water meter is poor condition (image 1). The domestic water consists of copper pipe with soldered fittings (image 1) and it is expected the solder used in the system has a significant lead content. In addition, existing domestic water is original and in poor condition and is not expected to last more than a few years without exhibiting possible failures.

Pipe insulation and valves appear to be original and in poor condition (image 2). Original pipe insulation is possibly asbestos and should be evaluated for abatement. No Pipe labels, flow arrows and valve tags are present throughout the system.

Domestic Hot water for the facility is supplied from two indirect water heaters fed by the boilers, (image 3) Well McLain (Plus-119), which has a capacity of 119 gallons. The water heater in general is in fair condition but the piping to the water heater is in very poor condition with mineral deposits and portions visibly leaking (images 4&5). A tempering valve is not provided for the domestic hot water system. A hot water recirculation pump is provided and controlled via aqua-stat (image 5).

Due to the poor condition of the piping, it is recommended that all domestic water systems be replaced including the piping, valves, fittings, hangers, and insulation.

Specific Issues	Recommendations
No backflow preventer and water meter on domestic service.	Provide new backflow preventer and water meter assembly.

Domestic water piping, valves, hangers and insulation have outlived its useful life.	Provide new domestic water piping, insulation, hangers, and valves.
No two-temperature hot water system and thermostatic mixing valve.	Provide 120°F hot water to fixtures via thermostatic mixing valve and 140°F hot water to kitchen appliances.

SANITARY WASTE AND VENT

Sanitary for the building gets collected to a cast iron sewage basin under the stairs near the mechanical room, which gets pumped by two ejector pumps (image 6). This is also the case for the addition part (image 7). The pumps appear to be in fair condition, although they may have exceeded their life expectancy. The sanitary piping is cast iron with hub and spigot joints (image 8). Smaller pipe sizes (less than 3") are copper with soldered joints. Sanitary piping could continue to be used with maintenance and replacement of failed components (image 9); however, due to its age, it is not expected to last more than a few years without exhibiting widespread problems and possible failures. The vent piping is cast iron and appears to be in fair condition (image 6).

Storm Drainage

The majority of the storm conductors are not visible but where piping can be seen, appears to be in fair condition. Piping is suspected to be cast iron with hub and spigot joints. Roof drains consist of metal dome tops, and flashing clamps and appear to be in fair condition. Horizontal storm piping above the ceiling is insulated. The insulation is original and is in fair condition on the second-floor area (image 10) and is in fair condition in the gym area (image 11). Storm piping in general appears to be in fair condition but is not expected to last more than a few years without exhibiting widespread problems and possible failures.

Natural Gas/Propane

There is a propane system in the building which appears to be served by the two propane tanks outside the kitchen area (image 12) serves the kitchen appliances and boilers in the building (image 13). Piping where visible and observed to be black steel. Gas piping in general appears to be in fair condition but is not expected to last more than a few years without exhibiting widespread problems and possible failures.

Image 1

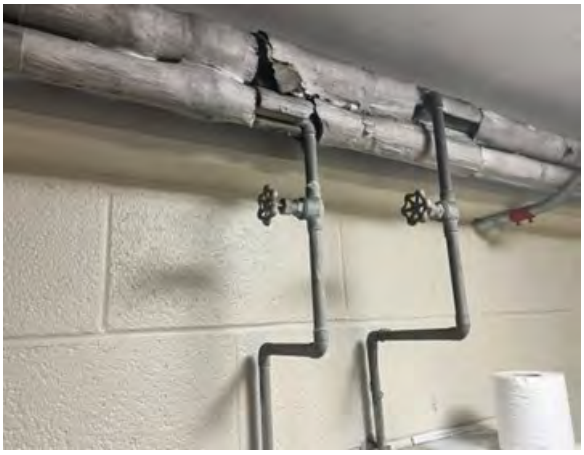

Image 2

Image 3

Image 4

Image 5

Image 6

Specific Issues	Recommendations
Sanitary, waste and vent piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Storm piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Pumps served/exceeded their life expectancy	A new sewage ejector pumps and new basin is recommended
Roof drain covers nearing its life expectancy.	New roof drains dome covers are recommended.

FIXTURES

Plumbing fixtures throughout the facility are in fair condition, many are antiquated and do not employ current water-saving features.

Water closets are primarily floor-mounted vitreous china with manual flush valves, overall, the water closets are in fair condition (image 14) except for the toilet in the mechanical room (image 15). The urinals are wall-mounted vitreous china with manual flush valves, overall, the urinals are in fair condition (see image 16).

Lavatories are wall-hung, vitreous china with manual faucets, with hot and cold water handles generally in fair condition (image 17).

Mop receptors are floor-mount terrazzo and wall-hung cast iron with 3” inch trap, generally in fair condition. Faucets are equipped with vacuum breakers and soap dispensers (image 18) but some of the faucets don’t have vacuum breakers (image 19).

Classroom sinks are stainless steel, single faucets with gooseneck and cold water handle (image 20) are in fair to poor conditions.

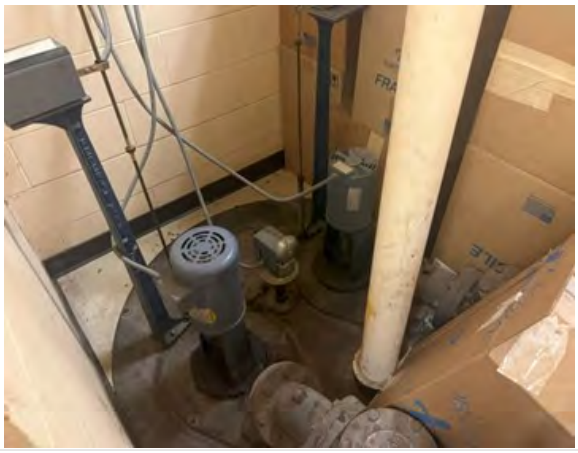

Image 7

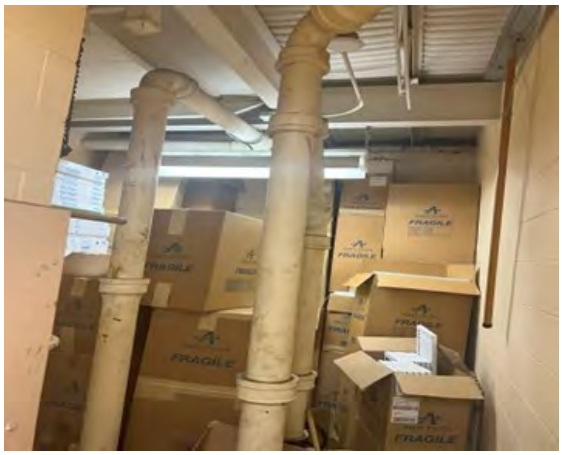

Image 8

Image 9

Image 10

Image 11

Image 12

Girls' and boys' locker rooms have showers but at present, they are abandoned and used as storage (image 21)

Drinking fountains are surface mounted, stainless steel, wall-hung push button type, it appears water filters are installed for a few drinking fountains (image 22), overall, drinking fountains are in fair condition and non-ADA compliant (image 23).

Kitchen fixtures appear to be in fair condition. Pot sinks originally appeared to be piped to a grease interceptor but at present pot sinks are piped directly to sanitary without an interceptor which is a code violation (image 24). The dishwasher is piped to an above-ground point of grease trap in the kitchen which is in fair condition (image 25). A separate kitchen waste system is not present in the facility other than the point-of-use grease interceptor and there is no evidence of an exterior grease interceptor.

All the cold water handles to the interior hose bibs are removed (image 26) and the exterior hose bibs are not equipped with vacuum breakers.

Specific Issues	Recommendations
Existing plumbing fixtures are antiquated, non-ADA compliant and not water-conserving.	During a substantial renovation and addition project, the code would require that all the water closets, lavatories, etc. be modified to be accessible water conservation-type fixtures. Replace all electric water coolers with new handicap-accessible fixtures. Replace all mop receptors and janitor sinks with new fixtures and provide backflow protection for soap dispensers to comply with the code.
No separate kitchen waste system or exterior grease trap	Replace all point-of-use grease interceptors and provide a new exterior grease trap.

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

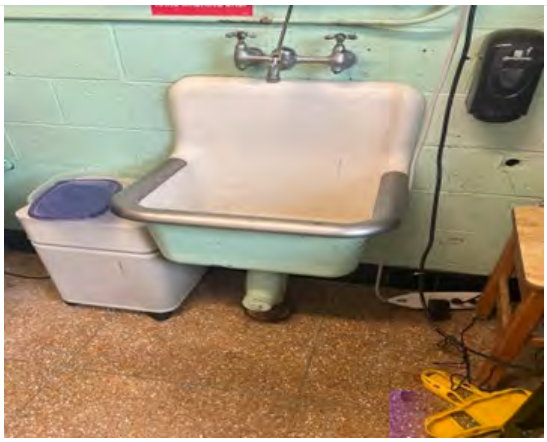

Image 19

Image 20

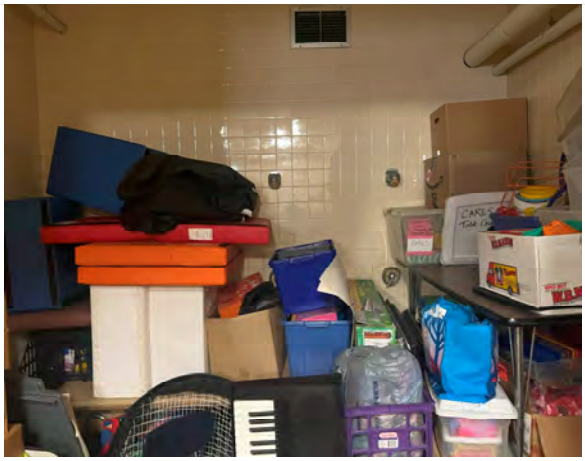

Image 21

Image 22

Image 23

Image 24

Image 25

Image 26

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EXISTING CONDITIONS: FIRE PROTECTION

There is no active fire suppression system in the school building. The building has no automatic sprinklers, no hose cabinets, no corridor fire extinguishers, or fire department standpipes present.

Recommendations:

- If the existing building is renovated to any substantial degree, the entire building needs to be upgraded with fire suppression system per latest Massachusetts Building Code 780 CMR Chapter 9.

- The existing site water service and capacity needs to be evaluated for new requirements and to comply with the latest Commonwealth of Massachusetts building code and the National Fire Protection Association (NFPA).
- A new dedicated fire service to the building will be required from the site and which then feeds the automatic fire sprinkler system covered throughout the building.

- NFPA-13 standard would require that all areas of the building shall be protected with wet fire suppression sprinklers. Unheated areas will require a dry system. Provide sprinklers and a standpipe system throughout the building to comply with current code.

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EXISTING CONDITIONS: FOOD SERVICE

SUMMARY

The Woburn Street School kitchen serves a population of approximately 350 students in grades K to four. The original kitchen in mostly intact with very little impartments having been done throughout the years. Major infrastructure items such as the exhaust hood and sinks have not change since the original installation. The walk-in cooler also appears to be a replacement but is now in a worn state with components on it having failed and corroding (Image 1).

Overall, the kitchen is worn. In some cases, the original finishes are of exceptionally high quality such as terrazzo floors that have held up well. There are areas where the floor was opened up for repairs and the replacement patch used is unsealed concrete. Unsealed concrete is absorbent of grease and dirt and difficult to clean. This type of finish is not health code complaint.

The walls are a painted block that have held up well. However, there are many instances of piping and conduit being surface mounted to the walls as the years have passes. As seen in (Image 2) drain piping and electrical conduits are difficult to clean and present accumulation points where dust and dirt accumulates.

The ceiling in the kitchen area is a lay in tile and is in good condition. The lighting appears to have been new at the time the ceiling was replaced. The lighting level in the kitchen does appear to be adequate. However, the lighting that is part of the hood system in not. The antiquated incandescent lights are inefficient and offer poor lighting output. The hood is oversized for the equipment that sits below it (Image 3).

For the purposes of this report, when the health code is referenced, we are citing requirements of the Federal Food Code, 2023 edition, published by the FDA, as well as the Merged Massachusetts Food Code, 2013 edition.

We also reference the National Sanitation Foundation (NSF), which is an independent governing body that develops standards for foodservice equipment and facility design. All equipment in commercial kitchens must be built in accordance with NSF standards as a requirement of the food code.

KITCHEN EQUIPMENT

The kitchen equipment is original with failed pieces of equipment having been removed. The most critical is the original hood that is in place. Some of the equipment below it has been removed (Image 3). The hood is not code compliant and lacks a fire suppression system.

A steamer was added which enhances the ability to prepare food but it was not placed under the hood. As result the steam is allowed to waft into the space adding to what is already a very warm and uncomfortable work environment.

Specific Issues

The hood does not have adequate overhang and is covering equipment that does not need to be below a hood.	Replacement of the hood is recommended. The size can be configured and right sized for the cooking capacity.
The interior of the hood is equipped with low quality filters. Low quality (loose) filters will not collect and hold grease, which is not desirable. The lighting levels under the hood canopy do not meet the minimum standards of 50-foot candles at the work surface.	Replacement of the hood is recommended. A hood with baffle filters will eliminate this concern.
There is not dedicated hand washing sink in the kitchen. This is unsanitary and a code violation.	Renovation of the kitchen is recommended and will provide for the complete compliment of the code minimum sinks including a dedicated hand washing stations.

The health code requires that any sink used in the preparation of food be air gapped. The air gap prevents sewer gas and backup form contaminating the sink bowls. In this case the prep sink is directly connected to the sanitary drain system (Image 6).

Wood toped table can be seen in in (Image 3). Wood topped work surfaces are not allowed in a kitchen unless it is being used in a baking of breads and other dough baking. Wood surfaces are difficult to maintain in the long term and they require frequent oiling. If not oiled the wood shrinks and splits causing health code violation since the gap fill with debris and it is not possible to clean and sanitize. All materials in a kitchen should be stainless steel or other appropriate material. Materials must be durable and easy to clean. Wood does not meet this characteristic if not continuously maintained.

Image 1

Image 2

Image 3

Image 4

The serving counter is not equipped with cold food holding equipment. Without mechanical cooling it can be difficult to maintain proper cold food serving temperatures. The sneeze shield in the serving counter is not compliant with current sneeze guard standards and health codes (Image 5). It's not clear if this line is being used. We suspect it is not since its in a corridor that sits between the seating area and the kitchen. This prevents direct adjacency and is difficult to manage.

A secondary serving line has been set up in the seating area. It may be supplementary to the line adjacent to the kitchen. In any case it is not able to be secured when not in use which effect the ability to ensure surfaces have been sanitized and ready and safe to be used for serving food.

The health code requires that there be a dedicated food preparation sink. There is not a sink for this purpose in the kitchen. It appears the three-compartment sink which should be dedicated to washing, rinsing, and sanitizing utensils servers as the only sink in the kitchen. This is difficult to manage and places a burden on staff.

Recommendations:

A reorganizing the kitchen is warranted. The serving line lacks the ability to hold cold food during serving. This function must be reorganized to be within full control of the kitchen area with all serving happening within the kitchen envelope.

Eliminate all wood surfaces. Replace them with appropriate materials that are complaint with the modern health code standards.

Add appropriate mobile worktables to provide for additional work surfaces that are flexible. Provide hand washing station and an adequate three compartment wash sink.
Redeploy the dish room or eliminate the equipment from the dish room to provide for efficient storage.

Replace the antiquated exhaust hood with a compliant hood system that is equipped with safety features and provides proper lighting and exhaust coverage above the equipment.

An appropriate walk-in cooler and freezer should be considered for proper storage capacity and adequate cold food holding temperatures.

This concludes this report.

EXISTING CONDITIONS: TECHNOLOGY AND COMMUNICATIONS

EDVANCE TECHNOLOGY DESIGN

EXECUTIVE SUMMARY

Technology and communication systems for this facility range from those that are original to more current systems such as the wireless access points and switches being implemented. There is a lack of controlled and dedicated space, power, and environmental conditioning for core network equipment. Furthermore, many of the core communication systems, including but not limited to the public address system and master clock systems cannot be upgraded or expanded due to the age of the equipment. The telephone system, although based on current technology should be extended into all spaces including classrooms and fully integrated with Zoom. We recommend that the older equipment be replaced and that the classroom technology, network infrastructure, audio visual systems of large assembly spaces, and the building security systems be upgraded to current standards.

Older systems within the three elementary schools in our survey have been identified by the district's IT team. We discussed these systems, such as telephones, network switches, and wireless access points, as well as their desired solution during site visits and discussions with Kenneth Lord in July 2023.

STRUCTURED CABLING

The Woburn School appears to have network cabling installed in surface mounted raceway throughout the school (Image 1). It is run from a central location or main distribution in a shared custodial space. This area is not properly cooled or ventilated. Older preexisting network cabling is exposed in some locations. K. Lord - Most of the district's elementary school cable is Cat 5e. Twelve strands of single mode fiber connect the school to the public safety building (Image 3).

Specific Issues	Recommendations
Cabling is run to wall mounted wireless access points and other network device locations using surface mount raceway. Cabling originates in a shared closet that is not properly treated for power and environmental conditioning. This is common when networks are implementing in older existing facilities.	Dedicated network closets should be established as part of any building renovation project, with new Cat 6A cabling installed from outlets to closets within walls if possible or with the use of more permanent metallic raceway technology. Remove and replace older existing surface mount raceways and cabling as part of any renovation project.

NETWORK SWITCHES

In the main distribution location, there is an old chassis-based switch installed in a wall-mounted equipment rack along with patch panels, patch cords and UPS equipment (Image 2).

The district intends to upgrade network switch hardware to Cisco. There are a few new switches in the Woburn School awaiting deployment (Image 4).

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, new Cisco 9300 switches have been installed.

Specific Issues	Recommendations
Network switches are installed in a rack that is in a shared storage closet. Switches are exposed to the elements of a shared closet, without adequate ventilation, power distribution and conditioning.	Dedicated network closets should be established as part of a building renovation project, where network switches can be secured, properly supported with adequate power and environmental conditioning.
UPS equipment does not fit into wall mount enclosures and is sitting on the floor of the closet.	Dedicated network closets with free standing open relay racks will provide space for securing UPS equipment.

WIRELESS NETWORK

Wireless access points were observed throughout the facility in most of the classrooms. Large assembly spaces also appear to be equipped with wireless access points. These appear to be new Cisco Meraki devices (Image 5).

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, new Cisco Meraki wireless access points have been installed. This upgrade was completed in mid-August.

Specific Issues	Recommendations
None, if the new Cisco Meraki wireless access points provide sufficient coverage across the building.	If coverage is not sufficient, increase the number of access points in the building specifically in larger spaces and corridors. Since the original review, Owner has installed new Cisco Meraki devices. Coverage is sufficient.

Image 1

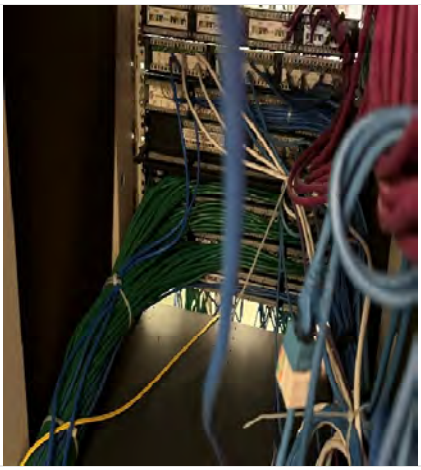


Image 2

Image 3

Image 4

PUBLIC ADDRESS AND CLOCK SYSTEM

The main public address system is in the main office, which is an older Bogen analog public address system (Image 6). A public address system console was observed in the main office. The older in-wall speakers appear to be working throughout the building. The original clock system does not appear to be functioning, with most rooms being equipped with battery secondary clock of various types and sizes (Image 9).

There is a Polycom module labeled "Woburn Intercom to Zoom Phone" which appears to be part of the move to a Yealink Zoom phone system (Image 7).

Specific Issues	Recommendations
There is an antiquated public address System. Speakers are functional but appear to be original equipment. The clock system does not appear to be working.	Install new public address main equipment including new speakers as part of any facility renovation or upgrade project.
Every variation of battery-operated clock was observed to replace nonfunctioning master and secondary clock systems are not functional.	Install new master clocks system with low voltage secondary clocks as part of any facility renovation or upgrade project.

TELEPHONE SYSTEM

The Telephone System serves primarily the main office administration area and remote office locations. The handsets appear to be in good working order (Image 10). However, there are no telephone handsets in any of the classrooms. There may be a connection between the public address system and telephone system at the system level to allow for outside calls from the classroom handsets, but it was not verifiable from the site visit. K. Lord mentioned that it is the district's intention to move to a Zoom phone system using Yealink devices in both administrative and classroom settings, starting in the summer of 2023.

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, the school has moved to a Zoom phone system with new Yealink devices. This system went live on August 15, 2023.

Image 5

Image 6

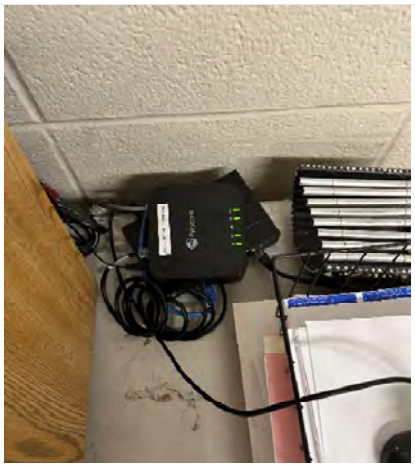


Image 7

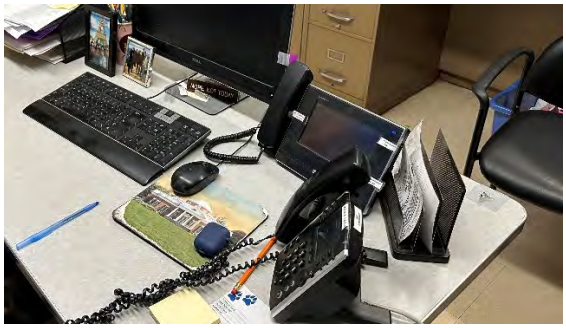


Image 8

Image 9

Specific Issues	Recommendations
Calling between administration and individual rooms as well as between room calling is accomplished through the public address system. However, system may not be connected to outside lines for making emergency calls from classrooms	Revise public address system to allow for emergency telephone calls to be made from classrooms through the public address handsets in classrooms.
Telephone system capability does not currently extend to all classrooms and other spaces other than the administrative office and work areas.	Install a new Telephone system capable of incorporating telephone handsets in all classrooms and spaces for emergency calling capability. Since the original review, the Owner has installed a new system.

AUDIO-VISUAL SYSTEMS FOR LARGE ASSEMBLY SPACES

North Intermediate has two large spaces: the gymnasium and the cafeteria. The cafeteria acts as the building's large assembly space. Large program loudspeakers are mounted on either side wall at the stage end of the room (Image 11). There is a projector used with the pull-down screen on the stage (Image 11).

Specific Issues	Recommendations
Flat panel technology is not suitable for large venue presentations. Projection screen may not be appropriately sized for the room.	Include a new large format projection screen with a permanently installed high lumen projector and sound system in the Cafetorium.

INSTRUCTIONAL AUDIO-VISUAL SYSTEMS

Classroom instructional technology includes a variety of systems and devices. Most classrooms are equipped with an ultra-short throw projector and speakers on each side. Older sound reinforcement and audio equipment was observed in some of the classrooms. The integration of classroom display technology into the classrooms varied in terms of completeness, with some classrooms displaying exposed cabling.

Image 10

Image 11

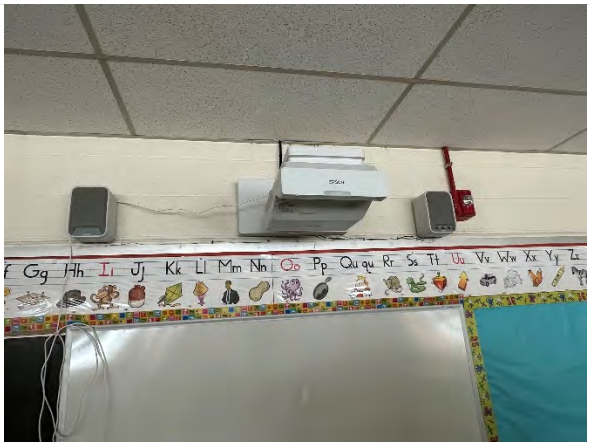


Image 12

Image 13

Image 14

Specific Issues	Recommendations
Functional but older Instructional Audio-Visual display systems were observed throughout the classrooms.	Replace older systems with newer interactive projector or panel technology
Portable Voice Reinforcement systems were observed in only a few of the classrooms.	Include state of the art Voice Reinforcement systems during renovations or facility upgrades

NETWORK COMPUTERS AND PRINTERS

Mobile student technology carts for Chromebook were observed in some classrooms (image 22). It has been confirmed that the district is 1-to-1. Based on discussion with K. Lord, it appears each school has roughly 10 Chromebook carts. Each room was equipped with a teacher's laptop and document camera and some type of digital display. Large, networked copier/printers were observed in various strategic locations.

K. Lord discussed the intention of converting Pre-K and first grade to touch screen Chromebooks.

Specific Issues	Recommendations
Mobile charging carts are relevant as the school is managing the student devices.	Design into the classroom a place where charging carts can be stored and powered.

DIGITAL SIGNAGE

One flat panel display was observed that may be associated with digital signage in the main office. (Image 15)

Specific Issues	Recommendations
None if the installed signage system is easy for administrators to update information on and mange on a regular basis.	Build on the current use of digital display technology in the main entrance and cafeteria with easy to manage signage system solutions.

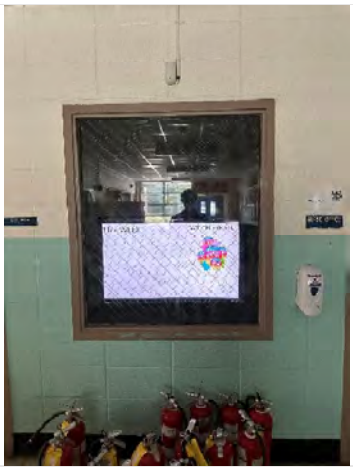


Image 15

Image 16

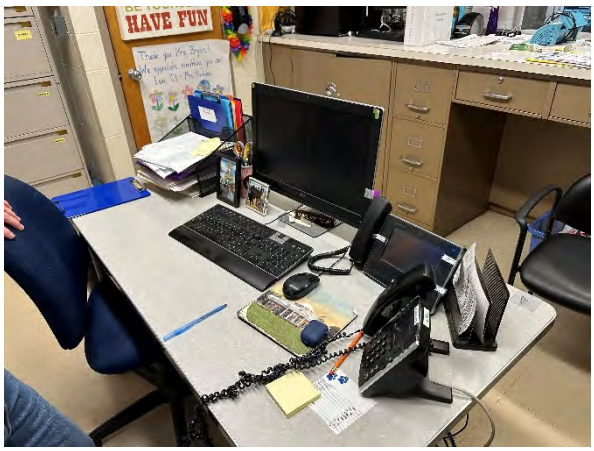


Image 17

SECURITY

Like other elementary schools in the district, Woburn Street School has one camera outside the building's main entry doors (Image 16). There is an associated AiPhone in the main office for verification and entry approval (Image 17) There are no interior cameras, and there are no additional exterior cameras aside from the main entry.

Specific Issues	Recommendations
Video surveillance is extremely limited	Add additional surveillance cameras and necessary Network Video Recorder storage as part of any facilities upgrade project.
Limited intrusion system motion sensors were observed. Ground floor rooms with windows do not appear to be equipped with motions sensors.	Add infrared motions sensors to all windowed spaces on the first floor. Upgrade system as part of any facility renovation project

UEC universal environmental consultants

October 10, 2023

Ms. Rani Phillip
Dore & Whittier Architects
260 Merrimac Street
Newburyport, MA 01950

Reference: Hazardous Materials Determination Survey
Woburn Street Elementary School, Wilmington, MA

Dear Ms. Phillip:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Hazardous Materials determination survey at Woburn Street Elementary School, Wilmington, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

_____

Ammar M. Dieb
President

UEC:\223 514.00\Report.DOC

Enclosure

REPORT
FOR
HAZARDOUS MATERIALS DETERMINATION
SURVEY
AT THE
WOBURN STREET ELEMENTARY SCHOOL
WILMINGTON, MASSACHUSETTS

PROJECT NO: 223 514.00

Survey Dates:
May 12, 2017, May 25, 2017, January 5, 2021
October 3, 2023, October 9, 2023

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS
12 BREWSTER ROAD
FRAMINGHAM, MA 01702

INTRODUCTION:
UEC has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty-five years of experience.

UEC was contracted by Dore & Whittier Architects to conduct the following services at the Woburn Street Elementary School, Wilmington, MA:

- Inspection and Testing for Asbestos Containing Materials (ACM).
- Inspection for Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures.
- Inspection for PCB's-Caulking.
- Inspection for Lead Based Paint (LBP).
- Mercury in Rubber Flooring inspection and sampling.
- Airborne Mold inspection and sampling.
- Radon sampling.

A comprehensive survey per the Environmental Protection Agency (EPA) NESHAP regulation would be required prior to any renovation or demolition activities.

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination of types of ACM found and cost estimates for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Jason Becotte (AI-034963) and analyzed by a Massachusetts licensed laboratory EMSL, Woburn, MA.

Airborne mold samples were analyzed by an EPA trained laboratory EMSL, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

Refer to samples results.

FINDINGS:
Asbestos Containing Materials (ACM):
The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to be ACM based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount of 1 percent or greater in accordance with DEP regulations.

All suspect materials that contain any amount of asbestos must be considered asbestos if it is scheduled to be removed per the Department of Environmental Protection (DEP) regulations.

Number of Samples Collected
May 12, 2017
Eight (8) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. 2' x 2' Suspended acoustical ceiling tile at lobby
2. 2' x 2' Suspended acoustical ceiling tile at cafeteria hallway
3. Textured hard ceiling plaster at boy's bathroom B-level

4. Textured hard ceiling plaster at boy's bathroom B-level
5. Textured hard ceiling plaster at boy's bathroom B-level
6. Smooth hard ceiling plaster at closet by B10
7. Smooth hard ceiling plaster at closet by B10
8. Smooth hard ceiling plaster at closet by B10

Sample Results

Type and Location of Sample	**Sample Result**
1. 2' x 2' Suspended acoustical ceiling tile at lobby	No Asbestos Detected
2. 2' x 2' Suspended acoustical ceiling tile at cafeteria hallway	No Asbestos Detected
3. Textured hard ceiling plaster at boy's bathroom B-level	No Asbestos Detected
4. Textured hard ceiling plaster at boy's bathroom B-level	No Asbestos Detected
5. Textured hard ceiling plaster at boy's bathroom B-level	No Asbestos Detected
6. Smooth hard ceiling plaster at closet by B10	No Asbestos Detected
7. Smooth hard ceiling plaster at closet by B10	No Asbestos Detected
8. Smooth hard ceiling plaster at closet by B10	No Asbestos Detected

May 25, 2017
Two (2) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. 1' x 1' Acoustical wall tile at room B-6
2. 1' x 1' Acoustical wall tile at room B-7

Sample Results

Type and Location of Sample	**Sample Result**
1. 1' x 1' Acoustical wall tile at room B-6	10% Asbestos Amosite
2. 1' x 1' Acoustical wall tile at room B-7	10% Asbestos Amosite

January 5, 2021
Sixteen (16) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. Light tan 12" x 12" vinyl floor tile at room C-4
2. Light tan 12" x 12" vinyl floor tile at room B-7
3. Mastic for light tan 12" x 12" vinyl floor tile at room C-4
4. Mastic for light tan 12" x 12" vinyl floor tile at room B-7
5. Tan flecks 12" x 12" vinyl floor tile at room B-2
6. Tan flecks 12" x 12" vinyl floor tile at room B-4
7. Mastic for tan flecks 12" x 12" vinyl floor tile at room B-2
8. Mastic for tan flecks 12" x 12" vinyl floor tile at room B-4
9. Light brown 12" x 12" vinyl floor tile at assistant principal's office
10. Light brown 12" x 12" vinyl floor tile at assistant principal's office
11. Mastic for light brown 12" x 12" vinyl floor tile at assistant principal's office
12. Mastic for light brown 12" x 12" vinyl floor tile at assistant principal's office
13. Grey/brown 12" x 12" vinyl floor tile at stage
14. Grey/brown 12" x 12" vinyl floor tile at teacher's room
15. Mastic for grey/brown 12" x 12" vinyl floor tile at stage
16. Mastic for grey/brown 12" x 12" vinyl floor tile at teacher's room

Sample Results

Type and Location of Sample	Sample Result
1. Light tan 12” x 12” vinyl floor tile at room C-4	No Asbestos Detected
2. Light tan 12” x 12” vinyl floor tile at room B-7	No Asbestos Detected
3. Mastic for light tan 12” x 12” vinyl floor tile at room C-4	No Asbestos Detected
4. Mastic for light tan 12” x 12” vinyl floor tile at room B-7	No Asbestos Detected
5. Tan flecks 12” x 12” vinyl floor tile at room B-2	No Asbestos Detected
6. Tan flecks 12” x 12” vinyl floor tile at room B-4	No Asbestos Detected
7. Mastic for tan flecks 12” x 12” vinyl floor tile at room B-2	2% Asbestos
8. Mastic for tan flecks 12” x 12” vinyl floor tile at room B-4	2% Asbestos
9. Light brown 12” x 12” vinyl floor tile at assistant principal’s office	3% Asbestos
10. Light brown 12” x 12” vinyl floor tile at assistant principal’s office	3% Asbestos
11. Mastic for light brown 12” x 12” vinyl floor tile at assistant principal’s office	4% Asbestos
12. Mastic for light brown 12” x 12” vinyl floor tile at assistant principal’s office	4% Asbestos
13. Grey/brown 12” x 12” vinyl floor tile at stage	No Asbestos Detected
14. Grey/brown 12” x 12” vinyl floor tile at teacher’s room	No Asbestos Detected
15. Mastic for grey/brown 12” x 12” vinyl floor tile at stage	2% Asbestos
16. Mastic for grey/brown 12” x 12” vinyl floor tile at teacher’s room	2% Asbestos

October 9, 2023
Twelve (12) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. Exterior door framing caulking
2. Exterior door framing caulking
3. Exterior door framing caulking
4. Exterior window framing caulking
5. Exterior window framing caulking
6. Exterior window framing caulking
7. Exterior window glazing caulking
8. Exterior window glazing caulking
9. Exterior window glazing caulking
10. Exterior unit vent grille caulking
11. Exterior unit vent grille caulking
12. Exterior unit vent grille caulking

Sample Results

Type and Location of Sample	Sample Result
1. Exterior door framing caulking	5% Asbestos
2. Exterior door framing caulking	4% Asbestos
3. Exterior door framing caulking	4% Asbestos
4. Exterior window framing caulking	No Asbestos Detected
5. Exterior window framing caulking	5% Asbestos
6. Exterior window glazing caulking	No Asbestos Detected
7. Exterior window glazing caulking	No Asbestos Detected
8. Exterior window glazing caulking	3% Asbestos
9. Exterior unit vent grille caulking	4% Asbestos
10. Exterior unit vent grille caulking	6% Asbestos
11. Exterior unit vent grille caulking	4% Asbestos
12. Exterior unit vent grille caulking	6% Asbestos

Observations and Recommendations:
The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition, or other activity.

1. 1' x 1' Acoustical wall tile was found to contain asbestos.
2. Glue daub for 1' x 1' acoustical wall tile was assumed to contain asbestos.
3. Mastic for tan flecks 12" x 12" vinyl floor tile was found to contain asbestos.
4. Light brown 12" x 12" vinyl floor tile was found to contain asbestos.
5. Mastic for light brown 12" x 12" vinyl floor tile was found to contain asbestos.
6. Mastic for grey/brown 12" x 12" vinyl floor tile was found to contain asbestos.
7. Hard joint insulation was assumed to contain asbestos.
8. Boiler exhaust insulation was assumed to contain asbestos.
9. Boiler insulation was assumed to contain asbestos.
10. Flexible connector was assumed to contain asbestos.
11. Interior windows glazing caulking was assumed to contain asbestos.
12. Sink coating was found to contain asbestos.
13. Blackboard/tackboard glue was assumed to contain asbestos.
14. Exterior door framing caulking was found to contain asbestos.
15. Exterior window framing caulking was found to contain asbestos.
16. Exterior window glazing caulking was found to contain asbestos.
17. Exterior unit vent grille caulking was found to contain asbestos.
18. Gymnasium hardwood flooring paper and mastic were assumed to contain asbestos.
19. Transite sewer pipe was assumed to contain asbestos.
20. Damproofing on exterior and foundation walls was assumed to exist and assumed to contain asbestos. A Non-Traditional Work Plan will be required to be prepared and submitted to the DEP for approval.
21. Roofing material was assumed to contain asbestos. Roofing material does not have to be removed by a licensed asbestos contractor. However, the Demolition/Roofing Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval
22. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures:
Observations and Conclusions
Visual inspection of various equipment such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury. It would be very costly to test those equipment and dismantling would be required to access. Therefore, the above-mentioned equipment should be disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking:
Observations and Conclusions
Caulking was assumed to contain PCB's.

Lead Based Paint (LBP):
Observations and Conclusions
LBP was assumed to exit on painted surfaces. A school is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

Mercury in Rubber Flooring:
Observations and Conclusions:
No rubber flooring exists in the school.

Airborne Mold:
Airborne mold testing was performed utilizing Zefon International Incorporated's Air-O-Cell® sampling device following all manufacturer supplied recommended sampling procedures.

The Air-O-Cell® is a direct read total particulate air sampling device. It works using the inertial impaction principle similar to other spore trap devices. It is designed for the rapid collection and analysis of airborne particulate including bioaerosols. The particulate includes fibers (e.g. asbestos, fiberglass, cellulose, clothing fibers) opaque particles (e.g. fly ash, combustion particles, copy toner, oil droplets, paint), and bioaerosols (e.g. mold spores, pollen, insect parts, skin cell fragments).[1]

The method involves drawing a known quantity of air through a sterile sampling cassette. Subsequent to sampling, the cassette is sealed and transferred to a microbiology laboratory under chain of custody protocol for microscopic analysis. This method counts both viable and nonviable mold spores.

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M^3	Pollen	Insect Fragment	Hyphal Fragments
132306393-0001	Cafeteria	2,190	ND	ND	ND
132306393-0002	Room B1	830	ND	ND	40
132306393-0003	Room B12	930	ND	ND	20
132306393-0004	Room B5	5,590	ND	ND	90
132306393-0005	Room B6	3,720	ND	ND	20
132306393-0006	Room A1	600	ND	ND	40
132306393-0007	Room A4	190	ND	ND	ND
132306393-0008	Room A6	110	ND	ND	ND
132306393-0009	Library	2,270	ND	ND	20
132306393-0010	Outside	4,270	20	ND	90

AIRBORNE MOLD and PARTICULATE
(Subjective Scales)

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
132306393-0001	Cafeteria	1	1	1
132306393-0002	Room B1	1	1	1
132306393-0003	Room B12	1	1	1
132306393-0004	Room B5	1	1	1
132306393-0005	Room B6	1	1	1

[1] Zefon International Inc. <www.zefon.com>

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
132306393-0006	Room A1	1	1	1
132306393-0007	Room A4	1	1	1
132306393-0008	Room A6	1	1	1
132306393-0009	Library	1	1	1
132306393-0010	Outside	-	1	1

Legend:
ND - Not Detected

Observations:
There are currently no guidelines or standards promulgated by a government agency or widely recognized scientific organization for the interpretation of airborne mold spore levels. The most commonly employed tool used to assess if mold growth is occurring in a structure is to compare quantities and species of mold outdoors to indoor. If there were more mold indoor, and/or if species were present indoor which were not present outdoors, then growth is occurring, and remediation is recommended.

Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered average. Indoor mold spore counts in the fall are typically in the 1,500-3,500-spores/cubic meter range.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as “1” on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as “1” on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Radon:
Number of Samples Collected
Ten (10) air samples were collected at the following locations:

Location of Sample

1. Cafeteria
2. Room B1
3. Room B12
4. Room B5
5. Room B6
6. Room A1
7. Room A4
8. Room A6
9. Library
10. Room A3

Location of Sample	Sample Result
1. Cafeteria	0.6 pCi\L
2. Room B1	1.4 pCi\L

3. Room B12	0.7 pCi\L
4. Room B5	0.7 pCi\L
5. Room B6	0.9 pCi\L
6. Room A1	6.0 pCi\L
7. Room A4	6.6 pCi\L
8. Room A6	4.1 pCi\L
9. Library	0.6 pCi\L
10. Room A3	9.1 pCi\L

Observations and Conclusions:
The measured radon concentrations of most of the samples were found to be much lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). Radon levels at few rooms were found to exceed EPA guidelines. Additional testing is recommended and a mitigation system might be required.

COST ESTIMATES:
The cost includes removal and disposal of all accessible ACM, other Asbestos Containing materials and an allowance for removal and disposal of inaccessible or hidden ACM that may be found during the demolition project.

Location	Material	Approximate Quantity	Cost Estimate ($)
Interior	Flooring Materials	6,500 SF	32,500.00
	Hard Joint Insulation	500 Total	15,000.00
	Hidden Hard Joint Insulation	Unknown	50,000.00
	1' x 1' Acoustical Wall Tiles/Glue Daub	2,000 SF	25,000.00
	Interior Windows	82 Total	24,600.00
	Sinks	30 Total	6,000.00
	Gymnasium Flooring	4,500 SF	45,000.00
	Flexible Connecters	6 Total	1,200.00
	Chalkboards/Tackboards	42 Total	16,800.00
	Miscellaneous Hazardous Materials	Unknown	25,000.00
Boiler Room	Boiler Exhaust Insulation	280 SF	8,400.00
	Boiler Insulation	400 SF	12,000.00
	Boilers	2 Total	18,500.00
Exterior	Windows	262 Total	78,600.00
	Doors	10 Total	3,000.00
	Unit Vent Grills	30 Total	9,000.00
	Transite Panels	30 Total	6,000.00
	Transite Sewer Pipes	Unknown[1]	50,000.00
	Damproofing on Walls	2,500 Tons[1]	700,000.00
	Roofing Materials	Unknown	75,000.00
Estimated costs for NESHAP Inspection and Testing Services			17,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			151,200.00
		TOTAL:	***1,365,000.00***
		TOTAL:	***1,650,000.00***[2]

[1]: Part of total demolition and site work.
[3]: Work to be Performed by a C.M at Risk Contractor.

DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos:

Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA /600/R-93/116 method.

Airborne Mold:

The samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

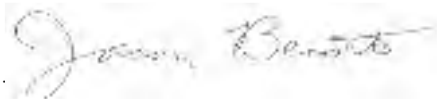
Radon:

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

LIMITATIONS AND CONDITIONS:
This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:



_____

Jason Becotte
Asbestos Inspector

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 22352

NVLAP®
Lab Code: 200919-0

May 19, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Woburn Street School, Wilmington, MA

Date Sampled: 2017-05-12
Work Received: 2017-05-17
Work Analyzed: 2017-05-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

May 19, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Woburn Street School, Wilmington, MA

Date Sampled: 2017-05-12
Work Received: 2017-05-17
Work Analyzed: 2017-05-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 252171	2x2 SAT 2 Craggy	Lobby	gray	Mineral Wool 40 Cellulose 40 Non-Fibrous 20	None Detected
2 / 252172	2x2 SAT 2 Craggy	Cafe Hallway	gray	Mineral Wool 40 Cellulose 40 Non-Fibrous 20	None Detected
3 / 252173	Texture Hard Ceiling Plaster	Boys Bathroom B-Level	white	Non-Fibrous 100	None Detected
4 / 252174	Texture Hard Ceiling Plaster	Boys Bathroom B-Level	white	Non-Fibrous 100	None Detected
5 / 252175	Texture Hard Ceiling Plaster	Custodian Office	white	Non-Fibrous 100	None Detected
6 / 252176	Smooth Hard Ceiling Plaster	Closet By B10	white	Non-Fibrous 100	None Detected
7 / 252177	Smooth Hard Ceiling Plaster	Closet By B10	white	Non-Fibrous 100	None Detected
8 / 252178	Smooth Hard Ceiling Plaster	Closet By B10	white	Non-Fibrous 100	None Detected

Friday 19 May 2017 End of Report

Analyzed by:

Batch: 22352

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM
48-hour TAT

Town/City: Wilmington, MA Building Name Woburn Street School

Sample	Result	Description of Material	Sample Location
1		2x2 SAT 2 Craggy	Lobby
2		1 1	Cafe hallway
3		Texture hard ceiling Plaster	Boys bathroom B-Level
4		1 1	1 1
5		1 1	custodian office
6		Smooth hard ceiling Plaster	closet by B10
7		1 1	1 1
8		1 1	1 1

Reported By: Jason Record Date: 5-12-17 Due Date: ----------

Received By: [signature] Date: 5/17

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 22590

NVLAP®
Lab Code: 200919-0

May 26, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Woburn Street School, Wilmington MA

Date Sampled: 2017-05-25
Work Received: 2017-05-25
Work Analyzed: 2017-05-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

May 26, 2017

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Number:
Project Name: Woburn Street School, Wilmington MA

Date Sampled: 2017-05-25
Work Received: 2017-05-25
Work Analyzed: 2017-05-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 254958	1 X 1 Acoustical Wall Tile	Room B6	gray	Fiberglass 80 Non-Fibrous 10	Detected Amosite 10
2 / 254959	1 X 1 Acoustical Wall Tile	Room B7	gray	Fiberglass 80 Non-Fibrous 10	Detected Amosite 10

Friday 26 May 2017
Analyzed by: Michael Thomas

End of Report

Batch: 22590

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM
24-hour TAT

Town/City: Wilmington, MA Building Name Woburn Street School

Sample	Result	Description of Material	Sample Location
1		1x1 Acoustical wall tile	Room B6
2		1 1	Room B7

Reported By: Jason Becotte Date: 5-25-17 Due Date:

Received By: Date: 5/25/17

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 59348

NVLAP® Testing Lab Code: 200919-0

January 06, 2021

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Name: *Woburn St. School, Wilmington, MA*
Project Number:
Date Sampled: 2021-01-05
Work Received: 2021-01-06
Work Analyzed: 2021-01-06

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Ammar Dieb,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
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- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Ammar Dieb for your business.

Michael Manning
Owner/Director

January 06, 2021

Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Project Name: *Woburn St. School, Wilmington, MA*
Project Number:
Date Sampled: 2021-01-05
Work Received: 2021-01-06
Work Analyzed: 2021-01-06

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 659271	Light Tan 12x12 VFT	Roolm C-4	tan	Cellulose 2 Non-Fibrous 98	None Detected
2 / 659272	Light Tan 12x12 VFT	Room B-7	tan	Cellulose 2 Non-Fibrous 98	None Detected
3 / 659273	Mastic	ON #1	black	Cellulose 2 Non-Fibrous 98	None Detected
4 / 659274	Mastic	On #2	black	Cellulose 2 Non-Fibrous 98	None Detected
5 / 659275	Tan Flecks 12x12 VFT	Room B-2	tan	Cellulose 2 Non-Fibrous 98	None Detected
6 / 659276	Tan Flecks 12x12 VFT	Room B-4	tan	Cellulose 2 Non-Fibrous 98	None Detected
7 / 659277	Mastic	On #5	multi	Cellulose 2 Non-Fibrous 96	**Detected** **Chrysotile 2**
8 / 659278	Mastic	ON #6	multi	Cellulose 2 Non-Fibrous 96	**Detected** **Chrysotile 2**
9 / 659279	Light Brown 12x12 VFT	Assistant Principal's Office	brown	Cellulose 2 Non-Fibrous 95	**Detected** **Chrysotile 3**
10 / 659280	Light Brown 12x12 VFT	Assistant Principal's Office	brown	Cellulose 2 Non-Fibrous 95	**Detected** **Chrysotile 3**
11 / 659281	Mastic	on #9	black	Cellulose 2 Non-Fibrous 94	**Detected** **Chrysotile 4**
12 / 659282	Mastic	On #10	black	Cellulose 2 Non-Fibrous 94	**Detected** **Chrysotile 4**
13 / 659283	Gray W/Brown Flecks 12x12 VFT	Stage	tan	Cellulose 2 Non-Fibrous 98	None Detected
14 / 659284	Gray W/Brown Flecks 12x12 VFT	Teacher's Room	tan	Cellulose 2 Non-Fibrous 98	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
15 659285	Mastic	On #13	multi	Cellulose 2 Non-Fibrous 96	Detected Chrysotile 2
16 659286	Mastic	On #14	multi	Cellulose 2 Non-Fibrous 96	Detected Chrysotile 2

Wednesday 06

End of Report

Analyzed by: Lauren Oakes

Batch: 59348

Client: UEC

Address:

Project Site & #: Woburn Street School

Phone / email address: Wilmington, MA

Contact:

Relinquish by/date:

Received by/date: Teyl Caldwell 11/6/21

# of Samples Received: 16

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab

165 New Boston St.

Suite 227

Woburn, MA 01801

(781)932-9600

www.asbestosidentificationlab.com

Date Sampled:

BATCH#

Rev 06/16

Page ___ of ___

Turnaround Time

- [ ] Less 3 Hrs
- [x] Same Day
- [ ] Next Day
- [ ] Two Day

Sample Method

- [x] Bulk
- [ ] Soil
- [ ] Wipe
- [ ] Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Analyzed By: Lauren Oakes

Date: 11/6/21

Temp in Celsius = 20

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
1166991	1	Material	0	tr	Y	GN	N	Chrysotile											R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				98
								Anthophyllite															
								Actinolite															
72	2	Material	0	tr	Y	GN	N	Chrysotile											R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				98
								Anthophyllite															
								Actinolite															
73	3	Material	0	tr	Y	GN	N	Chrysotile											R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				98
								Anthophyllite															
								Actinolite															

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
4L	4	Material	0	BK	Y	GN	N	Chrysotile											R				
		Location						Amosite											2				98
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
5L	5	Material	0	T	Y	GN	N	Chrysotile											R				
		Location						Amosite											2				98
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
6L	6	Material	0	T	Y	GN	N	Chrysotile											R				
		Location						Amosite											2				98
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
7L	7	Material	10	M	N	GN	N	Chrysotile	2	W	P	+	2	N	1.551	1.552			R				
		Location						Amosite											2				96
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
8L	8	Material	0	M	N	GN	N	Chrysotile	2	W	P	+	2	N	1.551	1.552			R				
		Location						Amosite											2				96
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
01	9	Material	0	BR	Y	GN	N	Chrysotile	3	W	P	+	L	N	1.551	1.552			R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				95
								Anthophyllite															
								Actinolite															
02	10	Material	0	BR	Y	GN	N	Chrysotile	3	W	P	+	L	N	1.551	1.552			R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				95
								Anthophyllite															
								Actinolite															
12	11	Material	0	BR	Y	GN	N	Chrysotile	4	W	P	+	L	N	1.551	1.552			R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				94
								Anthophyllite															
								Actinolite															
08	12	Material	0	BR	Y	GN	N	Chrysotile	4	W	P	+	L	N	1.551	1.552			R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				94
								Anthophyllite															
								Actinolite															
[illegible]	13	Material	0	T	Y	GN	N	Chrysotile											R				
		Location						Amosite															
								Crocidolite															
								Tremolite											2				98
								Anthophyllite															
								Actinolite															

Page_____ of _____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
78	14	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location	0	†	Y	GN	N	Tremolite											R				
								Anthophyllite											2				98
								Actinolite															
58	15	Material						Chrysotile	2	W	P	†	L	N	1.559	1.552							
								Amosite											R				
								Crocidolite															
		Location	0	M	N	GN	N	Tremolite											2				96
								Anthophyllite															
								Actinolite															
0880659	16	Material						Chrysotile	2	W	P	†	L	N	1.559	1.552							
								Amosite											2				
								Crocidolite															
		Location	0	M	N	GN	N	Tremolite											2				96
								Anthophyllite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															

OrderID: 132306524

132306524

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM

24 hour TAT

Town/City: Wilmington, MA Building Name Woburn Street School

Sample	Description of Material	Sample Location
1	Door Frame Caulk	exterior Door
2	"	"
3	"	"
4	window Frame Caulk	exterior window
5	"	"
6	"	"
7	window Glass glaze	"
8	"	"
9	"	"
10	vent Grill Caulk	exterior vent grill
11	"	"
12	"	"

Reported By: Jason Becotte Date: 10-9-23 Due Date: **24-Hours**

Received By: ---------- Date: ----------

REC'D EMSL-BOSTON OCT 09 2023 8AM 1300

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	132306524
Customer ID:	UEC63
Customer PO:	
Project ID:	

Attention:	Ammar Dieb	**Phone:**	(617) 984-9772
	Universal Environmental Consultants	**Fax:**	(508) 628-5488
	12 Brewster Road	**Received Date:**	10/09/2023 1:00 PM
	Framingham, MA 01702	**Analysis Date:**	10/10/2023
		Collected Date:	10/09/2023
Project:	Woburn Street School; Wilmington, MA		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

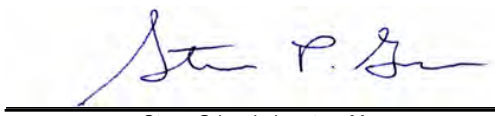
			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1 *132306524-0001*	Exterior Door - Door Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
2 *132306524-0002*	Exterior Door - Door Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
3 *132306524-0003*	Exterior Door - Door Frame Caulk	Gray Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
4 *132306524-0004*	Exterior Window - Window Frame Caulk	Gray/Tan/Silver Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
5 *132306524-0005*	Exterior Window - Window Frame Caulk	Gray/Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
6 *132306524-0006*	Exterior Window - Window Frame Caulk	Gray/Silver Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
7 *132306524-0007*	Exterior Window - Window Glass Glaze	Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
8 *132306524-0008*	Exterior Window - Window Glass Glaze	Tan/White Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
9 *132306524-0009*	Exterior Window - Window Glass Glaze	Tan/White Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
10 *132306524-0010*	Exterior Vent Grill - Vent Grill Caulk	Gray/Tan Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
11 *132306524-0011*	Exterior Vent Grill - Vent Grill Caulk	Gray/Tan Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
12 *132306524-0012*	Exterior Vent Grill - Vent Grill Caulk	Gray/Tan Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile

Initial report from: 10/10/2023 12:30:01

EMSL Analytical, Inc.
5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	132306524
Customer ID:	UEC63
Customer PO:	
Project ID:	

Analyst(s)
Ava Kopellas (12)



Steve Grise, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, ME LB-0039

Initial report from: 10/10/2023 12:30:01

OrderID: 132306393

UEC universal environmental consultants

12 Brewster Road
Framingham, MA 01702
Phone: 508.628.5486
Fax: 508.628.5488

132306393

CHAIN OF CUSTODY

BUILDING / SITE NAME: Woburn St. Elementary
WORK AREA:
TOWN / CITY: Wilmington
STATE: MA

Analysis Type	Turnaround Time (x) 6-8 Hr	12 Hr	24 Hr	48 Hr	72 hr
TEM / AHERA					
TEM / Level II					
TEM / Dust					
TEM / Bulk					
TEM / Water					
PLM					
Mold			X		
Other:					

Specific Project Notes

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	START	STOP	TIME	L/MIN	VOLUME
1	3517 3771	Cafeteria	3:54	4:04	10	15	150
2	3517 3774	Room B1	3:57	4:07	10	15	150
3	3517 3773	Room B-12 conference/office	4:11	4:21	10	15	150
4	3517 3765	Room B5	4:13	4:23	10	15	150
5	3517 3770	Room B6	4:28	4:38	10	15	150
6	3694 8297	Room A1	4:47	4:57	10	15	150
7	3694 8300	Room A4	5:00	5:10	10	15	150
8	3694 8301	Room A6	5:01	5:11	10	15	150
9	3694 8302	Library	4:41	4:51	10	15	150
10	3694 8303	Outside	5:25	5:35	10	15	150

SAMPLED BY: Sydney Faure 10/3/23 DATE/TIME: 5:41PM
RECEIVED BY: DATE/TIME:
RELINQUISHED BY: DATE/TIME:
RECEIVED IN LAB BY: RHB DATE/TIME:

RECD EMSL-BOSTON OCT 04 2023

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132306393
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

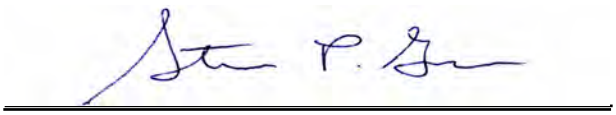
Project: Woburn Street Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306393-0001			132306393-0002			132306393-0003		
Client Sample ID:	1			2			3		
Volume (L):	150			150			150		
Sample Location:	Cafeteria			Room B1			Room B-12 Conference/Office		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	4	90	10.8	-	-	-
Ascospores	1	20	1	-	-	-	-	-	-
Aspergillus/Penicillium	6	100	4.8	-	-	-	-	-	-
Basidiospores	72	1500	71.4	29	620	74.7	23	490	52.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	15	320	15.2	2	40	4.8	16	340	36.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	5	100	4.8	2	40	4.8	-	-	-
Myxomycetes++	3	60	2.9	-	-	-	5	100	10.8
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	2	40	4.8	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Aureobasidium++	-	-	-	-	-	-	-	-	-
Torula++	-	-	-	-	-	-	-	-	-
Total Fungi	**102**	**2100**	**100**	**39**	**830**	**100**	**44**	**930**	**100**
Hyphal Fragment	-	-	-	2	40	-	1	20	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

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Initial report from: 10/05/2023 10:03 AM

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EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132306393
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

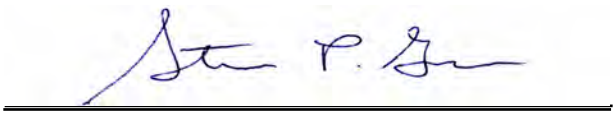
Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

Project: Woburn Street Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306393-0004			132306393-0005			132306393-0006		
Client Sample ID:	4			5			6		
Volume (L):	150			150			150		
Sample Location:	Room B5			Room B6			Room A1		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	6	100	1.8	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	4	90	2.4	-	-	-
Basidiospores	236	5030	90	129	2750	73.9	19	410	68.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	13	280	5	32	680	18.3	-	-	-
Curvularia	1	20	0.4	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	2	40	0.7	-	-	-	-	-	-
Myxomycetes++	7	100	1.8	8	200	5.4	4	90	15
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Aureobasidium++	1	20	0.4	-	-	-	-	-	-
Torula++	-	-	-	-	-	-	5	100	16.7
Total Fungi	**266**	**5590**	**100**	**173**	**3720**	**100**	**28**	**600**	**100**
Hyphal Fragment	4	90	-	1	20	-	2	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



Steve Grise, Laboratory Manager
or other Approved Signatory

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Phone: (617) 984-9772
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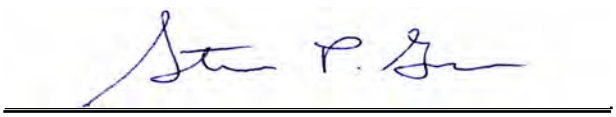
Project: Woburn Street Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306393-0007			132306393-0008			132306393-0009		
Client Sample ID:	7			8			9		
Volume (L):	150			150			150		
Sample Location:	Room A4			Room A6			Library		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	3	60	2.6
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	4	90	47.4	4	90	81.8	63	1300	57.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	5	100	52.6	-	-	-	39	830	36.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	20	18.2	-	-	-
Myxomycetes++	-	-	-	-	-	-	3	60	2.6
Pithomyces++	-	-	-	-	-	-	1	20	0.9
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Aureobasidium++	-	-	-	-	-	-	-	-	-
Torula++	-	-	-	-	-	-	-	-	-
Total Fungi	**9**	**190**	**100**	**5**	**110**	**100**	**109**	**2270**	**100**
Hyphal Fragment	-	-	-	-	-	-	1	20	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



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Project: Woburn Street Elementary; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	**132306393-0010**		
Client Sample ID:	**10**		
Volume (L):	**150**		
Sample Location:	**Outside**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	7	100	2.3
Ascospores	2	40	0.9
Aspergillus/Penicillium	-	-	-
Basidiospores	155	3310	77.5
Bipolaris++	-	-	-
Chaetomium++	-	-	-
Cladosporium	26	560	13.1
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium++	-	-	-
Ganoderma	-	-	-
Myxomycetes++	8	200	4.7
Pithomyces++	-	-	-
Rust	2	40	0.9
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	1	20	0.5
Zygomycetes	-	-	-
Aureobasidium++	-	-	-
Torula++	-	-	-
Total Fungi	**201**	**4270**	**100**
Hyphal Fragment	4	90	-
Insect Fragment	-	-	-
Pollen	1	20	-
Analyt. Sensitivity 600x	-	21	-
Analyt. Sensitivity 300x	-	7*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	1	-
Background (1-5)	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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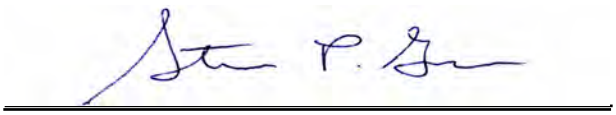

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Radon in Air

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

EPA Method #402-R-92-004
Liquid Scintillation
NRPP Device Code 8088
NRSB Device Code 12193

Laboratory Report for:

Universal Environmental Consultant
12 Brewster Road
Framingham MA 01702

Property Tested:

Woburn Street Elementary
227 Woburn Street
Wilmington MA 01887

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
8431496	4963384	10/03/2023	4:08 pm	10/06/2023	10:26 am	Cafeteria	0.6
8431497	4963385	10/03/2023	4:18 pm	10/06/2023	10:27 am	Room B1	1.4
8431498	4963386	10/03/2023	4:19 pm	10/06/2023	10:28 am	Room B12	0.7
8431499	4963387	10/03/2023	4:31 pm	10/06/2023	10:29 am	Room B5	0.7
8431500	4963388	10/03/2023	4:28 pm	10/06/2023	10:30 am	Room B6	0.9
8431501	4963389	10/03/2023	4:48 pm	10/06/2023	10:31 am	Room A1	6.0
8431502	4963390	10/03/2023	4:49 pm	10/06/2023	10:37 am	Room A4	6.6
8431503	4963391	10/03/2023	4:51 pm	10/06/2023	10:34 am	Room A6	4.1
8431504	4963392	10/03/2023	4:41 pm	10/06/2023	10:39 am	Library	0.6
8431505	4963393	10/03/2023	4:54 pm	10/06/2023	10:33 am	Room A3	9.1

Comment: Universal Environmental Consultant was emailed a copy of this report.

