SMMA

Comprehensive Facilities Assessment

Westford Public Schools

Westford, MA

August 18, 2023

Prepared by
SMMA
1000 Massachusetts Avenue
Cambridge, Massachusetts

Comprehensive Facilities Assessment of the Westford Public Schools
Westford, MA.

Prepared by
SMMA

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Section A

Introduction and Executive Summary

Acknowledgments

SMMA would like to acknowledge the participation and guidance provided by the district administration, Facilities department, and the teachers and staff of the Westford School District.

Adhoc Working Group

Christopher Chew - Superintendent of Schools
Kerry Clery – Assistant Superintendent of Schools
Chris Sanders - Chair, School Committee
Valerie Young – Vice Chair, School Committee
Jeff Goodwin – Facilities Director

School Committee

Chris Sanders – Chair
Valery Young – Vice Chair
Marisol Garcia
Sean Kelly
Gloria Miller
Mingquan Zheng

Introduction

SMMA was engaged by Westford Public Schools to conduct a "Comprehensive Facilities Assessment of the Westford Public School Buildings". By it's nature, the result is a Master Plan for the district and at times it is refered to in the report as the Master Plan.

The focus of this Plan is to review all school buildings for their ability to include appropriate educational spaces that meet program and enrollment needs while also supporting the quality of learning experiences. This includes both physical and programmatic accessments.

Included in the accessments is: the review of grade level configurations, elementary and middle school districting, relocation of district administration, identification of critical maintenance issues for the next ten years, possible renovations, and additions or building replacements to meet the district goals.

Early in the process, the principals of each school were interviewed as part of the existing building conditions and educational facility effectiveness review. Meeting reports from those meetings can be found in Appendix 2.

The data collected in the various assessments, combined with the project goals and community input yields options for how the buildings might best support teaching and learning for the forseeable future.

Westford Master Plan / Study Goals

The Westford School Department "Request for Qualifications" (RFQ) included certain goals for the study. SMMA conducted meetings with administrators, school principals, students and community members who identified additional goals.

RFQ Goals Identified:

Review of educational spaces to see if they meet program and enrollment needs while also supporting the quality of learning experiences.

- Review of grade level configurations and elementary and middle school districting
- Explore possible relocation of district administration
- Identify critical maintenance items for building envelope and building engineering systems
- Determine if renovations, and additions or building replacements are needed to best serve the community for the future
- Educational goals include:
    - Student collaboration
    - Experiential / hands-on learning
    - Creative thinking and problem solving
    - Multiple opportunities to engage in STEM learning (and STEAM)
    - Meeting the needs of all learners through tiered instruction
- Conduct community meetings to gather input from parents, local boards and community groups
- Assistance with development of a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA) for a potential capital project.

Refinements of the RFQ goals and additional goals identified through client / SMMA discussions:

- Minimize transitions across PreK – 12 student career
- Identify potential ways to create equity (vs equality) across learning environments including:
    - Flexibility
    - Universal Design for Learning (UDL)
    - Social Emotional Learning (SEL)
    - Project and inquiry-based learning (PBL)
- Improve physical environments for school safety and security

Overview of Previous Existing Conditions Assessments

Within the last decade, the Town of Westford conducted two assessments of the existing schools to examine the functionality of the buildings and site, as well as determine the educational adequacy of the school facilities.

SMMA reviewed each of these studies and found them to be consistent with our walkthroughs of the buildings and interviews with school administrators.

DRA 2014 Town-Wide Facilities Conditions Assessment

In 2014, DRA Architects and their engineering consultants visited and evaluated 27 town buildings, including all the Westford public schools, and met with Town of Westford Department Heads to determine which physical improvements were necessary for the buildings. The educational adequacy of the school buildings was not examined.

Such improvements included:

- General
- Life Safety
- Health
- Hazardous Materials
- ADA-compliance
- Site Issues
- Exteriors
- Interiors
- Energy and Water Conservation
- Mechanical
- Electrical
- Plumbing
- Fire-Protection

The design team generated a list of general maintenance and capital repairs for each of the school buildings, and provided an estimated cost for each repair item, as well as indicated the fiscal year in which said repairs should occur.

Roof Consulting 2018 Conditions Assessment Reports

In 2018, Roof Consulting Services, based out of Glen Allen, VA, conducted a **Conditions Assessment Report** for roof conditions of each public building, including several, but not all, the Westford Public School buildings. The schools evaluated were Nabnasset, Robinson, Stony Brook, Rita Miller, and Westford Academy. While the reports contain significant information on the roofs, there was no assessment completed on other components of the buildings and sites, nor on educational adequacy of the buildings.

Roof Consulting Services found the following schools to have the most significant roof issues:

- Robinson Elementary School – Failed Condition
- Stony Brook Middle School – Poor Condition
- Westford Academy – Poor Condition

Enrollment Discussion

In November 2022, the New England School Development Council (NESDEC) developed a report for the Westford Public Schools district. The report includes historical enrollment data for the past ten years as well as projected enrollments for the next ten years. The projected numbers were based on the October 1, 2022, actual enrollments of the district. Section B of this report describes the Enrollment Discission in more detail. The NESDEC report is included in Appendix 1 of this Master Plan report.

Take-aways from the referenced NESDEC report:

Past

- Since the 2012–13 school year, the Grades K-5 population has dropped by approximately 283 students
- Since the 2012–13 school year, the Grades K-12 population has dropped by approximately 541 students (a 10.5% decrease)

Future

- Over the next ten years (2022 to 2032), the Grades 1-5 population is anticipated to rise by approximately 102 students
- Over the next ten years (2022 to 2032), the Grades K–12 population is anticipated to rise by approximately 122 students
- The projections indicate that the steady decline experienced over the past 10 years is coming to an end. The projections indicate a relatively flat population though there will be modest fluctuations, both high and low
- Although the fluctuations may, in a few cases seem large, when spread across multiple schools, multiple grades and multiple sections within a grade, the impact on individual classrooms will likely be modest.

Building Facilities Assessments

During November and December of 2022, representatives of SMMA visited ten school facilities to assess the physical building systems and the educational strategies in each building.

The Facilities Staff of the Westford Facilities Department, led by Jeff Goodwin, Director of Facilities, reviewed concerns and conditions of existing buildings with SMMA's team of architects, engineers, and educational planner during on site tours of each facility.

Prior to visiting the building, Westford provided building documentation for SMMA to use as the basis for defining existing conditions and defining categories and criteria to be reviewed during each building assessment.

SMMA architects and engineers conducted the on-site reviews. Here are the areas of review along with examples of the site and building materials and systems:

Site (civil and landscape) - Circulation, Playgrounds, Parking, Infrastructure & Utilities, Plantings

Structural - Lateral Bracing, General Condition

Architectural - Interior and Exterior Materials, Handicapped Accessibility, Safety & Security

Plumbing - Toilet Rooms, Classrooms, Handicapped Accessibility

Fire Protection – present or not

Heating Ventilation and Air Conditioning (HVAC) -Heating Equipment, Ventilation

Electrical - Lighting, Power, Emergency, Fire Alarm, Communication, Data

The "Facilities Assessments at a Glance" are reviewed in more detail in Section C of this report. The detailed reports for all schools are in Appendix 3.

Educational Adequacy

The process of education has changed significantly since most of Westford's' school buildings were planned and constructed (in the 20th and early 21st Centuries). Typical academic classrooms of the past were intended as stand-alone spaces that were teacher-centric. Today, teaching and learning has taken on characteristics, as noted below, of Next Generation Learning Environments. It is anticipated that teaching and learning pedagogies will continue to evolve in the coming decades. They will be best served by flexible environments that can enhance learning experiences. The Educational Adequacy is reviewed in more detail in Section D of this report.

20th C Environments (as designed)		**Next Generation Learning Environments**
Teacher Centric	→	Student Centric
Passive Learning	→	Active Learning
Classrooms	→	Flexible Learning Environments
Conventional Technology	→	1:1 Technology Environments
Individual	→	Collaborative
Subject Based	→	Project / Inquiry Based
Standardized	→	Differentiated / Personalized

Historically, each of the schools have supported larger populations than are current, yet many self-identify as full or at capacity. This sense of fullness was reported by school principals and observed during the school visits.

To the extent possible, Special Needs services are delivered in the classroom with additional teachers and or aides.

All Elementary; Middle Schools and Westford Academy

Each building was reviewed and assessed on the following attributes:

Educational Effectiveness – the ability to host current and future:

- Educational curricula
- Teaching and learning methodologies
- Next generation modalities of learning
- Numbers, types and sizes of teaching spaces needed currently and in the future

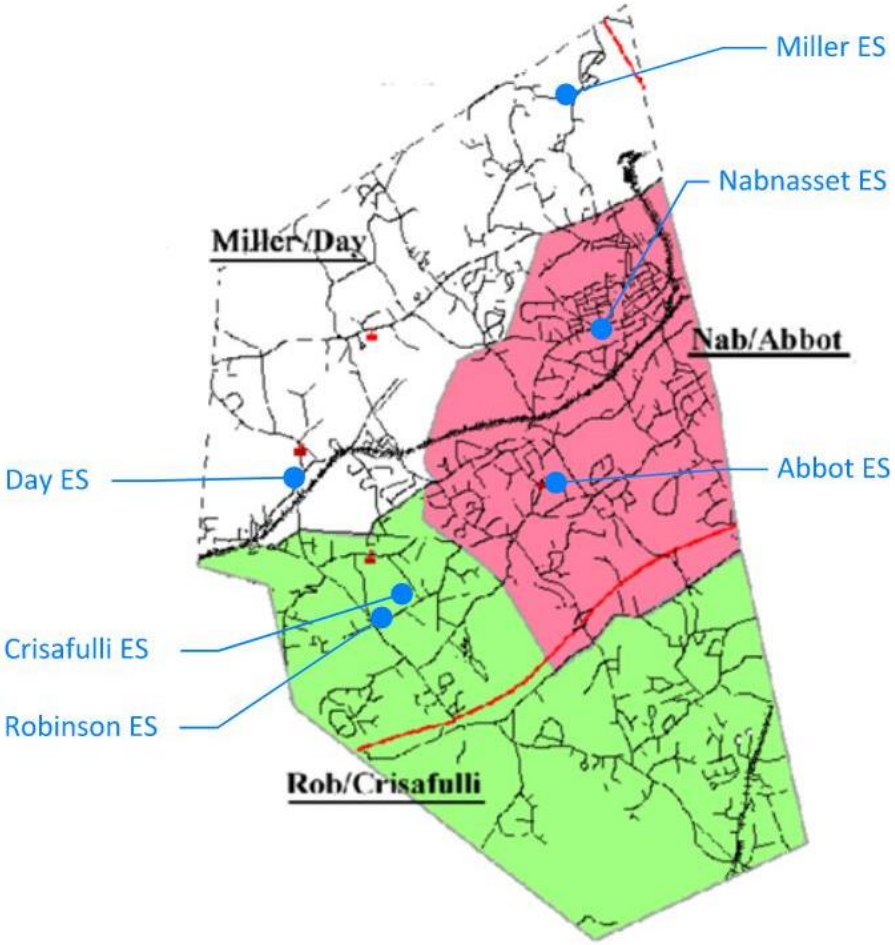
Building Elements – multiple building conditions that impact teaching and learning

- Quality of Environments
- Ventilation
- Lighting
- Furniture
- Technology
- Acoustics

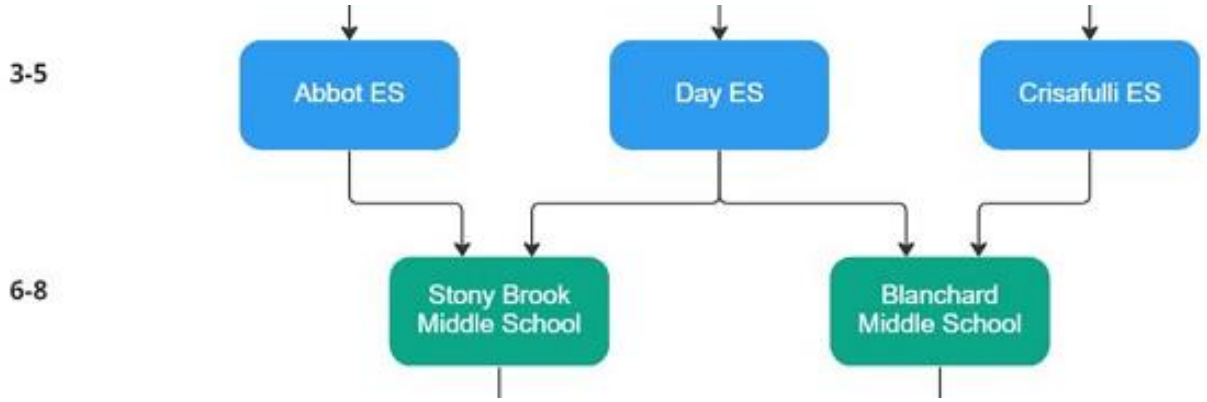
Current Elementary and Middle School District Lines

The elementary school districts are paired so students matriculate from grades PreK to grade 5 with the same cohort of students. Some Special Education programs exist in only one school at each grade level creating exceptions to these district lines The graphics below shows the current elementary and middle school catchment boundaries:

- White – Rita Miller and Norman Day Elementary Schools
- Pink – Nabnasset and Abbot Elementary Schools
- Green – Colonel John Robinson and Crisafulli Elementary Schools

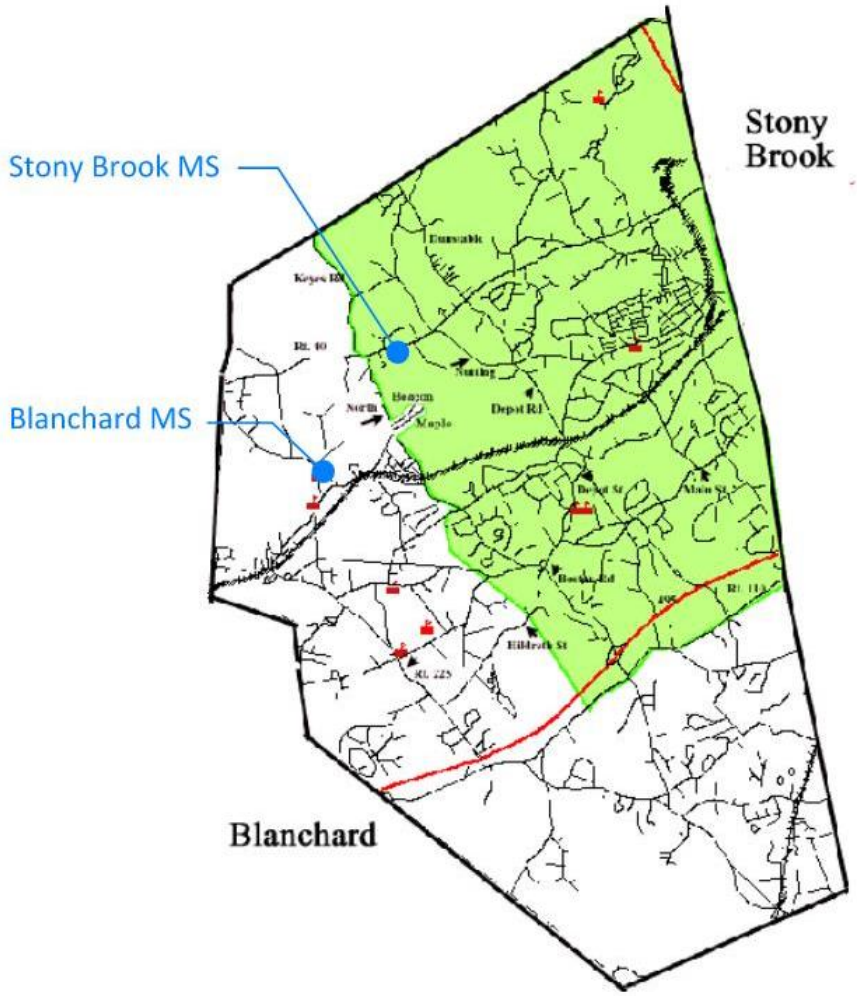


The matriculation from elementary schools to middle schools is shown below. You see that the Day Elementary school divides its population between the two middle schools.



The catchment zones for the middle schools is shown on the town map below

- Green - Blanchard Middle School
- White - Stony Brook Middle School

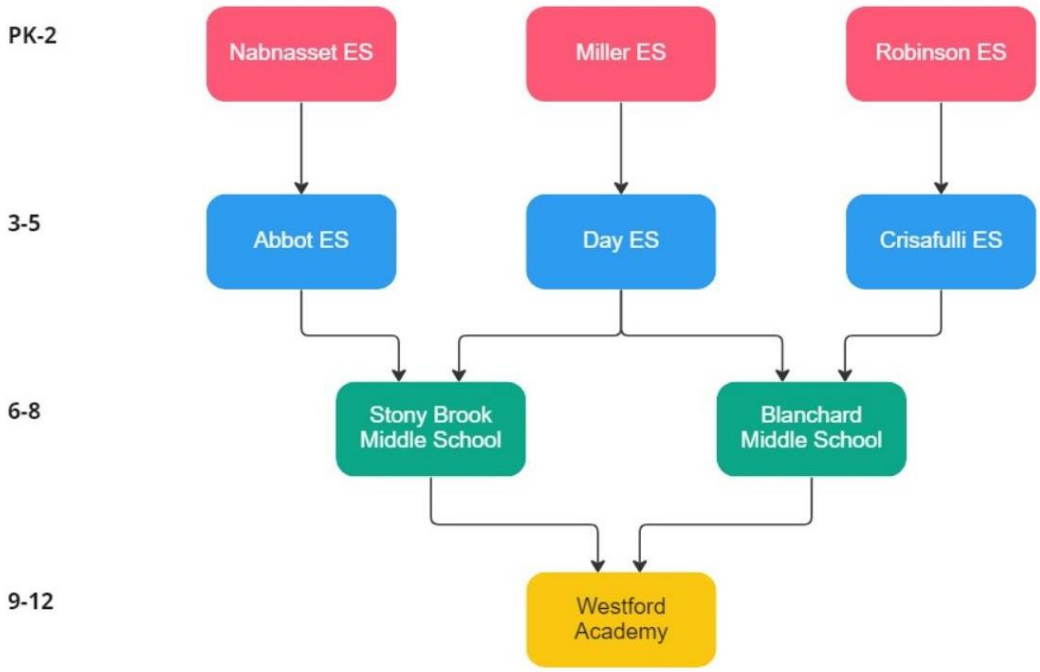


Current Grade Level Configuration

Background

Westford has a grade level configuration consisting of PreK-2, 3-5, 6-8, and 9-12. Each Prek-2 school is paired with a 3-5 school.

Elementary School children matriculate to either Stony Brook Middle School or Blanchard Middle School and then on to Westford Academy.



Master Plan Options

Master Plan Options were discussed with the Ad Hoc Committee and the full School Committee with a presentation (open to the public) on April 24, 2023.and the larger community. See Appendix 2 for the PowerPoint presentation.

The elementary schools were identified as in need of:

- Some educational changes and renovations recommended
- Modest (more) educational changes and renovations recommended
- Comprehensive renovations or building replacement recommended

The Options include configurations that maintain the current grade configuration and an alternate elementary configuration of K-5. See Section E for the discussion of Options.

Redistricting

Redistricting will likely be needed from time to time to balance class sizes. If Westford decides to change the grade configurations, redistricting will very likely accompany the new configurations. Regardless of what direction the school renovation or replacement program takes, there will be an inevitable need to re-evaluate the elementary school attendance zones. The schedule for replacement, including the number of replacement buildings will greatly influence the redistricting process and whether it will need to take place more than once, within any defined schedule.

Moving Forward with the Massachusetts School Building Authority (MSBA)

Engagement with the MSBA is formally initiated through the submission of a Statement of Interest (SOI), followed by an Eligibility Period and a Feasibility Study. This section describes those initial steps in detail, after which a prescriptive design and construction process follows.

Statement of Interest Process (SOI)

1. Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition, or repair of municipally owned school facilities located in cities, towns, and regional school districts.
    - The Westford School Department submitted an SOI for the Robinson School on April 14, 2023.
2. The SOI allows districts to inform the MSBA about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
3. The district either submits under the Core (Capital) Program or the Accelerated Repair program.

The Study scope included assisting with development of an SOI for an assumed Capital Project. It was anticipated that the SOI would be submitted in the Spring of 2024. Following the completion of Facilities Assessment and the Educational Adequacy tasks, it was determined that there was adequate data to develop an SOI prior to the April 2023 deadline. See Section F for a detailed discussion.

The Community Process, Summary of Community Meetings

SMMA, in collaboration with the School Department and School Committee, conducted a series of presentations to keep the school committee and public informed on progress of the study. Community meetings took place on:

- School Committee Meeting – January 30, 2023
- March 9, 2023 to update the community on project activities to date and to conduct an interactive workshop around the current elementary grade configuration as well as an alternative grade configuration.
- School Committee Meeting – March 27, 2023
- School Committee Meeting – April 24, 2023

- School Committee Meeting – June 20, 2023

  Note: PowerPoint presentations from each of the Community Meetings can be found in the Appendix 2 of this report

Discussion of Probable Costs

Probable costs are a function of several factors including, but not limited to, material costs and labor, availability of qualified contractors, construction schedule, market conditions, complexity, and what is known as the project delivery method. Section H is intended to capture factors and decisions that can impact costs at a very high level and to provide an understanding of design and construction cost vocabulary.

The categories of scope and identified values are not "additive". This information should be seen as an a-la-carte menu of building projects and repair tasks. Each time a building project or Capital Repair project is undertaken, there may be ripple events that alter, and likely removes, some other projects or Capital Repairs.

Background: In April 2023, the School Department and Town of Westford submitted a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA). The SOI requested that Westford's Robinson Elementary School be accepted into the Capital Pipeline for study. The SOI also included information about the Abbot and Day elementary schools and suggested that the "study" might expand to include more than just the Robinson school building and population. This future MSBA "study" would explore a no-build solution, additions and renovation solution and a new construction solution. The size (and student design size) of a possible project will be an outgrowth of that study.

The Conceptual Cost model identifies costs for a 350-student school and a 700-student school (multiple populations). Also included are multiple Capital Repairs projects (or tasks) for each of the school buildings including Robinson, Abbot and Day. Depending on schedules for an MSBA study, the town will need to decide on which Capital Repairs might need to proceed and are there lower priority repairs that might no need to be undertaken.

Capital Repairs: This Master Plan included a review of each of the buildings for both physical and educational issues. The physical condition reviews yielded many items in various stages of need. These building systems or materials were reviewed with the town Facilities staff before including them in the estimating process. The color coding is a series of priorities, discussed between SMMA staff and Westford Facilities.

Central Office Administration

Currently, the Westford Central School Department offices are located in the former Millennium School building. The building was constructed in 1999 as a single-story modular building. It was intended as a temporary building which is typically the nature of this type of modular construction.

With the many building condition issues it has, the school department intents to relocate to a permanent building location. There was hope that one of the school buildings might be able to house the administration, the Educational Adequacy review determined that none of the schools has adequate space.

Options 2 & 3 show a possible future home in the existing Abbot School building. Option 1 has no location identified for the School Department Offices. This issue needs to be addressed within the Study that is part of a MSBA Capital Projects analysis.

Student Discussion

A select group of Westford Academy students engaged six middle school students to discuss their experiences in elementary school. They focused specifically on the grade configurations including Westford's current elementary two grade group schools verse the possibility of a new configuration of K - 5. Their detailed report is included in the appendix of the report.

End of Section A

Section B

Enrollment Discussions

In November 2022, the New England School Development Council (NESDEC) developed a report for the Westford Public Schools district. The report includes historical enrollment data for the past ten years as well as projected enrollments for the next ten years. This was done based on the October 1, 2022 actual enrollments. The NESDEC report is included in Appendix I of this Master Plan report.

NESDEC uses the Survival Cohort Model when developing projected enrollments. This model includes historical trends, numbers of live births, anticipated matriculation of students from year to year, newly constructed housing, and anticipated school-aged children from that housing. It may not include housing projects that are in the planning stages.

NOTE: Beyond 5 years out, populations are "estimated" for elementary years.

Take-aways from the referenced NESDEC report:

- Since the 2012–13 school year, the Grades K-5 population has dropped by approximately 283 students
- Since the 2012–13 school year, the Grades K-12 population has dropped by approximately 541 students (a 10.5% decrease)
- Over the next ten years (2022 to 2032), the Grades 1-5 population is anticipated to rise by approximately 102 students
- Over the next ten years (2022 to 2032), the Grades K–12 population is anticipated to rise by approximately 122 students
- The projections indicate that the steady decline experienced over the past 10 years is coming to an end. The projections indicate a relatively flat population though there will be modest spikes, both high and low
- Although the spikes may in a few cases, seem large, when spread across multiple schools, multiple grades and multiple sections within a grade, the impact on individual classrooms will likely be modest.

Historical Enrollments

The following chart takes data from the NESDEC report to show the historical changes over the past 10 years including the highs and lows. This is included for context for similar data for the next ten years.

Historical Previous Ten Years (2012-2022)

Grade Levels	Change from 2012 to 2022	Peak Year Low	Change from 2012 to 2022	Peak Year High	Change from 2012
PK - 2	-98	2020 - 2021	-213	2012 - 2013	0
3 - 5	-187	2021 - 2022	-234	2012 - 2013	0
6 - 8	-103	2020 - 2021	-124	2014 - 2015	69
9 - 12	-157	2022 - 2023	-157	2018 - 2019	38

PK-12 overall decline of 541 students or 10.5%

Projected Enrollments

This chart similarly takes data from the NESDEC report to show the Projected Enrollments over the next 10 years including the highs and lows.

Projected Next Ten Years (2022 - 2033)

	Change from 2022 to 2032	Peak Year Low	Change from 2022 to 2032	Peak Year High	Change from 2022
PK - 2	44	2024 - 2025	-6	2027 - 2028	63
3 - 5	59	2024 - 2025	-3	2030 - 2031	96
6 - 8	41	2024 - 2025	-47	2032 - 2033	41
9 - 12	-21	2028 - 2029	-73	2022 - 2023	0

PK-12 overall increase of 122 students or 2.6%

For the purposes of this chart, Pre-kindergarten (PreK) numbers are kept as a constant. PreK enrollments vary each year by the number of Special Education students served. These students are balanced within a class with tuition in general education students. Seven (7) Special Education students are paired with eight (8) general education peers. These fifteen (15) students then make up an “integrated PreK classroom”.

Future PreK Needs

Based on discussions with the school department and community members suggests that Prekindergarten enrollments will likely remain as "integrated PreK classrooms" serving Special Education students along with tuition general education peers. Universal PreK is unlikely until it is mandated and funded by the Commonwealth.

School Enrollments / Class Sizes

The follow chart shows the classroom enrollments for the elementary schools, by grade and class size. The class sizes are all within the school department guidelines. Classroom sections are well ballenced across the grade levels and among the schools. With the exception of a few high and low outlyers, most classes are within the (19) to (21) students per classroom range. It should be noted that the Massachusetts School Building Authority (MSBA) identifies class size targets of (18) for kindergartens and (23) for grades 1 – 5 when planning new or renovated school buildings. The notable exception on class sizes is the Abbot School.

The Abbot School was the former building for Westford Academy and as such, includes high school sized rooms (for that point in time). With many smaller-than-current-standard room sizes, class sizes are kept small to maintain a reasonable room size to student number ratio.

PreK - 2 ELEMENTARY SCHOOLS								Totals	Avg
Colonel John Robinson School									
PK	15	16						31	
K	21	21	22	21	20			105	21
1	21	22	21	22	22			108	21.50
2	20	20	20	21	19			100	20
Total								**344**	**20.83**
Nabnasset Elementary School									
PK	13	19						32	
K	21	21	21	21	21			105	21
1	20	20	21	20	21			102	20
2	20	20	20	20	19	19	19	137	20
Total								**376**	**20.33**
Rita Miller Elementary School									
PK	1	14	16	6				37	
K	20	20	18	20				78	20
1	19	18	19	17	20			93	18.5
2	23	23	22	22				90	23
Total								**298**	**20.5**

3 - 5 ELEMENTARY SCHOOLS	Totals	Avg

Abbot Elementary School									
3	16	17	17	16	18	17	17	118	16.5
4	20	20	20	20	20	19		119	20
5	18	18	17	18	18	18	18	125	18
Total								**362**	**18.17**
Norman Day Elementary School									
3	21	21	21	20	20			103	21
4	20	20	21	21	21			103	20
5	20	20	19	20	20	20		119	20
Total								**325**	**20.33**
Crisafulli Elementary									
3	20	20	20	21	20			101	20
4	20	20	20	19	21	20		120	20
5	17	20	21	19	20	19		116	18.5
Total								**337**	**19.5**

End of Section B

Section C

Facility Assessment Reports at a Glance

Introduction

This section provides summaries of findings at each of the Westford Public Schools. For more comprehensive reviews of building systems and site attributes by school, refer to Appendix 3: Existing Building Facilities.

The following general comments apply to these "At a Glance" summaries and the detailed reviews:

- The study assumes that schools were designed and built to applicable Codes at the times of construction
- The terms "inadequate and obsolete" are used to describe materials or systems and do not mean that said materials or systems need to be promptly replaced. Rather, the report is noting that these components or systems are beyond the anticipated useful life. This is applicable to any future building renovations.
- For the presence and conditions of hazardous materials, consult on-file AHERA reports.

PreK-2 Schools

Colonel John Robinson Elementary School

One story building was designed / constructed in 1968 - 1969 (54 years old) as an "open Plan" school.

- Structural – building predates the requirements for seismic lateral bracing
- Building envelope ranges from poor to fair/good condition
- Interior materials range from poor to fair/good condition
- The plumbing system components from poor to fair/good condition
- Fire Protection System – none
- HVAC – much of the system is original from 1969 and is obsolete and beyond its expected life. The potential addition of air conditioning is an anticipated capital cost.
- Electrical - system components from poor to fair / good condition; lacking needed power in classrooms
- Fire Alarm - much of the system is original from 1969, system components range from poor to fair/good condition
- Areas of the school lack appropriate handicapped accessibility

The potential addition of air conditioning has been included in the capital repair section costs.

Nabnasset Elementary School

Designed / Constructed in 1960 (63 years old) with classroom additions in 1963 & 1996

- Structural – building predates the requirements for seismic lateral bracing
- Building envelope is generally in fair to fair/good condition
- Interior materials range from poor to fair/good condition
- Plumbing – most systems are noted as in poor condition, most fixtures are non-ADA compliant
- HVAC – mostly in good condition with significant replacement in 1995
- Fire Protection System – installed in 1995, fair/good condition

- Electrical system – mostly in good condition
- Most building components and systems range from fair to good conditioning, functioning and maintained. Some issues have been identified for need of maintenance. The potential addition of air conditioning has been included in the capital repair section costs.
- Critical spaces that are lacking in the building, are small group rooms located within grade level areas for student collaboration and for Special Education students to receive "pull over" services close to their home rooms, rather than pull out to rooms located further away. One way to achieve this may be by reconfiguring SPED classrooms.

Rita Miller Elementary School

- Designed / Constructed in 2001-2002 as a 3 – 5 elementary School (22 years old).
- Most building components and systems are in fair to good conditioning, functioning and maintained. Some issues have been identified for need of maintenance. The potential addition of air conditioning has been included in the capital repair section costs.
- Critical spaces that are lacking in the building, are small group rooms located within grade level areas for student collaboration and for Special Education students to receive "pull over" services close to their home rooms, rather than pull out to rooms located further away. One way to achieve this may be by reconfiguring SPED classrooms.

Grades 3 – 5 Schools

Abbot Elementary School

Designed in 1955 as Westford Academy (67 years old); converted to Abbott Elementary school when the Academy relocated to the new school. It appears that minor renovations took place at that time. Minor addition in 2005 and an elevator was added in 2011. Abbot shares the site with the Millennium Building.

- Class sizes are kept smaller than at other elementary schools at least 1/3 of the classrooms are considered under MSBA guidelines (depending on the criteria used)
- Structural – building predates the requirements for seismic lateral bracing
- Building envelope is in fair condition
- Interior materials range from poor to fair/good condition
- Plumbing – most systems are noted as in poor condition, most fixtures are non-ADA compliant
- Fire Protection System – none
- HVAC Systems – most systems are beyond the life expectancy
- Electrical Systems - most systems are in fair to poor condition and beyond the life expectancy
- Fire Alarm System – is inadequate considering the lack of a fire protection system
- Areas of the school lack appropriate handicapped accessibility

Crisafulli Elementary School

Designed / Constructed in 2001-2002 as a 3 – 5 elementary School (22 years old). Crisafulli shares a site with the (feeder) Robinson Elementary School and the High School.

Most building components and systems are in fair to good conditioning, functioning and maintained. Some issues have been identified for need of Capital maintenance. The potential addition of air conditioning has been included in the capital repair section costs.

Critical spaces that are lacking in the building, are small group rooms located within grade level areas for student collaboration and for Special Education students to receive "pull over" services close to their

home rooms, rather than pull out to rooms located further away. One way to achieve this may be reconfiguring SPED classrooms.

Norman Day Elementary School

Designed/Opened in 1964 as a middle school, it was converted to use as an elementary school in 2003 +/-. It had a classroom addition in 1999. The school presently serves 325 students in grades 3 – 5.

- Structural – building predates the requirements for seismic lateral bracing
- Building envelope is generally in fair condition
- Interior materials range from poor/fair to fair/good condition
- Plumbing – most systems are noted as in poor/fair condition, most fixtures are non-ADA compliant
- Fire Protection System – none
- HVAC Systems – most systems in poor/fair condition and are beyond the useful life expectancy
- Electrical Systems - most systems are in poor to fair condition and beyond the useful life expectancy
- Fire Alarm System – systems and components are in poor/fair to fair good condition
- Areas of the school lack appropriate handicapped accessibility

The potential addition of air conditioning has been included in the capital repair section costs.

Blanchard Middle School

One story building designed / opened in 1990 - 1992 (31 years old) as a middle school , serves 542 students in grades 6-8. The building has served larger populations in the past.

- The building envelope has a wide range of conditions from poor to good, see details
- Interior materials range from poor/fair to fair/good condition
- Plumbing systems range from poor to fair/good
- Mechanical systems are mostly in fair/good condition
- Electrical systems are mostly in fair/good to good condition
- Security and communications systems range from poor/fair to good

The potential addition of air conditioning has been included in the capital repair section costs.

Stony Brook Middle School

Designed / Constructed in 2003 as a Grade 6 - 8 Middle School (20 years old).

Most building components and systems are in fair to good conditioning, functioning and maintained. Some issues have been identified for the need of capital maintenance. The potential addition of air conditioning has been included in the capital repair section costs.

End of Section C

Section D

Educational Adequacy, Building Issues & Characteristics

Westford School Buildings

PreK – Grade 2 Elementary Schools

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

Grades 3 – 5 Elementary Schools

- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

Middle Schools

- Blanchard Middle School
- Stony Brook Middle School

High School

- Westford Academy

Central Office / Millennium School

Introduction

All school buildings were reviewed for their ability to serve contemporary and next generation learning into the future. The following building issues are the most impactful to teaching and learning: occupant comfort, health and safety, and adequacy of building systems. Many will need to be addressed at some point in the future. If there were to be building renovations and or additions, all would need to be addressed, triggered by building / health codes or educational needs.

The educational adequacy, is one part of the determination of how the buildings might best serve potential educational pedegogies of the future.

Educational Facility Effectiveness

Educational Effectiveness is defined for this study as the buildings' ability to host current and future:

- Educational curricula
- Teaching and learning methodologies
- Next generation modalities of learning

This can include teaching and learning methodologies, room sizes and appointments, and building elements that reinforce or detract from the ability to learn.

Schools have traditionally been designed to serve "teacher-centric" teaching and learning verse student centric learning. Most, perhaps all, of Westford's schools were designed as teacher-centric, with a single teaching wall with marker board, and individual student furniture in rows. Today, most schools and teachers have already transitioned to the student-centric model for at least some of their lessons. The Westford school administration has identified this teaching and learning modality as a goal for all schools. Room sizes, configurations and furnishings can be different between the schools serving the same grade levels.

These modalities can be described as:[1]

- Teacher-centered learning — the more traditional or conventional approach — the teacher functions in the familiar role of classroom lecturer, presenting information to the students, who are expected to passively receive the knowledge being presented.
- Student-centered learning - the teacher is still the classroom authority figure but functions as more of a coach or facilitator as students embrace a more active and collaborative role in their own learning.

Westford's nine schools were constructed between 1956 to 2003 and cover a wide range of school building types. Most can be categorized as traditional with the exception of the "open plan" Robinson elementary school.

The process of educating today, content, delivery methodology and learning modalities is different from when these schools were built. This Master Plan needs to look as far into the future as possible. The Educational Facility Effectiveness review takes into account both the Educational Spaces and the Building Elements that impact teaching and learning.

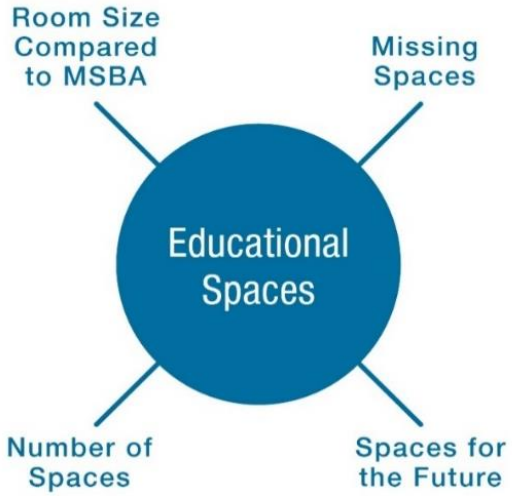
The Massachusetts School Building Authority (MSBA) has "Guidelines" for the type, number and size of rooms that typically comprise schools today. These are formulaic with the size and number of spaces based on the anticipated student population (design size). This MSBA document is called the Summary of Spaces. The Summary of Spaces assumes 23 students per classroom in grades 1-12 and 18 students per classroom in K.

Educational Spaces

Room sizes Compared to MSBA – Is the square footage similar to standards as listed in the Summary of Spaces? Room size has a direct relationship to the number of students properly supported in the classroom. It is a good indicator of flexibility for future educational changes.

Missing Spaces – Are there spaces, typical to a school, that are missing from Westford's schools?

Number of Spaces – Are there enough classrooms and other teaching and support spaces to serve the proposed design size and teaching methodologies?



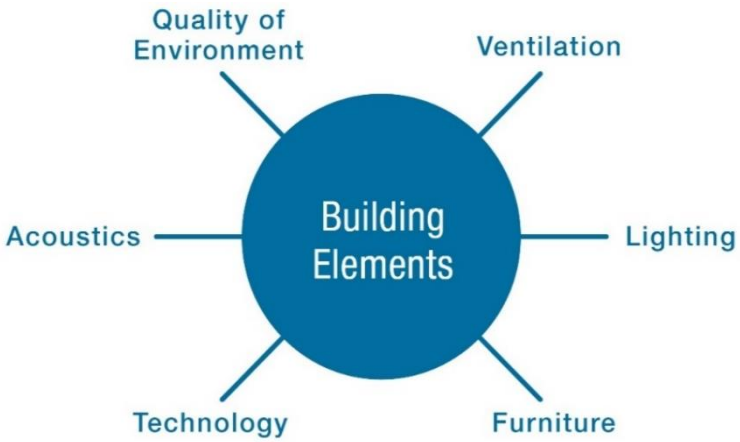
[1] *Complete Guide to Teacher-Centered vs Student-Centered Learning, Joseph Lathan, PhD*

Spaces for the Future – Although it is not possible to forecast the future of education and the spaces needed, are existing spaces flexible enough to accommodate multiple or alternate teaching methodologies?

Building Elements

Quality of the Environment – A subjective interpretation regarding the aesthetics of space. Is the space one where children will want to spend a large portion of their day? Many of the other "building elements" contribute to this quality.

Ventilation – Good ventilation can positively impact students' ability to learn. Does the space have the proper (code-compliant) mechanical ventilation, providing: outdoor air, filtered air, heated, or cooled? Are operable windows, with insect screens, available to provide natural ventilation on temperature appropriate days?



The classroom temperature comfort level is important for effective learning. Heating systems controls need to be functioning properly to avoid the often "too hot or too cold" conditions. Additionally, in May, June, and September, it is not unusual for classroom temperatures to reach levels that are too hot for learning. All Westford schools lack central air conditioning.