Test Performed By: Placed: Sydney Towne Retrieved: Sydney Towne

Distributed by: Universal Environmental Consultant

Date Received: 10/06/2023 Date Logged: 10/06/2023 Date Analyzed: 10/07/2023 Date Reported: 10/09/2023

Report Reviewed By: Elizabeth Wagner Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

The counting uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interferences with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Laboratory personnel were not involved in the placement or retrieval of the samples. Analytical results relate to the samples as received by the laboratory. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

NORTH INTERMEDIATE SCHOOL – EXISTING SITE CONDITIONS

Property Data

Address: 227 North Intermediate
Wilmington, MA 01887

Use:	Grades 4-5 Intermediate School
Site Area:	14 Acres
Date Built:	1962
Renovations:	NA
Additions:	NA
Occupancy Group:	Educational
Construction Class:	III-B
Zoning District:	R20, Municipal Open Space, Ground Water Protection District (Zone II Wellhead Protection Area)

Building Data

No. of Floors:	Main Floor, Lower level, Upper Level
Gross Area:	55,541 +/- GSF
Foundation / Frame:	Cast-in-place Concrete
Exterior Walls:	Masonry with uninsulated masonry back-up.
Sprinklers:	None
HVAC:	natural gas-fired hot water plant; unit ventilators.
Sewer:	Municipal Sewer Service

Introduction

The purpose of this section is to report on and analyze – the condition of the existing building and systems in order to identify what is in acceptable condition via current building codes, best practices, accessibility, and where there may be deficiencies. The assessments are based on site visits by the design team in conjunction with Town and School staff, as well as facilities maintenance personnel. There were no intrusive investigations or test openings performed as part of this review. Given the era the building was constructed, previous Hazardous Materials reports on file, as well as observations by the design team consultant – some materials are known to exist and others are assumed to be uncovered during construction and / or demolition.

General

The North Intermediate School is one of (6) elementary schools in Wilmington. The North Intermediate School had some upgrades, including exterior windows and doors but otherwise mostly preventative maintenance and repairs in the last 50 years. For its age and construction type, is in fair condition. The accessibility issues and exterior envelop, including lack of thermal insulation, are among the challenges. Infrastructure is functioning but in need of replacement as systems are antiquated and inefficient.

Legal Title to the Property / Determination of Development Restrictions

The Town of Wilmington has legal title to the property and the property is available for development with no restrictions. The deed and associated legal back up is included in Appendix Section X.08.

Historic Registrations / Preservation

The North Intermediate School is not listed on the Town's Historic Bylaw register. The building is not historically or architecturally significant.

Soils Exploration & Geotechnical Evaluation

A preliminary Soils Resource Report is provided in Section 3.1.4.C.1- Civil Assessment. Further soils exploration and geotechnical investigation of the North Intermediate site will occur if the site is selected as the preferred option in the Schematic Design Phase. Soils will be tested for permeability for stormwater management design. The size of the parcels and potential new school will merit detailed geotechnical investigation.

Impact of Preliminary Findings on Alternatives

The North Intermediate site is large enough to construct a new school building, parking, playgrounds and open space. New Construction will have some disruption, as access to the site will likely be a shared entrance from Ballardvale Street. Adding to, and renovating the existing building is problematic and costly due to phasing and / or swing space required and disruption to instruction.

The site is situated in a residential neighborhood with two access points into the site, from Salem and Ballardvale Streets. However if a larger enrollment of PK-3 or PK-5 is selected, increased traffic in the neighborhood is likely to be disruptive to residents.

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EXISTING CONDITIONS: CIVIL/SITE

EXECUTIVE SUMMARY

CDW Consultants has performed an assessment of the existing site conditions at the North Intermediate School located at 320 Salem Street in Wilmington, Massachusetts. This assessment included a site visit on July 26, 2023, and a review of the following drawings/documents:

- Record site, utility, and building drawings provided by the Client;
- 2008 Master Planning Study;
- 2018 Facility Master Plan Report;
- Town of Wilmington Assessor's Maps; and
- Mass Geographic Information System (GIS) Data/Maps.

GENERAL SITE CONDITIONS

The North Intermediate School property at the corner of Salem Street and Ballardvale Street is 13.98 acres and has approximately 385 feet of frontage on Ballardvale Street and 530 feet of frontage on Salem Street. The site borders residential properties on all four sides. A wetland is present on an area to the southwest of the site, encompassing two residential properties and a section of the school property. North Intermediate School building contains approximately 55,541 square feet and houses 250 Grades 4-5 students. See Figure 1 for the Aerial Locus Map and Figure 2 for the USGS Locus Map.

Vehicular access to the site consists of two curb cuts on Salem Street and two curb cuts on Ballardvale Street. The northern most curb cut on Ballardvale Street is an entrance driveway to the parking lot, and to the south, still on Ballardvale Street, is the exit driveway. To the southeast of the school building, a loop road along Salem Street provides access to the main entrance.

A sidewalk runs along the front school to the northwest side of the loop road providing access to the main entrance, as well as to secondary doors along the front and one to the west of the school. The sidewalk continues along the west side of Ballardvale Street and to the south of the parking lot, connecting to the loading dock area. Another sidewalk to the north of the school provides access from a rear door to the playground area and the north section of the parking lot.

There is one parking lot on the property, located north of the building and adjacent to the playground. It contains 60 standard parking spaces, and no designated handicap parking space.

Image 1 – Loop Road Entrance on Salem Street

Image 2 – Loop Road Exit on Salem Street

Image 3 – Main Entrance Sidewalk

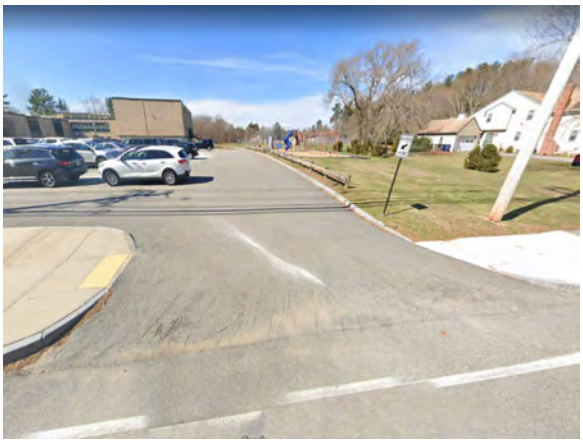


Image 1 – Parking Lot Entrance Driveway

Image 5 – Parking Lot East View

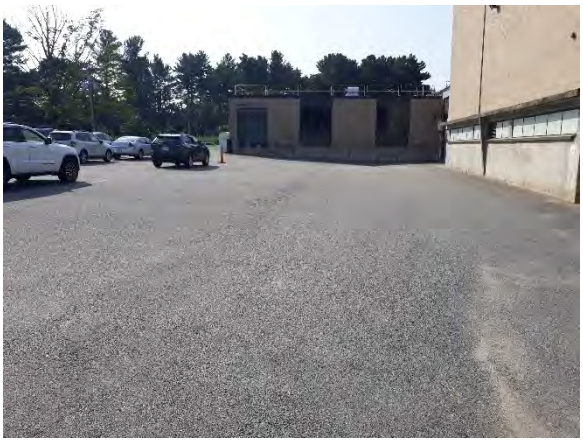


Image 6 – Parking Lot South View

A playground is located along the north edge of the parking lot. Northwest of the building, along the rear edge of the property are basketball, tennis courts, and a baseball field. A grass field is located behind the school.

Asphalt pavement in the parking lot and sidewalks are in good to fair condition depending on the location with some areas showing some cracking. Asphalt pavement in the basketball and tennis courts is in a poor condition and exhibits noticeable cracking and deterioration, with vegetation growth through the cracks and drainage structures grates covered with dirt. Additionally, the concrete sidewalk, as well as the granite and asphalt curbs, in front and to the east of the school are in good condition. A timber guard rail along the north and east sides of the parking lot is in good condition.

The front of the school, including the main entrance and loop road, generally slopes towards the corner of Salem Street and Ballardvale Street. The area behind the school is generally flat, except for the areas to the north of the tennis courts and to the east of the building, and slopes towards the wetlands. The parking lot has a ridge through almost the middle of the pavement, dividing the flow into a west/east direction.

Image 7 – Concrete Sidewalk on Loop Road

Image 8 – Sidewalk to the Southwest Entrance

Image 9 – Concrete Sidewalk in Front of the School

Image 10 – Main Entrance

Image 11 – Sidewalk in Front of the School

Image 12 – Sidewalk to Parking Lot – East View

Image 13 – Tennis Courts

Image 14 – Basketball and Tennis Courts

Image 15 – Covered Drainage Inlet Grate

Image 16 – Cracked Pavement at Parking Lot

SITE UTILITIES

WATER

Water service to the building is provided by a 4-inch copper domestic waterline to the northwest side of the school connected to the Wilmington's water system. The building does not have fire protection service. There is an existing fire hydrant on the corner of Salem Street and Ballardvale Street.

SEWER

According to the Wilmington Facility Master Plan Study, done in 2018, the school has municipal sewer service as of 2015. However, plans for this recent sewer connection have not been provided for review. During the site visit, sewer manholes were observed on the rear of the school, near the playground area, which seems to connect to the manhole on Ballardvale Street.

STORM DRAINAGE

There is limited storm drainage infrastructure onsite. The parking lot has two catch basins that, according to the Wilmington's Drainage online map, connect to a drainage system comprised of both asphalt-coated corrugated metal pipe (ACCMP) and reinforced concrete pipe (RCP) that runs in between the grass and the baseball fields and discharges near a wetland to the west of the site. Catch basins were also observed on Ballardvale Street, which connects to a 12" Corrugated Metal Pipe (CMP) system that runs along Ballardvale and Salem Street and seems to discharge near wetlands to the east of the school property.

GAS/OIL

According to Wilmington Facility Master Plan Study, done in 2018, the natural gas service and meter are located on exterior of building adjacent to the Mechanical Room. Gas piping is black steel with threaded and welded joints depending on the pipe size. See the MEP section for additional information on the gas service.

ELECTRIC/TELECOM

Electric service to the building is provided via underground lines to a building mounted meter. Telephone, CATV, and fiber run underground from a utility pole to the electric room. See the MEP section for additional information on the electric and telecom services.

SOILS

The site soil consists primarily of Udorthents (sandy) with Deerfield loamy fine sand area to the north, Hinckley loamy sand areas to the west and to the southeast, and Windsor loamy sand area to the southwest. The Udorthents (sandy) soil does not have a hydrologic soil group designation due to its variation as a fill material, slopes range from 0 to 25 percent, and depth to water table is more

than 80 inches.

The Deerfield loamy fine sandy is a Hydrologic Soil Group A soil (fast infiltration rate), is moderately well drained, slopes range from 0 to 3 percent, and depth to water table is 15 to 37 inches. The Hinckley loamy sand is a Hydrological Group A soil, (fast infiltration rate), is excessively drained, slopes range from 3 to 8 percent for the area to the west and range from 15 to 25 percent for the area to the southeast, and depth to water table is more than 80 inches. The Windsor loamy sand is a Hydrological Group A soil, (fast infiltration rate), is excessively drained, slopes range from 0 to 3 percent, and depth to water table is more than 80 inches. Soil maps are included with this report.

Specific Issues	Recommendations
Some areas of the asphalt pavement are in poor condition (tennis and basketball courts).	Replace asphalt pavement. (24,000 sq.ft.)
Parking lot does not meet MAAB/ ADA standards for the minimum number of H/C parking spaces.	Provide at least three handicap spaces with sign and stripping as needed to meet the requirements of 521 CMR (Architectural Access Board) and ADA Accessibility Standards.
The front loop road is not designated as a one-way circulation for vehicular traffic (east to west) and would be safer if it were.	Designate the front loop road as one-way for vehicular traffic (east to west) via signage and stripping. (2 signs)
General stormwater operations practices:	Establish a stormwater operations and maintenance plan for the site/property.
New development or impervious area:	The addition of new impervious area, either pavement or building roof, may require stormwater best management practices (BMPs) to mitigate impacts. Those BMPs would need to be designed to meet the MassDEP Stormwater Management Standards, including requirements for discharges to Zone II Wellhead Protection Areas.

Building lacks a sprinkler system.	Assuming a sprinkler system will be required, provide fire protection service to the building with a new cement-lined ductile iron pipe and a dedicated gate valve. (150-ft)
Existing storm drainage piping system is aging and should be inspected.	Clean and video inspect the storm drainage system to confirm its condition. Any pipes and/or structures that are damaged or compromised should be replaced.
Covered drainage inlet on tennis and basketball courts	Clean the surface and inside drainage structure. Inspect to check integrity of the structure and replace if needed. (4 structures)
One fire hydrant is provided.	Assess in coordination with the Wilmington Fire Department if any additional site fire hydrants are required.

Image 17 – Hydrant on corner of Salem Street and Ballardvale Street

Image 18 – Sewer Manhole near Parking Lot

Image 19 – Sewer Manhole behind Playground

Image 20 – Sewer Manhole on Ballardvale Street near the Parking Lot Entrance

PERMITTING

Town of Wilmington Zoning Bylaw

The property is in Residence 20 (R20) zoning district. The property falls within the Groundwater Protection District (Zone II, Wellhead Protection Area). The Zoning Bylaw indicates that Educational use in a R20 zoning district does not require Site Plan Review. This assumption should be confirmed with the Planning Department. Any work within the Groundwater Protection District would need to comply with the requirements of Section 6.6 of the Zoning Bylaw and the MassDEP Stormwater Management Standards. See Figure 3 for the Zone II Wellhead Protection Area Map.

Wetland Protection Act (310 CMR 10.00) and Town of Wilmington Wetlands Enforcement Bylaw and Policies

The Wetlands Protection Act ensures the protection of Massachusetts' inland and coastal wetlands, tidelands, great ponds, rivers, and floodplains. It regulates activities in coastal and wetland areas and contributes to the protection of ground and surface water quality, the prevention of flooding and storm damage, and the protection of wildlife and aquatic habitat. The Town of Wilmington also has a Wetlands Enforcement Bylaw and Policies which establish additional requirements for work that will impact a wetland resource area. The Policy includes a 25-foot "No Structure" zone and a 15-foot "No Disturbance" zone around all jurisdictional wetland resource areas except for land subject to flooding (100-year floodplain).

Based on MassGIS data, there is a state regulated wetland along the property line with 298R and 300R Salem Road properties and has a 100-foot Buffer Zone, which would be approximately 50 feet from the corner front section of the building. If work is proposed to the southwest of the existing building, wetland permitting would be required. See Figure 4 for the MassDEP Wetlands Map.

Natural Heritage and Endangered Species Program

A review of the 15th Edition of the Massachusetts Natural Heritage Atlas prepared by the Natural Heritage and Endangered Species Program (NHESP), dated August 1, 2021, indicates that the site is NOT a Priority Habitat of Rare Species or an Estimated Habitat of Rare Wildlife. Therefore, any redevelopment or new construction would not trigger a permit through the NHESP. See Figure 5 for the NHESP Map.

FLOODPLAIN

Floodplain information was obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) community map number 25017C0283F dated July 6, 2016. The site is within Zone X, which is identified as an area outside of the 0.2% chance (500-year) annual floodplain. Therefore, any redevelopment or new construction would not trigger a permit with respect to the floodplain. See Figure 6 for the FEMA Flood Hazard Map.

ATTACHMENTS:

Figure 1 – Aerial Locus Map

Figure 2 – USGS Locus Map

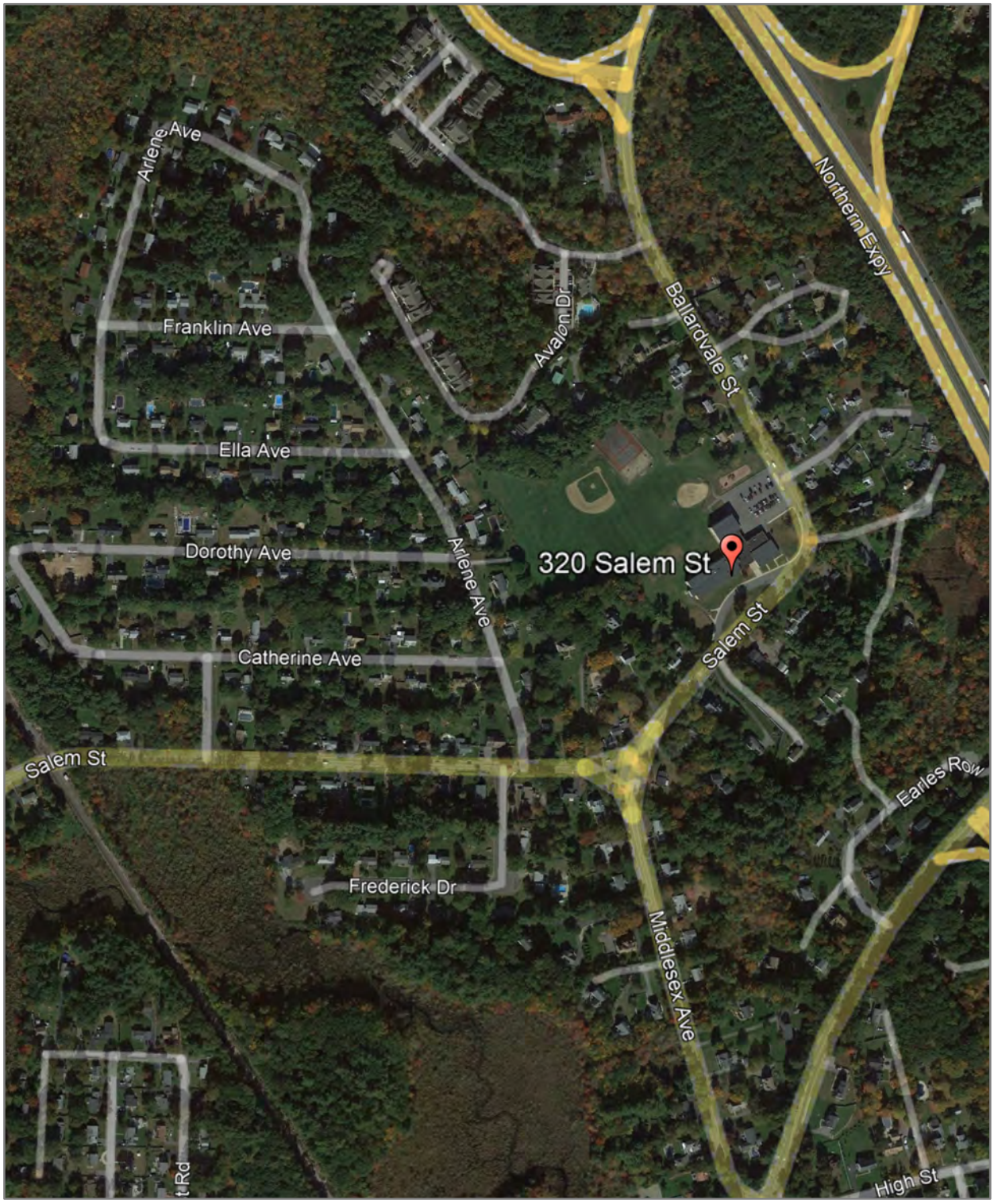
Figure 3 – Zone II Wellhead Protection Area Map

Figure 4 – MassDEP Wetlands Map

Figure 5 – NHESP Map

Figure 6 – FEMA Flood Hazard Map

Soil Report



CDW CONSULTANTS, INC.

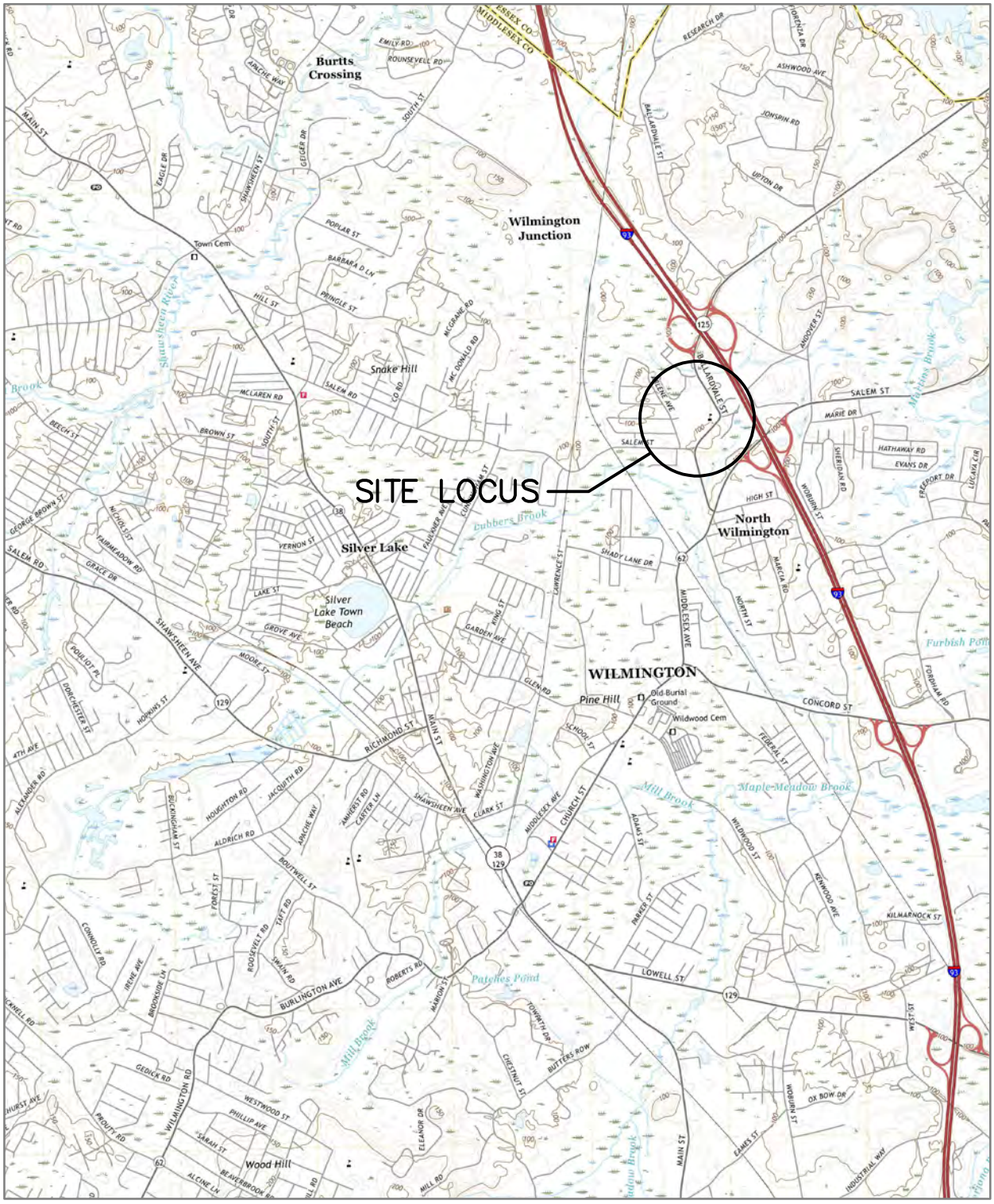
AERIAL LOCUS MAP

NORTH INTERMEDIATE SCHOOL
320 SALEM STREET
WILMINGTON, MA 01887

N

DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS



CDW CONSULTANTS, INC.

USGS LOCUS MAP

NORTH INTERMEDIATE SCHOOL
320 SALEM STREET
WILMINGTON, MA 01887

N

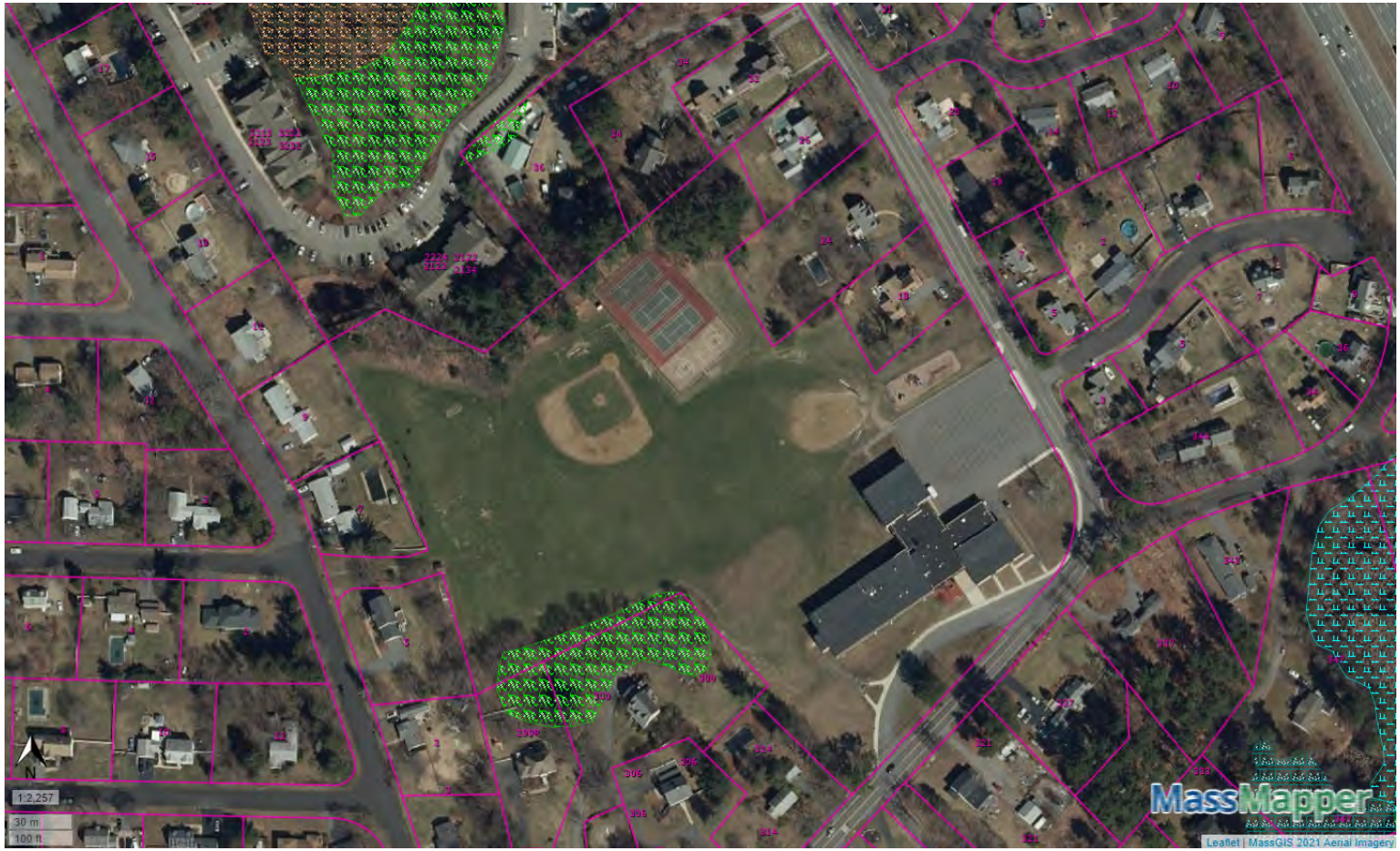
DATE:08/02/2023

PROJ NO.: 2089.0
SCALE: NTS

Zone II Wellhead Protection Area Map

Zone IIs

MassDEP Wetlands Map



Property Tax Parcels

DEP Wetlands Detailed With Outlines

- Barrier Beach System
- Barrier Beach-Deep Marsh
- Barrier Beach-Wooded Swamp Mixed Trees
- Barrier Beach-Coastal Beach
- Barrier Beach-Coastal Dune
- Barrier Beach-Marsh
- Barrier Beach-Salt Marsh
- Barrier Beach-Shrub Swamp
- Barrier Beach-Wooded Swamp Coniferous
- Barrier Beach-Wooded Swamp Deciduous
- Bog
- Coastal Bank Bluff or Sea Cliff
- Coastal Beach
- Coastal Dune
- Cranberry Bog
- Deep Marsh
- Barrier Beach-Open Water
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Shrub Swamp
- Tidal Flat
- Wooded Swamp Coniferous
- Wooded Swamp Deciduous
- Wooded Swamp Mixed Trees

Natural Heritage and Endangered Species Program NHESP Map

Potential Vernal Pools

NHESP Priority Habitats of Rare Species

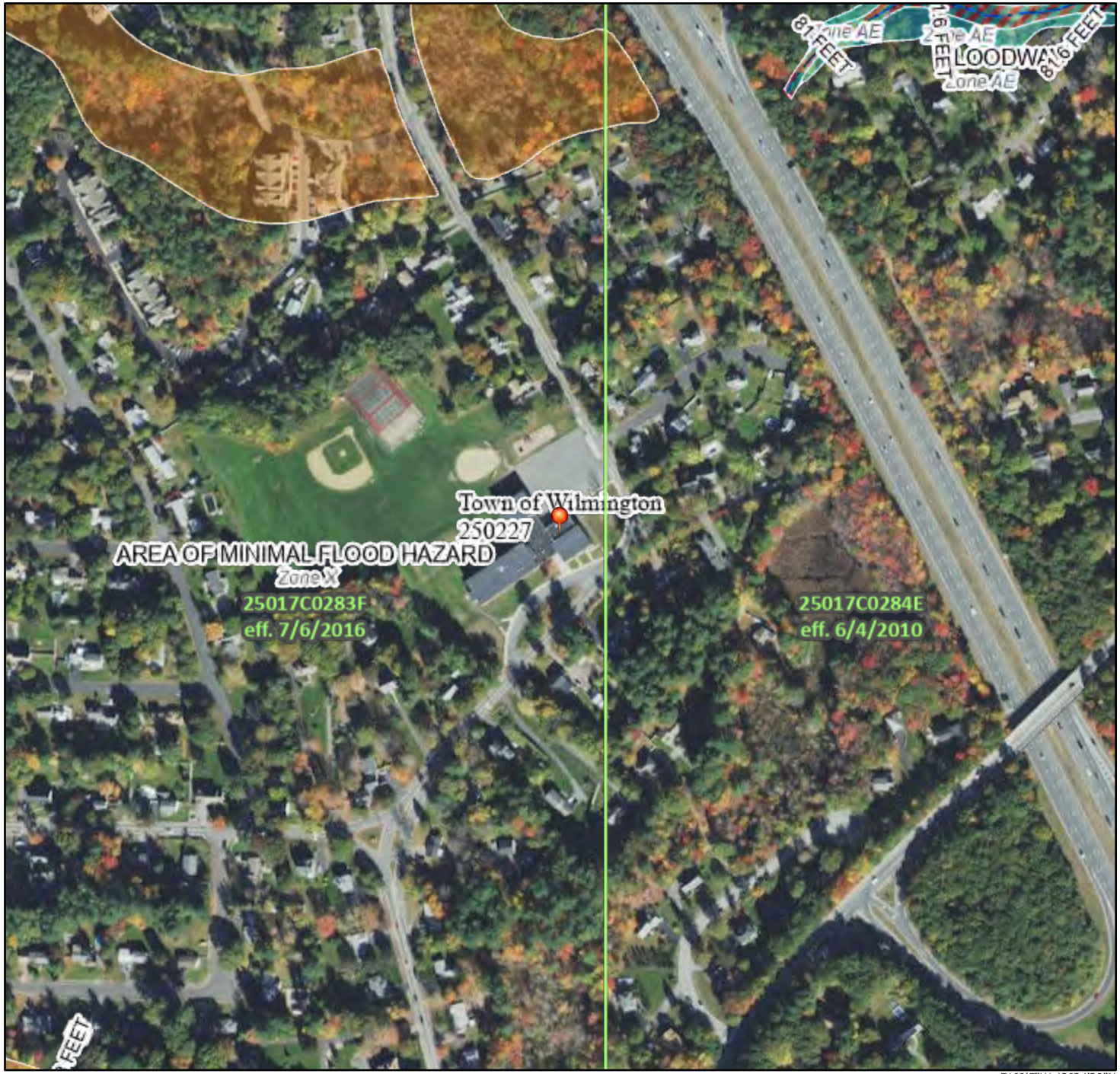
NHESP Natural Communities

NHESP Estimated Habitats of Rare Wildlife

NHESP Certified Vernal Pools

National Flood Hazard Layer FIRMette

71°9'43"W 42°34'55"N



71°9'5"W 42°34'29"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
- 513 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 8/1/2023 at 5:31 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.

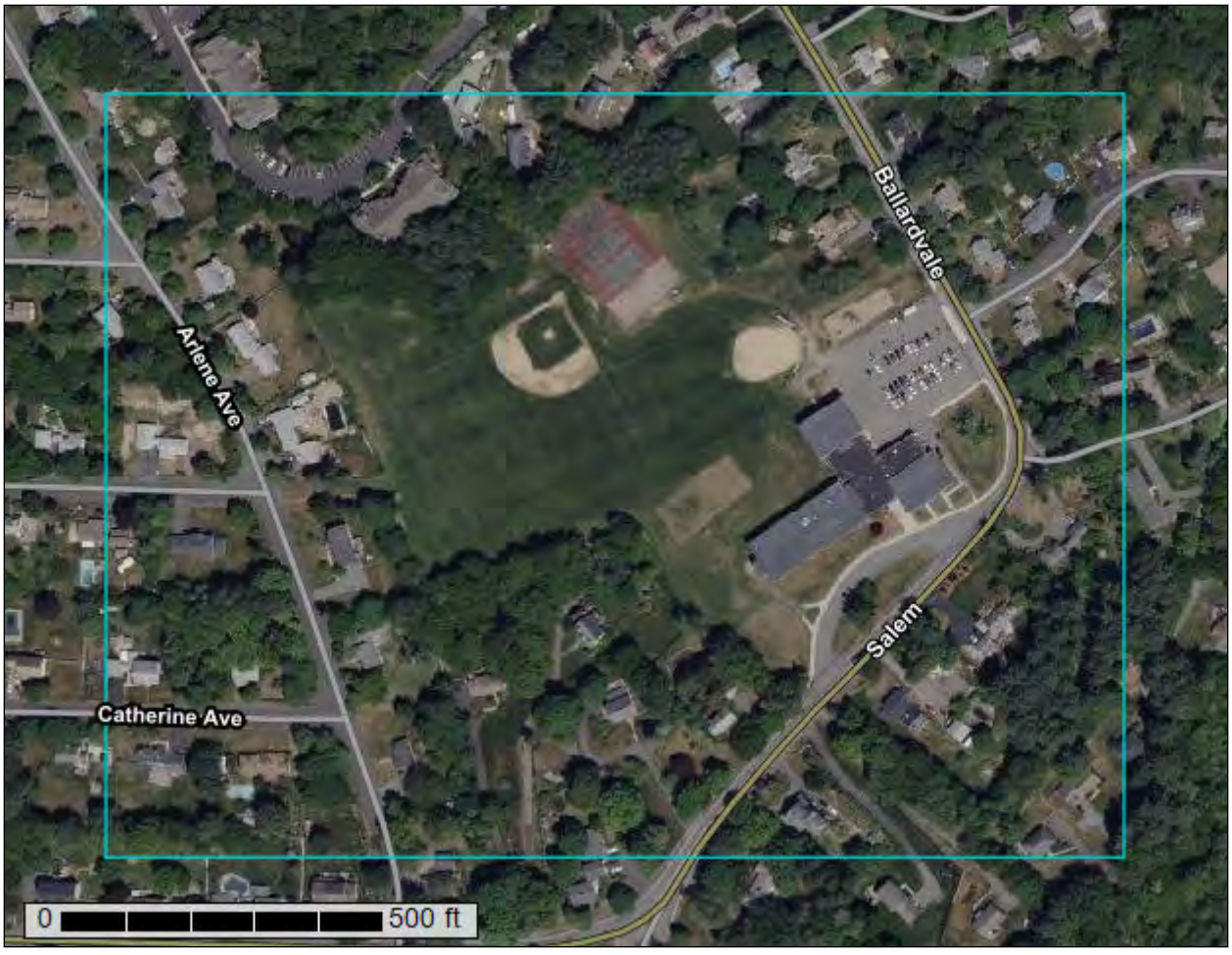
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



August 1, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	0.3	0.6%
253B	Hinckley loamy sand, 3 to 8 percent slopes	3.0	7.0%
253D	Hinckley loamy sand, 15 to 25 percent slopes	5.0	11.5%
255A	Windsor loamy sand, 0 to 3 percent slopes	10.0	23.2%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	11.1	25.7%
653	Udorthents, sandy	13.8	31.9%
Totals for Area of Interest		**43.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

44A—Birdsall mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: vzt4
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Birdsall and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birdsall

Setting

Landform: Flats, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty eolian deposits and/or loamy eolian deposits over glaciofluvial deposits and/or ablation till

Typical profile

H1 - 0 to 15 inches: mucky silt loam
H2 - 15 to 30 inches: silt loam
H3 - 30 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Wareham

Percent of map unit: 4 percent
Landform: Deltas, depressions, terraces

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Raypol

Percent of map unit: 2 percent
Landform: Depressions, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Swansea

Percent of map unit: 2 percent
Landform: Depressions, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

253B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, kames, kame terraces, moraines, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Outwash deltas, outwash terraces, moraines, outwash plains, kame terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope, base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

253D—Hinckley loamy sand, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2svmc
Elevation: 0 to 1,460 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Kames, kame terraces, outwash deltas, outwash terraces, moraines, eskers, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 8 percent
Landform: Eskers, outwash terraces, kames, outwash plains, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Kames, kame terraces, moraines, eskers, outwash deltas, outwash terraces, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent
Landform: Eskers, kame terraces, outwash deltas, moraines, outwash plains, outwash terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Convex, concave, linear
Across-slope shape: Convex, concave, linear
Hydric soil rating: No

255A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash plains, outwash terraces, deltas, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

256A—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand

Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, kame terraces, outwash deltas, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Kame terraces, outwash plains, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

653—Udorthents, sandy

Map Unit Setting

National map unit symbol: vr1k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, sandy, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Sandy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

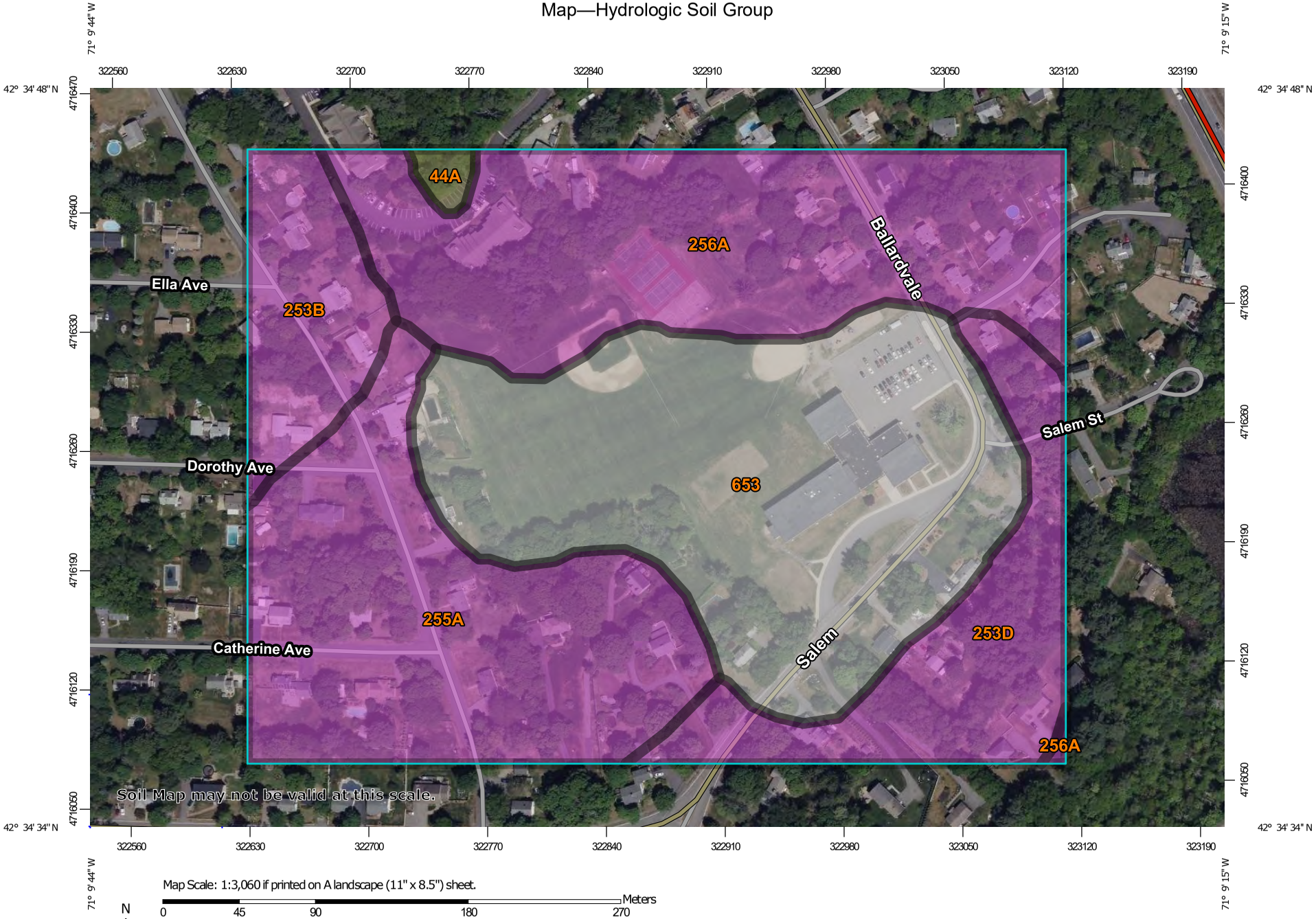
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:3,060 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	C/D	0.3	0.6%
253B	Hinckley loamy sand, 3 to 8 percent slopes	A	3.0	7.0%
253D	Hinckley loamy sand, 15 to 25 percent slopes	A	5.0	11.5%
255A	Windsor loamy sand, 0 to 3 percent slopes	A	10.0	23.2%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	11.1	25.7%
653	Udorthents, sandy		13.8	31.9%
Totals for Area of Interest			**43.1**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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EXISTING CONDITIONS: LANDSCAPE

SUMMARY

Located in the lively Wilmington, Massachusetts community, the North Intermediate School is strategically situated at 320 Salem Street. This educational institution is surrounded by a harmonious blend of residential neighborhoods, offering an array of opportunities for both academic enrichment and recreational engagement. The topography of the site presents a gentle undulation, providing a picturesque backdrop for the North Intermediate School. The elevation changes across the grounds are subtle, ensuring an accessible and inclusive environment for all members of the school community, making every corner of the grounds a potential learning space. The campus is embraced by a mixture of deciduous and coniferous trees, enhancing the atmosphere with various shades of green. Along the perimeter of the site, the verdant canopy provides refreshing pockets of shade during warmer months, encouraging outdoor gatherings, learning, and leisurely strolls. There are multiple entry points on site that seamlessly connect it to the surrounding neighborhood. This strategic positioning offers a web of pathways for pedestrians, cyclists, and vehicles to interact harmoniously, fostering a strong sense of community engagement. On the southern fringes of the school property, a delicate wetland area adds an ecological dimension to the landscape. While contributing to the biodiversity of the site, this wetland necessitates careful consideration during the design process to ensure that any approaches taken uphold its environmental integrity. The site furnishings and amenities throughout the school site have weathered and aged over time. Baseball fields, softball diamonds, soccer fields, and tennis courts are interspersed across the site, each weathered to varying degrees.

ENVIRONMENT

Context and Natural Resources

The North Intermediate School is nestled at the convergence of Ballardvale Street and Salem Street in the heart of a tranquil residential neighborhood in Wilmington, Massachusetts. Surrounded by a lush expanse of diverse trees, comprising both coniferous and deciduous varieties, the school enjoys a serene natural setting that enhances the learning environment. This verdant embrace of nature serves as a buffer to the north, west, and south sides of the school, creating an inviting environment for students (Image 1). Within the woodlands that grace the southern perimeter of the school, a small wooded deciduous wetland area adds to the richness of the ecosystem (Image 2).

Key elements of the site's development encompass a building entry space, a parking area, and a well-maintained open lawn sprawling to the northwestern side of the school building. This green expanse accommodates a diverse range of amenities, including versatile paved areas for multiple sports, and

a playground. The entire property falls within a DEP Approved Wellhead Protection Area (Zone II), and a large portion of the site is designated as Municipal Open Space with limited protection.

Specific Issues	Recommendations
Wooded wetlands areas occupy a portion of the property may limit site improvement opportunities.	It is recommended that the Project Design Team closely collaborate with all applicable regulatory agencies to clarify restrictions to site modifications pertaining to protected wetlands.
The protected Municipal Open Space status of a large portion of the property may limit site improvement opportunities. Similarly, the Wellhead Protection Area designation may constrain development.	It is recommended that the Project Design Team closely collaborate with all applicable regulatory agencies to clarify restrictions to site modifications pertaining to protected municipal Open Space and Wellhead Protection Areas.

Landscape and Drainage

The North Intermediate School campus is graced by gently undulating topography, providing a picturesque and welcoming setting. This subtle elevation change across the grounds ensures an environment that is inclusive and accessible to all members of the school community. The site's gentle slopes and undulations offer a pleasing backdrop to the school, creating a sense of harmony between the built environment and nature.

As one traverses the campus, a harmonious blend of deciduous and coniferous trees envelops the surroundings in varying shades of green. These trees contribute to the overall ambiance and provide refreshing pockets of shade during the warmer months. These natural oases encourage outdoor gatherings, learning sessions, and leisurely strolls, fostering a strong connection between the school community and the environment. Within the site's periphery, the verdant canopy of trees creates a natural border that further enhances the overall aesthetic. There are two recently planted Maple trees located in the southern entry area. These young trees are thoughtfully nestled within concrete curbs and wood fences (Image 3). The southern entry area also features carefully chosen perennials that add bursts of color and life to the landscape, while a prominent school logo signage installation serves as a point of pride for the institution. Adjacent to the southern entry, stands a grand Pine tree, welcoming all who approach the school's south entrance.

Throughout the campus, the open lawn areas on the north, west, and south sides of the school provide ample green expanses for various activities. The turf, meticulously maintained, is in excellent condition, especially within the expansive open lawn area (Image 4). However, a small section of the turf (near the playground memorial stone adjacent to the baseball field) appears to have undergone

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

some wear and tear, likely due to heavy usage (Image 5). This showcases the vibrant life of the school grounds, where students engage in play and recreation. Toward the southern fringes of the school property, a charming wetland area adds an intriguing ecological dimension to the landscape. While the water levels currently appear low, this wetland contributes to the diversity of the environment and offers a unique opportunity for ecological education and observation.

In contrast to the previous landscape description, the drainage infrastructure at North Intermediate School is simpler in design. There is a deliberate absence of stone drip edges along the building façades, with a focus on discreet surface drains scattered across the lawn area. These drains effectively manage surface water flow, contributing to the preservation of the grounds' integrity (Image 6). Notably, a single pipe drain is present on the southern slope leading towards the school building. However, due to overgrowth, its visibility and functionality are obscured (Image 7). This highlights an area for potential improvement and maintenance to ensure proper drainage in the future.

Specific Issues	Recommendations
The single drainpipe on the southern slope may present drainage and erosion control challenges.	It is recommended that site drainage infrastructure be evaluated and improved as necessary to prevent pooling of water and ensure slope stability.
Turf areas appear damaged in a few locations adjacent to high-use areas.	It is recommended that all high-use surfaces be lined with cast-in-place or granite curbs to direct foot travel and prevent wear.

ACCESS AND CIRCULATION

VEHICULAR

Situated adjacent to the Ballardvale Street entrance, the primary parking lot offers ample space for approximately 60 vehicles, accommodating both visitors and school personnel. Despite the asphalt surface of this parking lot being well-maintained, it's worth noting the absence of ADA-compliant parking spaces and proper signage. This oversight, coupled with limited curbing, could potentially contribute to turf damage and hinder accessibility for individuals with disabilities.

As one approaches the school from Ballardvale Street, the entrance is flanked by a sturdy granite curb, demarcating the transition between the parking lot and the adjacent playground area. (Image 8). On the southern perimeter, where the parking lot interfaces with the lawn, a reliable concrete curb reinforces the boundary, preserving the integrity of both spaces (Image 9).

Image 7

Image 8

Image 9

Image 10

Image 11

Image 12

A standout feature enhancing traffic management is the traffic channelization island, thoughtfully positioned along the Salem Street side of the school building. This island serves as a pivotal point for vehicular movement, facilitating two-way traffic flow that travels in a northeast-to-southwest direction, parallel to the school's front façade. It provides a seamless drop-off point for students, ensuring their safety and convenience during arrivals and departures (Image 10).

Specific Issues	Recommendations
Asphalt vehicular pavement is in generally good condition; however, curbs are lacking or in poor condition.	It is recommended that all vehicular pavements to be edged with granite or cast-in-place concrete curbs to best maintain the vehicular pavement and adjacent sidewalks and turf panels.
No accessible parking appears to be offered on site and there is a lack of indication for accessible routes to the building entrances.	ADA/MAAB requirements for accessible parking spaces connected to even, level, accessible routes to building entrances must be met.

PEDESTRIAN

The pedestrian conditions at North Intermediate School in Wilmington, MA exhibit a mix of infrastructure elements that impact accessibility and safety. The North Intermediate School boasts a relatively flat topography, making the entrances to the front of the school almost level with Salem Street, a notable advantage for visitors and students alike.

However, there are notable disparities in the condition of the walkways and sidewalks on the school premises. On the western side of Ballardvale Street, a cast-in-place sidewalk runs from the southern edge of the parking lot. This sidewalk continues westward along the southern perimeter of the drop-off zone, extending to the southern side of the building. It culminates at the intersection of the drop-off road and Salem Street. These cast-in-place sidewalks appear to be in good condition.

On the southern side of the building, a concrete walkway branches off from this main sidewalk near Salem Street, descending slightly in elevation with a few steps down. It provides access to the western side entrance of the school building (Image 11). This configuration does not adhere to ADA/MAAB compliance standards, potentially posing challenges for individuals with mobility impairments. While the cast-in-place sidewalks remain in good shape, the walkway exhibits signs of aging, with visible weathering and cracks, which are particularly evident at the main entrance landing (Image 12). Despite these concerns, the concrete landings are thoughtfully placed at all doorways throughout the school building, with short concrete ramps connecting them to the ground level.

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

Specific Issues	Recommendations
Pedestrian routes near Salem Street on the south side of the building are not accessible.	Replace all pedestrian routes with new, accessible routes connecting visitors to all site amenities.
Cast-in-Place sidewalks, while in good condition, are beginning to show wear and cracking.	It is recommended that all pedestrian sidewalks be replaced with new cast-in-place concrete paving.
Crosswalks are missing where pedestrian routes cross vehicular routes in two locations.	It is recommended that crosswalks and the associated curb cut ramps and detectable warning panels are added in these two locations.

AMENITIES

Play and Athletics

The play area contains one playground. It has Engineered Wood Fiber Mulch (EWFM) safety surface that appears to be aged; worn areas were observed along paths of travel between the equipment and at the bases of slides and swings. These worn areas create uneven surfaces, likely reducing the accessibility of the playgrounds. No wear mats were observed on site to prevent displacement of EWFM (Image 13). Black plastic borders separate the playgrounds from the surrounding turf. The playground includes four pieces of traditional play equipment. Most play equipment appears worn; paints and coatings are chipped, and the plastic pieces are faded in color (Image 14).

The athletic area contains one basketball court, three tennis court, two baseball field, and one soccer field. The basketball court features two gooseneck basketball systems, but the surface of the court exhibits extensive cracks, and the line-striping has faded, requiring refurbishment (Image 15). Adjacent to the basketball court, three tennis courts have fallen into disrepair, with severe weathering evident. Cracks and depressed areas mar the once-vibrant playing surface, with overgrown vegetation reclaiming some sections (Image 16). Two baseball fields situated in the turf area west of the playground both feature an infield mix, bases, a chain-link fence backstop, and two players' benches, indicating their usability with some upkeep (Image 17). The soccer field, while maintaining a well-groomed turf, have the two soccer goals, tucked away at the field's edge, and appear to have been unused for an extended period (Image 18).

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

Specific Issues	Recommendations
The playground surfacing is not ADA compliant. The play equipment is aged and may require updated equipment for safety and accessibility.	It is recommended that the school receive a new, ADA-compliant playground with accessible poured-in-place surfacing and updated play equipment.
The tennis court and basketball courts are in poor condition.	Should this area of the property be included in the project, it is recommended that the tennis and basketball courts be replaced with new, accessible courts.

Site Furnishings

Between the playground and baseball field, there is a blue bench and a memorial stone honoring playground fundraisers (Images 19-20). A litter receptacle is available in the playground, between the tennis court and baseball court fences, and a five-tier stadium seating north of the west baseball field (Image 21). A small shed is at the end of Rita Road, west of the campus, with a litter receptacle in front of it (Image 22). Near the wet area on site, a white granite piece sits surrounded by overgrown vegetation, with no carvings but two honed sides (Image 23). At the front of the school, there is a wooden sign, ornamental plant bed, flagpole, and a dedicated bench (Images 24-25).

In the service area, a large dumpster is on the south side of the parking lot, without a fence for clearance indication and screening (Image 26). Two clothing donation containers are adjacent to the school building wall, next to the dumpster (Image 27).

Specific Issues	Recommendations
The site contains very few site furnishings, providing two benches, a five-tier stadium seating, limited litter and recycling receptacles, a flagpole, and wooden sign.	It is recommended that the site receive new benches, picnic tables, litter and recycling receptacles, bicycle racks, and site lighting fixtures to provide ample opportunities to sit and gather, to maintain a tidy campus, to support alternative modes of transportation to the site, and to improve safety.
The service area is not clearly indicated, and it is not screened from view when in the parking lot.	It is recommended to clearly indicate the areas of service and loading at the school, including the use of screen fencing.

Image 25

Image 26

Image 27

EXISTING CONDITIONS: ARCHITECTURAL

ARCHITECTURAL SUMMARY

The North Intermediate School (Image 1) serves grades four and five (4-5) with a current enrollment of approximately 250 students. The building was constructed in 1962 with no additions to the building since. The building is approximately 54,569 SF and sits on a lot that is approximately 14 acres.

The building is situated on the site, built into a hill, with three primary floor levels. The main floor exits at grade at the front of the school (facing southeast). There is a second floor classroom wing, a lower level where the cafeteria is located, and a basement level where locker rooms, boiler room, music room and district administration offices are located. The basement level exits to grade to the rear of the site (facing northwest).

Overall the building is in fair condition considering the era of construction—but the building envelope, the HVAC, Plumbing and Electrical systems are all beyond the end of the expected service life cycle and do not comply with current codes and are extremely inefficient. The heating system utilizes pneumatic controls, original to the building. This is impressive from a maintenance perspective that the system has been maintained this long, but challenging as well, as this system is obsolete and difficult to locate people to service it. Minor improvements have been made over the decades - mainly in the form of maintenance and upkeep, but the building is essentially the same as when it was originally constructed aside from the window replacement project completed in 2017. There is evidence of water infiltration at some ceiling / roof areas where the asphalt roll roofing is located. One of the most significant concerns is the lack of accessibility throughout the building. Once inside the lobby space, one must traverse multiple levels in each direction to to get anywhere in the building, with no lifts, elevators or ramps. There are numerous other accessibility issues throughout including door knobs, the latch side pull clearances, toilet rooms, sinks, counters, signage, drinking fountains.

TERMINOLOGY

Building Condition scale of terms used throughout this report are as follows:

- "Excellent" : new or nearly new condition with few or no blemishes or compromises of quality or function.
- "Very Good" : highly functional condition with slight wear and tear and/or compromises of quality or function.

- "Good" : median functional condition with noticeable wear and tear and/or compromises of quality or function.
- "Fair" : below median functional condition with significant wear and tear and/or major compromises of quality or function. Seriously worn parts or elements, minor structural compromise. Possible near-future safety hazard.
- "Poor" : nearly or completely non-functional condition with major wear and tear and/or serious compromises of quality or usability. Missing parts or elements, major structural damage or condition. Immediate safety hazard or danger.

EXTERIOR

FOUNDATION

The foundation walls are twelve (12) inch reinforced concrete with strip footings; the footings are typically shown on existing drawings as eight (8) inches deep by one foot eight inches (1'-8") wide.

The foundation for the gymnasium extends above grade a full floor level, with a precast concrete shelf/overhang at the transition between the basement level and first floor. This precast shelf is located only at the perimeter of the gym. (Image 2, 3, 4)

Specific Issues	Recommendations
The precast concrete shelf at the gym has significant deterioration with exposed rebar and spalling concrete. (Image 4).	Remove loose concrete. Remove rust from rebar. Provide stainless steel studs and patch/repair concrete. Apply water-resistant breathable coating over entire precast concrete elements. (5'x perimeter of gym- three sides)
Concrete stairs leading from grade up to gymnasium floor level are in poor condition, with spalling concrete and exposed rebar. (Image 5, 6)	Because the handrails/guardrails are not compliant also, it is recommended to replace the stairs, handrails and guardrails entirely with new.

EXTERIOR WALLS

The exterior walls are brick veneer with CMU backup. In looking at existing drawings there does not appear to be an air space or insulation. Throughout the building the interior face of the CMU is painted out as the interior finish. Overall the brick appeared to be in good condition.

Image 1

Image 2

Image 3

Image 4

Image 5

Image 6

Specific Issues	Recommendations
At the southwest corner of the classroom wing, cracked/damaged brick was observed. (Image 7). There was also damaged brick on each side of the receiving area loading dock.	Replace damaged brick (100 SF)
Discoloration at brick areas below some windows, particularly on north-facing and shaded areas.	Provide brick cleaning for 50% of the brick area.

Exterior Windows

The original steel frame system with single glazed windows have been replaced with aluminum framed insulated glass units and translucent insulated panels (ie. Kalwal), circa 2017. The original sills have been covered with aluminum. (image 8,9,10).

Exterior Doors

The original entry framing systems have been replaced with aluminum framing and new aluminum doors. Individual doors throughout the exterior have been replaced with hollow metal frames and insulated metal doors. These appear to have been installed at the same time as the exterior windows. (Image 11).

Louvers and Other Openings

Louvers for classroom unit ventilators appear to be in good condition. Mini-split air conditioning units were observed in some locations around the building.

Specific Issues	Recommendations
A copper and PVC pipe which drains the cafeteria roof onto the roof above the entry roof, has an opening through the brick that is larger than needed and has exposed insulation (image 12). Draining the roof onto this lower roof is not an ideal condition as it sheds a large quantity of water onto another roof.	Repair brick, seal opening and provide escutcheon to provide waterproof condition. Provide a new roof drain leader to connect cafeteria roof drain to underslab storm drainage system.

Roof

Image 7

Image 8

Image 9

Image 10

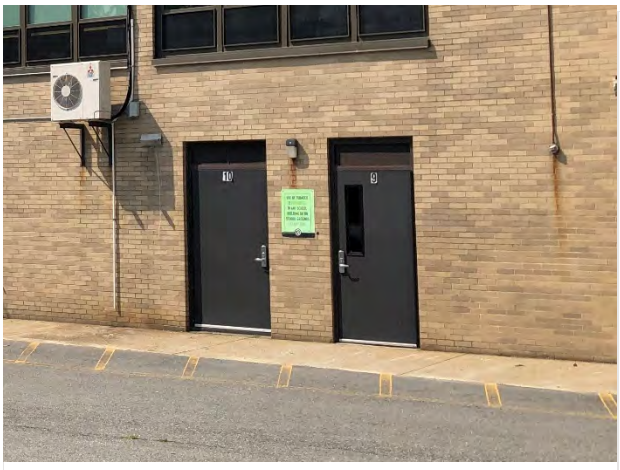


Image 11

Image 12

The three highest roof levels (classroom, cafeteria, gym) have fully adhered EPDM rubber membrane with tapered insulation to drain. Overall these roofs appear to be in good condition, generally, however the seams appear to be in need of re-stripping and sealant added within the next two years. A few locations where membrane was folded should be addressed to provide flat membrane, particularly at seams. Recommend review with the roofing manufacturer's representative. Reinforced asphalt roll roofing, located in the lower roof area, is in poor condition with exposed reinforcing visible and leaks apparent in spaces below. (images 13-21)

Specific Issues	Recommendations
At EPDM roofs, sealant is beginning to crack at seams. Folded membrane at seams could contribute to accelerated deterioration.	Re-strip flashing tape at all seams. Flatten membrane roofing where folded.
Reinforced asphalt roofing has exposed reinforcing visible, and fish-eye conditions allowing water to enter. This roof appeared to be mostly flat, with very little pitch. An area around exhaust fan was covered with moss.	For the short term, patching where reinforcement is exposed, should be completed before winter. For the long-term, this entire section of roofing should be replaced. Perform structural analysis to confirm if additional insulation can be added. If so, the following is additional recommended scope: Cut brick at adjacent walls to construct thru-wall flashing, provide tapered insulation, roof board and 60 mil EPDM rubber membrane, extend perimeter blocking and curbs for rooftop accessories and new metal fascia. This would be an opportune time to replace exhaust fans or roof equipment at this time also. Remove clerestory aluminum window at platform and infill with insulation and brick veneer.

Other Exterior Features

A few comments regarding the site are noted here, however, refer to the Site Assessment portion of the study for more information.

Specific Issues	Recommendations
There is a drop-off/pick-up loop that is used by both cars and busses (image 22)	Provide a separate bus and car drop off loop

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

INTERIOR

FLOORS

The floor in the central lobby, primary circulation area, kitchen and toilet rooms is terrazzo and is in very good condition. (Image 23) The classrooms and most other spaces have original vinyl asbestos tile (VAT). (image 24,26) The VAT tile in high traffic areas has been worn down but maintained well. Many rooms are a patchwork of VAT and VCT (vinyl composition tile).

The gymnasium has the original wood plank flooring system that is in fair condition (Image 25).

Specific Issues	Recommendations
Original VAT tile has reached past its useful life and is a source of continual maintenance and care.	Remove all VAT in the building, an ideal solution to eliminate the potentially hazardous material. Replace with linoleum flooring.
Gymnasium wood flooring has reached the end of its life, after being sanded and refinished so many times and does not have the ball-bounce qualities of newer floors.	Replace with resilient sports wood floor system.
Platform at Cafeteria: wood floor and apron is in heavily worn.	Refinish wood floor. Replace apron and stairs with new.

WALLS, PARTITIONS, AND WALL FINISHES

The majority of walls in the school are composed of painted concrete masonry units of varying widths, and in good condition. The main lobby has brick walls and wood paneling at the corridor. The Nurses Room has both CMU and brick walls.

We were unable to verify if all walls throughout the building extend to the structure above and feature adequate bracing and fire-stopping per current codes, or if they present issues of acoustic separation.

The walls in the Cafeteria feature artistic murals on nearly all surfaces, which we understand the school would like to preserve.

Classrooms commonly feature an operable partition between rooms, all of which appear to be left closed the majority of the time. These are in fair condition. The gymnasium folding partition is no longer functioning.

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

Corridors in the classroom wing and toilet rooms feature structural glazed facing tile (SGFT) (Image 27), original to the school.

Specific Issues	Recommendations
CMU wall bracing may not meet current code if the building were to undergo renovations.	Most of the interior CMU walls are in good condition and require virtually no repair work. Prior to a comprehensive renovation, a thorough review of all interior walls should be performed to determine whether they meet current code requirements for seismic bracing.
Folding partition at the gym does not function and is a safety concern. (Image 28)	Remove gym folding partition. Provide curtain divider.

Interior Windows

Specific Issues	Recommendations
Interior windows (borrowed lites) include wired glass in some areas, which is safety concern. (Image 29)	Replace wired glass with clear vision glass or tempered safety glass in areas required by the building code.

Interior Doors

The existing interior doors vary in condition based on their location and frequency of use. Overall, the doors are solid core wood, and in fair condition.

Specific Issues	Recommendations
Interior doors throughout the building are nearing the end of their useful life. Some doors have been reinforced with metal strapping. (image 30) Most doors do not have fire rating labels and associated hardware as would be required by	Replace doors within the facility with new wood doors, with ratings where appropriate to the opening rating. Provide mop plates at all doors to prevent soiling. Hardware throughout the building should be replaced with barrier-free lever sets to provide

Image 25

Image 26

Image 27

Image 28

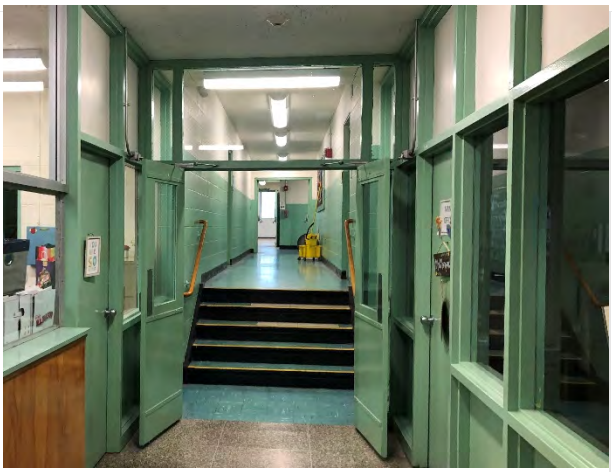


Image 29

Image 30

current codes. Hardware on the doors is not compliant with current barrier-free codes, as they feature knobs instead of lever trim (Image 31). Some doors, such as the gymnasium doors do not have magnetic hold opens and are held open with floor stops (Image 32)	universal accessibility as well as the ability to quickly lock doors during a lockdown. Refer to Regulatory Assessment section for discussion of accessibility issues related to doors and hardware.
Wired glass is used throughout the building in door vision panels, sidelights, and transoms, as well as borrowed lites. Wired glass has been shown to adversely impact the fire and impact performance of the glass, and when broken the exposed wire represents a significant threat to cutting of hands and amputation of fingers. Wired glass is no longer permitted as "safety glass" in openings in impact areas such as door vision panels and sidelights. (Images 29,30,31).	Replace all glazing in door vision panels, sidelights, transoms, and borrowed lights subject to pedestrian impact with tempered or laminated safety glass, with fire ratings where appropriate to the frame assembly rating.
Wood doors along corridors do not appear to include fire ratings necessary to separate corridors, especially at stair towers. Refer to Regulatory Assessment for discussion of the corridor fire rating.	Replace doors and frames including borrowed light frames at perimeters of corridors with 1 hour rated doors, frames, and windows to improve separation of corridors.

CEILINGS

Most classrooms, corridors and offices have 12"x12" glued-on or concealed spline ceiling panels (Image 33).

The building features surface-mounted fluorescent strip lighting.

The cafeteria has knotty pine plank ceiling in fair condition (Image 34). The gym has exposed metal deck and structure.

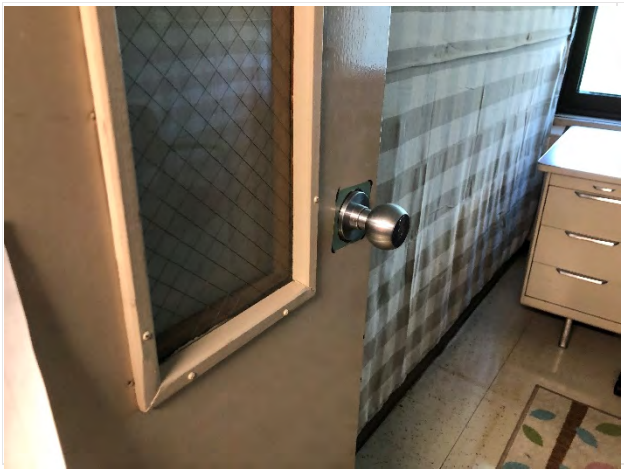


Image 31

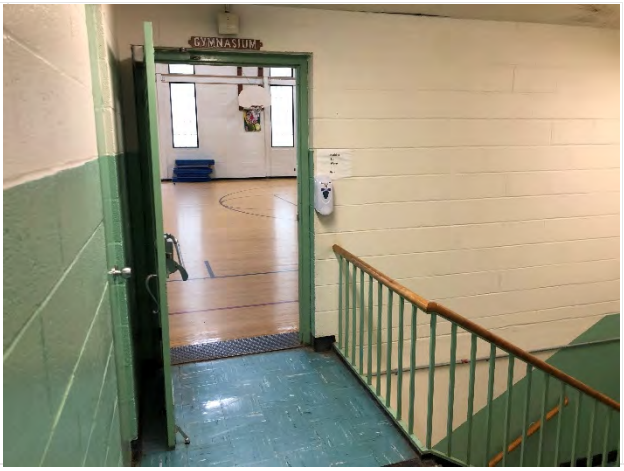


Image 32

Image 33

Image 34

Image 35

Image 36

Specific Issues	Recommendations
Many of the ceilings are in poor condition, some are stained and are difficult to replace with matching tile since this ceiling system is outdated.	Replacement of all ceilings throughout the building is recommended, and would serve many purposes. Older ceiling tiles may provide inferior acoustic performance, and access to the ceiling cavity may be needed based on changes to lighting, ductwork, fire protection, technology systems, and other utilities.

ACCESSORIES, FIXTURES, AND EQUIPMENT

Classroom desks, tables, and chairs, as well as built-in casework all appear to be original to the building with few exceptions. Cafeteria tables are a mix of rectangular and round folding tables with fixed integrated seating, and appear to be in very good condition.

Specific Issues	Recommendations
Furniture is generally in good condition and well maintained but antiquated to the standard in today's schools. (Image 35)	Classroom furnishings, such as desks, tables and chairs should be replaced with appropriate furnishings to support flexibility in teaching and learning.
Built-in casework are heavily worn from the past 60 years of use, and many are not used as originally intended (ie. Science) (Image 36).	Replace classroom casework with new units that are compliant with accessibility for the age of the intended users, and with a uniform appearance throughout the school.
The kitchen equipment is a mix of newer and old. Some in need of replacement. The walk-in Cooler is original to the building and has exceeded its useful life. The kitchen hood is not code compliant.(Image 37,38)	Refer to Food service portion of this report
The heating system utilizes pneumatic controls which is obsolete with very few people available to service it. It is very unpredictable	Refer to Mechanical Section of the report

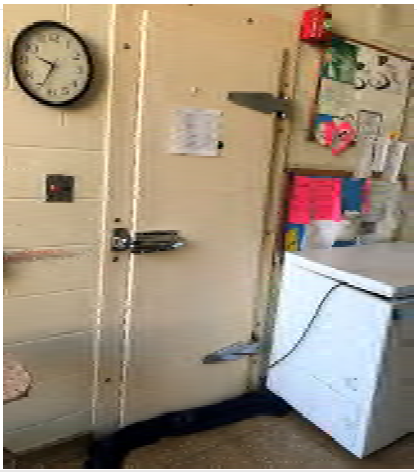
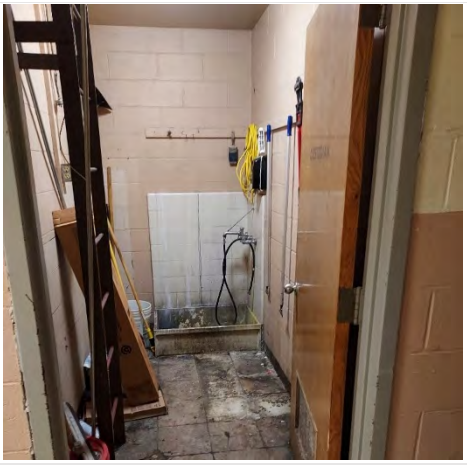


Image 37

Image 38

Image 39

difficult to manage and prone to have issues. (image 39)	



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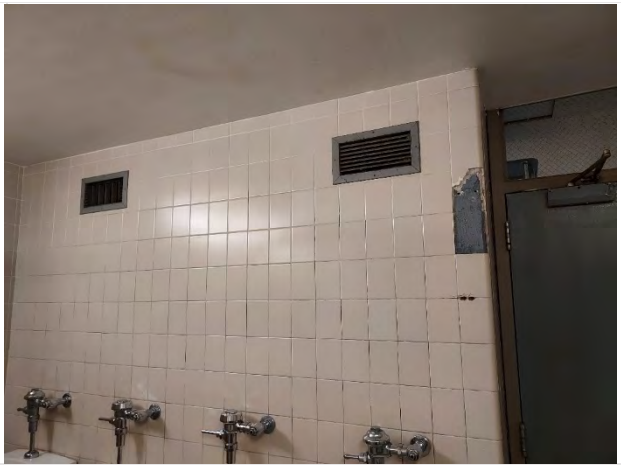

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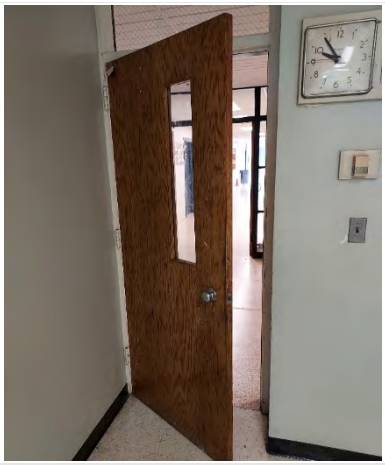
Image 46



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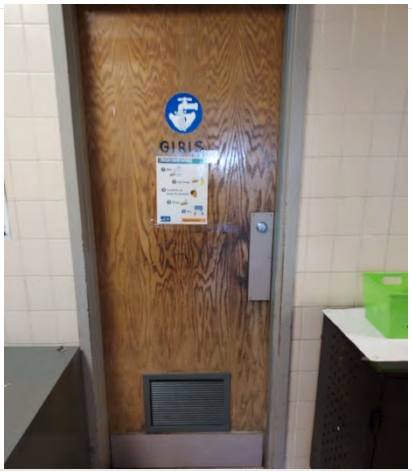

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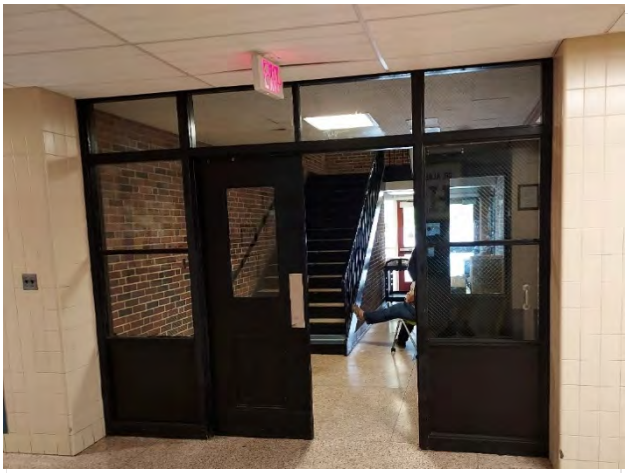

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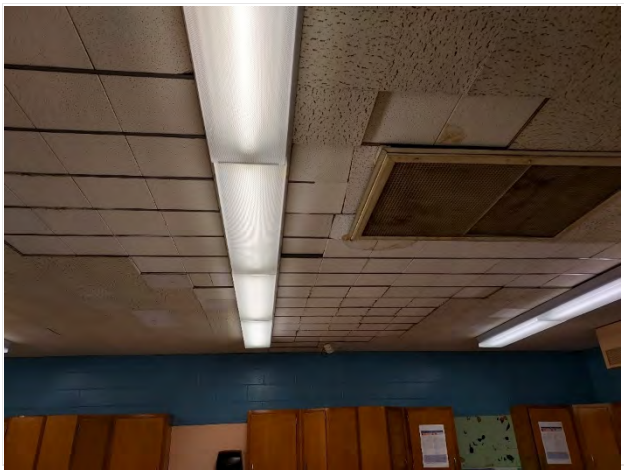

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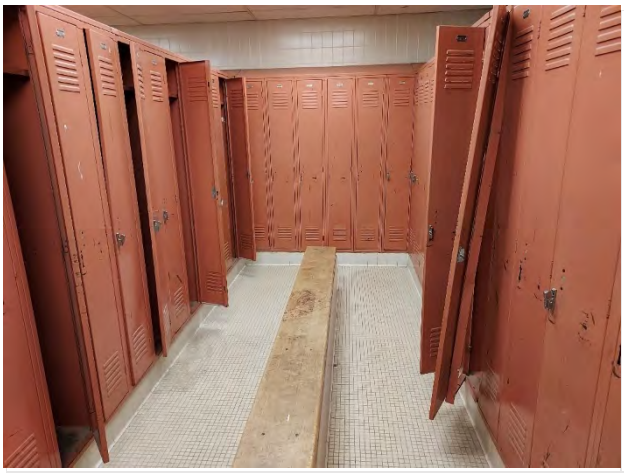

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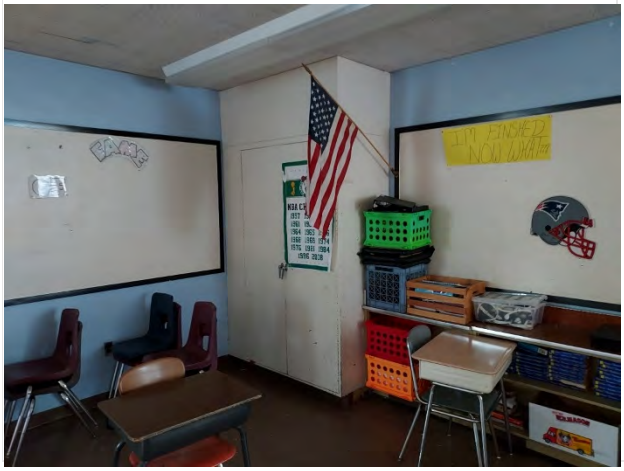

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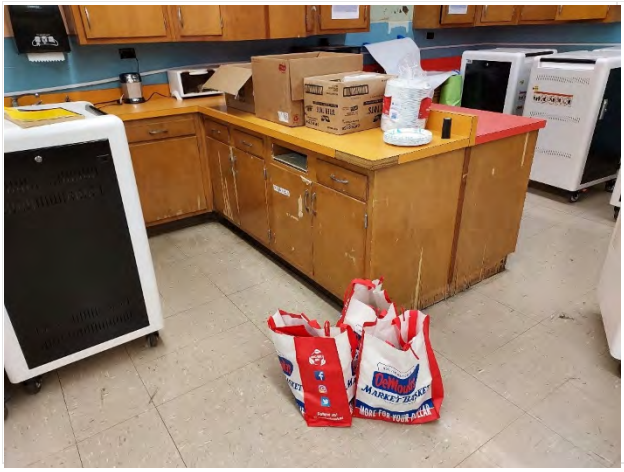

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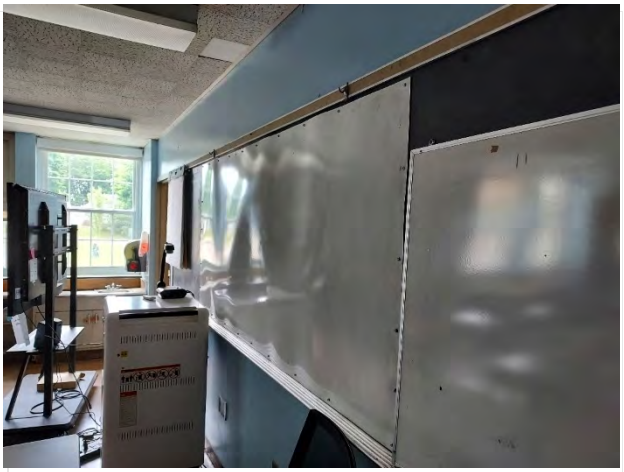

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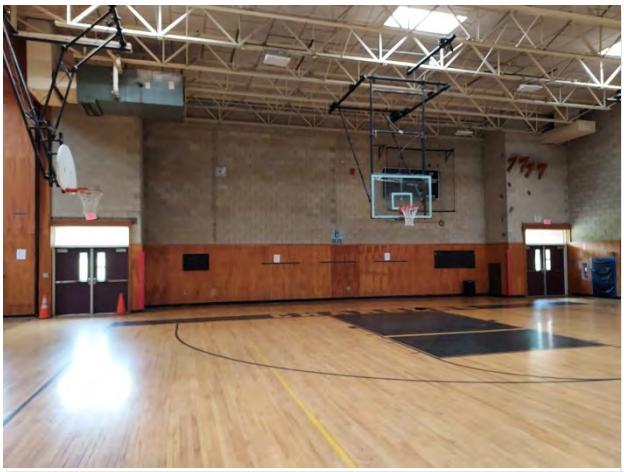

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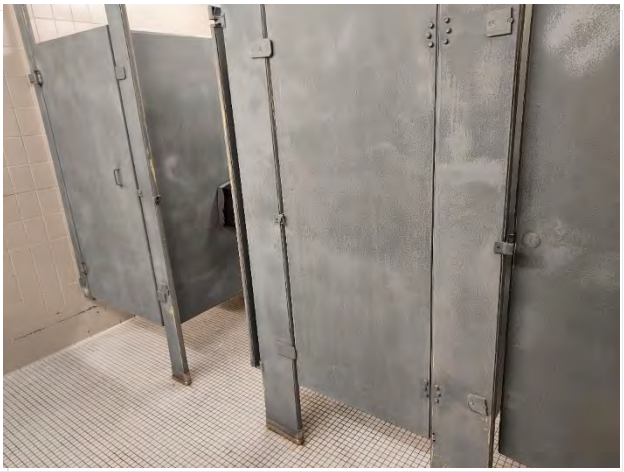

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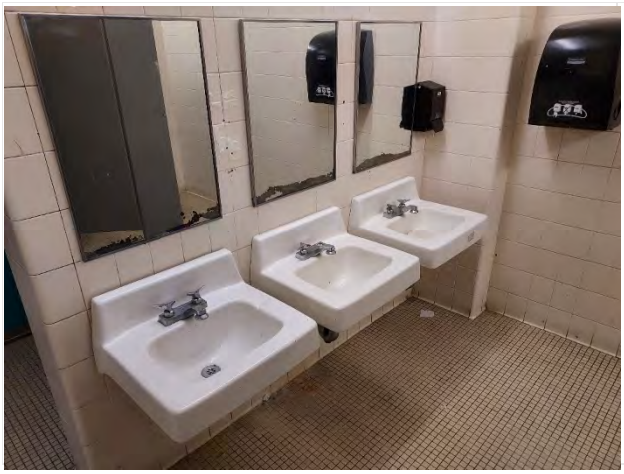

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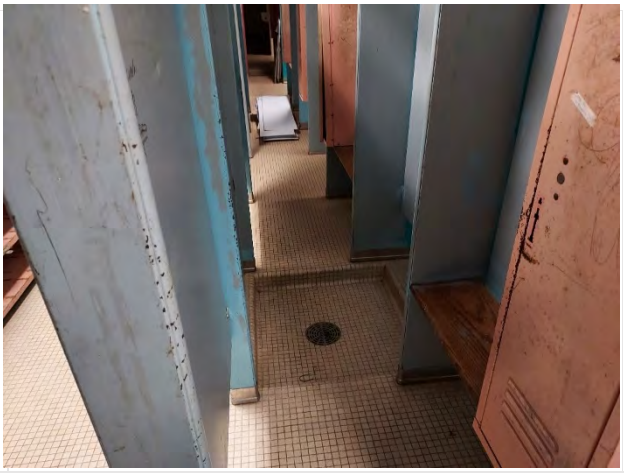

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Image 80

EXISTING CONDITIONS: REGULATORY ASSESSMENT

INTRODUCTION

This Regulatory Assessment will convey to what degree the North Intermediate School in its current condition, complies with current building codes and regulations. The Assessment does not attempt to define a scope of work, but rather highlight specific non-complying conditions and identify which conditions would require correction if a repair, alteration, addition, or change of use were to be proposed for the facility.

It is important to note that a building or a portion of a building does not require correction simply because it does not comply with current codes; any building that is legally occupied and adequately maintained can remain so without bringing the building into full compliance with codes and regulations. This *principal of non-conforming rights* (that a newly adopted regulation cannot impose the undue burden of compliance on legally existing occupancies) is reflected in how the codes identify to what degree existing buildings must be brought into compliance when a scope of work is proposed. The greater the scope of work, the greater the burden of compliance with a given code or regulation will be required.

For some regulations, such as 521 CMR Accessibility Rules or the Massachusetts special sprinkler provisions of MGL c.148 s.26G, these compliance thresholds are “hard lines” comprised of specific dollar value thresholds. When determining the dollar value thresholds for compliance, the cash value of the building is used as the basis for determining the requirements for compliance. The full and fair cash value of the *building*, as determined from the Town Assessor's online database is calculated as follows:

Property Value	**$ 8.798,300**
Land Value	**($ 2,938,100)**
Other Improvements or outbuildings	**($ 60,900)**
Full and Fair Cash Value	**$ 5,799,300**

This value will be used later in this Assessment to calculate the applicable compliance thresholds. The Existing Building Code uses the type of work and the affected area to determine when increasing levels of compliance are required. When considering a proposed scope of work for the building, a careful consideration of the various degrees of compliance will need to be considered. Refer to the Regulatory Overview section of this report for a more detailed description of the various compliance paths outlined in the Existing Building Code.

THE INTERNATIONAL EXISTING BUILDING CODE (IEBC)

The Performance Compliance path provides a simple yet comprehensive overview of the general life safety aspects of a building. Although designed as a building code compliance path, it can also be used as an assessment tool. This assessment will utilize the value and scoring based method of the Performance Compliance path to assign a score to the building as it is currently configured and maintained. Similar to previous comments, a failing score in any category as part of an assessment does not compel any corrective action - it simply indicates how the building would be viewed under current codes. It is intended to illustrate the relative general and life safety performance of the existing building.

The building is constructed of primarily non-combustible materials with some combustible wood decking and laminated wood beams in the cafetorium. Floors are concrete slab on grade or reinforced one-way concrete slabs, or 2-inch slabs on steel lath supported by steel joists. Typical roofs are metal deck supported by steel framing with the exception of the cafetorium roof noted above. Exterior walls are brick veneer over CMU back-up and interior partition walls are primarily CMU. Because the exterior walls are non-combustible but not load-bearing and some of cafetorium roof is combustible (wood), the building construction would best be classified as Type III-B.

The building does incorporate some life safety assets, specifically the non-combustible construction type and relatively small building area for the construction type, short travel distances to exits, and the provision of a compliant fire alarm system. However, many life-safety features are antiquated, non-functioning, or simply missing, resulting in deficits in nearly every category. Many of these missing or incomplete features are further compounded by the lack of a sprinkler system, which affords relief to buildings that do include them. While this list is not exhaustive, noted code deficiencies include:

- No sprinkler system or standpipes
- Non-compliant enclosure of exit stairs
- Lack of 1-hour rated corridor walls without a sprinkler system (classroom doors are not provided with closers)
- Non-compliant door hardware throughout the facility.
- Lack of dampers for HVAC systems through multiple floors and non-compliant plenums
- Inadequate egress capacity (width) for the second story of the classroom wing

The table and evaluation scores on the following page summarize the facility under the Performance Compliance path of the IEBC. In each category (Fire Safety, Means of Egress, and General Safety), the building does not achieve the minimum score required to be considered compliant.

Table 1401.7 Summary Sheet - IEBC PERFORMANCE GRADE - WILMINGTON NORTH INTERMEDIATE SCHOOL

Existing Occupancy	**Educational**	Proposed Occupancy	**Educational**		
Year building was constructed	**1962**	Number of Stories	**2**	Height in feet	**32**
Type of construction	**III-B**	Area per floor	**8,418 / 31,618 / 12,725**		
Percentage of open perimeter increase	**100%**				
Completely Supressed	**No**	Corridor wall rating	**0 hr.**		
		Type	**N/A**		
Compartmentation	**No**	Required door closers	**No**		
Fire resistance rating of vertical opening enclosures	**N/A**				
Type of HVAC system	**Unit Vent / duct exh.**	, serving number of floors	**2**		
Automatic fire detection	**Yes**	Type and location	**Smoke/heat in classrooms & corr.**		
Fire alarm system	**Yes**	Type	**Addressable, adequate notification**		
Smoke control	**No**	Type	**N/A**		
Adequate exit routes	**Yes**	Dead ends	**Yes**	Length in feet	**25**
Maximum exit access travel distance	**151 feet**	Elevatory controls	**No**		
Means of egress lighting	**No**	Mixed Occupancies	**Yes**		
Standpipes	**No**	Patient abilty for self preservation	**N/A**		
Incidental use	**Yes**	patient concentration	**N/A**		
Smoke compartment less than 22,500 sq. ft.	**No**	Attendant-to-patient ratio	**N/A**		

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
1401.6.1 Building Height	0	0	0
1401.6.2 Building Area	15	15	15
1401.6.3 Compartmentation	0	0	0
1401.6.4 Tenant and Dwelling Unit Separations	0	0	0
1401.6.5 Corridor Walls	-5	-5	-5
1401.6.6 Vertical Openings	-14	-14	-14
1401.6.7 HVAC Systems	-15	-15	-15
1401.6.8 Automatic Fire Detection	8	8	8
1401.6.9 Fire Alarm System	0	0	0
1401.6.10 Smoke Control	****	0	0
1401.6.11 Means of Egress	****	-5	-5
1401.6.12 Dead Ends	****	-2	-2
1401.6.13 Maximum Exit Access Travel Distance	****	4	4
1401.6.14 Elevator Control	-2	-2	-2
1401.6.15 Means of Egress Emergency Lighting	****	****	0
1401.6.16 Mixed Occupancies	0	0	0
1401.6.17 Automatic Sprinklers	-12	-6	-12
1401.6.18 Standpipes	-12	-12	-12
1401.6.19 Incidental Use	-1	-1	-1
1401.6.20 Smoke Compartmentation	0	0	0
1401.6.21.1 Patient Ability for Self-preservation	****	0	0
1401.6.21.2 Patient Concentration	****	0	0
1401.6.21.3 Attendant-to-patient Ratio	****	0	0
Building Score - total value	-38	-35	-41

Table 1401.9 Evaluation Formula

Wilmington North Intermediate School Evaluation:

				Score	Pass	Fail
-38	(FS) -	*29*	(MFS)=	-67		X
-35	(MS) -	*40*	(MMS)=	-75		X
-41	(GS) -	*40*	(MGS)=	-81		X

Sprinkler Protection Requirements

The building does not include a sprinkler system and therefore is not in compliance with M.G.L. c.148 s.26G. Because the building is larger than 7500 Gross Square Feet (GSF), any scope of work meeting the criteria of a "major alteration" would require a sprinkler system to be installed throughout the facility. In Massachusetts, a building's *fire area* includes all portions of the building enclosed by the exterior walls regardless of interior sub-division with fire walls or fire barriers. This is important to understand because the sub-division of a building into separate fire areas (with fire walls and fire barriers, for example) would not be considered a compliance strategy in Massachusetts.

To be considered a "major alteration" the scope of work would have to meet both the "nature of work" and "scope of work" criteria. For the scope of work criterion, the Division of Fire Services provides two separate thresholds - if the project exceeds one of these thresholds, then the project is considered "major" in scope. For the North Intermediate School, if the work area exceeds **17,412** square feet (33% of the total building area of **52,761** square feet) ***OR*** if the cost of work exceeds **$1,913,769** (33% of the value of the building, calculated above), the project *scope* would be considered "major". (The square footage used here are the *Building Area* as defined in the Code, not the more conventional Gross Square Footage area.)

The "nature of work" criterion is less specific, but essentially if any work is being done that would not make the installation of sprinklers substantially more difficult, it would be considered “major” in nature. Examples include the demolition of ceilings, walls, or floor decking exposing structural framing.

Accessibility

Any proposed work will be required to comply with the accessibility requirements of 521 CMR (The Massachusetts Architectural Access Board, or MAAB Rules).

If the cost of the proposed work exceeds $100,000, an accessible entrance, toilet room, drinking fountain, and telephone (if drinking fountains and telephones are provided) will be required in addition to the compliance requirements of the proposed work.

When the cost of work exceeds 30% of the full and fair cash value (calculated above), then the entire facility will be required to comply with the MAAB Rules. For the North Intermediate School, this 30% threshold dollar value would be **$1,739,790.**

Because the building is a public school, owned and operated by the local municipality, it is considered a Title II facility under the Americans with Disabilities Act (ADA). As such, any proposed work to the facility would be required to comply to the maximum extent feasible with the ADA Architectural Guidelines (the ADAAG) except where it would be structurally impractical. The ADA does not have a threshold for requiring full facility compliance but does require that when there are alterations to an area of "primary function" (including classrooms, gymnasium, cafeteria, and administration areas), than the path of travel as well as the restrooms, telephones, and drinking fountains serving the areas of primary function are also accessible.

Specific deficiencies or non-compliant conditions were noted at the North Intermediate School. If a major alteration exceeding the 30% threshold were undertaken, all of these items would require correction.

Site Features

- No compliant accessible parking spaces are provided.
- A portion of the sloped concrete path toward the main entry appears to be sloped greater than 1:20 and is not provided with ramp handrails.
- The pedestrian path at the southwest egress stair/exit does not provide an accessible means of egress to a public way.
- The playground surfaced with woodchips and is not accessible; no playground equipment is on an accessible path.
- Crosswalks are not provided with accessible routes or detectable warning panels.
- In general, site features such as benches, sports field athlete benches, and spectator seating are not on an accessible path.

Entrances

- With the exception of the main entry, none of the building entrances are provided with accessible doorways; some include steps or changes in elevation, and some are not provided with a level landing on the pull side of the door or accessible hardware.
- The administration area does not include an accessible transaction counter.

Doors

- Multiple exterior exit doors are not provided with a level landing on the exterior side of the door. There appears to be only one accessible means of egress from the building.
- Numerous doors do not require pull-side clearance.
- Many doors are narrower than the required minimum 32” clear when the door is opened to 90 degrees to the frame.
- Door hardware throughout the school building consists primarily of doorknobs, which require grasping and turning rather than lever operation.

Accessible Route

- Stair access the stage in the cafeteria has no handrails, which is a life-safety code and accessibility requirement.
- There is no means of traversing the level change (platform lift or stair lift) at the cafeteria stage, making it not accessible.
- Various level changes throughout the school include stairs, but no ramp or other accessible means of changing levels.
- No accessible lockers are provided.
- There is no elevator in the building.
- Handrails at egress stairs do not comply with the required grasp-ability profile, nor do they include required top or bottom extensions.

Toilet Rooms & Plumbing Fixtures

- No accessible toilet room was observed in the building.
- No accessible drinking fountains were observed in the building.
- The doorways to gang toilet rooms are narrower than the required 32 inches. Pull-side accessible clearances are not provided at doors.
- There are no accessible toilet partition stalls in gang toilet rooms: minimum size, doorway dimensions, clear floor space, toilet position, grab bars, and/or accessories are not provided or are non-compliant.
- In gang toilet rooms, no hand-drying devices are provided within accessible reach ranges.
- Single-user toilet rooms do not comply with door hardware, door clear floor area, general clear floor area, vanity knee space, controls or dispenser requirements, grab bar requirements, or toilet location requirements.
- Showers are not accessible.
- Classroom sinks, where provided, do not include the required knee space clearance below the sink and include faucets that require tight grasping and turning. Most sinks do not have the ability to be adapted for proper clearances due to their design and construction.

Controls & Miscellaneous

- Fire alarm pull stations are not mounted within the allowable reach range in some cases.
- Accessible room identification signage is not provided throughout the school.
- The main office admin workstation transaction desk does not provide an accessible counter – it appears to be higher than 36” off the floor.

Standards for the Treatment of Historic Structures

The building and property is not listed on, nor is it eligible for listing on the National Register of Historic Buildings. Refer to the Regulatory Overview portion of this report for Historical Regulations.

EXISTING CONDITIONS:

STRUCTURAL ASSESSMENT

The purpose of this report is to describe, in broad terms, the structure of the existing building, comment on the existing structure, comment on the structural integrity of the building and comment on the structural code issues related to the future renovation and expansion of the existing building.

SCOPE

- Description of existing structure.
- Evaluation of the structural integrity of the building.
- Comments on the existing condition.
- Discussion of primary structural code issues that would influence the renovations and design of new additions.

BASIS OF THE REPORT

This report is also based on the our visual observations during our site visit on July 26, 2023, review of the original construction drawings prepared by Valtz & Kimberley Architects and Engineers dated March 17, 1961. During our visit, we did not remove any finishes; so, our understanding of the structure is limited and may have to be further evaluated as the design evolves.

BUILDING DESCRIPTION

The school is located on intersection of Ballardvale Street and Salem Street in Wilmington, Massachusetts. The school is essentially a one, two and three story steel and concrete structure. The school structure was constructed in 1961.

The foundations are traditional cast-in-place concrete spread footings.

The lowest level slab is a concrete slab on grade. Parts of the basement slab is bituminous concrete.

The supported slab above the Basemen/Crawl Space is one way reinforced concrete supported on reinforced concrete beams and reinforced concrete piers.

The typical supported floor is a 2” thick concrete slab on steel lath spanning between open web steel joists supported on wide flange steel girders and columns.

The typical roof is metal deck spanning between open web steel joists supported on wide flange steel girders and steel columns.

The roof of the Gymnasium is similar to the typical roof construction, 1 ½” metal roof deck supported on open web steel joists spanning between wide flange steel girders and steel columns.

The high roof at the cafetorium is 4" thick Wood Deck spanning between 36" deep laminated wood beams.

The typical exterior wall is brick veneer with strip windows at the academic wings.

The interior walls are concrete block.

The Gymnasium has infill block around the entire perimeter.

The demising walls between the classrooms are typically masonry walls.

EXISTING CONDITIONS

Based on our observations, the school structure is functioning adequately based on the age of the school.

- We observed that the non-structural masonry walls are connected to the structure, at the corridor walls the masonry terminates at the sill of the clerestory.
- We observed several cracks in the interior masonry walls and exterior masonry façade. We did not observe any control joints in the exterior masonry façade.
- We observed signs of moisture infiltration at the exterior wall in the Gymnasium.
- We observed spalls and cracks in the exterior concrete walls at the loading dock and other exposed concrete structures.

We did not observe any signs of foundation settlement, or any undue vibrations from footfall and traffic on the supported floor slab though the wood framed areas a bit more susceptible to vibrations from the footfall.

PROPOSED SCHEMES

Based on the requirements of the code, no structural upgrades are triggered for any proposed renovations of limited scope that do not invoke any required structural modifications. The extent of the code required structural upgrades is dependent on the extents of the proposed renovations. The following is a description of the compliance methods that may be triggered depending on the extents of the proposed schemes as dictated by other disciplines.

GENERAL CODE CONSIDERATIONS

If any repairs, renovations, additions or change of occupancy or use are made to the existing structure, an evaluation of the structure is required to demonstrate compliance with 780 CMR,

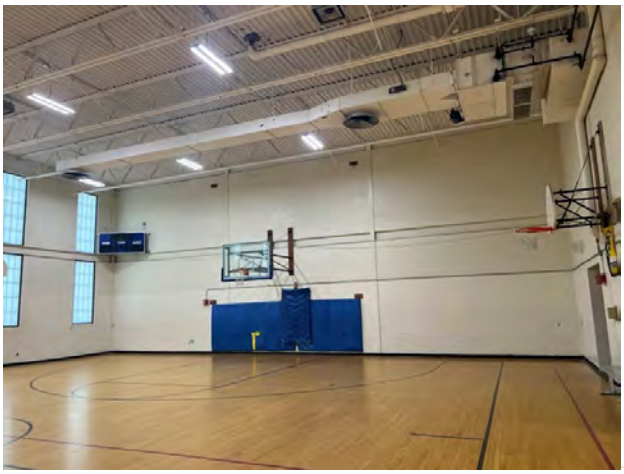


Image 1 – Gymnasium roof framing

Image 2 - Cracks in exterior concrete walls

Image 3 – Spalls in exterior concrete structures

Chapter 34 "Existing Building Code" (Massachusetts Amendments to The International Existing Building Code 2015). The intent of the IEBC and the related Massachusetts Amendments to IEBC is to provide alternative approaches to alterations, repairs, additions and/or a change of occupancy or use without requiring full compliance with the code requirements for new construction.

The IEBC provides three compliance methods for the repair, alteration, change of use, or additions to an existing structure. The three compliance methods are as follows:

1. Prescription Compliance Method.
2. Work Area Compliance Method.
3. Performance Compliance Method.

For more information on these compliance methods, refer to the Regulatory Overview section of this report. A summary of the structural implications of the various compliance methods follows.

PRESCRIPTIVE COMPLIANCE METHOD

In this method, compliance with Chapter 4 of the IEBC is required. As part of the scope of this report, the extent of the compliance requirements identified are limited to the structural requirements of this chapter.

ALTERATIONS

- If the proposed alterations of the structures increase the demand-capacity ratio of any lateral load resisting element by more than 10 percent, the structure of the altered building or structure shall meet the requirements for the code for new construction.
- Where alterations increase the design gravity loads by more than 5 percent on any structural members, those members would have to be strengthened, supplemented, or replaced.

ADDITIONS

Additions can be designed to be structurally separate or structurally connected to the existing building. Based on the project scope, the following structural issues must be addressed: The requirements applicable to the existing structure for connected additions are similar to those for altered structures.

- All construction of all addition areas must comply with the code requirements for new construction in the IBC.

- For additions that are not structurally independent of an existing structure, the following rules apply to the existing building:
  - The existing structure and its addition - acting as a single structure - must meet the requirements of the code for new construction for resisting lateral loads. Exceptions

allow that structural elements that only resist lateral forces whose demand-capacity ratio is not increased by more than 10 percent may remain unaltered.

- Any load-bearing structural element for which the addition or its related alterations causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced. This may invoke or cause additional renovation work to access the structure.

In order to avoid invoking required structural modifications to the existing building, any planned additions should be designed as structurally separate buildings.

WORK AREA COMPLIANCE METHOD

In this method, compliance with Chapter 5 through 13 of the IEBC is required. The extent of alterations has to be classified into LEVELS OF WORK based on the scope and extent of the alterations to the existing building. Refer to the Regulatory Overview section of this report for an explanation of the Levels of Work.

This report assumes that planned renovation schemes would affect more than 50 percent of the floor area and invoke Level 3 Alteration requirements, and the following analysis is based on that assumption. In addition, there are requirements that have to be satisfied for additions to the existing structure.

LEVEL 3 ALTERATIONS

- Any existing load-bearing structural element for which an alteration causes an increase in the design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- If the proposed structural alterations of an existing structure exceed 30 percent of the total floor and roof areas of an existing structure, we have to demonstrate that the altered structure complies with the IBC for wind loading and with reduced IBC level seismic forces.
- Existing anchorage of all unreinforced masonry walls to the structure have to be evaluated. If the existing anchorage of the walls to the structure is deficient, the tops of the masonry walls will require new connections to the structure.
- If the proposed structural alterations of an existing structure are less than 30 percent of the total floor and roof areas of the existing structure, the project must demonstrate that the altered structure complies with the loads applicable at the time of the original construction (or the most recent major renovation) and that the seismic demand-capacity ratio is not increased by more than 10 percent on any existing structural element. Those structural elements whose seismic demand-capacity ratio is increased by more than 10 percent must be strengthened, supplemented, or replaced in order to comply with reduced IBC level seismic forces.

ADDITIONS

- All additions shall comply with the requirements for the code for new construction in the IBC.
- Any existing gravity, load-carrying structural element for which an addition or its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented or replaced.
- For additions that are not structurally independent of any existing structures, the existing structure and its additions, acting as a single structure, shall meet the requirements of the code for new construction in the IBC for resisting wind loads and IBC Level Seismic Forces (may be lower than loads from the Code for New Construction in the IBC), except for small additions that would not increase the lateral force story shear in any story by more than 10 percent cumulative. In this case, the existing lateral load resisting system can remain unaltered.

PERFORMANCE COMPLIANCE METHOD

Following the requirements of this method for the alterations and additions may be onerous on the project because this method requires that the altered existing structure and the additions meet the requirements for the code for new construction in the IBC.

SUMMARY

The existing school structure appears to be performing adequately. All of the structural components that are visible appear to be in sound condition. The cracks in the exterior masonry façade and interior masonry walls are not a structural part concern and they should be repaired or masonry repointed as part of an on-going maintenance program.

The compliance requirements of the two Prescriptive and Work Area Compliance methods are very similar in most respects for a major renovation. The Prescriptive Compliance Method would be more restrictive, as it would likely require that the existing lateral load resisting systems of the existing building meet the requirements of the code for new construction of the IBC, even for small increases of design lateral loads. Based on this, we would recommend the Work Area Compliance Method for the project.

Any major proposed renovations and additions would likely require that the structure be updated to meet the requirements for the Code for New Construction. This may require addition of reinforced masonry shear walls with new reinforced concrete foundations, connecting the floor and roof diaphragms to the existing masonry walls. All of the existing masonry walls would have to be adequately connected to the roof and floor structure.

EXISTING CONDITIONS: MECHANICAL

EXECUTIVE SUMMARY

The North Intermediate School (the school) services Fourth and Fifth Grade students. The 55,541 gross square foot school was constructed in 1962. Presently, the HVAC systems serving the school are comprised of a natural gas-fired hot water plant, unit ventilators with hydronic heating coils, both general and dedicated exhaust systems communicating to roof and inline exhaust fans, terminal hydronic heating units, and an antiquated pneumatic control system.

Most of the building HVAC systems are in poor operating condition, are difficult to run, and need replacement. The pneumatic temperature control system is functioning and has had a recent compressor upgrade, but the system is antiquated and inefficient in terms of energy consumption. The overall HVAC system is similarly inefficient and costly to operate and maintain. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment. This consumes unnecessary energy and results in additional incurred electrical cost. Overall, most systems are operating but have exceeded their expected serviceable life. Modern code-required ventilation rates are not being met in many spaces and acceptable air-quality is likely compromised due to the surface contamination on many systems as well as inoperable or poorly operating outside ventilation controls. Interior zones are generally lacking ventilation entirely.

HEATING HOT WATER PLANT:

The school is heated by a boiler plant consisting of three (3) natural gas-fired hydronic boilers which replaced the original boiler plant in 2015. The three boilers were manufactured by Camus (Dynaflame Series) and are each 2,000 MBH input capacity. The boilers are sealed combustion with modern double-wall stainless steel flue venting to the building exterior. Combustion air is provided through new insulated ducting.

Hot water is circulated through schedule 40 black steel piping by means of three floor-mounted end suction pumps. These pumps were all replaced as part of the 2015 boiler room upgrade. The hydronic distribution system serves typical unit ventilators in classes, fin tube radiation, cabinet unit heaters, and several heating and ventilation units which are original to the building. In some cases, heating pipe is bare and where insulation is present it appears original to the building and in poor condition. This insulation is likely asbestos containing. Tanks and appurtenances associated with the boiler plant such as air separation equipment and expansion tanks were replaced in 2015. The boiler plant also serves the heating demand for domestic hot water throughout the building.

Specific Issues	Recommendations
Domestic Hot Water is served by central boilers causing need for boilers to run during summer.	Consider a gas or heat pump domestic water heater to segregate the boilers from the domestic system and allow the boilers to be secured during the off-heating season.
Signs of corrosion on piping and flanges. Pipe integrity unknown. Hazardous and/or missing insulation.	Replace entire piping system with a combination of schedule 40 black steel and copper piping and utilize dielectric fitting for dissimilar materials. Replace insulation. Alternatively, consider new fossil fuel free heating system replacement such as air source variable refrigerant flow (VRF) heat pump system.

ATC Controls

The building heating and ventilation systems are controlled by an antiquated pneumatic control system with an air compressor manufactured by Speedaire that is in the boiler room *(Image 5)*. The compressor appears less than 10 years old and in good condition. Analog thermostats are present to control the flow of hot water to each piece of terminal heating equipment in each space. There is no building management system for centralized control or management. The control system is antiquated and in need of replacement due to its limited capability with equipment control, high maintenance and energy requirements, and overall decreased thermal comfort.

Specific Issues	Recommendations
Pneumatic control systems are generally considered inefficient, and unreliable. Many of the existing pneumatic thermostats are likely damaged and inaccurate.	Replace the entire Pneumatic control system with current direct digital control (DDC) technologies for improved reliability, controllability, and the ability for a web-based building management system (BMS).

Classrooms:

The classrooms are heated and ventilated by hydronic unit ventilators. The heating coil valve and dampers are pneumatically actuated and tied to local thermostats in each space. Ventilation air brought in through the unit ventilators is relieved via a low-wall transfer grille typically located near the entryway of the

Image 1: Camus Hydronic Boilers

Image 2: Typical Boiler Venting

Image 3: Hydronic System Pumps

Image 4: Hydronic Pump VFDs

Image 5: Pneumatic Controls Compressor

Image 6: Pneumatic Control Panel

classroom. This transfers air to the adjacent corridors which is then collected by a large central exhaust system with fans located on the roof. The unit ventilators appear to be originally installed equipment, are in poor condition, and are beyond their expected service life. Control of the unit ventilators is by the unit mounted on/off toggle switch. Older unit ventilators are inherently noisy, and as a result some faculty turn fans off, which effectively stops the flow of ventilation air. Additionally, books and other classroom materials are occasionally placed in front of or on top of unit ventilator grilles which creates noise and reduces ventilation effectiveness. The typical classroom in this school is not air conditioned however, there are approximately 5 classrooms which are used for summer student programs and have been outfitted with ductless cooling (mini-split) units for zone cooling. At the time of the site visit during summer break, the fans for the unit ventilators were observed to be running. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment. There is also a Media Center in the school which appears to be a converted classroom and is heated and ventilated in an identical way.

Specific Issues	Recommendations
Currently, installed Unit Ventilators have far-exceeded their expected service lives and are therefore noisy & approaching failure. Additionally, the units are operated even during unoccupied hours, wasting energy and money.	Provide new HVAC equipment & associated control systems to provide the classroom spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Current Unit ventilators are difficult to restart when stopped, this requires the staff to operate unit ventilators during otherwise unneeded run hours at a greater energy cost to the building.	Install new unit ventilators where units are present. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Most classrooms lack air conditioning functionality.	Cooling is not a necessity but certain heating system options such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS) would inherently provide system-wide cooling as a benefit.

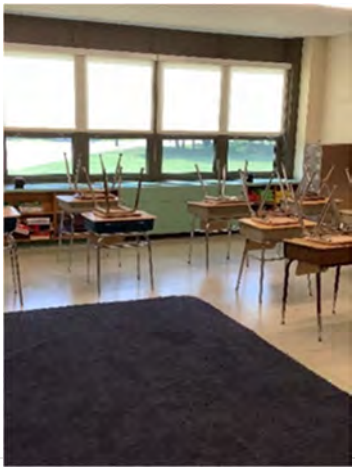


Image 7: Typical Classroom with Unit Ventilator

Image 8: Typical DCU-type Air Conditioner

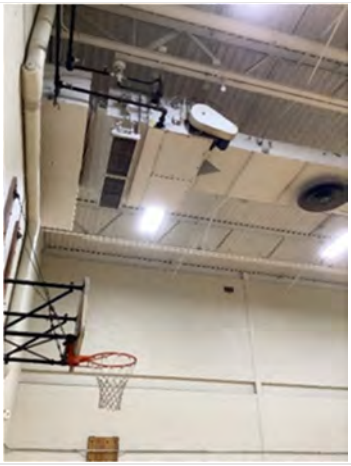


Image 9: Ceiling Suspended Heating and Ventilation Units

Image 10: Media Center

Image 11: Supply Diffusers at Cafeteria

Image 12: Cafeteria Air Handler

ADMINISTRATION AREAS & CORRIDORS:

The administration area and corridors are heated via hydronic fin tube radiation, unit heaters, and convectors. Air conditioning is provided via DCU type air conditioners. Offices, faculty spaces, and corridors have no provided mechanical ventilation which is a violation of current codes.

Specific Issues	Recommendations
Natural Ventilation can be code compliant; however, ventilation is only available when the windows are opened.	Provide Mechanical Ventilation Systems to serve all spaces that currently lack mechanical ventilation. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Currently, installed convectors and fin tube radiation have far-exceeded their expected service life.	Provide new HVAC equipment & associated control systems to provide spaces with greater indoor environmental conditions. Alternatively, consider a fossil fuel free HVAC system replacement such as an air-source variable refrigerant flow (VRF) system and dedicated outdoor air system (DOAS).
Individual temperature control for each office/space is lacking.	Provide a new direct digital control system.

GYMNASIUM:

The Gym is heated and ventilated by two pneumatically controlled H&V units suspended from the roof. *(Image 9)*. Both units supply air to the space through uninsulated ductwork high in the space. Return air is also brought directly back to the H&V through return openings at the underside of the unit. *(Image 10)* The H&V units are provided with a hydronic heating coil, supply fan, filters, and a mixing box.

Specific Issues	Recommendations
Currently, installed heating & ventilating units have exceeded expected service life and are in poor condition.	Provide new HVAC equipment & associated control systems to provide the gym with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

Image 13: Kitchen Hood

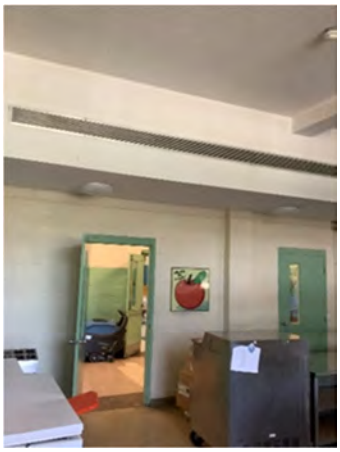


Image 14: Diffuser for Kitchen Heat

KITCHEN AND CAFETERIA/STAGE:

The kitchen appears to be a warming type kitchen with a stainless steel island-type range exhaust hood *(Images 13, 14)* that is ducted to dedicated roof-mounted exhaust fan. There are no grease filters or fire suppression system installed for the hood. There is no make-up air provided for the hood but a heating and ventilation unit does serve the space for normal operation. There is no commercial dishwasher ductwork. At the time of the site visit during summer break, the fan for the exhaust hood was observed to be running. Custodial staff indicated that many, if not all, fan powered equipment is left running at all hours throughout the year to avoid issues frequently encountered with restarting the aged equipment.

The cafeteria and stage are heated and ventilated by a heating and ventilation unit suspended from the roof above an adjacent storage room. *(Image 9)*. The unit supplies air to the space through ductwork to four diffusers high in the space. Air brought into the zone is relieved to the exterior through grilles below the stage to an inline exhaust fan. Existing drawings indicate that the cafeteria/stage area is provided with in-slab radiant heating at the perimeter of the space, The working status of this embedded heating element could not be field verified at the time of the site visit.