Lighting – Is the artificial lighting in the school:

- Offering the proper light levels for educational activities?
- Controllable for a range of activities in the rooms?
- The type that won't aggrevate some students medical or phyisilogical conditions

Furniture – Is the furniture comfortable for students? Can it be easily moved within the classroom to serve multiple modalities of teaching and learning?

Technology – Is the technology infrastructure capable of serving future needs?

Acoustics – Are the rooms' acoustical qualities appropriate for teaching and learning?

- Is there appropriate absorptive material within each room to ensure speech intelligibility between occupants?
- Are the walls and partitions capable of keeping out noise generated from outside each room?

Each of the Westford's school buildings are addressed below. The comments are general and do not address the schools room by room, but rather identify the most typical impressions from school tours by the architectural and engineering team. There were no engineering measurements taken to document featues such as: ventilation, lighting levels and acoustic properties.

Significant Building Condition

Issues are those components that have an impact on teacher's ability to teach and students ability to learn. In some cases, are the buildings able to be renovated in a cost-effective way?

Minor Issues

Identified as minor, have some impact on teaching and learning but are not code or safety issues. Many can likely be accomplished as needed with operational funding.

Westford School Buildings

Abbot Elementary School

Abbot Elementary School was designed / opened for Westford Academy in 1956 (67 years old). The building was reassigned as an elementary school when the new Westford Academy was opened in 1973. Modest renovations likely took place at that time and in subsequent years. There are very few records available to know exactly what and when renovations took place. One apparent addition was the elevator and accompanying changes in 2012 to provide handicapped accessibility to the second floor.

1. **Educational Effectiveness**
    a. Oversized gym and stage – a legacy from the high school use
    b. Widely differing classroom sizes. A legacy from the high school use, many of the high school science labs, home economics and shops were not resized at the time of conversion to an elementary school. Some classrooms are undersized (639 to 695 sf) while other classrooms range in size up to 1,288 sf, and are in excess of MSBA guidelines
    c. The mechanical system in most classrooms remains as the original unit ventilators.
    d. Need for additional spaces to support Special Education
    e. STEM education in elementary schools largely takes place in the homeroom classroom. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.
    f. Building Elements in general:
        i. Quality of environment – well maintained and pleasant
        ii. Ventilation – original classroom unit ventilators
        iii. Lighting – natural and artificial light appears adequate
        iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk, and collaborative tables.
        v. Technology – though infrastructure wiring is out of date, appears adequate
        vi. Acoustics – appears adequate
2. **Building Condition Issues – requiring capital expenditures**
    a. Lack of handicapped access to parts of the building
    b. Obsolete mechanical H&V system
    c. Lack of air conditioning (frequent too hot / too cold for teaching and learning)
    d. Inadequate and obsolete electrical systems
    e. Inadequate and obsolete plumbing systems
    f. Lack of automatic fire protection system

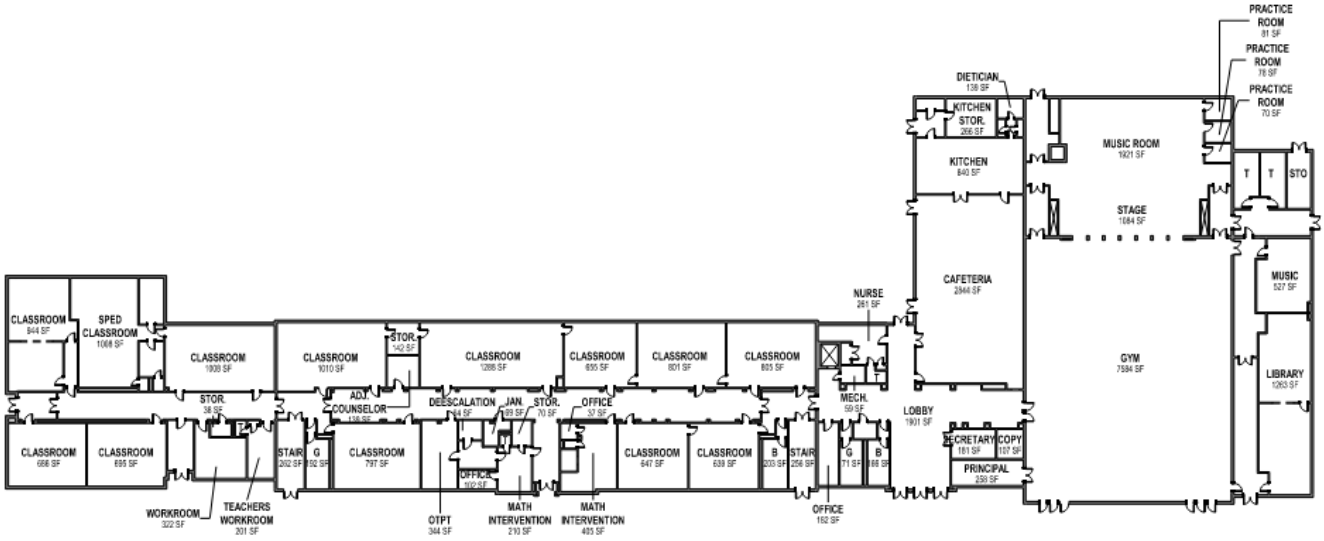
g. Structural – building predates the requirements for seismic lateral bracing. This would be an issue if a major renovation were to be considered.

h. See the Capital Expenditures section of this report for specific items that need repair or replacement.

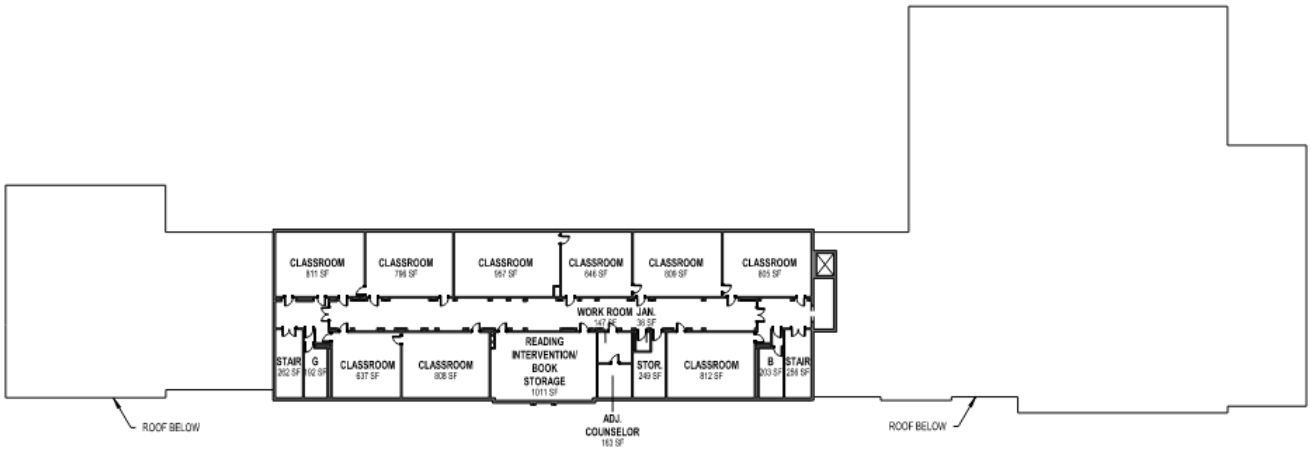
3. Minor Issues – may be accomplished with operational funding

a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for "pull over" services close to their home rooms rather than pull out to further away rooms. Some of this might be possible by reconfiguring SPED classrooms.

b. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



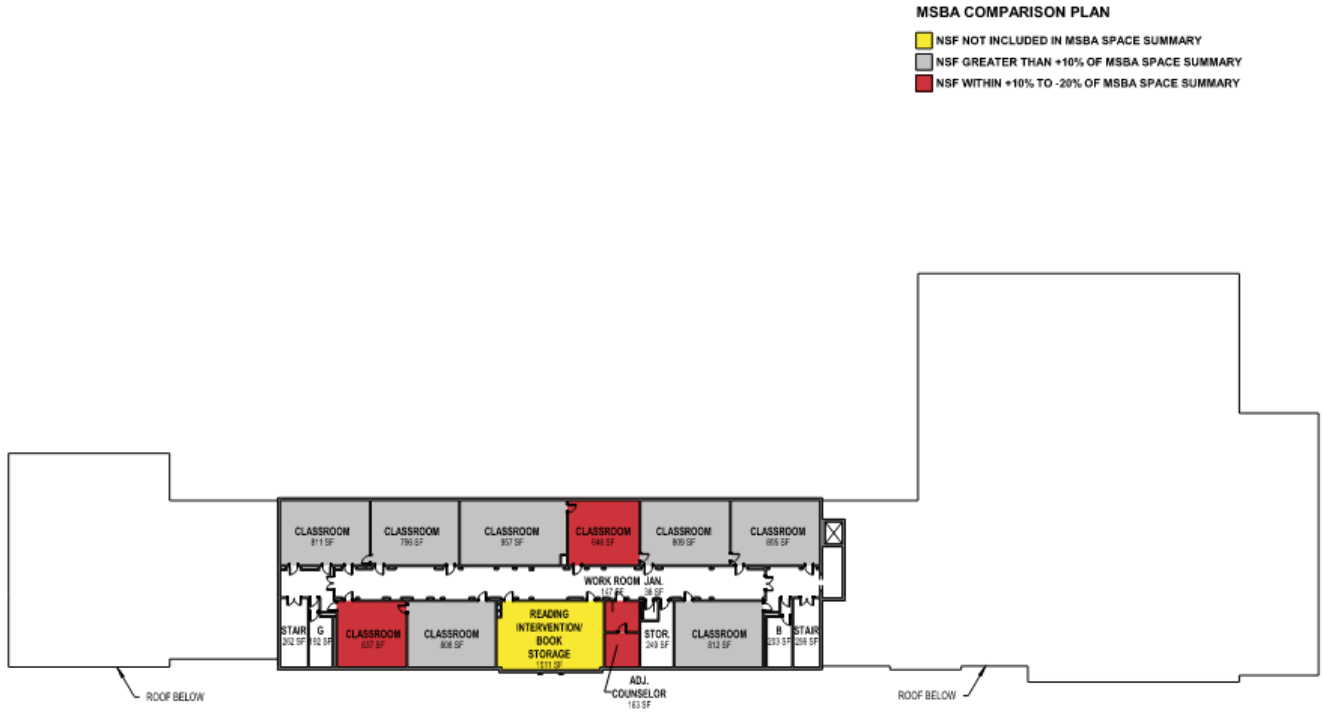
First Floor Current Use Plan



Second Floor Current Use Plan



First Floor Comparison Plan



Second Floor Comparison Plan

Colonel John Robinson Elementary School

The one story, Robinson Elementary School was designed / opened in 1969 as a K-5 elementary school (55 years old). It was designed and remains an "Open Plan" design concept with up to four classroom / learning environments in each open pod. There were two modular / portable Classrooms added in the 1990's.

Currently the school serves 344 students in grades PreK – 2.

1. Educational Effectiveness

a. Each of the four open pods serves multiple classes (approx. 2,604 sf). This equates to less than 650 sf per classroom area. There are no walls between the learning environments. Furniture and low dividers separate the learning environments from each other and define circulating paths.

b. Many of the effective classroom spaces are more than 20% smaller than the MSBA guidelines. This applies to many other spaces including gymnasium (4,418 sf); Special education (687 sf) and art (700 sf). o. The gymnasium was created by enclosing previously outdoor space. There are temperature regulation issues associated with this space.

c. Many of the effective classroom spaces are more than 20% smaller than the MSBA guidelines. This applies to many other spaces including gymnasium; Special education and art.

d. The gymnasium was created by enclosing previously outdoor space. There are temperature regulation issues associated with this space.

e. The music room (1,446 sf) is on the cafeteria stage. This combined cafetorium space creates scheduling conflicts and lacks appropriate acoustical isolation.

f. STEM education in elementary schools largely takes place in the homeroom classroom. Only one sink exists and is not handicapped accessible. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.

g. The PreK classrooms are significantly undersized.

h. A portable section was added with two classrooms (826 sf each) which is currently utilized for speech and Occupational Therapy/Physical Therapy services.

i. Building Elements in general:

   i. Quality of environment – well maintained and pleasant

   ii. Ventilation – large unit ventilators are slung within the pods. These do not distribute the heated and ventilated air through the four open classrooms.

   iii. Lighting – natural light appears adequate at the two perimeter learning environments. Inner classroom spaces (2 out of 4) within the pods have no direct access to natural light and views. The artificial appears adequate.

   iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables.

v. Technology – though infrastructure wiring is out of date, appears adequate.

vi. Acoustics – Four teaching spaces (classrooms and other) make up each pod. There are no walls that acoustically the spaces from each other. There are acoustical baffles / structures that have been draped from the ceiling in the pods, these should not be considered a long-term solution. They gather dirt and dust and are difficult to clean. Four ceiling hung unit ventilators in each pod are noisier than desired.

2. Building Condition Issues – requiring capital expenditures

a. The building exterior masonry walls are solid and contain no insulation (this may not be practical as a capital expense)

b. Lack of handicapped access to parts of the building

c. Most engineering systems are beyond their useful life expectancy.

d. Obsolete mechanical heating and ventilation system

e. Lack of air conditioning (frequent too hot / too cold for teaching and learning)

f. Inadequate and obsolete electrical systems

g. Inadequate and obsolete plumbing systems

h. No automatic fire protection system

i. Fire alarm system needs to be upgraded to account for a lack of a fire protection system

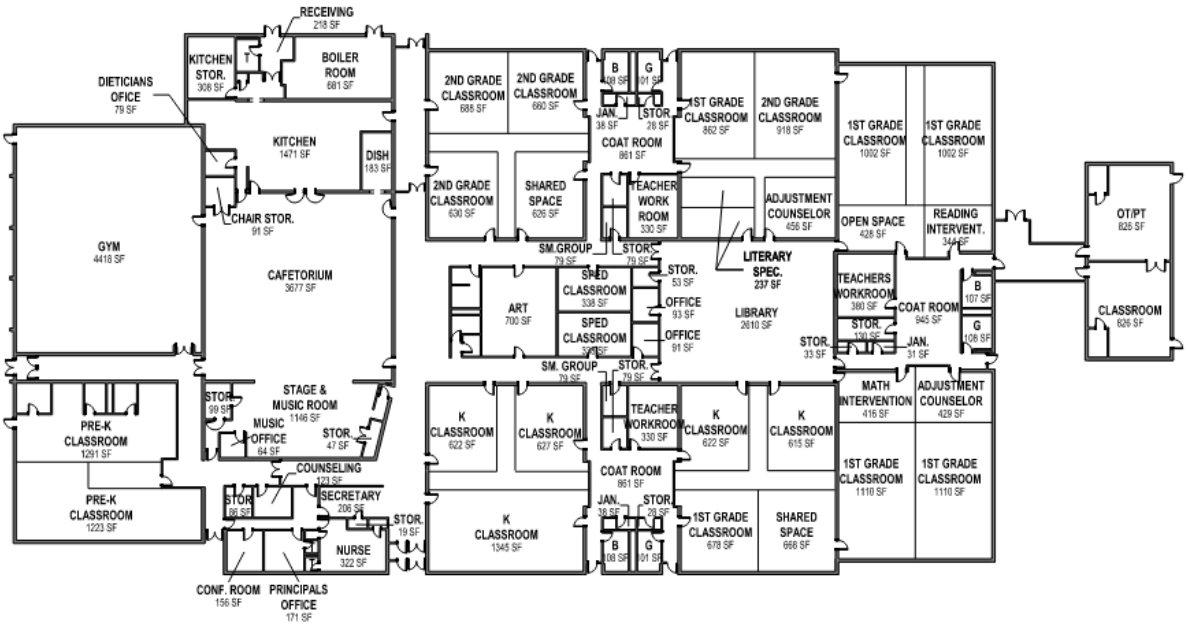
j. Structural – building predates the requirements for seismic lateral bracing. This would be an issue if a major renovation were to be considered.

k. See the Capital Expenditures section of this report for specific items that need repair or replacement.

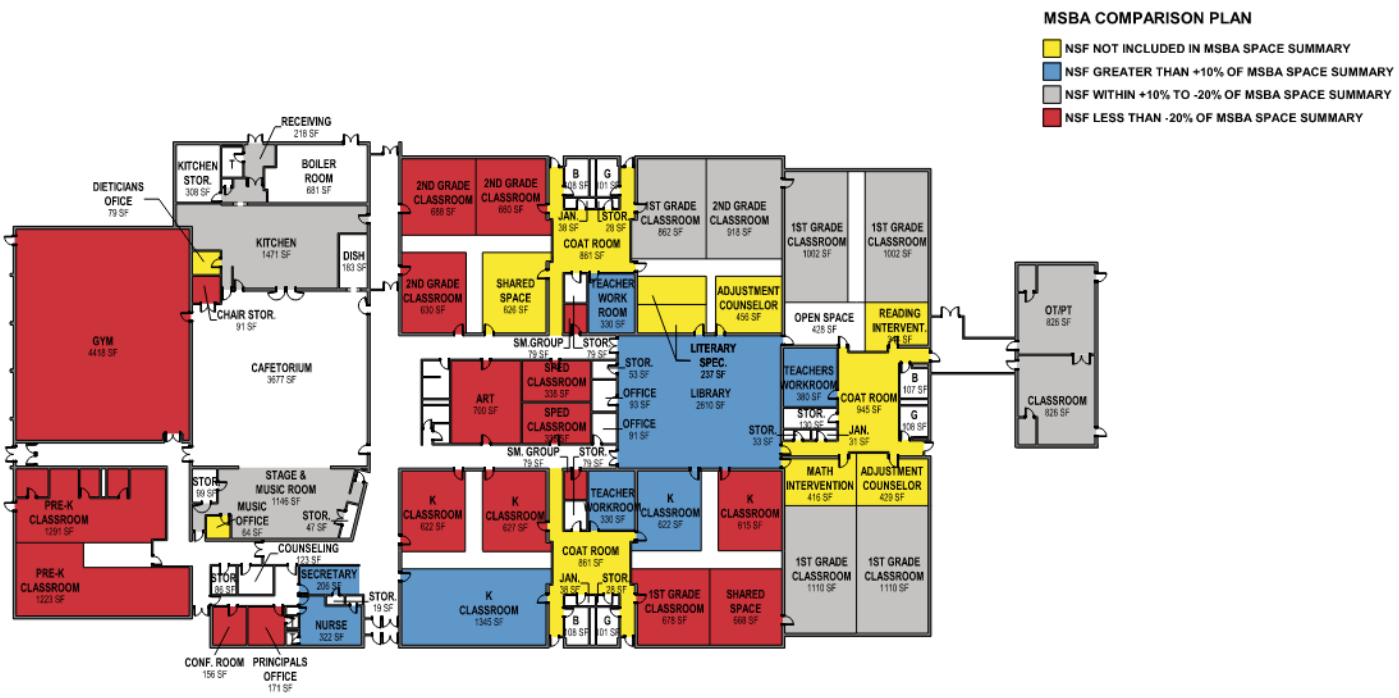
3. Minor Issues – may be accomplished with operational funding

a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for “pull over” services close to their home rooms rather than pull out to further away rooms. Some of this can be achieved by reconfiguring SPED classrooms.

b. Replace hard plastic chairs with soft plastic, ergonomic, light-weight chairs



Current Use Floor Plan



Comparison Plan

Norman Day Elementary School

The two-story Day Elementary School was designed / opened in 1964 (59 years old) as a middle school. It was converted to an elementary school in 2003. A one-story classroom addition was constructed in 1999. The school currently serves 325 students in grades 3 – 5.

1. Educational Effectiveness

a. Typical classrooms are approximately 100 sf smaller than the newer Miller and Crisafulli elementary schools. Three classrooms are well undersized. The classrooms are organized around double and single-loaded corridors. The corridors in the original building are lined with lockers intended for middle schoolers, which are too tall for elementary school children. The number of lockers is in excess of what is needed.

b. The gymnasium is undersized as compared against MSBA guidelines

c. STEM education in elementary schools largely takes place in the homeroom classroom. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.

d. Building Elements in general:

   i. Quality of environment – well maintained and pleasant

   ii. Ventilation – adequate - using unit ventilators for heating and ventilation (very little air conditioning)

   iii. Lighting – natural and artificial light appears adequate

   iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk, and collaborative tables.

   v. Technology – all teaching spaces include projection technology. Infrastructure wiring is out of date, though appears and is reported as adequate

   vi. Acoustics – appears to be adequate

2. Building Condition Issues – requiring capital expenditures

a. Lack of handicapped access to parts of the building

b. Most engineering systems are beyond their useful life expectancy

c. Obsolete mechanical H&V system

d. Lack of air conditioning (frequent too hot / too cold for teaching and learning)

e. Inadequate and obsolete electrical systems

f. Inadequate and obsolete plumbing systems

g. Lack of automatic fire protection system

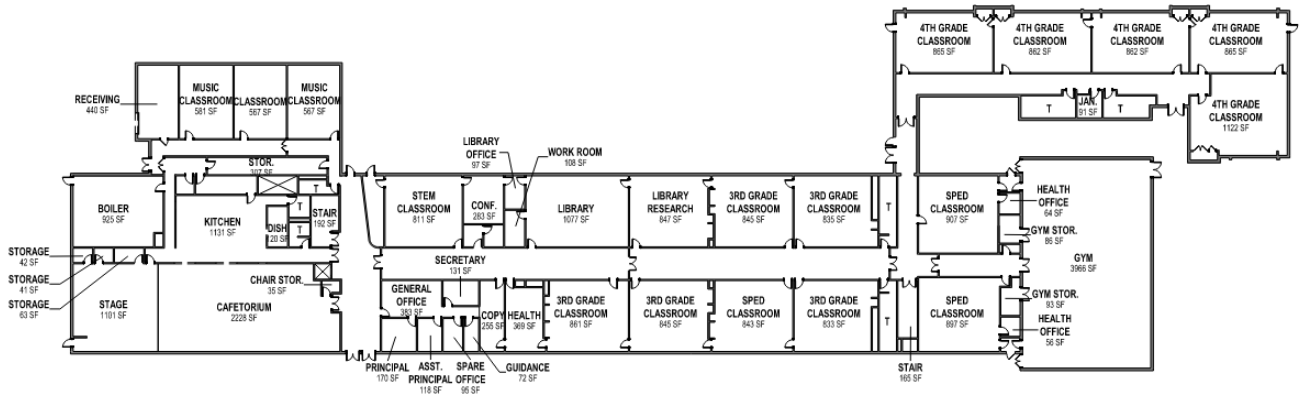
h. Structural – building predates the requirements for seismic lateral bracing. This would be an issue if a major renovation were to be considered.

i. See the Capital Expenditures section of this report for specific items that need repair or replacement.

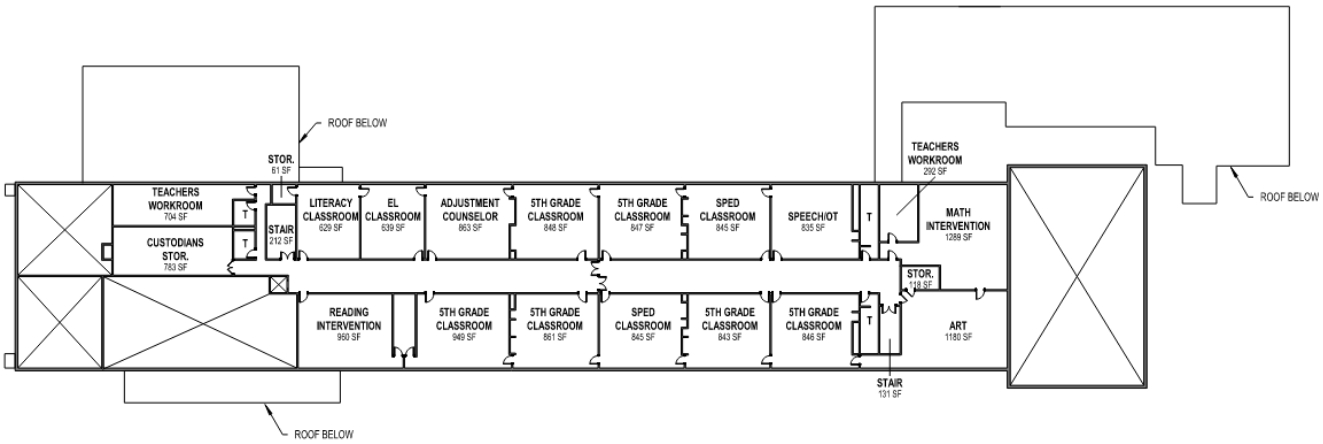
3. Minor Issues – may be accomplished with operational funding

a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for "pull over" services close to their home rooms rather than pull out to further away rooms. Some of this might be possible by reconfiguring SPED classrooms.

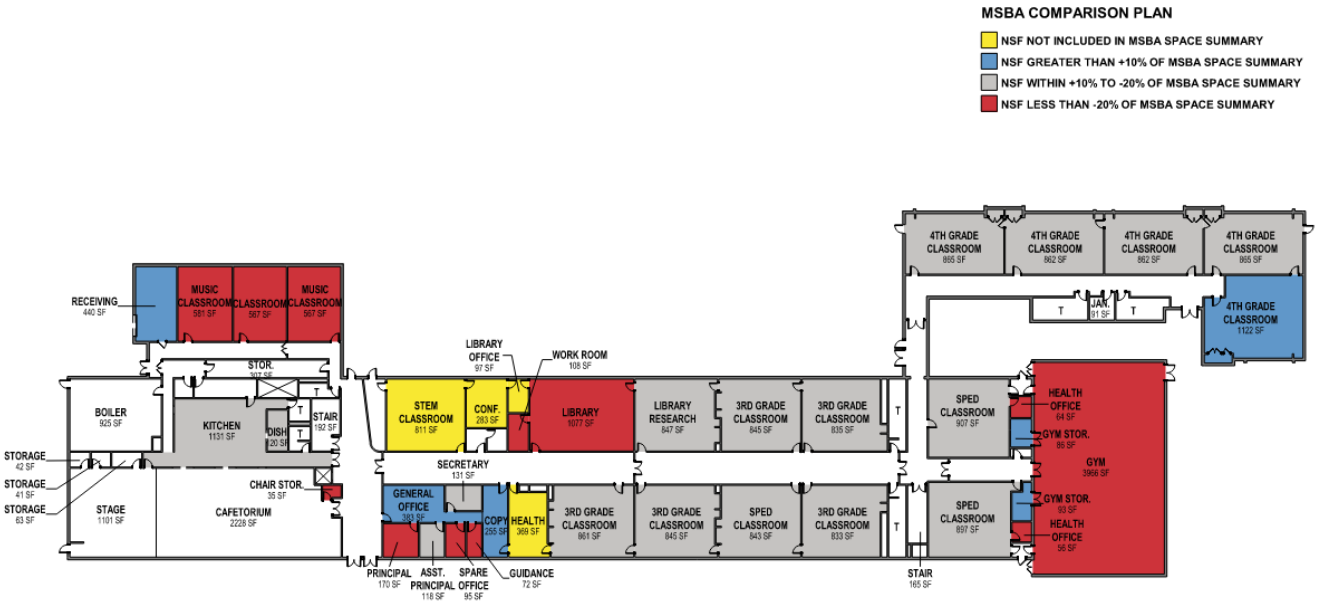
b. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



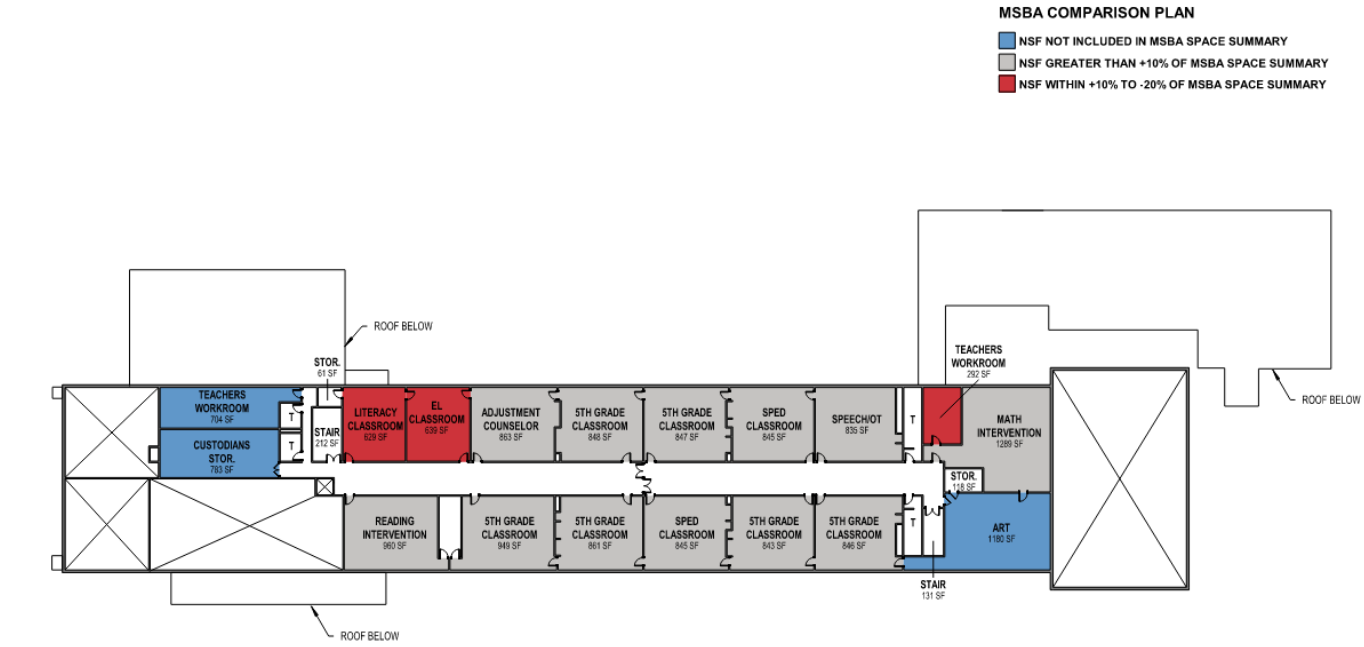
Current Use, 1st floor



Current Use, 2nd floor



First Floor Comparison Plan



Second Floor Comparison

Nabnasset Elementary School

The Nabnasset Elementary School was designed / opened in 1960 as an elementary school, and later changed to serve K-2 and eventually was PreK added. The building is one story. The school received building additions in 1963 and 1996. The first addition created an exterior courtyard. The second addition simple extended a corridor. This latter addition serves grades PreK & K (all but one K). each room as a toilet room.

The school currently serves 377 students in grades PreK-2. Nabnasset is paired with Abbot elementary School for grades 3-5. Although the class sizes are in line with the other elementary schools across the district, it is reported to feel overcrowded. This perception may be due to all of the rooms in the school being occupied, as well as the corridor widths appearing to be narrower than other schools.

1. Educational Effectiveness

a. Classrooms are adequate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:

   i. General Education classrooms are slightly undersized but within the 20% variance set up for this study

   ii. One kindergarten classroom is undersized and lacks an internal toilet room

   iii. STEM education in elementary schools largely takes place in the homeroom classroom. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.

b. The gymnasium is undersized by MSBA guidelines

c. Building Elements in general:

   i. Quality of environment – well maintained and pleasant

   ii. Ventilation – adequate - using unit ventilators for heating and ventilation (very little air conditioning)

   iii. Lighting – natural and artificial light appears adequate

   iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables.

   v. Technology – all teaching spaces include projection technology. Infrastructure wiring is out of date, though appears and is reported as adequate

   vi. Acoustics – appears to be adequate

2. Significant Building Condition Issues – requiring capital expenditures

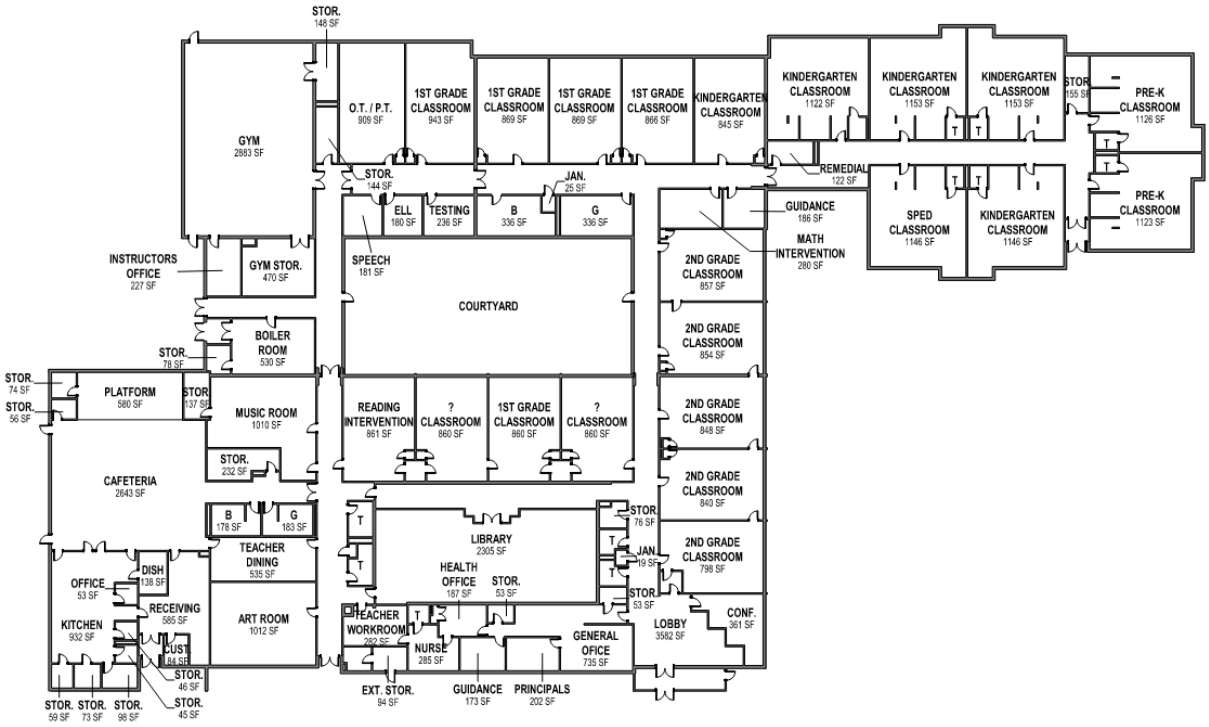
a. Lack of handicapped access to parts of the building

b. Refer to the Capital Expenditures section of this report for specific items that need repair or replacement.

3. Minor Issues – may be accomplished with operational funding

a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for "pull over" services close to their home rooms rather than pull out to further away rooms. This might be possible by reconfiguring SPED classrooms.

b. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



Current Use Plan



Comparison Plan

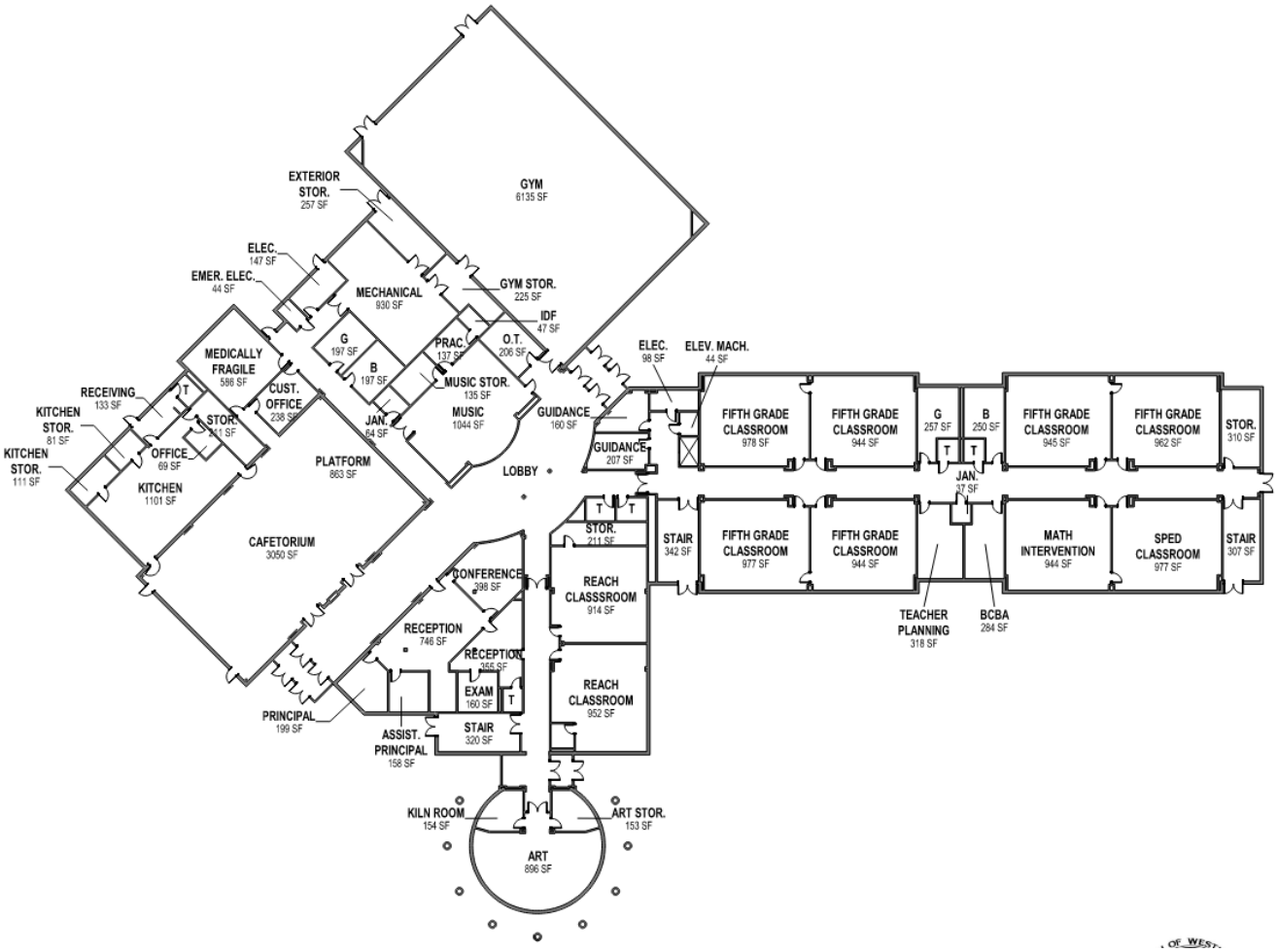
Crisafulli Elementary School (grades 3-5)

The Crisafulli Elementary School was designed specifically to house grades 3-5. It was designed in 2001 and occupied in 2002 (21 years old). The classroom layouts are double loaded corridors. As relatively new buildings, it contains most of the components and systems capable of serving well into the future.