Specific Issues	Recommendations
Currently, installed ventilation and exhaust hood units have exceeded their expected service life and is in poor condition. Hood is labeled as non-compliant upon last inspection. Additionally, the hood fan is operated even during non-cooking hours, wasting energy and money.	Provide new HVAC equipment & associated control systems to provide the kitchen with acceptable indoor air quality. Consider a fossil fuel free air-source heat pump system as a replacement option.

EXISTING CONDITIONS: ELECTRICAL

EXECUTIVE SUMMARY

The existing electrical systems of this facility range from original vintage, approximately 60 years old to more recent upgrades / add-ons installed including lighting retrofit, fire alarm, and emergency lighting (within 10-years old).

While the facility is well maintained and clean, the original systems are in poor / fair condition and have exceeded their intended useful life. Most of the existing systems are not suitable for renovation / expansion.

The electrical service is adequate in capacity and voltage characteristics for the present load demand of the building. However, the existing service will be required to be modified / relocated to accommodate renovation/addition.

Replacement parts are very difficult to find or no longer available for many of the electrical systems.

It is our recommendation, taking in consideration the age and general conditions of the existing equipment, that all electrical systems with exception to the fire alarm system should be replaced with new energy efficient code compliant systems under a renovation/addition program.

ELECTRICAL DISTRIBUTION SYSTEM

The primary service of the building is fed underground from the utility pole to (3) pole mounted transformers adjacent to the building and next to the main electrical room. (Image #1)(Image #2)

The secondary service of the building consists of 800A, 120/208V, 3-Phase, 4 Wire manufactured by Federal Pacific. (Image #3)

The building is on one secondary meter #68294548 located inside of main electrical room. (Image #4)

Also, there are electrical sub-panels located throughout the facility. The panels are circuit breaker type and without space available for additional circuit breakers. Most of the sub-panels are original to the building and in poor / fair condition. The panels are manufacturer by GE. (Image #5)

Specific Issues	Recommendations
Main Distribution Panels and all Sub-Panels are old and in poor condition, original distribution equipment is manufactured by Federal Pacific which are a safety hazard as they are known to be faulty.	Provide new pad mounted transformer, new primary service, and new secondary service. Replace all electrical distribution system with new. Existing branch circuits to connect to new panels.

INTERIOR LIGHTING

90% of the lighting has been upgraded to LED fixtures.

Corridor lights generally consists of 1'x4' surface mounted LED lighting. (Image #6)

Library and Classroom lighting consists of surface linear LED light fixtures controlled by (3) switches. (Image #7) (Image #8)

Gymnasium (Image #9) lighting consists of suspended 2'x4' LED high bays.

Kitchen has linear pendant LED wraparound fixtures. Fixtures are not vapor tight. (Image #10)

Cafetorium has 2'x4' pendant mounted LED high bays, some directional spotlights fixtures with wall mounted rotary dimmers for platform lighting. (Image #11) (Image #12)

The building does not contain occupancy sensors or daylight light sensors. The school does not have an automated lighting control system.

Specific Issues	Recommendations
School does not have automatic lighting control system.	Provide automatic lighting control system in combination with automatic dimming sensors. In accordance with current energy code.
There are no dimming photo sensors	Provide dimming photo sensor within areas with natural daylight to dim fixtures automatically.
Not every space has occupancy sensors	Provide occupancy sensors within each space to conserve energy.

EXTERIOR LIGHTING

Exterior lighting consists of building mounted flood lights and overall packs within integral photosensors and egress doors. (Image #13)

The main entrance has surface downlight LED light fixtures mounted at the canopy.

Some exit doors do not have egress lighting.

Image 1:

Image 2:

Image 3:

Image 4:

Image 5:

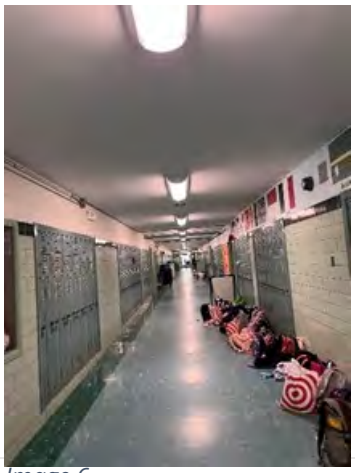


Image 6

Specific Issues	Recommendations
Flood lighting is not dark sky compliant and not all doors contain egress lighting with battery back up	Provide pole mounted full cutoff energy efficient LED lighting for parking area and wall mounted LED lighting for general exterior building illumination.
There is no parking lot pole lighting.	Provide pole lighting to illuminate parking lot to minimum IESS standards.

EMERGENCY LIGHTING

The facility does not contain an emergency generator. Emergency lighting is accomplished utilizing wall mounted emergency battery units. Emergency lighting is not sufficient at exterior egress paths. In general, the emergency lighting is in good condition (Image #14)

Existing exit signs are in fair condition. (Image #15)

Specific Issues	Recommendations
No exterior emergency lighting at some egress doors.	Add LED emergency egress lighting.

FIRE ALARM SYSTEM

The fire alarm consists of a Notifier NFS 3030 addressable panel with voice evacuation. The FACP is located in the main vestibule. (Image #16)

The method of transmission is via Gamewell Masterbox #63 (Image #17)

Currently, the fire alarm system is code compliant.

There is no C.O. detection in the school or in the kitchen.

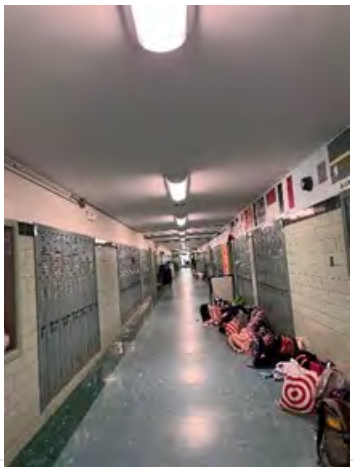


Image 6:

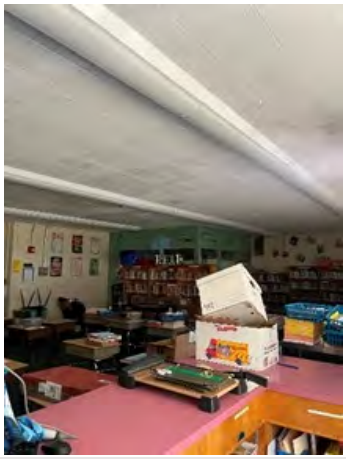


Image 7:

Image 8:

Image 9:

Image 10:

Image 11:

Specific Issues	Recommendations
There is no C.O. detection in the school.	Provide C.O. detection in mechanical rooms with fossil fuel burning equipment.
There is no C.O. detection in the kitchen with gas shut down.	C.O. detection system UL listed to shut down gas valve with reset button should be installed.

BRANCH CIRCUITS/WIRING DEVICES

The receptacle coverage is inadequate in most spaces. Typical classrooms have two or three receptacles.

Extension cords are used throughout classrooms and offices due to lack of receptacles. The use of extension cords for permanent wiring is a code violation. Equipment cords are being run above ceilings in classrooms which is also a code violation. (Image #18) (Image #19)

Typically branch circuits are not separate based upon load type. The existing receptacles are in fair/poor condition.

There are receptacles in the kitchen and within 6’ of a water source in classrooms that are not GFCI type. (Image 20)

Specific Issues	Recommendations
Receptacle coverage in classrooms and offices is inadequate, cord and plugs are run above ceilings.	Provide additional receptacles in all classrooms and offices, remove cord and plug violations.
A number of receptacles in kitchen do not contain GFCI protection.	Provide GFCI receptacles in kitchen area.

MISCELLANEOUS

The facility does not have a lightning protection system or lightning preventor system.

There is no emergency power off device in the kitchen to turn-off power to equipment under the hood.

Image 12:

Image 13:

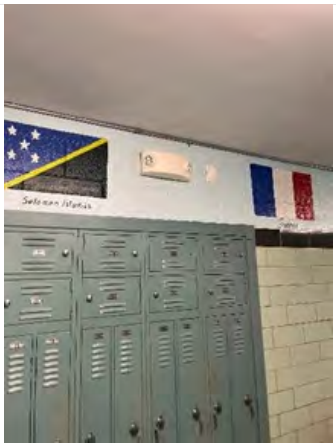


Image 14

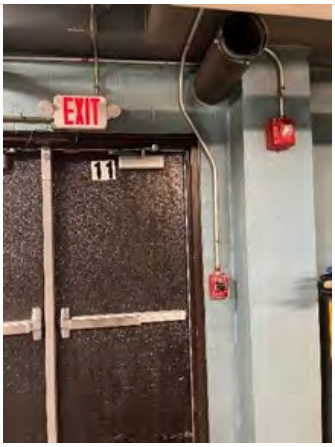


Image 15

Image 16

Image 17

Specific Issues	Recommendations
Building has no lightning protection	Provide lightning protection/preventor system.
Kitchen equipment has no emergency shutdown.	Provide emergency power off switch to shut down electrical equipment in kitchen in an emergency.

Image 18

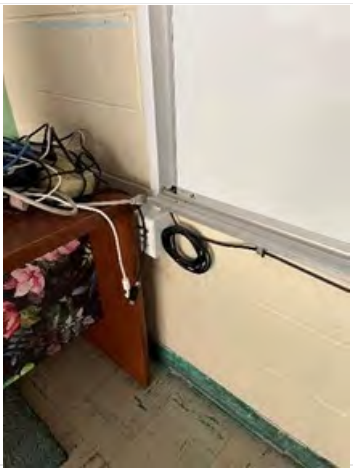


Image 19

Image 20

EXISTING CONDITIONS: PLUMBING

GENERAL

The existing plumbing systems serving the school consist of the domestic water system (cold, hot, and hot water return) domestic hot water heaters, sanitary system (waste and vent piping systems), acid waste system (acid waste, venting, and neutralizing tank), storm system (roof drains, storm piping), natural gas piping system, and the plumbing fixtures. The systems, in general, appear original to the building. Some systems/equipment have been upgraded/replaced; however, most plumbing systems and equipment are approaching or are beyond their useful life.

DOMESTIC WATER SYSTEMS

Domestic water for the facility is fed from the 4" main (image 1) which enters the building in the kitchen storage, reduces to 2" for the meter (image 2) and increases to 4" with pressure reducing valve (image 3) and drops to crawl space and is supplied throughout the building in the crawl space for area A and goes to mechanical room in area B. No backflow preventer is present at the service, but the water meter is in good condition (image 2). The domestic water consists of copper pipe with soldered fittings (image 4) and it is expected the solder used in the system has a significant lead content. In addition, the existing domestic water is original and in poor condition and is not expected to last more than a few years without exhibiting possible failures.

Pipe insulation and valves appear to be original, in poor condition (image 5), although portions of piping insulation in the mechanical room has been upgraded (image 6 &7). Original pipe insulation is possibly asbestos and should be tested and abated as required (image 8). Pipe labels, flow arrows, and valve tags are not present throughout the system.

The domestic Hot water for the facility is supplied from two indirect water heaters (image 9) Well McClain (Aqua plus-105-S2), which has a capacity of 110.9 gallons. The water heater appears to be in fair condition. A tempering valve is provided for the domestic hot water system (image 10), hot water recirculation pump is provided and controlled via aqua-stat.

Due to the poor condition, it is recommended that all domestic water piping systems be replaced.

Specific Issues	Recommendations
No backflow preventer and water meter on domestic service.	Provide new backflow preventer and water meter assembly.

Domestic water piping, valves, hangers and insulation have outlived its useful life.	Provide new domestic water piping, insulation, hangers and valves.
No two-temperature hot water system and thermostatic mixing valve.	Provide 120°F hot water to fixtures via thermostatic mixing valve and 140°F hot water to kitchen appliances.

SANITARY WASTE AND VENT

Sanitary piping that can be seen is cast iron with hub and spigot joints (image 11). Smaller pipe sizes (less than 3") are copper, galvanized pipe (used in the kitchen) with soldered joints. Sanitary piping may continue in use with maintenance and replacement of failed components (image 12); however, due to its age, it is not expected to last more than a few years without exhibiting widespread problems and possible failures. Additionally, part of the maintenance PVC piping has been installed for sanitary which is a code violation (image 13). The vent piping is cast iron and appears to be in fair condition (image 14).

STORM DRAINAGE

Most storm conductors are not visible but where piping can be seen, it appears to be in fair condition. Piping observed to be cast iron with hub and spigot joints. Roof drains consists of metal dome tops, flashing clamps and appear to be in fair condition. Horizontal storm piping above the ceiling is insulated. Insulation is original and is in fair to poor conditions on the second-floor area A (image15) and in fair condition in the gym area. Storm piping in general appears to be in fair condition but is not expected to last more than a few years without exhibiting widespread problems and possible failures.

NATURAL GAS/PROPANE

The existing natural gas system appears to be 4" black steel, which enters the building into the mechanical room. The existing gas piping includes a gas meter, valves, and utility gas regulator (image 16). Gas is distributed throughout the facility for the boilers, kitchen equipment, and laboratory classroom gas turrets. Gas piping within the mechanical boiler room appears to be in fair condition. Other gas piping in the building is not active and that is visible appears to be original and in poor condition (image 17). It is not expected to last a few more years without problems and possible failure.

Image 1

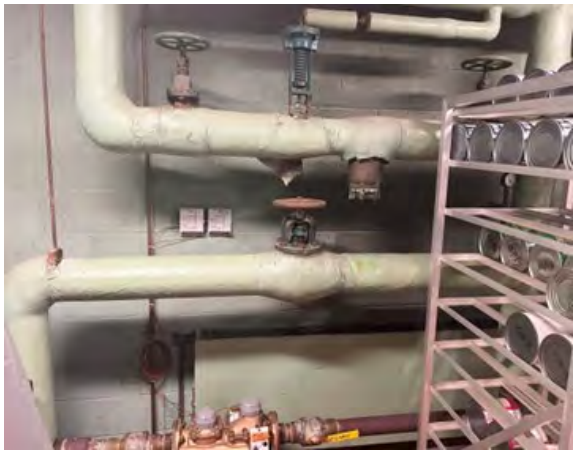


Image 2

Image 3

Image 4

Image 5

Image 6

ACID WASTE AND VENT

The laboratory classrooms include a laboratory (acid) waste and vent system which is not active. The system is comprised of galvanized pipe (image 17) which is a code violation as Massachusetts plumbing code for hazardous waste and does not include a pH adjustment system, as required by Code. The piping appears to be original, and it is not expected to last a few more years without problems and possible failure.

Specific Issues	Recommendations
Sanitary, waste and vent piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Storm piping reaching its life expectancy.	Piping should be video inspected for any interior corrosion and blockage. Consider replacement in its entirety if found excessive corrosion due to its age.
Gas piping for laboratory sinks nearing its life expectancy	New gas piping for all the laboratory sinks is recommended
Galvanized pipe is used for hazardous waste which is a code violation	New acid waste and vent system with pH adjustment is recommended
Roof drain covers nearing their life expectancy.	New roof drain dome covers are recommended.

FIXTURES

Plumbing fixtures throughout the facility are in fair condition, many are antiquated and do not employ current water saving features.

Water closets are primarily wall-hung vitreous china with manual flush valves. Overall, the water closets are in fair condition (image18). The urinals are wall-mounted vitreous china with manual flush valves, and overall, the urinals are in fair condition (see image 19).

Image 7

Image 8

Image 9

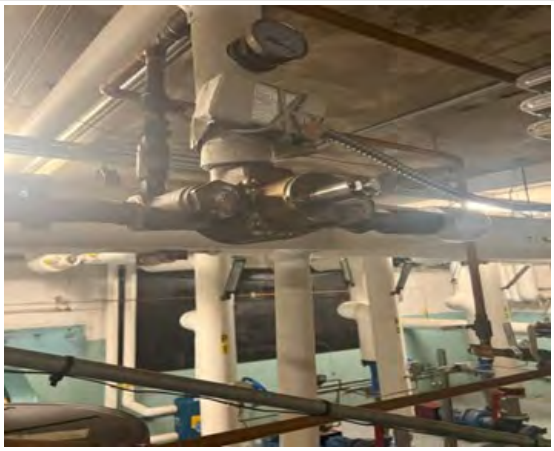


Image 10

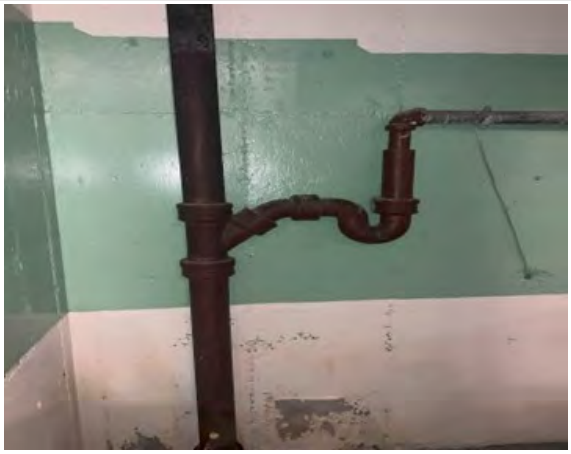


Image 11

Image 12

Lavatories are wall-hung, vitreous china with manual faucets, with hot and cold water handles generally in fair condition (image 20).

Mop receptors are wall-hung cast iron with 3" inch trap, generally in fair condition, faucets are equipped with vacuum breakers and soap dispensers (image 21).

Classroom sinks are enamel on steel, with cold and hot water handles (image 22).

Laboratory sinks are epoxy resin, with single gooseneck handles (cold water only) and gas turrets (image 23), generally in fair to poor condition, some sinks have the faucets removed (image 24).

Art sinks are stainless steel with cold and hot water handles (image 25) and equipped with under-the-counter solids interceptor. The sinks appear to be in fair condition, but the solids interceptor is in poor condition (image 26).

Girls and boys Lockers rooms have gang showers, which have a combination shower head with hot, cold and tepid water connections (image 27) and single shower head with only tepid water connection (image 28). Most of the heads in the locker rooms are removed and capped. Each locker room has its own tempering station with a thermostatic mixing valve (image 29) for tepid water. All the piping to the shower head is chrome plated (image 27&28). At present, the locker rooms are not in use.

Drinking fountains are surface mounted, stainless steel, wall-hung push button type, and generally in fair condition and not ADA compliant (image 29).

Kitchen fixtures appear to be in fair condition (image 30), and pot sinks are piped to grease interceptor in the crawl space which is in poor condition (image 31). At present, the school has no dishwasher. A separate kitchen waste system is not present in the facility other than the point of use grease interceptor and there is no evidence of an exterior grease interceptor.

All the cold water handles to the interior hose bibs are removed (image 20) and the exterior hose bibs are not equipped with vacuum breakers (image 32).

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

Specific Issues	Recommendations
Existing plumbing fixtures are antiquated, non-ADA compliant and not water conserving.	During a substantial renovation and addition project, code would require that all the water closets, lavatories, etc. be modified to be accessible water conservation type fixtures. Replace all electric water coolers with new handicap accessible fixtures. Replace all mop receptors and janitor sinks with new fixtures and provide backflow protection for soap dispensers to comply with code.
No separate kitchen waste system and exterior grease trap	Provide new point of use grease interceptors and provide new exterior grease trap.

Image 19

Image 20

Image 21

Image 22

Image 23

Image 24

Image 25

Image 26

Image 27

Image 28

Image 29

Image 30

Image 31

Image 32

EXISTING CONDITIONS: FIRE PROTECTION

There is no active fire suppression system in the school building. The building has no automatic sprinklers, no hose cabinets, no corridor fire extinguishers, or fire department standpipes present.

Recommendations:

- If the existing building is renovated to any substantial degree, the entire building needs to be upgraded with fire suppression system per latest Massachusetts Building Code 780 CMR Chapter 9.
- The existing site water service and capacity needs to be evaluated for new requirements and to comply with the latest Commonwealth of Massachusetts building code and the National Fire Protection Association (NFPA).
- A new dedicated fire service to the building will be required from the site and which then feeds the automatic fire sprinkler system covered throughout the building.
- NFPA-13 standard would require that all areas of the building shall be protected with wet fire suppression sprinklers. Unheated areas will require a dry system. Provide sprinklers and a standpipe system throughout the building to comply with current code.

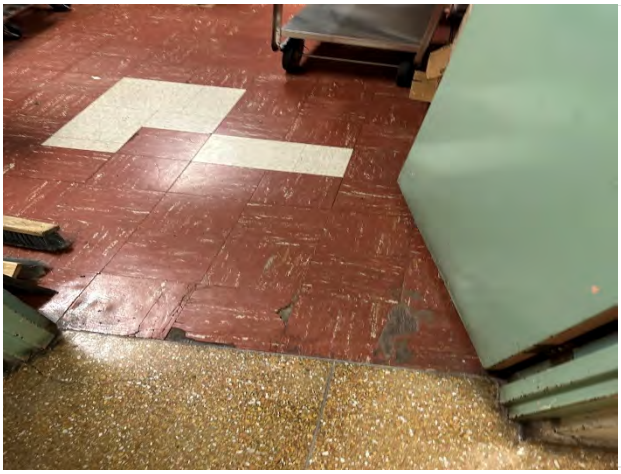


Image 1

Image 2

Image 3

Image 4

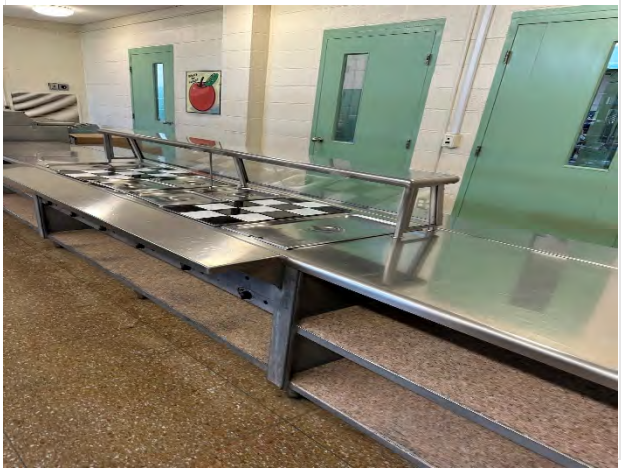


Image 5

Image 6

Image 7

Image 8

EXISTING CONDITIONS: TECHNOLOGY AND COMMUNICATIONS

EDVANCE TECHNOLOGY DESIGN

EXECUTIVE SUMMARY

Technology and communication systems for this facility range from those that are original to more current systems such as the instructional ultrashort projection technology. However, the newer systems, although functional, have been added to a building that was never designed to adequately support these systems. There is a lack of controlled and dedicated space, power, and environmental conditioning for core network equipment. Furthermore, many of the core communication systems, including but not limited to the public address system and master clock systems cannot be upgraded or expanded due to the age of the equipment. The telephone system, although based on current technology should be extended into all spaces including classrooms. We recommend that the older equipment be replaced and that the classroom technology, network infrastructure, audio visual systems of large assembly spaces, and the building security systems be upgraded to current standards.

Older systems within the three elementary schools in our survey have been identified by the district's IT team. We discussed these systems, such as telephones, network switches, and wireless access points, as well as their desired solution during site visits and discussions with Kenneth Lord in July 2023..

STRUCTURED CABLING

North Intermediate School appears to have network cabling installed in surface mounted raceway throughout the school (Image 1). It is run from a central location or main distribution in a shared custodial space. This area is not properly cooled or ventilated. Connections in the MDF are not made in an organized manner (Image 2). Older preexisting network cabling is exposed in many locations and in many locations the raceway system containing the structured cabling is failing to support cabling. Most of the elementary school cable is Cat 5e. More recently installed cabling has also been left exposed. Twelve strands of single mode fiber connect the school to the public safety building.

Specific Issues	Recommendations
Cabling is run to wall mounted wireless access points and other network device locations using surface mount raceway. Cabling originates in an antiquated phone booth that is not properly treated for power and environmental conditioning. This is common when networks are implementing in older existing facilities.	Dedicated network closets should be established as part of any building renovation project, with new Cat 6A cabling installed from outlets to closets within walls if possible or with the use of more permanent metallic raceway technology. Remove and replace older existing surface mount raceways and cabling as part of any renovation project.

NETWORK SWITCHES

In the main distribution location, there is an HP chassis-based switch installed in a wall-mounted equipment rack along with patch panels, patch cords and UPS equipment (Images 2 and 3). There is extreme dust buildup due to the lack of environmental protection for this equipment (Image 4).

The district intends to upgrade network switch hardware to Cisco.

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, new Cisco 9300 switches will be installed on November 10, 2023.

Specific Issues	Recommendations
Network switches are installed in a rack that is in a shared storage closet. Switches are exposed to the elements of a shared closet, without adequate ventilation, power distribution and conditioning.	Dedicated network closets should be established as part of a building renovation project, where network switches can be secured, properly supported with adequate power and environmental conditioning.
UPS equipment does not fit into wall mount enclosures and is sitting on the floor of the closet.	Dedicated network closets with free standing open relay racks will provide space for securing UPS equipment.

WIRELESS NETWORK

Wireless access points were observed throughout the facility in most of the classrooms. Large assembly spaces also appear to be equipped with wireless access points. These devices appear to be dated Aruba models. Discussions have taken place to remove the current devices and upgrade to cloud-based Cisco Meraki access points.

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, new Cisco Meraki wireless access points have been installed. This upgrade was completed in mid-August.

Specific Issues	Recommendations
The school is relying on old wireless network equipment for achieving network connectivity.	New hard-wired data outlets in addition to cabling for wireless should be installed in all educational spaces as part of any building renovation project. Since the original visit, Owner has installed new Cisco Meraki wireless access points.

Image 1

Image 2

Image 3

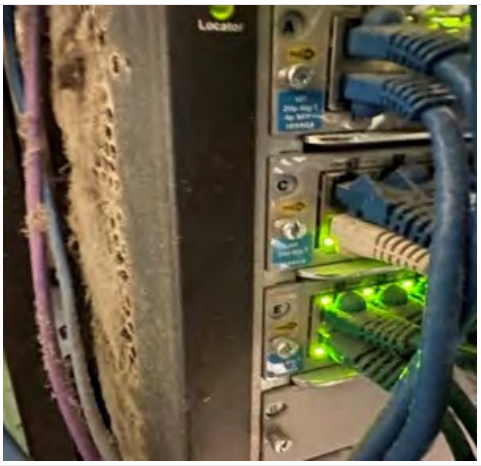


Image 4

Image 5

Image 6

PUBLIC ADDRESS AND CLOCK SYSTEM

The main public address system is in the main office, which is an older Bogen analog public address system. A public address system console was observed in the main office. The older in-wall speakers appear to be working throughout the building. Each classroom has a call button (Image 5). The original clock system does not appear to be functioning, with most rooms being equipped with battery secondary clock of various types and sizes (Image 6).

Specific Issues	Recommendations
There is an antiquated public address System. Speakers are functional but appear to be original equipment. The clock system does not appear to be working.	Install new public address main equipment including new speakers as part of any facility renovation or upgrade project.
Every variation of battery-operated clock was observed to replace nonfunctioning master and secondary clock systems are not functional.	Install new master clocks system with low voltage secondary clocks as part of any facility renovation or upgrade project.

TELEPHONE SYSTEM

The Telephone System serves primarily the main office administration area and remote office locations. The handsets appear to be in good working order (Image 7). However, there are no telephone handsets in any of the classrooms. There may be a connection between the public address system and telephone system at the system level to allow for outside calls from the classroom handsets, but it was not verifiable from the site visit.

K. Lord mentioned that it is the district's intention to move to a Zoom phone system using Yealink devices in both administrative and classroom settings, starting in the summer of 2023.

POST-ASSESSMENT NOTES: Since our visit with K Lord on 7-24-2023, the school has moved to a Zoom phone system with new Yealink devices. This system went live on August 15, 2023.

Image 7

Image 8

Image 9

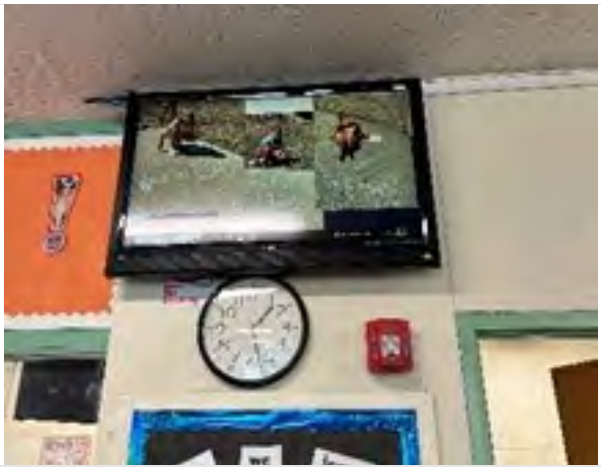


Image 10

Image 11

Specific Issues	Recommendations
Calling between administration and individual rooms as well as between room calling is accomplished through the public address system. However, system may not be connected to outside lines for making emergency calls from classrooms	Revise public address system to allow for emergency telephone calls to be made from classrooms through the public address handsets in classrooms.
Telephone system capability does not currently extend to all classrooms and other spaces other than the administrative office and work areas.	Install a new Telephone system capable of incorporating telephone handsets in all classrooms and spaces for emergency calling capability. Since the original review, Owner has installed a new Zoom phone system with full coverage.

AUDIO-VISUAL SYSTEMS FOR LARGE ASSEMBLY SPACES

North Intermediate has two large spaces: the gymnasium and the cafeteria. The cafeteria acts as the building's large assembly space. Large program loudspeakers are mounted on either side wall at the stage end of the room. There is a rear-throw projector mounted in the ceiling used with the pull-down screen on the stage (Images 8 and 9).

Specific Issues	Recommendations
Audio-Visual Systems for large assembly space such as the Cafetorium and Gymnasium depends on older portable sound system equipment.	Upgrade all built in Audio-Visual systems in large assembly spaces as part of any facilities renovation and upgrade project
Flat panel technology is not suitable for large venue presentations. Projection screen may not be appropriately sized for the room.	Include a new large format projection screen with a permanently installed high lumen projector and sound system in the Cafetorium.

INSTRUCTIONAL AUDIO-VISUAL SYSTEMS

Classroom instructional technology includes a variety of systems and devices. Most classrooms are equipped with an ultra-short throw projector and speakers on each side. Older sound reinforcement

and audio equipment was observed in some of the classrooms. The integration of classroom display technology into the classrooms varied in terms of completeness, with many classrooms displaying exposed cabling.

Specific Issues	Recommendations
Functional but older Instructional Audio-Visual display systems were observed throughout the classrooms.	Replace older systems with newer interactive projector or panel technology
Portable Voice Reinforcement systems were observed in only a few of the classrooms.	Include state of the art Voice Reinforcement systems during renovations or facility upgrades

NETWORK COMPUTERS AND PRINTERS

Mobile student technology carts for Chromebook were observed in some classrooms. It was assumed without confirmation that the school is either 1-to-1 or close to being 1-to-1 from the number of carts observed. Each room was equipped with a teacher's laptop and document camera and some type of digital display. Copier/printers were observed in various strategic locations.

Specific Issues	Recommendations
Mobile charging carts are still relevant if the school is managing the student devices.	Design into the classroom a place where charging carts can be stored and powered.

DIGITAL SIGNAGE

One flat panel display was observed that may be associated with digital signage in the main office. (Image 15)

Specific Issues	Recommendations
None if the installed signage system is easy for administrators to update information on and manage on a regular basis. Digital signage is limited in North Intermediate, however this is an item of use and may not be an issue.	Build on the current use of digital display technology in the main entrance and cafeteria with easy to manage signage system solutions.

SECURITY

Like other elementary schools in the district, North Intermediate has one camera outside the building's main entry doors. There is an AiPhone associated with the front door security system. There are no interior cameras, and there are no additional exterior cameras aside from the main entry. There is one motion sensor within the school's main entry vestibule (Image 11)

Specific Issues	Recommendations
Video surveillance is extremely limited	Add additional surveillance cameras and necessary Network Video Recorder storage as part of any facilities upgrade project.
Limited intrusion system motion sensors were observed. Ground floor rooms with windows do not appear to be equipped with motions sensors. Alarm System does not appear to be operational and therefore not able to initiate a school lockdown and automatically notify authorities if required.	Add infrared motions sensors to all windowed spaces on the first floor. Upgrade system as part of any facility renovation project

UEC universal environmental consultants

October 10, 2023

Ms. Rani Phillip
Dore & Whittier Architects
260 Merrimac Street
Newburyport, MA 01950

Reference: Hazardous Materials Determination Survey
North Intermediate School, Wilmington, MA

Dear Ms. Phillip:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for Hazardous Materials determination survey at North Intermediate School, Wilmington, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants

_____
Ammar M. Dieb
President

UEC:\223 514.00\Report.DOC

Enclosure

REPORT
FOR
HAZARDOUS MATERIALS DETERMINATION
SURVEY
AT THE
NORTH INTERMEDIATE SCHOOL
WILMINGTON, MASSACHUSETTS

PROJECT NO: 223 514.00

Survey Dates:
January 20, 2012
October 3, 2023, October 9, 2023

SURVEY CONDUCTED BY:

UNIVERSAL ENVIRONMENTAL CONSULTANTS
12 BREWSTER ROAD
FRAMINGHAM, MA 01702

INTRODUCTION:
UEC has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of thirty-five years of experience.

UEC was contracted by Dore & Whittier Architects to conduct the following services at the North Intermediate School, Wilmington, MA:

- Inspection and Testing for Asbestos Containing Materials (ACM).
- Inspection for Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures.
- Inspection for PCB's-Caulking.
- Inspection for Lead Based Paint (LBP).
- Mercury in Rubber Flooring inspection and sampling.
- Airborne Mold inspection and sampling.
- Radon sampling.

A comprehensive survey per the Environmental Protection Agency (EPA) NESHAP regulation would be required prior to any renovation or demolition activities.

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination of types of ACM found and cost estimates for remediation. Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) in accordance with EPA standard. Bulk samples were collected by a Massachusetts licensed asbestos inspector Mr. Jason Becotte (AI-034963) and analyzed by a Massachusetts licensed laboratory EMSL, Woburn, MA.

Airborne mold samples were analyzed by an EPA trained laboratory EMSL, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

Refer to samples results.

FINDINGS:
Asbestos Containing Materials (ACM):
The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed. All suspect materials were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to be ACM based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount of 1 percent or greater in accordance with DEP regulations.

All suspect materials that contain any amount of asbestos must be considered asbestos if it is scheduled to be removed per the Department of Environmental Protection (DEP) regulations.

Number of Samples Collected
January 12, 2012
Eight (8) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. Ceiling tile at hallway outside gymnasium
2. Ceiling plaster at hallway outside room 207
3. Ceiling plaster at hallway outside room 211

4. Ceiling tile at hallway outside room 104
5. Ceiling plaster at hallway outside room 105
6. Ceiling plaster at hallway outside room 107
7. Ceiling plaster at first floor bathroom
8. Ceiling tile at hallway outside office

Sample Results

Type and Location of Sample	**Sample Result**
1. Ceiling tile at hallway outside gymnasium	No Asbestos Detected
2. Ceiling plaster at hallway outside room 207	No Asbestos Detected
3. Ceiling plaster at hallway outside room 211	No Asbestos Detected
4. Ceiling tile at hallway outside room 104	No Asbestos Detected
5. Ceiling plaster at hallway outside room 105	No Asbestos Detected
6. Ceiling plaster at hallway outside room 107	No Asbestos Detected
7. Ceiling plaster at first floor bathroom	No Asbestos Detected
8. Ceiling tile at hallway outside office	No Asbestos Detected

October 9, 2023
Twelve (12) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Sample

1. Exterior new door framing caulking
2. Exterior new door framing caulking
3. Exterior old door framing lintel caulking
4. Exterior old door framing lintel caulking
5. Exterior window framing caulking
6. Exterior window framing caulking
7. Exterior window framing caulking
8. Exterior window glazing caulking
9. Exterior window glazing caulking
10. Exterior unit vent grille caulking
11. Exterior unit vent grille caulking
12. Exterior unit vent grille caulking

Sample Results

Type and Location of Sample	**Sample Result**
1. Exterior new door framing caulking	No Asbestos Detected
2. Exterior new door framing caulking	No Asbestos Detected
3. Exterior old door framing lintel caulking	5% Asbestos
4. Exterior old door framing lintel caulking	5% Asbestos
5. Exterior window framing caulking	No Asbestos Detected
6. Exterior window framing caulking	No Asbestos Detected
7. Exterior window framing caulking	No Asbestos Detected
8. Exterior window glazing caulking	No Asbestos Detected
9. Exterior window glazing caulking	No Asbestos Detected
10. Exterior unit vent grille caulking	5% Asbestos
11. Exterior unit vent grille caulking	5% Asbestos
12. Exterior unit vent grille caulking	5% Asbestos

Observations and Recommendations:
The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition, or other activity.

1. Lab countertop was assumed to contain asbestos.
2. Hard joint insulation was assumed to contain asbestos. The ACM was found at various locations within the school including crawl space. ACM debris was found in the crawl space.
3. Flexible connector was assumed to contain asbestos.
4. 9" x 9" Vinyl floor tile and mastic were assumed to contain asbestos.
5. Transite panels were assumed to contain asbestos.
6. Interior windows glazing caulking was assumed to contain asbestos.
7. Sink coating was assumed to contain asbestos.
8. Blackboard/tackboard glue was assumed to contain asbestos.
9. Exterior old door framing lintel caulking was found to contain asbestos.
10. Exterior unit vent grille caulking was found to contain asbestos.
11. Exterior window framing caulking was found to contain asbestos.
12. Exterior window glazing caulking was found to contain asbestos.
13. Exterior door framing caulking was found to contain asbestos.
14. Gymnasium hardwood flooring paper and mastic were assumed to contain asbestos.
15. Transite sewer pipe was assumed to contain asbestos.
16. Damproofing on exterior and foundation walls was assumed to exist and assumed to contain asbestos. A Non-Traditional Work Plan will be required to be prepared and submitted to the DEP for approval.
17. Roofing material was assumed to contain asbestos. Roofing material does not have to be removed by a licensed asbestos contractor. However, the Demolition/Roofing Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval
18. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures:
Observations and Conclusions
Visual inspection of various equipment such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs, and switches were assumed to contain mercury. It would be very costly to test those equipment and dismantling would be required to access. Therefore, the above-mentioned equipment should be disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking:
Observations and Conclusions
Caulking was assumed to contain PCB's.

Lead Based Paint (LBP):
Observations and Conclusions
LBP was assumed to exit on painted surfaces. A school is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. According to OSHA, any amount of LBP triggers compliance.

Mercury in Rubber Flooring:
Observations and Conclusions:
No rubber flooring exists in the school.

Airborne Mold:
Airborne mold testing was performed utilizing Zefon International Incorporated's Air-O-Cell® sampling device following all manufacturer supplied recommended sampling procedures.

The Air-O-Cell® is a direct read total particulate air sampling device. It works using the inertial impaction principle similar to other spore trap devices. It is designed for the rapid collection and analysis of airborne particulate including bioaerosols. The particulate includes fibers (e.g. asbestos, fiberglass, cellulose, clothing fibers) opaque particles (e.g. fly ash, combustion particles, copy toner, oil droplets, paint), and bioaerosols (e.g. mold spores, pollen, insect parts, skin cell fragments).[1]

The method involves drawing a known quantity of air through a sterile sampling cassette. Subsequent to sampling, the cassette is sealed and transferred to a microbiology laboratory under chain of custody protocol for microscopic analysis. This method counts both viable and nonviable mold spores.

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M^3	Pollen	Insect Fragment	Hyphal Fragments
132306392-0001	Cafeteria	1,900	40	ND	ND
132306392-0002	Office	220	ND	ND	ND
132306392-0003	Teacher's Lounge	310	ND	ND	ND
132306392-0004	Library	130	ND	ND	ND
132306392-0005	Room 100 Art	150	ND	ND	ND
132306392-0006	Room 103	60	ND	ND	ND
132306392-0007	Room 102	220	ND	ND	ND
132306392-0008	Room 107	3,150	ND	ND	ND
132306392-0009	Room 104	20	ND	ND	ND
132306392-0010	Outside	26,130	ND	ND	ND

AIRBORNE MOLD and PARTICULATE
(Subjective Scales)

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
132306392-0001	Cafeteria	1	1	1
132306392-0002	Office	1	1	1
132306392-0003	Teacher's Lounge	1	1	1
132306392-0004	Library	1	1	1
132306392-0005	Room 100 Art	1	1	1

[1] Zefon International Inc. <www.zefon.com>

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
132306392-0006	Room 103	1	1	1
132306392-0007	Room 102	1	1	1
132306392-0008	Room 107	1	1	1
132306392-0009	Room 104	1	1	1
132306392-0010	Outside	-	1	1

Legend:
ND - Not Detected

Observations:
There are currently no guidelines or standards promulgated by a government agency or widely recognized scientific organization for the interpretation of airborne mold spore levels. The most commonly employed tool used to assess if mold growth is occurring in a structure is to compare quantities and species of mold outdoors to indoor. If there were more mold indoor, and/or if species were present indoor which were not present outdoors, then growth is occurring, and remediation is recommended.

Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered very low. Indoor mold spore counts in the fall are typically in the 1,500-3,500-spores/cubic meter range.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as “1” on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as “1” on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Radon:
Number of Samples Collected
Eight (8) air samples were collected at the following locations:

Location of Sample

1. Office
2. Teacher’s lounge
3. Library
4. Room 100
5. Room 103
6. Room 102
7. Room 107
8. Room 104

Location of Sample	Sample Result
1. Office	0.8 pCi\L
2. Teacher’s lounge	0.8 pCi\L
3. Library	1.4 pCi\L
4. Room 100	0.8 pCi\L

5. Room 103 0.7 pCi\L
6. Room 102 1.5 pCi\L
7. Room 107 2.6 pCi\L
8. Room 104 1.6 pCi\L

Observations and Conclusions:
The measured radon concentrations of the samples were found to be much lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). No further action is required based on the results.

COST ESTIMATES:
The cost includes removal and disposal of all accessible ACM, other Asbestos Containing materials and an allowance for removal and disposal of inaccessible or hidden ACM that may be found during the demolition project.

Location	Material	Approximate Quantity	Cost Estimate ($)
Interior	Flooring Materials	32,000 SF	160,000.00
	Hard Joint Insulation	1,000 Total	30,000.00
	Hidden Hard Joint Insulation	Unknown	50,000.00
	Debris/Soil in Crawl Space	10,000 SF	30,000.00
	Transite Panels	18 Total	9,000.00
	Windows	70 Total	14,000.00
	Hardwood Flooring/Paper	4,500 SF	45,000.00
	Lab Counter Tops	14 Total	7,000.00
	Flexible Connecters	16 Total	3,200.00
	Chalkboards/Tackboards	42 Total	16,800.00
	Miscellaneous Hazardous Materials	Unknown	25,000.00
Exterior	Lintel Caulking	50 LF	2,500.00
	Old Doors	3 Total	1,500.00
	Expansion Joint Caulking	120 LF	3,600.00
	Transite Sewer Pipes	Unknown[1]	50,000.00
	Damproofing on Walls	2,500 Tons[1]	700,000.00
	Roofing Materials	Unknown	75,000.00
Estimated costs for NESHAP Inspection and Testing Services			17,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			155,900.00
		TOTAL:	***1,400,000.00***
		TOTAL:	***1,650,000.00***[2]

[1]: Part of total demolition and site work.
[3]: Work to be Performed by a C.M at Risk Contractor.

DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:
Asbestos:
Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA /600/R-93/116 method.

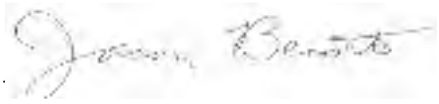
Airborne Mold:
The samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

Radon:
Radon samples were analyzed by an EPA licensed laboratory AccuStar, Ward Hill, MA.

LIMITATIONS AND CONDITIONS:
This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state, and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:



_____

Jason Becotte
Asbestos Inspector

131200321

131200321

ENVIROTEST LABORATORY, Inc.

639 Washington Street, Dedham, MA 02026 Tel 781-329-1133 Fax 781-329-1177

SAMPLE SHEET

Project Name: Town of Wilmington

Project Address: North Intermediate School, Wilmington

Contact: George Hooper

TURN-AROUND TIME: ☐ RUSH ☒ 24 HOURS ☐ 48 HOURS ☐ > 48 HOURS

Sample Date	Sample Number	Sample Location	Sample Description	Layer
1/20	N-1	Hall outside gym	Ceiling Tile	
	N-2	Hall outside Room 207	Ceiling Plaster	
	N-3	Hall outside Room 211	Ceiling Plaster	
	N-4	Hall outside Room 104	Ceiling Tile	
	N-5	Hall outside Room 105	Ceiling Plaster	
	N-6	Hall outside Room 107	Ceiling Plaster	
	N-7	1st Floor Boys Bathroom	Ceiling Plaster	
	N-8	Hall outside Office	Ceiling Tile	

RECEIVED
JAN 20 2012
By AK 1445

Relinquished by: _____ Time: _____
Date: _____

Received By: _____ Time: _____
Date: _____

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: **Mark Gorham**
Envirotest Laboratory
639 Washington Street
Dedham, MA 02026

Fax: (781) 329-1177 Phone: (781) 329-1133

Project: **Town of Wilmington; North Intermediate School; Wilmington**

Customer ID: ENVT56
Customer PO:
Received: 01/20/12 2:45 PM
EMSL Order: 131200321

EMSL Proj:
Analysis Date: 1/24/2012

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
N-1 *131200321-0001*	Hall Outside Gym - Ceiling Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-2 *131200321-0002*	Hall Outside Room 207 - Ceiling Plaster	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-3 *131200321-0003*	Hall Outside Room 211 - Ceiling Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-4 *131200321-0004*	Hall Outside Room 104 - Ceiling Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-5 *131200321-0005*	Hall Outside Room 105 - Ceiling Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-6 *131200321-0006*	Hall Outside Room 107 - Ceiling Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
N-7 *131200321-0007*	1st Fl Boys Bathroom - Ceiling Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Initial report from 01/24/2012 10:26:07

Analyst(s)

Kevin Pine (8)

Renaldo Drakes, Laboratory Manager
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as < 1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available available upong request

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-10713 and VT AL357102

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: **Mark Gorham**
Envirotest Laboratory
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			Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous		% Non-Fibrous	% Type
N-8 *131200321-0008*	Hall Outside Office - Ceiling Tile	Gray Fibrous Homogeneous	80%	Min. Wool	20% Non-fibrous (other)	None Detected

Initial report from 01/24/2012 10:26:07

Analyst(s)

Kevin Pine (8)

Renaldo Drakes, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-10713 and VT AL357102

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 132306525

132306525

CHAIN OF CUSTODY

Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702
Tel: (508) 628-5486 - Fax: (508) 628-5488
adieb@uec-env.com

PLM
24-hour TAT

Town/City: Wilmington, MA Building Name North Intermediate School

Sample	Description of Material	Sample Location
1	New Door Frame caulk	exterior door
2	"	"
3	old door caulk at Lintel	"
4	"	"
5	window Frame Caulk	exterior window
6	"	"
7	"	"
8	window Glaze	"
9	"	"
10	unit vent Grill caulk	exterior vent Grill
11	"	"
12	"	"

Reported By: Jason Becotte Date: 10-9-23 Due Date: **24-Hours**

Received By: ---------- Date: ----------

REC'D EMSL-BOSTON OCT 09 2023 1300
wainin

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	132306525
Customer ID:	UEC63
Customer PO:	
Project ID:	

Attention:	Ammar Dieb	**Phone:**	(617) 984-9772
	Universal Environmental Consultants	**Fax:**	(508) 628-5488
	12 Brewster Road	**Received Date:**	10/09/2023 1:00 PM
	Framingham, MA 01702	**Analysis Date:**	10/10/2023
		Collected Date:	10/09/2023
Project:	North Intermediate School; Wilmington, MA		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1 *132306525-0001*	Exterior Door - New Door Frame Caulk	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2 *132306525-0002*	Exterior Door - New Door Frame Caulk	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
3 *132306525-0003*	Exterior Door - Old Door Caulk at Lintel	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
4 *132306525-0004*	Exterior Door - Old Door Caulk at Lintel	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
5 *132306525-0005*	Exterior Window - Window Frame Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
6 *132306525-0006*	Exterior Window - Window Frame Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
7 *132306525-0007*	Exterior Window - Window Frame Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
8 *132306525-0008*	Exterior Window - Window Glaze	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
9 *132306525-0009*	Exterior Window - Window Glaze	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
10 *132306525-0010*	Exterior Vent Grill - Unit Vent Grill Caulk	Gray Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
11 *132306525-0011*	Exterior Vent Grill - Unit Vent Grill Caulk	Gray Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
12 *132306525-0012*	Exterior Vent Grill - Unit Vent Grill Caulk	Gray Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile

Initial report from: 10/10/2023 11:30:39

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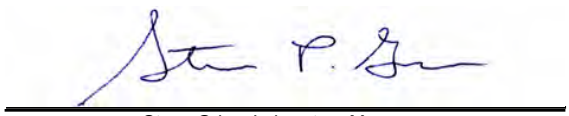
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	132306525
Customer ID:	UEC63
Customer PO:	
Project ID:	

Analyst(s)
John McCarthy (12)



Steve Grise, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, ME LB-0039

Initial report from: 10/10/2023 11:30:39

OrderID: 132306392

UEC universal environmental consultants
12 Brewster Road
Framingham, MA 01702
Phone: 508.628.5486
Fax: 508.628.5488

132306392

CHAIN OF CUSTODY

BUILDING / SITE NAME: North Intermediate School
WORK AREA:
TOWN / CITY: Wilmington
STATE: MA

Analysis Type	Turnaround Time (x) 6-8 Hr	12 Hr	24 Hr	48 Hr	72 hr
TEM / AHERA					
TEM / Level II					
TEM / Dust					
TEM / Bulk					
TEM / Water					
PLM					
Mold			X		
Other:					

Specific Project Notes

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	START	STOP	TIME	L/MIN	VOLUME
1	3694 8309	Cafeteria	6:19	6:29	10	15	150
2	3694 8320	Mrs. Mangani's Office	6:20	6:30	10	15	150
3	3694 8310	Teachers Lounge	6:25	6:35	10	15	150
4	3694 8308	Library	6:31	6:41	10	15	150
5	3694 8305	Room 100 Art	6:35	6:45	10	15	150
6	3694 8306	Room 103	6:37	6:47	10	15	150
7	3694 8298	Room 102	6:43	6:53	10	15	150
8	3694 8304	Room 107	6:47	6:57	10	15	150
9	3694 8307	Room 104	6:49	6:59	10	15	150
10	3694 8316	Outside	7:23	7:33	10	15	150

SAMPLED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
Sydney Faure	10/3/23 7:38 PM		
RELINQUISHED BY:	DATE/TIME:	RECEIVED IN LAB BY:	DATE/TIME:

REC'D EMSL-BOSTON OCT 04 2023 RHB 0830 DM By

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132306392
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

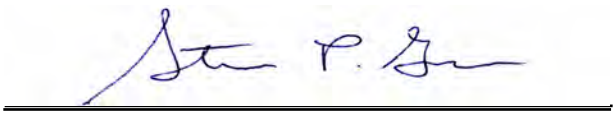
Project: North Intermediate School; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306392-0001			132306392-0002			132306392-0003		
Client Sample ID:	1			2			3		
Volume (L):	150			150			150		
Sample Location:	Cafeteria			Mrs. Mangan's Office			Teachers Lounge		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	7	100	45.5	-	-	-
Basidiospores	84	1800	94.7	5	100	45.5	10	210	67.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	6	100	5.3	-	-	-	7	100	32.3
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	20	9.1	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**90**	**1900**	**100**	**13**	**220**	**100**	**17**	**310**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	2	40	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.



Steve Grise, Laboratory Manager
or other Approved Signatory

Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded, prohibiting accurate detection and quantification). High levels of background will obscure spores and other particulates, leading to underestimation. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 10/05/2023 10:04 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132306392
Customer ID: UEC63
Customer PO:
Project ID:

Attention: Ammar Dieb
Universal Environmental Consultants
12 Brewster Road
Framingham, MA 01702

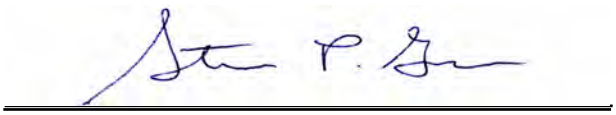
Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

Project: North Intermediate School; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306392-0004			132306392-0005			132306392-0006		
Client Sample ID:	4			5			6		
Volume (L):	150			150			150		
Sample Location:	Library			Room 100 Art			Room 103		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	40	30.8	4	90	60	-	-	-
Basidiospores	4	90	69.2	2	40	26.7	1	20	33.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	20	13.3	2	40	66.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**6**	**130**	**100**	**7**	**150**	**100**	**3**	**60**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



Steve Grise, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

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EMSL Order: 132306392
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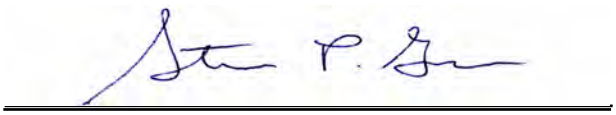
Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

Project: North Intermediate School; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132306392-0007			132306392-0008			132306392-0009		
Client Sample ID:	7			8			9		
Volume (L):	150			150			150		
Sample Location:	Room 102			Room 107			Room 104		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	1	20	9.1	14	300	9.5	-	-	-
Basidiospores	7	100	45.5	129	2750	87.3	1	20	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	5	100	45.5	3	60	1.9	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	2	40	1.3	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**13**	**220**	**100**	**148**	**3150**	**100**	**1**	**20**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.



Steve Grise, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

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Initial report from: 10/05/2023 10:04 AM

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Phone: (617) 984-9772
Fax: (508) 628-5488
Collected Date: 10/03/2023
Received Date: 10/04/2023 08:30 AM
Analyzed Date: 10/05/2023

Project: North Intermediate School; Wilmington, MA

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	**132306392-0010**		
Client Sample ID:	**10**		
Volume (L):	**150**		
Sample Location:	**Outside**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	1190	25400	97.2
Bipolaris++	-	-	-
Chaetomium++	-	-	-
Cladosporium	22	470	1.8
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium++	-	-	-
Ganoderma	-	-	-
Myxomycetes++	11	240	0.9
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	1	20	0.1
Zygomycetes	-	-	-
Total Fungi	**1224**	**26130**	**100**
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	21	-
Analyt. Sensitivity 300x	-	7*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	1	-
Background (1-5)	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager
or other Approved Signatory

Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded, prohibiting accurate detection and quantification). High levels of background will obscure spores and other particulates, leading to underestimation. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 10/05/2023 10:04 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

EPA Method #402-R-92-004
Liquid Scintillation
NRPP Device Code 8088
NRSB Device Code 12193

Laboratory Report for:

Universal Environmental Consultant
12 Brewster Road
Framingham MA 01702

Property Tested:

North Intermediate School
320 Salem Street
Wilmington MA 01887

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
8431175	4963395	10/03/2023	7:10 am	10/06/2023	10:52 am	Mrs. Manga i's Office	0.8
8431176	4963396	10/03/2023	7:11 am	10/06/2023	10:53 am	Teacher's Lounge	0.8
8431177	4963397	10/03/2023	7:06 am	10/06/2023	10:55 am	Library	1.4
8431178	4963398	10/03/2023	7:05 am	10/06/2023	10:56 am	Room 100 Art	0.8
8431179	4963399	10/03/2023	7:03 am	10/06/2023	10:57 am	Room 103	0.7
8431180	4963400	10/03/2023	6:58 am	10/06/2023	10:58 am	Room 102	1.5
8431181	4963401	10/03/2023	6:59 am	10/06/2023	10:59 am	Room 107	2.6
8431182	4963402	10/03/2023	7:01 am	10/06/2023	11:01 am	Room 104	1.6

Comment: Universal Environmental Consultant was emailed a copy of this report.

Test Performed By: Placed: Sydney Towne Retrieved: Sydney Towne

Distributed by: Universal Environmental Consultant

Date Received: 10/06/2023 Date Logged: 10/06/2023 Date Analyzed: 10/07/2023 Date Reported: 10/09/2023

Report Reviewed By: Elizabeth Negre Report Approved By:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

The counting uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Laboratory personnel were not involved in the placement or retrieval of the samples. Analytical results relate to the samples as received by the laboratory. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

SITE DEVELOPMENT REQUIREMENTS

SUMMARY

There are four sites under consideration for this project: the existing Wildwood Early Childhood Center site at 182 Wildwood Street, the existing Woburn Street Elementary School site at 227 Woburn Street, the existing North Intermediate School site at 320 Salem Street and the existing Town Hall site at 121 Glen Road.

This report also contemplates three different enrollments: 130+ students grades PK-K, 510+ students grades PK-3 and 755+ students grades PreK-5. Any project will need to consider how the existing sites can support base repair-only projects for 144 + 358 +249 students (existing Wildwood, Woburn Street and North Intermediate populations respectively), or renovation-addition alternatives or new construction alternatives for 130+, 510+ or 755+ students.

This section will evaluate the site development requirements for any completed project, and consideration of construction operations is warranted given the significant design and development constraints imposed by an occupied building and site, and other site constraints discussed below.

STRUCTURES AND FENCES

Wildwood Elementary School

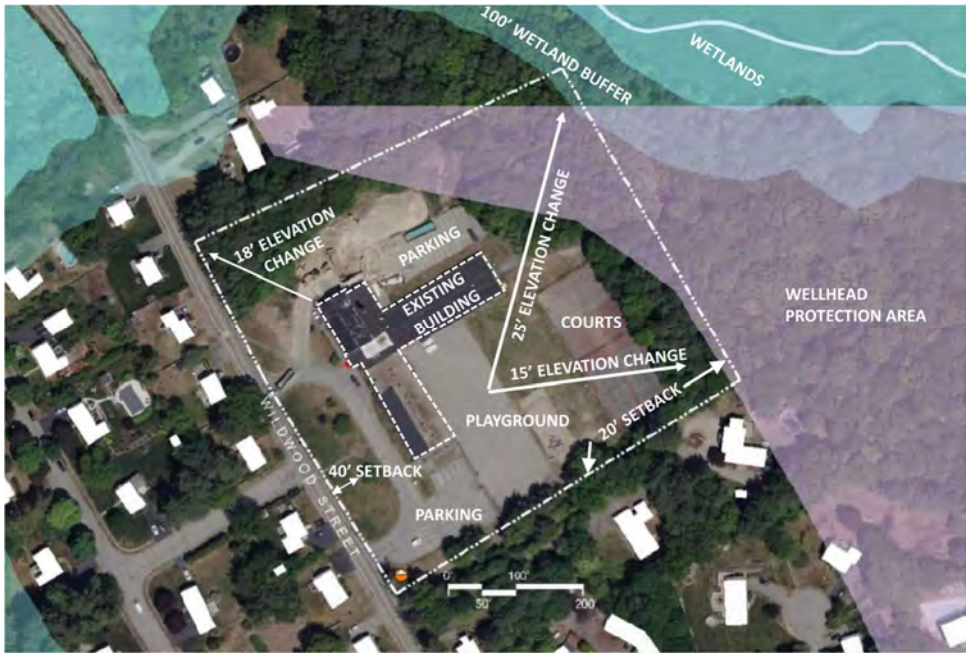


Image 1– Wildwood Elementary School site and context

The existing Wildwood school is the primary structure on the current 7.5+- acre site, occupying the central portion of the site, with associated drives and paved parking areas to the south, west, and north, a playground, hardscape area, and sports courts are also located to the east.

A chain-linked fence encloses the sports courts which includes 2 tennis, 2 pickleball and a basketball court. (Image 1)

Immediately west of the Wildwood school is the vehicular loop, separating the building from Wildwood Street. The parking area to the south has a chain link fence separating it from the hardscape play area to the east. Another chain link fence is found along the southeast property line. A guard fence with concrete posts and a wood rail delineates the border between the north parking lot and the steep hillside beyond. Significant grade changes are present, sloping west, north and east towards the property line. (Image 1)

The site is bordered on all side edges/ property lines by a buffer of relatively mature trees of varying density and depth. fencing in very poor condition. There are several large granite boulders in the wooded area on the north-west corner of the site, possibly collected from earth works on the site over time.

Woburn Street Elementary School

Image 2 – Woburn Street Elementary School Site and context

Woburn Street School is the primary structure on the 10+- acre site, occupying the south-east portion, and with significant grade changes bisecting the site. It has associated vehicular loop and pedestrian sidewalks to the east, sport courts to the north, a playground and playfields to the west and parking areas on three sides of the building. The natural grass playfields are lined for multiple soccer fields

which are primarily used for school recess, PE class, and elementary-age Town recreation league sports. (Image 2)

A steep slope cuts the property in two: the school building, parking lots, and sport courts to the east, and the athletic fields at a much lower elevation to the west. The school building and rear parking lot sit at the top of the hill. The steep terrain has necessitated various means of stabilization, including a substantial retaining wall between the rear and north parking lots and a landscape retaining wall in the lawn panel northeast of the school building.

A concrete block retaining wall of variable height defines the south and east borders of the playground. A low wood guard fence lines the entire western perimeter of the rear and north parking lots, above the steep slope to the athletic fields. Deciduous forest suffused with vines provides a dense buffer between the property and abutters to the north and west. The forested buffer at the southeast corner of the site is likewise dense. However, this buffer thins to a single row of trees in the center of the property line, creating a more permeable border. Landscape boulders guard the pedestrian cut through to Marcia Road, at the southwestern corner of the property.

North Intermediate School

Image 3 – North Intermediate School Site and context

North Intermediate School is the primary structure on the 14+- acre site, occupying the south-east portion. It has associated vehicular loop, parking and pedestrian sidewalks to the south, ball fields

and sport courts to the north, a playground just north of a parking area to the east. Subtle grade changes make the site accessible. (Image 3)

Diverse trees serve as a buffer to the north, west, and south sides of the school, creating an inviting environment for students. Within the woodlands that grace the southern perimeter of the school, a small wooded deciduous wetland area is noted.

Town Hall Site

Image 4 – Town Hall Site and context

Town Hall building is the primary structure on the 19+- acre site, occupying the southern portion of a relatively flat site. The building was originally used for school purposes until 1983 and is similar layout to Boutwell Early Childhood Center, currently housing the Prekindergarten and Kindergarten for the west catchment area for the district.

The recreation area located north of the building, including ball fields, sports courts, playground area, walking trails, and picnic area, were named in honor of Robert P. Palmer in 1998 by a vote at Town Meeting. The 2015 Open Space and Recreation Plan (2015) identifies the area as Robert Palmer Park.

SITE ACCESS AND CIRCULATION

Wildwood Elementary School

Existing vehicular access to the site is mixed with 2 curb cuts along the 600 feet of frontage on Wildwood Street. The southernmost curb cut provides access to the main driveway for school drop-off and parking, as well as the playgrounds and sports courts. A second curb cut access a drive and fire lane leading to the loading dock and north parking lot.

The looped, asphalt drive off Wildwood Street provides vehicular access to the site. Vehicles enter the site from the south and proceed straight into the south parking lot or continue along the loop to the drop off area outside the main entrance. Beyond the main entrance, vehicles may turn right onto a vehicular drive and fire lane leading around the north side of the school building to the loading dock and north parking lot. Otherwise, they may follow the loop back to Wildwood Street. One additional asphalt drive stretches from the northeastern façade of the school building to the wooded edge, ending in a few fieldstone boulders. While this drive appears wide enough for vehicular travel it does not connect to any vehicular routes.

Along the looped drive, near the main entrance, are two bus parking spaces and three car parking spaces marked as accessible, however they do not connect to an accessible path.

Wildwood Street includes a pedestrian sidewalk on its western side but lacks a sidewalk on its eastern side, adjacent the school property. A break in the vehicular curb marks the beginning of a narrow asphalt walkway at the western corner of the site leading to the vehicular drive leading to the north parking lot. No crosswalk exists across this drive. The walkway continues to the main entrance in the form of an asphalt berm along the looped drive, joining an asphalt path that traverses the front façade of the building, from the north parking lot drive to the south parking lot. Visitors may branch off this path onto a short asphalt path leading to a secondary entrance at the southeastern façade of the school building. An asphalt berm brings users of the north parking lot to this secondary entrance.

Another narrow, asphalt walkway leads from a crosswalk across Wildwood Street at Senpek Road to the school's flagpole in the front lawn panel, encircles the flagpole, and continues to the looped drive. Curbs obstruct both ends of this walkway, and no crosswalk exists to provide safe passage to the school building.

The entry plaza at the main entrance is surfaced with worn stone pavers that no longer create an even surface. The entry plaza at the secondary entrance consists of a concrete pad and appears to be accessible. While the one entrance to the building adjacent the asphalt play area (Door 11) is flush with the surrounding pavement, another sits above a raised concrete pad (Door 10). The doors next to the loading dock may only be accessed by a stair (Doors 7, 8, and 9). Door 5, on the northwest façade, sits above crumbling concrete stairs lacking sufficient handrails. One must step atop a raised concrete pad to access Doors 2 and 3, north of the main entrance on the front façade. A plastic ramp connects the asphalt play area to the playground (Image 17, above). However, grass has grown around the entrance to the ramp, compromising its accessibility. No accessible routes through the turf exist to connect visitors to the town-owned sport courts at the base of the eastern hillside.

Woburn Street Elementary School

Vehicular access to the site consists of a curb cut and approximately 875 feet of frontage on Woburn Street, and two additional curb cuts on High Street. The northernmost curb cut on High Street, is an entrance/exit driveway. Just south of the northern most driveway, still on High Street, is the entrance to a loop road that runs north to south along the front of the school, exiting onto Woburn Street. Vehicles may branch off this loop to enter the rear parking lot to the south and west of the building. A sloped drive connects the rear parking lot to the north parking lot. The school's loading dock is located south of the school building.

An asphalt walkway runs along the entire length of the property line along High Street and Woburn Street. The walkway branches at the entrance to the looped drive to bring pedestrians closer to the building. However, this walk ends partway, at which point pedestrians must walk in the vehicular drive. Curb cuts and detectable warning panels are universal. However, no crosswalks are marked between the curb cuts at the entrance and exit of the north parking lot and looped drive. Two asphalt paths lead pedestrians from the rear parking lot down the slope to the western property line. One path, featuring a Cape Cod Berm on one side, aligns with a pedestrian cut-through to Marcia Road. Another path leads to the western end of the playground. However, no accessible ramp leads from this path into the playground. A third asphalt path lined with Cape Cod Berm and attractive granite boulders winds down to the athletic fields from the north parking lot. The three paths are not ADA accessible given they appear to be sloped at roughly 5-6 percent yet do not contain handrails or level landings.

The main entrance to the school building features a concrete ramp and stairs. The handrails of both do not appear to be ADA-compliant. The secondary front façade entrance, Door 11, and both doors at the lower level, adjacent to the north parking lot, appear to be accessible via flush concrete pads. The remaining entrances around the building are not accessible.

Two concrete bollards at the southwest corner of the parking lot block what may have once been a vehicular connection to Marcia Road to the west, but now is a steep narrow pedestrian path. No accessible entrances into or within the playground are offered.

North Intermediate School

Existing vehicular access to the site includes 2 curb cuts along the 385 feet of frontage on Ballardvale Street to access a parking lot, playground, sports courts and fields. An additional 2 curb cuts along the 530 feet of frontage on Salem Street leads to a loop road servicing the main entrance.

There are notable disparities in the condition of the walkways and sidewalks on the school premises. On the western side of Ballardvale Street, a cast-in-place sidewalk runs from the southern edge of the parking lot. This sidewalk continues westward along the southern perimeter of the drop-off zone, extending to the southern side of the building. It culminates at the intersection of the drop-off road and Salem Street.

On the southern side of the building, a concrete walkway branches off from this main sidewalk near Salem Street, descending slightly in elevation with a few steps down. It provides access to the western

side entrance of the school building. This configuration does not adhere to ADA/MAAB compliance standards, potentially posing challenges for individuals with mobility impairments. The concrete landings are thoughtfully placed at all doorways throughout the school building, with short concrete ramps connecting them to the ground level.

Town Hall Site

Vehicular access to the site consists of a two-way access road off Glen Road, which directs the public to a circular parking lot around the building.

The site contains very simple vehicular circulation, including the approach from Harden Street and the looped drive and parking lot. As mentioned above, a drive from the south end of the parking lot extends to Garden Ave but is obstructed by boulders. All vehicular areas are paved in asphalt that is generally in poor condition. While Harnden Street is lined with granite curbs, the remainder of the vehicular pavement on site lacks curbs. Roughly 80 parking spaces are offered, of which five are marked as accessible. It appears that the site currently meets ADA requirements for the number of accessible parking spaces for a lot of its size. Two spaces are designated for EV charging, of which one abuts an access aisle. The side of the parking lot abutting the play and athletic area is lined with a low, wooden guard fence that appears to be in fine condition.

A sidewalk runs along the south side of the access road connecting to the sidewalk on Glen Road and stops at the entrance to the parking lot. No sidewalk is provided for the public to safely travel from the parking lot entrance to the recreational area located behind the building. There are pedestrian access points along the east property lines from Garden Street and Kirby Street.

A sidewalk on the southern side of Harden Street brings pedestrians into the site. No formal walks exist around the looped drive and parking area, nor crosswalks facilitating safe passage across vehicular travel. A wide gravel path connects the parking lot to the basketball court, and from the basketball court to the pickleball courts. This path does not appear to be ADA accessible. A plastic ramp connects the asphalt play area to the playground. A mulch path circles the tall fence around Palmer Field. Various informal trails branch off this mulch path, leading into the woodland beyond. No trail signs were observed, though an aged trailhead kiosk stands southwest of Palmer Field. It does not contain a sign nor abut an obvious trail entrance. However, the Department of Planning and Conservation includes trails within the Town Hall property lines as part of the Glen Road Berry Bog, the adjacent property west of the Town Hall site, and refers to 13- acres of conservation, 32-acres total; it is unclear how much if any, of the acreage includes portions of the Town Hall site. IF the Town Hall site is selected for further study, research for further clarification on the property will be pursued in the PSR phase.

Design alternatives attempt to re-use the existing curb cut if possible, and to improve separation of on-site traffic. Although complete isolation of the various traffic types is not always feasible, efforts in the PDP phase have been made to separate the bus routes from parent drop-off route and to separate vehicular traffic in general from pedestrian traffic.

PARKING AND PAVING

Wildwood Elementary School

There are (59) existing standard parking spaces on the site. There is (1) handicap space in the south parking lot and (2) handicap parking spaces in the vehicular loop, as well as (2) spaces marked for buses.

Additional Vehicles could be located on the hardscape play area for events and as after-hours overflow parking, but these spaces are not available during the school day.

As noted in the existing conditions report, paving is in poor to very poor condition.

Woburn Street Elementary School

There are three striped parking lots on the property. Parking Lot #1 is located south of the building and adjacent to the exit driveway, it contains 10 standard parking spaces. Parking Lot #2 is located to the west, behind the building, and contains 25 standard parking spaces. None are marked accessible. Two clearly marked accessible parking spaces with access aisles adjoin the looped drive, though no clearly marked accessible route connects users to the main entrance. Additionally, north of the building, between the building and the fenced tennis/basketball court(s), is a large, paved area that contains painted circulation arrows but lacks defined parking spaces indicating It's primary use is play area and vehicle drop offs.

There are two asphalt sidewalk areas to the west of the site behind the building, that lead to playground areas and the grass athletic fields that are in poor condition. Additionally, the sidewalk leading to the grass athletic fields has an area with an eroded grass slope, likely due to a concentration of stormwater runoff. Asphalt pavement in the basketball and tennis courts is in good condition.

Asphalt pavement in the parking areas, driveways and play areas are in very good condition overall, free of cracking. Sturdy granite curb lines all vehicular pavements.

North Intermediate School

Situated adjacent to the Ballardvale Street entrance, the primary parking lot offers ample space for approximately 60 vehicles, accommodating both visitors and school personnel. Despite the asphalt surface of this parking lot being well-maintained, it's worth noting the absence of ADA-compliant parking spaces and proper signage. This oversight, coupled with limited curbing, could potentially contribute to turf damage and hinder accessibility for individuals with disabilities.

As one approaches the school from Ballardvale Street, the entrance is flanked by a sturdy granite curb, demarcating the transition between the parking lot and the adjacent playground area. On the

southern perimeter, where the parking lot interfaces with the lawn, a reliable concrete curb reinforces the boundary, preserving the integrity of both spaces.

Town Hall Site

There is one paved parking lot on the property, located around the existing building. It contains 70 standard parking spaces, 5 handicap spaces, and 2 electric vehicle spaces. The handicap parking spaces appear to be relatively flat, but two spaces do not have a properly dimensioned access aisle and there are no spaces with the "Van Accessible" signage.

Design Alternatives will address parking based on the proposed grade configuration. As sites are of various sizes, a minimum and preferred number of parking spaces has been established for the project.

Parking Guidelines		
	Minimum # of Spaces	Preferred # of Spaces
PK-K	60	100
PK-3	120	150
PK-5	140	180

CODE REQUIREMENTS

Any new facility or addition to the existing building will comply with all current applicable building and accessibility codes. Alternatives that consider alterations or repairs to the existing building will comply with codes, as applicable to the scope of work. No significant impediment to compliance with codes is anticipated for any of the proposed alternatives.

For a more detailed description of applicable regulations and an assessment of the existing building, refer to the Regulatory Overview and Regulatory Assessment in Section 3.1.4-A.

ZONING SETBACKS AND LIMITATIONS

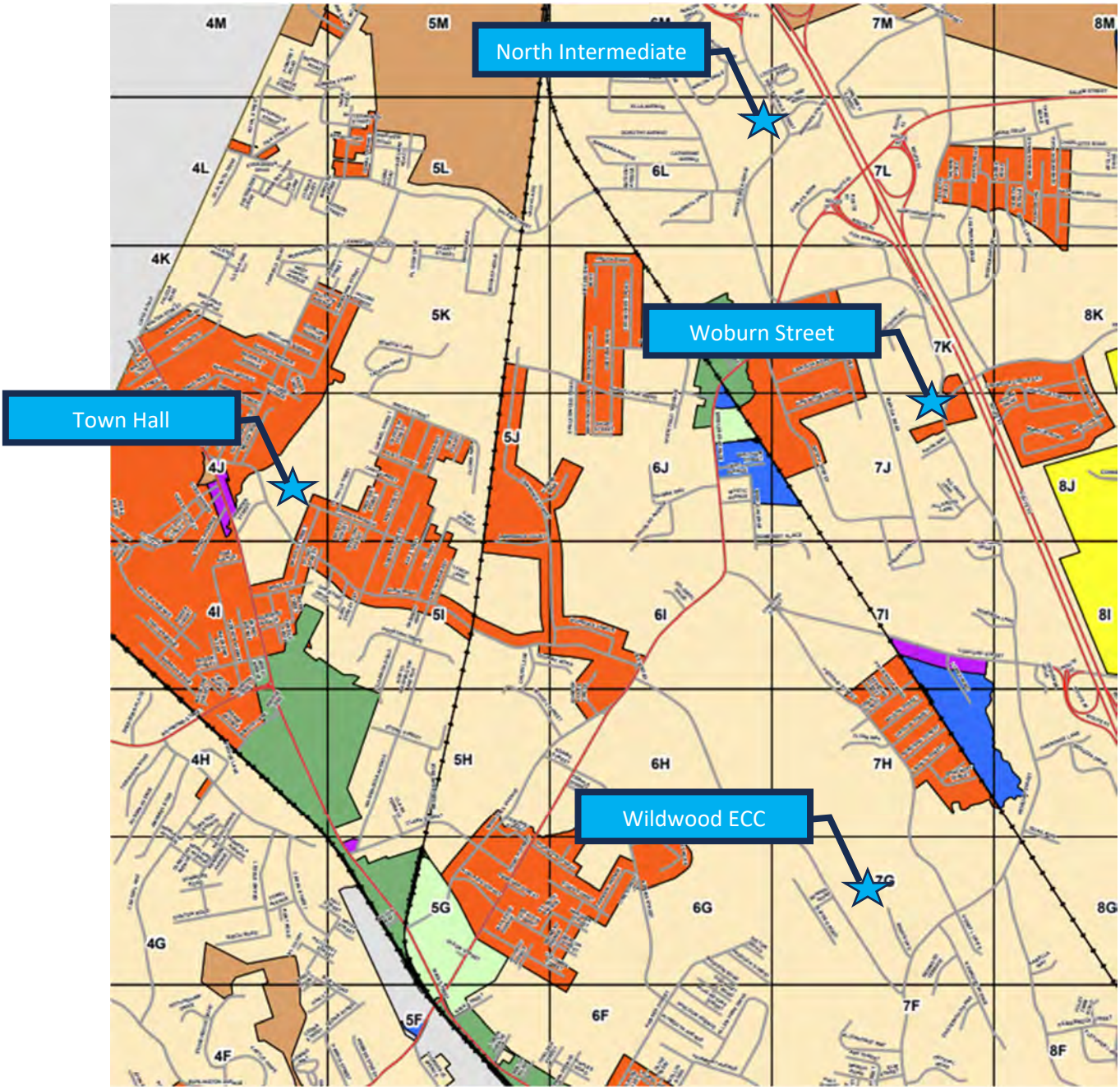


Image 5 – Zoning Map detail, Wildwood Site

All four sites under consideration are located in a R-20 Zoning District, primarily medium-density single family homes, and shown in beige on the map.

Educational uses are permitted in Zone R-20 [Refer to Table 1 of Principal Use Regulations, Wilmington Zoning By-laws dated 4/29/23]

Specific zoning setbacks for this Zone are as follows:

- Front yard: 40'
- Side yard: 20'
- Rear yard: 20'

Building height in Zone R-20 is restricted to two and one half (2.5) stories or thirty-six (36) feet, whichever is lower without special permit, and with certain measurement restrictions as noted in the bylaw. [9.6.5]

Parking requirements [6.4.1.1]:

- one space for each staff position, plus 1 space for each five persons of rated capacity of the largest auditorium

All four sites are also classified as Municipal Open Space. The Town of Wilmington's Open Space and Recreation Plan (2021) explains the following regarding Open Space protected through Town Ownership:

- "The next level of open space protection is through ownership by the Town of Wilmington… Land under the general control of the Town provides some level of protection. Development by the Town of parcels under its control will, in most instances, require the expenditure of Town funds and be subject to a majority vote of Town Meeting. In addition, individuals seeking to acquire Town property must petition the Town to render a decision that the property is surplus to its needs…" (Page 51)
- "Wilmington's open space and recreation lands comprise properties managed and administered by the Conservation Commission, the Water and Sewer Commission, the Historical Commission, and the Board of Selectmen acting as Park Commissioners. The Department of Public Works Parks & Grounds Division maintains School Department playgrounds and ball fields, parks…" (Page 54)

The existing school sites have limited protection under Municipal Open Space. Limited Protection is defined by MassGIS as:

- "Limited (L) - Protected by legal mechanisms other than those above, or protected through functional or traditional use. These lands might be protected by a requirement of a majority municipal vote for any change in status. This designation also includes lands that are likely to remain open space for other reasons (e.g. cemeteries and municipal golf courses)."

The Town Hall site includes approximately 8-acres refered to as Robert Palmer Park and the protection classification is "in Perpetuity" and is defined by MassGIS as:

- "In Perpetuity (P)- Legally protected in perpetuity and recorded as such in a deed or other official document. Land is considered protected in perpetuity if it is owned by the town's conservation commission or, sometimes, by the water department; if a town has a conservation restriction on the property in perpetuity; if it is owned by one of the state's conservation agencies (thereby covered by article 97); if it is owned by a non-profit land trust;

or if the town received federal or state assistance for the purchase or improvement of the property."

The Town requested clarification from their legal council to clarify the extent of the designation on the Town Hall site. The opinion concluded:

- "If the Town intends to site a building within the Recreation Area, the Town may consider contacting the Executive Office of Energy and Environmental Affairs ("EEA"), which oversees Article 97 property, to determine if Article 97 compliance is required (or please let me know if you would like me to reach out to our contacts at EEA0. If compliance is required, the Select Board must obtain a vote of two-thirds of Town Meeting, a two-thirds roll-call vote of the state legislature, and the approval of EEA; in addition, the Town may be required to obtain or create new recreation land to mitigate the loss of the portion of the Recreation Area on which the building is constructed."

Any work within the Groundwater Protection District would need to comply with the requirements of Section 6.6 of the Zoning Bylaw and the MassDEP Stormwater Management Standards. Wellhead Protection Area is indicated with a purple hatch for each respective site in Images 1-4. At North Intermediate School, the entire site falls within the Groundwater Protection District.

In summary, each site includes the following limitations beyond R-20 zoning requirements:

Wildwood Early Childhood Center

- Municipal Open Space - limited protection
- Wellhead Protection Area

Woburn Street School

- Municipal Open Space - limited protection
- Wellhead Protection Area

North Intermediate School

- Municipal Open Space - limited protection
- Wellhead Protection Area

Town Hall Building and Recreation Area

- Municipal Open Space – in perpetuity and Article 97 purpose

All of the proposed new construction or addition-renovation options will comply with setback requirements for the district. The R-20 district has a limitation in height, and any proposed alternative that utilizes a three-story massing will require adjustment to zoning requirements. Time to obtain the votes required for use of the Town Hall site would likely impact the schedule as compared to the existing school sites.

ACCESSIBILITY REQUIREMENTS

Similar to building code requirements, any all-new or addition alternatives will comply with Massachusetts (521 CMR) and Federal (ADA) accessibility requirements. The repair-only alternative will certainly exceed the threshold compelling full-facility compliance with Massachusetts accessibility regulations. Each of these alternatives have assumed that improvements to accessibility such as new ramps, elevators, and/or platform lifts. Reconfiguration of some site features will be incorporated. No variances to accessibility requirements are anticipated at this time.

DEEDS AND EASEMENTS

The Town of Wilmington has produced deeds indicating full ownership and control of all four sites. Deeds are contained in Appendix X.14.

A title analysis to determine presence of any easements is ongoing with the Town at the time of this report. Any findings will be reported in the PSR submission.

Any proposed alternative will seek to work with the Utility company in both maintaining the existing utility service during construction or alterations and reconsidering the condition and location of the current easement as part of a completed project.

WETLANDS AND/OR FLOOD RESTRICTIONS

Overview

The Town of Wilmington has a Wetlands Enforcement Bylaw and Policies which establish additional requirements for work that will impact a wetland resource area beyond the Wetlands Protection Act. The Policy includes a 25-foot “No Structure” zone and a 15-foot “No Disturbance” zone around all jurisdictional wetland resource areas except for land subject to flooding (100-year floodplain).

Based on available information, none of the sites are within any Flood Plain Districts.

Image 6 MassDEP Wetland Area

Wildwood Elementary School site

Based on MassDEP data, a state regulated wetland area is approximately 75 feet from the east property line and has a 100-foot Buffer Zone. Maple Meadow Brook, a perennial stream, also runs through this adjacent property. It is approximately 100 feet from the east property line and has a 200-foot Riverfront Zone. The 100-foot

Buffer Zone and 200-foot Riverfront Zone extend into the northeast corner of the Wildwood School property, which is currently undeveloped woods.

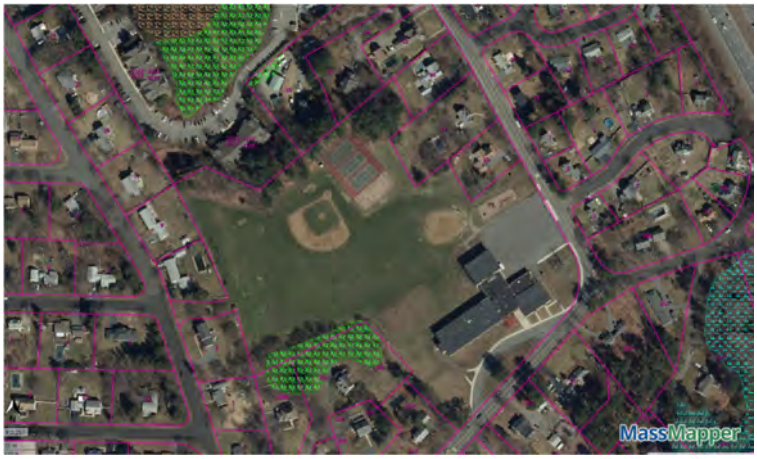
The developed portion of the site is over 200 feet away from the nearest wetland resource area. The 100' buffer zone of this wetland extends onto the north edge of the Wildwood property alternatives intend to avoid any impact. If unavoidable, wetland permitting will be required.

Woburn Street Elementary School site

Based on MassGIS data as well as Wilmington's GIS information data there are no adjacent regulated wetland areas on or adjacent to the site.

North Intermediate School

Based on MassGIS data, there is a state regulated wetland along the property line with 298R and 300R Salem Road properties and has a 100-foot Buffer Zone, which would be approximately 50 feet from the corner front section of the building. Work encroaching to the southwest of the existing building would require wetland permitting.



Town Hall Site

Based on MassGIS data, there is state regulated wetlands and associated 100-foot Buffer Zone on the adjacent properties to the north and west.

Lubbers Brook, a perennial stream, also runs through these adjacent properties. It is approximately 80 feet from the northwest corner of the property and has a 200-foot Riverfront Zone. The 100-foot Buffer Zone and 200-foot Riverfront Zone extend into the northwest corner of the Town Hall property, which is currently undeveloped wooded area. The developed portion of the site is approximately 50 feet from the nearest

wetland resource area. If work is proposed to the west area of the building, wetland permitting would be required.

EMERGENCY VEHICLE ACCESS

The Wildwood building is provided with paved emergency vehicle access around the building except for the far end of the north classroom wing. Though there is potentially room for fire apparatus on that side of the building, there is no paved driveway, only grass lawn areas.

Similarly, the North Intermediate school is provided with limited paved emergency vehicle access at the south front and on the east side of the building. Though there is potentially room for fire apparatus on other sides of the building, there is no paved driveway; only limited width stepped sidewalks and grass lawn areas.

Woburn Street school provides paved emergency vehicle access around the entire building.

The Town Hall site currently has only one access point off Glenn Road for the site.

It is possible that the Fire Department will require a full-perimeter loop as part of any proposed alternative and each alternative has been developed to either provide such a loop or allow for one to be incorporated should it be required. For most alternatives, the access loop maintains a tight perimeter to the building, with varying amounts of green space directly adjacent to the building depending on the site plan constraints.

SAFETY AND SECURITY REQUIREMENTS

Specific to their sites, each alternative will seek to clarify and make evident the main entry into the site from the roadway fronting the property. Site design elements will be employed to define the entrance and territorial boundary of the site, indicating to visitors that they are on school property and under surveillance. Around the project location, appropriate boundary fencing and/or hedging will need to be carefully evaluated to see what, if any, pedestrian openings, or access to adjacent neighborhoods should be considered. Site lighting will be considered in both cases.

Where possible, buildings will be remote from the vehicular site access/entrance to allow staff to observe vehicular traffic well before it arrives at the building. Administrative spaces will be positioned within the building to maintain “eyes on the street” for visitor, delivery, and other vehicles entering and leaving the site, and will be located flanking and controlling access to the main entrance of the school. Where possible, parking will be located so it is visible and can be under surveillance by staff.

In their building design, conceptual alternatives suggest a delineation between “public” or core areas, and “private” or academic areas, and operable, secure barriers between these zones. Each zone is provided with independent means of egress to allow compartmentation and evacuation of the building in a crisis or emergency.

Other safety and security features, such as limiting the number of external doors, shelter-in-place areas with hardened construction, and specifications of locking hardware, access controls, and glazing—to name a few—will be introduced as the building design is developed in future phases.

UTILITIES

Wildwood Elementary School site

Currently, domestic water, electrical, and telecommunications utilities are all routed from the curb cut at Wildwood Street, under, alongside or overhead and entering the school at various points on the east elevation and into the boiler room.

The water service adjacent to the site includes a 6-inch water main in Wildwood Street. A 6-inch water line extends off this main and heads into the site north of the exit driveway and building. It provides service to a fire hydrant in Parking Lot #2 north of the building and domestic water service to the building via a 3-inch pipe that enters the west side of the building at the utility room. The water meter is in the utility room along the east wall. The building does not have fire protection service. An additional fire hydrant north of the exit driveway was recently installed and tied into the onsite 6inch water line.

Sewer service exits the north end of the building via an 8-inch vitrified clay (VC) pipe and discharges to an onsite septic system with a septic tank, dosing chamber, two distribution boxes, and a leaching field. The system is gravity fed with no pumps. There is an interior grease trap for kitchen waste. There is no exterior grease trap.

There is limited storm drainage infrastructure onsite and adjacent to the site. There is no closed drainage system in the portion of Wildwood Street adjacent to the site. Roof runoff from the building discharges to the east to a leaching catch basin. This catch basin is located just inside the tree line and is constructed of open concrete masonry unit (CMU) blocks. Discharge from this catch basin continues to flow overland to the northeast.

There is a catch basin in the lawn area just west of the basketball/tennis courts. The outlet pipe from this catch basin, which appears to be a 15-inch corrugated metal pipe (CMP), heads east under the courts and discharges to the woods east of the courts.

There are no storm drainage systems in the paved play area, either parking lot, or in the front loop road. It is assumed stormwater runoff follows the topography of the site and eventually flows offsite or into Wildwood Street.

There is no gas service onsite or in Wildwood Street. The building is heated with No. 2 fuel oil, which is stored in a 10,000-gallon underground storage tank located on the north side of the building. Due to a recent leak in the tank, the older tank was removed and replaced.

Electric and telecom service to the building is provided via overhead lines from utility poles on Wildwood Street. The electric meter is located on the north face of the building.

Existing utility routes will not need to be maintained during construction since the existing Wildwood school is unoccupied. throughout construction phases.

Woburn Street Elementary School site

Currently, domestic water, electrical, and telecommunications utilities are all routed from the curb cut at Woburn Street, under, alongside or overhead and entering the school at various points.

Water service to the building is provided by a 2-1/2inch domestic water line off the 10" water main in the street. There is an existing fire hydrant by the entrance to the loop road. The building does not have an automatic sprinkler system.

The original septic system exited the west side of the building to a septic tank and then went to the on-site sewage infiltration system located under the athletic fields. A new septic leach field and a grease interceptor were installed in 2012. However, plans for this recent system have not been provided for review. The septic tank was not replaced in 2012. This will be verified if an option on this site proceeds to the next phase.

There is limited storm drainage infrastructure onsite, primarily consisting of onsite leaching catch basins. It is assumed that some stormwater runoff flows to the west and on to the grassed athletic field. Runoff from the northern paved area has caused some erosion of the grass slope. According to the Wilmington GIS database, a depression (BMP) is located on the southeast corner of the site, which seems to collect some water from the exit loop road and from a section of Woburn Street through a catch basin that has an outlet to the BMP.

There is no gas service onsite or in Woburn Street. The building is heated with No. 2 fuel oil, which is stored in a 10,000-gallon underground storage tank.

Electric and telecom service to the building is provided via overhead lines from utility poles on Woburn Street.

Existing utility routes will need to be maintained during construction since the existing Woburn Street school is anticipated to remain occupied throughout construction phases. Independent utility routes to a new mechanical / electrical / water entry location will be established to permit the installation of new utilities without disrupting school operations.

North Intermediate School site

Currently, domestic water, electrical, and telecommunications utilities are all routed from the curb cuts under, alongside or overhead and entering the school at various points on the east elevation and into the boiler room.

Water service to the building is provided by a 4-inch copper domestic waterline to the northwest side of the school connected to Wilmington's water system. The building does not have fire

protection service. There is an existing fire hydrant on the corner of Salem Street and Ballardvale Street.

According to the Wilmington Facility Master Plan Study, done in 2018, the school has municipal sewer service as of 2015. However, plans for this recent sewer connection have not been provided for review. During the site visit, sewer manholes were observed on the rear of the school, near the playground area, which seems to connect to the manhole on Ballardvale Street. This will be verified if an option on this site proceeds to the next phase.

There is limited storm drainage infrastructure onsite. The parking lot has two catch basins that, according to the Wilmington's Drainage online map, connect to a drainage system comprised of both asphalt-coated corrugated metal pipe (ACCMP) and reinforced concrete pipe (RCP) that runs in between the grass and the baseball fields and discharges near a wetland to the west of the site. Catch basins were also observed on Ballardvale Street, which connects to a 12" Corrugated Metal Pipe (CMP) system that runs along Ballardvale and Salem Street and seems to discharge near wetlands to the east of the school property.

According to Wilmington Facility Master Plan Study, done in 2018, the natural gas service and meter are located on exterior of building adjacent to the Mechanical Room. Gas piping is black steel with threaded and welded joints depending on the pipe size.

Electric service to the building is provided via underground lines to a building mounted meter. Telephone, CATV, and fiber run underground from a utility pole to the electric room.

Existing utility routes will need to be maintained during construction since the existing North Intermediate school is anticipated to remain occupied throughout construction phases. Independent utility routes to a new mechanical / electrical / water entry location will be established to permit the installation of new utilities without disrupting school operations.

Town Hall site

Currently, domestic water, electrical, and telecommunications utilities are all routed from the curb cut at Glen Road, under, alongside or overhead and entering the school at various points on the east elevation and into the boiler room.

According to the Wilmington Facility Master Plan Study, done in 2018, the water service to the building is provided by a 2-inch copper domestic waterline with sweat joint, which includes a water meter and pressure reducing valve. The building does not have fire protection service. There is an existing fire hydrant to the south of the building, near the parking spaces, and a second hydrant near the entrance of Cushing Field.

According to the Wilmington GIS database, the building is connected to the municipal sewer service, which consists of an 8" ductile iron Class 52 pipe to the northwest of the building that turns into an 8" AC Class 3300 pipe that travels along the driveway to Glen Road.

There is limited storm drainage infrastructure onsite. There are two catch basins located near the building. According to Wilmington's Drainage online map, the one on the northeast does not show any connections, while the one to the west shows a 10" vitrified clay pipe that discharges through an outlet further west in the woods. There are four catch basins in the access road, which are connected through 12" reinforced concrete pipes, and discharge to the wetlands on the property at 123 Glen Road.

Gas service does not appear to be present onsite, but available along Main Street. The building is heated with an electric water heater. There are two 660-gallon, No. 2 fuel oil storage tanks for the air handler.

Electric and telecom service to the building is provided via overhead lines from a utility pole behind the building.

Existing utility routes will not need to be maintained during construction since the existing Wildwood school is unoccupied. throughout construction phases.

All utilities will be verified for sites proceeding to the next phase.

ATHLETIC FIELDS AND OUTDOOR EDUCATIONAL SPACES

There are no specific new athletic field requirements directed by the District or Town, such as a baseball field or minimum size and type of soccer fields.

The selected alternative will make efforts to preserve as much large open green space as possible to mitigate the impact of a larger building footprint. Outdoor educational spaces will be incorporated into the project if possible; rather than large expanses of open space, outdoor educational spaces exhibit close walking proximity to classrooms and more intimate and inviting settings.

Alternatives - common site design principles

Repair-only alternatives will create the greatest potential to improve outdoor athletic areas and connections thereto, since they don't result in an increase in building footprint or substantive floor plan changes. All-new and addition-renovation options will create more opportunities to create shared athletic and recreational space on or offsite. Alternatives that divide the existing green space into smaller outdoor spaces will provide a variety of opportunities for outdoor educational space. Alternatives that employ courtyards (three-sided open, or completely four-sided enclosed spaces) will utilize those exterior spaces for outdoor learning or gathering spaces. Prioritization of the type, amount, and configuration of outdoor athletic and educational spaces will continue further exploration in PSR phase.

SITE ORIENTATION AND LOCATION

The current Wildwood and North Intermediate site classroom wings are not directly east-west orientation but closer to a 45-degree angle. The entire Woburn Street building sits along a north-south axis, which does not optimize daylighting for the classrooms. Some administration spaces/offices within the building are windowless, offering no natural light or views to the exterior.

The renovation/addition options will explore opportunities to improve upon the current school building orientation and configuration with re-organization of interior spaces, or through improved daylighting via skylights in cases of existing spaces to remain.

Renovation/addition and all-new alternatives seek a balance between linear massing of classrooms and administrative areas to maximize visual and solar access and a more compact massing that improves energy efficiency though minimizing exterior envelope areas. Both sites have excellent solar access with buildable areas facing south or nearly south. Classrooms would ideally be oriented facing north / south on the site to minimize the potential for glare within educational spaces.

The location of any proposed new construction is largely dictated by the existing school building (if occupied) and site constraints such as grading, wetlands, and access points. The buildable areas on the sites are a direct result of these site constraints, but may still afford opportunities for high quality daylighting, improved site access and security, and exterior play and educational spaces.

PRELIMINARY EVALUATION OF ALTERNATIVES

OVERVIEW

After an assessment of the existing conditions, site development restrictions and opportunities, and taking into consideration the proposed educational program and associated space summary, the school district, working closely with Dore + Whittier (Designer) and SMMA (OPM), evaluated a number of alternatives which fall into three basic grade configuration scenarios at up to four sites. The graphic below summarizes these scenarios:

Potential Site Location	PreK-K	PreK-3rd	PreK-5th
Wildwood ECC	• Repair • Add/Reno • New	• Add/Reno • New	• Add/Reno • New
Woburn Street ES	N/A	• Repair • Add/Reno • New	• Add/Reno • New
North Intermediate	N/A	N/A	• Repair • Add/Reno • New
Town Hall	• New	• New	• New

The narratives and drawings that follow provide comparative information for each alternative which served as the basis for evaluation. During a series of principals' interviews, community meetings, and visioning sessions, Wilmington administration, staff, and community members identified guiding principles, site/building features, and project goals that are consolidated into the following nine categories. The first eight categories are scored and weighted equally in the matrix, with the following criteria under each, respectively:

Education Criteria:

1. Public/Private Separation
2. Quality community spaces and ease of access to these spaces without compromising building security
3. Provides flexible and adaptable spaces
4. Addresses adjacencies of programs to support educational model: grade level learning

communities that limit isolation of any one grade and provides options to expand grade level communities in bubble years
5. Reduces travel distances between classrooms and shared core spaces
6. Retains small school feel - some administration offices within classroom groupings
7. Integrates outdoor learning spaces
8. Seamlessly integrated spaces for special education, student support services and specials
9. Cafeteria design maximizes site line and minimizes need for adult supervision
10. Creates a variety of student dining experiences and smaller zones/quieter spaces
11. Promotes a sense of community and collaboration for teachers and students
12. Provides access to natural daylight and views for all spaces
13. Wide variety of spaces (small group, movement, extended learning)
14. Includes adaptable spaces for professional development

Site Criteria:

1. Public/Private Separation
2. Quality community spaces and ease of access to these spaces without compromising building security
3. Proximity of parking to main entrance
4. Provides a dedicated Pre-Kindergarten Entry
5. Site supports appropriate number of parking spaces
6. Positions grade-level specific playground adjacent to grade-level classroom areas
7. Having a safe, clear and easily understood circulation route - Separation of bus, car and pedestrians.
8. Adequate queuing space for buses and cars
9. Ability to expand building for future growth
10. Maximizes open green space in addition to playgrounds on site
11. Student access to play areas without crossing parking or roadways
12. Scale of building to site
13. Minimizes steep slopes and retaining walls
14. Minimizes impacts to wetlands
15. Maximizes distance from abutters and property line
16. Access to municipal infrastructure (sewer and water)
17. Proximity of location to students - minimize travel time

Article 97 Restrictions & Future Uses Criteria:

1. Minimal restrictions for development (Article 97, Municipal Open Space designation, Wetlands, Wellhead Protection Zones)
2. Limits future use as other town functions in a centralized location

Community Criteria:

1. Public/Private Separation
2. Quality community spaces and ease of access to these spaces without compromising

building security

Sustainability Criteria:

1. Meets Town and school district goals for Sustainability and Energy Efficiency and Meets MSBA Requirements for Additional 3%+ Point
2. Solar Orientation; classrooms oriented along east-west axis for best control of north/south light Each criterium was evaluated and scored on a scale of 1 to 5 for each alternative, and scores were added and tabulated.

Logistics / Construction Impact Criteria:

1. Simple construction phasing
2. Minimizes construction phase disturbance to students/teachers
3. Construction phasing impact to neighbors
4. Temporary facilities not required

Consolidation Criteria:

1. Traffic impact to neighborhoods and intersections
2. Benefits all PK-5 students at three schools (Wildwood, Woburn Street, North Intermediate)

Total Time to Address All Needs Criteria:

1. How well does the alternative limit the time necessary to address all elementary-aged needs across the three subject schools

Cost Criteria:

The ninth category is related to the cost of alternatives. The committee initially entertained criteria for evaluation of this category. However options in the same grade configuration resulted in estimates within similar cost ranges and did not impact the scoring in the matrix enough to differentiate between alternatives. Therefore, the cost category was not scored in the matrix.

These criteria and the associated evaluation questions associated with each are comprehensively outlined in the Evaluation Criteria subsection of this document.

ANALYSIS OF STUDENT SCHOOL ASSIGNMENT

Existing School Attendance (Catchment) Area Policy:

"Attendance areas for the various schools of the town will be drawn up by the Superintendent and approved by the School Committee. The primary considerations that govern the establishment of a school attendance area are school capacity and transportation

considerations. Generally, students will attend the school in the attendance area in which they live.

In establishing an attendance area, the following general guidelines will also be applied:

1. Use of safe walking conditions consistent with the Committee's transportation policies; where possible, major traffic thoroughfares and natural barriers will be used for boundaries.
2. Honoring community of interest; where possible, school attendance zones will incorporate community patterns.

From time to time an overcrowded condition in an existing school, the development of new residential areas, or the opening of a new school may require the establishment or change of previously establishedschool attendance areas.

The Committee will confer with community representatives prior to setting new attendance lines. However, the Committee's primary basis for judgment must be equality of educational opportunity for all students rather than the personal desires of any one group.

The Superintendent is authorized to make exceptions to attendance lines for individual children in the best interests of the student and/or the school."

Assignment of Students to School Policy:

Generally, students will be required to attend school in the attendance area in which they reside, unless the Superintendent has granted special permission.

1. Special permission may be granted for the following reasons:
2. If the change involves an exceptional child, a hardship case, or if there are medical considerations.
3. If the change appears to be in the interests of the child, of the schools, and for disciplinary and administrative reasons.
4. If the legal residence of a child changes from one attendance area to another during the school year and the parents wish the child to remain in his former school; permission will not extend beyond the current school year.
5. To permit secondary school students to take courses not offered in their assigned schools.

School bus transportation will not be provided for students attending schools outside their attendance area unless they can be accommodated on existing bus routes and schedules, or an exceptional child is involved; or unless specific permission is granted by the School Committee.

Proposed School Attendance (Catchment) Area:

No change in catchment area is anticipated with the preferred project.

AVAILABLE SPACE IN OTHER SCHOOLS IN THE DISTRICT

Wilmington Public Schools experienced an unfortunate accidental rupturing of the underground fuel oil storage tank serving the Wildwood Early Childhood Center, which caused the long-term evacuation of the property. During remediation, a study was initiated by the District to relocate Wildwood students. The purpose of the study was to prepare options for a medium-term temporary or interim solution for accommodating students at location or locations within other existing District facilities, or potentially back on the Wildwood site.

The work was done in the context of, and with the knowledge that Wilmington has been accepted into the Massachusetts School Building Authority (MSBA) eligibility phase for an elementary school project with the Wildwood school as the subject site. The medium-term solution being sought in that study was for the approximately five- to seven-year time horizon it would take to design, build, and bring on-line a new school solution, whatever form that may take.

D+W analyzed the theoretical maximum capacity of each school in the district, based on maximum numbers of students per classroom recommended by the MSBA. This analysis showed buildings at or over capacity at all the elementary and intermediate schools, and some available capacity at the Middle and High Schools. This reading virtually mirrored the lived experiences in those buildings.

With the capacity information in hand, it was no surprise that almost all of the options considered would require some amount of added modular space. It was decided that none of the options presented were viable as an interim solution. An alternate idea to better utilize space within existing school buildings was developed to minimize the need for new, temporary space. The alternate option utilized space at the West Intermediate School and Middle School to accommodate Wildwood Students and staff by Fall of 2023.

This option had the following Pros:

- Option can be maintained until the completion of an MSBA project
- Continues existing pattern of student placement after leak accident at West Intermediate School
- Middle Schools appears to have capacity to accommodate added population
- Lowest cost option as no new (modular) space is needed
- Had the shortest time duration
- Location at the Middle school creates a small school-within-a-school setting
- Best utilization of existing space (of the non-Wildwood options) as it requires no new space
- Confines disruptions to two school buildings
- Keeps Wildwood community in close proximity, across the street within walking distance
- Reduces number of buildings in district by one (Wildwood taken out of service)

This option had the following Cons:

- Wildwood is not under one roof
- Some Middle School staff are displaced
- Age-appropriate toilet rooms need to be constructed at the Middle School
- Potential for disruption during construction or toilet rooms while school is in session
- Middle School library/media center relocation and curricular adjustment required

Although not the ideal solution for the myriad of accommodations listed above, it was determined that this temporary solution can be maintained until the completion of an MSBA project and was implemented by the Town and District.

TUITION AGREEMENTS WITH ADJACENT SCHOOL DISTRICTS

Wilmington Public Schools does not have any tuition agreements with neighboring districts.

RENTAL OR ACQUISITION OF EXISTING BUILDING FOR SCHOOL USE

At present, there are no available existing buildings for lease or for purchase suitable to house the populations under consideration. Through the course of its study, D+W reviewed alternate sites above 15 acres for suitability for this space program and found only one viable alternatives other than the school sites.

- The Town Hall building is currently in use but the site was identified as a potential location for consideration since a new Town Hall Building project is underway at an alternate site. Although this building is a replica of the Boutwell Early Childhood Center that services Prekindergarten and Kindergarten students on the west side of town, a renovation of the existing building was not considered as part of this study. An adaptation of the building still would not meet all 21st century learning requirements. Additionally, the existing building would be too small to accommodate the proposed program and population of a consolidated school, and the site is on the outer limit of the proposed consolidated catchment area for a new school.
- Beyond the current school sites, the town hall site is included as a potential developable property which can support this project.
- There are no other existing buildings available for purchase or rent that could be used to accommodate the planned enrollment.

PRELIMINARY ALTERNATIVES

The focus of this study is the Wildwood Early Childhood Center. As such, each alternative includes the Wildwood Early Childhood Center enrollment. Alternatives related to each of the enrollment scenarios are outlined below and include:

- code upgrade/base repair renovation alternatives (Capital Improvement Plan)
- addition/ renovation alternatives
- new construction alternatives

While reviewing a renovation-only alternative of the existing school buildings, D+W quickly discovered that it was not feasible because the existing building does not have enough space to satisfy the 130+, 510+ and 755+ student agreed-upon enrollment without an addition. For this reason, the renovation of the existing schools was not considered. It was determined that the base repair alternative would satisfy the intent of the renovation-only alternative for purposes of evaluation in relation to each of the other alternatives.

Due to significant limitations of the existing building configuration, structural framing systems, and sizes of spaces, the renovation/addition alternatives proved to be limited as to which portions of the existing buildings were practical to meet the educational space needs.

A total of six (6) variations of renovation/additions were explored:

- PK-K at Wildwood - 130+ student population
- PK-3 at Wildwood - 510+ student population
- PK-3 at Woburn Street - 510+ student population
- PK-5 at Wildwood - 755+ student population
- PK-5 at Woburn Street - 755+ student population
- PK-5 North Int. - 755+ student population

In an effort to provide a variety of Alternatives for the District to consider the educational programming needs and to respond to the feedback received during community meetings, visioning meetings with staff, students and school parents, and multiple Working Group meetings, the Design Team developed a total of nine (9) new construction alternatives for the three proposed enrollments:

- PK-K at Wildwood - 130+ student population
- PK-K at Town Hall - 130+ student population
- PK-3 at Wildwood - 510+ student population
- PK-3 at Woburn St - 510+ student population
- PK-3 at Town Hall - 510+ student population
- PK-5 at Wildwood - 755+ student population
- PK-5 at Woburn St - 755+ student population
- PK-5 at North Int. - 755+ student population
- PK-5 at Town Hall - 755+ student population

There is a high degree of similarity between the PK-3 options and the PreK-5 options, with the main differences being the addition of the larger gymnasium and shifting of two grades up to the third floor or a separate wing for PK-5 options. Otherwise, the alternatives are similar.

ORGANIZATION OF THE ALTERNATIVES

Due to the number of variables, we developed a simple format for organizing, naming and numbering the options.

The grade configuration is first identified.

- PK-K
- PK-3
- PK-5

The type of project is then identified, followed by numbering sequence

- R.1 = Repair only, iteration 1
- AR.1 = Addition Renovation, iteration 1
- N.1 = New Construction, iteration 1

The eighteen alternatives include:

Alternatives PK-K (130 + PK enrollment) – 4 total

- PK-K R.1 - Repair-Only (CIP) – Wildwood
- PK-K AR.1 – Addition Renovation at Wildwood
- PK-K N.1 – New Construction at Wildwood
- PK-K N.2 – New Construction at Town Hall

Alternatives PK-3 (510 + PK enrollment) – 6 total

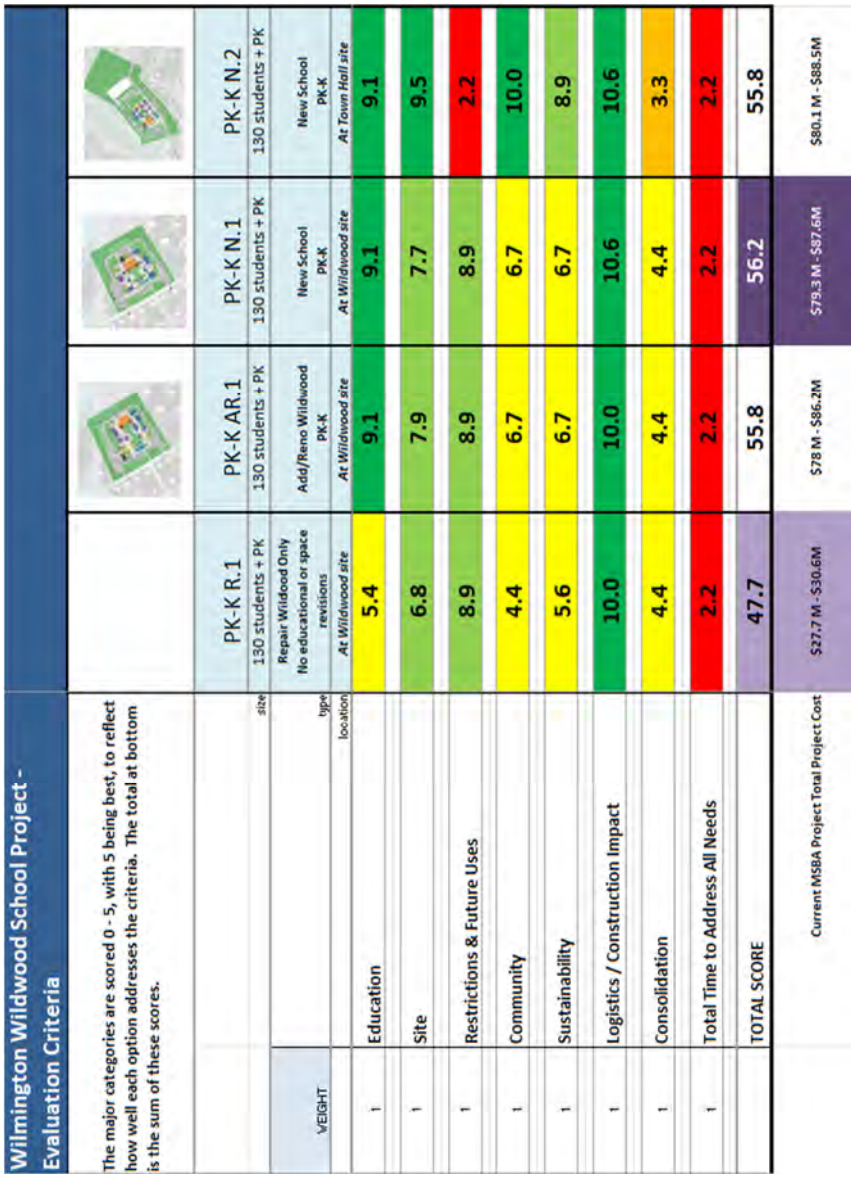
- PK-3 R.1 - Repair-Only (CIP) at Woburn St
- PK-3 AR.1 – Addition Renovation at Woburn St
- PK-3 AR.2 – Addition Renovation at Wildwood
- PK-3 N.1 – New Construction at Woburn St
- PK-3 N.2 – New Construction at Wildwood
- PK-3 N.3 – New Construction at Town Hall

Alternatives PK-5 (755 + PK enrollment) – 8 total

- PK-5 R.1 - Repair-Only (CIP) at North Int
- PK-5 AR.1 – Addition Renovation at North Int
- PK-5 AR.2 – Addition Renovation at Woburn St
- PK-5 AR.3 – Addition Renovation at Wildwood
- PK-5 N.1 – New Construction at North Int
- PK-5 N.2 – New Construction at Woburn St
- PK-5 N.3 – New Construction at Wildwood
- PK-5 N.4 – New Construction at Town Hall

EVALUATION MATRIX SUMMARY

PK-K ALTERNATIVES



Wilmington Wildwood School Project - Evaluation Criteria						
The major categories are scored 0 - 5, with 5 being best, to reflect how well each option addresses the criteria. The total at bottom is the sum of these scores.		PK-K R.1	PK-K AR.1	PK-K N.1	PK-K N.2
	size	130 students + PK	130 students + PK	130 students + PK	130 students + PK
	type	Repair Wildood Only No educational or space revisions	Add/Reno Wildwood PK-K	New School PK-K	New School PK-K
WEIGHT	location	At Wildwood site	At Wildwood site	At Wildwood site	At Town Hall site
1	Education	5.4	9.1	9.1	9.1
1	Site	6.8	7.9	7.7	9.5
1	Restrictions & Future Uses	8.9	8.9	8.9	2.2
1	Community	4.4	6.7	6.7	10.0
1	Sustainability	5.6	6.7	6.7	8.9
1	Logistics / Construction Impact	10.0	10.0	10.6	10.6
1	Consolidation	4.4	4.4	4.4	3.3
1	Total Time to Address All Needs	2.2	2.2	2.2	2.2
	TOTAL SCORE	47.7	55.8	56.2	55.8
	Current MSBA Project Total Project Cost	$27.7 M - $30.6M	$78 M - $86.2M	$79.3 M - $87.6M	$80.1 M - $88.5M

PK-3 ALTERNATIVES

Wilmington Wildwood School Project - Evaluation Criteria

The major categories are scored 0 - 5, with 5 being best, to reflect how well each option addresses the criteria. The total at bottom is the sum of these scores.

		For Comparison Only					
	site	PK-3 R.1	PK-3 AR.1	PK-3 AR.2	PK-3 N.1	PK-3 N.2	PK-3 N.3
		510 students + PK	510 students + PK	510 students + PK	510 students + PK	510 students + PK	510 students + PK
	type	Repair Woburn St Only No educational or space revisions	Add/Reno Woburn PK-3	Add/Reno Wildwood PK-3	New School PK-3	New School PK-3	New School PK-3
WEIGHT	location	*At Woburn St site*	*At Woburn St site*	*At Wildwood site*	*At Woburn St site*	*At Wildwood site*	*At Town Hall site*
1	Education	4.8	9.1	9.1	9.1	9.1	9.1
1	Site	7.4	8.1	6.8	9.0	6.5	9.3
1	Restrictions & Future Uses	10.0	10.0	8.9	10.0	8.9	2.2
1	Community	5.6	8.9	8.9	8.9	7.8	7.8
1	Sustainability	5.6	6.7	6.7	10.0	7.8	8.9
1	Logistics / Construction Impact	2.8	6.7	10.0	8.3	10.6	10.6
1	Consolidation	5.6	7.8	6.7	7.8	6.7	5.6
1	Total Time to Address All Needs	2.2	5.6	5.6	6.7	6.7	6.7
	TOTAL SCORE	43.9	62.8	62.5	69.8	63.9	60.1
	Current MSBA Project Total Project Cost	[illegible]	$135 M - $149.2M	$130.2 M - $143.9M	$135.7 M - $150M	$131.2 M - $145.1M	$132.2 M - $146.1M

PK-5 ALTERNATIVES

Wilmington Wildwood School Project - Evaluation Criteria

The major categories are scored 0 - 5, with 5 being best, to reflect how well each option addresses the criteria. The total at bottom is the sum of these scores.

WEIGHT		For Comparison Only									
	site	PK-5 R.1	PK-5 AR.1	PK-5 AR.2	PK-5 AR.3	PK-5 N.1	PK-5 N.2	PK-5 N.3	PK-5 N.4		
		755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK		
	type	Repair North Only No educational program revisions	Add/Reno North PK-5	Add/Reno Woburn PK-5	Add/Reno Wildwood PK-5	New School PK-5	New School PK-5	New School PK-5	New School PK-5		
	location	At North site	At North site	At Woburn St site	At Wildwood site	At North site	At Woburn St site	At Wildwood site	At Town Hall site		
1	Education	5.0	9.1	9.1	9.1	9.1	9.1	9.1	9.1		
1	Site	7.6	8.1	8.1	6.1	8.7	8.6	6.4	9.3		
1	Restrictions & Future Uses	11.1	11.1	10.0	8.9	11.1	10.0	8.9	2.2		
1	Community	5.6	10.0	10.0	7.8	8.9	8.9	5.6	8.9		
1	Sustainability	6.7	8.9	6.7	6.7	10.0	10.0	6.7	8.9		
1	Logistics / Construction Impact	2.8	6.7	6.7	10.0	9.4	7.8	10.6	10.6		
1	Consolidation	5.6	10.0	10.0	8.9	10.0	10.0	8.9	7.8		
1	Total Time to Address All Needs	2.2	8.9	8.9	11.1	11.1	11.1	11.1	11.1		
	TOTAL SCORE	46.4	72.8	69.4	68.5	78.4	75.4	67.1	67.8		
	Current MSBA Project Total Project Cost	[illegible]	$193.3 M - $213.6M	$188.9 M - $208.8M	$188.2 M - $208M	$194.1M - $214.5M	$194.7 M - $215.2M	$188.8 M - $208.7M	$187.6 M - $207.3M		

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PK-K R.1 – BASE REPAIR-ONLY (CIP) WILDWOOD ECC SITE

DESCRIPTION

The scope of work identified in this base repair and code upgrade alternative assumes that the existing Wildwood PK-K school population will return to the Wildwood Early Childhood Center upon completion with no modification of existing spaces or function. The existing one-story building remains the at 29,302 square feet.