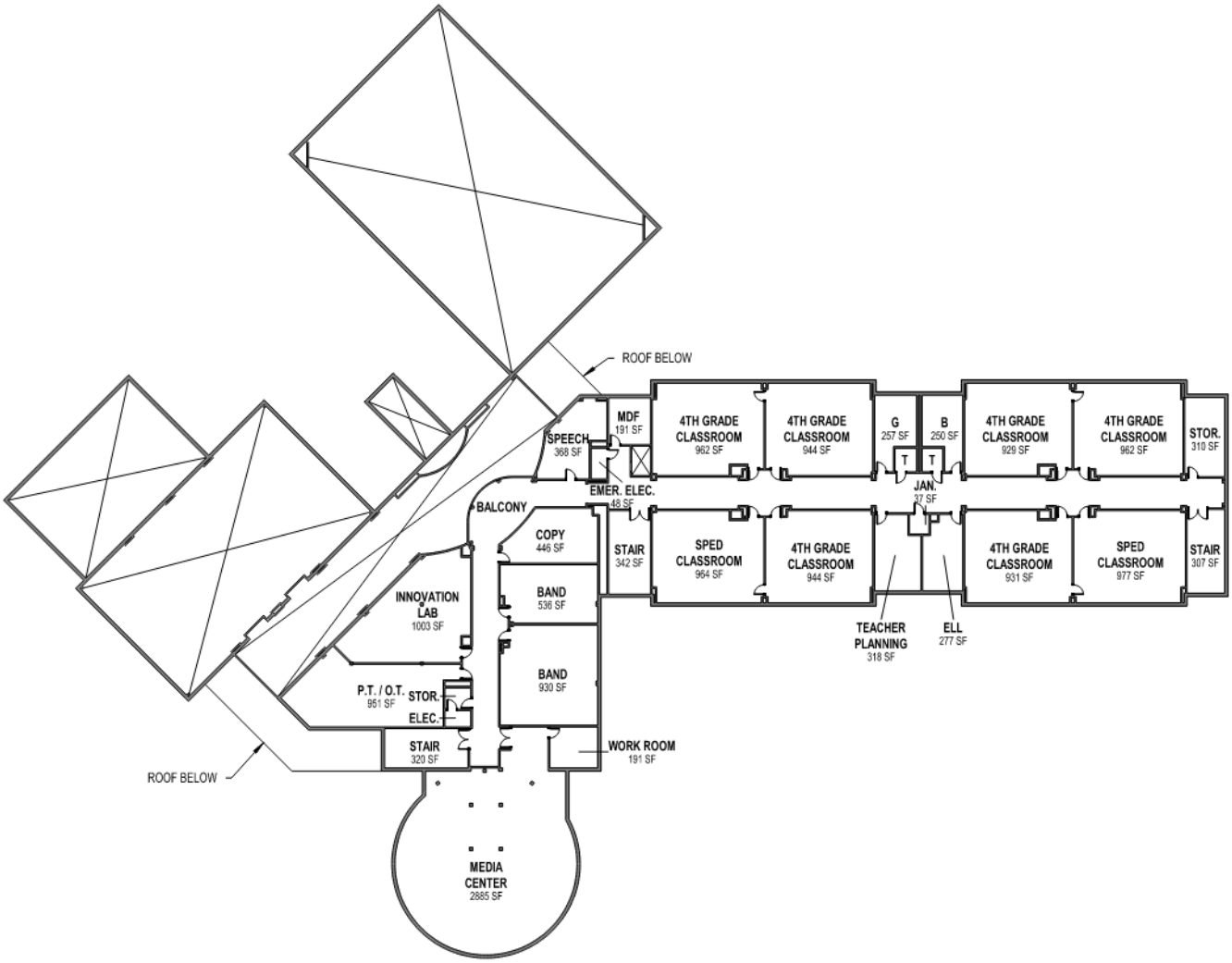
1. **Educational Effectiveness**
    a. Classrooms are appropriate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:
        i. General Education classrooms
        ii. Special Education classrooms
        iii. System wide sub-separate REACH program classrooms for shared grades 3 – 5.
    b. Full classrooms serving Intervention, Reading and others may be oversized. Consolidation of areas may free up one or more rooms for reassignment.
    c. Two Band rooms are underutilized. Explore a reorganization of spaces or possible reassignment.
    d. STEM education in elementary schools largely takes place in the homeroom classroom. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.
    e. Building Elements in general:
        i. Quality of environment – welcoming and pleasant
        ii. Ventilation – adequate; central air systems for heating and ventilation only. Air conditioning is provided in Special Education rooms, offices, library, and cafeteria.
        iii. Lighting – natural and artificial lighting appears to be of good quality and condition
        iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk, and collaborative tables.
        v. Technology – although infrastructure wiring is out of date, appears to be adequate
        vi. Acoustics – appears to be adequate
2. **Building Condition Issues – requiring capital expenditures**
    a. The building lacks air-conditioning
    b. See the Capital Expenditures section of this report for specific items that need repair or replacement.
3. **Minor Issues – may be accomplished with operational funding**
    a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for “pull over”

services close to their home rooms rather than pull out to further away rooms. Some of this might be possible by reconfiguring SPED classrooms.

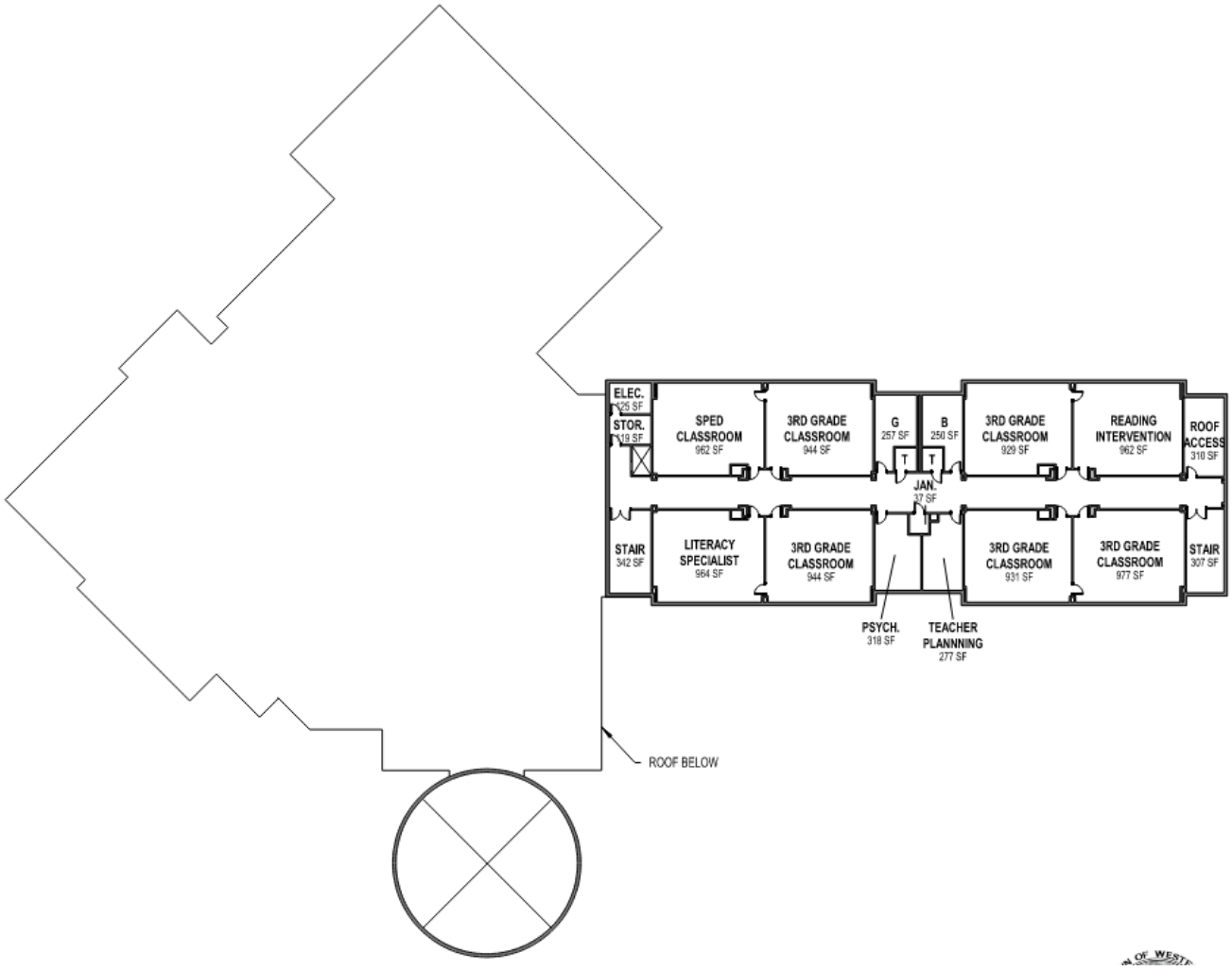
b. Replace hard plastic chairs with soft plastic, ergonomic, light-weight chairs



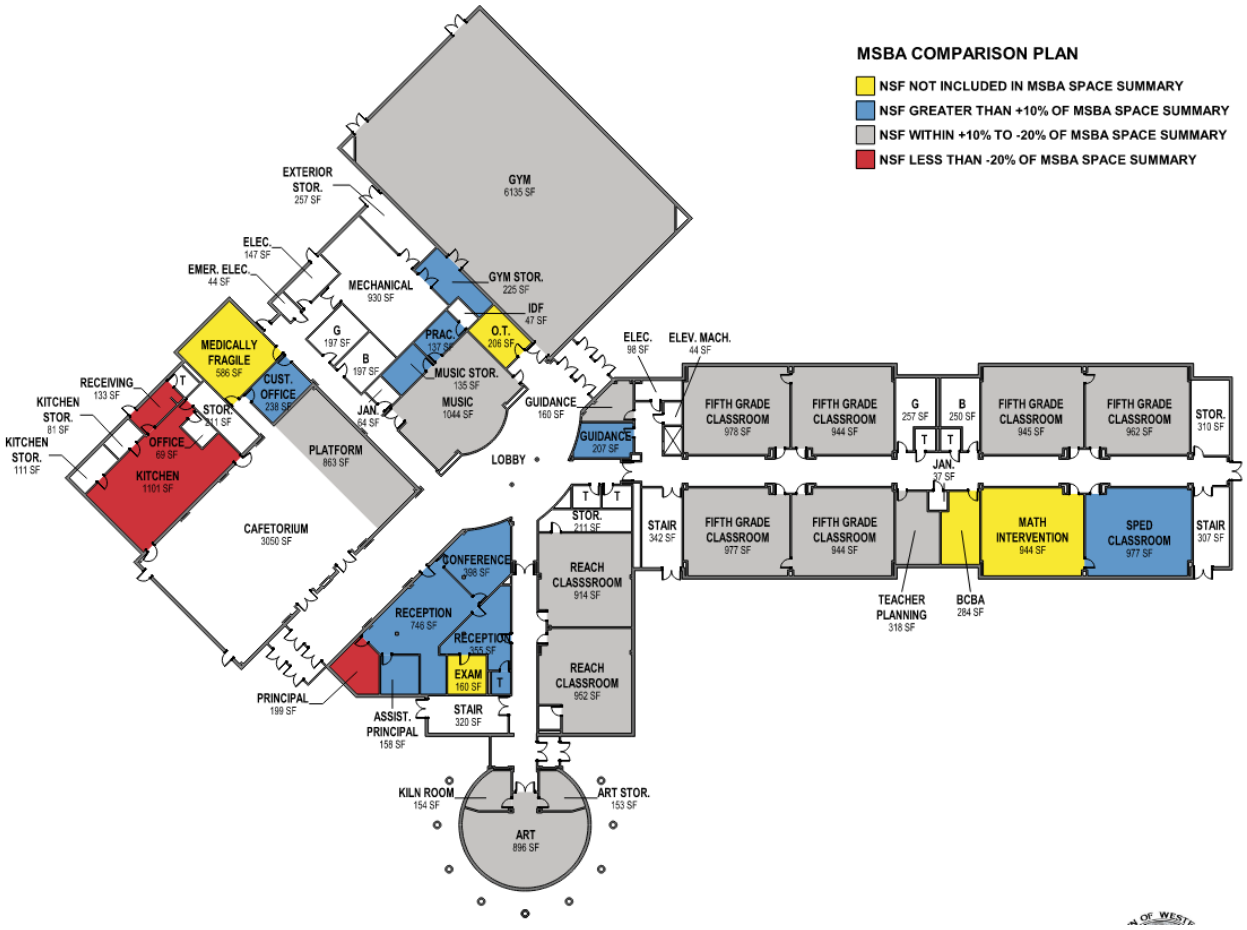
Current Use Plan – First Floor



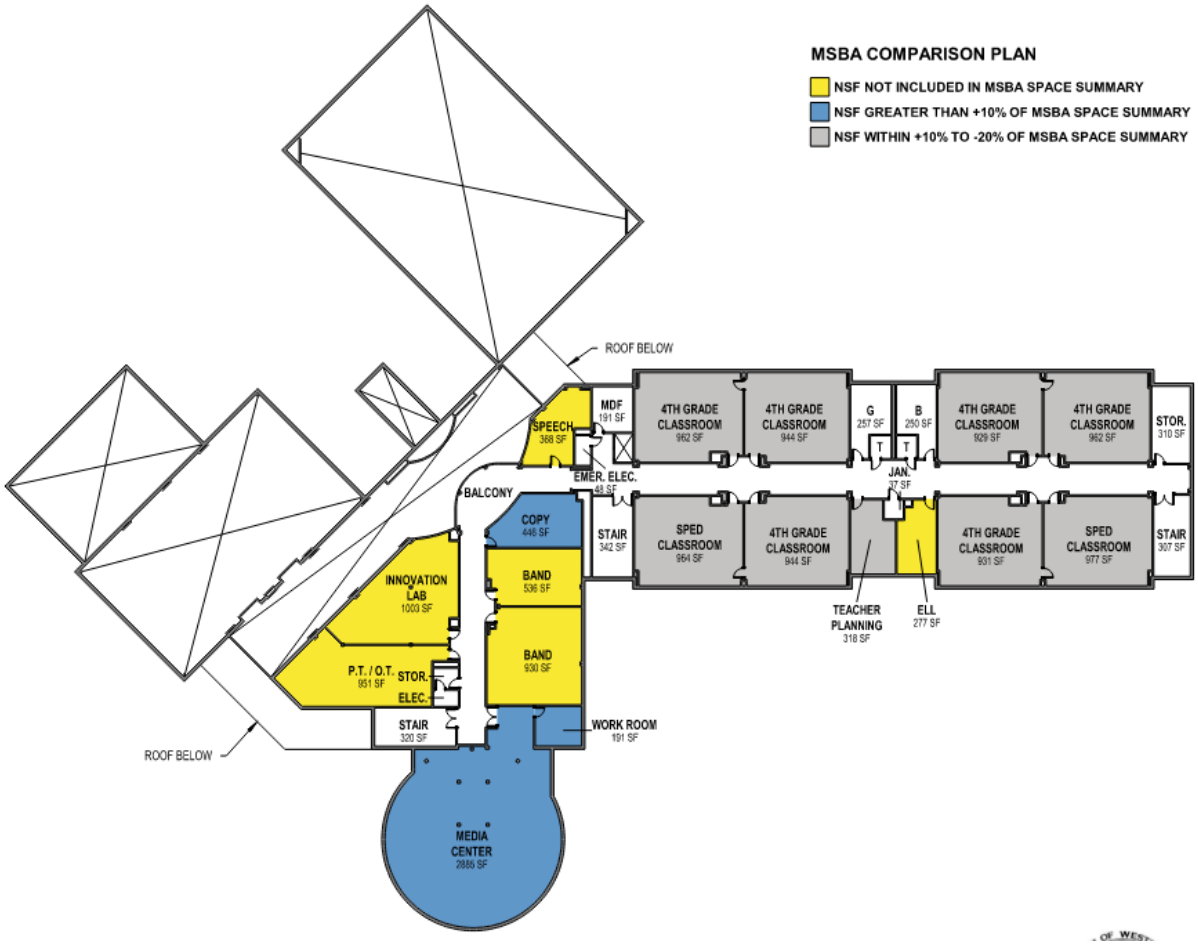
Current Use Plan – Second Floor



Current Use Plan – Third Floor



First Floor Comparison Plan



Second Floor Comparison Plan



Third Floor Comparison Plan

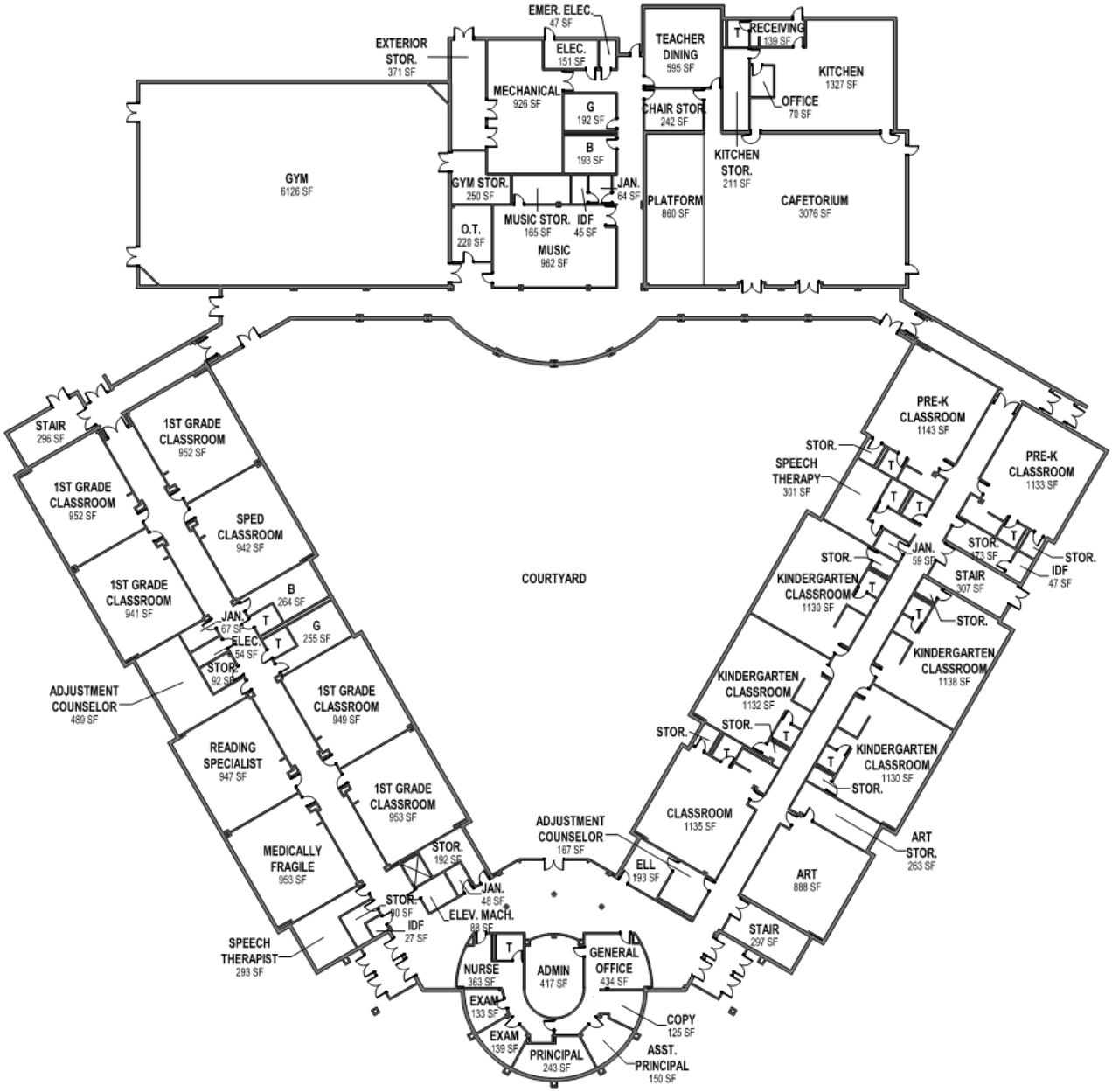
Rita Miller Elementary School

The Rita Miller Elementary School was designed specifically to house grades 3-5. It was designed in 2002 and occupied in 2003. The classroom layouts are double loaded corridors. As a relatively new building, it contains most of the components and systems capable of serving well into the future.

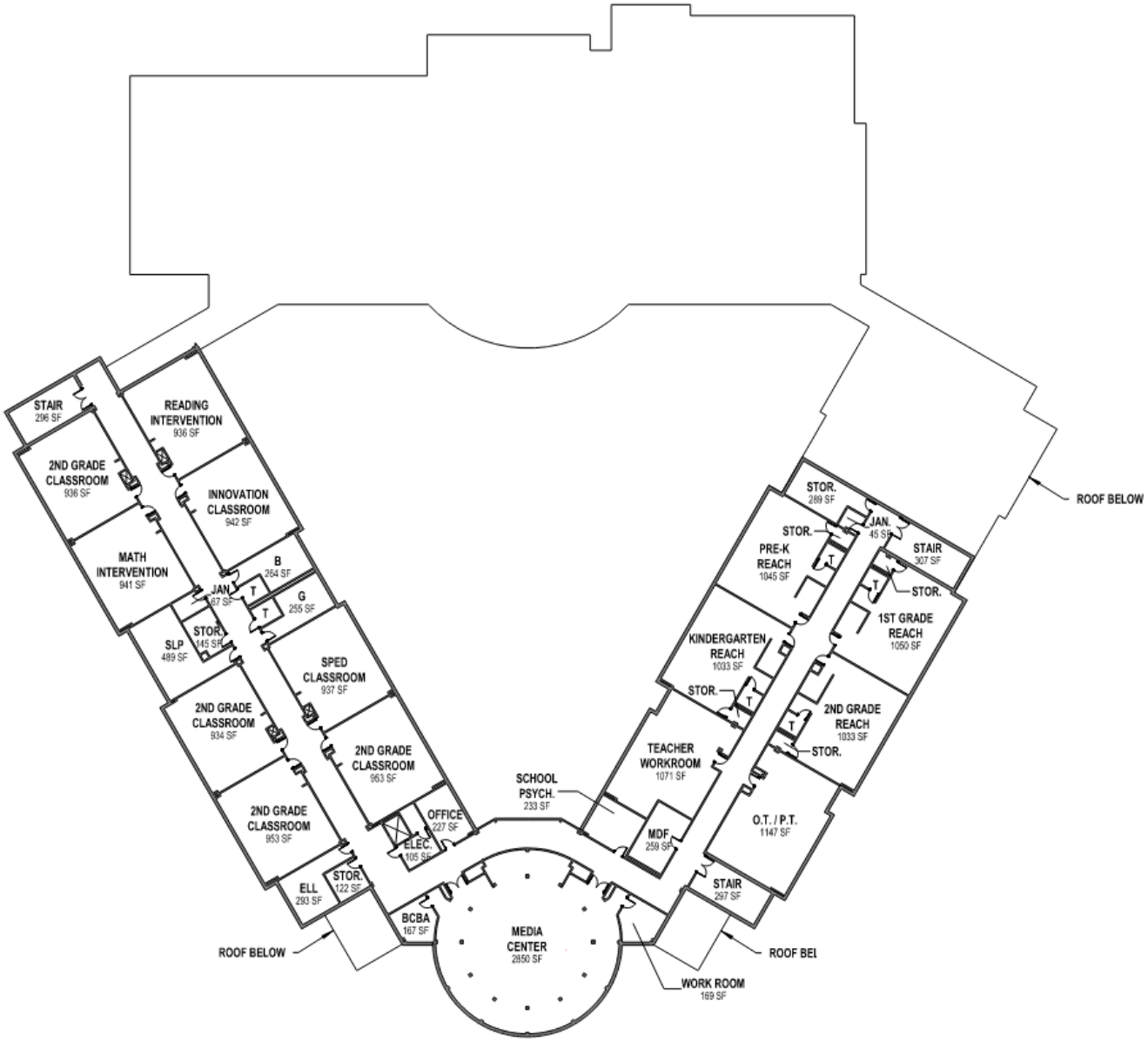
1. **Educational Effectiveness**
    a. Classrooms are appropriate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:
        i. General Education classrooms
        ii. Special Education classrooms
        iii. Integrated PreK classrooms w/ toilet rooms
        iv. Kindergarten classrooms w/ toilet rooms
        v. System wide sub-separate REACH program classrooms for PreK through grade 2
    b. STEM education in elementary schools largely takes place in the homeroom classroom. The effectiveness can be improved with two sinks and appropriate storage for materials and student project. WPS might consider the addition of more sinks and storage in typical classrooms.
    c. Full classrooms serving Intervention, Speech, Reading and others may be oversized. Consolidation of areas may free up one or more rooms for reassignment.
    d. Building Elements in general:
        i. Quality of environment – welcoming and pleasant
        ii. Ventilation – adequate, central air systems for heating and ventilation only. Air conditioning is provided in Special Education rooms, offices, library and cafeteria.
        iii. Lighting – natural and artificial appears good
        iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables.
        v. Technology – though infrastructure wiring is out of date, appears adequate
        vi. Acoustics – appears adequate
2. **Building Condition Issues – requiring capital expenditures**
    a. The building lacks air-conditioning
    b. Refer to the Capital Expenditures section of this report for specific items that need repair or replacement.
3. **Minor Issues – may be accomplished with operational funding**
    a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for “pull over”

services close to their home rooms rather than pull out to further away rooms. Some of this might be possible by reconfiguring SPED classrooms.

b. Replace hard plastic chairs with soft plastic, ergonomic, light-weight chairs



Current Use Plan – First Floor



Current Use Plan – Second Floor



Comparison Plan – First Floor



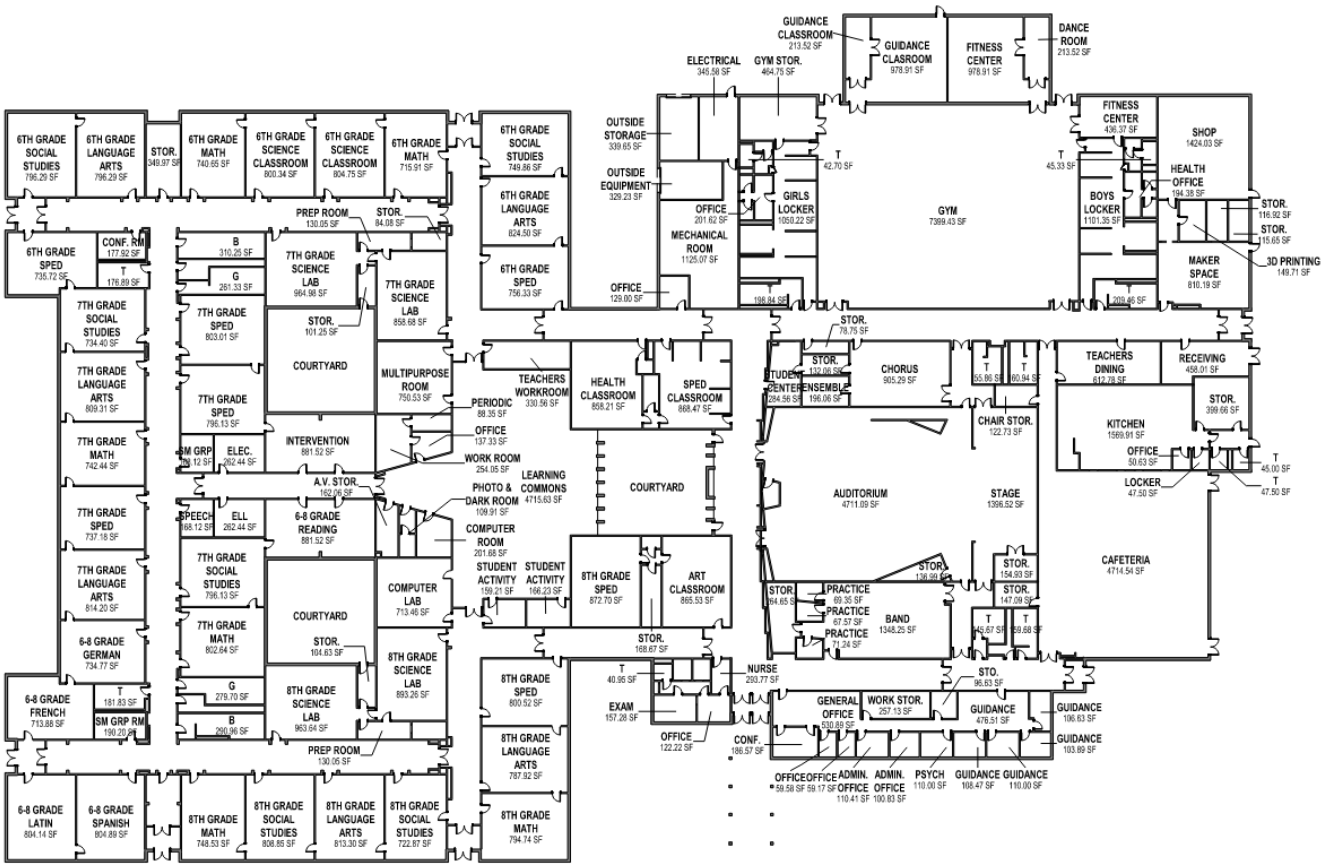
Comparison Plan – Second Floor

Blanchard Middle School

The Blanchard Middle School was designed in 1990 and occupied in 1992 (31 years old). It currently serves 504 students in grades 6 – 8. The one-story building is comprised of an academic side and a public side. The academic portion is organized as a rectangular donut with double loaded corridors. There are two exterior courtyards in the middle of the donut. Each of the major corridors serve one of the grade levels.

The public side of the school includes the gym, cafeteria, administration and specialty classrooms.

1. **Educational Effectiveness**
    a. Classrooms are adequate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:
        i. General Education classrooms are slightly undersized but within the 20% variance set up for this study
        ii. Special Education classrooms
        iii. The 7th grade science lab is disconnected from the 7th grade corridor.
    b. Building Elements in general:
        i. Quality of environment – welcoming and pleasant
        ii. Ventilation – adequate – central air systems for heating and ventilation only. Air conditioning is provided in Special Education rooms, offices, library and cafeteria.
        iii. Lighting – natural and artificial appears good
        iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables.
        v. Technology – though infrastructure wiring is out of date, appears adequate
        vi. Acoustics – appears adequate
2. **Significant Building Condition Issues – requiring capital expenditures**
    a. The building lacks air-conditioning
    b. See the Capital Expenditures section of this report for specific items that need repair or replacement.
3. **Minor Issues – may be accomplished with operational funding**
    a. The one area of most need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for “pull over” services close to their home rooms rather than pull out to further away rooms. Some of this might be possible by reconfiguring SPED classrooms.
    b. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



Current Use Plan



Comparison Plan

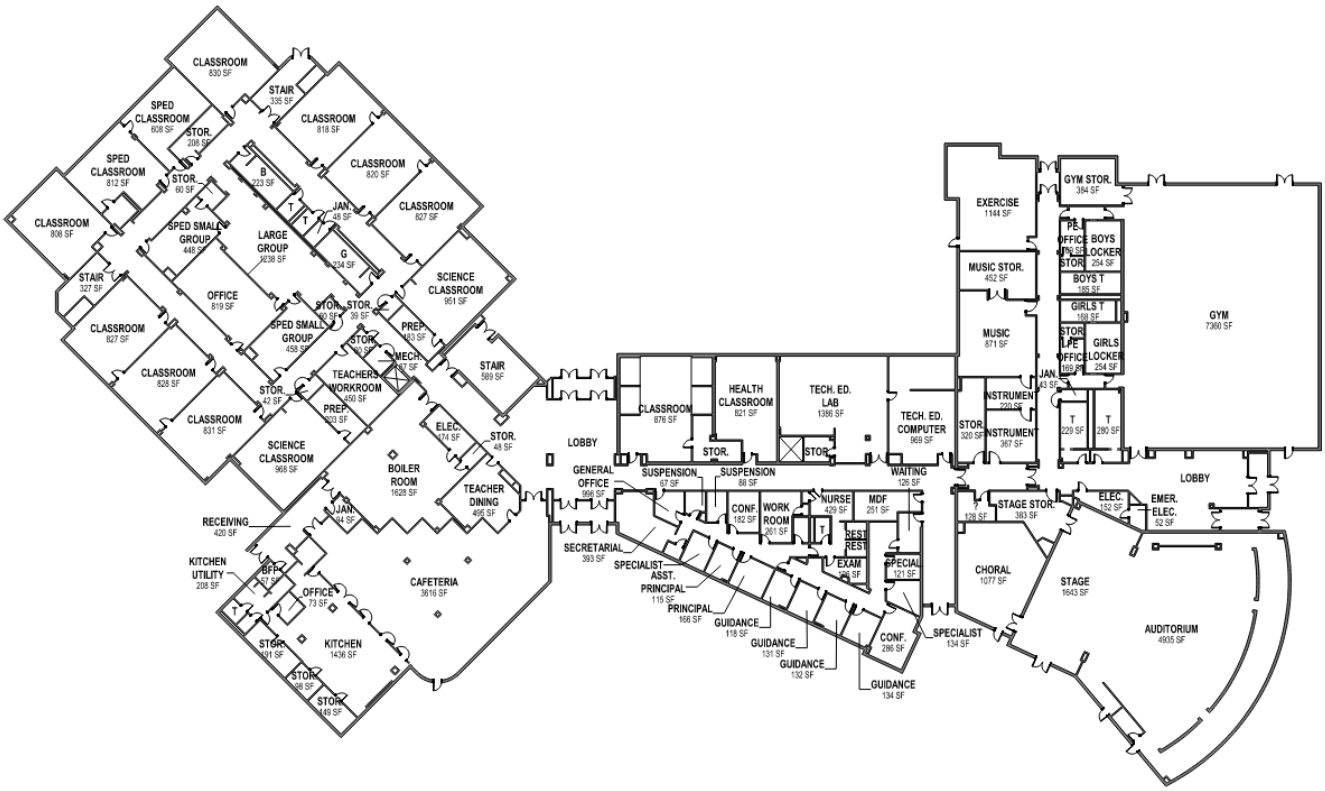
Stony Brook Middle School

The Stony Brook Middle School was designed in 2001 and occupied in 2003 (20 years old). It currently serves 632 students in grades 6 – 8. The two- and three-story building is comprised of an academic side and a public side. The three-story academic side houses a grade level of classrooms on each floor. It also includes the cafeteria.

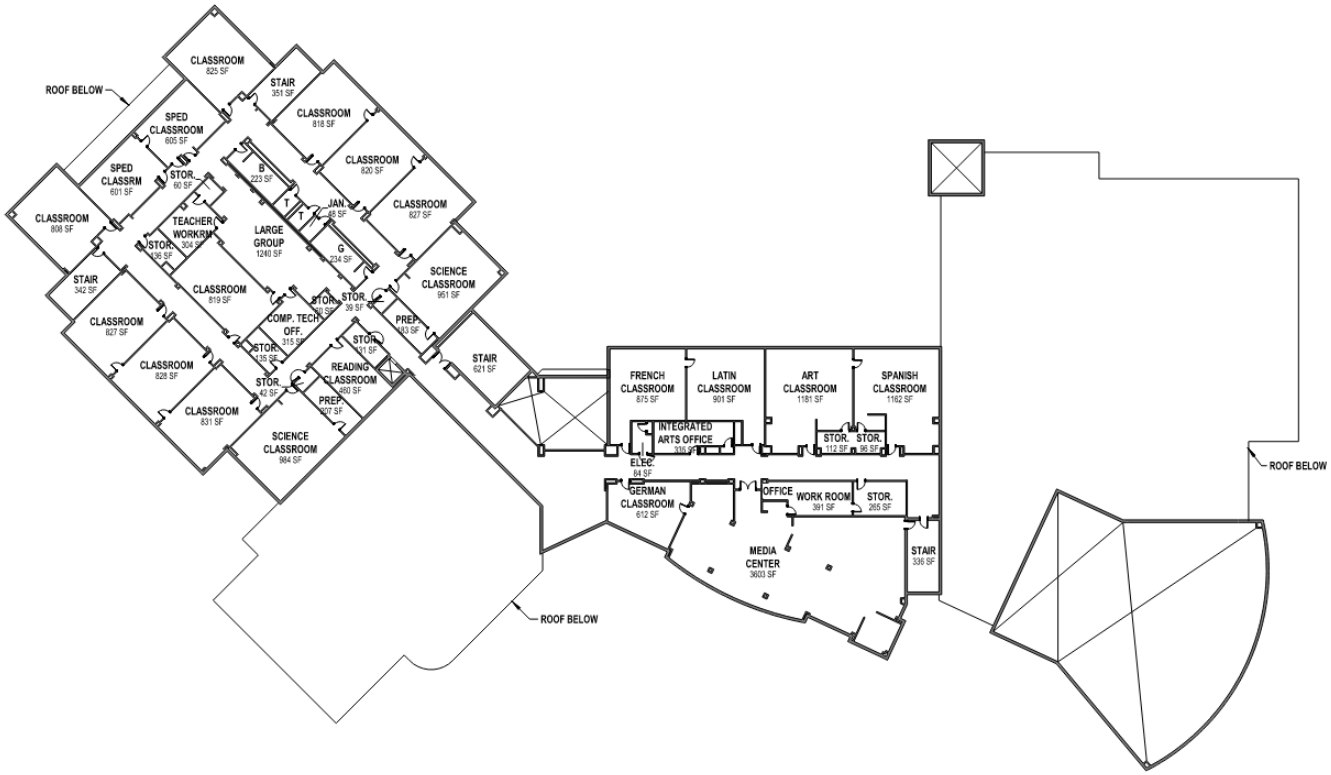
The two-story public side includes: the administration, gym, auditorium, library and some specialty classrooms.

As relatively new buildings, it contains most of the components and systems capable of serving well into the future.