The base repair is the result of the existing facility conditions assessment and includes the upgrading of all major building systems that are beyond their useful life, inefficient to operate, and expensive to repair. Under this alternative, the building footprint and exterior walls would remain as-is. However, windows, doors and roofing would be replaced. As there is little to no insulation in the envelope, this repair would include adding insulation and new finishes to the interior side of exterior walls where feasible and upgrading roof insulation to meet the energy code requirements. All interior wall configurations would remain as-is except for accessibility upgrades. This base repair alternative does not address enrollment, educational program needs, nor site circulation improvements.

This alternative includes upgrades to the HVAC system, electrical, and plumbing and fire protection systems to meet current code, as well as accessibility upgrades to meet accessibility code. Hazardous materials encountered would be abated. Though the existing structure is basically sound, it does not meet current codes for lateral-force resisting systems, and seismic upgrades to the structure would be required with any substantial project. Similar to structural upgrades, upgrades would trigger requirements for a fire suppression system under the current building codes.

In summary, this Alternative does not meet the requirements of the Educational Plan drafted by Wilmington Public Schools for this project. The PK-K Repair Only alternative scored highest of the three base repair options but all base repair alternatives scored lowest of the eighteen alternatives on the Evaluation Matrix.

EVALUATION OF CRITERIA

EDUCATION

Although the building would be repaired to extend the life of the building, no spatial improvements are included to support the District's Educational Plan for PK-K students. The building configuration remains status-quo with no improvements for flexible and adaptable spaces. Grade levels are grouped together with no opportunity for expansion of a grade in a bubble year. Special education and student support services are typically integrated at these grade levels with limited pull-out space available. There is no dedicated art or music room (instruction occurred in the library). Core spaces are centrally located between the two

classroom wings, minimizing travel for students. The layout of the multipurpose room requires exiting the space to access the kitchen serving line which is not ideal for this age grouping, nor does provide variety of spaces to serve a neurodiverse student population.

Spatial deficiencies and limitations associated with the existing building include a lack of sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation. The only space available to adequately house 50+ staff for professional development is the multi-purpose room or an off-site location.

There are no existing outdoor learning spaces, structures, or amenities and none would be provided under this alternative. The playgrounds would be accessible although it is located on the opposite end of the building from the multi-purpose space.

As a base repair project does not consider consolidation, the school retains its current sense of community.

SITE

A base repair (CIP) alternative does not include major alterations to the site, except to replace paving in poor condition, and provide accessible parking and an accessible route to the main entrance. The site has access to municipal water but would include improvements to the service as well as the septic system for compliance with current regulations.

The Wildwood site with 7.5 acres is the smallest site considered for a project and site circulation remains a challenge. The school would continue being accessed by one vehicular circulation pattern from Wildwood Street. Four buses servicing Wildwood students circulate through the front bus loop at the main entrance. Cars would continue to circulate through the active parking lot south of the building. Parking on site would be inadequate if all staff were present. With no continuous paved access road around the building, the ability to accommodate emergency response vehicles to the rear part of the sites and the recreational areas of the property would remain a challenge as well.

The building is situated near the front property line, separated from the street mainly by the bus loop. Play areas are located behind the building and provide opportunities for outdoor movement breaks. The playground is set away from the building across a paved play surface but does not require crossing parking/traffic to access. There is limited green space and shading at play areas. The community utilizes sport courts and playgrounds located behind the building after hours.

A base repair-only project would not impact steep slopes, wetland buffers or require additional retaining walls. Any future growth would compromise site design and amenities if building expansion was warranted.

This location is outside areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

A base repair (CIP) alternative does not include major alterations and maintains the status quo of functionality for the building and site. The Wildwood site must comply with the requirements for Municipal Open Space designation (designation on all sites under consideration), Wetlands buffer areas located to the north and Wellhead Protection Zone that on the north wooded-portion of the site. Refer to Section 3.1.5, Site Development Requirements.

The site is not centrally located in the Town of Wilmington and would continue to serve as an educational facility for the community.

COMMUNITY

A base repair (CIP) alternative does not support an improved building design or layout that would enhance the student, staff, or community experience, and it does not support separate academic and public use of the building. There are no improvements to safety as it relates to increased distance from the street and improved sight distance or additional queuing on site for vehicles. Likewise, as a base repair alternative, there are no improvements to the cafeteria to support a better assembly space for community use, and there are no improvements or additions to on-site recreational areas or playgrounds other than accessibility.

SUSTAINABILITY

Because of the essential nature of this “base repair” alternative, it does not include many types of upgrades associated with a modern energy-efficient building, improvements to interior environments, or provision of natural light and views to all regularly occupied spaces. One of the two classroom wings has ideal solar orientation, and the other does not. All classrooms have the potential for views outside with glazing replacement, but some interior administrative spaces are internal and would require reconfiguration. With the smallest acreage, improvements that require ample site area are limited to support possibilities such as geothermal wells. This base repair alternative would pose significant challenges and require a substantial cost to support the sustainability goals set by the Town and District.

LOGISTICS

Wildwood site is currently unoccupied and would not require phasing, relocation or disruption of students during construction as students are already relocated. Neighbors may be impacted

with noise and dust and have limited or no access to community courts during construction.

Overall Project duration: 18 months

CONSOLIDATION

This alternative maintains the status quo of an existing school site and population and does not impact the remaining students in Grades 1-5 in the catchment area under consideration.

TIME

This alternative includes only one school and would require multiple capital projects over several to accomplish the renovations and additions necessary to meet the goals set forth in this project for all PK-5 students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-K R.1 is:

$22,432,491 *

The estimated project cost range for Alternative PK-K R.1 is:

$27.7 M - $30.6 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

NOTE: There are no building or site drawings for this Alternative, but the Capital Improvement Plan document is included in the Cost Estimates in Appendix X.16.

PK-K AR.1 –ADDITIONS + RENOVATIONS TO WILDWOOD EARLY CHILDHOOD CENTER (130+ STUDENTS)

DESCRIPTION

The goal of alternative PK-K AR.1 is to align, to the fullest extent possible, renovations and additions with the entirety of the educational program. Demolition of the north classroom wing would make way for a one-story addition. The existing core area and south classroom wing entails reconfiguration of interior walls to accommodate change of function and extensive renovations. Along with repurposed spaces, additions to the east of the existing building would be developed to meet the District's educational goals and programmatic needs. No phasing is required as the site is unoccupied.

The existing one-story building is 29,302 square feet. This option results in 10,593 square feet of demolition, 18,709 square feet of renovation and 48,101 square feet of additions, for a gross square foot total of 66,810 square feet.

Administration, medical, kitchen, boiler room, electrical rooms, and much of the custodial and storage program would be accommodated in the existing shell of the building. A "U"-shaped addition turned counterclockwise will connect to the renovated area creating a courtyard in the center of the building. Separate Pre-K and Kindergarten academic wings will extend northeast from the renovated area and connect on the opposite end with a new gymnasium, stage, art and music classrooms and related storage spaces. Once completed, the Wildwood population could be reunited under one roof again.

Site work would occur simultaneously. Site circulation and parking would be improved with separate on-site parent and bus drop-offs. A significant retaining wall would be required to support the building additions and fire access lane. Accessible playgrounds, outdoor learning space within the courtyard and a dedicated service area, would also be provided.

In summary, this Alternative is feasible however scored lower on the evaluation matrix with for multiple reasons described above.

EVALUATION OF CRITERIA

EDUCATION

This addition and renovation alternative meets the district's educational program. Some programmatic and experiential compromises still exist, including:

- The cafeteria is articulated with two dining spaces, one associated with each grade

level because of the guidelines that resulted from Visioning. However, feedback from educators indicated a more centralized dining experience would be preferred if these options were to move into the next phase.

- Grade levels have little opportunity for expansion of a grade in a bubble year.
- At this early conceptual level, it is difficult to foresee how new spaces will fit into the existing building, and there may be cases where the renovated environment is inferior to the new addition, or it entails compromises in the physical plant or layout.

This alternative meets the district's educational program with intentionally designed spaces to meet the needs of staff and students. The northern academic wing is organized along a main street with embedded extended learning for Pre-Kindergarten. The southern academic wing contains multiple extended learning areas shared between two Kindergarten classrooms. Classroom sections are integrated with special education and small group spaces. This organization meets the educational program requirement exactly.

Dedicated art, music, and core spaces are centrally located between the two classroom wings, minimizing travel for students. The layout of the dining spaces provides options to serve a neurodiverse student population.

Sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The only space available to adequately house 50+ staff for professional development is likely the gymnasium or an off-site location.

The courtyard supports outdoor learning spaces easily accessible from classrooms. Use of the space may be distracting for classrooms located along the courtyard. The playgrounds would be accessible and located closer to the gymnasium space.

As this PreK-K additions and renovation alternative does not consider consolidation, the school retains its current sense of community.

SITE

As an addition-renovation alternative, significant alterations to the 7.5 acre site are required to accommodate a centrally located one-story building more than twice the size of the existing structure. The site has its highest elevation in the center of the site, with grade changes of -15 feet to -25 feet towards the rear property line. To accommodate the larger footprint and emergency access drive around the perimeter, a significant 1,100+ linear foot retaining wall is planned.

The setback from the main road does not change though overall safety of Wildwood Street traffic

is improved, given the dedicated on-site drop-off/pickup loops for busses and parent vehicles. This alternative provides a minimum of 60 parking spaces, a dedicated service area, and does not encroach the wetlands buffer to the north. With a retaining wall, emergency access drive around the back of the building improves the safe travel and functionality of the site in this alternative. This drive would limit through traffic during school hours to double as hardscape play area for students. The adjacent playgrounds are closer to the youngest students on the north side of the building. The relationship between the play area and gymnasium is also improved. Outdoor learning spaces are centrally located within the courtyard.

The site has access to municipal water but anticipated improvements to the service as well as the septic system for compliance with current regulations.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is outside areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This renovation and additions alternative significantly impacts the site.

Same comments as Alternate PK-K R.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

An addition and renovation alternative supports an improved building design and layout that would enhance the student, staff, or community experience, but it does not support separate academic and public use of the building. Increased safety with distance from the street and improved sight distance remain the same but additional parking and queuing on site for vehicles are improved. The community sport courts are not replicated on site for after-hours use. The gymnasium with stage adjacent to the courtyard provides a significantly larger assembly 0space for community use.

SUSTAINABILITY

This addition and renovation alternative with its efficient building plan will meet many sustainability goals set by the Town and District. The building is oriented with classrooms facing northwest or southeast, which will require some control of daylighting. Though maybe not as thermally efficient as a more cubic volume, the donut plan will give great access to much-needed daylight and views. All-new systems will be high efficiency. With the smallest acreage,

improvements, like those that require ample site area are limited to support possibilities such as geothermal wells, would require additional scope and a substantial impact to cost.

LOGISTICS

Wildwood site is currently unoccupied and would not require phasing, relocation, or disruption of students during construction as students are already relocated. Neighbors may be impacted with noise and dust and have limited or no access to community courts during construction.

Overall Project duration: 22 months

CONSOLIDATION

This alternative maintains the status quo of an existing school site and population and does not impact the remaining students in Grades 1-5 in the catchment area under consideration.

TIME

This alternative includes only one school and would require multiple capital projects over several to accomplish the renovations and additions necessary to meet the goals set forth in this project for all PK-5 students in the catchment area under consideration.

COST

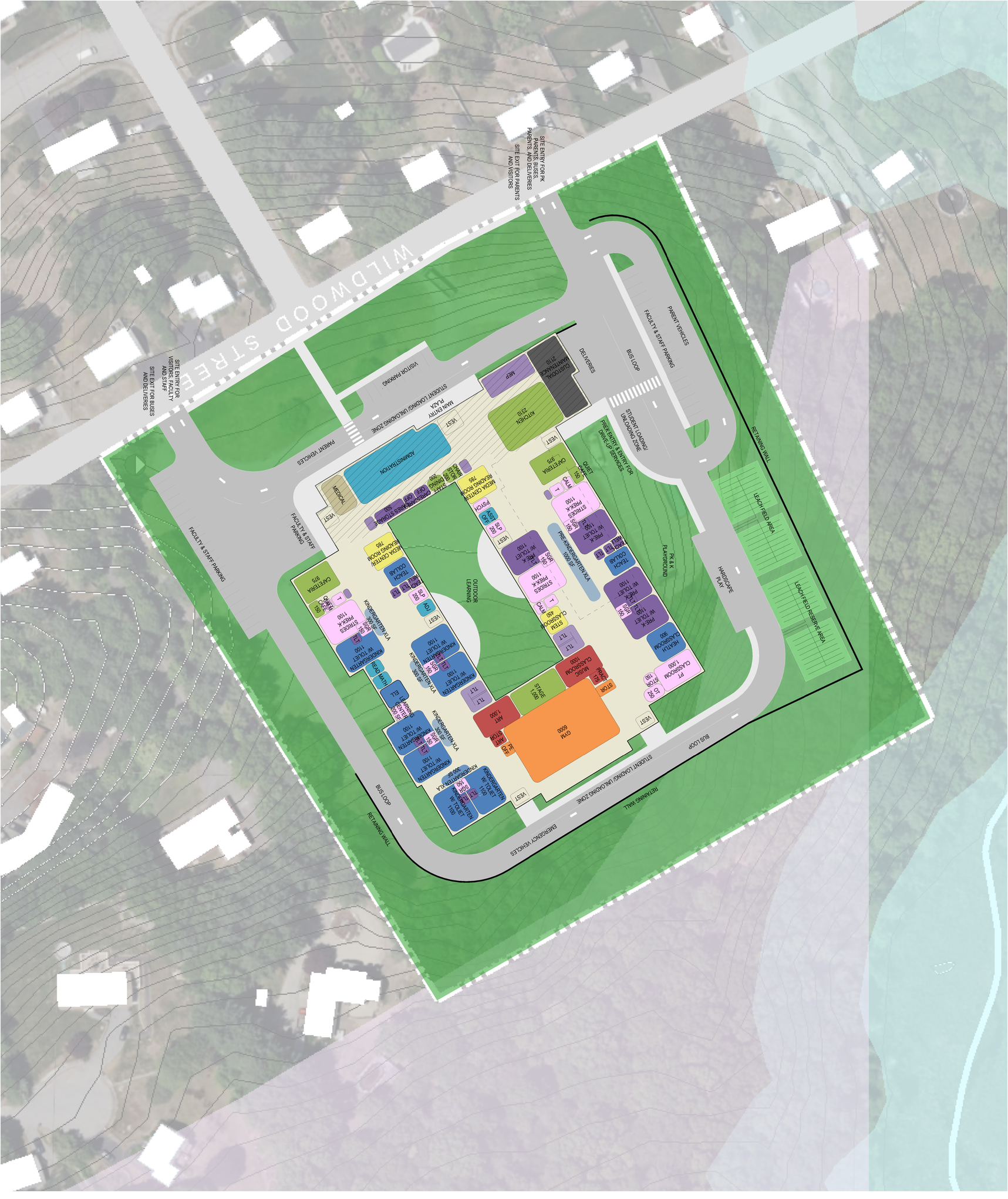
The estimated construction cost for Alternative PK-K AR.1 is:

$63,181,787 *

The estimated project cost range for Alternative PK-K AR.1 is:

$78.0 M - $86.2 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.


WILDWOOD STREET
SITE ENTRY FOR PK PARENTS, BUSES, PARENTS, AND DELIVERIES
SITE EXIT FOR PARENTS AND VISITORS
SITE ENTRY FOR VISITORS, FACULTY, AND STAFF
SITE EXIT FOR BUSES AND DELIVERIES
PARENT VEHICLES
VISITOR PARKING
STUDENT LOADING/ UNLOADING ZONE
MAIN ENTRY PLAZA
ADMINISTRATION
MEP
KITCHEN 210
CUSTODIAL MAINTENANCE 210
DELIVERIES
BUS LOOP
FACULTY & STAFF PARKING
PARENT VEHICLES
STUDENT LOADING/ UNLOADING ZONE
PRE-K ENTRY & ENTRY FOR DRIVE-UP SERVICES
RETAINING WALL
LEACH FIELD AREA
LEACH FIELD RESERVE AREA
HARDSCAPE PLAY
PK & K PLAYGROUND
OUTDOOR LEARNING
MEDICAL
MEDIA CENTER 1,000
CAFETERIA 975
QUIET 150
PSYCH 250
PRE-K W/ TOILET 1100
PRE-K STUDIO 1100
PRE-KINDERGARTEN 3,000
TEACH COLLAB 150
KINDERGARTEN W/ TOILET 1100
KINDERGARTEN W/ TOILET 1100
KINDERGARTEN W/ TOILET 1100

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-K

AR.1 Add/Reno @ Wildwood ECC Site

First Floor

1" = 40'

PK-K N.1 – WILDWOOD SITE, NEW CONSTRUCTION – (130+ STUDENTS)

DESCRIPTION

This alternative explores a new early childhood center for 130+ students at the existing school site.

The existing 29,302 square feet one-story building is demolished to accommodate a new building totaling 66,810 gross square feet.

This concept is organized as a donut shaped plan, similar to Alternative PK-K AR.1 but slightly more compact, with core spaces located on either side of the building connected by academic wings organized around a courtyard. Administration, medical, and Cares program spaces are closest to the main entrances. Meanwhile the gymnasium, dining, kitchen, custodial and back of house functions including the mechanical and electrical spaces are located at the rear of the building with academic wings connecting the core functions. This configuration somewhat strays from the district's goal of organizing the building into public and private zones.

In summary, this alternative meets the educational program for PreK-K, improves traffic conditions, supports community use of the facility and access to playgrounds, and is energy efficient. It scored highest for PK-K alternatives in the evaluation matrix.

EVALUATION OF CRITERIA

EDUCATION

This new alternative meets the district's educational program with some programmatic and experiential compromises still exist, including:

- The cafeteria is articulated with two dining spaces, one associated with each grade level as a result of the guidelines from Visioning. However, feedback from educators indicated a more centralized dining experience would be preferred if this options were to move into the next phase.
- Grade levels have little opportunity for expansion of a grade in a bubble year.

The northern academic wing is organized along a main street with embedded extended learning for Pre-Kindergarten. The southern academic wing contains multiple extended learning areas shared between two Kindergarten classrooms. Classroom sections are integrated with special education and small group spaces.

Dedicated art, music, and core spaces are equidistant from the academic wings wings, minimizing travel for students. The layout of the dining spaces provides options to serve a neurodiverse student population.

Sufficient space to support administrative and guidance staffing needs and professional space

for adult planning, collaboration, and consultation are integrated into the layout. The only space available to adequately house 50+ staff for professional development is the gymnasium or an off-site location.

The courtyard supports outdoor learning spaces easily accessible from classrooms but can be distracting for spaces located along the courtyard. The playgrounds would be accessible and located closer to the gymnasium and PK dining space.

As this PreK-K new construction alternative does not include consolidation, the school retains its current sense of community.

SITE

This new construction alternative is similar to the PK-K AR.1 alternative in that it includes significant alterations to the 7.5-acre site to centrally locate the new single-story building. The setback from the main road is like previous options though overall safety of Wildwood Street traffic is improved, given the dedicated on-site drop-off/pickup loops for buses and parent vehicles.

This alternative provides a minimum of 60 parking spaces, a dedicated service area, and does not encroach the wetlands buffer. With a retaining wall, emergency access drive around the back of the building improves the safe travel and functionality of the site in this alternative. This drive would limit through traffic during school hours to double as hardscape play area for students; the exception would be emergency vehicles and deliveries may need to be scheduled now that “back of house” functions are located to the rear of the site. The adjacent playgrounds are closer to the youngest students on the north side of the building as well as the gymnasium and dining spaces. Outdoor learning spaces are located within the courtyard.

The site has access to municipal water but anticipated improvements to the service as well as the septic system for compliance with current regulations.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is outside areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This new construction alternative significantly impacts the site.

Same comments as Alternate PK-K R.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

The improved building design and layout would enhance the student, staff, or community experience, and supports separate academic and public use of the building. Additional parking and queuing on site for vehicles are improved. The community sport courts are not replicated on site for after-hours use. The gymnasium with stage adjacent to the courtyard provides a significantly larger assembly space for community use.

SUSTAINABILITY

This alternative with its efficient building plan will meet many sustainability goals set by the Town and District. The building is oriented with classrooms facing northwest or southeast, which will require some control of daylighting. Though maybe not as thermally efficient as a more cubic volume, the donut plan will give great access to much-needed daylight and views. All-new systems will be high efficiency. With the smallest acreage, improvements that require ample site area limit possibilities such as geothermal wells without a substantial impact to upfront costs.

LOGISTICS

This alternative is more favorable than PK-K AR.1 because potential complications with a renovation project is a not an issue.

Overall Project duration: 20 months

CONSOLIDATION

Same comments as Alternate PK-K AR.1.

TIME

Same comments as Alternate PK-K AR.1.

COST

The estimated construction cost for Alternative PK-K N.1 is: $64,185,182 *

The estimated project cost range for Alternative PK-K N.1 is: $79.3 M - $87.6 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

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PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-K

N.1 New Construction @ Wildwood ECC Site

Site Plan

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-K

N.1 New Construction @ Wildwood ECC Site

First Floor

1" = 40'

PK-K N.2 – TOWN HALL SITE, NEW CONSTRUCTION – (130+ STUDENTS)

DESCRIPTION

This alternative explores a new early childhood center for 130+ students at the 19-acre town hall site, centrally located in Wilmington. The smallest grade configuration on the largest site has ample opportunity to achieve all the town and district's goals for site features and potential future expansion.

The existing 20,800 square feet one-story building is demolished to accommodate a new building totaling 66,810 gross square feet.

This concept is organized as a donut shaped plan, similar to other PK-K alternatives but successfully achieves the district's goal of organizing the building into public and private zones and providing greater setback from the main road for safety and security. Core spaces, including administration, medical, gymnasium, cafeteria, kitchen custodial and mechanical spaces, are located closer to the site entry point on the southwest area of the site. Academic wings are organized around a courtyard.

In summary, although this alternative meets the educational program for PreK- K, supports community use of the facility and access to playgrounds and potential fields, and is energy efficient, it did not receive the highest score for PK-K alternatives in the evaluation matrix. The site has restrictions that can potentially lengthen the project completion schedule and impact traffic as the site is centrally located along a main artery in Town.

EVALUATION OF CRITERIA

EDUCATION

This new alternative successfully meets the district's educational program without programmatic and experiential compromises.

The academic wings are organized along a main street with embedded extended learning for Pre-Kindergarten. The northern academic wing contains extended learning areas shared between each set of kindergarten classrooms. Classroom sections are integrated with special education and small group spaces. Dedicated art and music spaces and the media center connect the two classroom wings, minimizing travel for students.

The layout of the dining space provides options to serve a neurodiverse student population and easy access to the courtyard or open green space northwest of the building. This is the only PK-K option that accomplishes the stage between the dining and gymnasium space for access from either space.

The courtyard supports outdoor learning spaces easily accessible from classrooms but can be distracting for spaces located along the courtyard. The playgrounds would be accessible and located closer to the academic wings but are on the opposite end of the building from gymnasium and cafeteria spaces.

Sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The gymnasium or cafeteria space are available to house 50+ staff for professional development.

SITE

This new construction alternative is located centrally within Wilmington along a major artery that has generated some concern from the community. A traffic study would be required to ascertain impact to the immediate area if a school was located at this site. The 19-acre site has only one access point from Glen Road, but there is ample space within the site to circulate vehicular traffic to reduce back-up during peak times. A second emergency access point is located along the eastern property line connecting through a residential neighborhood. The building is located on the western portion of the site to reduce site impact to wooded areas on the opposite end of the site.

This alternative provides the ideal 100 parking spaces, a dedicated service area and has access to municipal infrastructure for both water and sewer. The drive around the building provides safe travel and functionality of the site. This drive would be limited to through traffic during school hours to double as a hardscape play area for students; the exception would be emergency vehicles. The adjacent playgrounds are located northeast of the building, closer to community sports courts and potential fields.

Although the building and site encroach on the existing Cushing Field, the sizable northeastern area beyond the building could be utilized to replicate fields if desired. An alternative is relocating fields to the Wildwood site which is unoccupied.

Any future growth would require modification of site design and amenities if building expansion was warranted.

This location is within an area of higher student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This centrally located site borders wetlands, Lubbers brook, and wooded area to the northwest.

The site must comply with the requirements for Municipal Open Space designation (designation on all sites under consideration) and wetland permitting if encroaching the buffer zone. The site

must also comply with Article 97 designation. Refer to Section 3.1.5, Site Development Requirements.

The site is centrally located and would restrict future community use by the Town if an educational facility is located on the site.

COMMUNITY

This new construction alternative supports an improved building design and layout that would enhance the student, staff, or community experience, and support separate academic and public use of the building. Ample area to provide community recreation features including sport courts and fields adjacent to parking and playgrounds for after-hours use are positive attributes to this location. The gymnasium and cafeteria spaces, both with stage access, provide options for larger assemblies by the community centrally located within town.

SUSTAINABILITY

This alternative is similar to PK-K N.1.

Systems utilizing geothermal wells and other site opportunities can more easily be explored at the Town Hall site due to the sizeable land available.

LOGISTICS

This alternative is similar to PK-K N.1.

Overall Project duration: 22 months

CONSOLIDATION

This alternative is similar to PK-K N.1.

TIME

Same comments as Alternate PK-K AR.1.

COST

The estimated construction cost for Alternative PK-K N.2 is: $64,842,724 *

The estimated project cost range for Alternative PK-K N.2 is: $80.0 M - $88.5 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-K

N.2 New Construction @ Town Hall Site

Site Plan

1" = 40'

N.2 New Construction @ Town Hall Site

First Floor

PK-K

1" = 40'

Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-3 R.1 – REPAIR-ONLY (CIP) WOBURN STREET SITE

DESCRIPTION

The scope of work identified in this base repair and code upgrade alternative does not address enrollment, educational program needs, nor site circulation improvements. The existing three-story building remains at 53,771 square feet.

The scope of work identified in this base repair only alternative is similar to alternative PK-K R.1, and will address deficiencies as it relates to code compliance for accessibility, energy, life safety, kitchen, and building systems.

In terms of scope, this alternative assumes that the existing school populations stay where they are, but to make an apples-to-apples comparison to the costs of the add-reno and new construction alternatives, combine base repair costs for both Wildwood ECC and Woburn Street Schools to represent serving the 510+ student agreed-upon enrollment—greater than the capacity of either school building by itself.

In summary, this Alternative does not meet the requirements of the Educational Plan drafted by Wilmington Public Schools for this project. It scored the lowest on the Evaluation Matrix and should be viewed as a comparator to which other Alternatives can be measured.

EVALUATION OF CRITERIA

EDUCATION

Although the building would be repaired to extend the life of the building, no spatial improvements are included to support the District's Educational Plan for PK-3 students. The capacity required exceeds the ability of the existing building itself.

SITE CRITERIA

A base repair (CIP) alternative does not include major alterations to the site, except to provide accessible parking and improve accessible routes to the main entrance and around the site. Municipal infrastructure is available but would include improvements to the service as well as the septic system for compliance with current regulations.

The Woburn Street site is a 10-acre with significant grade change creating circulation and accessibility challenges. The school would continue access from High Street. Buses servicing Woburn Street students circulate through the front bus loop at the main entrance. Cars would continue to circulate through the active parking lot. Parking on site would be inadequate when all staff are present. There is a continuous paved access road with parking around the building.

The building is situated near the front property line, separated from the street mainly by the bus

loop. The playground is located behind the building but not accessible due to the steep grade change on the southwest section of the site. The playground and fields require crossing parking areas to access. There is quality green space via fields along the entire western half of the property. The community utilizes sport courts located along the northern edge of the property.

A base repair-only project would not impact steep slopes or require additional retaining walls except when it relates to accessibility. Any future growth would compromise site design and amenities if building expansion was warranted.

This location is located within an area of higher student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

A base repair alternative does not include major alterations and maintains the status quo of functionality for the building and site. The Woburn Street site must comply with the requirements for Municipal Open Space designation (designation on all sites under consideration), and Wellhead Protection Zone across a portion of the northern half of the site. Refer to Section 3.1.5, Site Development Requirements.

The site is not centrally located in the Town of Wilmington and would continue to serve as an educational facility for the community.

COMMUNITY

A base repair (CIP) alternative does not support an improved building design or layout that would enhance the student, staff, or community experience. There are no improvements to safety as it relates to increased distance from the street and improved sight distance or additional queuing on site for vehicles. Likewise, as a base repair alternative, there are no improvements to support a better assembly space for community use, and there are no additions to on-site recreational areas or playgrounds beyond accessibility improvements.

SUSTAINABILITY

Because of the essential nature of this “base repair” alternative, it does not include many types of upgrades associated with a modern energy-efficient building, improvements to interior environments, or provision of natural light and views for all regularly occupied spaces. Solar orientation is not ideal with the existing north-south building configuration. All classrooms have the potential for views outside with glazing replacement, but some interior administrative spaces are internal and would require reconfiguration. Significant grade changes at this site may limit features without a significant cost impact. This base repair alternative would pose significant challenges and require additional scope and considerable cost to support the sustainability goals set by the Town

and District.

LOGISTICS

The cost of this alternative assumes that the construction would be completed in several phases while students continue to occupy the existing building. It assumes the need to lease of modular swing space (six (6) classrooms plus toilet facilities) for phased, occupied construction over 2 years. Remaining work to be completed over 2 summers and vacation weeks. This poses a significant, prolonged disruption to students, parents, and faculty as well as being a burdensome cost. Even with best practices, disruption from noise, dust, and construction traffic would be extensive. Managing temporary corridors, site logistics, and construction laydown space with the need for parking and outdoor play would be very difficult. Asbestos abatement would be required throughout the construction process. Scheduling the work over multiple summer seasons is required and would extend project duration and increase project costs—these items are included in the cost estimates.

Overall Project duration: 32 months, non-continuous

CONSOLIDATION

This alternative does not address the needs of PK-K and Grades 4-5 students within the student catchment area.

TIME

This alternative includes only one school and would require multiple capital projects over several to accomplish the renovations and additions necessary to meet the goals set forth in this project for all PK-5 students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-3 R.1 is:

$29,412,531 *

The estimated project cost range for Alternative PK-3 R.1 is:

$36.3.0 M - $40.1 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes. The estimated project cost range includes an allowance for (6) temporary modular classrooms to be used as swing space while

portions of the building are undergoing renovation.

NOTE: There are no building or site drawings for this Alternative, but the Capital Improvement Plan is included in the Cost Estimates in Appendix X.16.

ADDITIONS + RENOVATIONS TO WOBURN STREET SCHOOL

PK-3 AR.1 (510+ STUDENTS) AND PK-5 AR.2 (755+ STUDENTS)

DESCRIPTION

The goal of the alternatives at Woburn street is to align, to the fullest extent possible, renovations and additions with the entirety of the educational program for a larger student population.

For the PK-3 grade configuration a new two-story academic and 6,000 square foot gymnasium addition will be constructed west of the existing building while the lower level of the 1968 building is renovated into new mechanical/electrical plant and maintenance areas. For the PK-5 grade configuration a new three-story academic and 12,000 square foot gymnasium addition will be constructed west of the existing building to accommodate 2 more grade levels.

Once completed, Woburn Street students and staff will occupy the additions for the demolition and renovation of the existing building to occur. Spaces will require reconfiguration to accommodate: Administration, Cafeteria and kitchen are proposed on the main level; Media Center, Art, Music, STEM, and PT spaces will be housed on the upper level.

Site work would occur in phases. Site circulation and parking would be improved with separate on-site parent and bus drop-offs. Multiple accessible age-appropriate playgrounds, outdoor learning and dedicated PK entry are included. Once site work is completed, the remaining grades can relocate to the Woburn Street site.

The existing three-story building is 53,771 square feet. This option results in 6,419 square feet of demolition, 47,352 square feet of renovation and 69,966 square feet of additions, for a gross square foot total of 117,318 square feet for the PK-3 option. The PreK-5 alternative has 3,917 square feet of demolition, 49,854 square feet of renovation and 118,001 square feet of additions, for a gross square foot total of 167,855 square feet.

In summary, these Alternatives are feasible, however scored lower on the evaluation matrix than similar options on larger sites as the phasing is more complicated on an occupied site with several site constraints, especially for the larger PK-5 population.

EVALUATION OF CRITERIA

EDUCATION

This addition and renovation alternative meets the district's educational program. Some programmatic and experiential compromises still exist, including:

- At this early conceptual level, it is difficult to foresee how new spaces will fit into the existing building, and there may be cases where the renovated environment is inferior to the new addition, or it entails compromises in the physical plant or layout.

The academic areas are organized around extended learning areas and classroom sections are integrated with special education and small group spaces. This organization meets the educational program requirements.

Dedicated art, music, and media center are located on the upper level in the PK-3 and are not within close proximity to younger students. Administration, cafeteria, and stage are located in closer proximity on the main renovated level. The Gymnasium is accessed from the lower level for closer proximity to younger students and outdoor play areas in both options.

Sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The gymnasium or cafeteria can house staff for professional development.

Consolidation to PK- 3 or PK-5 expands the sense of community with more time to build relationships and reduce one or both transitions during the elementary years.

SITE

As an addition-renovation alternative, significant alterations to the 10- acre site are required to accommodate a three-story building more than twice the size of the existing structure. The site has its highest elevation on the east side of the site, with grade sloping -25 feet towards the west property line. This grade change is utilized so the building appears to be two stories from the street; the lower level is only visible from the west. To accommodate the larger footprint, parking and circulation around the perimeter, significant retaining wall is planned.

Overall safety of Wildwood Street traffic is improved given the dedicated on-site drop-off/pickup loops for buses and parent vehicles. This alternative can provide the ideal 150 parking spaces on site for PK-3. However, this meets the minimum parking needs for a PK-5 configuration. The adjacent playgrounds are closer to the youngest students on the north side of the building. The relationship between the play area and gymnasium is also improved.

The site has access to municipal water but anticipated improvements to the service as well as the septic system for compliance with regulations for the larger enrollments.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is in an area of high student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This renovation and additions alternative significantly impacts the site.

Same comments as PK-3 R.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

An addition and renovation alternative supports an improved building design and layout that would enhance the student, staff, or community experience, and supports separate academic and public use of the building. Ample parking and queuing on site for vehicles are improved. The community sport courts and fields are not replicated on site for after-hours use due to site constraints. The gymnasium and cafeteria with stage both provide significantly larger assembly spaces for community use.

SUSTAINABILITY

This addition and renovation alternative can meet many sustainability goals set by the Town and District. The building is oriented with most classrooms oriented north-south, which will require control of daylighting. Although the footprint may not be as thermally efficient as other configurations, the plan provides daylight and views for all spaces.

LOGISTICS

The Woburn site is currently occupied and would require phasing, relocation, and disruption of students in Grades 1-3 during construction. Neighbors may be impacted with noise and dust and have limited or no access to community courts during construction.

1. Construct new 2 story additions west of existing building. Significant grading around building, with site retaining wall 800+ LF
2. Renovate Basement area below existing Gym for new Mechanical/Electrical plant, and Back of House service areas +-5,000 SF.
3. Construct new septic system. Sizing: PK-3: 5,856 gpd = 11,100 SF leaching area; PK-5: 8,208 gpd = 15,486 SF leaching area
4. Move Grades 1-3 into new additions.
5. Interior selective demolition of remaining existing building space. Remove all partitions, services, etc. down to structure, roof deck, exterior walls, slabs:
6. Heavy Renovation of existing space into new program areas. Add insulation and new fenestration to envelope as per New Construction R- and U-values. Stitch together new and existing areas. Connect and operate MEP/FP systems from new plant.

7. Complete site work, parking, drives, playgrounds, landscaping, signage, pavement markings, etc. Significant grading, cut & fill activities.
8. Remaining grades to occupy building once site work is complete.

Overall Project duration: 36 months

CONSOLIDATION

The PK-3 alternative consolidates two schools and does not impact the remaining students in Grades 4-5 in the catchment area under consideration.

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-3 alternative does not address the needs of students at North intermediate and would require one additional capital project to accomplish alternations necessary to meet the goals set forth in this project for students in the catchment area under consideration.

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-3 AR.1 is:

$109,338,459 *

The estimated project cost range for Alternative PK-3 AR.1 is:

$135.0 M - $149.2 M *

The estimated construction cost for Alternative PK-5 AR.2 is:

$152,944,156 *

The estimated project cost range for Alternative PK-5 AR.2 is:

$188.9 M - $208.8 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

1" = 40'

AR.1 Add/Reno @ Woburn Street Site

PK-3rd

Site Plan

Special Note: This illustrations depicts the main level for the public elements which are proposed to be at grade to the east AND the lower level for the academic elements which are proposed to be at grade to the west. Please refer to floor plans for more information.

PK-3rd

AR.1 Add/Reno @ Woburn Street Site

Lower Level

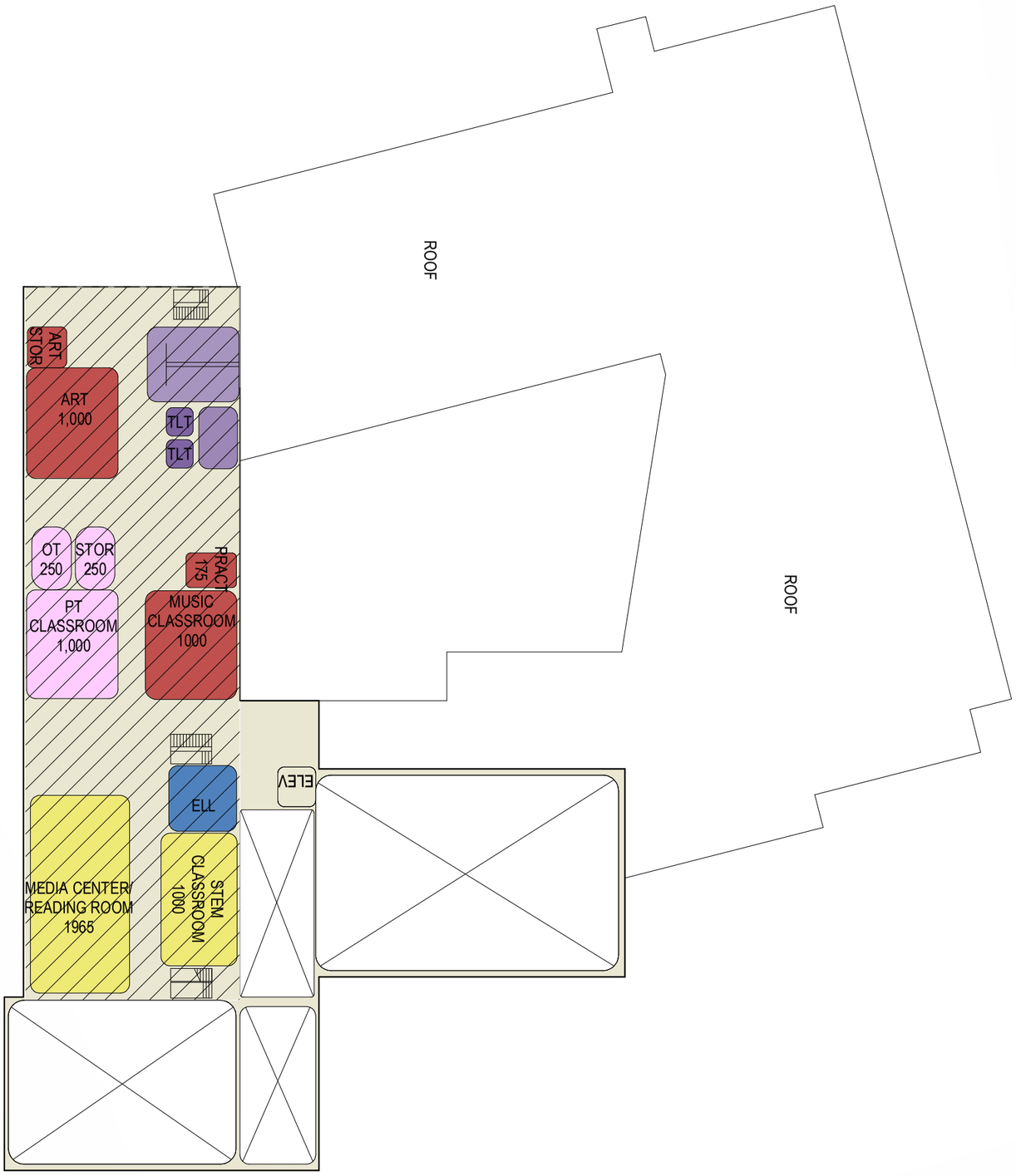
1" = 40'

PK-3rd

AR.1 Add/Reno @ Woburn Street Site

First Floor

1" = 40'



N

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-3rd

AR.1 Add/Reno @ Woburn Street Site

Second Floor

1" = 40'

Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

1" = 40'

AR.2 Add/Reno @ Woburn Street Site

PK-5th

Site Plan

Special Note: This illustrations depicts the main level for the public elements which are proposed to be at grade to the east AND the lower level for the academic elements which are proposed to be at grade to the west. Please refer to floor plans for more information.

PK-5th

AR.2 Add/Reno @ Woburn Street Site

Lower Level

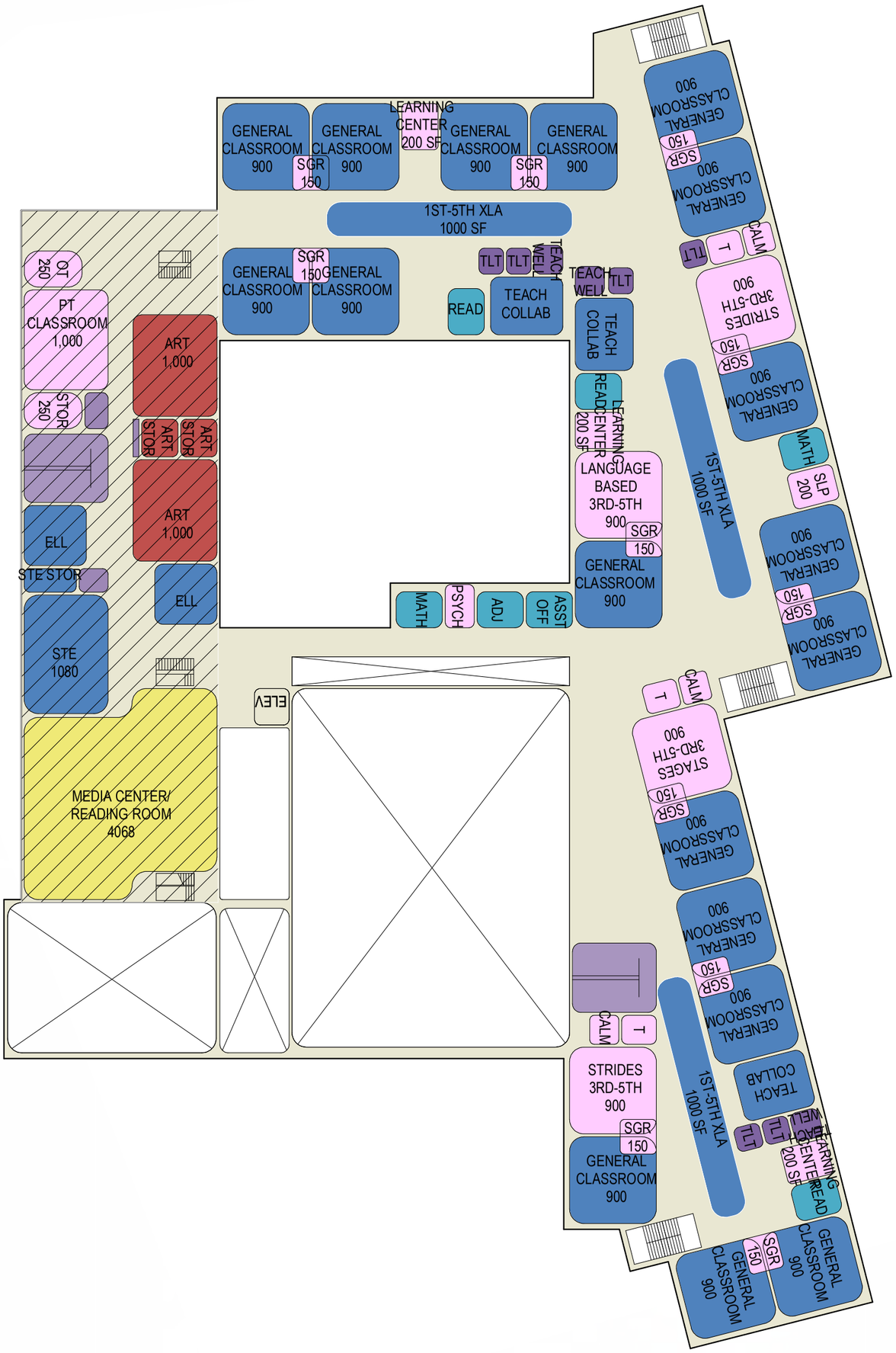
1" = 40'

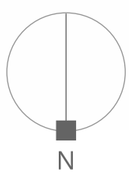
PK-5th

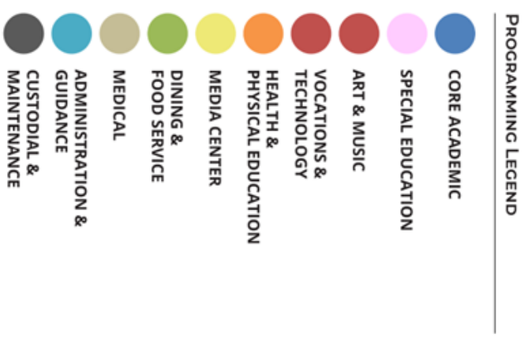
AR.2 Add/Reno @ Woburn Street Site

First Floor

1" = 40'







PK-5th

AR.2 Add/Reno @ Woburn Street Site

Second Floor

1" = 40'

ADDITIONS + RENOVATIONS TO WILDWOOD EARLY CHILDHOOD CENTER

PK-3 AR.2 (510+ STUDENTS) AND PK-5 AR.3 (755+ STUDENTS)

DESCRIPTION

The goal of the alternatives is to test fit the larger PK-3 and PK-5 populations on the smallest site while aligning, to the fullest extent possible, renovations and additions with the entirety of the educational program. Demolition of the north classroom wing would make way for a three-story addition. The existing core area and south classroom wing entails reconfiguration of interior walls to accommodate change of function and extensive renovations. Along with repurposed spaces, additions to the east of the existing building would be developed to meet the District's educational goals and programmatic needs. No phasing is required as the site is unoccupied.

The existing one-story building is 29,302 square feet. The PK-3 option results in 10,593 square feet of demolition, 18,709 square feet of renovation and 98,609 square feet of additions, for a gross square foot total of 117,318 square feet. The PK-5 option results in 10,593 square feet of demolition, 18,709 square feet of renovation and 149,146 square feet of additions, for a gross square foot total of 167,855 square feet.

Administration, medical, kitchen, boiler room, electrical rooms, and much of the custodial and storage program would be accommodated in the existing shell of the building. An internal gymnasium, cafeteria and shared stage are centrally located and minimize travel distance for students. Art and Music, and the kitchen are located on either side. The new two or three story academic wings will extend northeast from the centralized core spaces.

Site work would occur simultaneously. Site circulation and parking would be improved with on-site parent and bus drop-offs. A significant retaining wall would be required to support the building additions and fire access lane. Accessible age-appropriate playgrounds are located north and east of the site. Outdoor learning space is possible but not yet identified as the site has limited open area available due to the increase in on-site parking.

In summary, these alternatives are feasible however scored lower on the evaluation matrix largely due to limitations of available site area for development.

EVALUATION OF CRITERIA

EDUCATION

The academic wings contains multiple extended learning areas and classroom sections are integrated with special education and small group spaces. Grade levels are grouped to provide options for expansion of a grade in a bubble year.

Dedicated art, music, and core spaces are centrally located, minimizing travel for students. The layout of the dining spaces provides options to serve a neurodiverse student population.

Some programmatic and experiential compromises still exist, including:

- The gymnasium and cafeteria are located internally, with limited options for natural light.
- At this early conceptual level, it is difficult to foresee how new spaces will fit into the existing building, and there may be cases where the renovated environment is inferior to the new addition, or it entails compromises in the physical plant or layout.

Sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. Professional development can be supported in the Gymnasium or cafeteria.

The playgrounds would be accessible and located closer to the gymnasium and cafeteria spaces.

Consolidation of PreK- K and Grades 1-3 with this option expands a sense of community with more time to build relationships and reduce a transition during the elementary years.

SITE

As an addition-renovation alternative, significant alterations to the 7.5 acre site are required to accommodate a centrally located three-story building more than four times the size of the existing structure. To accommodate the larger footprint and emergency access drive around the perimeter, a significant 1,200+ linear foot retaining wall is planned.

The on-site drop-off/pickup loops for buses and parent vehicles are provided on site. This alternative provides sufficient parking spaces, a dedicated service area, and does not encroach the wetlands buffer to the north. With a retaining wall, emergency access drive around the back of the building improves the safe travel and functionality of the site in this alternative. The adjacent playgrounds are closer to the youngest students on the north side of the building. The relationship between the play area and gymnasium and cafeteria are also improved.

The site has access to municipal water but anticipated improvements to the service as well as the septic system for compliance with current regulations to comply for the larger enrollment.

Any future growth would compromise site design and amenities if building expansion was

warranted.

This location is outside areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This renovation and additions alternative significantly impacts the site.

Same comments as Alternate PK-K AR.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

This addition and renovation alternative enhances the student, staff, or community experience, and supports separate academic and public use of the building. Parking and queuing on site for vehicles are improved. The community sport courts are not replicated on site for after-hours use. The gymnasium and cafeteria with shared stage provides assembly space options for community use.

SUSTAINABILITY

Same as PK-3 AR.1

LOGISTICS

Wildwood site is currently unoccupied and would not require phasing, relocation, or disruption of students during construction as students are already relocated. Neighbors may be impacted with noise and dust and have limited or no access to community courts during construction.

1. Demolish +- 10,593 SF classroom addition on northeast end of existing building.
2. Interior selective demolition of remaining existing building space. Remove all partitions, services, etc. down to structure, roof deck, exterior walls, slabs: 18,709 SF.
3. Construct new 2 story additions 98,609 SF, west of existing building. Significant grading around building, with site retaining wall 1,198 LF
4. Construct new septic system. Sizing: PK-3: 5,856 gpd = 11,100 SF leaching area. Price “bio-clear units” for treatment.

5. Heavy Renovation of existing space into new program areas: 18,709 SF. Add insulation and new fenestration to envelope as per New Construction R- and U-values. Stitch together new and existing areas. Connect and operate MEP FP systems from new plant.

6. Complete site work, parking, drives, playgrounds, landscaping, signage, pavement markings, etc. Significant grading, cut & fill activities.

Overall Project duration: 24 months

CONSOLIDATION

The PK-3 alternative consolidates two schools and does not impact the remaining students in Grades 4-5 in the catchment area under consideration.

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-3 alternative does not address the needs of students at North intermediate and would require one additional capital project to accomplish alternations necessary to meet the goals set forth in this project for students in the catchment area under consideration.

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

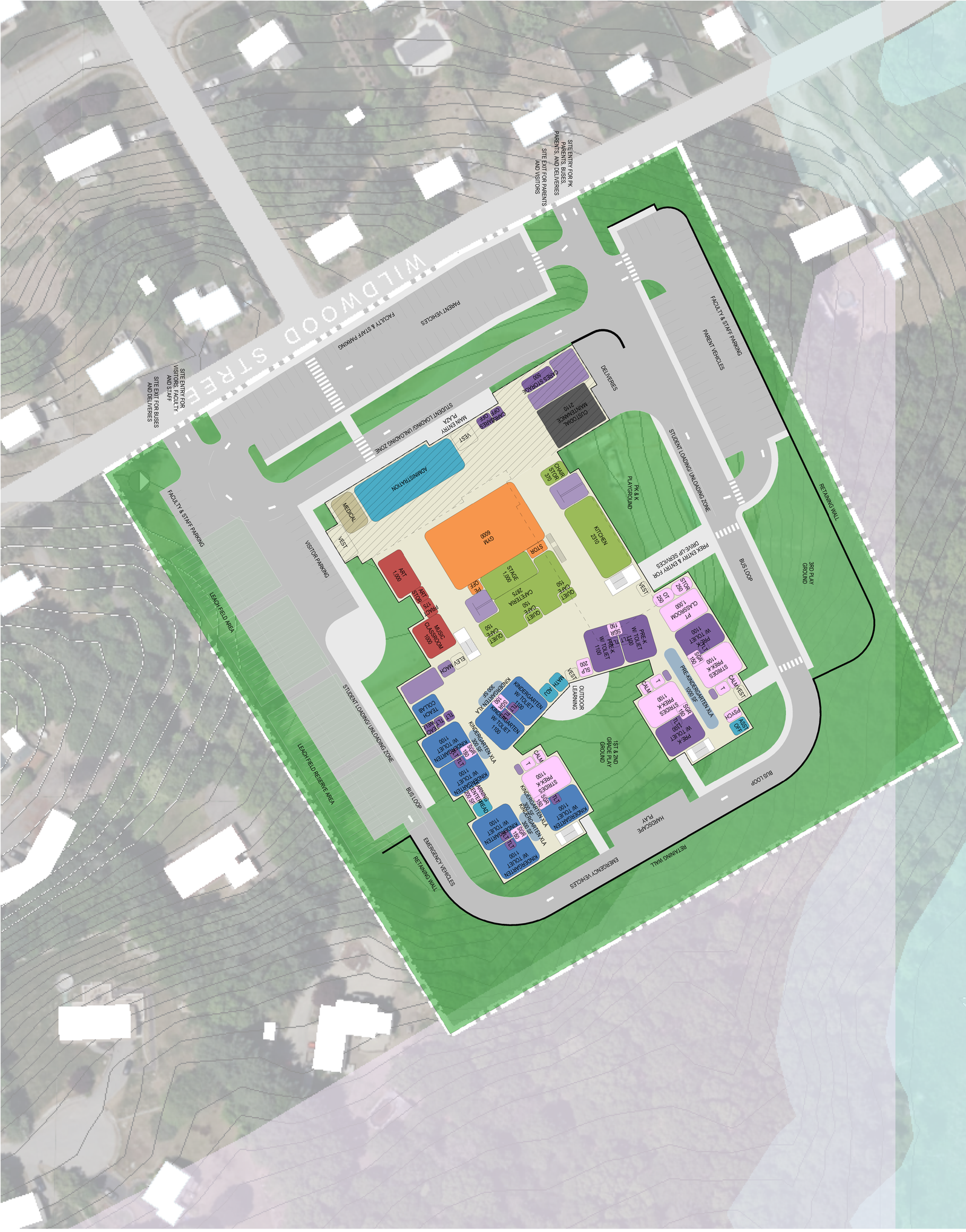
The estimated construction cost for Alternative PK-3 AR.2 is: $105,399,486 *

The estimated project cost range for Alternative PK-3 AR.2 is: $130.1 M - $143.9 M *

The estimated construction cost for Alternative PK-5 AR.3 is: $152,365,605 *

The estimated project cost range for Alternative PK-5 AR.3 is: $188.2 M - $208.0 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.