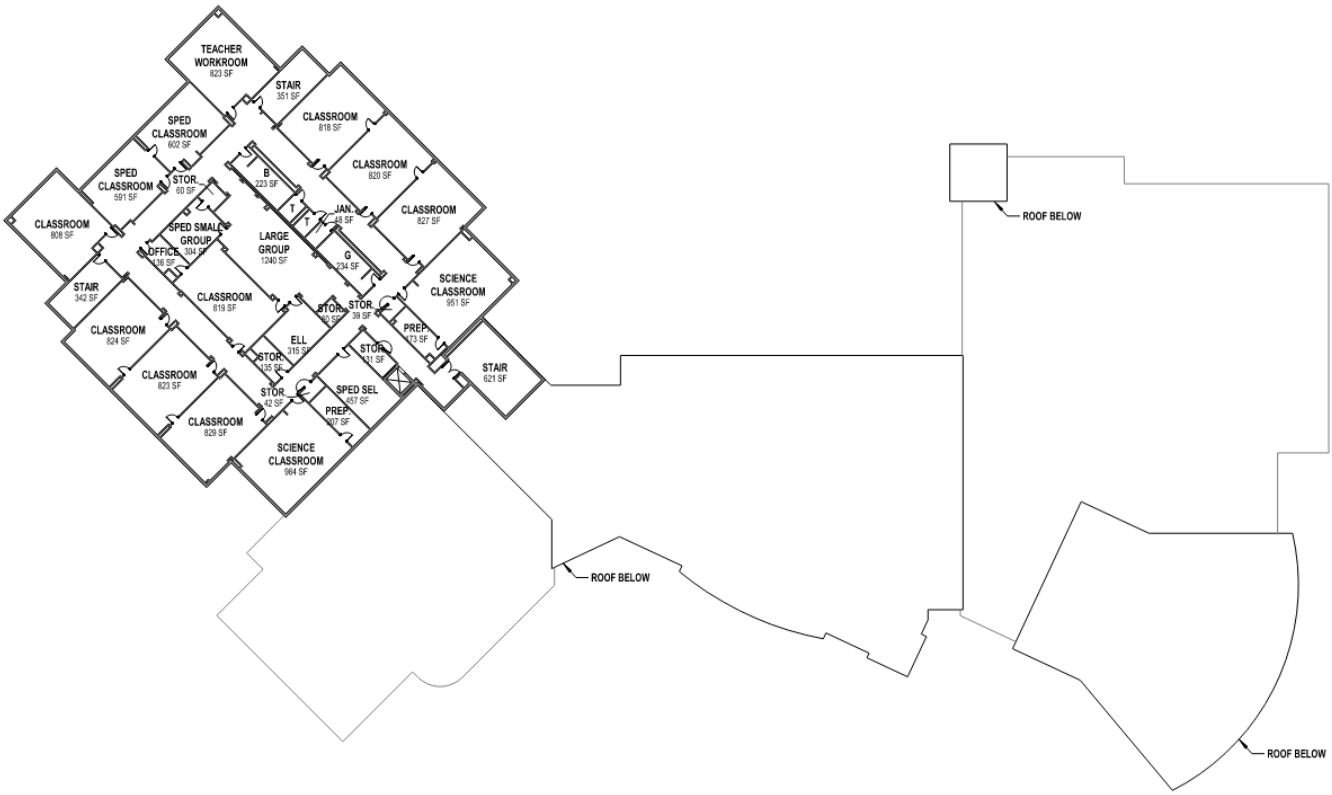
1. **Educational Effectiveness**
    a. Classrooms are adequate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:
        i. General Education classrooms are slightly undersized but within the 20% variance set up for this study
        ii. Each floor / grade level includes a learning commons, teachers work rooms and multiple small group SPED rooms.
    b. Building Elements in general:
        i. Quality of environment – welcoming and pleasant
        ii. Ventilation – adequate – central air systems for heating and ventilation only. Air conditioning is provided in Special Education rooms, offices, library and cafeteria.
        iii. Lighting – natural and artificial appears good
        iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables. There is excess furniture that is stacked in multiple locations that should be removed.
        v. Technology – though infrastructure wiring is out of date, appears adequate
        vi. Acoustics – appears adequate
2. **Significant Building Condition Issues – requiring capital expenditures**
    a. The building lacks air-conditioning
    b. See the Capital Expenditures section of this report for specific items that need repair or replacement.
3. **Minor Issues – may be accomplished with operational funding**
    a. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



First Floor Current Use Plan



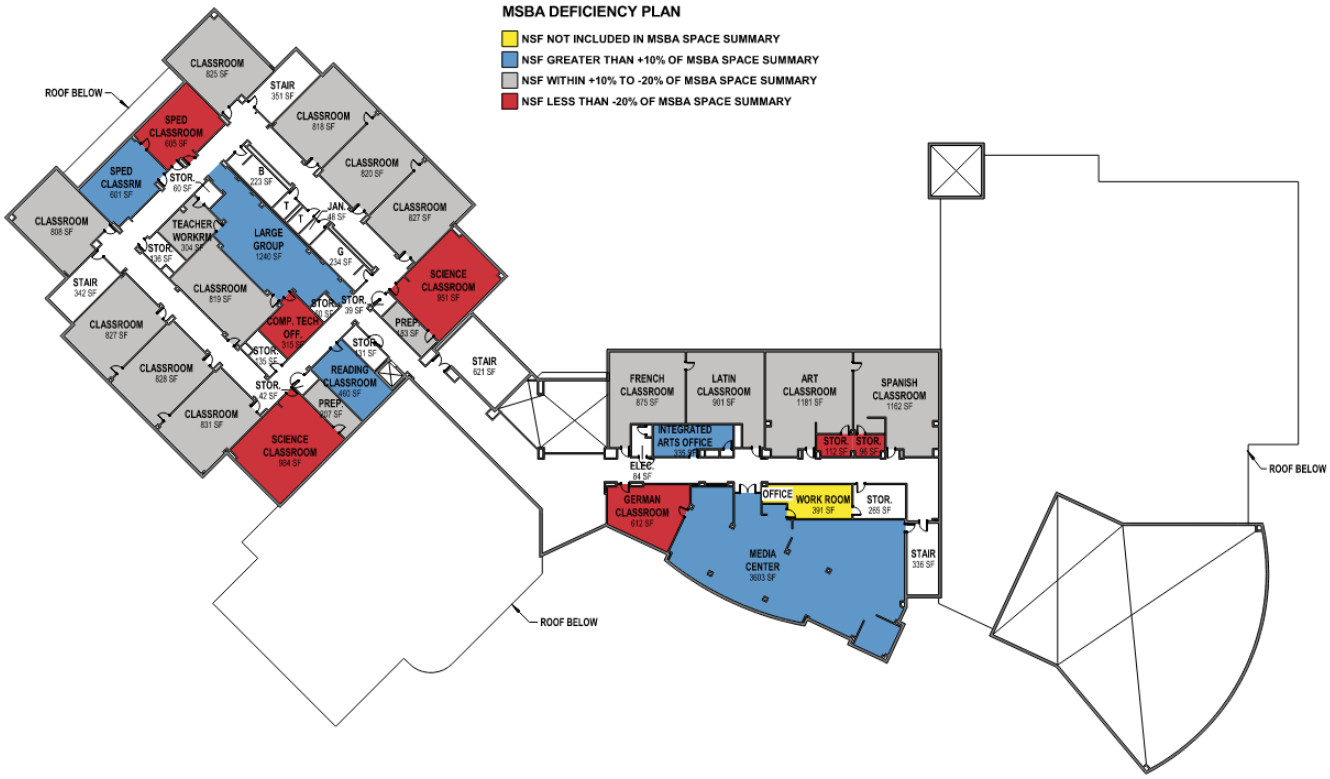
Second Floor Current Use Plan



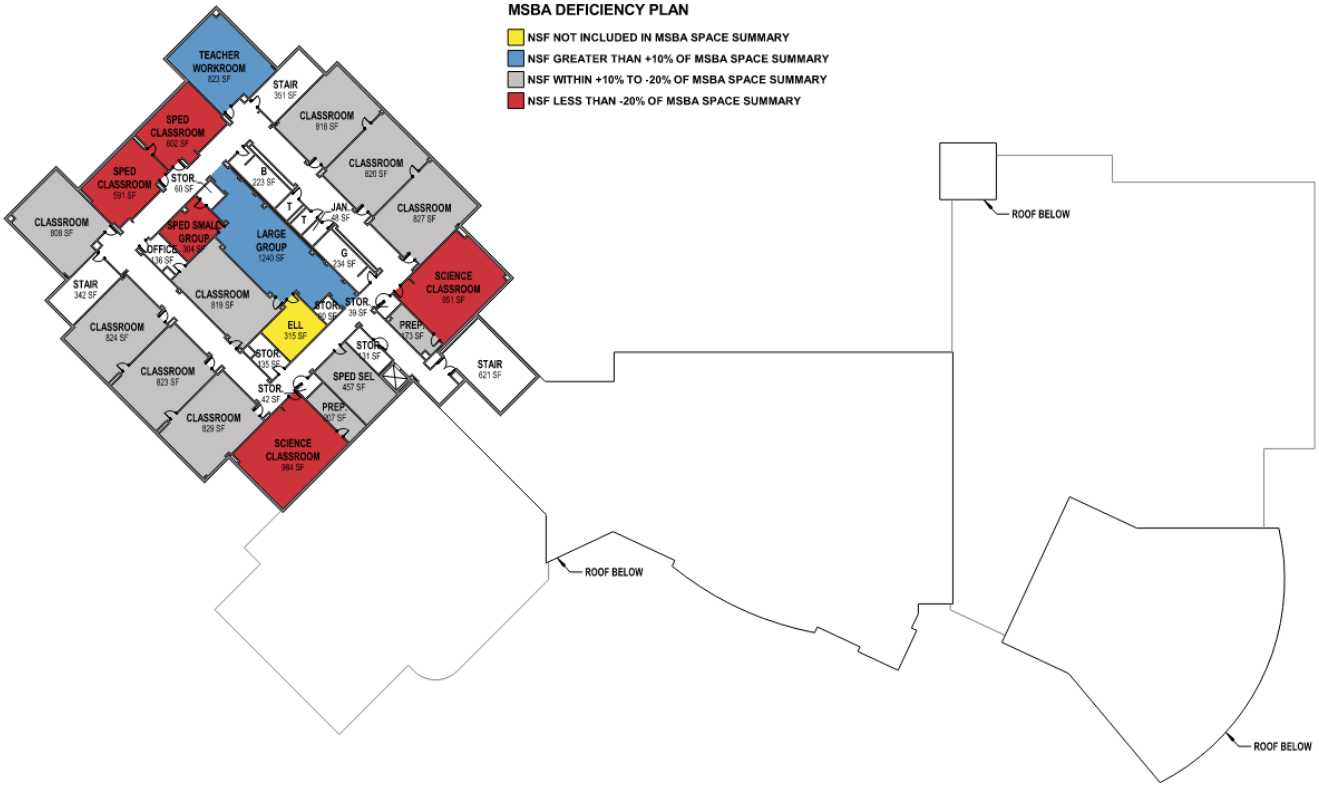
Third Floor Current Use Plan



First Floor Comparison Plan



Second Floor Comparison Plan



Third Floor Comparison Plan

Westford Academy

The Westford Academy building was constructed in 1971 and occupied in 1973. In 2000, the building was renovated, and an addition of a classroom wing was built. The classroom addition created an exterior courtyard that is well used by students. The building currently serves 1,567 students in grades 9 – 12. The classroom wings are largely configured as double loaded corridors. The building is largely arranged departmentally.

1. Educational Effectiveness

a. Classrooms are adequate in size and configuration for current curriculum delivery and appear to have the flexibility for future pedagogies. This includes:

   i. General Education classrooms are slightly undersized but within the 20% variance set up for this study

   ii. Science labs are under the MSBA guidelines and under the recommended standard of 60 sf per student. It is recommended the school review class sizes to comply with this standard.

   iii. It is reported that most classrooms are used every period of every day. This is likely operating at greater than the 85% utilization rate that is normal for high schools. This could present an issue if the population were to significantly increase, or significant curriculum offerings were to be added. The 10-year population is projected to be flat over the next 10 years and the curriculum offerings are projected as stable

   iv. It is reported that some Project Based / Inquiry Based learning is currently ongoing. WPS has a goal of increasing BPL at the Academy as well as other schools. Some of the change could be by arranging the classrooms for interdepartmental adjacencies. For math, English, social studies and world languages, reassignment and room signage changes could accomplish some of the desired adjacency changes. Specialty rooms that are designed for the subject such as science labs, art classrooms and others, likely need to remain in their current departmental locations.

b. Building Elements in general:

   i. Quality of environment – welcoming and pleasant

   ii. Ventilation – adequate – central air systems for heating and ventilation only. Air conditioning is provided in Special Education rooms, offices, library and cafeteria.

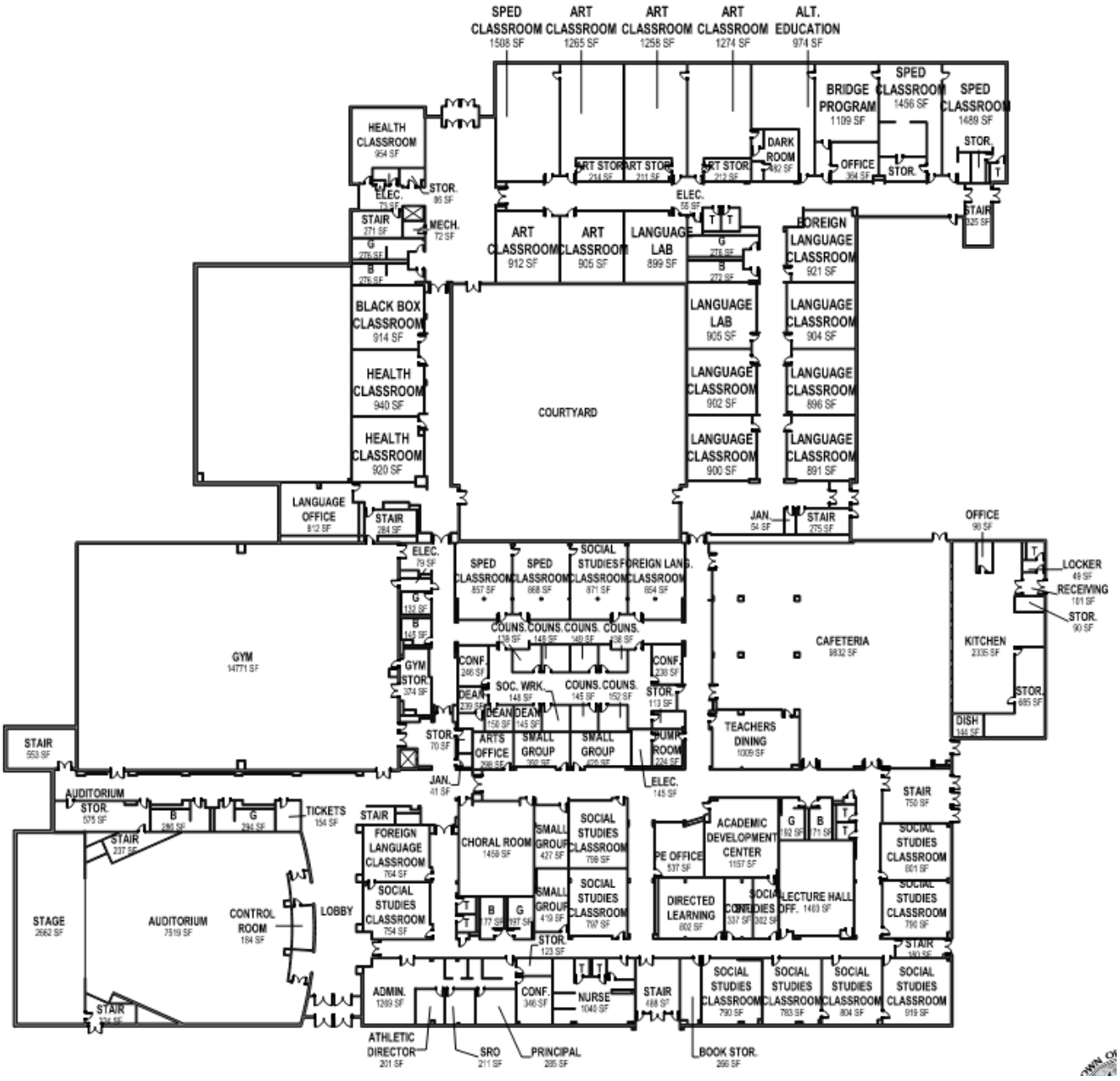
   iii. Lighting – natural and artificial appears good

   iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables. There is excess furniture that is stacked in multiple locations that should be removed.

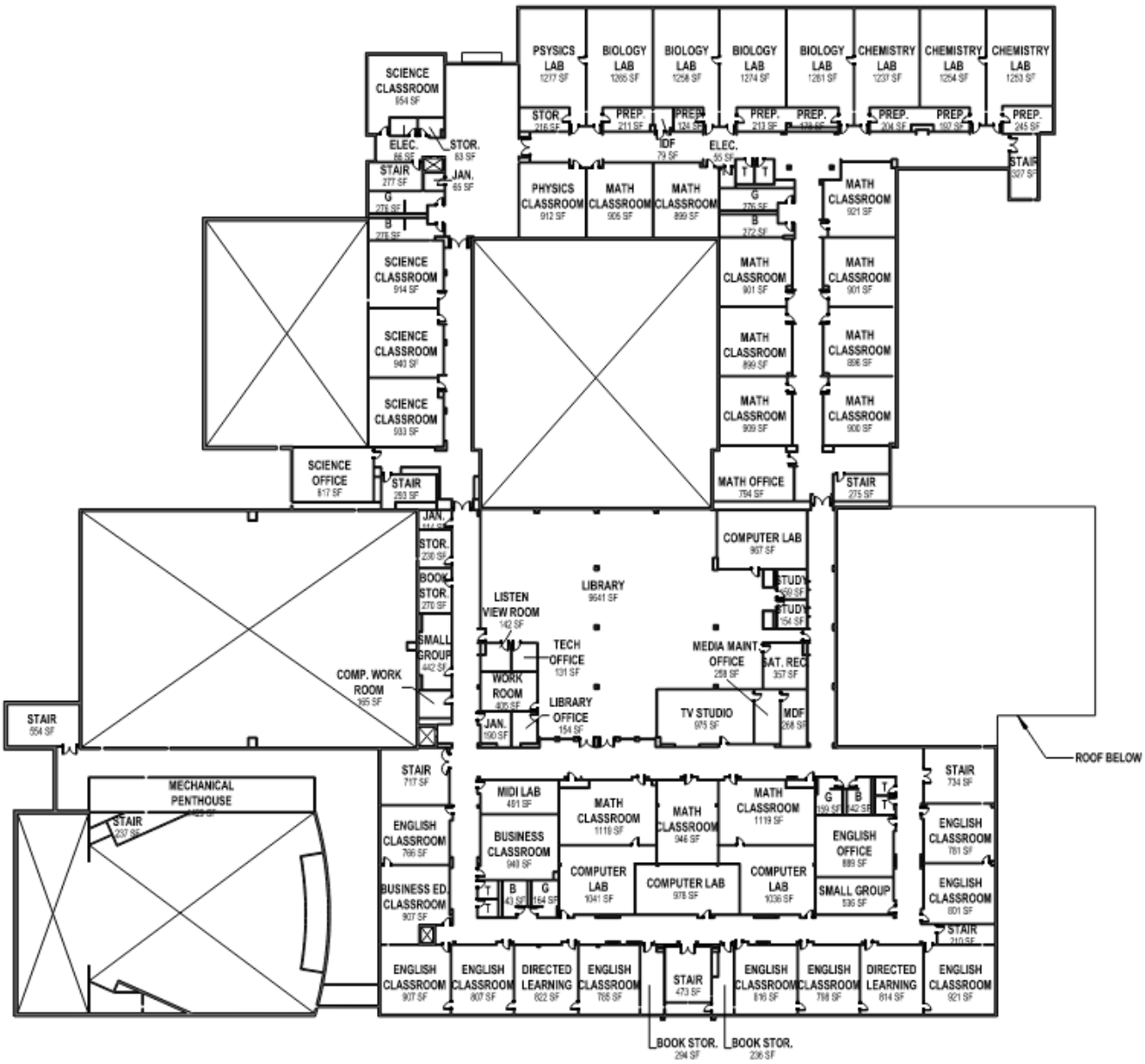
   v. Technology – though infrastructure wiring is out of date, appears adequate

   vi. Acoustics – appears adequate

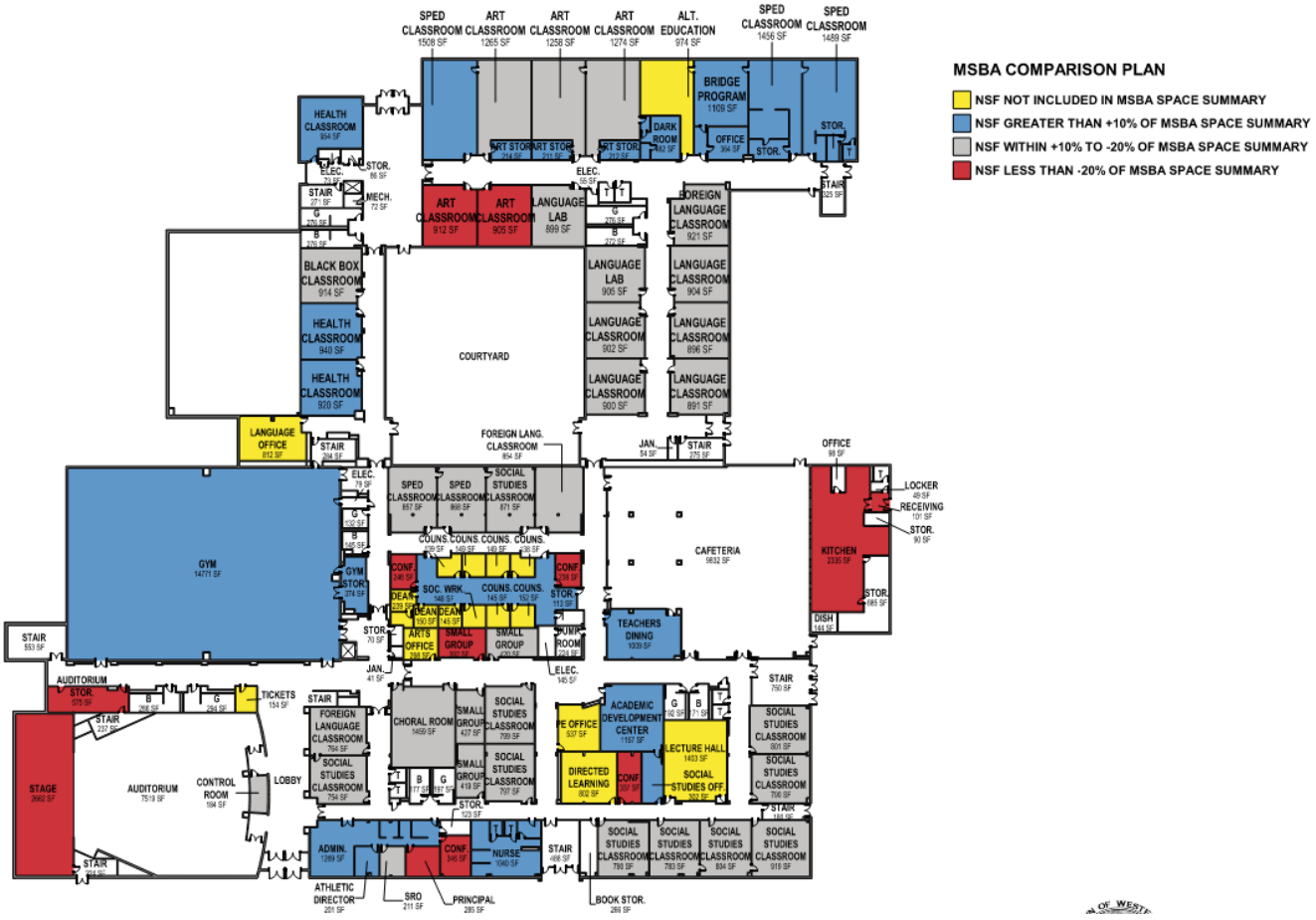
2. **Significant Building Condition Issues – requiring capital expenditures**
    a. See the Capital Expenditures section of this report for specific items that need repair or replacement.
3. **Minor Issues – may be accomplished with operational funding**
    a. Reorganize the classrooms to improve adjacencies for Project Based / Inquiry Based learning. Install new room signage across the entire building
    b. Remove all combination desk/chair units and replace with easily movable collaborative desks and soft plastic, ergonomic, light weight chairs



First Floor Current Use Plan



Second Floor Current Use Plan



First Floor Comparison Plan



Second Floor Comparison Use Plan

End of Section D

SMMA

Section E

Conceptual Options

This Section E demonstrates “conceptual options” which were presented to and discussed with the School Committee on April 24, 2023 and discussed further in an additional School Committee meeting.

Assumptions used when developing the Options:

1. Only the existing school sites were considered. No other Town-owned land was identified for consideration for a single or multiple new school(s)
2. Due to the lack of available swing space at existing school buildings, concept approaches shown in this Section are confined to the construction of a new building on the same site as the existing school. The existing school is intended to remain in operation during the construction of the new building. Following occupancy, the existing building would likely be down to make room for vehicular circulation, parking and play fields or the building and immediate site would be returned to the Town as surplus property.
3. Further investigations will be needed of each of the sites to confirm the viability to support a new school. These investigations will take place as part of part of the MSBA driven Feasibility Study. These investigations will include, but not be limited to wetlands, geotechnical, topography and survey, hazardous materials etc.

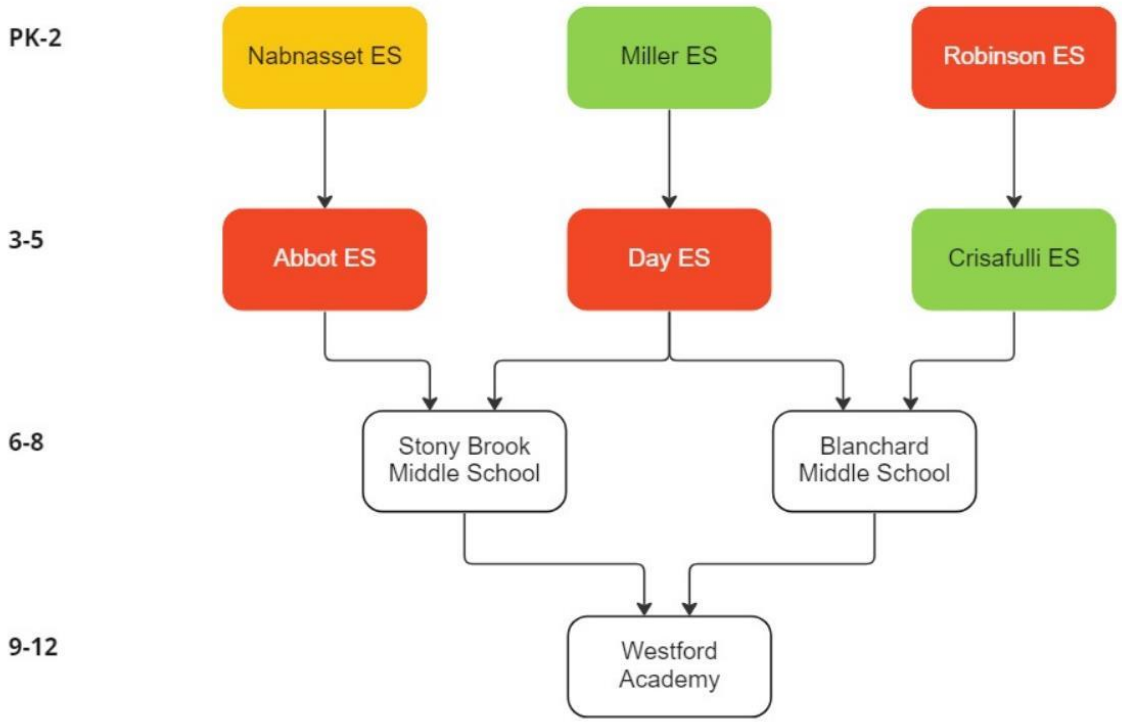
The elementary schools were identified as in need of:

- Some educational changes and renovations recommended
- Modest (more) educational changes and renovations recommended
- Comprehensive renovations or building replacement recommended

These recommendations were arrived at through the analysis of the Facilities Assessment (see Section C) and the Educational Adequacy (see Section D)

The accompanying graphics color code these needs by school and are maintained through each of the options.

Option 1 maintaining the current grade configuration



Status Quo – Renovate or affect varying degrees of physical upgrades and educational changes

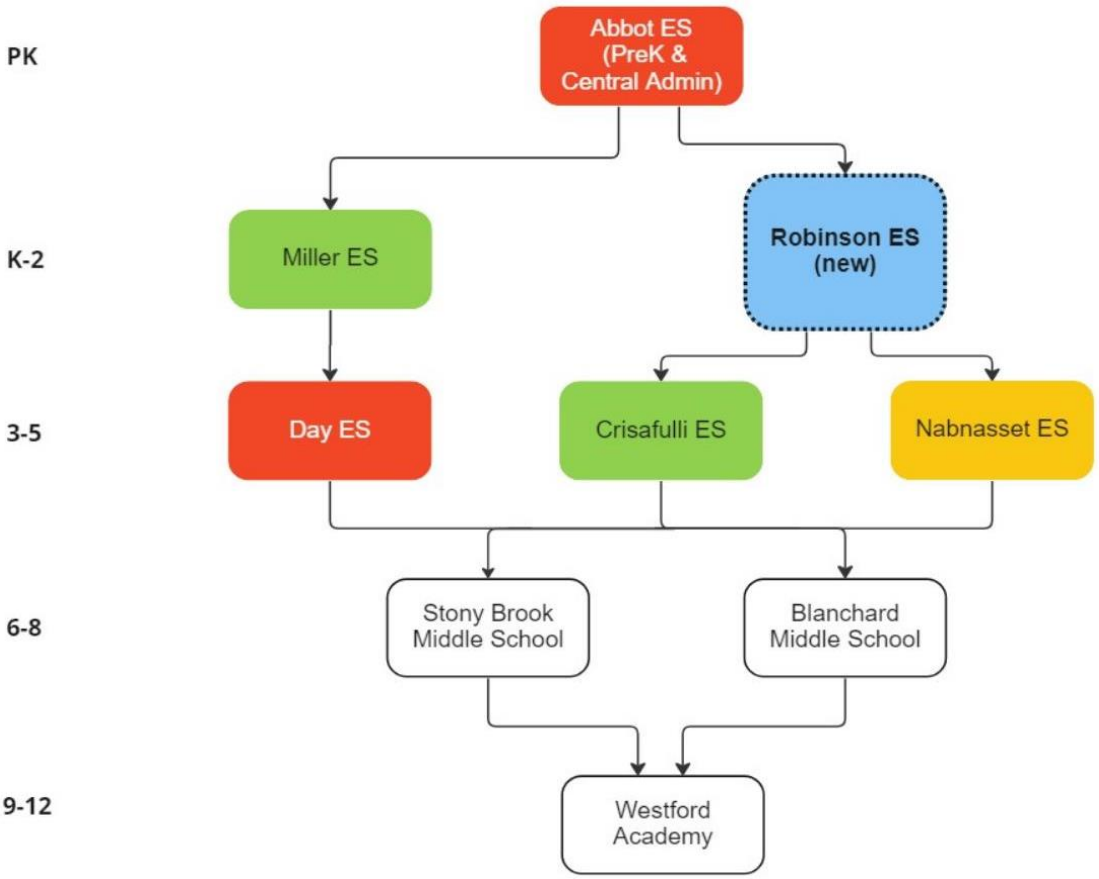
PreK - 2 Schools

- Colonel John **Robinson** School – Comprehensive renovation or replacement **(Priority 1),** Statement of Interest (SOI) submitted to the MSBA 4/14/2023
- **Nabnasset** Elementary School – some educational changes; renovations as needed
- **Rita Miller** Elementary School - modest educational changes

3 - 5 Schools

- **Abbot** Elementary School - Comprehensive renovation **(Priority 2)**
- **Norman Day** Elementary School – Comprehensive or substantial renovations **(Priority 3)**
- **Crisafulli** Elementary School - modest educational changes

Option 2 One new school w/ the current grade configuration



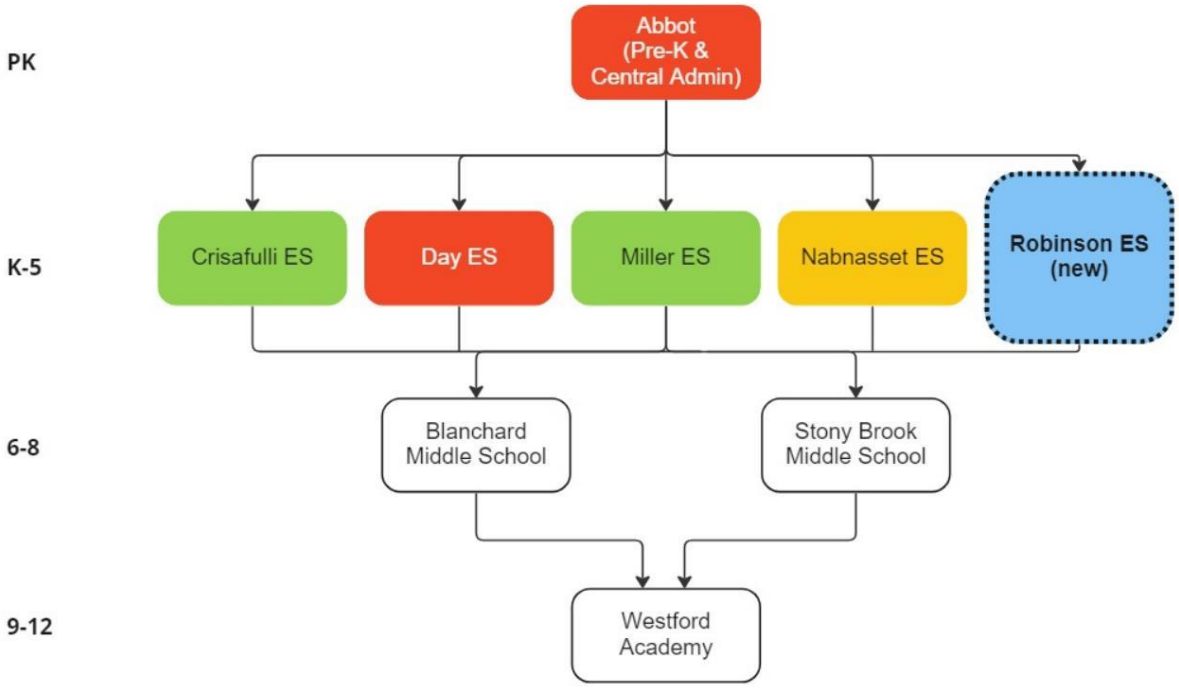
K - 2 Schools

- Colonel John **Robinson School** – Replace with a large new building (K-2). Location to be determined, to replace Robinson and Nabnasset
- **Nabnasset** Elementary School – converted to a 3 - 5 school
- **Rita Miller** Elementary School - modest educational changes

3 - 5 Schools

- **Abbot** Elementary School – renovated to serve all PreK and Central Office Administration
- **Norman Day** Elementary School – Comprehensive or substantial renovations
- **Crisafulli** Elementary School - modest educational changes
- **Nabnasset** Elementary School – converted to a 3 - 5 school, some educational changes; renovations as needed

Option 3 One new school to replace 2 with the Alternate K-5 grade configuration



K - 5 Schools

- Colonel John **Robinson School** – Replace with a large new building (K-5). Location to be determined, to replace Robinson and Abbot populations. This could be a single school or 2 schools in a single building but with their own identities.
- **Nabnasset** Elementary School – some educational changes; renovations as needed for reconfiguration and repairs
- **Rita Miller** Elementary School - modest educational changes, renovations as needed for reconfiguration
- **Abbot** Building – renovated to serve all PreK and Central Office Administration
- **Norman Day** Elementary School – Comprehensive or substantial renovations, renovations as needed for reconfiguration
- **Crisafulli** Elementary School - modest educational changes, renovations as needed for reconfiguration

End of Section E

Section F

Moving Forward with the Massachusetts School Building Authority (MSBA)

The MSBA Process

Engagement with the MSBA is formally initiated through the submission of an SOI, followed by an Eligibility Period and a Feasibility Study. This section describes those initial steps in detail, after which a prescriptive design and construction process follows.

Statement of Interest Process (SOI)

1. Submitting an SOI is the first critical step in the MSBA's program to partially fund the construction, renovation, addition, or repair of municipally owned school facilities located in cities, towns and regional school districts.
2. The SOI allows districts to inform the MSBA about deficiencies that may exist in a local school facility and how those deficiencies inhibit the delivery of the district's educational program.
3. The district either submits under the Core (Capital) Program or the Accelerated Repairs program.
4. The SOI must identify one school for the Core Program, but the District or MSBA may request to include all three schools in the evaluation. (Even if multiple schools are studied, the one school identified must be improved or replaced through the Core Program).

MSBA Statement of Interest (SOI) Priorities

The SOI submitted by the district must identify which of the following SOI Priorities are relevant for their project:

1. Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children.
2. Elimination of existing severe overcrowding
3. Prevention of the loss of accreditation.
4. Prevention of severe overcrowding expected to result from increased enrollments, which must be substantiated.
5. Replacement, renovation, or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6. Short term enrollment growth.
7. Replacement of or addition to obsolete buildings to provide a full range of programs consistent with state and approved local requirements
8. Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

Of the eight SOI Priorities, Westford Public Schools intends to submit under the two priorities (underlined above), Priorities Five and Seven.

MSBA Statement of Interest (SOI) Timeframe (Core Program)

January 2023: SOI period opened

April 14, 2023: SOI period closes for the core program

- Review SOI for Completeness
- Review SOI and accompanying documents for content
- Conduct Senior study visits if required
- Recommend SOIs for initiation into Eligibility Period

Typically, MSBA releases eligible Accelerated Repair projects in June/July and Core Program (CP) Projects in December.

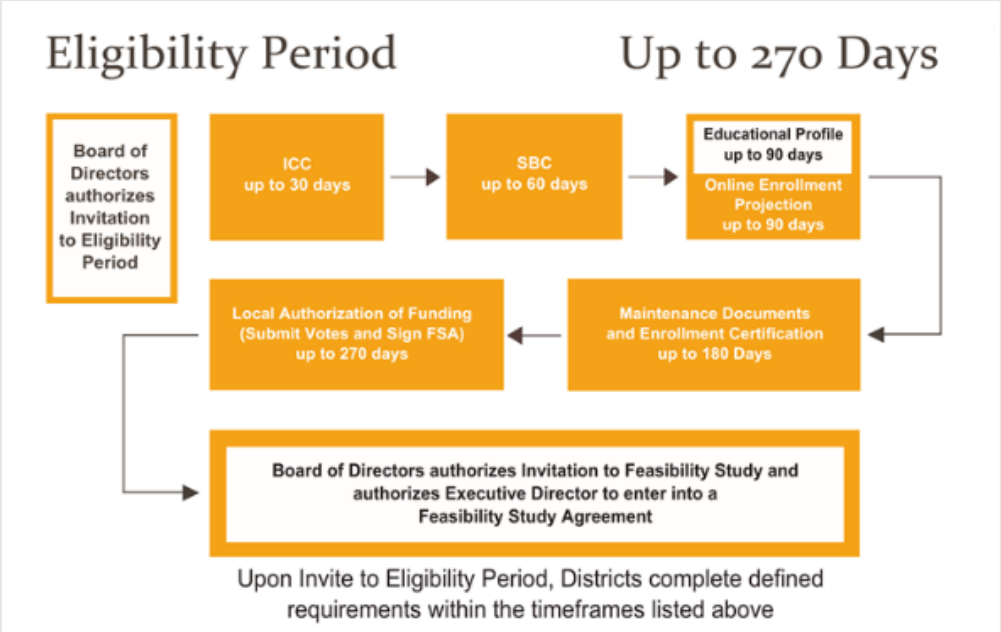
MSBA Eligibility Period (Module 1)

After acceptance into the Core Program, the District must successfully complete the following steps before they are authorized to commence with the Feasibility Study. The District has up to 10 months to complete these steps.

- Initial Compliance Certificate
- Form the School Building Committee

In place with the permanent SBRC

1. Complete educational profile
2. Submit District's Maintenance Practices
3. Certify Design Enrollment
4. VOTE the Feasibility Study Phase funding
5. Execute Feasibility Study Agreement (FSA)
6. Receive authorization to begin Feasibility Study
7. Process has up to 10 Months to complete



Upon Invite to Eligibility Period, Districts complete defined requirements within the timeframes listed above

MSBA Feasibility Study (Module 3)

With the Owner's Project Manager and Designer in place, the District and its team collaborate with the MSBA to document their educational program / initial space summary, document existing conditions, develop and evaluate alternatives, and recommend the most cost effective and educationally appropriate preferred solution.

1. Test alternative sites, site solutions
2. Possibly explore alternative school sizes (populations)
3. Select a preferred solution
4. At this stage, the project becomes reimbursable

After the preferred solution (one site, one design/construction approach) is selected by the District and all local approvals are in place, the District and design team represent the preferred solution at the Facilities Assessment Subcommittee (FAS). The FAS makes their recommendation to the MSBA Board of Directors and the project then commences with Schematic Design of the preferred solution.

Schematic Design and Project Funding Agreement (Modules 4 and 5)

Following the Feasibility Study and the approval of the preferred solution by the MSBA Board of Directors, the District and design team commence with the design of that preferred solution. It is at the conclusion of Schematic Design that the first detailed cost estimate is available that is used to set the project budget for the remainder of the project lifetime. The Schematic Design, its program and budget must be approved by the District and Community and put forward to the MSBA Board of Directors once again. The MSBA uses this program and budget to finalize their Scope and Budget and Project Funding Agreements. At this point in time, the total reimbursable amount to the Town is known.

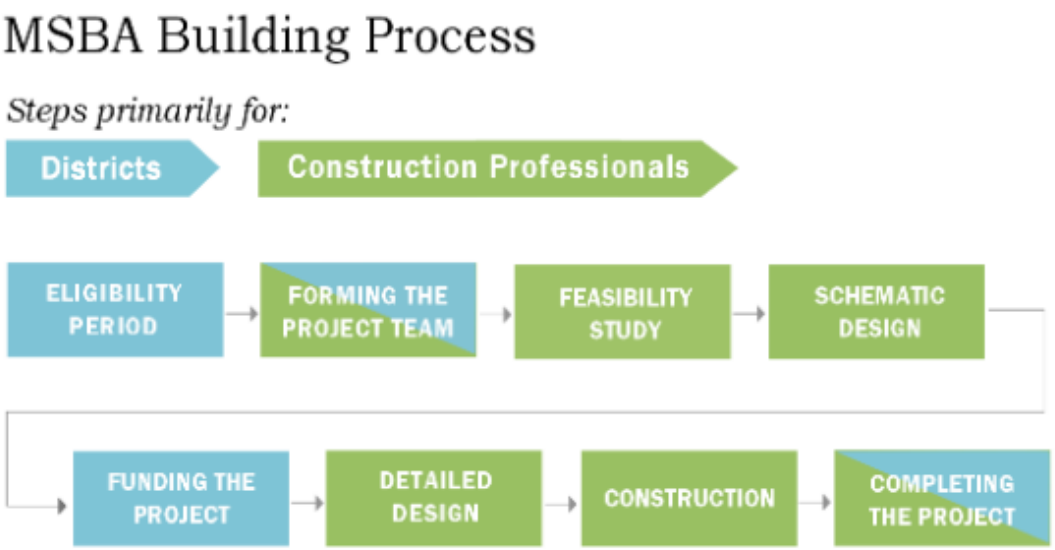
After all votes, approvals, and funding (for Detailed Design through Construction) have been obtained, the project can move forward into Detailed Design and Construction.

Complete Grant and Implementation Timeframe

The following outline of phases and times represents an average proposed school building project that is part of the Massachusetts School Building Authority (MSBA) Capital Grant Program.

Statement of Interest (SOI) Process:	12 months
Eligibility Period:	10 months
Feasibility Study:	9 months
Schematic Design:	6 months
Development Design:	5 months
Construction Documents:	8 months
Construction:	24 months
Close Out:	3 months
Total:	**77 months**[1] *(all timeframes are approximate)*

[1] *(6.5 years) - Assumes an "Invitation" based on the SOI initial submission*



SOI Priorities – Robinson

Based on the findings of the Master Plan to date, as well as the school's ranking in the MSBA Facilities Assessment, it was recommended to submit the SOI with the Colonel John Robinson School identified as that which should be substantially repaired or replaced through the Core Program.