WILDWOOD STREET
SITE ENTRY FOR PK PARENTS, BUSES, PARENTS, AND DELIVERIES
SITE EXIT FOR PARENTS AND VISITORS
SITE ENTRY FOR VISITORS, FACULTY AND STAFF
SITE EXIT FOR BUSES AND DELIVERIES
FACULTY & STAFF PARKING
PARENT VEHICLES
DELIVERIES
FACULTY & STAFF PARKING
PARENT VEHICLES
STUDENT LOADING/UNLOADING ZONE
MAIN ENTRY PLAZA
VEST
ADMINISTRATION
MEDICAL
VEST
VISITOR PARKING
FACULTY & STAFF PARKING
LEACH FIELD AREA
LEACH FIELD RESERVE AREA
STUDENT LOADING/UNLOADING ZONE
BUS LOOP
EMERGENCY VEHICLES
RETAINING WALL
MASONRY PLAY
RETAINING WALL
BUS LOOP
STUDENT LOADING/UNLOADING ZONE
PARENT ENTRY & ENTRY FOR DROP-UP SERVICES
BUS LOOP
RETAINING WALL
3RD PLAY GROUND
1ST & 2ND GRADE PLAY GROUND
PK & K PLAYGROUND
OUTDOOR LEARNING
CUSTODIAL MAINTENANCE 2170
KITCHEN 2240
STAIR STOR
STOR
GYM 6500
ART 1,000
MUSIC CLASSROOM 1000
CAFETERIA 2875
STAGE 1,000
QUIET CARE 150
QUIET CARE 150
QUIET CARE 150
KINDERGARTEN W TOILET 1100
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PRE-K W TOILET 1100
STROLLER PARK 1100
PSYCH
CALM
CALM
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TEACH COUNS
ELEV
MAIN
KID
SLP
SLP
SLP

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-3rd

AR.2 Add/Reno @ Wildwood ECC Site

First Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

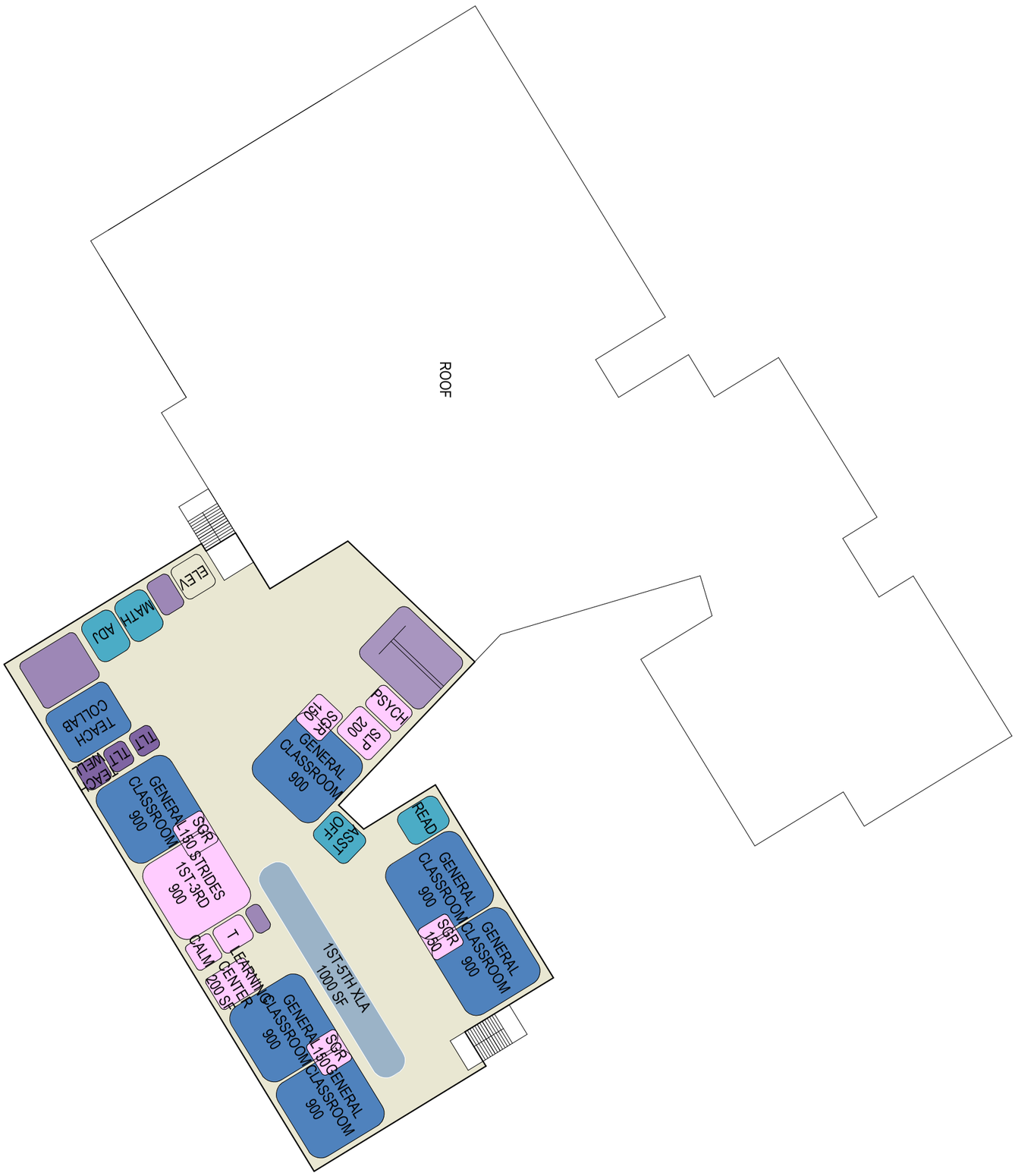
N

PK-3rd

AR.2 Add/Reno @ Wildwood ECC Site

Second Floor

1" = 40'



PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

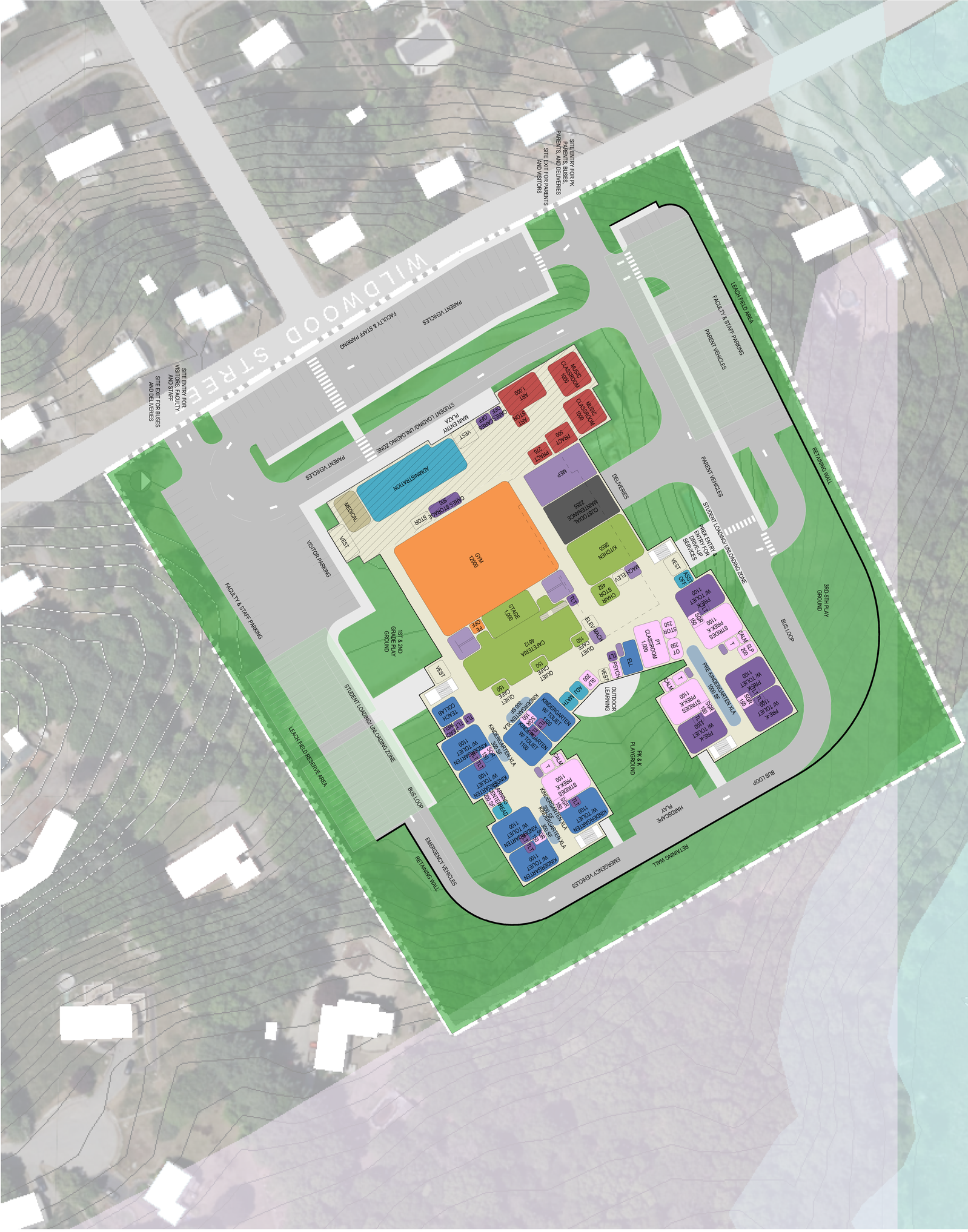
N

PK-3rd

AR.2 Add/Reno @ Wildwood ECC Site

Third Floor

1" = 40'



PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5

AR.3 Add/Reno @ Wildwood ECC Site

Site Plan

1" = 40'

PK-5th

AR.3 Add/Reno @ Wildwood ECC Site

First Floor

1" = 40'

PK-5th

AR.3 Add/Reno @ Wildwood ECC Site

Second Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

AR.3 Add/Reno @ Wildwood ECC Site

Second Floor

1" = 40'

NEW CONSTRUCTION AT WOBURN STREET SITE

PK-3 N.1 – (510+ STUDENTS) AND PK-5 N.2 (755+ STUDENTS)

DESCRIPTION

Alternatives PK-3 N.1 and PK-5 N.2 explore new construction of approximately 117,318 and 167,855 respectively on the Woburn Street site.

The configuration of the building supports public use, locating the gymnasium and cafeteria "up front" with a shared stage. Administration and Medical are adjacent to the main entrance. Multi-story academic wings are organized to achieve ideal programmatic adjacencies and can be secured during community use. This organization supports the district's goals for public and private zones.

The PK-5 alternative requires demolition of the existing gymnasium to support construction of the public zone which includes the larger 12,000 square foot gymnasium. The PK-3 option has the 6,000 square foot gymnasium and does not require early demolition of the existing building.

In summary, this alternative meets the educational program for PreK-3 and PK-5, improves traffic conditions, supports community use of the facility and site, and is energy efficient. PK-3 N.1 scored highest for PK-3 alternatives in the evaluation matrix. PK-5 N.2 scored second highest for PK-5 alternatives.

EVALUATION OF CRITERIA

EDUCATION

Academic wing are organized around central extended learning zones. The Kindergarten academic wing contains multiple extended learning areas shared between two classrooms. Classroom sections are integrated with special education and small group spaces for all grades. The Prekindergarten and kindergarten wings are located on a lower-level from the core spaces including administration, medical, gymnasium, and music.

A dedicated art classroom is located off the PreK wing; music and core spaces are positioned in the public zone but all specials are organized to minimizing travel for students. The layout of the cafeteria provides options to serve a neurodiverse student population.

Space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, development and consultation are integrated into the layout.

Grades are grouped to retain a small school feel. Transitions to a new school are reduced or eliminated completely in the elementary years with consolidation alternatives, sparking opportunity to embrace the larger community and cultivate relationships.

SITE

This new construction alternative includes significant alterations to the 10-acre site, locating the building to the north. This maintains the southern half of the site for open space and parking. Overall safety of High Street and Woburn Street traffic is improved, given the dedicated on-site drop-off/pickup loops for buses and parent vehicles, including dedicated Pre-Kindergarten drop off zone. This alternative provides sufficient parking spaces with a main parking lot where the existing building currently stands.

Retaining walls supports the emergency access drive around the back of the building, resulting in safe travel in this alternative. Due to the steep grade change from east to west, another retaining wall improves functionality of the site separating parking to the east from playgrounds and open space to the west.

A shaded hardscape area adjacent to the emergency drive is shaded by a classroom wing that extends west over the drive. The courtyard supports outdoor learning spaces and is easily accessible from classrooms but can be distracting for spaces located along the courtyard. Age-appropriate and accessible playgrounds are situated south of the new building closest to the Prekindergarten wing and within proximity of the gymnasium and cafeteria.

The site has access to municipal water but anticipated improvements to the service as well as the septic system for compliance with current regulations for the increased population.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is with areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This new construction alternative significantly impacts the site.

Same comments as Alternate PK-3 AR.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

The improved building design and layout would enhance the student, staff, or community experience, and supports separate academic and public use of the building. Additional parking and queuing on site for vehicles are improved. The community sport courts are not yet replicated on site for after-hours use. The gymnasium with stage adjacent to the cafeteria provide significantly

larger assembly spaces for community use.

SUSTAINABILITY

New construction options have the highest potential to meet the sustainability goals for the project, with full energy code compliance, including the exterior envelope and infrastructure systems.

Academic wings are also oriented east-west to maximize daylighting opportunities.

LOGISTICS

This new alternative is more favorable than PK-3 AR.1 because of the potential complications with phasing a renovation project. Site circulation during construction will be challenging.

1. Begin site work along south and southwest area of site to provide temporary additional parking and circulation loop. Work would include demo of existing playground and construction of +-500 LF retaining wall.

2. Construct new multi-story building. For PK-3 options construction is very close to the existing building, +-15' – 40' at closest. Demolition of the existing gymnasium required for new PK-5 construction. Complete site work at north and northwest areas of site, including site retaining wall of +- 507 LF

7. Construct new septic system. Sizing: PK-3: 5,856 gpd = 11,100 SF leaching area or PK-5: 8,208 gpd = 15,486 SF leaching area

8. Grades 1-3 occupy new building.

9. Demolish old Woburn Street School, 53,771 SF.

10. Complete remaining site work, parking, drives, playgrounds, landscaping, signage, pavement markings, etc. and grading activities.

Overall Project duration: 33 months (+3 months for gymnasium demolition)

CONSOLIDATION

The PK-3 alternative consolidates two schools and does not impact the remaining students in Grades 4-5 in the catchment area under consideration.

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-3 alternative does not address the needs of students at North intermediate and would require one additional capital project to accomplish alternations necessary to meet the goals set forth in this project for students in the catchment area under consideration.

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-3 N.1 is:

$109,873,045 *

The estimated project cost range for Alternative PK-3 N.1 is:

$135.7 M - $150.0 M *

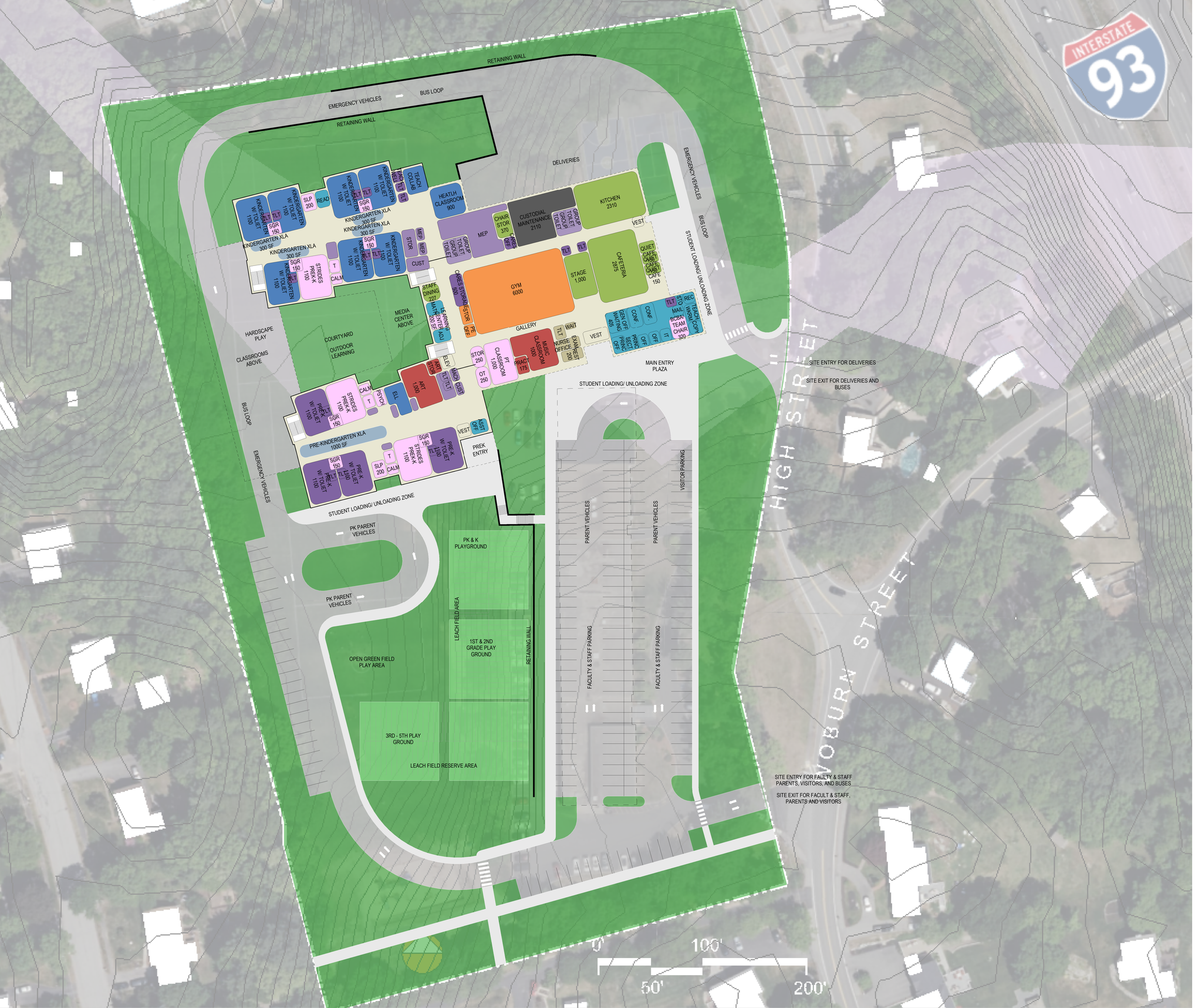
The estimated construction cost for Alternative PK-5 N.2 is:

$157,127,753 *

The estimated project cost range for Alternative PK-5 N.2 is:

$188.1 M - $208.0 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.



Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

1" = 40'

N.1 New Construction @ Woburn Street Site

Site Plan

PK-3rd

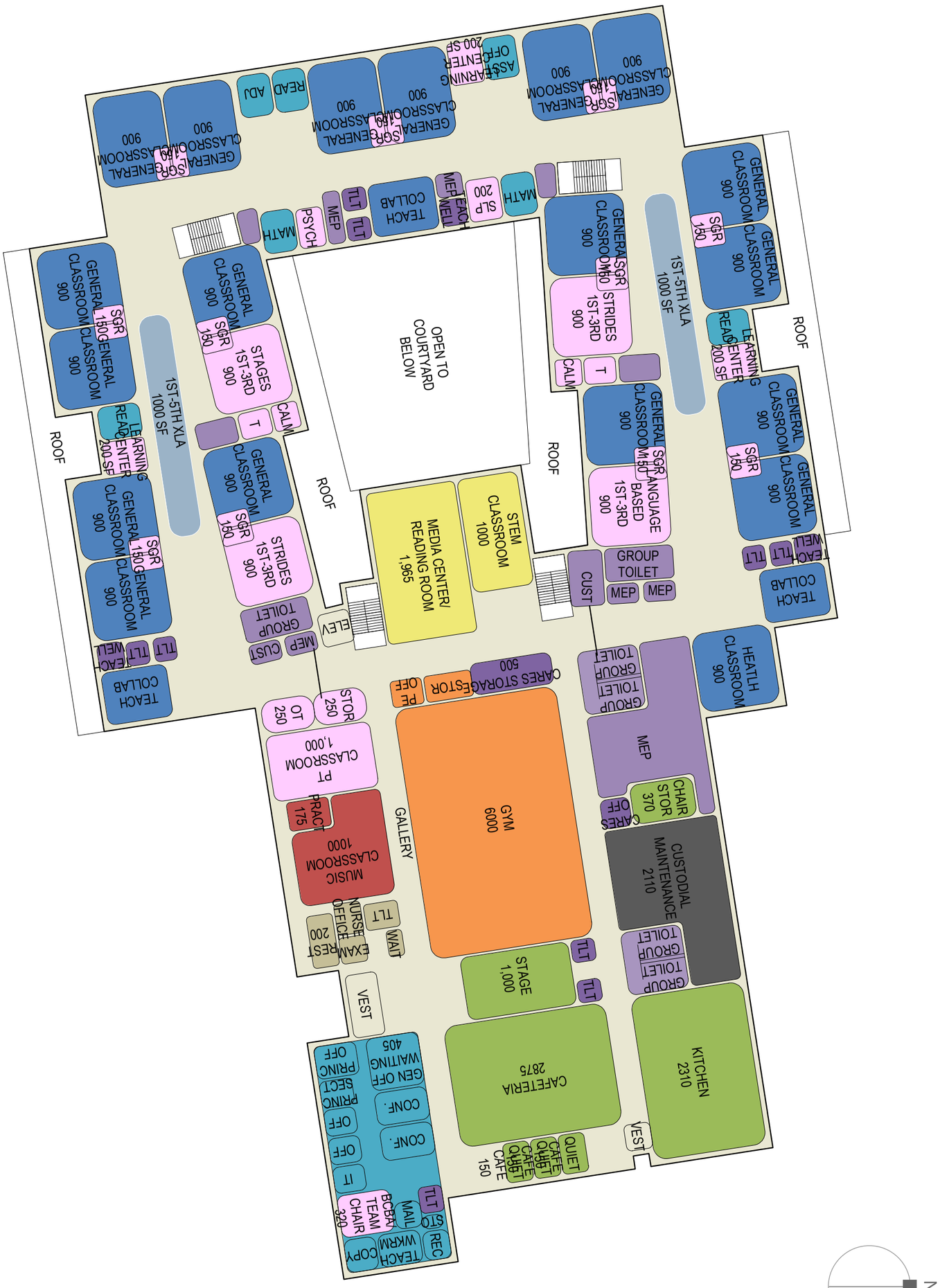
Special Note: This illustrations depicts the main level for the public elements which are proposed to be at grade to the east AND the lower level for the academic elements which are proposed to be at grade to the west. Please refer to floor plans for more information.

PK-3rd

N.1 New Construction @ Woburn Street Site

Lower Level

1" = 40'

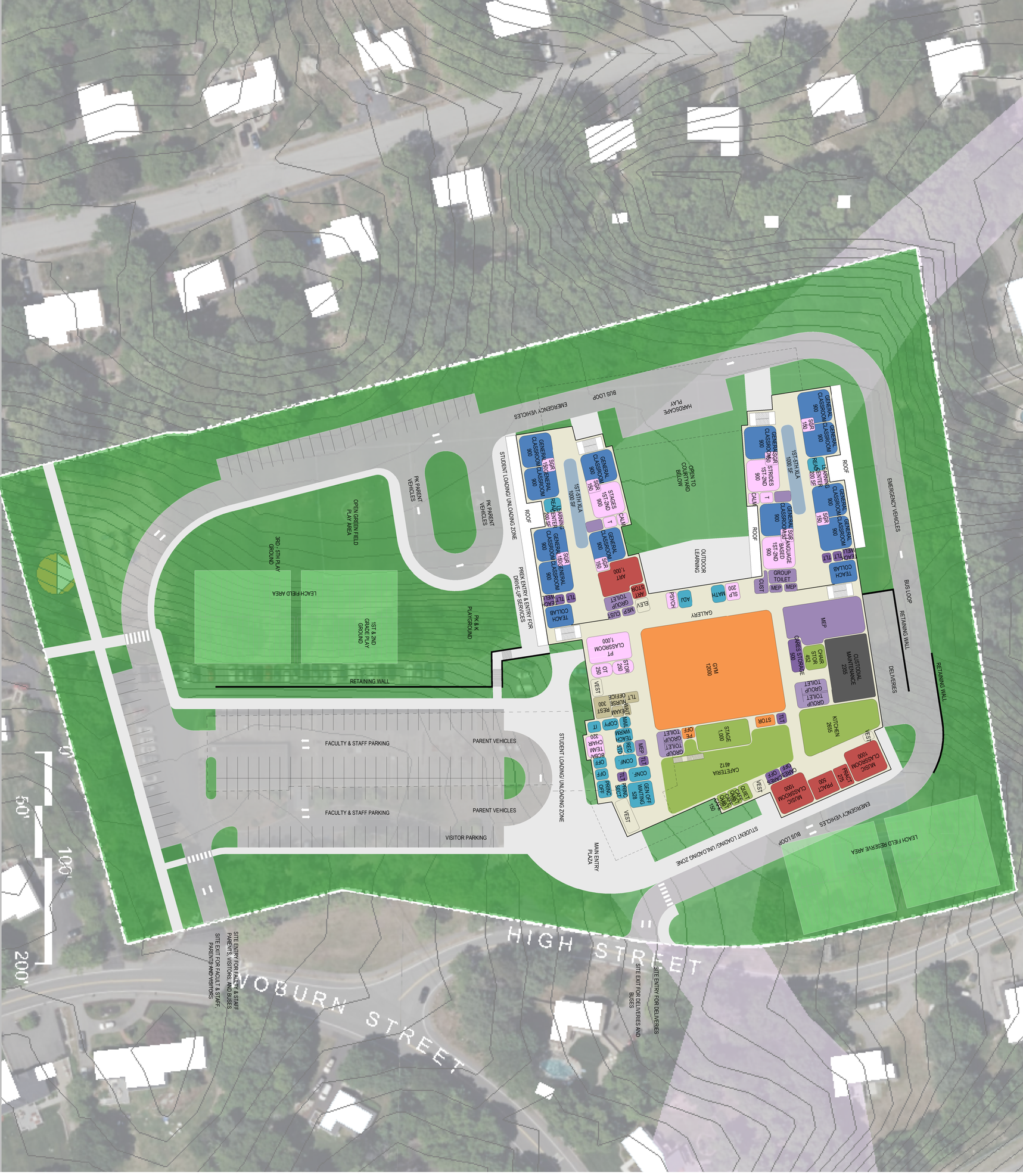


PK-3rd

N.1 New Construction @ Woburn Street Site

Main Level

1" = 40'



PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

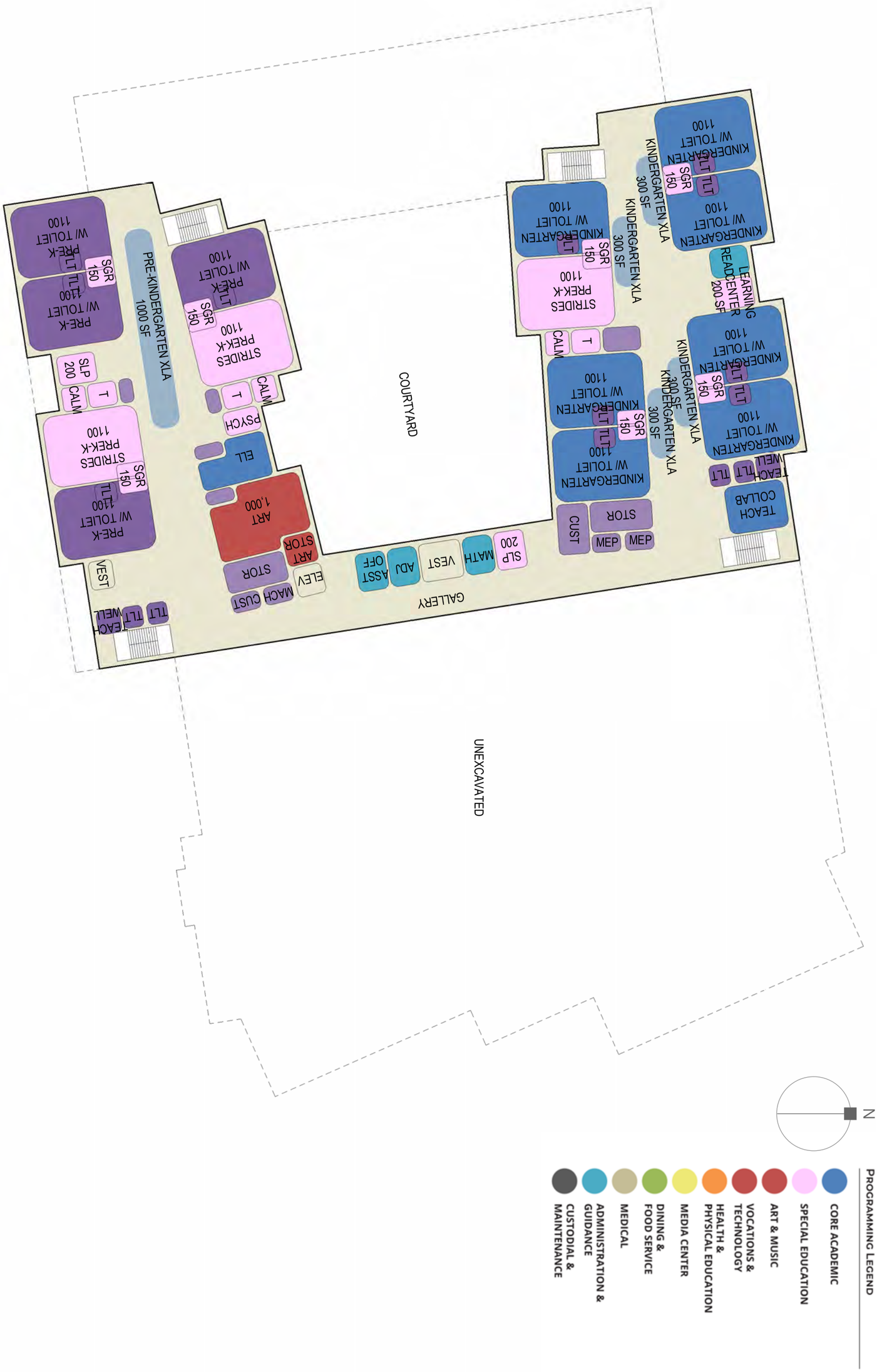
N

PK-5th

N.2 New Construction @ Woburn Street Site

Site Plan

1" = 40'



PK-5th

N.2 New Construction @ Woburn Street Site

Lower Level

1" = 40'

PROGRAMMING LEGEND

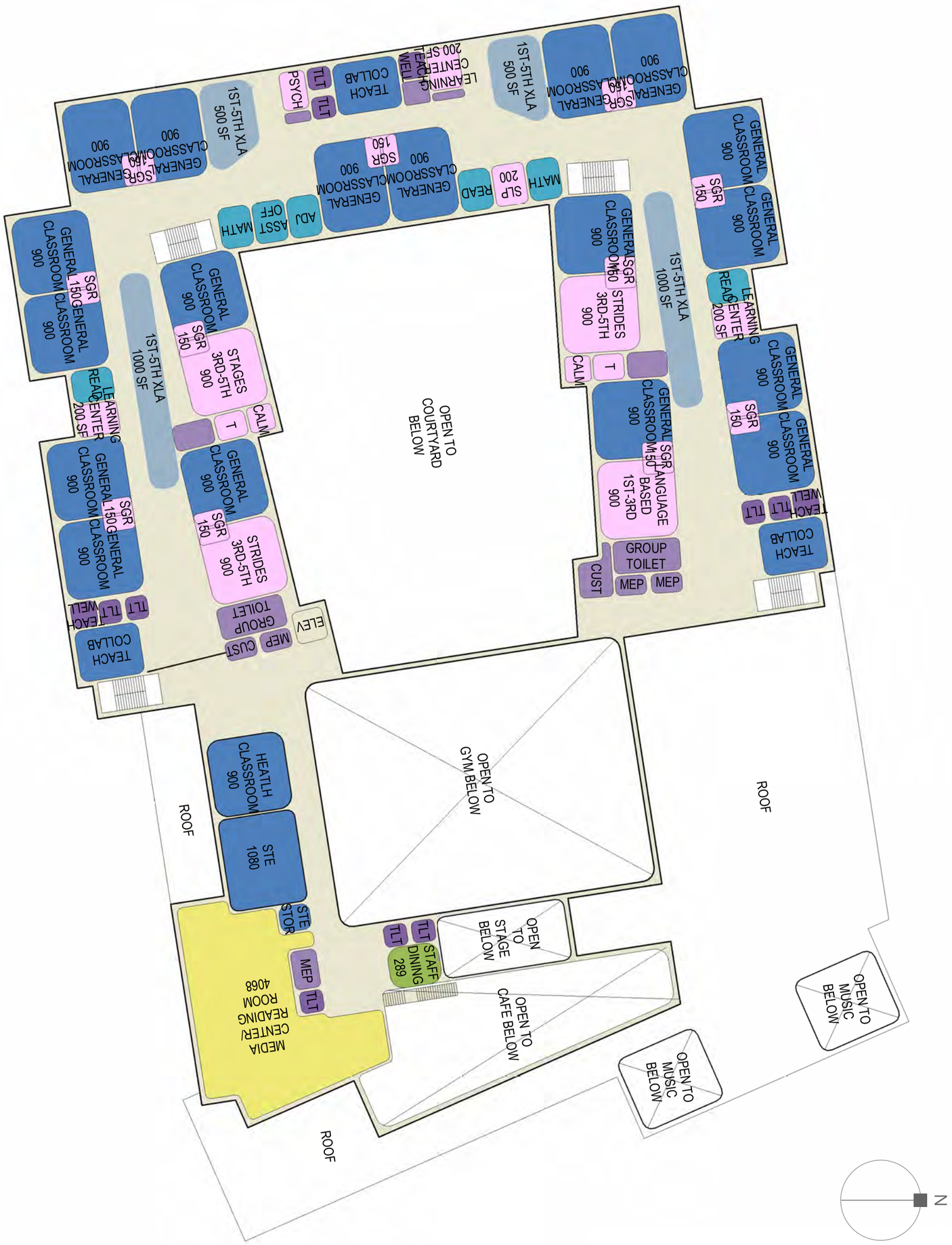
- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N.2 New Construction @ Woburn Street Site

PK-5th

Main Level

1" = 40'



PK-5th

N.2 New Construction @ Woburn Street Site

Upper Level

1" = 40'

NEW CONSTRUCTION AT WILDWOOD SITE

PK-3 N.2 (510+ STUDENTS)

DESCRIPTION

The goal of the new construction alternatives is to test fit the larger PK-3 population on the smallest site while aligning, to the fullest extent possible, with the entirety of the educational program. No phasing is required as the site is unoccupied.

The existing one-story building is 29,302 square feet. The PK-3 option results in a gross square foot total of 117,318 square feet.

The configuration supports public and private zones. The public one organizes administration and medical at the main entrance, adjacent to cafeteria and internalized gymnasium with shared stage between the two potential spaces for community use. Music, kitchen, maintenance, and mechanical spaces are located south of these assembly spaces.

Unlike alternative PK-3 N.1, Prekindergarten and kindergarten academic wings are located on the same level as the core spaces. The upper-level similarly houses three grades with one section connecting the end of the wings to define an outdoor courtyard and covered play area below.

Site work would occur simultaneously. Site circulation and parking would be improved with on-site parent and bus drop-offs. A significant retaining wall would be required to support the building additions and fire access lane. Accessible age-appropriate playgrounds are located north and east of the site. Outdoor learning space may be possible but not yet identified as the site has limited open area available due to the increase in on-site parking.

In summary, these alternatives are feasible however scored lower on the evaluation matrix largely due to limitations of available site area for development.

EVALUATION OF CRITERIA

EDUCATION

Refer to PK-3 N.1.

SITE

Refer to PK-3 AR.2.

RESTRICTIONS & FUTURE USES

Refer to Alternative PK-3 AR.2.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

Refer to Alternative PK-3 AR.2.

SUSTAINABILITY

This alternative with its efficient building plan will meet many sustainability goals set by the Town and District. Although the configuration maybe not be as thermally efficient as a more cubic volume, the plan will provide access to daylight and views. All-new systems will be of the highest efficiency. With the smallest acreage, improvements that require ample site area limit possibilities without a substantial impact to upfront costs.

LOGISTICS

Same comments as PK-K N.1.

Overall Project duration: 22 months

CONSOLIDATION

Same comments as Alternate PK-3 AR.2.

TIME

Same comments as Alternate PK-3 AR.2.

COST

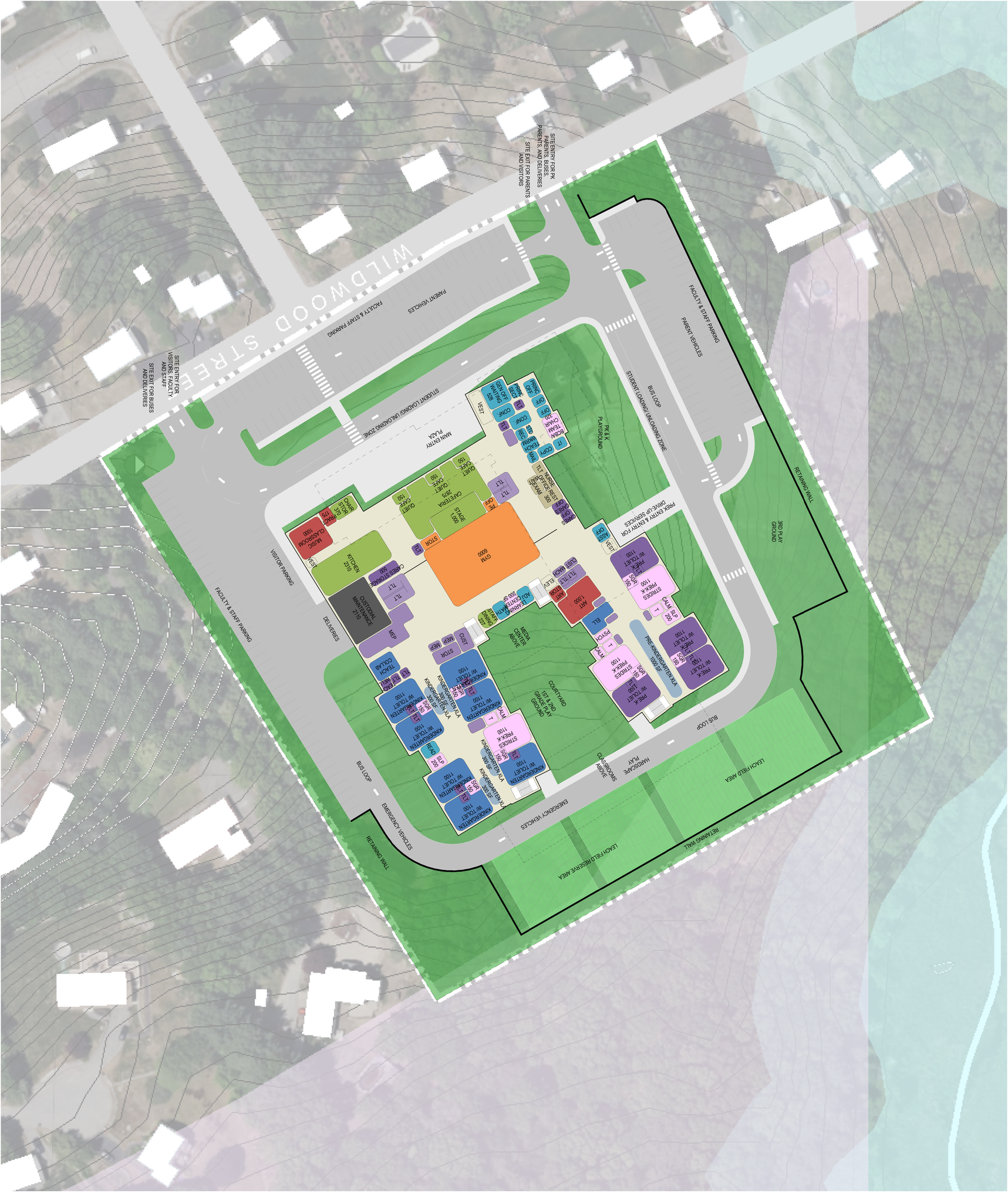
The estimated construction cost for Alternative PK-3 N.2 is:

$106,273,043 *

The estimated project cost range for Alternative PK-3 N.2 is:

$131.2 M - $145.1 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.


WILDWOOD STREET
SITE ENTRY FOR PK PARENTS, BUSES, PARENTS, AND DELIVERIES
SITE EXIT FOR PARENTS AND VISITORS
SITE ENTRY FOR VISITORS, FACULTY AND STAFF
SITE EXIT FOR BUSES AND DELIVERIES
PARENT VEHICLES
FACULTY & STAFF PARKING
STUDENT LOADING/UNLOADING ZONE
MAIN ENTRY PLAZA
BUS LOOP
PK & K PLAYGROUND
FACULTY & STAFF PARKING
PARENT VEHICLES
RETAINING WALL
3RD PLAY GROUND
PARK ENTRY & ENTRY FOR DRIVE-UP SERVICES
VISITOR PARKING
FACULTY & STAFF PARKING
DELIVERIES
BUS LOOP
EMERGENCY VEHICLES
RETAINING WALL
COURTYARD
1ST & 2ND GRADE PLAY GROUND
MEDIA CENTER ABOVE
CLASSROOMS ABOVE
BREEZEWAY
EMERGENCY VEHICLES
LEACH FIELD RESERVE AREA
RETAINING WALL
LEACH FIELD AREA
BUS LOOP
KITCHEN 210
GYM 800
CAFETERIA 3875
STAGE 1001
MUSIC CLASSROOM 1100
CUSTODIAL MAINT. 1710
MEP
STOR
CUST
TLT
ELEC
MDF
MECH
PUMP
ELL
PSYCH
OFF
CONF
TEACH
COPY
RECEP
WAIT
NURSE
OFFICE REST
PRE-K 1100
KINDERGARTEN 1100
STAIRS
ELEV
PRE-K 1000
PRE-K 1200
PRE-K 1100
KINDERGARTEN 1100
KINDERGARTEN 1100
KINDERGARTEN

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

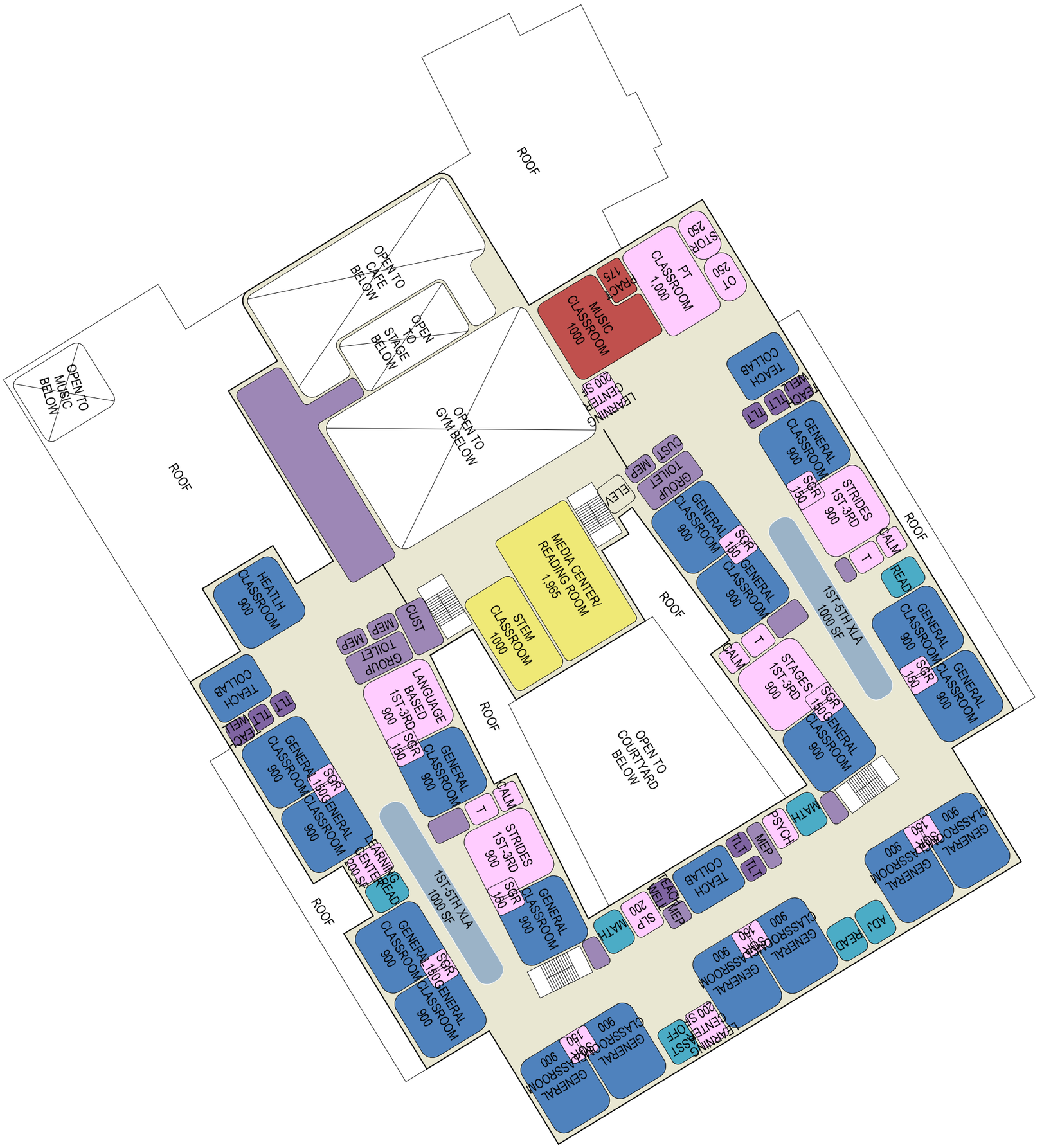
N

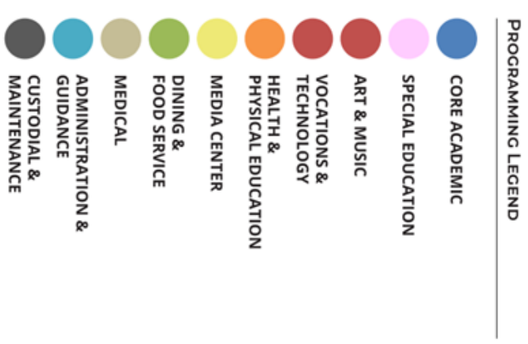
PK-3rd

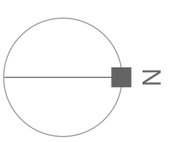
N.2 New Construction @ Wildwood ECC Site

First Floor

1" = 40'







PK-3rd

N.2 New Construction @ Wildwood ECC Site

Second Floor

1" = 40'

NEW CONSTRUCTION AT TOWN HALL SITE

PK-3 N.3 (510+ STUDENTS) AND PK-5 N.4 (755+ STUDENTS)

DESCRIPTION

This alternative investigates new consolidation alternatives at the 19-acre town hall site, centrally located in Wilmington. As the largest site both alternatives have the opportunity to extend three two-story academic wings and a one-story academic wing from a central public zone. A spacious sites offers greater possibility to achieve all the town and district's goals for site features and potential future expansion.

The existing 20,800 square feet one-story building is demolished to accommodate a new construction on site.

Although the alternatives meet the educational program, supports community use of the facility and access to playgrounds and potential fields, and is energy efficient, it scored lower than other new construction options in the evaluation matrix. The site has restrictions that can potentially lengthen the project completion schedule and impact traffic as the site is centrally located along a main artery in Town.

EVALUATION OF CRITERIA

EDUCATION

This new alternative successfully meets the district's educational program with one programmatic and experiential compromise as drawn.

- In a new PreK-3 alternative, one grade is isolated on an upper level. After review by educators part of an Extended Leadership Working Group, the second story can be eliminated if that grade level is connected to the end of two wings to create a courtyard. Pros and Cons of this revision will be studying further is this option is shortlisted into the PSR phase.

The academic wings are the same as previous options discussed with centralized extended learning areas for most grades, integrated special education and small group spaces. Dedicated art and music spaces are adjacent to the core area minimizing travel for students. The media center on the second floor extends over the main entry, providing a shelter area outside.

The age-appropriate and accessible playgrounds neighbor academic wings. The courtyards support outdoor learning and are easily accessible from classrooms but can be distracting for spaces located along the courtyard or playgrounds.

Sufficient space to support administrative and guidance staffing needs and professional space for

adult planning, collaboration, development and consultation are integrated into the layout.

SITE

This alternative is similar to PK-K N.2.

This location is within an area of higher student density as determined by the Catchment Area Study however it was noted that the average travel distance was greater than the other sites studied (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

This alternative is similar to PK-K N.2.

Refer to Section 3.1.5, Site Development Requirements.

The site is centrally located and would restrict future community use by the Town if an educational facility is located on the site.

COMMUNITY

This alternative is similar to PK-K N.2.

SUSTAINABILITY

This alternative is similar to PK-K N.2.

Systems utilizing geothermal wells and other site opportunities can be explored at the Town Hall site due to the sizeable land available.

LOGISTICS

This alternative is similar to PK-K N.2.

Overall Project duration: 24-26 months

CONSOLIDATION

The PK-3 alternative consolidates two schools and does not impact the remaining students in Grades 4-5 in the catchment area under consideration.

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-3 alternative does not address the needs of students at North intermediate and would require one additional capital project to accomplish alternations necessary to meet the goals

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-3 N.3 is:

$107,060,423 *

The estimated project cost range for Alternative PK-K N.3 is:

$132.2 M - $146.1 M *

The estimated construction cost for Alternative PK-5 N.4 is:

$151,895,210 *

The estimated project cost range for Alternative PK-5 N.4 is:

$187.6 M - $207.3 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

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SITE ENTRY/EXIT FOR PK
PARENTS, BUSES, PARENTS
STUDENT LOADING
FACULTY AND STAFF
PARENT VEHICLES
FACULTY & STAFF PARKING
1ST & 3RD GRADE PLAY GROUND
PK & K PLAYGROUND
COURTYARD
OUTDOOR LEARNING
PARENT VEHICLES
PARENT VEHICLES
STUDENT LOADING UNLOADING ZONE
DELIVERIES
GYM 6000
STAGE 1800
CAFETERIA 3870
KITCHEN 2170
CUSTODIAL MAINTENANCE 2170
GALLERY
MEDIA CENTER 1000
OPEN GREEN FIELD PLAY AREA
HARDSCAPE PLAY
SOFTBALL DIAMONDS
COURTYARD
3RD - 5TH PLAY GROUND
EMERGENCY VEHICLES
SECOND EGRESS THROUGH FACULTY PARKING
FACULTY & STAFF PARKING
POTENTIAL AREA TO REPLICATE FIELDS (THIS RECTANGLE REPRESENTS AND AREA 120 YARDS LONG X 50 YARDS WIDE)
BUS LOOP
BUS LOOP
BUS LOOP
EMERGENCY VEHICLES
VISITOR PARKING
FACULTY & STAFF PARKING
STUDENT LOADING UNLOADING ZONE
MAIN ENTRY & DROP OFF SERVICES
VESTIBULE
VEST
ELEV
CORR
STOR
MECH
TLT
CLASSROOM 900
GENERAL CLASSROOM 900
LANGUAGE WORK ROOM 900
RESOURCE CLASSROOM 900
SPECIAL EDUCATION CLASSROOM 900
SPEECH THERAPY 150
OCCUPATIONAL THERAPY 150
PHYSICAL THERAPY 150
SENSORY ROOM 150
SMALL GROUP 150
SPECIAL EDUCATION CLASSROOM 900
SPECIAL EDUCATION CLASSROOM 900
SPECIAL EDUCATION CLASSROOM 900

N.3 New Construction @ Town Hall Site

First Floor

PK-3rd

1" = 40'

N

DELIVERIES

PK ENTRY

MAIN ENTRY and DRIVE-UP SERVICE ENTRY

KINDERGARTEN W/ TOLIET 1100
TLT
SGR 150
KINDERGARTEN XLA 300 SF
LEARNING CENTER 200 SF
READ
TEACH COLLAB
TEACH WELL
VEST
QUIET CAFE 150
CAFETERIA 2875
KITCHEN 2310
CUSTODIAL MAINTENANCE 2110
ELL
GENERAL CLASSROOM 900
MATH
ADJ
1ST-5TH XLA 1000 SF
STRIDES PREK-K 1100
T
CALM
STOR
MEP
CUST
STAGE 1,000
GYM 6000
PE OFF
CARES STORAGE 500
GALLERY
MUSIC CLASSROOM 1000
PRACT 175
CHAIR STOR 370
STAGES 1ST-3RD 900
SLP 200
ASST OFF
ART 1,000
ART STOR
PSYCH
PRE-KINDERGARTEN XLA 1000 SF
PRE-K W/ TOLIET 1100
PT CLASSROOM 1,000
STOR 250
OT 250
NURSE OFFICE
REST 300
WAIT
EXAM
REC
TEACH WKRM
COPY
STO
MAIL
BCBA/ TEAM CHAIR 320
IT
CONF.
OFF
PRINC SECT
GEN OFF WAITING 528
ELEV
CARES OFF
LANGUAGE BASED 1ST-3RD 900

PROGRAMMING LEGEND

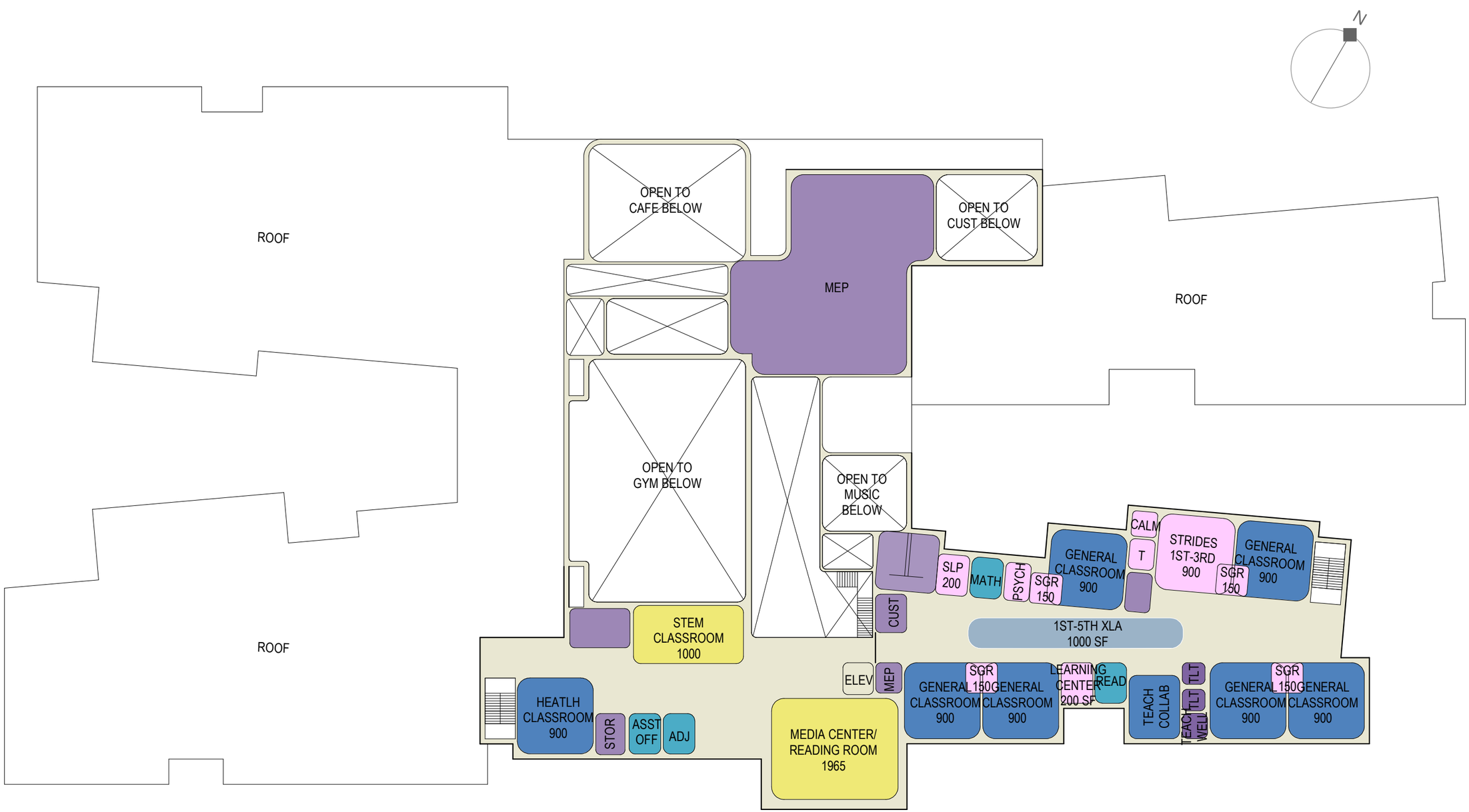
- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N.3 New Construction @ Town Hall Site

Second Floor

PK-3rd

1" = 40'



Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-5th

N.4 New Construction @ Town Hall Site

Site Plan

1" = 40'

N.4 New Construction @ Town Hall Site

First Floor

PK-5th

1" = 40'

N.4 New Construction @ Town Hall Site

Second Floor

PK-5th

1" = 40'

N

GENERAL CLASSROOM 900
SGR 150
LEARNING CENTER READ 200 SF
1ST-5TH XLA 1000 SF
STRIDES 1ST-2ND 900
T
CALM
LANGUAGE BASED 1ST-2ND 900
GROUP TOILET
MEP
CUST
SLP 200
MATH
ADJ
CARES OFF
TEACH COLLAB
TEACH WELL
TLT
GALLERY
ROOF
OPEN TO CAFE BELOW
OPEN TO GYM BELOW
OPEN TO MUSIC BELOW
OPEN TO CUST BELOW
ART 1,000
ART STOR
STAGES 1ST-2ND 900
HEATLH CLASSROOM 900
STOR
STE 1080
STE STOR
MEDIA CENTER/ READING ROOM 4068
ELEV
PSYCH
STRIDES 3RD-5TH 900

Programming Legend

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-5 R.1 – REPAIR-ONLY (CIP) NORTH INTERMEDIATE SITE

DESCRIPTION

The scope of work identified in this base repair and code upgrade alternative does not address enrollment, educational program needs, nor site circulation improvements. The existing two-story building remains at 55,541 square feet.

The scope of work identified in this base repair only alternative is similar to alternative PK-K R.1, and will address deficiencies as it relates to code compliance for accessibility, energy, life safety, kitchen, and building systems.

In terms of scope, this alternative assumes that the existing school populations stay where they are, but to make an apples-to-apples comparison to the costs of the add-reno and new construction alternatives, combine base repair costs for all three schools together; Wildwood ECC, Woburn Street and North Intermediate Schools to represent serving the 755+ student agreed-upon enrollment—greater than the capacity of any school building by itself.

In summary, this Alternative does not meet the requirements of the Educational Plan drafted by Wilmington Public Schools for this project. It scored second to last in the Evaluation Matrix and should be viewed as a comparator to which other Alternatives can be measured.

EVALUATION OF CRITERIA

EDUCATION

Although the building would be repaired to extend the life of the building, no spatial improvements are included to support the District's Educational Plan for PK-5 students. The capacity required exceeds the ability of the existing building itself.

SITE

A base repair (CIP) alternative does not include major alterations to the site, except to provide accessible parking and improve accessible routes to the main entrance and around the site. Municipal infrastructure is available but would include improvements to the service for compliance with current regulations.

The North Intermediate site is a 14-acre with a -10 foot grade change from Salem street to the fields creating circulation and accessibility challenges. The school has two separate access points. Buses servicing North students circulate through the front bus loop at the main entrance on Salem Street. Cars would continue to circulate through the active parking lot from Ballardvale Street. Parking on site would be inadequate when all staff are present. There is no continuous paved

access road with parking around the building.

The building is situated near the front property line, separated from the street mainly by the bus loop. The playground is located behind the building adjacent to the parking lot. The playground and fields are directly accessible from the school building without crossing the parking lot. There is quality green space and fields occupying the remaining property area. The community utilizes sport courts located along the northern property which is not adjacent to a parking area.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is not located within an area of higher student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

A base repair alternative does not include major alterations and maintains the status quo of functionality for the building and site. The North Intermediate site must comply with the requirements for Municipal Open Space designation (designation on all sites under consideration), and Wetlands Buffer along the southwest property line. Refer to Section 3.1.5, Site Development Requirements.

The site is not centrally located in the Town of Wilmington and would continue to serve as an educational facility for the community.

COMMUNITY

A base repair (CIP) alternative does not support an improved building design or layout that would enhance the student, staff, or community experience. There are no improvements to safety as it relates to increased distance from the street and improved sight distance or additional queuing on site for vehicles. Likewise, as a base repair alternative, there are no improvements to support a better assembly space for community use, and there are no additions to on-site recreational areas or playgrounds beyond accessibility improvements.

SUSTAINABILITY

Because of the essential nature of this “base repair” alternative, it does not include many types of upgrades associated with a modern energy-efficient building, improvements to interior environments, or provision of natural light and views for all regularly-occupied spaces. Solar orientation is ideal with the existing east-west classroom wing configuration. All classrooms have the potential for views outside, but some interior administrative spaces are internal and would require reconfiguration. This base repair alternative would pose significant challenges and require

additional scope and considerable cost to support the sustainability goals set by the Town and District.

LOGISTICS

Same as PK-3 R.1

Overall Project duration: 32 months, non-continuous

CONSOLIDATION

This alternative does not address the needs of PK-3 students within the student catchment area.

TIME

This alternative includes only one school and would require multiple capital projects over several to accomplish the renovations and additions necessary to meet the goals set forth in this project for all PK-5 students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-5 R.1 is:

$23,905,781 *

The estimated project cost range for Alternative PK-5 R.1 is:

$29.5 M - $32.6 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes. The estimated project cost range includes an allowance for (6) temporary modular classrooms to be used as swing space while portions of the building are undergoing renovation.