The following section identifies the applicable MSBA SOI Priorities with relevant information from the Robinson School existing conditions.

Priority Five - Replacement, renovation, or modernization of school facility systems, such as roofs, windows, boilers, heating, and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility:

- Obsolete mechanical heating and ventilation system, no air conditioning (frequently too hot / too cold for teaching and learning)

  From **the SMMA Comprehensive Facilities Assessment Report**:

  - *The original three-story 1902 building has a central steam boiler connected to a passive steam heating system and steam radiators. The building has steam heated Air Handler Units (AHUs) that appear to bring in fresh outdoor air to mix with internally heated air to classrooms.*
  - *The 1952 wing has a central steam dual boiler system connected to unit ventilators and radiators.*
  - *Supplemental units in the 1902 building include fan-driven exhaust ducts connected to the chimney to pull air up through the building and multiple unit heaters*
  - *Supplemental units in the 1952 wing include vent fans and unit heaters*
  - *Supplemental units in the 1960 end additions include electric baseboard and unit ventilators*

- Inadequate electrical systems *(see SMMA Report)*
- Window replacement needed - all windows are listed as fair to poor in the SMMA report. All but those in the basement of the 1092 building are singe glazed
- Lack of handicapped access to significant parts of the building and other accessibility issues
    - Door widths and clearances
    - Door hardware
    - Toilet fixtures and configurations
    - Vertical access to all teaching and learning spaces
    - Signage
    - Stair and handrail configurations

The 2023 SMMA Comprehensive Facilities Assessment Report lists the following items as the most significant short term and modernization recommendations:

- *Replace tile flooring in the original multi-story building*
- *Install backflow preventers on the two town water supply lines*
- *Install additional exterior lighting for safety and security*
- *Install a complete fire suppression system*
- *Replace unit ventilators in classrooms based on life cycle*
- *Replace all windows*
- *Replace boilers when they reach the end of their useful life*
- *Replace lighting fixtures based on life cycle*
- *Maintain courtyard pavement*
- *Cut and patch pavement on the west side*
- *Modernize obsolete electrical panels*
- *Replace failed fuel oil tank monitoring and alarm systems*
- *Install fire-rated interior doors*
- *Replace exterior doors as they pass the end of their useful life*
- *Install a video monitoring system*
- *Replace original iron water supply piping with copper*
- *Heat balancing and control system upgrade*
- *When at the end of their useful life, replace the underground No.2 fuel oil tanks*
- *Repair and paint plaster ceilings and walls in the original multi-story building*
- *The building and inhabitants are not protected by a fire suppression system. Due to its construction date, the facility is most likely "grandfathered" by code and the installation of fire sprinklers not required until major renovations are performed. Regardless of when or if installation of facility-wide fire suppression is required by the governing municipality, EMG recommends a retrofit be performed. A facility-wide fire suppression retrofit is*

recommended for additional safety and security and to reduce liability and the cost of insurance. A budgetary cost is included.

The 2023 SMMA Comprehensive Facilities Assessment Report also includes:

SPECIAL ISSUES AND FOLLOW-UP RECOMMENDATIONS

As part of the FCA, a limited assessment of accessible areas of the building(s) was performed to determine the presence of mold, conditions conducive to mold growth, and/or evidence of moisture. Property personnel were interviewed concerning any known or suspected mold, elevated relative humidity, water intrusion, or mildew-like odors. Sampling is not a part of this assessment.

Areas of suspect mold growth were observed along the masonry structure in the following areas:

- *Outdoor alley between rooms 20 and 22, low on the walls and foundation*
- *Outdoor corner indent near the boiler room door where damaged gutter drains (north of classroom 14). Mold is low on the brick wall and concrete foundation.*
- *Outdoor wall near classrooms 21 and 22. Mold is on the brick wall and concrete foundation.*

The mold appears to be the result of condensation from a stack of plywood in an area with limited ventilation. Exposure to mold or mold producing materials can be hazardous and should be avoided. The presence of mold does not necessarily constitute an exposure. This assessment does not constitute a comprehensive mold survey of the Project, and any conclusions are based solely on conditions readily observable in accessed areas.

Exterior mold occurs in the alley between rooms 20 and 22. Since mold is not evident in interior areas of the Project, there does not appear to be a significant health threat to the occupants of the Project. The affected exterior materials should be cleaned or removed as part of the property's routine maintenance program. The cost of this work is not included in the cost tables.

Priority Seven - Replacement of or addition to obsolete buildings to provide a full range of programs consistent with state and approved local requirements:

- Typical classrooms in the original building are significantly undersized, most others undersized
- Undersized gym & library/media center
- Numerous issues with building conditions that impede teaching and learning:
    - antiquated lighting
    - control of the temperature in classrooms and other occupied spaces
    - ventilation
    - acoustics - window single glazing; room materials and engineering system noise all contribute to higher than desirable background noise levels
- Issues related to safe and secure learning environments
    - Entry into the school is dependent on a phone/camera. However, the main office is located in a part of the building which does not have a view of the accessible entrance. Currently, there is no way to monitor or control who enters the school once they have been "buzzed in".
    - There is no way of automatically locking down portions of the building in a lock down condition.
- Need for additional Special Education spaces

Section G

The Community Process, Summary of Community Meetings

SMMA, in collaboration with the School Department and School Committee, conducted a series of presentations to keep the school committee and public informed on progress of the study. A summary of each meeting/session has been provided below.

Note: The presentations from each of the Community Meetings can be found in Appendix 2 of this report.

January 30, 2023

Westford School Committee Meeting

In late January, SMMA presented the following agenda to the Westford School Committee:

- Enrollment Projections
- Project Goals and Tasks
- Class Sizes Across All Schools
- Preliminary Review of Findings from Elementary School Facilities Assessments
- Review of Comparison Plans
- Schedule Updates
- Community Presentation #1 Agenda

March 9, 2023

Community Workshop 1

The March Community Workshop was the first meeting where the design team was able to engage and interact with the general community. With __ people in attendance, both in-person and virtually, through Zoom, residents and community members were able to provide information and feedback on several topics.

The agenda for Community Workshop #1 included:

- Enrollment Projections
- Review of Building Conditions
- Review of Educational Effectiveness
- Class Sizes Across All Schools
- Grade Configuration Discussion
- Schedule Updates

During this interactive workshop using Mentimeter, participants answered questions surrounding preferences and concerns regarding elementary school grade configurations and ranked importance of listed priorities for the school districts.

- What are your top priorities for the elementary schools?
- What are the pros of the current grade configuration (PK-2 and 3-5)?
- What are the cons of the current grade configuration (PK-2 and 3-5)?
- What are the pros of an alternate/unified grade configuration (PK and K-5)?
- What are the cons of an alternate/unified grade configuration (PK and K-5)?
- What is your preference for grade configuration?

The Community Meeting PowerPoint and Mentimeter polling results can be found in the Appendix.

March 27, 2023

Westford School Committee Meeting to Discuss Statement of Interest Process

On March 27, SMMA met with the School Committee to discuss recommendations for submitting a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA) for the Robinson School. This included a walkthrough of the SOI and MSBA processes. The following agenda was presented to the School Committee:

- Identification of School
  - Facilities Assessment
  - Educational Adequacy
- MSBA Statement of Interest
  - Process
  - Schedule

Superintendent Christopher Chew requested the School Committee's authorization for submitting the SOI to the MSBA at the following School Committee meeting, on April 10, 2023.

April 10, 2023

Westford School Committee Meeting for SOI Authorization

On April 10, 2023, the Westford School Committee authorized Superintendent Chew to submit the SOI to the MSBA for the Robinson School.

April 24, 2023

Westford Select Board Meeting

On April 24, SMMA met with the School Committee to discuss the study activities completed in the previous months. Also a presentation and discission of proposed Long Term Options. The following agenda was presented to the School Committee:

- Tasks Completed to Date
  - Facilities Assessment
  - Educational Adequacy

- MSBA Statement of Interest
- Long Term Options: 1, 2 & 3
- Next Steps
  - Conceptual Cost Models (2023 $)

June 20, 2023

Westford School Committee Meeting was the final Board / Community Presentation.

Presentation and discussion included:

- Facilities Assessment of all School Department Buildings
  - Complete – 450 page +/- Report
  - Identification of Capital Maintenance Items
- Educational Adequacy Assessment
- Long Term Options Development: 1, 2 & 3
- MSBA Statement of Interest submitted 4/14/23
- Conceptual Costs Models (2023 $) – in Draft form
- Assemble Final Report - Outstanding

End of Section G

Section H

Conceptual Costs

Probable costs are a function of several factors including, but not limited to, material costs and labor, availability of qualified contractors, construction schedule, market conditions, complexity, and what is known as the project delivery method. This Section is intended to capture factors and decisions that can impact costs at a very high level and to provide an understanding of design and construction cost vocabulary.

Cost Considerations

Construction Schedule, Escalation and Market Conditions

The **Construction Schedule** is important to determine the escalation that must be applied to the present-day cost estimate and to inform the construction contractor's level of effort. A compressed schedule may require overtime or weekend work which may cause the contractor to submit a higher bid. A schedule that is very long may also cause higher bid costs because the management and oversight for that contract is drawn out for a longer period of time. The project team will advise the Town of what construction duration may be anticipated based on the size and nature of the project and will discuss schedule impact and influences with the project team in detail after the scope is defined.

Escalation, over the past few years, has been anything but consistent in this dynamic, and sometimes, volatile market. Escalated pricing should be applied to the mid-point of construction and is evaluated with each design submission. The closer the project gets to the bid date, the lower the escalation will be.

Market Conditions are an important influence on construction costs. When the construction industry is saturated, it may be harder to find labor which can result in higher costs, material costs may be influenced by availability and the political climate or tariffs. The professional cost estimators take these factors into consideration but cannot predict what will happen.

Project Complexity

The project complexity can have an impact on the construction cost in many ways. Phased projects may have schedule and delay risks because they rely on moving from one area of the building or site to the next. Renovation projects may have schedule/delay and scope risks, depending on the amount of information that the design team was able to collect on the existing conditions. A more recent complexity is the endeavor to ask for Passive House and Netzero buildings. These sustainability goals are raising the bar for workmanship and quality control during construction that contractors may, due to their current "novelty," feel the need to increase bids for to protect themselves from risk.

Construction Delivery Method

There are two options for MSBA construction contract procurement in Massachusetts. They are referred to as Chapter 149 and Chapter 149a which is a reference back to the section of the Massachusetts General Law that defines the two methods.

A **Chapter 149a** project is a "Construction Manager at Risk" delivery method, which means that you share project cost/construction risk with the construction contractor / construction manager. This is done by bringing a construction manager on board during the design phase (typically after Schematic Design is complete but before Design Development documents are complete). The contractor provides input during the design process that should reduce change orders during construction, therefore reducing risk to the town. They can also provide advice on construction alternatives that may result in cost savings. This method is typically selected for occupied or phased renovation or addition/renovation projects because of their complexity. It allows for early start of construction for some phases and can expedite a project schedule. Due to this early involvement, and the fact that the contractor is to submit a Guaranteed Maximum Price to construct the project before the design is complete, this procurement method has a higher cost. In an ideal scenario, these costs may be offset by being able to complete the project more quickly and with fewer change orders.

A **Chapter 149** project is a "design-bid-build" delivery method which means that you have completed the design documents entirely before putting the project out for contractors to bid. After the bid, the *build* commences. Using this delivery method is known to have less upfront costs because you are not paying for the involvement and risk of the Construction Manager, but the Town does assume more risk for change orders. It becomes of high importance to have high quality design documents for bid to reduce this risk.

There are many pros and cons to consider when selecting your construction delivery method and this is typically not decided until the project has been defined in the Feasibility Study, at which time the project team will weigh the two options in much more detail.

Vocabulary

Construction Costs vs Project Costs

Construction Costs refers to the bid / contract amount paid to the contractor or Construction Manager - "the cost of bricks and mortar".

Project Cost refers to the construction cost and includes other necessary related and Soft Costs needed for a complete project. It includes items such as:

- Furnishings and Equipment
- Owners Project Management fees
- Design fees including architects, engineers, specialty consultants, cost estimating, site survey, geotechnical and many others.
- Owner contingencies
- Note that debt service and other financial costs are not included in the Project Costs

For new construction and renovations, there is a 1.25 multiplier applied to construction costs to cover the above noted costs.

For Capital Repairs / Maintenance items, the multiplier is 1.12 because there is likely fewer specialty consultants and the work may not require OPM services.

Contingency

Contingencies may appear in estimates in as many as three places. The construction cost estimate that will include an "estimating" or "design contingency" that is high at the beginning of

the design phase (typically 15% in Feasibility and Schematic Design) and decreases to 0% when the design documents are complete. This contingency is intended to cover unknowns during the design process. As the design becomes more defined and detailed, the unknowns are eliminated. “Owner’s contingency” is there to cover change orders during construction. Construction Manager (CM) contingency is to cover the CM for unknowns when they submit their bid for the project.

All these factors will be reviewed and evaluated by your project team, discussed with the design team, and will be used to inform the project estimate.

Conceptual Cost Models

The following is a guide how the school department and larger community should use the significant data provided:

The categories of scope and identified values are not “additive”. This information should be seen as an a-la-carte menu of building projects and repair tasks. Each time a Capital Building Project (e.g. MSBA project or Capital Repair project is undertaken, there may be ripple events that alters, and likely removes, some other projects or Capital Repairs.

Background: In April 2023, the School Department and Town of Westford submitted a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA). The SOI requested that Westford’s Robinson Elementary School be accepted into the Capital Pipeline for study. The SOI also included information about the Abbot and Day elementary schools and suggested that the “study” might expand to include more than just the Robinson school building and population. This future MSBA “study” would explore a no-build solution, additions and renovation solution and a new construction solution. The size (and student design size) of a possible project will be an outgrowth of that study.

The Conceptual Cost model identifies costs for a 350-student school and a 700-student school (multiple populations). Also included are multiple Capital Repairs projects (or tasks) for each of the school buildings including Robinson, Abbot and Day. Depending on schedules for an MSBA study, the town will need to decide on which Capital Repairs might need to proceed and are there lower priority repairs that might no need to be undertaken.

Options A, B & C: this was an effort included in the Master Plan that explored the renovation or replacement of the schools with the current elementary grade configuration. Also explored was a potential grade level reconfiguration. This discussion is also included in the SOI and is expected to be included in MSBA study.

Capital Repairs: This Master Plan included a review of each of the buildings for both physical and educational issues. The physical condition reviews yielded many items in various stages of need. These building systems or materials were reviewed with the town Facilities staff before including them in the estimating process. The color coding is a series of priorities, discussed between SMMA staff and Westford Facilities.

Please note that the items were given to the estimator with brief descriptions only. There was no design or drawing efforts used for the estimates. These estimates should be considered conceptual.

From the educational building reviews, again there were conceptual ideas advanced for pricing including: partial air conditioning for each school. (it is difficult to teach and learn when it is too hot in the classroom); the potential to replace some of the classroom furniture to improve student collaboration and be more comfortable in the classroom. These are seen as “optional” but are provided for your consideration.

2023 Dollars: the following was provided by the estimator.

Costs are based on 2023 dollars. Individual projects will need to be escalated to the mid-point of construction and compounded per year. We have seen several years of historically high escalation and while we are currently seeing these percentages leveling off we would recommend a range of between 7% and 4% per year. (Peter Bradley)

Conceptual Cost Model following:

Masterplan
Estimate

Westford Public Schools

Options Scope

Westford, MA

PM&C LLC
20 Downer Ave, Suite 5
Hingham, MA 02043

(T) 781-740-8007
(F) 781-740-1012

Prepared for:

SMMA

June 7, 2023

Westford Public Schools
Options Scope
Westford, MA

Masterplan

7-Jun-23

Project Costs

	OPTION 1	OPTION 1a	OPTION 2	OPTION 3	GSF	Cost per SF	NEW SCHOOL	RENOVATION	CAPITAL REPAIRS / MAINTENANCE
Colonel John Robinson School (Comprehensive Renovation) Construction Costs		$ 37,968,480			55,836	$ 544.00		$ 37,968,480	$ 18,058,696
Colonel John Robinson School (350 student new school) Project Costs	$ 51,850,000				61,000	$ 680.00	$ 51,850,000		
Colonel John Robinson School (700 student new school)			$ 88,864,950	$ 88,864,950	104,547	$ 680.00	$ 88,864,950		
Nabnasset ES									$ 7,081,173
Rita Miller ES									$ 7,356,825
Abbot ES School (Comprehensive Renovation)		$ 38,634,880	$ 38,634,880	$ 38,634,880	56,816	$ 544.00		$ 38,634,880	$ 18,435,423
Abbot ES School (350 student new school)	$ 51,850,000				61,000	$ 680.00	$ 51,850,000		
Norman Day ES School (Comprehensive Renovation)		$ 41,110,080	$ 41,110,080	$ 41,110,080	60,456	$ 544.00		$ 41,110,080	$ 21,321,212
Norman Day ES School (350 student new school)	$ 51,850,000				61,000	$ 680.00	$ 51,850,000		
Crisafulli ES				$ 1,548,000				$ 1,548,000	$ 6,975,677
Blanchard MS									$ 15,890,773
Stony Brook MS									$ 13,297,416
Westford Academy (modest renovations)	$ 1,146,000	$ 1,146,000	$ 1,146,000	$ 1,146,000				$ 1,146,000	$ 37,852,050
							Construction costs	**$ 120,407,440**	**$ 146,269,246**
Estimated Construction Costs (not including Capital Maintenance)	**$ 195,870,000**	**$ 148,574,300**	**$ 212,194,888**	**$ 212,194,888**			**Project Costs x 1.12**	**$ 134,856,333**	**$ 163,821,555**
			includes Abbot as PreK & CO	includes Abbot as PreK & CO					

Assumptions:

Option 1 includes replacement schools at Robinson, Abbot + Day and Option 1a includes Renovations at those schools

Costs are based on 2023 dollars

Hard costs only - no soft costs are included

Westford Public Schools
Options Scope
Westford, MA

7-Jun-23

Masterplan

Construction Costs Only

	OPTION 1	OPTION 1a	OPTION 2	OPTION 3	GSF	Cost per SF	NEW SCHOOL	RENOVATION	CAPITAL REPAIRS / MAINTENANCE
Colonel John Robinson School (Comprehensive Renovation) Construction Costs		$ 30,374,784			55,836	$ 544.00		$ 30,374,784	$ 16,123,836
Colonel John Robinson School (350 student new school) Project Costs	$ 41,480,000				61,000	$ 680.00	$ 41,480,000		
Colonel John Robinson School (700 student new school)			$ 71,091,960	$ 71,091,960	104,547	$ 680.00	$ 71,091,960		
Nabnasset ES									$ 6,322,476
Rita Miller ES									$ 6,568,594
Abbot ES School (Comprehensive Renovation)		$ 30,907,904	$ 30,907,904	$ 30,907,904	56,816	$ 544.00		$ 30,907,904	$ 16,460,199
Abbot ES School (350 student new school)	$ 41,480,000				61,000	$ 680.00	$ 41,480,000		
Norman Day ES School (Comprehensive Renovation)		$ 32,888,064	$ 32,888,064	$ 32,888,064	60,456	$ 544.00		$ 32,888,064	$ 19,036,797
Norman Day ES School (350 student new school)	$ 41,480,000				61,000	$ 680.00	$ 41,480,000		
Crisafulli ES				$ 1,238,600				$ 1,238,600	$ 6,228,283
Blanchard MS									$ 14,188,190
Stony Brook MS									$ 11,872,693
Westford Academy (modest renovations)	$ 1,146,000	$ 1,146,000	$ 1,146,000	$ 1,146,000				$ 1,146,000	$ 37,852,050
							Construction costs	**$ 96,555,352**	**$ 134,653,118**
Estimated Construction Costs (not including Capital Maintenance)	**$ 156,982,500**	**$ 119,145,940**	**$ 170,042,410**	**$ 170,042,410**			**Project Costs x 1.12**	**$ 108,141,994**	**$ 150,811,492**
			includes Abbot as PreK & CO	includes Abbot as PreK & CO					

Assumptions:

Option 1 includes replacement schools at Robinson, Abbot + Day and Option 1a includes Renovations at those schools

Costs are based on 2023 dollars

Hard costs only - no soft costs are included

Westford Public Schools
Options Scope
Westford, MA
Masterplan

##

Legend

1	Safety/Code Related Project
1	Systems Poor or Fair, Attention Needed
2	Systems Poor or Fair, Servicable
3	Systems, Poor Condition, Deferrable
4	Projects Procured Separately

Priority Repair / Maintenance Summary

			Overall Maintenance Costs
Colonel John Robinson School Priority Repairs			
Construction Costs			14,504,581
Project Costs x 1.12		$	16,245,131
Nabnasset School Priority Repairs			
Construction Costs			6,322,476
Project Costs x 1.12		$	7,081,173
Rita Miller School Priority Repairs			
Construction Costs			6,568,594
Project Costs x 1.25		$	7,356,825
Abbot School Prioirity Repairs			
Construction Costs			16,460,199
Project Costs x 1.12		$	18,435,423
Norman Day School Priority Repairs			
Construction Costs			19,036,797
Project Costs x 1.12		$	21,321,212
Crisafulli School Priority Repairs			
Construction Costs			6,228,283
Project Costs x 1.12		$	6,975,677
Blanchard Middle School Priority Repairs			
Construction Costs			14,188,190
Project Costs x 1.12		$	15,890,773
Stony Brook Middle School Priority Repairs			
Construction Costs			11,872,693
Project Costs x 1.12		$	13,297,416
Westford Academy Priority Repairs			
Construction Costs			37,852,050
Project Costs x 1.12		$	42,394,296
Construction Cost	**$ -**	**$**	**133,033,863**
Project Cost	**$ -**	**$**	**148,997,926**

Department: 300 - WESTFORD PUBLIC SCHOOLS *Location: XX - ABBOT ELEMENTARY*		SF: 56,816 Classrooms: 24	UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
	SMMA Priority	Quantities			35%	
15 Perform pressure test & inspection of domestic cold and hot water piping	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
18 Perform inspection of sanitary sewer piping	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
11 Abate, remove and replace areas of VAT	1	10,000sf	$ 12.00	$ 120,000.00	$ 42,000	$ 162,000
21 Perform leak testing on storm drainage system	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
24 Install an emergency eye wash in the nurse's suite	1	1 emergency eyewash	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
26 Install a surface mounted fire protection sprinkler system	1	Full building square footage.	See Below			
27 Install a concealed mounted fire protection sprinkler system. Install new ceilings and finishes to coordinate. Install new fire rated enclosure, doors and hardware at egress stairs between first and second floors.	1	Full building square footage for fire protection system. Install new ACP ceilings in classrooms and office spaces. Install gyp ceilings at entrances. Install four pairs of doors, 6ftx7ft' HM Door and Frame with 6'x3' glazed transom, with fire rated glass. Entrances to be 1 hour rated with rated egress hardware.	$ 1,063,872.00	$ 1,063,872.00	$ 372,355	$ 1,436,227
32 Remove and replace normal and emergency power distribution systems equipment with power feeders and recepacles with branch wiring.	1	Full building square footage. Main switchboard 1,600 Amp 120/208v 3ph 4w.	$ 7.50	$ 426,120.00	$ 149,142	$ 575,262
33 Remove and replace utility transformer.	1	Allowance towards replacing the vault-mounted Town-owned/maintained with outdoor pad-mounted National Grid-owned/maintained	$ 60,000.00	$ 60,000.00	$ 21,000	$ 81,000
34 Remove and replace emergency generator	1	60 kW/75 kVA 120/208v 3ph 4w indoor diesel-fired with ATS	$ 125,000.00	$ 125,000.00	$ 43,750	$ 168,750
36 Remove existing and provide new fire alarm system to meet current code requirements.	1	Full building square footage.	$ 5.00	$ 284,080.00	$ 99,428	$ 383,508
37 Remove and replace clock/PA system throughout school with new IP based system.	1	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 113,632.00	$ 39,771	$ 153,403
38 Remove receptacles and associated branch wirings and provide new	1	Full building square footage.	$ 7.00	$ 397,712.00	$ 139,199	$ 536,911
38 Repair rutted roadway. Remove pavement, recompact subgrade and reinstall reclaimed pavement.	2	27500 SF	$ 10.00	$ 275,000	$ 96,250	$ 371,250
39 Repair parking areas, remove pavement, recompact subgrade and reinstall reclaimed pavement, parking striping, and signage	2	47500 SF	$ 12.00	$ 570,000.00	$ 199,500	$ 769,500

Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - ABBOT ELEMENTARY***			**SF: 56,816 Classrooms: 24**	UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
		SMMA Priority	Quantities			35%	
5	Re-coat wood pilasters, columns, and add canopy and security vestibule. Add cabinet unit heater and associated hot water piping, insulation and valves.	2	1 qty 25ft (W)x 25ft (T) Elevation. Install new 450 sf security vestibule composed of storefront and masonry, slab on grade, with steel framed flat roof, and PVC Roof Assembly. Install new cabinet unit heater, four recessed light fixtures in gyp ceiling, Install 3qty new 6'-0" aluminum doors and frames with egress hardware, two doors do receive automatic operators. Provide cameras and electronic access hardware at two doors. 100 linear feet of pipe. Remove 25ft x 25ft area of walk to provide ADA ground transition to entrance. Additionally, Recoat 3qty 12ft (W) x 25ft (T) Elevations. Replace copper roof coping and thru-wall flashing, regrout brick at corners. Replace wood soffits (20sf each) at four entrances	$ 355,175.00	$ 355,175.00	$ 124,311	$ 479,486
6	Replace landings outside of egress doors with level landings	2	Remove 50ft x 10ft walk at 4qty and 10ft x 10ft granite block landings. Install new 10ft x 10ft concrete landing and new concrete, ADA compliant walks to egress entrances. Recoat 20 HM Doors and Frames.	$ 96,000.00	$ 96,000.00	$ 33,600	$ 129,600
14	Replace existing water meter and shut-off valves, install new reduced pressure backflow preventer	1	1 Water Meter; 1 RPBP; 6 shut-off valves	$ 15,000.00	$ 15,000.00	$ 5,250	$ 20,250
16	Remove existing piping, where possible, back to service, install new domestic cold and hot water piping, including insulation Replace heating equipment with new.	1	Full building square footage.	$ 9.50	$ 539,752.00	$ 188,913	$ 728,665
17	Remove and replace gas piping serving heaters, gas boilers, and kitchen equipment	1	50% of the building square footage.	$ 1.00	$ 28,408.00	$ 9,943	$ 38,351
13	Install new wheel chair lift for access to stage.	1	1 new wheel chair lift.	$ 60,000.00	$ 60,000.00	$ 21,000	$ 81,000
19	Remove and replace, where possible, back to service, sanitary waste and vent piping	1	Full building square footage.	$ 5.00	$ 284,080.00	$ 99,428	$ 383,508
20	Remove and replace waste piping where possible, back to service, below triple pot sink in kitchen. Remove and replace grease trap. Provide new triple pot sink.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple pot sink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600
30	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	1	Full building square footage.	$ 10.00	$ 568,160.00	$ 198,856	$ 767,016
31	Remove old sections of non-compliant walkways, recompact and install new walking accessible walking surfaces	2	750 LF @ 12' wide	$ 180.00	$ 135,000.00	$ 47,250	$ 182,250
7	Remove and replace areas of flat roof	2	Remove and replace 25,000sf of EPDM roofing system, including insulation and edge metal and 15qty roof drain stainers.	$ 35.00	$ 875,000.00	$ 306,250	$ 1,181,250
10	Replace classroom doors and hardware. Enlarge entry vestibules to be reconstructed to meet accessiblity requirements.	2	Remove 5ft x 10ft section of masonry wall and adjacent door frame and door (qty 40). Remove section of flooring and at door 10sf. Install new masonry wall, door frame, and hardware. Repair floor with new VCT to match. Install new gyp soffit at entrance. Install new braille signage at each door.	$ 198,400.00	$ 198,400.00	$ 69,440	$ 267,840

Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - ABBOT ELEMENTARY***			**SF: 56,816 Classrooms: 24**	UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
		SMMA Priority	Quantities			35%	
29	Remove all existing HVAC air handling systems and distribution, and all heating hot water piping. Install new heating, ventilating and/or air conditioning systems and new heating hot water distribution piping to serve entire building. Remove louvers and infill with exterior wall assembly to match.	2	Full building square footage.	$ 55.00	$ 3,124,880.00	$ 1,093,708	$ 4,218,588
22	Remove and replace existing storm drainage piping with new	1	Full building square footage.	$ 3.50	$ 198,856.00	$ 69,600	$ 268,456
8	Remove Infill with exterior wall assembly, doors, and louvers at mechanical spaces	1	Remove and replace 500sf of wood framed doors. Infill openings with fully grouted CMU Masonry. Install 2qty, 4ftx7ft Heavy Duty, HM Doors and Frames. Install 1 8ftx7ft, Heavy Duty, HM Door and Frame. Install 2 new 3ftx7ft louvers.	$ 42,200.00	$ 42,200.00	$ 14,770	$ 56,970
28	Install additional ansul fire suppression system nozzles to provide adequate coverage	1	Add two nozzles to the existing ansul fire suppression system plus testing	$ 3,000.00	$ 3,000.00	$ 1,050	$ 4,050
4	Install additional site lighting	2	PROVIDE PER POLE PRICE, Assume 10qty.	$ 7,000.00	$ 70,000.00	$ 24,500	$ 94,500
12	Retrofit existing guard rails with added posts and panels to raise height to 42". Add appropriate code compliant hand rails.	2	Remove existing stairs and stair supports. Install new ADA compliants stairs with guard and handrails, assume 24 risers and 26 treads, one intermediate landing. Stair runs approximately, 5ft wide. Stairs are assumed to be metal framed, concrete stair mix, and rubber flooring for stair risers and treads. Install new handrails at two staircases at the stage, assume 20ft a piece.			$ -	$ -
23	Remove and replace existing janitors sinks with new	2	4 mop sinks	$ 2,500.00	$ 10,000.00	$ 3,500	$ 13,500
25	Install an emergency eye wash/shower in the boiler room	2	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
9	Replace exterior door hardware and gasketing	1	20 Door Openings	$ 1,500.00	$ 30,000.00	$ 10,500	$ 40,500
31	Remove and replace interior normal and emergency lighting (currently battery units) systems	1	Full building square footage (except recent upgrades: Multipurpose, Library, Music).	$ 12.00	$ 681,792.00	$ 238,627	$ 920,419
	Optional Educational Changes						
	Create small group rooms		Reconfigure partitions to include 2 small group pull-over rooms per grade level = 6 total at approximately 100 sf each. Accomplished by space mining the existing plan.	$ 150.00	$ 90,000.00	$ 31,500	$ 121,500
	Furniture		(partial) replace hard plastic student furniture and some teacher furniture with light weight flexible furniture. Dispose of replace furniture (SMMA to develop furniture budgets)	$ 10,605.00	$ 254,520.00	-	$ 254,520
	Data wiring		Replace Cat 5 technology wiring throughout with Cat 6A	$ 3.00	$ 170,448.00	$ 59,657	$ 230,105
	Typical classroom bink base cabinets		replace base cabinets to include a deep sink for STEM activities and a handicapped accessible sink (__ classrooms)	$ 600.00	$ 86,400.00	$ 30,240	$ 116,640
	Add air conditioning		add condensing units but existing ductwork to remain (= partial cooling)	$ 15.00	$ 852,240.00	$ 298,284	$ 1,150,524
			ESTIMATED CONSTRUCTION COSTS				**$ 16,460,199**
							$ 289.71
	OPTION 3 ADDITIONAL COSTS - Change to K-5						
	Change 50% of plumbing fixtures to age appropriate fixtures			$ 3.25	$ 184,652.00	$ 64,628	$ 249,280
	Add three Kindergarten classrooms			$ 220,000.00	$ 660,000.00	$ 231,000	$ 891,000

Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - ABBOT ELEMENTARY***			**SF: 56,816 Classrooms: 24**	UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
		SMMA Priority	Quantities			35%	
			ESTIMATED CONSTRUCTION COSTS				**$ 17,600,480**
							$ 309.78

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - CRISAFULLI ELEMENTARY
SF: 79,220 Classrooms: 32

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
13	Art Room intends to be used for pottery. Install plaster trap at sink.	2	2 plaster traps	$ 1,200.00	$ 2,400.00	$ 840	$ 3,240
2	Repair horizontal and vertical expansion joints at perimeter. Repair coordinating interior finishes and ceilings	1	Remove 50ft x 3ft feet of masonry on exterior. Salvage masonry. Install new insulation, membrane, expansion cover, install salvaged masonry to match. Repair 50ft x 3ft of interior masonry. Tooth in new CMU. Repair adjacent gypsum and repaint. Repair and replace 20sf of ACP ceiling system. Replace expansion joint system at roof. Replace expansion gasketing at floor systems. Remove and replace VCT, assume 200sf.	$ 31,100.00	$ 31,100.00	$ 10,885	$ 41,985
6	Repair air gap fitting at backflow preventer. Redirect indirect waste piping from the air gap to discharge into adjacent floor drain.	1	1 air gap fitting; 20 LF of pipe	$ 75.00	$ 1,500.00	$ 525	$ 2,025
11	Remove existing waste piping at kitchen, triple pot sink, with new code compliant waste piping. Install new triple pot sink. Install backflow preventer at detergent dispenser.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink; (2) RPBP's	$ 34,000.00	$ 34,000.00	$ 11,900	$ 45,900
20	Test existing glycol in hot water system and replace as needed to support associated mechanical systems.	1	Heating hot water system	$ 100,000.00	$ 100,000.00	$ 35,000	$ 135,000
22	Remove and replace clock/PA system throughout school with new IP based system.	1	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 158,440.00	$ 55,454	$ 213,894
4	Remove and replace roof system. Repair coordinating interior finishes and ceilings	2	Remove and Replace EPDM roof system and replace with new PVC system (35,000sf), including roof drain stainers, walkway pathways, 50ft of ballasted protection guards. Install 8,000sf of new ACP ceiling system.	$ 1,312,500.00	$ 1,312,500.00	$ 459,375	$ 1,771,875
9	Remove and replace sections of corroded gas piping and replace with new	2	50 LF of pipe in the kitchen	$ 100.00	$ 5,000.00	$ 1,750	$ 6,750
10	Install trap primers in penthouse floor drains	2	80 LF of trap primer piping; 1 electronic trap priming assembly (per Penthouse)	$ 10,200.00	$ 10,200.00	$ 3,570	$ 13,770
3	Remove and replace ramps at stage to provide appropriate accessible access.	1	Replace existing 25ft ramp with one that 48" with appropropriate handrails and extensions	$ 40,000.00	$ 40,000.00	$ 14,000	$ 54,000
7	Replace and install new pipe insulation on domestic cold & hot water piping	1	Full building square footage.	$ 1.50	$ 118,830.00	$ 41,591	$ 160,421
8	Remove and replace existing mixing valve and associated piping. Install new master mixing valve with building management system interface	1	1 master mixing valve; 60 LF of pipe	$ 13,400.00	$ 13,400.00	$ 4,690	$ 18,090
1	Recoat hollow metal doors and frames. Install new thresholds and repair slab or jambs were needed	2	Prepare Bottom of Frame and Bottom of Doors. Recoat 8 HM Doors and Frames.	$ 500.00	$ 4,000.00	$ 1,400	$ 5,400
12	Roof drain strainers are broken and missing. Install new cast iron dome strainers	2	35 cast iron dome strainers	$ 250.00	$ 8,750.00	$ 3,063	$ 11,813
18	Verify operation of heat recovery wheels and replace as needed to support associated mechanical systems	2	RTU-4, RTU-7 and RTU-8	$ 45,000.00	$ 45,000.00	$ 15,750	$ 60,750
19	Repair/replace compressor in RTU-10.	2	RTU-10	$ 3,000.00	$ 3,000.00	$ 1,050	$ 4,050
21	Fully replace automatic temperature controls with new DDC building management system and operator workstation, capable of districtwide integration.	2	Full building square footage.	$ 10.00	$ 792,200.00	$ 277,270	$ 1,069,470
15	Install sprinkers below the first accessible landings in all stairs	1	2 sprinklers below the first accessible landing for each stairwell	$ 500.00	$ 3,000.00	$ 1,050	$ 4,050

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - CRISAFULLI ELEMENTARY
SF: 79,220 Classrooms: 32

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
16	Remove black steel pipe, dry-pipe system in penthouse and replace with galvanized.	1	30 LF of pipe	$ 120.00	$ 3,600.00	$ 1,260	$ 4,860
17	Install additional ansul supression nozzles within kitchen hood to provide adequate coverage over cooking equipment	1	Add two nozzles to the existing ansul fire suppression system plus testing	$ 3,000.00	$ 3,000.00	$ 1,050	$ 4,050
14	Remove and replace floor mounted mop sinks with new. Install adjacent finishes, (FRP Paneling and mounting brackets) to facilitate drainage to the sinks	2	5 mop sinks.	$ 3,500.00	$ 17,500.00	$ 6,125	$ 23,625
						$ -	$ -
						$ -	$ -
	Optional Educational Changes					$ -	$ -
	Create small group rooms		Reconfigure partitions to include 2 small group pull-over rooms per grade level = 6 total at approximately 100 sf each. Accomplished by space mining the existing plan.	$ 150.00	$ 90,000.00	$ 31,500	$ 121,500
	Furniture		(partial) replace hard plastic student furniture and some teacher furniture with light weight flexible furniture. Dispose of replace furniture. Assume 32 classrooms	$ 11,600.00	$ 371,200.00	$ -	$ 371,200
	Data wiring		Replace Cat 5 technology wiring throughout with Cat 6A	$ 3.00	$ 237,660.00	$ 83,181	$ 320,841
	Typical classroom bink base cabinets		replace base cabinets to include a deep sink for STEM activities and a handicapped accessible sink (__ classrooms)	$ 600.00	$ 115,200.00	$ 40,320	$ 155,520
	Add air conditioning		add condensing units but existing ductwork to remain (= partial cooling)	$ 15.00	$ 1,188,300.00	$ 415,905	$ 1,604,205
			ESTIMATED CONSTRUCTION COSTS				**$ 6,228,283**
							$ 78.62
	OPTION 3 ADDITIONAL COSTS						
	Change 50% of plumbing fixtures to age appropriate fixtures			$ 3.25	$ 257,465.00	$ 90,113	$ 347,578
	Add three Kindergarten classrooms			$ 220,000.00	$ 660,000.00	$ 231,000	$ 891,000
			ESTIMATED CONSTRUCTION COSTS				**$ 7,466,861**
							$ 131.42

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - DAY ELEMENTARY
SF: 60,456 Classrooms: 34

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
3	Remove sections of crumbling bituminous curbing and replace with new	1	1000 LF	$ 20.00	$ 20,000.00	$ 7,000	$ 27,000
5	Perform Envelope Testing to understand the efficacy of the draining system.	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
9	Remove and replace entirety of roof systems systems, TPO and replace with new	1	36,000 SF of new PVC System, including code compliant insulation, edge metal and roof drain stainers.	$ 35.00	$ 1,260,000.00	$ 441,000	$ 1,701,000
10	Remove and replace entirety of dimensional shingle system and underlayment. Install new.	1	8,000 SF of new dimension shingle system, membrane underlayment, attic venting. Repair rotted wood at cupola. Replace perimter gutter system with new, assum 250 linear feet. Repair metal soffit.	$ 350,000.00	$ 350,000.00	$ 122,500	$ 472,500
12	Demolish existing lift and replace with accessible and stretcher compatible elevator	1	Replace existing with new 3,500lb passenger elevator, Traction MRL. Demolisth portions of elevator shaft to meet space requirement. Install 6x6 remote closet. Include cost for the construction of elevator overrun, including roofing materials.	$ 285,000.00	$ 285,000.00	$ 99,750	$ 384,750
19	Test and inspect existing domestic hot and cold water piping	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
22	Remove existing toilet room fixtures and compartments and install new accessible assemblies and systems. Inspect exterior wall. Install new pipe chase and insulate. Install new pipe plenum into adjacent corridor. Pipe enclosure to be incorporated back to main building.	1	8 qty Toilet/Urinal Fixtures Compartments, 4 Lavatories. Assume 600sf of new wall and new tile at exterior wall. Assume 600sf of wall repair at exterior wall, new pipe insulation, and wall insulation. For pipe enclosure, assume 10,000sf metal stud and sheetrock, with insulation for pipe enclosure. Install new mirrors and soap dispensers.	$ 293,200.00	$ 293,200.00	$ 102,620	$ 395,820
26	Perform leakage and pressure tests on the sanitary and waste piping systems.	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
29	Perform leakage and pressure tests on the storm drainage system	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
36	Install new exposed and surface mounted sprinkler system	1	Full building square footage.	See Above		$ -	$ -
38	Remove all existing HVAC systems. Install new boilers, pumps, piping & accessories, heating, ventilating and/or air conditioning systems to serve entire building. Remove louvers and infill with exterior wall assembly to match.	1	Full building square footage.	$ 55.00	$ 3,325,080.00	$ 1,163,778	$ 4,488,858
39	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	1	Full building square footage.	$ 10.00	$ 604,560.00	$ 211,596	$ 816,156
41	Remove and replace the main distribution panel and all downstream panels in the original section of the building with associated power feeders	1	Main distribution panel 800Amp 120/208v 3ph 4w. Building square footage, excluding 1998 classroom addition.	$ 7.50	$ 453,420.00	$ 158,697	$ 612,117
44	Remove existing and provide new emergency lighting system (currently battery units).	1	Full building square footage.	$ 1.50	$ 90,684.00	$ 31,739	$ 122,423
45	Remove existing and provide new fire alarm system to meet current code requirements.	1	Full building square footage.	$ 5.00	$ 302,280.00	$ 105,798	$ 408,078
46	Remove and replace clock/PA system throughout school with new IP based system.	1	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 120,912.00	$ 42,319	$ 163,231
1	Install pedestrian pathways through parking to playgounds and other student used spaces	2	400 LF @ 6' wide	$ 90.00	$ 36,000.00	$ 12,600	$ 48,600
2	Repair parking areas, remove pavement, recompact subgrade and reinstall reclaimed pavement, parking striping, and signage	2	65000 SF	$ 12.00	$ 780,000.00	$ 273,000	$ 1,053,000
16	Recoat floors within kitchen	2	Recoat Kitchen with full-body epoxy coating system with 6" epoxy base. (3,500sf)	$ 25.00	$ 87,500.00	$ 30,625	$ 118,125

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - DAY ELEMENTARY
SF: 60,456 Classrooms: 34

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
35	Install new fire protection system. Install new acoustic ceiling system and lighting throughout the school. Remove and install new rated, oversize doors between kitchen, corridors and gymnasium	2	Full building square footage for new fire protection system. Remove wood doors and HM frame. Replace with new rated hollow metal doors, 2qty 8ftx7'-4"ft & 2qty 3ft 6in x 7'-4"ft.	$ 1,092,752.00	$ 1,092,752.00	$ 382,463	$ 1,475,215
4	Repoint brick at base of wall where grouting has deteriorated, install new thru-wall flashing and rebrick where required	1	20sf	$ 250.00	$ 5,000.00	$ 1,750	$ 6,750
6	Remove exterior cladding and install new.	1	Remove brick cladding and aluminum windows. (4,500sf and 22qty 50sf openings. Install at perimeter to provide 2-1/2" air space. Remove portions of exterior sheathing as needed, assume 2,000sf. Install new flashing and liquid applied air and vapor barrier. Apply parge coat a foundation, (900sf).	$ 504,500.00	$ 504,500.00	$ 176,575	$ 681,075
18	Replace existing water meter and shut-off valves, install new reduced pressure backflow preventer	1	1 Water Meter; 1 RPBP; 6 shut-off valves; 2 PRV	$ 15,000.00	$ 15,000.00	$ 5,250	$ 20,250
20	Remove and replace portion of existing incoming domestic water piping and replace with new. Install new pressure reducing valves, main shutoff valve and meter. Install new reduced pressure backflow preventer	1	15 LF of pipe; 3 PRV's; 1 shut-off valve; 1 Water Meter; 1 RPBP	$ 12,600.00	$ 12,600.00	$ 4,410	$ 17,010
24	Remove and replace existing domestic cold water piping with new. Install new pipe insulation.	1	Full building square footage.	$ 4.50	$ 272,052.00	$ 95,218	$ 367,270
25	Remove and replace existing domestic hot water piping with new. Install new pipe insulation.	1	Full building square footage.	$ 5.00	$ 302,280.00	$ 105,798	$ 408,078
27	Remove and replace sanitary, waste and venting in the facility	1	Full building square footage.	$ 5.00	$ 302,280.00	$ 105,798	$ 408,078
30	Replace storm drainage piping, roof drains and strainers with new	1	Full building square footage.	$ 3.50	$ 211,596.00	$ 74,059	$ 285,655
34	Install trap primers at all floor drains	1	500 LF of trap primer piping; 12 trap guards; 8 electronic trap priming assembly	$ 73,800.00	$ 73,800.00	$ 25,830	$ 99,630
40	Remove and replace make-up air system in kitchen	1		Included above		$ -	$ -
7	Remove and replace sealant at all opening joints with new silicone sealant	2	60qty openings at 3ft (W)x 25ft (H), 50qty openings at 8ft (W) x 6ft (H)	$ 15.00	$ 71,400.00	$ 24,990	$ 96,390
8	Remove areas of chipped or non-uniform saw cut brick and infill with new at exterior doors. Reseal up against door frame.	2	6qty openings, Remove existing brick and CMU masonry and tooth in new. Refinish to match adjacent.	$ 4,200.00	$ 25,200.00	$ 8,820	$ 34,020
14	Replace hardware at doors with knob style hardware, with accessible lever hardware	2	20 Doors. Install ADA braille signage at 25 openings.	$ 25,000.00	$ 25,000.00	$ 8,750	$ 33,750
28	Remove and replace piping from triple pot sink and grease trap.	2	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600
42	Remove and replace receptacles and branch wiring in poor condition in the original section of the building	2	Building square footage excluding 1998 classroom addition	$ 7.00	$ 395,192.00	$ 138,317	$ 533,509
43	Remove and replace lights (except for Gym) and branch wiring in the original section of the building	2	Building square footage excluding 1998 classroom addition	$ 12.00	$ 677,472.00	$ 237,115	$ 914,587
13	Remove entirety of egress stairs and replace with new. Install new finishes to coordinate.	1	Remove existing stairs and stair supports. Install new ADA compliants stairs with guard and handrails, assume 24 risers and 26 treads, one intermediate landing. Stair runs approximately, 5ft wide. Stairs are assumed to be metal framed, concrete stair mix, and rubber flooring for stair risers and treads.	$ 75,000.00	$ 75,000.00	$ 26,250	$ 101,250
15	Remove extent of decorative wood paneling and replace with approved Class A Materials or non-combustible finishes. Remove existing wall mounted display cases and replace with new to not exceed protrusion requirement for accessible routes within a building	1	Assume 1,500sf. Install 4 new wall mounted display cases, 6ft (w) x 4ft (h) x 4"(d).	$ 156,600.00	$ 156,600.00	$ 54,810	$ 211,410

				UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - DAY ELEMENTARY***			**SF: 60,456 Classrooms: 34**			35%	
		SMMA Priority	Quantities				
21	Remove existing toilet room fixtures and compartments and install new accessible assemblies and systems. Modify entrances to ensure accessible access	1	32 qty Toilet or Urinal Fixtures, 24 Toilet Compartments and 8qty Lavatories. Add 1,400 sheetrock and metal stud, with tile 56" tile wainscotting at new wet wall. Install new mirrors and soap dispensers.	$ 300,200.00	$ 300,200.00	$ 105,070	$ 405,270
23	Faculty and staff toilet rooms should be modified to provide adequate clearance and accessible fixtures	1	4 qty toilet fixtures and lavatories.	$ 32,000.00	$ 32,000.00	$ 11,200	$ 43,200
31	Remove and replace section of casework within addition wing to incorporate accessible sink	1	Remove existing base cabinet and sink. Install new side panel at existing casework, finish to match. Install new ADA compliant counter and sink at wall. Assume 4qty.	$ 6,000.00	$ 24,000.00	$ 8,400	$ 32,400
32	Remove and replace existing cast iron mop sinks. Repair floor and adjacent floor wall services. Install new wall mounted FRP paneling and mop brackets to ensure proper drainage.	1	Assume 4 mop sinks.	$ 3,500.00	$ 14,000.00	$ 4,900	$ 18,900
33	Install new emergency shower/eyewash in boiler room	1	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
37	Install ansul fire suppression system in kitchen hood	1	1 ansul fire suppression system per kitchen hood	$ 6,000.00	$ 6,000.00	$ 2,100	$ 8,100
17	Recoat floors within shipping/receiving, and mechanical room	2	Recoat boiler room and shipping and receiving spaces with epoxy coating. (1,600sf)	$ 6.00	$ 9,600.00	$ 3,360	$ 12,960
11	Remove and replace entrance weatherstripping, gasketing, and thresholds	2	8 Openings	$ 500.00	$ 4,000.00	$ 1,400	$ 5,400

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - MILLER ELEMENTARY **SF: 90,463 Classrooms: 30**

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
8	Remove magnetic locks at courtyard doors	1	Replace Door Hardware at 3 pairs of doors.	$ 4,800.00	$ 4,800.00	$ 1,680	$ 6,480
14	Install a emergency eyewash within Nurse's Suite	1	1 emergency eyewash	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
19	Install additional ansul fire suppression heads at kitchen hood for proper coverage	1	Add two nozzles to the existing ansul fire suppression system plus testing	$ 3,000.00	$ 3,000.00	$ 1,050	$ 4,050
11	Remove and replace sections of corroded gas piping and replace with new	2	100 LF of pipe	$ 100.00	$ 10,000.00	$ 3,500	$ 13,500
22	Review space of fire alarm notification devices and install new as required to provide coverarge that meets code requirements	2	Add horn/strobes in corridors, approximately (10) total	$ 750.00	$ 7,500.00	$ 2,625	$ 10,125
3	Repair vertical cracking at wall-to-column encasement joints near boiler room and expansion joints. Install insulation and sealant joint at new expansion joints at each expansion location. Repair coordinating interior finishes and ceilings Remove and replace expansion joint systems with new, including appropriate insulation and sealing at the elevation and roof.	1	Remove 50ft x 3ft feet of masonry on exterior. Salvage masonry. Install new insulation, membrane, expansion cover, install salvaged masonry to match. Repair 50ft x 3ft of interior masonry. Tooth in new CMU. Repair adjacent gypsum and repaint. Repair and replace 20sf of ACP ceiling system. Replace expansion joint system at roof. Replace expansion gasketing at floor systems. Remove and replace VCT, assume 200sf.	$ 31,100.00	$ 31,100.00	$ 10,885	$ 41,985
21	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	1	Full building square footage.	$ 10.00	$ 904,630.00	$ 316,621	$ 1,221,251
23	Remove and replace clock/PA system throughout school with new IP based system.	1	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 180,926.00	$ 63,324	$ 244,250
2	Remove and install new roofing system, including cast iron strainers at roof drains. Provide appropriate guard systems at hatches and roof edges, where applicable	2	35,000sf	$ 35.00	$ 1,225,000.00	$ 428,750	$ 1,653,750
9	Remove and replace shut-off valves and pressure reducing valve at cold water service, including one reduced pressure backflow preventer.	2	1 RPBP; 1 PRV; 6 shut-off valves	$ 15,000.00	$ 15,000.00	$ 5,250	$ 20,250
	Test existing glycon in hot water system and replace as needed to support associated mechanical systems.		Heating hot water system	$ 100,000.00	$ 100,000.00	$ 35,000	$ 135,000
16	Install a backflower preventer at detergent dispenser at triple pot sink in kitchen	1	(2) RPBP's	$ 9,000.00	$ 18,000.00	$ 6,300	$ 24,300
6	Remove and install new weatherstripping, gasketing and threshold at all exterior doors	2	16 Door Openings	$ 500.00	$ 8,000.00	$ 2,800	$ 10,800
20	Verify operation of heat recovery wheels and replace as needed to support associated mechanical systems	2	AHU-4, AHU-7 and AHU-8	$ 45,000.00	$ 45,000.00	$ 15,750	$ 60,750
12	Install handicap accessible sinks within PreK and K rooms	1	10 Rooms	$ 4,000.00	$ 40,000.00	$ 14,000	$ 54,000
15	Install an emergency eyewash and shower within the boiler room	1	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
18	Remove black steel pipe, dry-pipe system in penthouse and replace with galvanized.	1	30 LF of pipe	$ 120.00	$ 3,600.00	$ 1,260	$ 4,860
1	Install new threshold at exterior storage room.	2	Remove 5ftx8ft landing outside entrance, replace subgrade and install new landing. Install new threshold.	$ 2,100.00	$ 2,100.00	$ 735	$ 2,835
5	Remove and replace existing sealant joints at all window openings and replace with new	2	65qty 3ftx3ft 6in, 52qty 2ft x 2ft, 40qty 9ftx4ft, 6qty 6ftx3ft 6in, 6qty 2ftx5ft	$ 15.00	$ 37,485.00	$ 13,120	$ 50,605
7	Remove and replace rated hollow metal doors with new. Existing frames to remain	2	7 HM Doors	$ 1,400.00	$ 9,800.00	$ 3,430	$ 13,230
13	Install insulation at pipes below counter in the Nurse's Suite and Main Office	2	20 LF	$ 15.00	$ 300.00	$ 105	$ 405

Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - MILLER ELEMENTARY***		**SF: 90,463 Classrooms: 30**		UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
		SMMA Priority	Quantities			35%	
17	Install sprinklers below the first accessible landings in all stairs	2	2 sprinklers below the first accessible landing for each stairwell	$ 500.00	$ 3,000.00	$ 1,050	$ 4,050
10	Remove and install pipe insulation at domestic cold and hot water piping.	2	Full building square footage	$ 1.50	$ 135,694.50	$ 47,493	$ 183,188

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - NABNASSET ELEMENTARY **SF: 58,766 Classrooms: 24**

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
27	Install accessible eyewash in nurse's office.	1	1 emergency eyewash	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
30	Install sprinkler head and piping below ductwork over 4 feet wide in outdoor storage. Install sprinkler head below the HVAC unit over 4 feet wide in gymnasium	1	Assume 4 sprinklers per ductwork over 4 feet wide (10 - 12 feet apart). Assume 2 sprinklers per HVAC unit over 4 feet wide	$ 500.00	$ 3,000.00	$ 1,050	$ 4,050
31	Remove and replace sprinkler coverat at outdoor storage adjacent to boiler room to provide adequate coverage.	1	4 sprinklers and piping	$ 1,000.00	$ 4,000	$ 1,400	$ 5,400
32	Install sprinker piping and heads within vestibule adajacent to water/fire service room.	1	4 sprinklers and piping	$ 1,000.00	$ 4,000	$ 1,400	$ 5,400
33	Install sprinkler piping and heads within water/fire service room.	1	6 sprinklers and piping	$ 1,000.00	$ 6,000	$ 2,100	$ 8,100
11	Remove and replace existing ACP tiles.	1	Remove 20,500 SF of Existing Acoustical Ceiling System and Replace with New	$ 8.00	$ 164,000	$ 57,400	$ 221,400
16	Test and Inspect existing cold and hot water piping.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
18	Test and Inspect existing gas piping.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
20	Perform pressure tests on sanitary waste and vent systems.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
23	Perform leakage and pressure tests on storm drainage piping.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
35	Remove and replace "original building" electrical panels and associated power feeders.	1	(4)- 100Amp 120/208v 42-pole panels with 100Amp feeders, approx. 200ft long each	$ 19,000.00	$ 19,000	$ 6,650	$ 25,650
1	Mill down areas of bituminous concrete at manholes and catchbasins and infill with new surface finish material at road way. Install new striping as required.	2	10,000 SF	$ 10.00	$ 100,000	$ 35,000	$ 135,000
2	Repair walks, remove pavement, recompact subgrade and reinstall reclaimed pavement, and signage	2	450 LF @ 12' wide	$ 180.00	$ 81,000.00	$ 28,350	$ 109,350
3	Remove existing curb cut at main entry. Recompact subgrade and install new accessible curb cuts, with tactile warning mats	2	2 new ADA curb cuts	$ 3,000.00	$ 6,000	$ 2,100	$ 8,100
5	Remove and replace roofing over classroom addition. Install new cast iron strainers at roof drains. Remove four courses of brick, provide new air and vapor barrier and install new thru-wall flashing. Reinstall existing brick.	2	Remove and replace existing 19,000 sf of fully adhered EPDM and replace with new fully adhered PVC system, including current code base insulation and coverboard. Remove 100 linear feet and 6 courses of face brick to install new through wall flashings at exterior wall.	$ 700,000.00	$ 700,000	$ 245,000	$ 945,000
36	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 117,532.00	$ 41,136	$ 158,668
14	Install new reduced pressure backflow preventer at main water service.	1	1 RPBP	$ 9,000.00	$ 9,000	$ 3,150	$ 12,150
17	Remove and replace existing domestic cold and hot water piping. Install new pipe insulation and PVC jacketing. Replace circulation pumps, mixing valves and pressure reducing valves. Provide new expansion tank and condensate neutralizing unit.	1	Full building square footage for domestic cold, hot and hot water recirculation systems and pipe insulation.	Included above		$ -	$ -
19	Remove and replace all existing gas piping with new.	1	50% of the building square footage	$ 1.00	$ 29,383	$ 10,284	$ 39,667
21	Remove and replace above slab sanitary waste and vent piping. Cap and make safe pipng below ground. Install new sanitary waste and vent piping.	1	Full building square footage.	$ 5.00	$ 293,830.00	$ 102,841	$ 396,671
22	Remove and replace piping and grease trap at triple pot sink in kitchen and provide new.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600
24	Remove and replace above slab storm drainage piping. Cap and make safe piping below ground. Install new piping.	1	Full building square footage.	$ 3.50	$ 205,681.00	$ 71,988	$ 277,669

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - NABNASSET ELEMENTARY **SF: 58,766 Classrooms: 24**

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
25	Remove existing toilet room fixtures and compartments and install new accessible assemblies and systems.	1	11 qty Toilet or Urinal Fixtures, 24 Toilet Compartments and 8qty Lavatories. Add 250 sheetrock and metal stud, with tile 56" tile wainscotting at new wet wall. Install new mirrors and soap dispensers.	$ 163,450.00	$ 163,450.00	$ 57,208	$ 220,658
29	Install backflow preventer for detergents at triple pot sink	1	(2) RPBP's	$ 9,000.00	$ 18,000	$ 6,300	$ 24,300
4	Remove and replace landings and walkways leading up to cafeteria	2	Install 2qty, 50ft, 6ft wide concrete walks to 2qty 6x5 concrete landings	$ 27,000.00	$ 27,000	$ 9,450	$ 36,450
6	Remove existing sealant and backer rod at window and door openings. Install new.	2	Remove and replace backer rod and sealant at 85 window and/or door openings.	$ 300.00	$ 25,500	$ 8,925	$ 34,425
7	Remove and replace rusted hollow metal doors and frames	2	Remove and replace 4 hollow metal doors, frames and hardware. Recoat 10 doors and frames.	$ 12,500.00	$ 12,500	$ 4,375	$ 16,875
8	Remove and replace doors with non-accessible hardware	2	Remove and replace door hardware at 10 interior doors and 4 exterior doors.	$ 17,200.00	$ 17,200	$ 6,020	$ 23,220
12	Remove existing metal ceilings in classrooms and replace with acoustic ceiling panel system.	2	Remove 11,500 SF of Existing Metal Ceiling and Replace with Acoustic Ceiling System	$ 9.00	$ 103,500	$ 36,225	$ 139,725
34	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	2	Full building square footage.	$ 10.00	$ 587,660.00	$ 205,681	$ 793,341
10	Remove and replace misaligned gutters and downspouts with new. Coordinate to underground drainage system	1	Remove and replace approximately 100 feet of metal formed gutters and downspouts. Remove and replace masonry at 6 piers and replace with new precast masonry.	$ 35,000.00	$ 35,000	$ 12,250	$ 47,250
13	Remove and replace non-accessible ramp	1	Replace existing 25ft ramp with one that 48" with appropropriate handrails and extensions	$ 50,000.00	$ 50,000	$ 17,500	$ 67,500
15	Remove and replace existing domestic cold water piping. Install new pipe insulation and PVC jacketing.	1	Full building square footage.	$ 4.50	$ 264,447.00	$ 92,556	$ 357,003
26	Remove casework and sinks in classrooms and provide new.	1	Remove existing base cabinet and sink. Install new side panel at existing casework, finish to match. Install new ADA compliant counter and sink at wall. Once per classroom.	$ 6,000.00	$ 144,000.00	$ 50,400	$ 194,400
28	Install emergency shower and eye washer in boiler room.	1	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
9	Remove and replace weatherstripping and thresholds at exterior doors	2	Remove and replace weatherstripping and thresholds at 12 doors	$ 500.00	$ 6,000	$ 2,100	$ 8,100
						$ -	$ -

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - ROBINSON ELEMENTARY
SF: 55,836 Classrooms: 29

		SMMA Priority	Quantiites	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
9	Remove and reinstall power line support assemble to exterior of	1	Reanchor power line to exterior masonry of building.	$ 750.00	$ 750.00	$ 263	$ 1,013
27	Install an emergency eye wash in the nurse's suite	1	1 emergency eyewash	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
8	Remove and replace the roof, skylights, exhaust vents, all penetration at systems, roof drains and strainers, and roof access systems. Replace gutters and downspouts at roof. Remove and replace portions of wall to facilitate installation of new thru wall flashing, including new windows at roof. Repoint or replace precast sills. Reinstall masonry	0	60000sf. 300 linear feet of gutter. 200 linear feet of repointing. 200 linear feet of thruwall flashing, including 3 courses of brick savage and reinstallation.	$ 2,186,000.00	$ 2,186,000.00	$ 765,100	$ 2,951,100
16	Remove domestic cold water service piping, fittings, water meter and main shut off and replace with new. Provide new reduced pressure backflow preventer.	1	Full building square footage for domestic cold water system; 1 Water Meter; 1 main shut-off valve; 1 RPBP	$ 4.50	$ 251,262.00	$ 87,942	$ 339,204
17	Test and inspect domestic cold and hot water piping.	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
19	Remove and replace gas piping serving heaters, gas boilers, and kitchen equipment	1	50% of the building square footage	$ 1.00	$ 27,918	$ 9,771	$ 37,689
20	Perform leak testing on sanitary sewer	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
23	Perform leak testing on storm drainage system	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
29	Install a surface mounted fire protection sprinkler system	1	Full building square footage.	$ 552,524.00	$ 552,524.00	$ 193,383	$ 745,907
31	Remove all existing HVAC air handling systems and distribution, and all heating hot water piping. Install new heating, ventilating and/or air conditioning systems and new heating hot water distribution piping to serve entire building. Remove louvers and infill with exterior wall assembly to match.	1	Full building square footage.	$ 55.00	$ 3,070,980.00	$ 1,074,843	$ 4,145,823
32	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	1	Full building square footage.	$ 10.00	$ 558,360.00	$ 195,426	$ 753,786
35	Remove and replace normal and emergency power distribution systems equipment with power feeders and recepacles with branch wiring.	1	Full building square footage. Main distribution panel 800 Amp 120/208v 3ph 4w.	$ 7.50	$ 418,770.00	$ 146,570	$ 565,340
36	Remove and replace emergency generator	1	55 kW 120/208v 3ph 4 w indoor gas-fired with ATS	$ 125,000.00	$ 125,000.00	$ 43,750	$ 168,750
37	Remove existing and provide new fire alarm system to meet current code requirements.	1	Full building square footage.	$ 5.00	$ 279,180.00	$ 97,713	$ 376,893
38	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 113,632.00	$ 39,771	$ 153,403
2	Remove and replace bituminuous curbing with new	1	800 LF	$ 20.00	$ 16,000.00	$ 5,600	$ 21,600
7	Remove and replace guardrails, handrails and access to portable classrooms.	1	30 linear feet, each.	$ 400.00	$ 12,000.00	$ 4,200	$ 16,200
18	Remove existing piping, where possible, back to service, install new domestic cold and hot water piping, including insulation Replace heating equipment with new.	1	Full building square footage.	Included Above		$ -	$ -
21	Remove and replace, where possible, back to service, sanitary waste and vent piping	1	Full building square footage.	$ 5.00	$ 279,180.00	$ 97,713	$ 376,893
22	Remove and replace waste piping where possible, back to service, below triple pot sink in kitchen. Remove and replace grease trap. Provide new triple pot sink.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600
24	Remove and replace existing storm drainage piping with new	1	Full building square footage.	$ 3.50	$ 195,426.00	$ 68,399	$ 263,825
1	Remove and replace bituminous concrete walkways with new	2	800 LF @ 10' wide	$ 120.00	$ 96,000.00	$ 33,600	$ 129,600

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - ROBINSON ELEMENTARY
SF: 55,836 Classrooms: 29

		SMMA Priority	Quantiites	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
3	Remove areas of roadway (circulation for queueing), milldown surrounding areas, replace road and infill and refinish areas with pittings and potholes.	2	27500 SF	$ 10.00	$ 275,000	$ 96,250	$ 371,250
6	Remove damaged wood paneling and repair building wrap and sheathing at portable classrooms.	2	3000sf	$ 35.00	$ 105,000.00	$ 36,750	$ 141,750
11	Replace classroom doors and hardware. Enlarge entry vestibules to be reconstructed to meet accessiblity requirements. Provide closers at each door.	2	Install new classroom hardware at 40 rooms.	$ 6,800.00	$ 272,000.00	$ 95,200	$ 367,200
13	Remove existing baffles in classrooms and replace with cloud suspension systems to assist sound absorption	2	Install new absorption cloud systems in each classroom. Assume 1200 sf in each room.	$ 20.00	$ 696,000.00	$ 243,600	$ 939,600
26	Remove and replace existing janitors sinks with new	2	assume 5 mop sinks	$ 3,500.00	$ 17,500.00	$ 6,125	$ 23,625
10	Remove existing ramp to stage. Modify entrances install new accessible entrance ramp to stage	1	Install new access lift at stage.	$ 60,000.00	$ 60,000.00	$ 21,000	$ 81,000
12	Prepare and recoat boiler room floor with epoxy floor coating	1	1000sf	$ 4.00	$ 4,000.00	$ 1,400	$ 5,400
14	Remove portions of classroom casework and new with accessilble sink in each classroom	1	Remove existing base cabinet and sink. Install new side panel at existing casework, finish to match. Install new ADA compliant counter and sink at wall. Once per classroom.	$ 6,000.00	$ 174,000.00	$ 60,900	$ 234,900
25	Remove existing toilet room fixtures and compartments and install new accessible assemblies and system	1	Revise 500sf to incorporate 8 new toilet/urinal fixtures with compartments and 4 lavatories. 16qty Sheetrock walls with 56" tile wainscotting.	$ 102,300.00	$ 102,300.00	$ 35,805	$ 138,105
30	Install ansul fire suppression system nozzles to provide adequate coverage	1	1 ansul fire suppression system per kitchen hood			$ -	$ -
4	Install additional site lighting	2	Assume 10qty light poles	$ 7,000.00	$ 70,000.00	$ 24,500	$ 94,500
5	Remove and replace backerrod and sealant at all window and door openings.	2	32qty 6'-0"x5'-0", 12'-0"x5'-0", 1qty 12'-0"x10', 12qty Door Openings	$ 15.00	$ 31,320.00	$ 10,962	$ 42,282
15	Remove wood paneling within corridors and replace with non-combustible materials	2	Replace 1,800 sf wall cladding and replace with sheetrock.	$ 10.00	$ 18,000.00	$ 6,300	$ 24,300
28	Install an emergency shower/eye wash in the boiler room	2	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
33	Remove and replace interior normal and emergency lighting (currently a mix of supported by generator and battery-operated) systems	1	Full building square footage.	$ 12.00	$ 670,032.00	$ 234,511	$ 904,543
34	Remove and replace non-operational exteror perimeter walls lights	1	Add (10) LED wall packs	$ 1,200.00	$ 12,000.00	$ 4,200	$ 16,200
			ESTIMATED CONSTRUCTION COSTS				**$ 14,504,581**

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - STONY BROOK MIDDLE SCHOOL **SF: 119,130 Classrooms: 49**

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
2	Remove old sections of non-compliant or degraded walkways,	1	1500 LF @ 8' wide	$ 96.00	$ 144,000.00	$ 50,400	$ 194,400
4	Repair and replace sections of roof systems around roof hatches and adjacent standing seam transitions. Repair coordinating interior finishes and ceilings	1	Fully Adhered, PVC System, 69,000 SF, with Code Compliant Insulation, Blocking and Edge Metal. Provde 200 linear feet of ballasted guard rail. Replace 5,000sf of acoustic ceiling system.	$ 2,495,000.00	$ 2,495,000.00	$ 873,250	$ 3,368,250
7	Remove and replace existing backflow preventer and new	1	1 RPBP	$ 9,000.00	$ 9,000	$ 3,150	$ 12,150
8	Test and Inspect domestic cold and hot water piping.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
10	Install new backflow preventer for cold water at science rooms	1	1 RPBP for non-potable cold water; 1 RPBP for non-potable hot water	$ 9,000.00	$ 9,000.00	$ 3,150	$ 12,150
12	Test and Inspect gas piping serving heaters, gas boilers and kitchen equipment.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
17	Install trap primers at all floor drains	1	950 LF of trap primer piping; 15 electronic trap priming assembly	$ 130,500.00	$ 130,500.00	$ 45,675	$ 176,175
20	Test existing glycol in hot water system and replace as needed to suport associated mechanical systems.	1	Heating hot water system	$ 100,000.00	$ 100,000.00	$ 35,000	$ 135,000
21	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	1	Full building square footage.	$ 10.00	$ 1,191,300.00	$ 416,955	$ 1,608,255
1	Remove old sections of non-compliant or degraded walkways, recompact and install new accessible walkway surfaces -concrete	2	3500 SF	$ 180.00	$ 630,000.00	$ 220,500	$ 850,500
6	Prepare and recoat all hollow metal service doors and frames	2	10qty Door Openings	$ 2,500.00	$ 2,500	$ 875	$ 3,375
22	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 238,260.00	$ 83,391	$ 321,651
9	Remove existing piping, where possible, back to service, install new domestic cold and hot water piping, including insulation Replace heating equipment with new.	1	Full building square footage. Replace water heater within 5 years.	$ 4.50	$ 536,085.00	$ 187,630	$ 723,715
13	Remove and replace gas piping serving heaters, gas boilers, and kitchen equipment	1	50% of the building square footage	$ 1.00	$ 59,565	$ 20,848	$ 80,413
14	Remove and replace waste piping where possible, back to service, below triple pot sink in kitchen. Remove and replace grease trap. Provide new triple pot sink.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600
16	Install backflow preventer for detergents at triple pot sink	1	(2) RPBP's	$ 9,000.00	$ 18,000.00	$ 6,300	$ 24,300
3	Repair rutted roadway. Remove pavement, recompact subgrade and reinstall reclaimed pavement.	2	44000 SF	$ 10.00	$ 440,000	$ 154,000	$ 594,000
19	Verify operation of heat recovery wheels and replace as needed to support associated mechanical systems	2	RTU-1, RTU-2, RTU-4, RTU-5 & RTU-7	$ 75,000.00	$ 75,000	$ 26,250	$ 101,250
11	Install new pipe insulation in kitchen and STEM spaces.	1	assume 300 LF of pipe insulation	$ 15.00	$ 4,500	$ 1,575	$ 6,075
15	Install a emergency eye wash and shower in boiler room	1	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
18	Install atmospheric vacuum breakers at existing hose bibbs	1	assume 30 hose bibbs	$ 400.00	$ 12,000	$ 4,200	$ 16,200
5	Remove backerrod and sealant at all window and door openings	2	15qty Door Openings	$ 300.00	$ 4,500	$ 1,575	$ 6,075
						$ -	$ -

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - BLANCHARD MIDDLE
SF: 109,556 Classrooms: 45

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
21	Demolish and renovate locker room showers to incorporate accessible	1	Install new accessible shower, with new shower receptor and	$ 75,000.00	$ 75,000	$ 26,250	$ 101,250
1	Remove and replace pedestrian pathways to adjacent fields and parking lots and replace with accessible walks	1	1250 LF @ 12' wide	$ 144.00	$ 180,000.00	$ 63,000	$ 243,000
4	Remove and replace main entry curb cut and ancillary curb cuts throughout the site.	1	4 new curb cuts at building side, 3 new double sided through parking island. 1 single at ADA. Existing double at ADA does not need to be replaced.	$ 18,000.00	$ 18,000	$ 6,300	$ 24,300
10	Remove and replace the roof, exhaust vents, all penetration at systems, roof drains and strainers, and roof access systems. Replace gutters and downspouts at roof.	1	Fully Adhered, PVC System, 110,000 SF, with Code Compliant Insulation, Blocking and Edge Metal. Replace 46 Cast Iron Roof Strainers.	$ 3,856,900.00	$ 3,856,900	$ 1,349,915	$ 5,206,815
11	Remove and replace egress doors to provide separation of school. Install magnetic hold opens at egress doors.	1	Install 6qty, 10'-9x9-4" HM Frames with 6'-0"x7'-0" Door Opening, including 7 borrowed lights, egress hardware and magnetic hold opens tied into fire alarm system.	$ 57,170.00	$ 57,170	$ 20,010	$ 77,180
14	Remove and replace all existing pipe insulation on domestic cold and hot water piping.	1	Full building square footage.	$ 4.50	$ 493,002.00	$ 172,551	$ 665,553
15	Test and Inspect domestic hot and cold water piping.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
17	Install backflow preventer for hot water in science rooms	1	1 RPBP for non-potable cold water; 1 RPBP for non-potable hot water	$ 9,000.00	$ 18,000	$ 6,300	$ 24,300
18	Test and inspect gas piping serving heaters, gas boiler, and kitchen equipment.	1	$10,000	$ 10,000.00	$ 10,000	$ 3,500	$ 13,500
25	Install trap primers at existing floor drains.	1	950 LF of trap primer piping; 15 electronic trap priming assembly	$ 130,500.00	$ 130,500.00	$ 45,675	$ 176,175
27	Add fire alarm notification devices to supplement existing system. Upgrade FACP, batteries and remote annunciator as required to accomodate additional devices.	1	(20) horn/strobes, (10) strobes, (40) smoke detectors	$ 800.00	$ 56,000.00	$ 19,600	$ 75,600
28	Replace/upgrade/repair emergency lighting system (currently supported by generator) with associated wiring as appropriate in various building conditions.	1	Full building square footage.	$ 1.50	$ 164,334.00	$ 57,517	$ 221,851
30	Remove and replace existing gas fired generator	1	100 kW/125 kVA 120/208v 3ph 4w gas-fired outdoor generator with weatherproof attenuated enclosure	$ 250,000.00	$ 250,000.00	$ 87,500	$ 337,500
2	Remove and replace bituminous concrete at curbs and replace with new	2	400 LF	$ 20.00	$ 8,000.00	$ 2,800	$ 10,800
3	Mill down area of accessible parking and repave finsih coat to repair cracking. Restripe spaces.	2	1500 SF	$ 10.00	$ 15,000	$ 5,250	$ 20,250
8	Recoat loose lintels at openings	2	14 Door Openings	$ 260.00	$ 3,640	$ 1,274	$ 4,914
12	Remove and replace existing ACP ceilings with new	2	20,000sf	$ 8.00	$ 160,000	$ 56,000	$ 216,000
29	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 219,112.00	$ 76,689	$ 295,801
6	Import 3" topsoil, fine grading, install stone reinforcement on slope and granite curb at asphalt edge to address erosion at play area by treatment plant		Curb: 150 LF Area: 6,000 SF	$ 45,750.00	$ 45,750	$ 16,013	$ 61,763
16	Remove existing piping, where possible, back to service, install new domestic hot water piping, including insulation Replace heating equipment with new.	1	Full building square footage. Replace water heater within 5 years	Included Above		$ -	$ -
19	Remove and replace gas piping serving heaters, gas boilers, and kitchen equipment	1	50% of the building square footage	$ 1.00	$ 54,778	$ 19,172	$ 73,950
20	Remove and replace waste piping where possible, back to service, below triple pot sink in kitchen. Remove and replace grease trap. Provide new triple pot sink.	1	30 LF of pipe; 1 grease trap (50 GPM); 1 triple potsink	$ 16,000.00	$ 16,000.00	$ 5,600	$ 21,600

Department: 300 - WESTFORD PUBLIC SCHOOLS ***Location: XX - BLANCHARD MIDDLE*** **SF: 109,556 Classrooms: 45**				UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
		SMMA Priority	Quantities			35%	
24	Install backflow preventer for detergents at triple pot sink	1	(2) RPBP's	$ 9,000.00	$ 18,000	$ 6,300	$ 24,300
5	Resurface and restripe outdoor basketball courts. Repair perimeter gates and fences and replace baskets.	2	Area: 15,000 SF Fence Perimeter: 500 LF	$ 120,000.00	$ 120,000	$ 42,000	$ 162,000
26	Remove and replace normal and energency power distribution systems equipment and associated power feeders.	2	Full building square footage. Main Switchboard 3,000 Amp 120/208v 3ph 4w.	$ 7.50	$ 821,670.00	$ 287,585	$ 1,109,255
22	Remove and replace existing janitors sinks with new	1	5 mop sinks	$ 3,500.00	$ 17,500.00	$ 6,125	$ 23,625
7	Remove backerrod and sealant at all window, door openings, or control joints and replace with new.	2	15qty Door Openings, 135qty 3'-4"x12'-0" Window Openings. 20qty, 2'-4"x12'-0"	$ 15.00	$ 70,680.00	$ 24,738	$ 95,418
23	Install emergency shower/eye wash within boiler room.	2	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
9	Remove and replace weatherstripping and thresholds at exterior doors.	1	10 Door Openings	$ 500.00	$ 5,000.00	$ 1,750	$ 6,750

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - WESTFORD ACADEMY
SF: 296,000 Classrooms: 80

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
21	Install new mixing valves and emergency shower/eye wash in science	2	15 emergency shower/eyewash units; 15 mixing valves	$ 4,000.00	$ 60,000.00	$ 21,000	$ 81,000
11	Demolish and renovate locker room showers to incorporate accessible showers and toilet rm.	1	Remove 6 masonry partitions and shower receptor. Repair floor, Install new accessible shower, with new shower receptor and ADA restroom. Install new tile on walls and floor (600sf). Install new accessible shower, seat, and curtain.	$ 75,000.00	$ 75,000	$ 26,250	$ 101,250
24	Remove and replace existing acid (lab) waste system, and provide new. Remove and replace existing acid neutralizing tanks. Replace vent piping on the roof with approved material, polypropylene or similar.	1	2,500 LF of acid (lab) waste piping, 2 acid neutralization tanks; 250 LF of polypropylene pipe (lab vent pipe on the roof)	$ 278,000.00	$ 278,000.00	$ 97,300	$ 375,300
26	Install emergency eye wash in nurse's suite.	2	1 emergency eyewash	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
36	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in cafeteria, gymnasium, corridors, building exterior, and large group areas.	$ 2.00	$ 592,000.00	$ 207,200	$ 799,200
1	Remove and replace pededstrian pathways at locations of pot holes, raveling and cracking.	1	950 LF @ 10' wide	$ 144.00	$ 180,000.00	$ 63,000	$ 243,000
12	Install reduced pressure backflow preventer	1	1 RPBP	$ 9,000.00	$ 9,000.00	$ 3,150	$ 12,150
13	Remove existing piping, where possible, back to service, install new domestic cold and hot water piping, including insulation	1	Full building square footage except for the latest addition/renovation	$ 4.50	$ 1,332,000.00	$ 466,200	$ 1,798,200
14	Install reduced pressure backflow preventer for HVAC make-up, fittings, insulation and jacketing.	1	1 RPBP for HVAC make-up water	$ 9,000.00	$ 9,000.00	$ 3,150	$ 12,150
15	Remove and replace existing master mixing valve, pressure reducing valves, and associate piping.	1	1 master mixing valve; 1 PRV	$ 12,000.00	$ 12,000.00	$ 4,200	$ 16,200
18	Perform leak testing on storm drainage system	1	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
20	Install separate backflow preventer for non-potable hot water in science rooms, including new fittings and insulation for adjacent piping.	1	1 RPBP for non-potable cold water; 1 RPBP for non-potable hot water	$ 9,000.00	$ 18,000.00	$ 6,300	$ 24,300
22	Remove and replace waste piping where possible, back to service, at food prep sink.	1	30 LF of pipe	$ 150.00	$ 4,500.00	$ 1,575	$ 6,075
2	Mill parking area down, install new surface, parking striping and signage for areas of cracking.	2	North Lot: 24000 SF West Lot: 92000 SF East Lot: 42000 SF	$ 10.00	$ 1,580,000	$ 553,000	$ 2,133,000
9	Remove and replace existing protective padding at perimeter of gymnasiums and install new.	2	Remove and replace protective padding in gymnasiums. (10,000sf)	$ 19.00	$ 190,000.00	$ 66,500	$ 256,500
4	Remove and replace expansion joint. Remove adjacent cracked masonry and replace with new. Provide new insulation and moisture barriers. Install new expansion joint on the interior and replace or repair interior finishes.	1	Remove 50ft x 3ft feet of masonry on exterior. Salvage masonry. Install new insulation, membrane, expansion cover, install salvaged masonry to match. Repair 50ft x 3ft of interior masonry. Tooth in new CMU. Repair adjacent gypsum and repaint. Repair and replace 20sf of ACP ceiling system. Replace expansion joint system at roof. Replace expansion gasketing at floor systems. Remove and replace VCT, assume 200sf.	$ 31,100.00	$ 31,100.00	$ 10,885	$ 41,985
5	Remove and replace weatherproofing and gasketing at exterior doors.	1	20qty Door Openings.	$ 500.00	$ 10,000.00	$ 3,500	$ 13,500
8	Remove and install rated doors at main gymnasium egress doors. Patch and repair adjacent masonry and expansion joints. Remove open storage from gymnasium and replace damaged louvers.	1	Repair 50sf masonry between egress stairs and storage rooms. Install new expansion joint covers, (50 linear feet.) Replace 4ftx4ft louvers, qty 4.	$ 10,900.00	$ 10,900.00	$ 3,815	$ 14,715
19	Remove and replace existing storm drainage piping with new	1	Full building square footage except for the latest addition/renovation	$ 3.50	$ 1,036,000.00	$ 362,600	$ 1,398,600
23	Remove original, existing toilet room fixtures and compartments and install new accessible assemblies and system	1	90 water closets; 25 urinals; 85 lavatories	$ 1,000,000.00	$ 1,000,000.00	$ 350,000	$ 1,350,000
27	Install backflow preventer at triple pot sink.	1	(2) RPBP's	$ 9,000.00	$ 18,000.00	$ 6,300	$ 24,300
28	Install trap primers in existing floor drains.	1	950 LF of trap primer piping; 15 electronic trap priming assembly	$ 130,500.00	$ 130,500.00	$ 45,675	$ 176,175