NOTE: There are no building or site drawings for this Alternative, but the Capital Improvement Plan is included in the Cost Estimates in Appendix X.16.

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ADDITIONS + RENOVATIONS TO NORTH INTERMEDIATE SCHOOL

PK-5 AR.1 (755+ STUDENTS)

DESCRIPTION

The goal of this alternative is to test fit the larger PK-5 population on the North Intermediate site while aligning, to the fullest extent possible, renovations and additions with the entirety of the educational program. Demolition of the existing classroom wing would make way for a three-story addition in its place. The existing core area entails reconfiguration of interior walls to accommodate change of function and extensive renovations, including renovating the Cafeteria into Administration, and the Gymnasium into the Media Center. A four-story academic addition plus gymnasium to the north complete the areas needed to meet the District's educational goals and programmatic needs.

The existing two-story building is 55,541 square feet. The PK-5 alternative results in 26,715 square feet of demolition, 28,826 square feet of renovation and 139,029 square feet of additions, for a gross square foot total of 167,855 square feet.

Site work would occur in phases. Site circulation and parking would be improved with separate on-site parent and bus drop-offs. Multiple accessible age-appropriate playgrounds, fields, outdoor learning and dedicated PK entry are included. Once site work is completed, the remaining grades can relocate to the site.

In summary, this alternative is feasible, and scored highest compared to other addition and renovation options on the evaluation matrix. The larger site best accommodates phasing for an occupied site.

EVALUATION OF CRITERIA

EDUCATION

The academic wings contains multiple extended learning areas and classroom sections are integrated with special education and small group spaces. All but one grade level are grouped to provide options for expansion of a grade in a bubble year.

Dedicated art, music, and core spaces are centrally located, and within reasonable travel distances for students. The layout of the dining spaces provides options to serve a neurodiverse student population.

Some programmatic and experiential compromises still exist, including:

- The media center are located internally, with limited options for natural light, likely from clerestory windows.

- At this early conceptual level, it is difficult to foresee how new spaces will fit into the existing building, and there may be cases where the renovated environment is inferior to the new addition, or it entails compromises in the physical plant or layout.

Sufficient space to support administrative and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The Gymnasium or Cafeteria space are available to house 120+ staff for professional development.

The playgrounds would be accessible and located closer to the gymnasium and cafeteria spaces.

All grades in the catchment area are consolidated with this option, promoting a larger with more time to build relationships and eliminating transitions during the elementary years.

SITE

As an addition-renovation alternative, significant alterations to the 14-acre site are required to accommodate a centrally located three and four-story building more than three times the size of the existing structure.

The on-site drop-off/pickup loops for buses and parent vehicles are provided on site. This alternative provides ideal number of parking spaces, and potentially encroaches the wetlands buffer to the west with the north academic addition. The playgrounds are located near the fields closest to the north academic wing.

An emergency access drive around the perimeter of the building is not provided as it would impact the wetlands buffer to the west.

The site has access to municipal water and sewer but anticipated improvements to the service to comply with current regulations for the larger enrollment.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location is outside current areas of highest student density as determined by the Catchment Area Study. However the site is within areas of highest student density for the sending schools: Wildwood and Woburn Street (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

The North Intermediate site must comply with the requirements for Municipal Open Space designation (designation on all sites under consideration), and Wetlands Buffer along the southwest property line. Refer to Section 3.1.5, Site Development Requirements.

The site is not centrally located in the Town of Wilmington and would continue to serve as an educational facility for the community.

COMMUNITY

This addition and renovation alternative enhances the student, staff, or community experience, and supports separate academic and public use of the building. Parking and queuing on site for vehicles are improved. The community sport courts are replicated on site for after-hours use. The gymnasium and cafeteria provide assembly space options for community use.

SUSTAINABILITY

An addition and renovation alternative supports an improved building design and layout that would enhance the student, staff, or community experience, and supports separate academic and public use of the building. Ample parking and queuing on site for vehicles are improved. The community sport courts and fields are not replicated on site for after-hours use due to site constraints. The gymnasium and cafeteria with stage both provide significantly larger assembly spaces for community use.

LOGISTICS

The occupied will require phasing, relocation, or disruption of students during construction as students. Neighbors may be impacted with noise and dust and have limited or no access to community courts during construction.

1. Construct new 4-story classroom addition, gymnasium, and back of house service area additions located north of existing building.
2. Relocate CARES offices/Music/storage out of lower level of existing building. Renovate lower level of existing north wing into new mechanical/electrical plant and connect new addition to operate MEP/FP systems from new plant area.
3. North Intermediate students and staff to occupy new additions.
4. Demolish existing classroom wing. Renovation of existing space into new program areas.
5. Construct new 3-story classroom addition, located west of existing building. Construct new cafeteria addition east of existing building.
6. Complete site work.
7. Occupy the building with PK-3 students from Wildwood and Woburn Street Schools.

Overall Project duration: 42 months

CONSOLIDATION

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

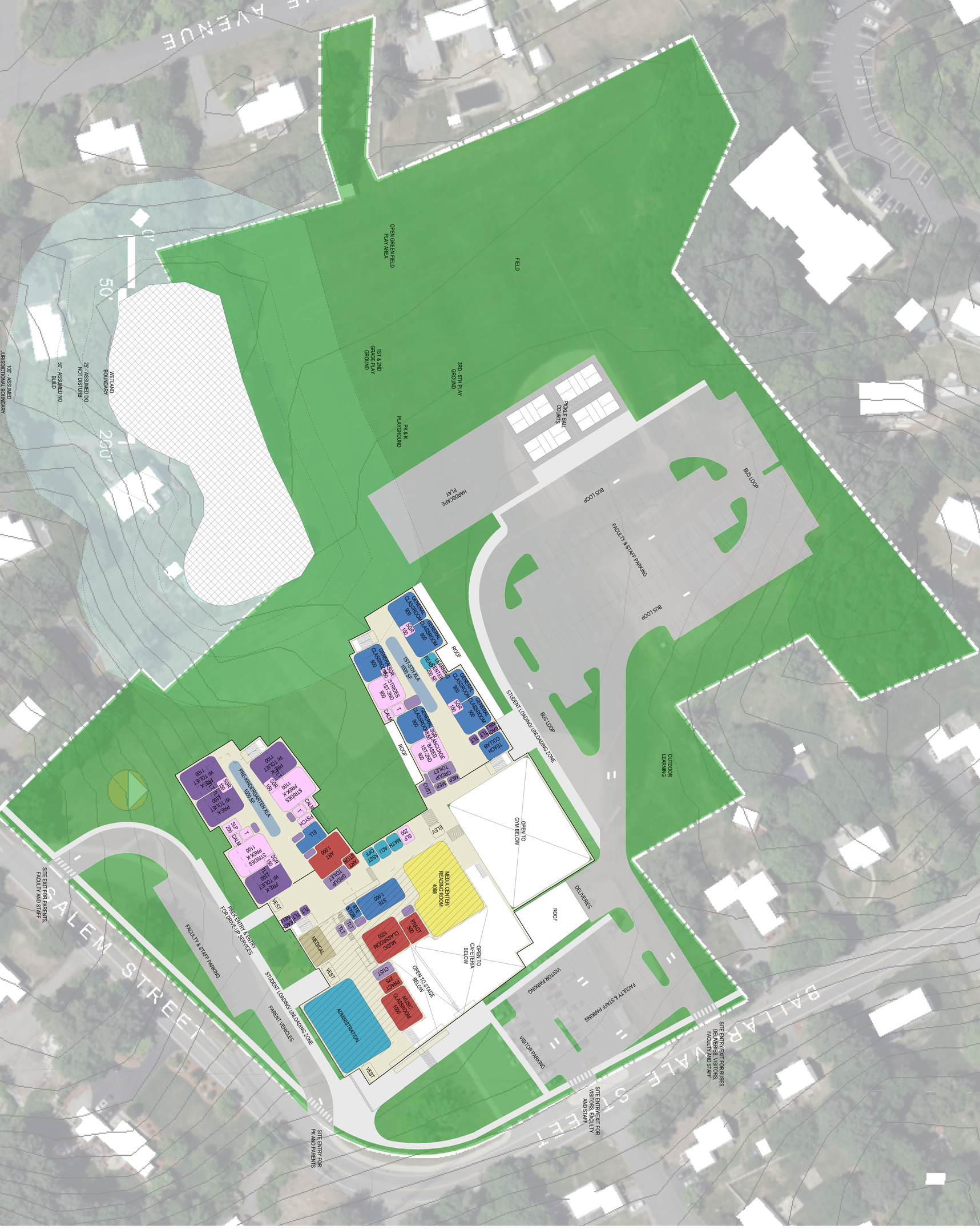
The estimated construction cost for Alternative PK-5 AR.1 is:

$156,505,469 *

The estimated project cost range for Alternative PK-5 AR.1 is:

$193.2 M - $213.6 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.



PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

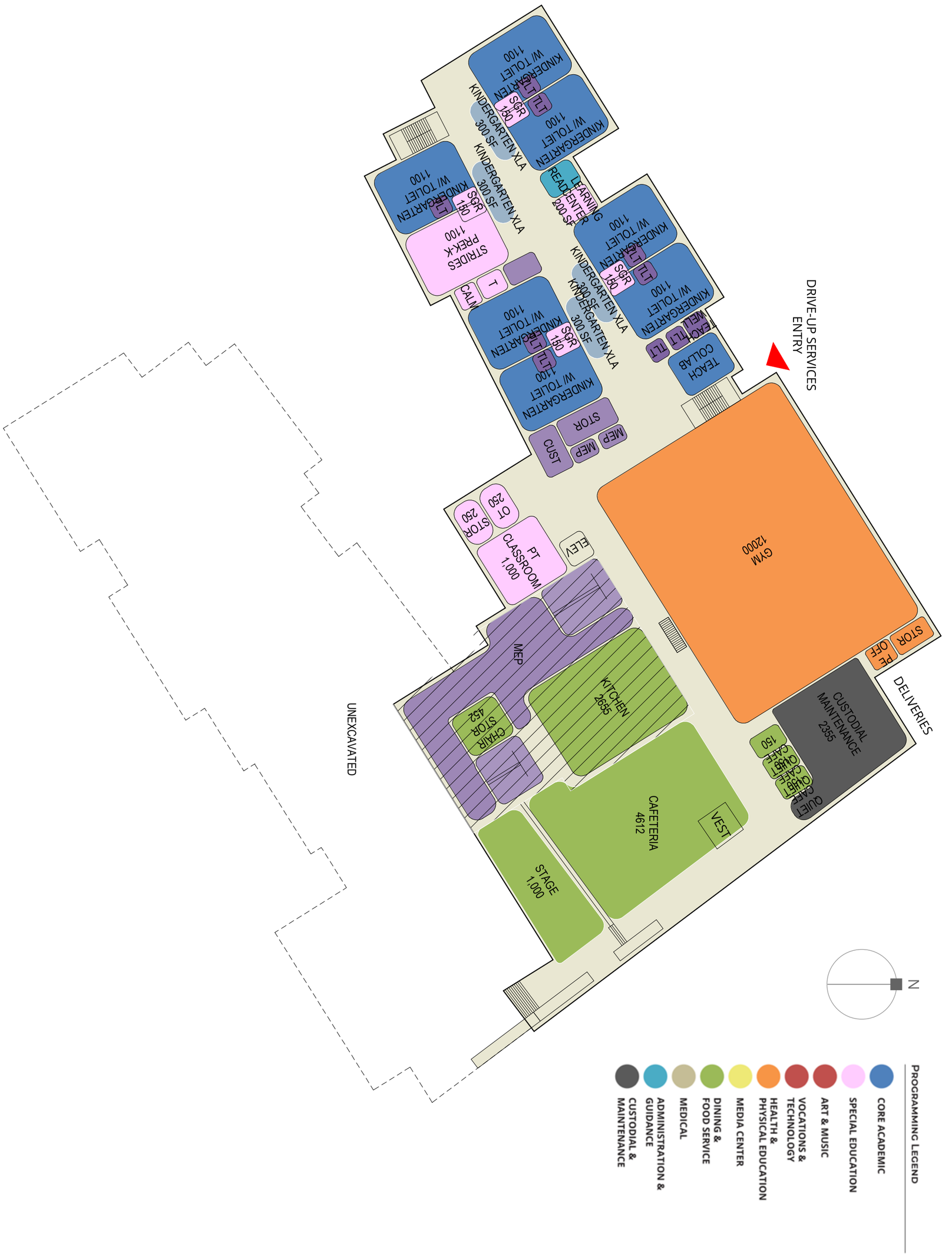
N

PK-5th

AR.1 Add/ Reno @ North Intermediate Site

Site Plan

1" = 40'



PK-5th

AR.1 Add/Reno @ North Intermediate Site

Lower Level

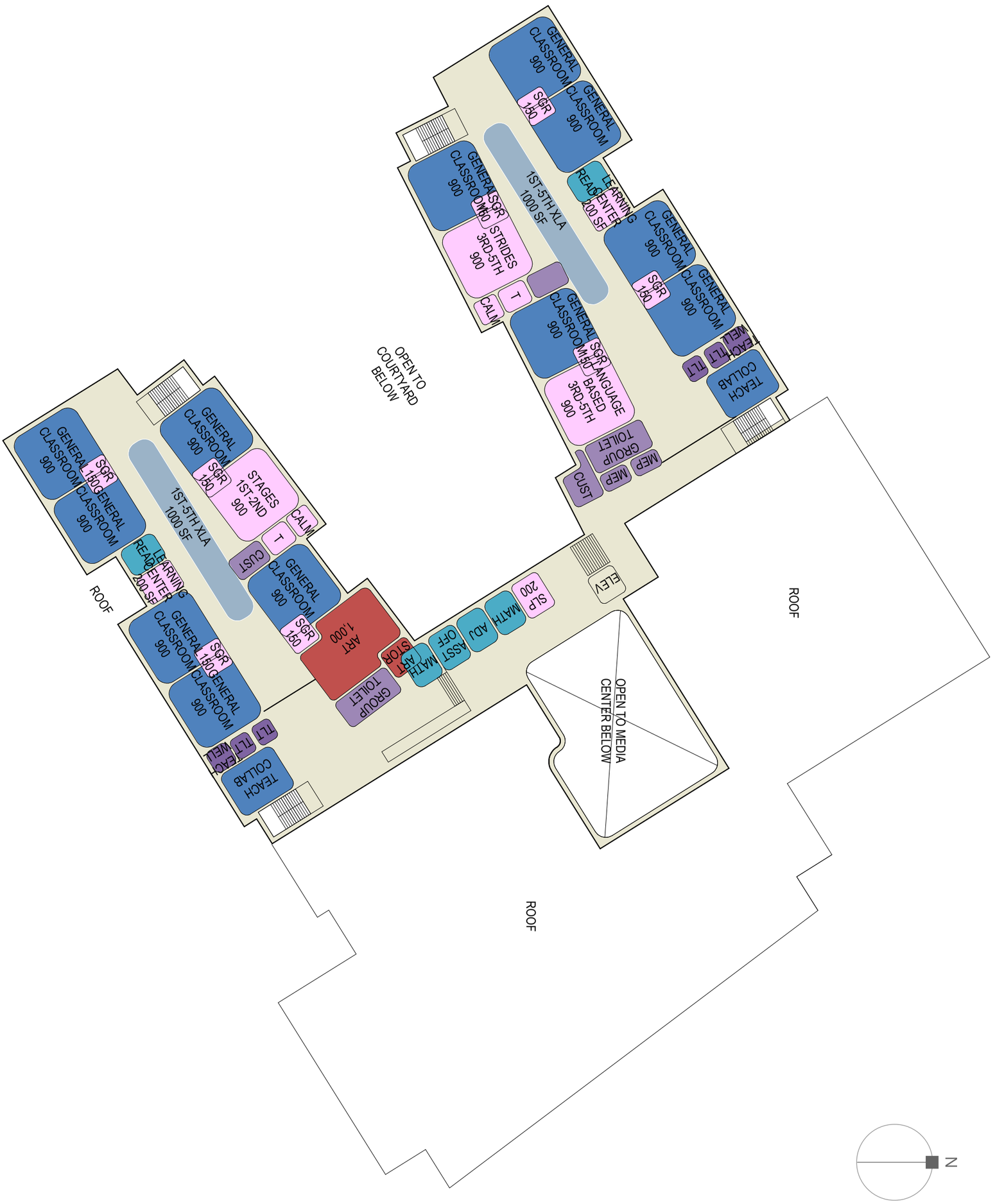
1" = 40'

PK-5th

AR.1 Add/Reno @ North Intermediate Site

First Floor

1" = 40'



PK-5th

AR.1 Add/Reno @ North Intermediate Site

Second Floor

1" = 40'

N

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-5th

AR.1 Add/Reno @ North Intermediate Site

Third Floor

1" = 40'

NEW CONSTRUCTION AT NORTH INTERMEDIATE SITE

PK-5 N.1 (755+ STUDENTS)

DESCRIPTION

Alternative PK-5 N.1 explores a new construction option,167,855 square feet total, on the North Intermediate site.

The configuration of the building supports community use, locating the gymnasium and cafeteria "up front" with a shared stage. Administration and Medical are adjacent to the main entrance. Multi-story academic wings are organized to achieve ideal programmatic adjacencies and can be secured during community events. This organization supports the district's goals for public and private zones.

In summary, this alternative meets the educational program for PK-5, improves traffic conditions, supports community use of the facility and site, and is energy efficient. PK-5 N.1 scored highest of all alternatives in the evaluation matrix.

EVALUATION OF CRITERIA

EDUCATION

Academic wings are organized around central extended learning zones. The Kindergarten academic wing contains multiple extended learning areas shared between two classrooms. Classroom sections are integrated with special education and small group spaces for all grades. The Prekindergarten and kindergarten wings are located on a lower-level from the core spaces including administration, medical, gymnasium, and music.

A dedicated art classroom is adjacent to the PreK wing; music and core spaces are positioned in the public zone but all specials are organized to minimizing travel for students. The layout of the cafeteria provides options to serve a neurodiverse student population.

Sufficient space to support administration and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The Gymnasium or Cafeteria space are available to house 120+ staff for professional development.

Grades are grouped to retain a small school feel. Transitions to a new school are reduced or eliminated completely in the elementary years with consolidation alternatives, sparking opportunity to embrace the larger community and cultivate relationships.

SITE

This new construction alternative includes significant alterations to the 14-acre site, locating the

new building to the northwest field area. This permits the existing North Intermediate school to operate during construction, minimizing disruptions as compared to PK-3 N.1 and PK-5 N.2 which are positioned much closer to the occupied Woburn Street School. The southeast area of the site envisions open green space, parking and circulation routes. Overall safety of Ballardvale Street and Salem Street traffic is improved, given the dedicated on-site drop-off/pickup loops for buses and parent vehicles. This alternative provides sufficient parking spaces , including community or all school events.

Age-appropriate and accessible playgrounds are situated west of the new building closest to the academic wings and within proximity of the gymnasium.

The site has access to municipal water and sewer but anticipated improvements to the service for compliance with current regulations for the increased population on site.

Any future growth would compromise site design and amenities if building expansion was warranted.

This location borders or is within areas of highest student density as determined by the Catchment Area Study (refer to Appendix section X.11 for more detail).

RESTRICTIONS & FUTURE USES

Same comments as Alternate PK-5 AR.1.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

The improved building design and layout would enhance the student, staff, or community experience, and supports separate academic and public use of the building. Additional parking and queuing on site for vehicles are improved. The community sport courts are replicated on site for after-hours use. The gymnasium with stage that also opens to the cafeteria provides significantly larger assembly spaces for educational and community use.

SUSTAINABILITY

New construction options have the highest potential to meet the sustainability goals for the project, with full energy code compliance, including the exterior envelope and infrastructure systems.

LOGISTICS

The distance from the occupied building allows for a construction zone that is somewhat removed from the occupied school, making this new consolidation option the most ideal.

1. Construct new three-story PK-5 building. Complete site work at north and northwest areas of site.
2. Grades 4-5 occupy new building.
3. Demolish North Intermediate School, 55,541 SF.
4. Complete remaining site work, parking, drives, playgrounds, landscaping, signage, pavement markings, etc. and grading activities.
5. Grades PK-3 locate to new building upon sitework completion.

Overall Project duration: 33 months

CONSOLIDATION

The PK-5 alternative consolidates all three schools in the catchment area under consideration.

TIME

The PK-5 alternative meets the project goals for all students in the catchment area under consideration.

COST

The estimated construction cost for Alternative PK-5 N.1 is:

$157,127,753 *

The estimated project cost range for Alternative PK-5 N.1 is:

$194.1 M - $214.5 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

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PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

N.1 New Construction @ North Intermediate Site

Site Plan

1" = 40'

PK-5th

N.1 New Construction @ North Intermediate Site

First Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

PK-5th

N.1 New Construction @ North Intermediate Site

Second Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

N.1 New Construction @ North Intermediate Site

Third Floor

1" = 40'

NEW CONSTRUCTION AT WILDWOOD SITE

PK-5 N.3 (755+ STUDENTS)

DESCRIPTION

The goal of the new construction alternative is to test fit the largest enrollment on the smallest site, while aligning, to the fullest extent possible, with the entirety of the educational program. No phasing is required as the site is unoccupied.

The existing one-story building is 29,302 square feet. The PK-5 option results in a gross square foot total of 167,855 square feet.

The very compact 3-story configuration does not support public and private zones. A centralized gymnasium and cafeteria with shared stage between has all other spaces oriented around the central core.

Site work would occur simultaneously. Site circulation and parking would be improved with on-site parent and bus drop-offs. A significant retaining wall would be required to support the building additions and fire access lane. Accessible age-appropriate playgrounds are located north and east of the building. Outdoor learning space and community courts are not yet identified as the site has limited open area available due to the increase in on-site parking.

In summary, this alternative is feasible however scored lower on the evaluation matrix largely due to limitations of available site area for development.

EVALUATION OF CRITERIA

EDUCATION

This new alternative successfully meets the district's educational program with one programmatic and experiential compromise as drawn.

- In a new PreK-5 alternative, Prekindergarten and Kindergarten are directly adjacent to core spaces on the main level. Although this limits travel distance for the youngest learners, the shared hallways with regularly scheduled spaces can also be a distraction.

Grades 1-2 are on the second level and Grades 3-5 are on the third level. The academic wings are similar to configurations discussed in other alternatives except the extended learning areas are longer and not as wide, a result of the compact design.

Sufficient space to support administration and guidance staffing needs and professional space for adult planning, collaboration, and consultation are integrated into the layout. The Gymnasium or Cafeteria space are available to house 120+ staff for professional development.

SITE

Refer to PK-5 AR.3.

RESTRICTIONS & FUTURE USES

Refer to Alternative PK-5 AR.3.

Refer to Section 3.1.5, Site Development Requirements.

COMMUNITY

This new construction alternative does not support separate academic and public use of the building. Parking and queuing on site for vehicles are improved. The community sport courts are not replicated on site for after-hours use due to site size constraints. The gymnasium and cafeteria with shared stage provides assembly space options for community use.

SUSTAINABILITY

This compact cubic footprint may result in highly efficient building that will meet many sustainability goals set by the Town and District. Although the configuration maybe not be as thermally efficient as a more cubic volume, the plan will provide access to daylight and views. All-new systems will be of the highest efficiency. With the smallest acreage, improvements that require ample site area limit possibilities without a substantial impact to upfront costs.

LOGISTICS

Same comments as PK-K N.1.

Overall Project duration: 24 months

CONSOLIDATION

Same comments as Alternate PK-5 AR.3.

TIME

Same comments as Alternate PK-5 AR.3.

COST

The estimated construction cost for Alternative PK-5 N.3 is:

$152,901,575 *

The estimated project cost range for Alternative PK-5 N.3 is:

$188.8 M - $208.7 M *

*All Cost estimates are based on current construction market conditions in Spring 2024, are conceptual in nature, and are intended for comparative purposes.

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WILDWOOD STREET
SITE ENTRY FOR VISITORS, FACULTY, AND STAFF
SITE EXIT FOR BUSES AND DELIVERIES
FACULTY & STAFF PARKING
PARENT VEHICLES
STUDENT LOADING/UNLOADING ZONE
MAIN ENTRY PLAZA
VEST
SITE ENTRY FOR PK PARENTS, BUSES, AND DELIVERIES
SITE EXIT FOR PARENTS AND VISITORS
PRE-ENTRY & EXITRY FOR DROP-OFF SERVICES
BUS LOOP
FACULTY & STAFF PARKING
PARENT VEHICLES
RETAINING WALL
PK & K PLAYGROUND
1ST & 2ND GRADE PLAY GROUND
VISITOR PARKING
FACULTY & STAFF PARKING
DELIVERIES
EMERGENCY VEHICLES
BUS LOOP
RETAINING WALL
LEACH FIELD RESERVE AREA
EMERGENCY VEHICLES
HARDSCAPE PLAY
3RD, 4TH & 5TH GRADE PLAY GROUND
BUS LOOP
LEACH FIELD AREA
RETAINING WALL
MUSIC CLASSROOM 1100
PRACT 300
MUSIC CLASSROOM 1100
GEN OFF 120
MAIN OFF 120
CONF 300
PRINC OFF 120
ASST PRINC OFF 120
RECEPT 300
WAIT 150
CAFETERIA 4612
STAGE 1001
STOR
KITCHEN 2855
CUSTODIAL MAINTENANCE 2287
OWNR STOR 300
MEP
GYM 12000
ELEV
STOR
STOR
STOR

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

N.3 New Construction @ Wildwood ECC Site

First Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

N.3 New Construction @ Wildwood ECC Site

Second Floor

1" = 40'

PROGRAMMING LEGEND

- CORE ACADEMIC
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

N

PK-5th

N.3 New Construction @ Wildwood ECC Site

Third Floor

1" = 40'

EVALUATION CRITERIA

Development of the Evaluation Matrix

The evaluation criteria were developed by the School Building Committee's Working Group in coordination with the Designer and OPM. Criteria reflect the guiding principles of design governing site and building design features that were identified by community members, school faculty and students, and administrators during the programming and visioning sessions held at the beginning of the PDP process.

A total of forty-two (42) criteria in nine (9) categories were identified, each tied to several essential questions or tests, which served as the mechanism for evaluation of each alternative:

Category and Criteria Descriptions:

EDUCATION

Essential Question: How well does each option embody the educational elements of Wilmington as established in the guiding principles for design?

This category is intended to reflect how well each alternative a) fulfills the educational program; b) meets the educational goals of Wilmington, and c) reflects the idealized spatial relationships and adjacencies as defined for the project in the Educational Plan and Guiding Principles for Design.

Alternatives that 1) meet the desired spatial relationships, 2) provide grade-level neighborhood clusters, 3) distribute special education spaces throughout the academic wings, and that 4) provide flexibility to support a variety of differentiated instructional experiences (whole class instruction, small collaborative groups, individual work, project-based learning) scored best in this category. All Addition-Renovation and New Construction Options scored relatively well, with some compromises to natural light and views for spaces.

Alternatives that are Repair Only with no associated educational or programmatic improvements, scored poor. All Renovation-Addition and New Construction options scored higher as they met all the educational and programmatic improvements in this category.

Education Criteria:

1. Provides flexible and adaptable spaces
    - Design best supports multi-functional spaces
    - Stage viewed from both cafeteria and gymnasium (alternatives that position the stage between the cafeteria and gym scored 5. Alternatives that position the stage adjacent to the cafeteria only scored 3. Alternatives that position the stage adjacent to the gym only scored 1.
    - Quiet rooms in Cafeteria can be used as multiple smaller rooms or one larger room.
    - Extended learning areas offer support space appropriate for grade levels.
2. Addresses adjacencies of programs to support educational model: grade level learning

communities that limit isolation of any one grade and provides options to expand grade level communities in bubble years
    - Grade levels are grouped together providing the ability to utilize classrooms of an adjacent grade level in a bubble year (when there are more students in a grade level than there are classrooms). This encourages closer proximity of same grade classrooms.
3. Reduces travel distances between classrooms and shared core spaces
    - Minimizes travel distances for youngest learners
    - Centrally locates core spaces to minimize travel for all students
4. Retains small school feel - some administration offices within classroom groupings
    - It was important that a consolidated project did not lose a sense of community of the individual schools. To better serve the multiple grade populations, some administrative staff would be located closer to classrooms instead of all centrally located in one main office. This would support educators in case of an emergency, especially with the younger grade levels as well.
5. Integrates outdoor learning spaces
    - Plan has access points to outdoor learning spaces, trails, etc.
    - Close proximity to outdoor field area from gymnasium
    - Interior courtyard space available for secured daytime play
    - Interior courtyard provides ample daylight to plan interior
6. Seamlessly integrated spaces for special education, student support services and specials
    - Special education and student support services are located within or adjacent to grade level groupings for best integration practices
    - Specials are located adjacent to grade level groupings
7. Cafeteria design maximizes site line and minimizes need for adult supervision
    - The layout of the cafeteria minimizes the number of adults required to supervise students during lunch with site lines to maximize views in the space.
8. Creates a variety of student dining experiences and smaller zones/quieter spaces
    - Provide variety of spaces and furniture to serve a neurodiverse student population
9. Promotes a sense of community and collaboration for teachers and students
    - Works areas within grade groupings
    - Gathering opportunities outside of grade groupings
10. Provides access to natural daylight and views for all spaces
    - All spaces have access to natural daylight/views
11. Wide variety of spaces
    - Small group, movement, extended learning area
    - Includes adaptable spaces for professional development
    - Available spaces for all-staff meetings/training

SITE

Essential Question: How well does each option achieve the site features and functions defined in the guiding principles for design?

This category is intended to differentiate alternatives from one another based on how well each alternative a) supports site circulation; b) supports faculty and event parking; and, c) meets the site features and adjacencies as defined by the project.

Emergency vehicle access to be coordinated with public safety requirements.

Appropriate number of faculty and staff parking near the academic areas of the building and capable of doubling as event parking near public areas of the building (gym & cafeteria). The following parking spaces were used as a standard for each enrollment:

- 60 min, 100 spaces ideal for Wildwood-only (130+PK-student design enrollment)
- 120 min., 150 spaces ideal for Wildwood + Woburn St (510+PK student design enrollment)
- 140 min., 180 spaces ideal for Wildwood + Woburn St + North Int (755+PK-student design enrollment)

Alternatives that provide dedicated parent and bus queues, a paved service road, emergency vehicle access, and the desired number of parking spaces per design enrollment without impacting safety, greenspace, and the potential for playfields scored best.

Alternatives that were restricted by the building location and/or site size and that, therefore, forced compromises in parent/bus queuing, limited entry points or other site features scored lower.

Site Criteria:

1. Public/Private Separation
   - Building placed away from street to increase sight distance (safety)
   - Building placed away from street to increase traffic safety
2. Quality community spaces and ease of access to these spaces without compromising building security
   - Community access to fields, sports courts and playgrounds after hours
3. Proximity of parking to main entrance
   - Sufficient parking is provided within close proximity to main entrance
4. Provides a dedicated Pre-Kindergarten Entry
   - Best PK drop-off: parking, maneuvering, protected walk, proximity to entry
   - Limits impact schedule of K-5 drop-off and pick up
5. Site supports appropriate number of parking spaces
   - Best solution for parking: number (110 min), proximity, ADA, configuration
6. Positions grade-level specific playground adjacent to grade-level classroom areas

- Best access to age-appropriate playgrounds from academic areas
- Best location for playgrounds limiting disruption to other grade levels
- Provides more opportunities for outdoor movement breaks

7. Having a safe, clear and easily understood circulation route
   - Logical Site Circulation, w/ separate paths & minimizes conflicts for bus, car and pedestrians.
8. Adequate queuing space for buses and cars
   - Best solution for queues, with adequate length for cars, busses and PK
   - Best solution for drop-off, with adequate curb length for all modes
9. Ability to expand building for future growth
   - Sufficient open space to expand building if increase in student population is realized
   - Sufficient open space to expand site amenities
   - Best solution for future expansion that would not reduce current amenities
10. Maximizes open green space
    - Best option that offers open green space in addition to playground areas
    - Green space is in addition to playgrounds on site
11. Student access to play areas
    - Best solution that maximizes safety for access to play areas
    - Solution does not require crossing parking or roadways
12. Scale of building to site
    - Building placed away from street to reduce scale impact
13. Minimizes steep slopes and retaining walls
    - Best Relationship to site topography, both features and grades
    - Balancing cut and fill requirements
14. Minimizes impacts to wetlands
    - Few or no wetlands impacts
15. Maximizes distance from abutters and property line
    - Building placed with adequate buffer from neighbors
    - Building placed with adequate buffer from property lines
16. Access to municipal infrastructure
    - Best access to municipal sewer
    - Best access to municipal water
    - Best access to natural gas
    - Does not require leaching fields
17. Proximity of location to students
    - Centrally located for all attending students
    - Minimizes travel time for all students

RESTRICTIONS & FUTURE USES

Essential Question: Are there restrictions or limitations that deter this site as a preferred location?

This category is intended to differentiate alternatives from one another based on how well each alternative a) limits use of a site with restrictions for development; and, b) supports future development by the town in a centralized location.

Alternatives located on a site with the least number of restrictions, or on a larger parcel that provides more options for placement of the building on the site generally scored higher, such as the North Intermediate and Woburn Street sites.

Alternatives located on a more centrally located site are ideal for future town development and scored lower, such as options on the Town Hall site.

Restrictions & Future Uses Criteria:

1. Minimal restrictions for development
    - No Article 97 designation
    - All sites have Municipal Open Space designation
    - No Wetlands/limited buffer areas
    - No/limited Wellhead Protection Zones present
2. Limits future use as other town functions in a centralized location
    - Site is not centrally located in Wilmington
    - Development of site does not restrict a centrally located site for future town use

COMMUNITY

Essential Question: How well does each option serve as a community resource?

The intent of Wilmington Public Schools is to design a building that fully supports the idea that schools are both an educational and community-wide investment, capable of supporting activities like youth athletics, large public meetings, voting, and community and/or school performances. This category is intended to reflect how well each alternative supports community use with specific site and building amenities and adjacencies as defined by the project.

All alternatives provided include a gymnasium and cafeteria of the appropriate size to meet the District's program and communities' needs. A high school competition-sized court with two cross courts plus bleachers is included in all PK-5 alternatives. This size gymnasium is in response to town, district and community feedback that additional gym space is needed for the significant number of programs that serve the community beyond the school day.

Specific field needs were not established as part of the PDP phase due to the complexities of determining what happens on the "other" school sites in a consolidation scenario. Fields needed could be located on sites not utilized for a consolidated building. It was determined that this category will be further explored in the PSR phase. Each of the Alternatives to be reviewed will explore further the athletic and outdoor play space needs and will seek to incorporate each element into each alternative for review, analysis, and comparison.

Alternatives that a) locate the gymnasium in proximity to fields and parking, b) provide a clear separation of public and private zones within the building for after school community use, and that c) provide competition-sized gymnasium score best.

Alternatives that accommodate or come close to accommodating two of the three scored lower.

Community Criteria:

1. Public/Private Separation
   - Best separates "public" core areas and "private" academic wings for operations and security when building is in use
   - Location of community spaces can be locked off from academic wings
   - Building placed away from street to increase sight distance (safety)
   - Building placed away from street to increase traffic safety
2. Quality community spaces and ease of access to these spaces without compromising building security
   - Community spaces, such as the gymnasium, cafeteria, library and main office, are easily accessible from main entry
   - Location of community spaces is easily secured for after-hours use from academic wings
   - Best supports community access to fields, sports courts, playgrounds, trails after hours with adjacent parking
   - Provides competition-sized gymnasium

SUSTAINABILITY

Essential Question: How well does each option achieve the goals for energy efficiency and sustainable design features?

This category is intended to reflect how well each alternative supports the sustainability goals and priorities as identified by the project, including the following:

- Views and access to outdoors
- Building as a teaching tool
- Promotes wellness
- Net-zero (ready) energy

- Renewable energy
- Healthy materials
- Pedestrian friendly
- High performance heating/ventilation systems and thermal envelope strategies including substantial insulation, air sealing and other features that would help to satisfy low Energy Use Intensity (EUI)

Under this category, Repair Only alternatives scored lowest of the options as they would pose significant challenges and require substantial cost to meet the project goals. Having existing exterior walls with limited or no insulation, poor air leakage and the burden to incorporate improved infrastructure within the existing building were significant considerations. Solar orientation and site improvements are limited to support the sustainability criteria. As such, not all sustainability goals set by the Town and District would be met without significant cost.

Addition/Renovation alternatives scored good to better as these Alternatives combine the benefits of new construction but with the challenges of renovation. Areas slated for renovation would have significant considerations similar to the Repair Only alternatives. Solar orientation of the building on site may be limited by the location of renovated portions or available area for additions. IN general,. smaller sites limit options for consideration that could support Sustainability criteria. As such, not all sustainability goals set by the Town and District would be met without considerable cost.

New-construction alternatives on larger sites scored best as they have the most potential to meet the sustainability goals as set by the Town and District. New alternatives are to be designed from the ground up to maximize efficiency, daylighting, and thermal performance, with buildings predominantly sited along an east/west axis, maximizing the northern/southern solar orientation of all academic spaces when possible.

Sustainability Criteria:

1. Meets Town and school district goals for Sustainability and Energy Efficiency and Meets MSBA Requirements for Additional 3%+ Point
   - Most compact footprint & perimeter
   - Adequate space for geothermal wells/solar/other
2. Solar Orientation
   - Classrooms oriented along east-west axis for best control of north/south light
   - Access to natural light and views

LOGISTICS

Essential Question: How well does each option limit disruption to students, staff, and neighbors during construction?

This category refers to the disruption to student learning due to the proximity of construction to the occupied building. Under all alternatives, the District's intent is to keep students on-site with no temporary relocation throughout the project whenever possible. The impact to the adjacent neighborhood is also considered.

Alternatives' rating in this category reflect a relative sliding scale, where those alternatives that least impact students, teachers, parents from the existing routine scored better.

Alternatives located on the Wildwood and Town Hall site where construction activities are occurring on an empty site scored best.

Alternatives located on the North Int. site that require students to move into and out of various portions of either renovated or newly constructed spaces and traverse temporary barriers and corridors during construction scored good to fair.

Alternatives on the Woburn St site scored lower, as they would require a significant impact on the existing operation of the school during construction with very little remaining room on-site for ongoing school activities.

Alternatives (such as repair only) where work is phased and students are relocated on a continuous basis, and where proximity of the construction or renovation activity is very close to occupied areas, thereby impacting education and/or the use of existing community athletic fields scored poor.

Logistics / Construction Impact Criteria:

1. Simple construction phasing
   - Limited phasing required to complete construction
   - Reasonable, safe site strategy for construction
2. Minimizes construction phase disturbance to students/teachers
   - Distance from building to construction (noise, dust, vibration)
3. Construction phasing impact to neighbors
   - Distance from abutters to construction (noise, dust, vibration)
   - Site access during construction limits disruption to abutters/residential streets
4. Temporary facilities not required
   - Option does not require student relocation to modulars or other building for phased construction
   - Option does not require swing space fit up for phased construction

CONSOLIDATION

Essential Question: What is the impact to PreK-5th students, neighborhoods, and traffic as a result of consolidation?

This category refers to the ability of the project to impact the most number of students with a single project. However there are pros and cons to any option including consolidation.

Alternatives that include all students from Wildwood, Woburn Street, and North Intermediate in a consolidated PK-5 project scored best if located on a larger existing school site such as Woburn Street and North Int.

Alternatives that include two of the three schools in a consolidated PK-3 project scored fair if located on a smaller site, such as Wildwood where the site does not ideally support the needs of a larger school population.

Alternatives that include only one school and are situated on a site that has the potential to negatively impact a residential neighborhood or main arteries in town, such as the town hall site, during peak travel times scored poorly.

Consolidation Criteria:

1. Traffic impact to neighborhoods and intersections
   - Spread traffic load away from major arteries
   - Neighborhood density around site
   - Access to road network
   - Possible necessary infrastructure upgrades

2. Benefits all PK-5 students at three schools (Wildwood, Woburn Street, North Intermediate)
   - Project addresses educational needs for all of students with one MSBA project

TIME

Essential Question: How well does each option limit the time necessary to address all elementary-aged needs across the three subject schools?

This category refers to the duration a project(s) addresses the needs of the PK-5 enrollment population.

Alternatives that include all students in a consolidated PK-5 project scored best since all schools are of similar vintage and have similar needs that would be addressed simultaneously with a single project.

Alternatives that include only one school scored poorly as these options would require multiple capital projects to accomplish the renovations and additions necessary to meet the goals set forth in this project.

Total Time to Address All Needs Criteria:

1. How well does the alternative limit the time necessary to address all elementary-aged needs across the three subject schools?
    - Project does not require additional capital investment projects over several years to address all students in the catchment area.

COST

Essential Question: How do costs align with the community's sense of value and affordability?

The cost estimate range for the alternatives were similar for each enrollment configuration and were not scored for this reason. To make an apples-to-apples comparison to the costs of the add-reno and new construction alternatives, estimates for base repair costs for two or all three schools potentially impacted are to be combined. It is important to note that serving the 510+ or 755+ student agreed-upon enrollment is greater than the capacity of any school building by itself.

EVALUATION RESULTS

Each criterion within a category was scored using a relative sliding scale from 1 to 5, where a one (1) was poor and a five (5) was best. The total possible points for each category are weighted equal to one another regardless of how many criteria exist within each category. As there are nine categories, each category can achieve a maximum weighted score of 11.1. As depicted below, this scale was color coded to provide a clear graphic representation of the evaluation matrix for each category. It is important to note that in this methodology, the scoring is NOT a ranking. If two alternatives achieved a category equally, they received the same score.

Poor	Fair	Good	Better	Best
0.0-2.2	2.2.4.4	4.4-6.8	6.8-9.0	9.0-11.2

The Alternatives Evaluation Matrix was assembled with the criteria down the left-hand side and Alternatives across the top. Both color-coded and numerical scores were filled in, and scores were totaled at the bottom.

The scores generally reflect the previous discussion of each criterion as applied to each alternative.

The Options Selection Criteria Evaluation Matrix is included on the following page.

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Wilmington Wildwood School Project - Evaluation Criteria

The major categories are scored 0 - 5, with 5 being best, to reflect how well each option addresses the criteria. The total at bottom is the sum of these scores.

WEIGHT		PK-K R.1	PK-K AR.1	PK-K N.1	PK-K N.2	PK-3 R.1	PK-3 AR.1	PK-3 AR.2	PK-3 N.1	PK-3 N.2	PK-3 N.3	PK-5 R.1	PK-5 AR.1	PK-5 AR.2	PK-5 AR.3	PK-5 N.1	PK-5 N.2	PK-5 N.3	PK-5 N.4
	size	130 students + PK	130 students + PK	130 students + PK	130 students + PK	510 students + PK	510 students + PK	510 students + PK	510 students + PK	510 students + PK	510 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK	755 students + PK
	type	Repair Willdood Only No educational or space revisions	Add/Reno Wildwood PK-K	New School PK-K	New School PK-K	Repair Woburn St Only No educational or space revisions	Add/Reno Woburn PK-3	Add/Reno Wildwood PK-3	New School PK-3	New School PK-3	New School PK-3	Repair North Only No educational or space revisions	Add/Reno North PK-5	Add/Reno Woburn PK-5	Add/Reno Wildwood PK-5	New School PK-5	New School PK-5	New School PK-5	New School PK-5
	location	*At Wildwood site*	*At Wildwood site*	*At Wildwood site*	*At Town Hall site*	*At Woburn St site*	*At Woburn St site*	*At Wildwood site*	*At Woburn St site*	*At Wildwood site*	*At Town Hall site*	*At North site*	*At North site*	*At Woburn St site*	*At Wildwood site*	*At North site*	*At Woburn St site*	*At Wildwood site*	*At Town Hall site*
1	**Education**	**5.4**	**9.1**	**9.1**	**9.1**	**4.8**	**9.1**	**9.1**	**9.1**	**9.1**	**9.1**	**5.0**	**9.1**	**9.1**	**9.1**	**9.1**	**9.1**	**9.1**	**9.1**
	Provides flexible and adaptable spaces	1	5	5	5	1	5	5	5	5	5	1	5	5	5	5	5	5	5
	Addresses adjacencies of programs to support educational model: grade level learning communities that limit isolation of any one grade and provides options to expand grade level communities in bubble years	2	4	4	4	2	4	4	4	4	4	2	4	4	4	4	4	4	4
	Reduces travel distances between classrooms and shared core spaces	3	5	5	5	3	5	5	5	5	5	3	5	5	5	5	5	5	5
	Retains small school feel - some administration offices within classroom groupings	5	5	5	5	3	5	5	5	5	5	4	5	5	5	5	5	5	5
	Integrates outdoor learning spaces	1	4	4	4	1	4	4	4	4	4	1	4	4	4	4	4	4	4
	Seamlessly integrated spaces for special education, student support services and specials	3	5	5	5	3	5	5	5	5	5	3	5	5	5	5	5	5	5
	Cafeteria design maximizes site line and minimizes need for adult supervision	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Creates a variety of student dining experiences and smaller zones/quieter spaces	1	4	4	4	1	4	4	4	4	4	1	4	4	4	4	4	4	4
	Promotes a sense of community and collaboration for teachers and students	3	3	3	3	2	3	3	3	3	3	2	3	3	3	3	3	3	3
	Provides access to natural daylight and views for all spaces	4	3	3	3	4	3	3	3	3	3	4	3	3	3	3	3	3	3
	Wide variety of spaces (small group, movement, extended learning)	2	5	5	5	2	5	5	5	5	5	2	5	5	5	5	5	5	5
	Includes adaptable spaces for professional development	1	3	3	3	1	3	3	3	3	3	1	3	3	3	3	3	3	3
1	**Site**	**6.8**	**7.9**	**7.7**	**9.5**	**7.4**	**8.1**	**6.8**	**9.0**	**6.5**	**9.3**	**7.6**	**8.1**	**8.1**	**6.1**	**8.7**	**8.6**	**6.4**	**9.3**
	Proximity of parking to main entrance	1	4	4	4	1	1	5	5	5	4	1	3	3	4	3	5	5	4
	Provides a dedicated Pre-Kindergarten Entry	1	5	5	5	1	5	5	5	5	5	1	5	5	5	5	5	5	5
	Site supports appropriate number of parking spaces	4	5	5	5	4	5	3	5	3	5	4	5	4	3	5	4	3	5
	Positions grade-level specific playground adjacent to grade-level classroom areas	1	3	3	5	1	3	2	3	2	5	1	1	3	4	3	3	4	5
	Having a safe, clear and easily understood circulation route - Separation of bus, car and pedestrians.	2	2	2	1	2	4	3	4	2	1	2	4	4	2	4	4	2	1
	Adequate queuing space for buses and cars	2	3	3	5	2	1	1	3	1	5	2	1	1	1	4	3	1	5
	Ability to expand building for future growth	3	2	2	5	5	2	1	2	1	5	5	3	2	1	3	2	1	5
	Maximizes open green space in addition to playgrounds on site	4	2	2	5	4	4	3	4	3	5	4	4	3	2	4	3	2	5
	Student access to play areas without crossing parking or roadways	5	5	5	5	3	5	4	5	4	5	5	5	5	4	5	5	5	5
	Scale of building to site	4	3	3	5	4	3	2	3	2	4	4	3	3	1	3	3	1	4
	Minimizes steep slopes and retaining walls	3	3	3	5	4	4	3	4	2	5	5	5	4	2	5	4	2	5
	Minimizes impacts to wetlands	4	4	4	3	5	5	4	5	4	3	4	3	5	3	3	5	3	3
	Maximizes distance from abutters and property line	5	5	4	5	5	4	3	4	3	5	5	5	4	2	4	3	2	5
	Access to municipal infrastructure (sewer, water, natual gas)	3	3	3	5	4	4	3	4	3	5	5	5	4	3	5	4	3	5
	Proximity of location to students - minimize travel time	4	4	4	1	5	5	4	5	4	1	3	3	5	4	3	5	4	1
1	**Restrictions & Future Uses**	**8.9**	**8.9**	**8.9**	**2.2**	**10.0**	**10.0**	**8.9**	**10.0**	**8.9**	**2.2**	**11.1**	**11.1**	**10.0**	**8.9**	**11.1**	**10.0**	**8.9**	**2.2**
	Minimal restrictions for development (Article 97, Municipal Open Space designation, Wetlands, Wellhead Protection Zones)	3	3	3	1	4	4	3	4	3	1	5	5	4	3	5	4	3	1
	Limits future use as other town functions in a centralized location	5	5	5	1	5	5	5	5	5	1	5	5	5	5	5	5	5	1
1	**Community**	**4.4**	**6.7**	**6.7**	**10.0**	**5.6**	**8.9**	**8.9**	**8.9**	**7.8**	**7.8**	**5.6**	**10.0**	**10.0**	**7.8**	**8.9**	**8.9**	**5.6**	**8.9**
	Public/Private Separation	1	3	3	5	2	4	4	4	4	4	2	4	4	4	4	4	2	4
	Quality community spaces and ease of access to these spaces without compromising building security	3	3	3	4	3	4	4	4	3	3	3	5	5	3	4	4	3	4
1	**Sustainability**	**5.6**	**6.7**	**6.7**	**8.9**	**5.6**	**6.7**	**6.7**	**10.0**	**7.8**	**8.9**	**6.7**	**8.9**	**6.7**	**6.7**	**10.0**	**10.0**	**6.7**	**8.9**
	Meets Town and school district goals for Sustainability and Energy Efficiency and Meets MSBA Requirements for Additional 3%+ Point	2	3	3	5	3	4	3	4	4	5	3	5	4	3	5	4	3	5
	Solar Orientation; classrooms oriented along east-west axis for best control of north/south light	3	3	3	3	2	2	3	5	3	3	3	3	2	3	4	5	3	3
1	**Logistics / Construction Impact**	**10.0**	**10.0**	**10.6**	**10.6**	**2.8**	**6.7**	**10.0**	**8.3**	**10.6**	**10.6**	**2.8**	**6.7**	**6.7**	**10.0**	**9.4**	**7.8**	**10.6**	**10.6**
	Simple construction phasing	4	4	5	5	1	2	4	3	5	5	1	2	2	4	4	2	5	5
	Minimizes construction phase disturbance to students/teachers	5	5	5	5	1	2	5	3	5	5	1	2	2	5	4	3	5	5
	Construction phasing impact to neighbors	4	4	4	4	2	3	4	4	4	4	2	3	3	4	4	4	4	4
	Temporary facilities not required	5	5	5	5	1	5	5	5	5	5	1	5	5	5	5	5	5	5
1	**Consolidation**	**4.4**	**4.4**	**4.4**	**3.3**	**5.6**	**7.8**	**6.7**	**7.8**	**6.7**	**5.6**	**5.6**	**10.0**	**10.0**	**8.9**	**10.0**	**10.0**	**8.9**	**7.8**
	Traffic impact to neighborhoods and intersections	3	3	3	2	4	4	3	4	3	2	4	4	4	3	4	4	3	2
	Benefits all PK-5 students at three schools (Wildwood, Woburn Street, North Intermediate)	1	1	1	1	1	3	3	3	3	3	1	5	5	5	5	5	5	5
1	**Total Time to Address All Needs**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**5.6**	**5.6**	**6.7**	**6.7**	**6.7**	**2.2**	**8.9**	**8.9**	**11.1**	**11.1**	**11.1**	**11.1**	**11.1**
	How well does the alternative limit the time necessary to address all elementary-aged needs across the three subject schools?	1	1	1	1	1	3	3	3	3	3	1	4	4	5	5	5	5	5
1	**Cost**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL SCORE	**47.7**	**55.8**	**56.2**	**55.8**	**43.9**	**62.8**	**62.5**	**69.8**	**63.9**	**60.1**	**46.4**	**72.8**	**69.4**	**68.5**	**78.4**	**75.4**	**67.1**	**67.8**

PROCESS FOR EVALUATING ALTERNATIVES

The Working Group and School Building Committee discussed the Evaluation Matrix at several meetings. First the document was introduced with no scoring to get people familiar with the format and to focus on the criteria and whether they were appropriate and reflective of the values of the Committee and Guiding Principles of Design from the Visioning. One category, "Article 97 Restrictions and Future Uses" was added. This was originally a criterion under the Site category. However, it was thought to be important enough to warrant its own category along with an additional criteria "Limits future use as other town functions in a centralized location". Site restrictions and potential future use have multiple impacts from project duration to community use and would help decide between options at this early concept stage.

At the following series of meetings, the Matrix was presented filled out with scores recommended by D+W who was most familiar with each of the numerous options and how they met or did not meet each criterion. The Working Group gave its feedback, and scoring was discussed and agreed to. Total scores were noted, absent the cost estimates.

At the final series of Working Group and SBC meetings, the cost estimates were added to the Matrix. SBC members were advised that at this stage that calculations were estimates of total project costs, did not include possible MSBA participation, for the purposes of comparison only, and should be viewed as order-of-magnitude figures only to help evaluate the ***relative cost differences between Alternatives***.

As such, it was noted that there was not a large enough spread between the Alternatives that would influence their ranking. Put another way, no Alternative was deemed so out of scale with the others that it ought to be eliminated from consideration purely based on cost. For this reason, the cost category was not scored in the Matrix.

As a final point of input, this information was presented at Public Meeting #3. Members of the community were shown the criteria, the matrix of the Alternatives and criteria scores, and the costs, and then invited to give input and feedback on the Alternatives prior to finalizing a short list.

Comments from the public meeting included the following:

- Estimated Tax Impact
- Impact on students during construction
- Current maintenance and energy costs
- Details about school site and impact to activities that currently take place on the site
- Town's funding plan
- Cost comparison of various renovations to a new consolidated school
- Long term value to the town
- Projected cost for addressing all 3 schools if do not proceed with pk-5taking into account increases in construction cost

- Cost of building 3 new schools verse 1 PreK -5, including eceonomic benefits of maintaining less buildings
- Long term cost savings
- Focus on building a safe building
- Impact to student learning environments
- Anything other than a K-5 school is pushing the problem down the road
- Hard numbers on maintenance costs; traffic and bussing; impact on town budget

Following that meeting, the Working Group met one more time on April 3 to consider the community feedback, rank the alternatives, and select a recommended short list for continuation into PSR. It was noted that community sentiment aligned closely with that of the School Building Committee. The District selected the highest-performing Alternatives in terms of their scores on the Matrix, that satisfy the required MSBA categories, for each proposed enrollment:

- repair-only - one alternative
- addition/renovation - one alternative selected
- new construction - three alternatives selected

The SBC voted on April 3, 2024 to approve the selected alternatives and to submit the PDP report to the MSBA on April 18, 2024. Copies of the vote and meeting minutes can be found in the appendix.

PROPOSED LIST OF PRELIMINARY ALTERNATIVES

After a thorough evaluation of the Alternatives, the School Building Committee formally recommends the following alternatives for further development in the Preferred Schematic Report:

Altern. Number	Description	Grade Configuration/ Enrollment
PK-K R.1	Capital Improvements Plan/ Repair only – Wildwood Early Childhood Center	PK- K (130+)
PK-5 AR.1	Phased Additions + Renovations to North Intermediate School	PK-5 (755+)
PK-K N.1	New Construction – Wildwood Early Childhood Center site	PK- K (130+)
PK-3 N.1	New Construction– Woburn Street School site	PreK-3 (510+)
PK-5 N.1	New Construction– North Intermediate School site	PreK-5 (755+)

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LOCAL ACTIONS AND APPROVAL

Attached is the signed local actions and approvals certification letter.

Meeting notes of the School Building Committee with agendas and copies of materials presented are included in Appendix X.18.

Public meeting presentations on November 8, 2023, February 1, 2024 and March 28, 2024 are included in Appendix X.17.

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WWW.WILMINGTONMA.GOV

April 18, 2024

Ms. Diane Sullivan
Senior Capital Program Manager
40 Broad Street
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Town of Wilmington School Building Committee ("SBC") has completed its review of the Feasibility Study Preliminary Design Program for the Wildwood Early Childhood Center project (the "Project"), and on April 3, 2024 the SBC voted to approve and authorize the Owner's Project Manager to submit the Feasibility Study related materials to the MSBA for its consideration. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

Since the MSBA's Board of Directors approved the District to conduct a Feasibility Study on June 22, 2022 the SBC has held eleven (11) meetings with the OPM regarding the Project, in compliance with the state Open Meeting Law. These meetings include:

- June 21, 2023, 6:00 PM, @ Wilmington High School Large Group Instruction Room, see Meeting Minutes attached.
- August 16, 2023, 6:00 PM, @ Remote Participation via ZOOM, see Meeting Minutes attached.
- October 18, 2023, 6:00 PM, @ Remote Participation via ZOOM, see Meeting Minutes attached.
- November 8, 2023, 7:00 PM, @ Remote Participation via ZOOM, see Meeting Minutes attached.
- December 13, 2023, 6:00 PM, @ Wilmington High School Large Group Instruction Room, see Meeting Minutes attached.
- January 10, 2024, 6:00 PM, @ Wilmington High School Large Group Instruction Room, see Meeting Minutes attached.
- January 25, 2024, 6:00 PM, @ Remote Participation via ZOOM, see Meeting Minutes attached.

- February 7, 2024, 6:00 PM, @ Remote Participation via ZOOM, see Meeting Minutes attached.
- March 6, 2024, 6:30 PM, @ Wilmington High School Large Group Instruction Room and Remote Participation via ZOOM, see Meeting Minutes attached.
- March 20, 2024 6:30 PM, @ Wilmington High School Large Group Instruction Room and Remote Participation via ZOOM, see Meeting Minutes attached.
- April 3, 2024 6:30 PM, @ Wilmington High School Large Group Instruction Room, see Meeting Minutes attached.

The meeting minutes are attached and outline any information shared or votes taken. The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review and are posted on the Wilmington Public Schools website with a link to the Wildwood Early Childhood Center Project website.

In addition to the SBC meetings listed above, the District held three public community meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

- November 8, 2023 @ 6:00 PM, Remote Participation via ZOOM, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.
- February 1, 2024 @ 6:30 PM, Remote Participation via ZOOM, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.
- March 28, 2024 @ 7:00 PM, Wilmington High School Large Group Instruction Room and Remote Participation via ZOOM, the presentation was given by the SBC Members and the project team, see PowerPoint presentation attached.

There were notes taken, however no formal meeting minutes or votes resulted from the community meetings. The presentation materials for each meeting are available locally for public review and are posted to the Wilmington Public Schools website with a link to the Town of Wilmington website.

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq.*

If you have any questions or require any additional information, please contact Dr. Glenn Brand at (978) 694-6000 or glenn.brand@wpsk12.com.

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: Louis Cinaglia, IV

Title: Chief Executive Officer
Date: April 3, 2024

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: Glenn Brand, Ed.D.

Title: Superintendent of Schools
Date: April 3, 2024

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By: David Ragsdale

Title: Chairperson of the School Committee
Date: April 3, 2024