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - WESTFORD ACADEMY
SF: 296,000 Classrooms: 80

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
6	Remove and replace the roof,exhaust vents, all penetration at systems, roof drains and strainers, and roof access systems.	2	Fully Adhered, PVC System, 135,000 SF, with Code Compliant Insulation, Blocking and Edge Metal. Replace 33 Cast Iron Roof Strainers.	$ 4,729,950.00	$ 4,729,950	$ 1,655,483	$ 6,385,433
7	Remove and replace existing hollow metal doors with corroded jambs.	2	10qty Door Openings	$ 1,800.00	$ 18,000.00	$ 6,300	$ 24,300
10	Replace rated doors and hardware within mechanical spaces to allow doors to remain closet. Patch in adjacent masonry or abandoned receptacles to maintain ratings of adjacent walls.	2	Repair 50sf masonry between rated spaces in Boiler Rm. Remove and replace 5qty rated doors.	$ 15,750.00	$ 15,750.00	$ 5,513	$ 21,263
16	Test and Inspect gas service piping.	2	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
17	Replace gas service piping	2	50% of the building square footage	$ 1.00	$ 148,000	$ 51,800	$ 199,800
35	Install new HVAC Controls, Building Management System and Energy Management systems	2		$ 10.00	$ 2,960,000.00	$ 1,036,000	$ 3,996,000
30	Replace five (5) rooftop air conditiong units. Units to include mixing box, filters, supply & return/exhaust fans, heating coil, DX cooling coil, condenser section and all necessary accessories.		RAC-1B: 14,250 cfm RAC-2B: 20,000 cfm RAC-1C: 21,700 cfm RAC-2C: 15,150 cfm RAC-1D: 36,000 cfm	$ 30.00	$ 3,213,000.00	$ 1,124,550	$ 4,337,550
31	Replace six (6) rooftop air handling units ready for connection to future condensing unit. Units to include mixing box, filters, supply & return/exhaust fans, heating coil, DX cooloing coil and all necessary accessories. Units capable of future connection to future condensing unit.		RAH-1B: 11,600 cfm RAH-1C: 27,650 cfm RAH-1D: 6,950 cfm RAH-2E: 6,720 cfm RAH-1F: 27,250 cfm RAH-2F: 28,250 cfm	$ 32.00	$ 3,469,440.00	$ 1,214,304	$ 4,683,744
32	Replace one (1) indoor air handling unit. Unit to include mixing box, filters, supply fan, heating coil and all necessary accessories.		AHU-1A: 7,605 cfm	$ 32.00	$ 243,360.00	$ 85,176	$ 328,536
33	Replace one (1) outdoor air handling unit. Unit to include mixing box, filters, supply & return fans, heating coil and all necessary accessories.		RHU-1E: 12,500 cfm	$ 32.00	$ 400,000.00	$ 140,000	$ 540,000
34	Replace four (4) heating 7 ventilating units. Units to include filters, supply fan, heating coil and all necessary accessories.		HV-1A: 4,200 cfm HV-2A: 4,200 cfm HV-1E: 5,000 cfm HV-2E: 5,000 cfm	$ 16.00	$ 294,400.00	$ 103,040	$ 397,440
29	Install new service sink in boiler room, including trap, and other related piping and fixtures.	1	1 service sink and faucet	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400
3	Remove existing sealant and backer rod at windows, door openings, and control joints. Replace with new	2	20qty Door Openings.	$ 255.00	$ 5,100.00	$ 1,785	$ 6,885
25	Install emergency shower and eye wash in boiler room.	2	1 emergency shower/eyewash unit	$ 4,000.00	$ 4,000.00	$ 1,400	$ 5,400

Department: 300 - WESTFORD PUBLIC SCHOOLS
Location: XX - DISTRICT OFFICE

SF: 32,000

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS 35%	ESTIMATED CONSTRUCTION COSTS
6	Remove and replace the roof, skylights, exhaust vents, all penetration at	1	Fully Adhered, PVC System, 30,000 SF, with Code Compliant	$ 1,090,000.00	$ 1,090,000.00	$ 381,500	$ 1,471,500
8	Remove and Install new windows.	1	46qty, 2'-0"x 2'-0" Window Openings	$ 640.00	$ 29,440.00	$ 10,304	$ 39,744
4	Remove old sections of non-compliant walkways, recompact and install new walking accessible walking surfaces	2	See Abbot School			$ -	$ -
5	Install additional site lighting	2	See Abbot School			$ -	$ -
17	Perform leakage testing on underslab piping to insure operation	2	$10,000	$ 10,000.00	$ 10,000.00	$ 3,500	$ 13,500
20	Remove and replace clock/PA system throughout school with new IP based system.	2	Full building square footage. IP clocks and two-way IP speakers in classrooms, offices, and other small group learning spaces. One-way analog speakers and IP clocks in corridors, building exterior, and large group areas.	$ 2.00	$ 64,000.00	$ 22,400	$ 86,400
1	Playground Repair - Rear of Millennium - Replace playground equipment, install new ground surface materials	1	6750 SF	$ 536,250.00	$ 536,250.00	$ 187,688	$ 723,938
7	Remove and replaces sections of exterior grade cladding and install new with new trim board. Install new protective coatings.	1	12,000sf.	$ 100.00	$ 1,200,000.00	$ 420,000	$ 1,620,000
13	Remove and replace acoustic ceiling tiles	1	15,000sf	$ 8.00	$ 120,000.00	$ 42,000	$ 162,000
15	Insulate domestic cold and hot water piping.	1	40 LF of exposed plumbing pipes in the Custodial/Sprinkler Room	$ 15.00	$ 600.00	$ 210	$ 810
16	Replace electric water heater and related piping. Install expansion tanks, circulation pumps and mixing valves	1	Replace 1 EWH; Replace 1 EWH within 5 years; 2 expansion tanks, 2 mixing valves; 2 circulation pumps	$ 50,000.00	$ 50,000.00	$ 17,500	$ 67,500
2	Remove and Repair Extent of rutted roadway. Reclaim pavement, recompact and install new	2	Front of district office paving: 9000 SF	$ 10.00	$ 90,000	$ 31,500	$ 121,500
3	Mill parking area down, install new surface, parking striping and signage	2	See Abbot School			$ -	$ -
10	Replace interior sheathing at building perimeter	2	240sf	$ 15.00	$ 3,600.00	$ 1,260	$ 4,860
12	Remove and replace VCT with new flooring system	2	6,000sf	$ 11.00	$ 66,000.00	$ 23,100	$ 89,100
14	Remove and replace areas of carpeting	2	10,000sf	$ 12.00	$ 120,000.00	$ 42,000	$ 162,000
18	Remove all existing HVAC systems. Install new heating, ventilating and air conditioning equipment to serve entire building.	2	Full building square footage.	$ 55.00	$ 1,760,000.00	$ 616,000	$ 2,376,000
19	Fully replace automatic temperature controls with new DDC building management system with operator workstation, capable of districtwide integration.	2	Full building square footage.	$ 10.00	$ 320,000.00	$ 112,000	$ 432,000
11	Remove and replace toilet compartments in bathrooms	2	Assume 8 compartments	$ 3,000.00	$ 24,000.00	$ 8,400	$ 32,400
9	Remove and install new weatherstripping and gasketing at all doors.	2	7 Door Openings	$ 500.00	$ 3,500	$ 1,225	$ 4,725
			ESTIMATED CONSTRUCTION COSTS				**$ 7,407,977**
							$ 231.50

Department: 300 - WESTFORD PUBLIC SCHOOLS

Location: XX - DISTRICT OFFICE

SF: 32,000

		SMMA Priority	Quantities	UNIT COST	SUBTOTAL	MARKUPS	ESTIMATED CONSTRUCTION COSTS
						35%	

SMMA

Appendices

Appendix 1 - NESDEC Enrollment Projections



Westford Public Schools
Westford, MA

2022-23 Enrollment Projection Report

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Enrollment Summary

The global pandemic continues to influence our nation's public health and economic stability in unpredictable ways. As such, it is still too early to identify many of the factors that could impact school enrollments. Over the past school year, we have seen fluctuations in the real estate market and job trends, which have impacted student attendance patterns. Moreover, during the past school year, we have seen how school enrollment patterns can differ substantially from one district to another, with some districts losing students while others experience an influx of students.

We are pleased to send you this report displaying the past, present, and projected enrollments for the District. These ten-year projections are designed to provide the District with yearly, up-to-date enrollment information that can be used by boards and administrators for effective planning and allocation of resources. Included in this report are graphs representing historical and projected grade-by-grade enrollments, as well as historical and projected enrollments in grade combinations. We have received the figures given to us by the District, and we assume that the method of collecting the enrollment data has been consistent from year to year.

Enrollment projections are more reliable in Years #1-4 in the future and less reliable in the "out-years." Projections six to ten years out may serve as a guide to future enrollments and are useful for planning purposes. In light of this, NESDEC has added a "Second Semester refresher" enrollment projection at no cost to affiliates. (For more information, please refer to the Reliability and Use of This Document section)

This is the first projection for the district since 2002. Next fall, we can determine the accuracy of NESDEC's forecast for school year 2022-23.

Births decreased by -3 from a previous ten-year average of 166 to a projected average of 163. In most districts, enrollments in Grades 1-8 are very stable environments. However, there have been increases in 8 of the 8 most recent years, leading to a net increase averaging 52 students per year.

Over the next three years, K-2 enrollments are projected to increase by +10 students, Grades 3- 5 enrollments are projected to increase by +25 students, Grades 6-8 are projected to decrease by -33 students and Grades 9-12 enrollments are projected to decrease by -37 students, as students move through the grades.

Historical Enrollment

School District: Westford, MA **11/15/2022**

Historical Enrollment By Grade																			
Birth Year	Births*	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2007	179	2012-13	106	267	344	396	358	426	421	441	404	413	417	426	411	429	0	5153	5259
2008	182	2013-14	96	264	344	320	412	370	439	432	444	411	406	419	414	409	0	5084	5180
2009	171	2014-15	105	271	328	330	345	421	378	445	433	449	399	405	411	419	0	5034	5139
2010	179	2015-16	108	288	352	303	342	358	429	385	457	439	457	402	402	418	3	5035	5143
2011	166	2016-17	119	259	367	341	319	357	373	442	400	463	430	455	393	398	4	5001	5120
2012	157	2017-18	110	277	324	345	362	331	373	383	444	410	447	433	443	388	4	4964	5074
2013	152	2018-19	116	265	364	297	364	377	337	385	392	448	397	444	433	447	3	4953	5069
2014	183	2019-20	114	273	305	337	307	373	389	358	386	395	431	392	443	424	1	4814	4928
2015	147	2020-21	45	271	277	307	345	307	383	387	367	380	384	424	390	444	3	4669	4714
2016	152	2021-22	97	277	308	312	316	338	317	391	386	359	370	379	429	386	0	4568	4665
2017	169	2022-23	104	284	302	325	319	339	360	344	414	397	353	373	377	423	2	4612	4716

*Birth data provided by Public Health Vital Records Departments in each state.

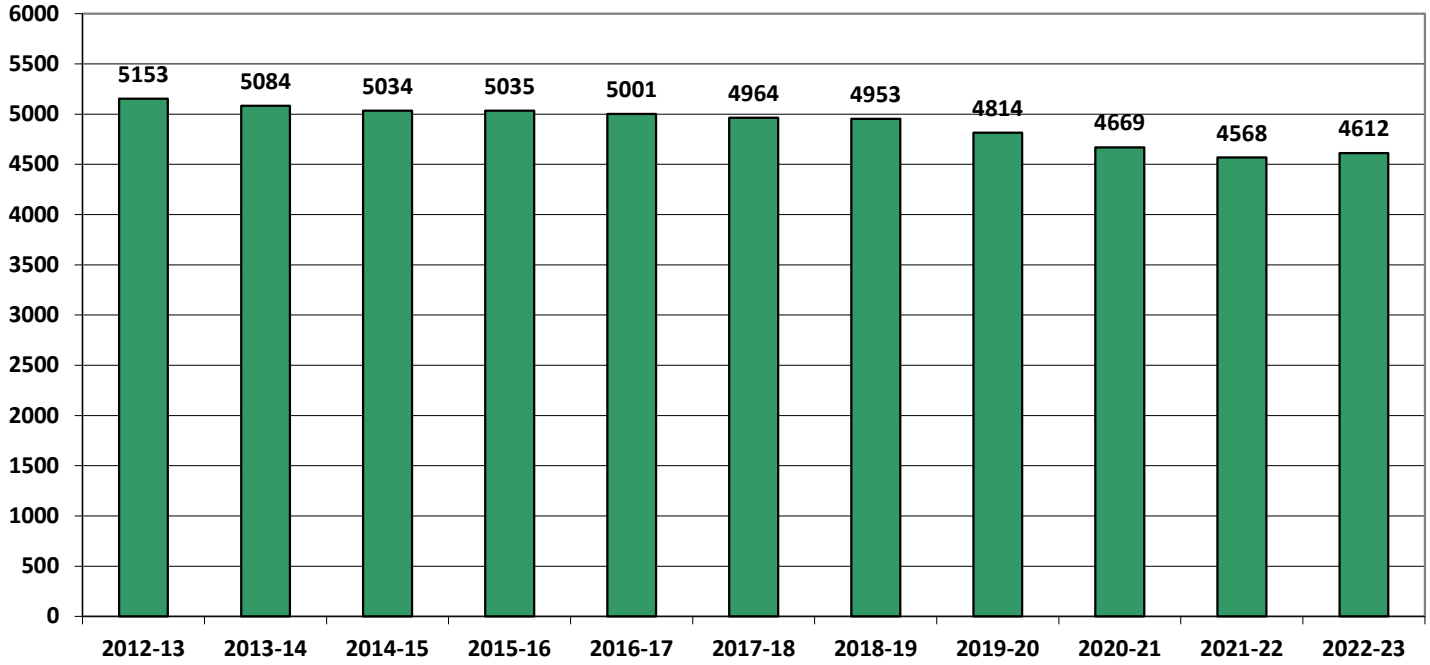
Historical Enrollment in Grade Combinations									
Year	PK-5	K-5	PK-2	K-2	3-5	6-8	PK-8	K-8	9-12
2012-13	2318	2212	1113	1007	1205	1258	3576	3470	1683
2013-14	2245	2149	1024	928	1221	1287	3532	3436	1648
2014-15	2178	2073	1034	929	1144	1327	3505	3400	1634
2015-16	2180	2072	1051	943	1129	1281	3461	3353	1679
2016-17	2135	2016	1086	967	1049	1305	3440	3321	1676
2017-18	2122	2012	1056	946	1066	1237	3359	3249	1711
2018-19	2120	2004	1042	926	1078	1225	3345	3229	1721
2019-20	2098	1984	1029	915	1069	1139	3237	3123	1690
2020-21	1935	1890	900	855	1035	1134	3069	3024	1642
2021-22	1965	1868	994	897	971	1136	3101	3004	1564
2022-23	2033	1929	1015	911	1018	1155	3188	3084	1526

Historical Percentage Changes			
Year	K-12	Diff.	%
2012-13	5153	0	0.0%
2013-14	5084	-69	-1.3%
2014-15	5034	-50	-1.0%
2015-16	5035	1	0.0%
2016-17	5001	-34	-0.7%
2017-18	4964	-37	-0.7%
2018-19	4953	-11	-0.2%
2019-20	4814	-139	-2.8%
2020-21	4669	-145	-3.0%
2021-22	4568	-101	-2.2%
2022-23	4612	44	1.0%
Change		-541	-10.5%

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Historical Enrollment

K-12, School Years 2012-13 to 2022-23



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Projected Enrollment

School District: Westford, MA **11/15/2022**

Enrollment Projections By Grade*																				
Birth Year	Births*		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2017	169		2022-23	104	284	302	325	319	339	360	344	414	397	353	373	377	423	2	4612	4716
2018	155		2023-24	104	271	318	321	333	329	353	374	353	418	388	351	373	374	2	4558	4662
2019	150		2024-25	104	263	304	338	329	343	343	367	384	357	408	386	351	370	2	4545	4649
2020	173		2025-26	104	303	295	323	347	339	357	357	377	388	349	406	386	348	2	4577	4681
2021	168	(prov.)	2026-27	104	294	339	313	331	357	353	371	367	381	379	347	406	383	2	4623	4727
2022	163	(est.)	2027-28	104	285	329	360	321	341	372	367	381	371	372	377	347	403	2	4628	4732
2023	162	(est.)	2028-29	105	283	319	350	369	331	355	387	377	385	362	370	377	344	2	4611	4716
2024	163	(est.)	2029-30	105	286	317	339	359	380	345	369	397	381	376	360	370	374	2	4655	4760
2025	166	(est.)	2030-31	105	290	320	337	348	370	396	359	379	401	372	374	360	367	2	4675	4780
2026	164	(est.)	2031-32	105	288	325	340	345	358	385	412	369	383	392	370	374	357	2	4700	4805
2027	164	(est.)	2032-33	105	286	323	345	349	355	373	400	423	373	374	390	370	371	2	4734	4839

Note: Ungraded students (UNGR) often are high school students whose anticipated years of graduation are unknown, or students with special needs - UNGR not included in Grade Combinations for 7-12, 9-12, etc.

Based on an estimate of births | Based on children already born | Based on students already enrolled

*Birth data provided by Public Health Vital Records Departments in each state.

Projected Enrollment in Grade Combinations*									
Year	PK-5	K-5	PK-2	K-2	3-5	6-8	PK-8	K-8	9-12
2022-23	2033	1929	1015	911	1018	1155	3188	3084	1526
2023-24	2029	1925	1014	910	1015	1145	3174	3070	1486
2024-25	2024	1920	1009	905	1015	1108	3132	3028	1515
2025-26	2068	1964	1025	921	1043	1122	3190	3086	1489
2026-27	2091	1987	1050	946	1041	1119	3210	3106	1515
2027-28	2112	2008	1078	974	1034	1119	3231	3127	1499
2028-29	2112	2007	1057	952	1055	1149	3261	3156	1453
2029-30	2131	2026	1047	942	1084	1147	3278	3173	1480
2030-31	2166	2061	1052	947	1114	1139	3305	3200	1473
2031-32	2146	2041	1058	953	1088	1164	3310	3205	1493
2032-33	2136	2031	1059	954	1077	1196	3332	3227	1505

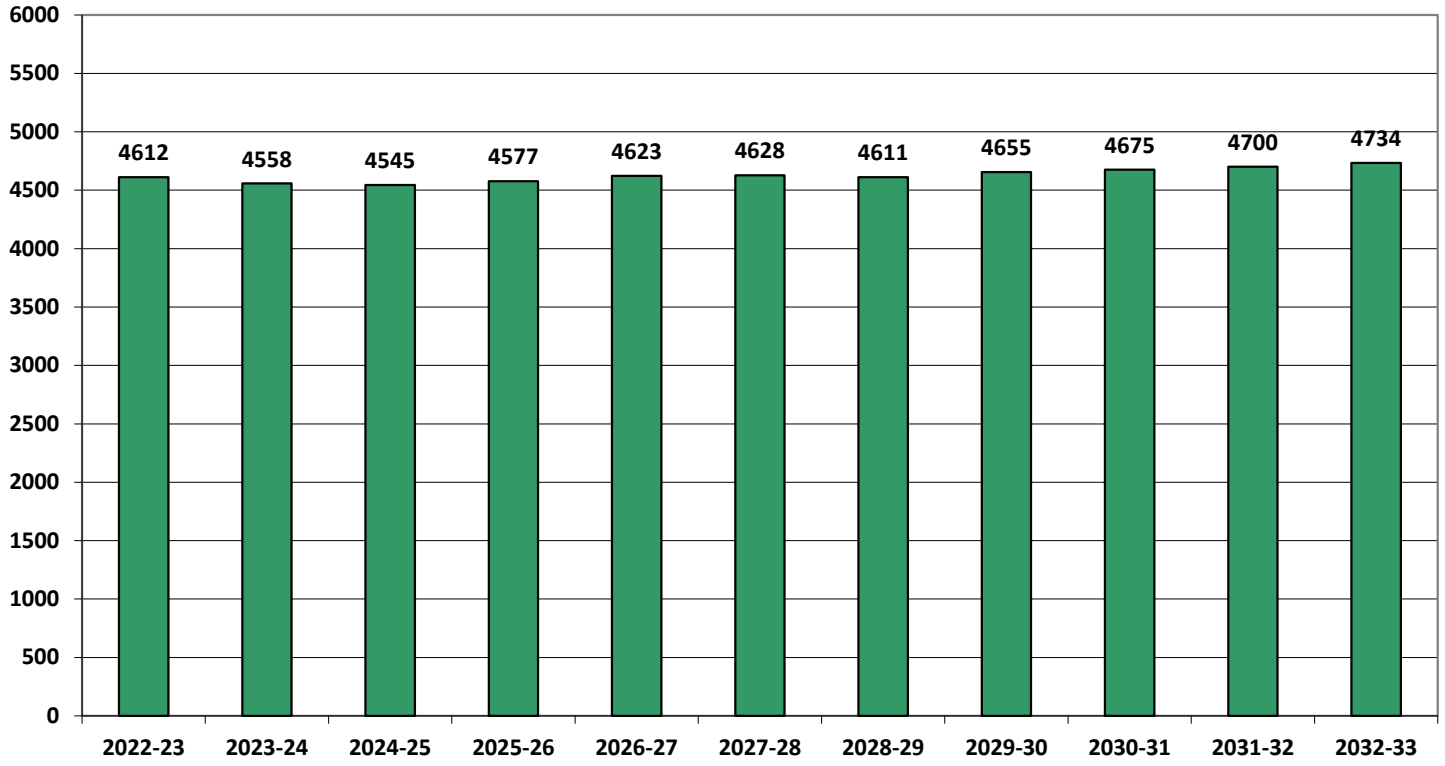
Projected Percentage Changes			
Year	K-12	Diff.	%
2022-23	4612	0	0.0%
2023-24	4558	-54	-1.2%
2024-25	4545	-13	-0.3%
2025-26	4577	32	0.7%
2026-27	4623	46	1.0%
2027-28	4628	5	0.1%
2028-29	4611	-17	-0.4%
2029-30	4655	44	1.0%
2030-31	4675	20	0.4%
2031-32	4700	25	0.5%
2032-33	4734	34	0.7%
Change		122	2.6%

*Projections should be updated annually to reflect changes in in/out-migration of families, real estate sales, residential construction, births, and similar factors.

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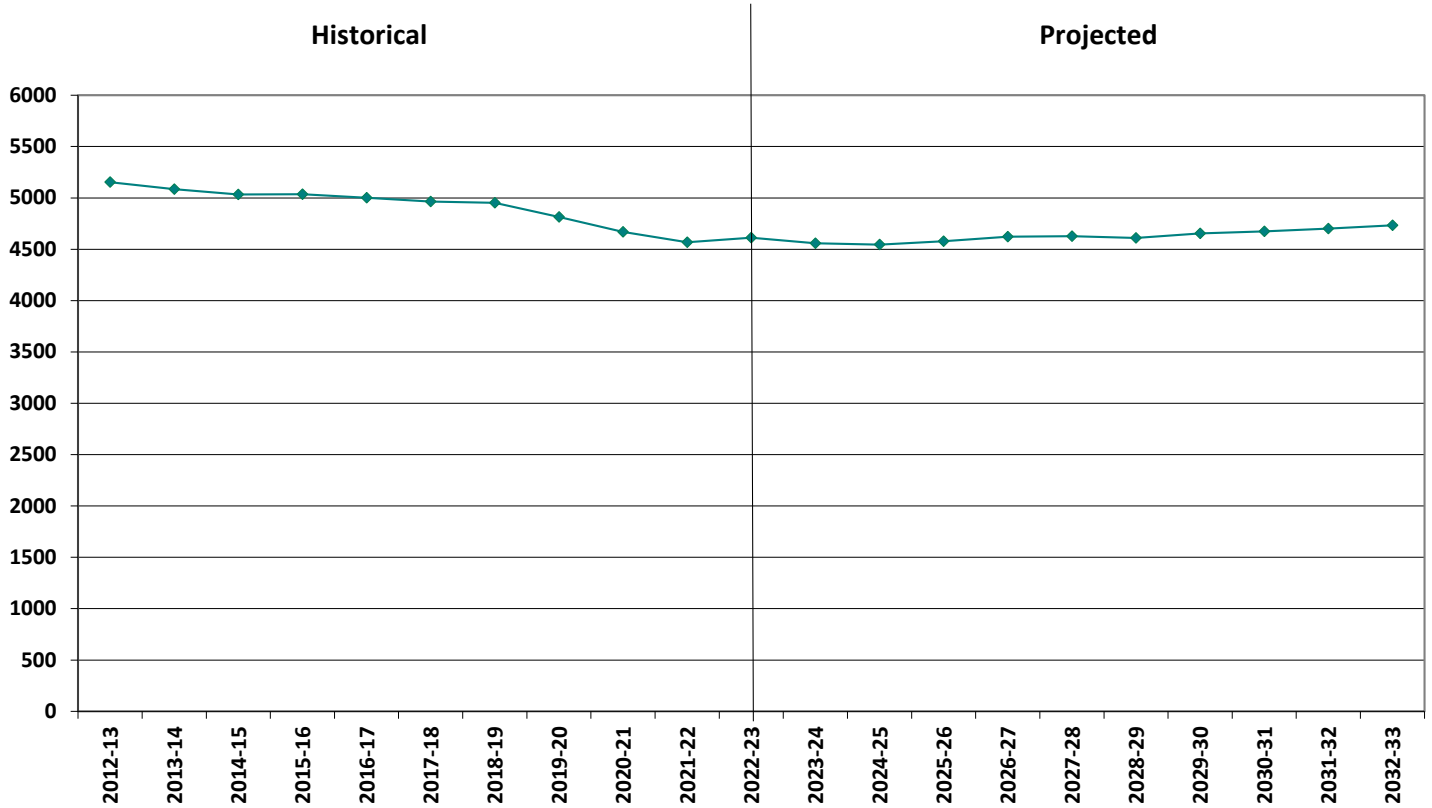
Projected Enrollment

K-12, School Years 2022-23 to 2032-33



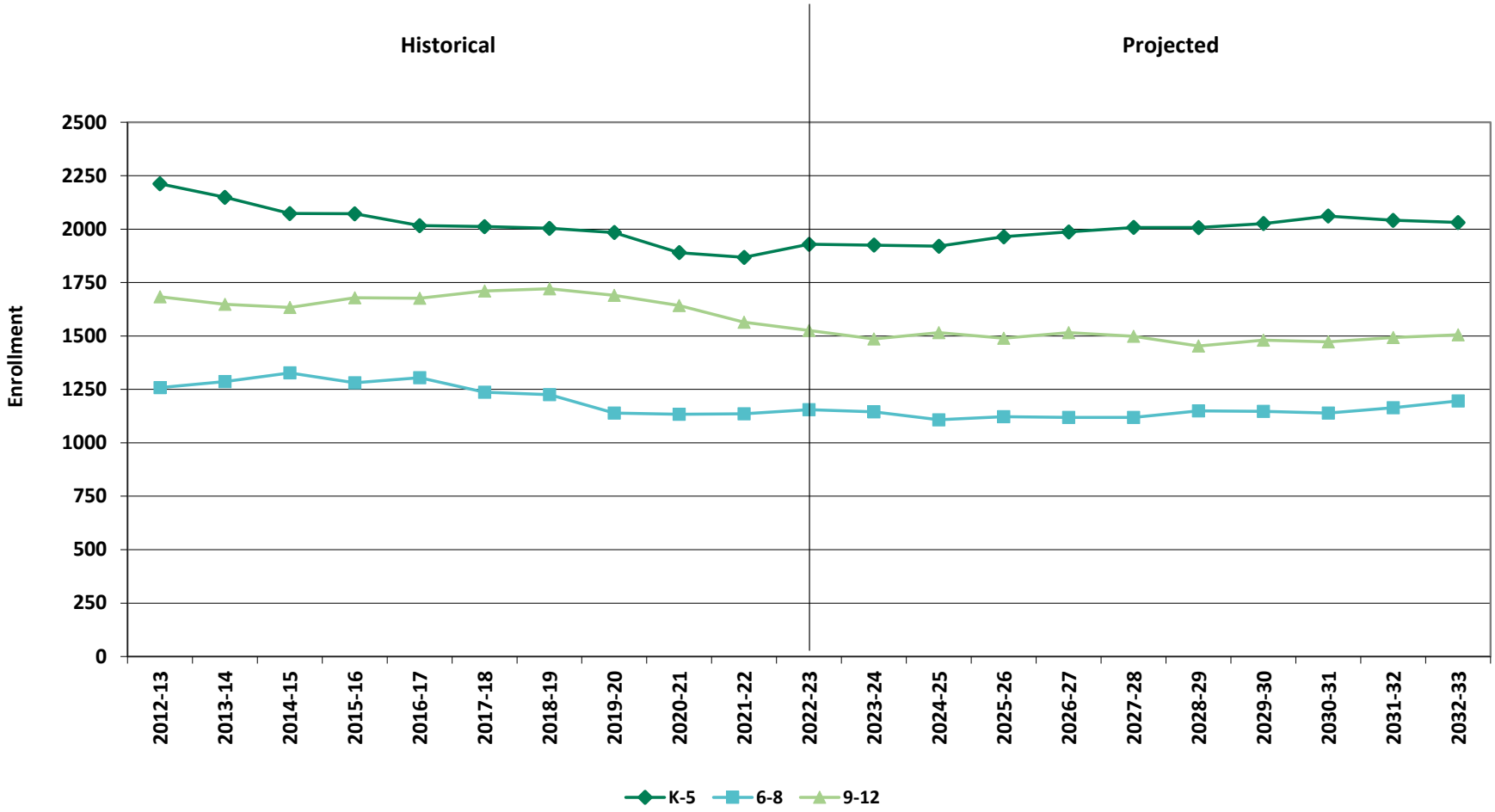
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Historical & Projected Enrollment



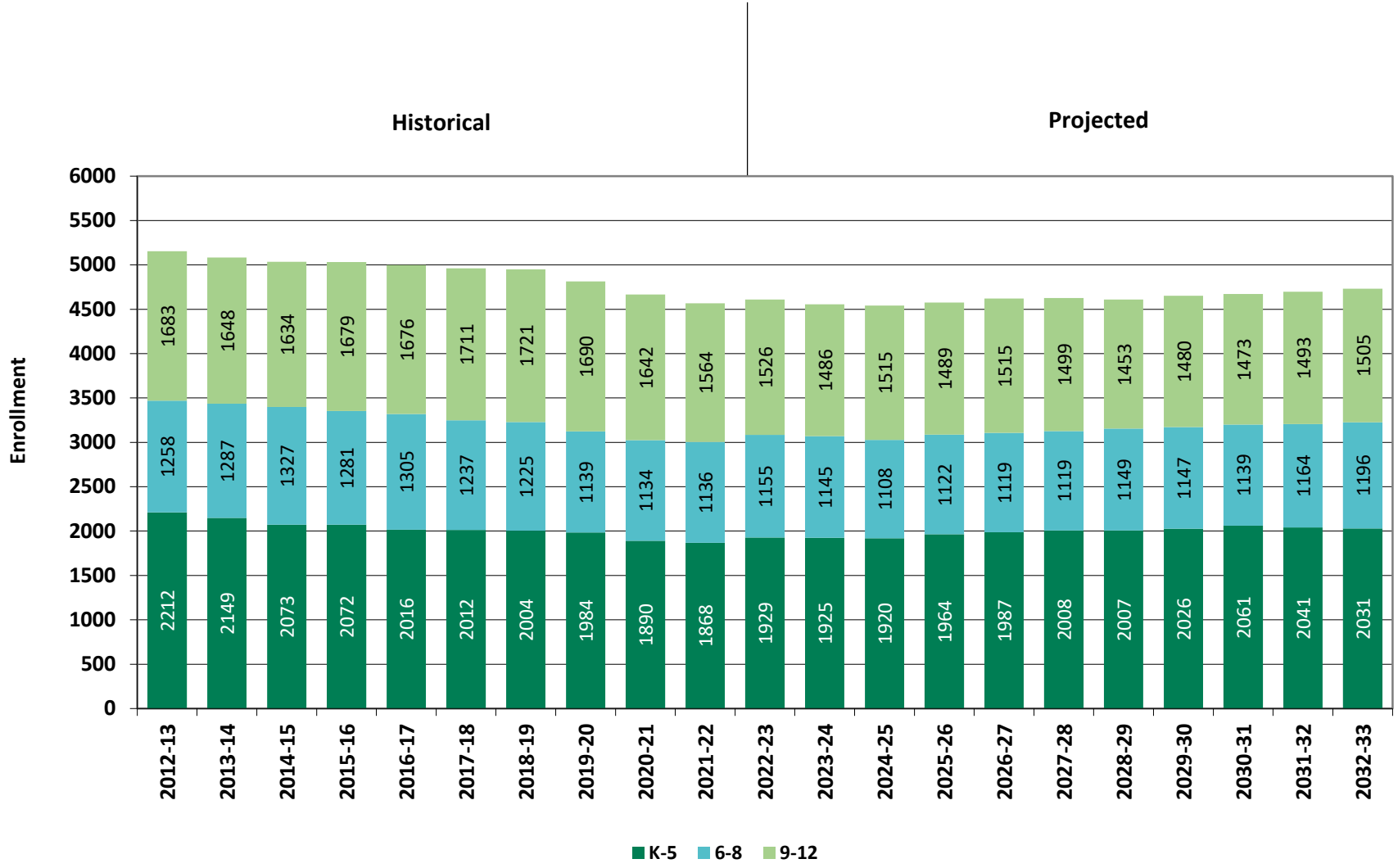
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Historical & Projected Enrollments in Grade Combinations



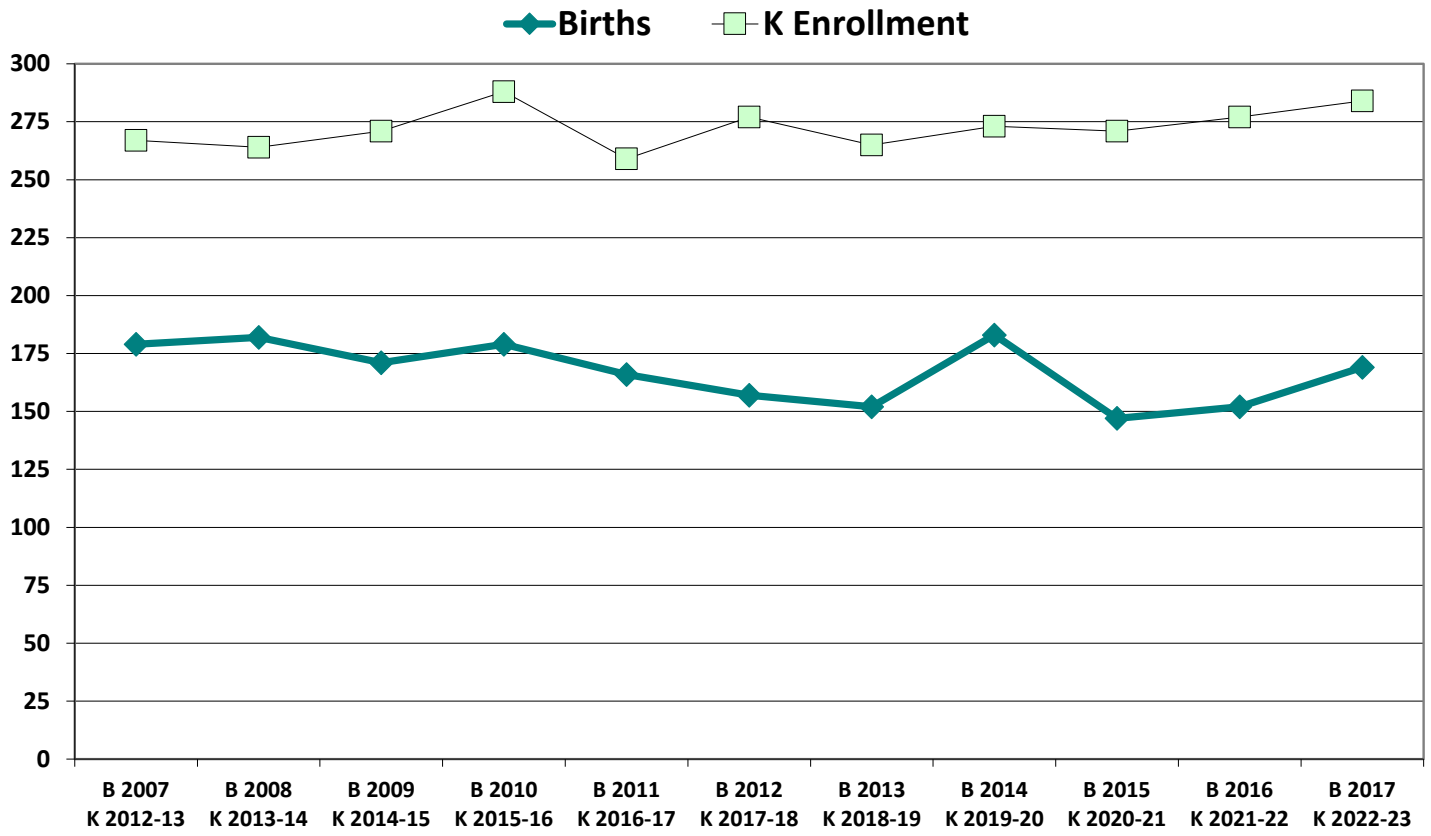
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Historical & Projected Enrollments in Grade Combinations



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Birth-to-Kindergarten Relationship



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Additional Information

Building Permits Issued (Source: HUD)		
Year	Single-Family	Multi-Units
2012	103	0
2018	14	240
2019	52	195
2020	33	2
2021	14	7
2022	10 to date	0 to date

Enrollment History*		
Year	Career-Tech 9-12 Total	Non-Public K-12 Total
2012-13	n/a	n/a
2018-19	n/a	n/a
2019-20	n/a	n/a
2020-21	n/a	n/a
2021-22	n/a	n/a
2022-23	74	106

Residents in Non-Public Independent and Parochial Schools (General Education)*														
Oct. 1 Enrollment	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 TOTAL
	10	9	4	8	7	8	10	5	9	7	8	15	6	106

K-12 Home-Schooled Students*	
2022	43

K-12 Residents in Charter or Magnet Schools, or Choiced-out*	
2022	39

K-12 Special Education Outplaced Students*	
2022	54

K-12 Tuitioned-In, Choiced-In, & Other Non-Residents*	
2022	133

*The above data were provided by the District, with the exception of building permit data (provided by HUD).
"n/a" signifies that information was not provided by District.

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New England's PK-12 Enrollment Trends

From 2020 to 2030, the US Department of Education anticipates changes in PK-12 enrollment of -2.4% in the South, -6.5% in the West, -3.8% in the Midwest, -6.2% in the Northeast, and a total of -4.3% nationwide.

State	Fall 2020 PK - 12	Fall 2030 Projected	PK-12 Decline	% Change 2020-2030
CT	509,058	475,600	-33,458	-6.6%
ME	172,455	161,800	-10,655	-6.2%
MA	921,712	879,900	-41,812	-4.5%
NH	169,027	144,600	-24,427	-14.5%
RI	139,184	130,200	-8,984	-6.5%
VT	82,401	74,600	-7,801	-9.5%

Source: U.S. Department of Education, National Center for Education Statistics**,** *Enrollment In Public Schools fall 1990 to fall 2030* , Table 203.20, March 2022.

Although most New England Districts are seeing a decline in the number of births, NESDEC's experience indicates that the impact on enrollment varies from District to District. Almost half of New England Districts have been growing in PK-12 enrollment, and a similar number are declining (often in rural areas), with the other Districts remaining stable.

Reliability and Use of this Document

PROJECTION METHODOLOGY

Cohort component (survival) technique is a frequently used method of preparing enrollment forecasts. NESDEC uses this method, but modifies it in order to move away from forecasts that are wholly computer- or formula-driven. Such modification permits the incorporation of important, current district-specific information into the generation of enrollment forecasts (such as in/out-migration of students, resident births, HUD-reported building permits, etc.). Percentages are calculated from the historical enrollment data to determine a reliable percentage of increase or decrease in enrollment between any two grades. For example, if 100 students enrolled in Grade 1 in 2018-19 increased to 104 students in Grade 2 in 2019-20, the percentage of survival would be 104%, or a ratio of 1.04. Ratios are calculated between each pair of grades or years in school over several recent years.

After study and analysis of the historical ratios, and based upon a reasonable set of assumptions regarding births, migration rates, retention rates, etc., ratios most indicative of future growth patterns are determined for each pair of grades. The ratios thus selected are applied to the present enrollment statistics to project into future years. The ratios are the key factors in the reliability of the projections, assuming validity of the data at the starting point.

RELIABILITY OF ENROLLMENT PROJECTIONS

Projections can serve as useful guides to school administrators for educational planning. Enrollment projections are more reliable in Years #1-4 in the future and less reliable in the "out-years." Projections six to ten years out may serve as a guide to future enrollments and are useful for planning purposes, but they should be viewed as subject to change given the likelihood of potential shifts in underlying assumptions/trends, such as student migration, births as they relate to Kindergarten enrollment, and other factors.

Projections that are based upon **the children who already are in the district** (the current K-12 population only) will be the most reliable. The second level of reliability will be for those children already **born into the community but not yet old enough to be in school.** The least reliable category is the group for which an estimate must be made **to predict the number of births**, thereby adding additional uncertainty. See these three multi-colored groupings on the "Projected Enrollment" tab.

Annual updates allow for early identification of recent changes in historical trends. When the actual enrollment in a grade is significantly different (higher or lower) from the projected number, it is important (yet difficult) to determine whether this is a one-year aberration or whether a new trend may have begun. **In light of this possibility, NESDEC urges all school districts to have updated enrollment forecasts developed by NESDEC each October.** This service is available at no cost to affiliated school districts.

USING THIS INFORMATION ELECTRONICALLY

If you would like to extract the information contained in this report for your own documents or presentations, you can use screenshots, which can be inserted into PowerPoint slides, Word documents, etc. Because screenshots create graphics, the image is not editable. Please feel free to contact us if you need assistance in this matter, by phone (508-481-9444) or by email (ep@nesdec.org).

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Appendix 2 - Communities Meetings and Visioning

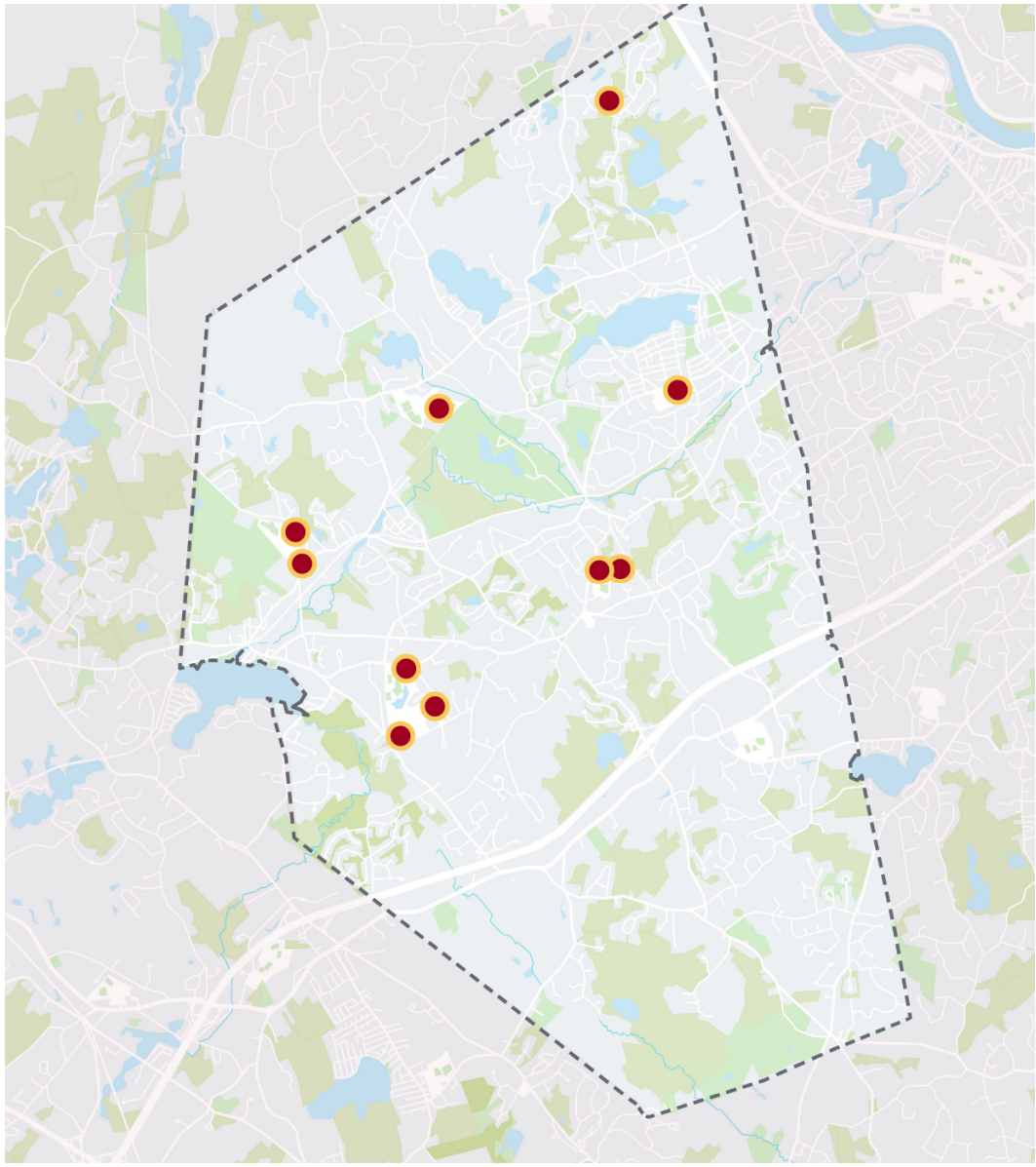
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Westford Public Schools

Westford Public Schools Master Plan

School Committee - Review of Project Goals, Enrollment, and Community Meetings

01.30.2023



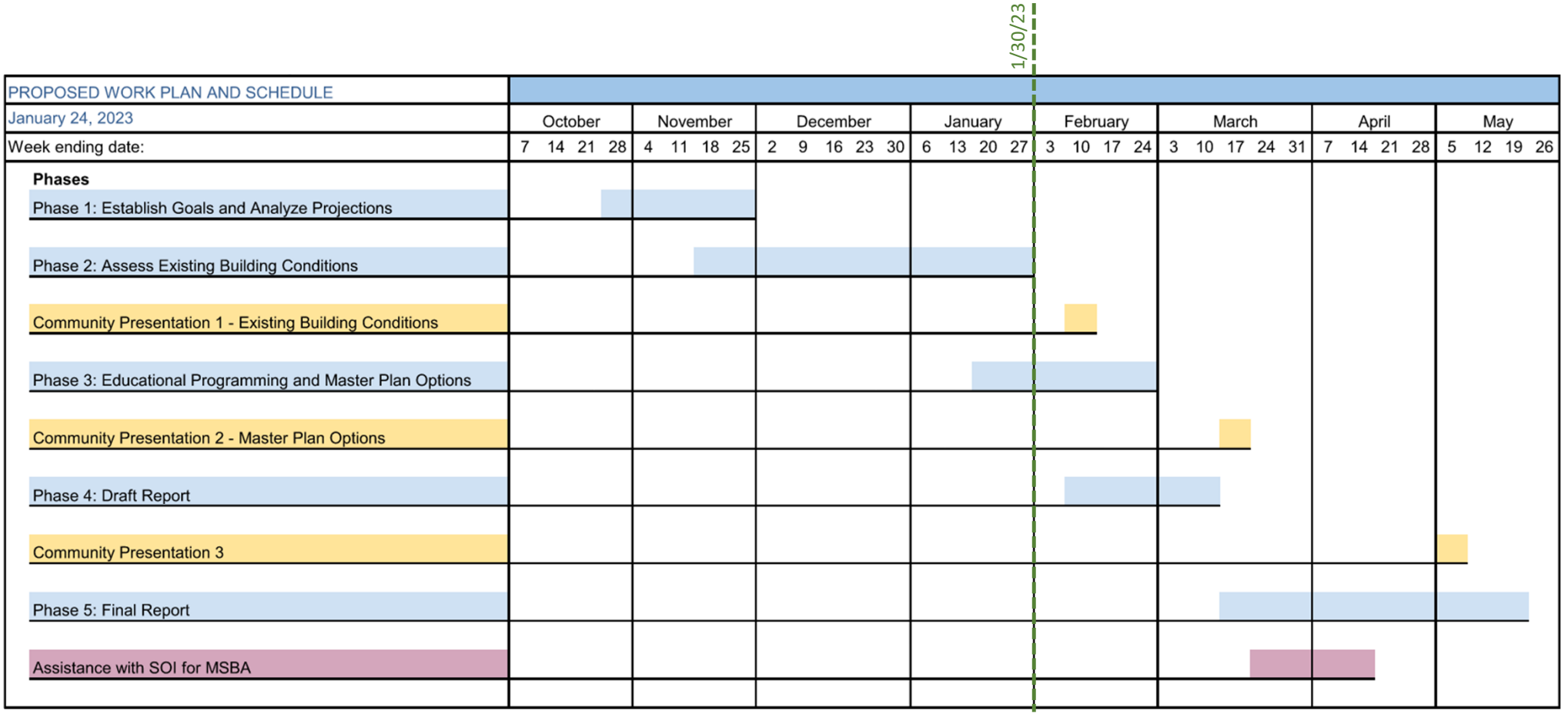
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Agenda

- Schedule Update
- Enrollment Projections
- Project Goals and Tasks
- Class Sizes Across All Schools
- Preliminary Review of Findings from ES Facilities Assessments
- Comparison Plans
- Schedule of Meetings
- Next Steps
- Community Presentation #1 Agenda
- Discussion

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Schedule



Enrollment Projections

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Enrollment Projections By Grade*																				
Birth Year	Births*		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2017	169		2022-23	104	284	302	325	319	339	360	344	414	397	353	373	377	423	2	4612	4716
2018	155		2023-24	104	271	318	321	333	329	353	374	353	418	388	351	373	374	2	4558	4662
2019	150		2024-25	104	263	304	338	329	343	343	367	384	357	408	386	351	370	2	4545	4649
2020	173		2025-26	104	303	295	323	347	339	357	357	377	388	349	406	386	348	2	4577	4681
2021	168	(prov.)	2026-27	104	294	339	313	331	357	353	371	367	381	379	347	406	383	2	4623	4727
2022	163	(est.)	2027-28	104	285	329	360	321	341	372	367	381	371	372	377	347	403	2	4628	4732
2023	162	(est.)	2028-29	105	283	319	350	369	331	355	387	377	385	362	370	377	344	2	4611	4716
2024	163	(est.)	2029-30	105	286	317	339	359	380	345	369	397	381	376	360	370	374	2	4655	4760
2025	166	(est.)	2030-31	105	290	320	337	348	370	396	359	379	401	372	374	360	367	2	4675	4780
2026	164	(est.)	2031-32	105	288	325	340	345	358	385	412	369	383	392	370	374	357	2	4700	4805
2027	164	(est.)	2032-33	105	286	323	345	349	355	373	400	423	373	374	390	370	371	2	4734	4839

Note: Ungraded students (UNGR) often are high school students whose anticipated years of graduation are unknown, or students with special needs - UNGR not included in Grade Combinations for 7-12, 9-12, etc.

Based on an estimate of births | Based on children already born | Based on students already enrolled

Projected Enrollment in Grade Combinations*									
Year	PK-5	K-5	PK-2	K-2	3-5	6-8	PK-8	K-8	9-12
2022-23	2033	1929	1015	911	1018	1155	3188	3084	1526
2023-24	2029	1925	1014	910	1015	1145	3174	3070	1486
2024-25	2024	1920	1009	905	1015	1108	3132	3028	1515
2025-26	2068	1964	1025	921	1043	1122	3190	3086	1489
2026-27	2091	1987	1050	946	1041	1119	3210	3106	1515
2027-28	2112	2008	1078	974	1034	1119	3231	3127	1499
2028-29	2112	2007	1057	952	1055	1149	3261	3156	1453
2029-30	2131	2026	1047	942	1084	1147	3278	3173	1480
2030-31	2166	2061	1052	947	1114	1139	3305	3200	1473
2031-32	2146	2041	1058	953	1088	1164	3310	3205	1493
2032-33	2136	2031	1059	954	1077	1196	3332	3227	1505

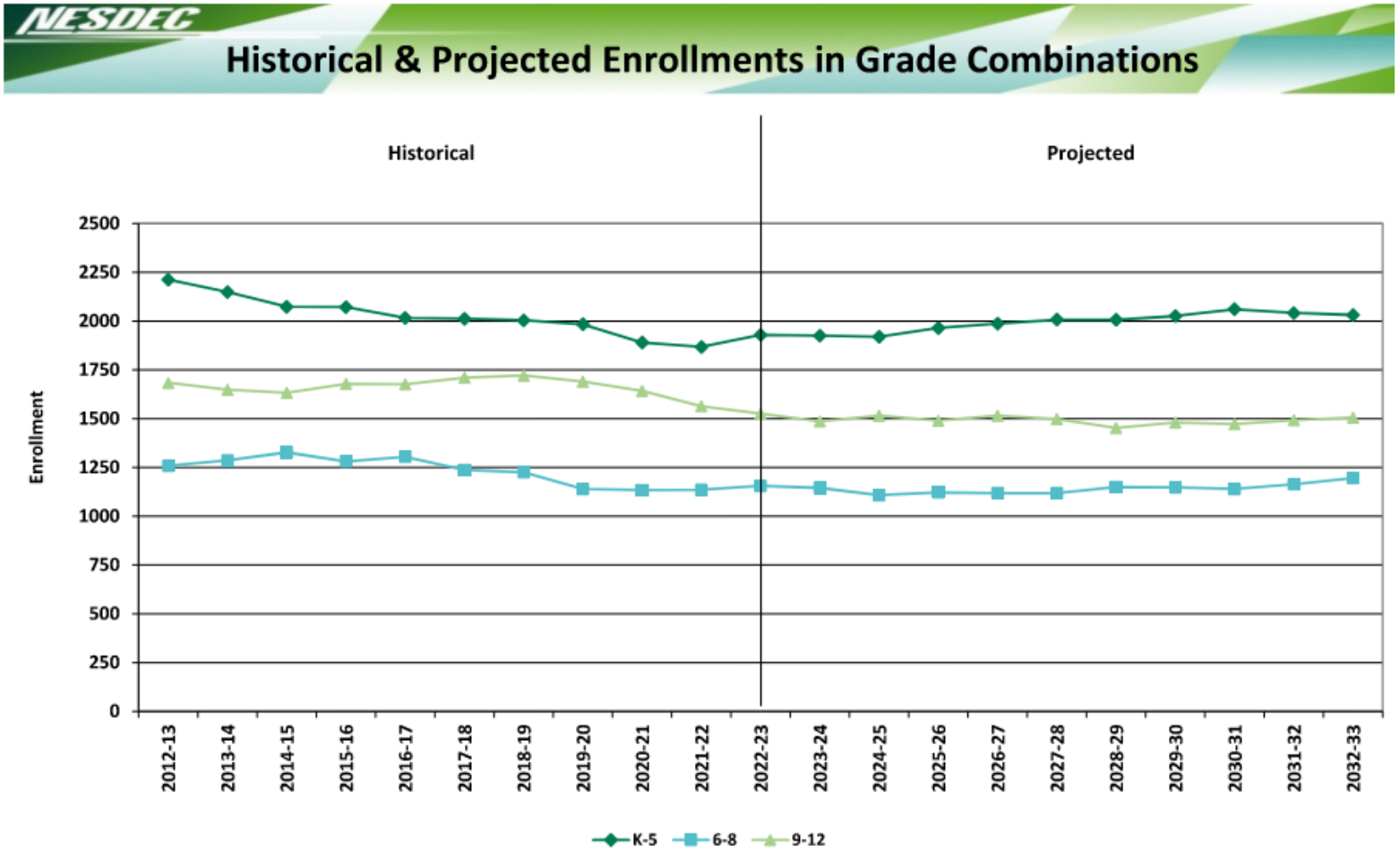
PK-2 1059 – 1015 = 44 / 3 schools = 15 students / grade / 3 grades = 5 student / grade

3-5 1077 – 1018 = 59 students / 3 schools = 20 students / 3 grades = 7 students / grade

6-8 1196 – 1155 = 41 students / 2 schools = 21 students / school / 3 grades = 7 students / grade

Enrollment Projections

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Project Goals

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Goals:

- Educational project goals of: Student collaboration; Experiential / hands-on learning; Creative thinking and problem solving; Multiple opportunities to engage in STEM learning (and STEAM)
- Meeting the needs of all learners through tiered instruction
- Minimize transitions across PreK – 12 student life; Review of grade level configurations and elementary and middle school districting
- Identify possible ways to create equity (vs equal) across learning environments including: Flexibility; Universal Design for Learning (UDL); Social Emotional Learning (SEL); Project and inquiry-based learning
- Improve environments for school safety and security
- Possible relocation of district administration offices

Project Tasks

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Tasks:

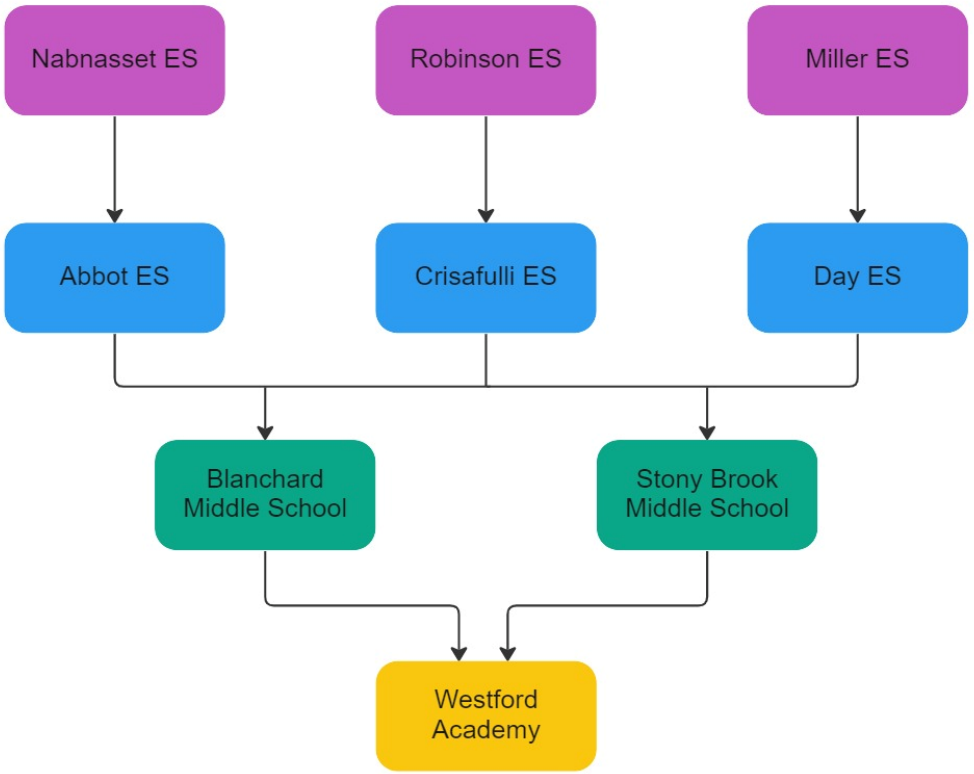
- Identification of critical maintenance items for building envelope and building engineering systems
- Identify possible renovations, and additions or building replacements for the next ten years
- Conduct community meetings to gather input from parents, local boards and community groups
- Assistance with development of a Statement of Interest to the Massachusetts School Building Authority (MSBA) for a potential capital

SECTION HEADER

Schools

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- **PreK - 2 Schools**
  - Colonel John Robinson School
  - Nabnasset Elementary School
  - Rita Miller Elementary School
- **3 - 5 Schools**
  - Abbot Elementary School
  - Crisafulli Elementary School
  - Norman Day Elementary School
- **Middle Schools**
  - Blanchard Middle School
  - Stony Brook Middle School
- **High School**
  - Westford Academy
- **Central Office / Millennium School**



Class Sizes Across Schools

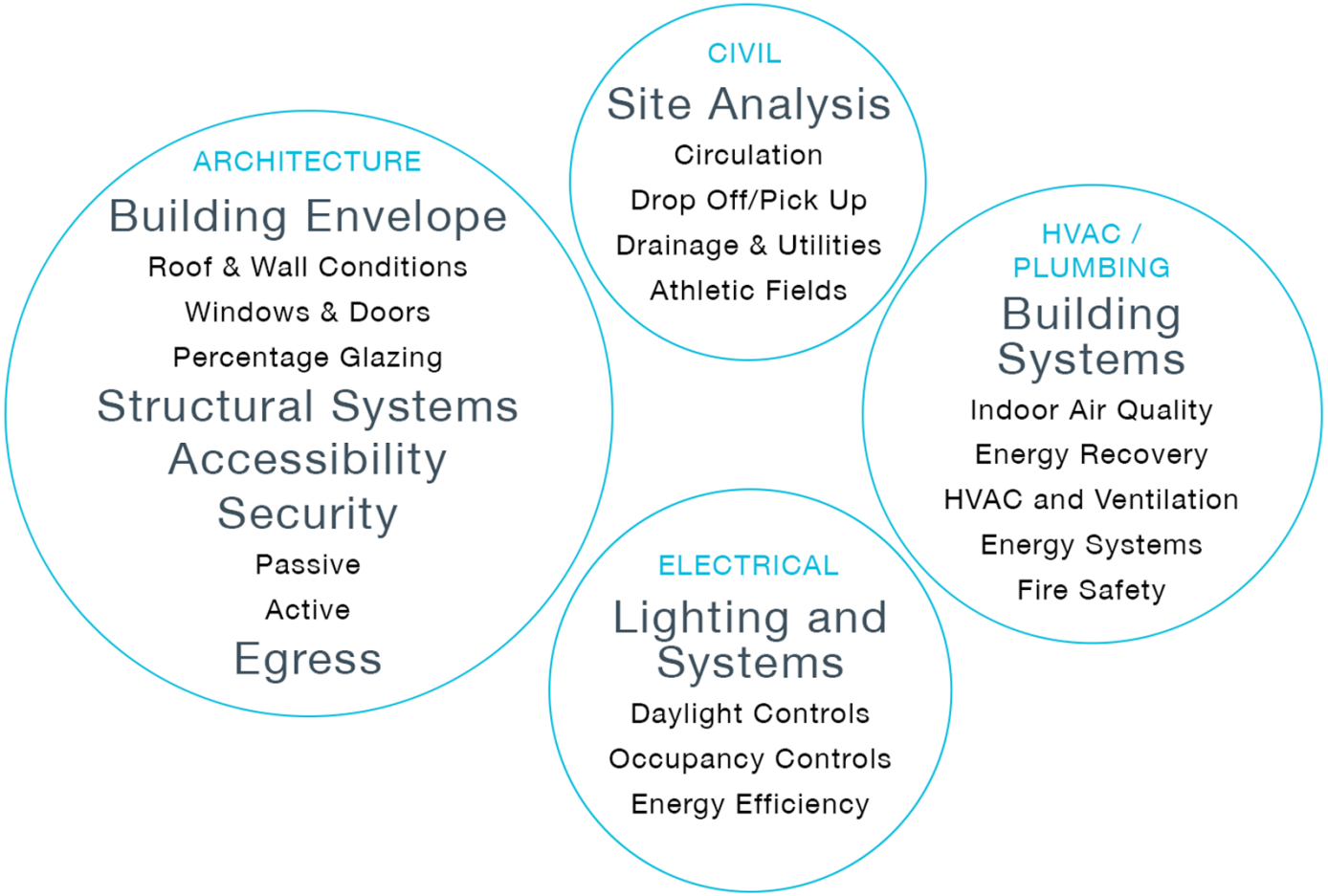
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PreK - 2 ELEMENTARY SCHOOLS								Totals
Colonel John Robinson School								
PK	15	16						31
K	21	21	22	21	20			105
1	21	22	21	22	22			108
2	20	20	20	21	19			100
Total								344
Average	19.25	19.75	21	21.33	20.33			20.867
Nabnasset Elementary School								
PK	13	19						32
K	21	21	21	21	21			105
1	20	20	21	20	21			102
2	20	20	20	20	19	19	19	137
Total								376
Average	18.5	20	20.67	20.33	20.33	19.00	19.00	20.077
Rita Miller Elementary School								
PK	1	14	16	6				37
K	20	20	18	20				78
1	19	18	19	17	20			93
2	23	23	22	22				90
Total								298
Average	20.67	20.33	19.67	19.67	20			20.077

3 - 5 ELEMENTARY SCHOOLS								
Abbot Elementary School								
3	16	17	17	16	18	17	17	118
4	20	20	20	20	20	19		119
5	18	18	17	18	18	18	18	125
Total								362
Average	18.00	18.33	18.00	18.00	18.67	27.00	17.50	18.1
Norman Day Elementary School								
3	21	21	21	20	20			103
4	20	20	21	21	21			103
5	20	20	19	20	20	20		119
Total								325
Average								20.313
Crisafulli Elementary								
3	20	20	20	21	20			101
4	20	20	20	19	21	20		120
5	17	20	21	19	20	19		116
Total								337
Average								19.824

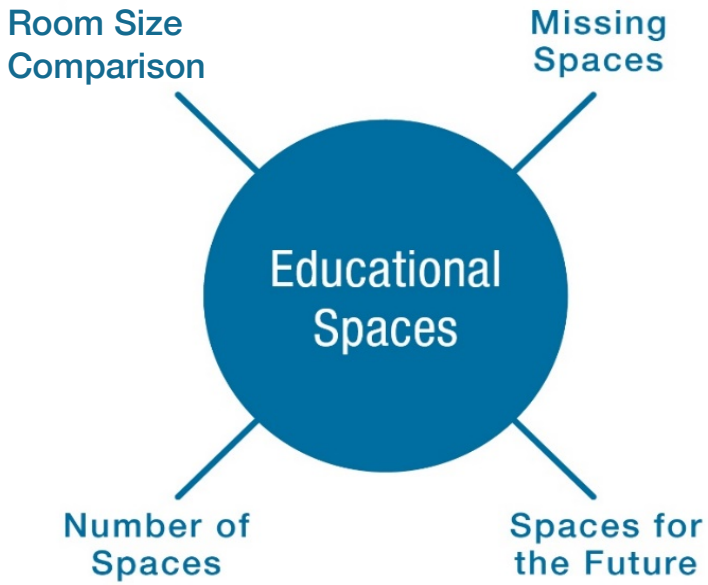
Elements of Facilities Assessments

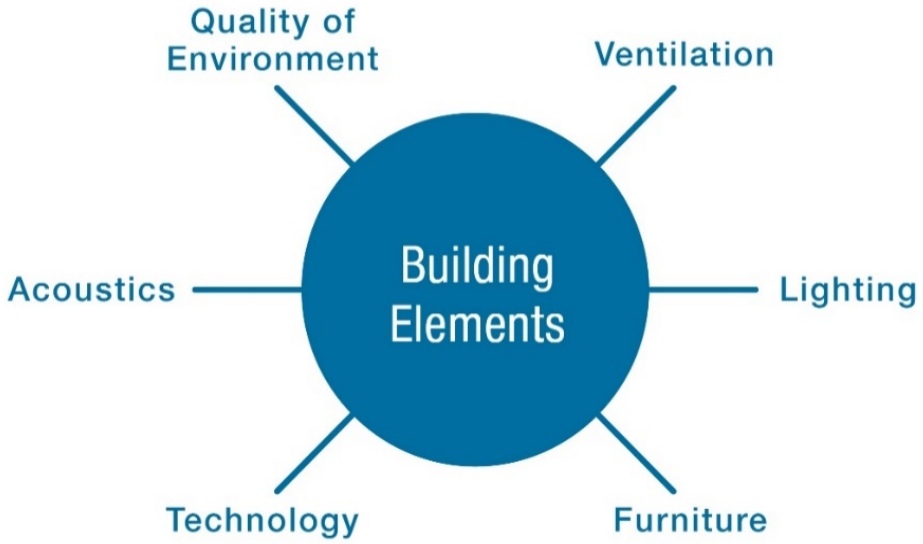
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Assessment Criteria





- Assume that schools were designed and constructed to applicable Codes at those times
- When the terms “inadequate and obsolete” systems are used, it does not imply that they need to be replaced, rather they are beyond the anticipated life of the component or system. This is applicable if the building were to be renovated.

Findings for Facilities Assessments – Day ES

SMMA

» **Norman Day Elementary School**

» The two-story Day Elementary School was designed / opened in 1964 – 65 (59 years old) as a middle school. It was converted to an elementary school in 2003. A one-story classroom addition was constructed in 1998. The school currently serves 325 students in grades 3 – 5.

1. **Educational Effectiveness**

   a. Typical classrooms are approximately 100 sf smaller than the newer Miller and Crisafulli elementary schools. Three classrooms are well undersized. The classrooms are organized around double and single loaded corridors. The corridors in the original building are lined with lockers intended for middle schoolers, too tall for elementary schoolers. The number of lockers are in excess of what is needed.

   b. The gymnasium is undersized by MSBA guidelines

   c. Building Elements in general:

      i. Quality of environment – well maintained and pleasant

      ii. Ventilation – adequate - using unit ventilators

      iii. Lighting – natural and artificial light appears adequate

      iv. Furniture – a combination of hard plastic chairs, soft plastic chairs, individual desk and collaborative tables.

      v. Technology – all teaching spaces include projection technology. Infrastructure wiring is out of date, though appears and is reported as adequate

      vi. Acoustics – appears to be adequate



Findings for Facilities Assessments – Day ES

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2. **Building Condition Issues – requiring capital expenditures**
   a. Most engineering systems are beyond their useful life expectancy
   b. Obsolete mechanical H&V system
   c. Lack of air conditioning (frequently too hot / too cold for teaching and learning)
   d. Inadequate and obsolete electrical systems
   e. Inadequate and obsolete plumbing systems
   f. Lack of automatic fire protection system
   g. Structural – building predates the requirements for seismic lateral bracing. This would be an issue if a major renovation were to be considered.

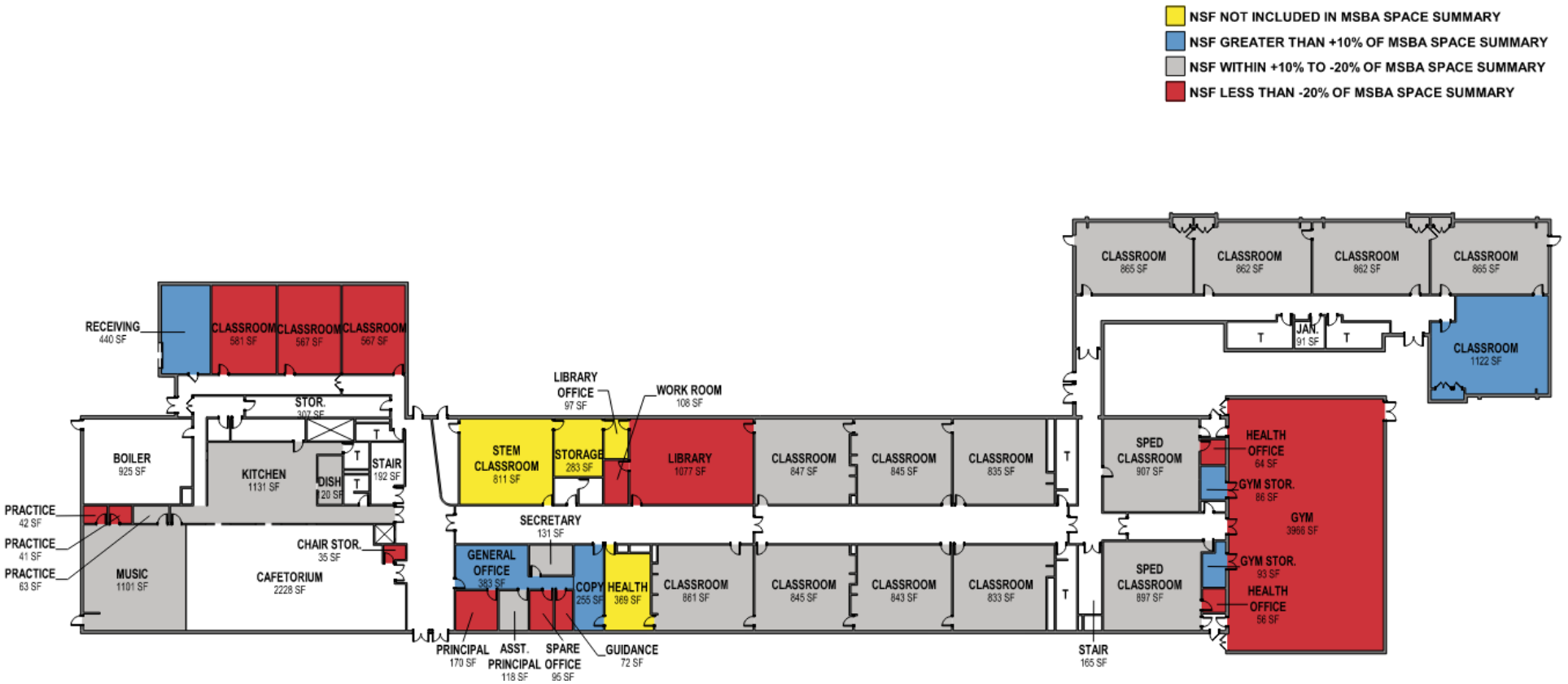
3. **Minor Issues – may be accomplished with operational funding**
   a. The one area of greatest need is for small group rooms within grade level areas for student collaboration and to serve Special Education students for "pull over" services close to their home rooms rather than pull out to further away rooms. This might be possible by reconfiguring SPED classrooms.
   b. Replace hard plastic chairs with soft plastic, ergonomic, light weight chairs



COMPARISON PLANS

Day School

SMMA



FIRST FLOOR PLAN

Comparison Plans

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Comparison Plans (red plans): in the past, we have used the criteria of 10% above and 10% below MSBA guidelines. MSBA felt that the 10% below was too tight of an interpretation so we have changed to 20% below. This is how the plans have been developed to date. Which criteria would Westford prefer we use?

Examples:

MSBA Elementary School general classroom 950 sf min 900 – max 1,000

20% low could be interpreted as: 950 x .8 = 760 sf

10% low could be interpreted as: 950 x .9 = 855 sf

For comparison purposes, the classrooms in Crisafulli and Miller range from 945 to 975

MSBA Middle School general classroom 950 sf min 850 – max 950

20% low could be interpreted as: 950 x .8 = 760 sf

10% low could be interpreted as: 950 x .9 = 855 sf

For comparison purposes, the classrooms in Stoney Brook range from ___ to ___

MSBA High School general classroom 850 sf min 825 – max 950

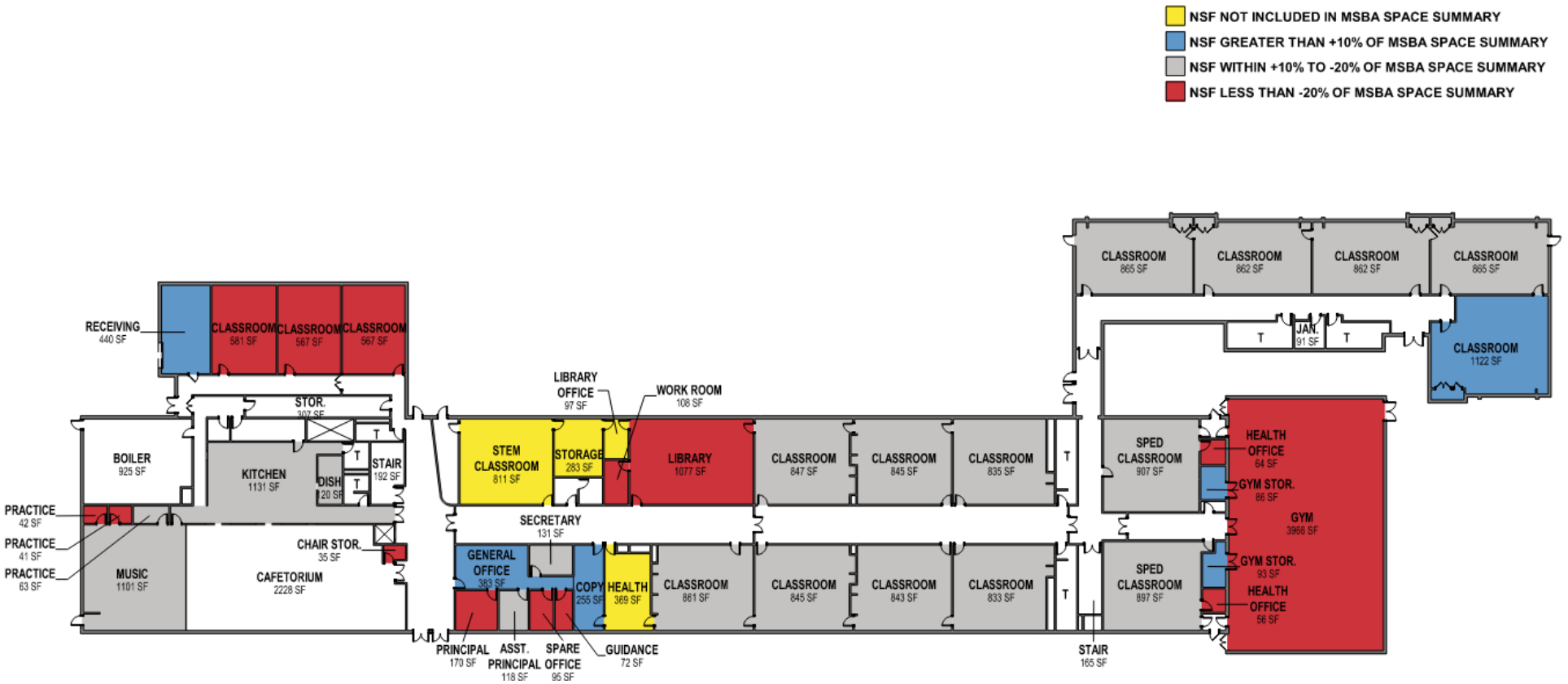
20% low could be interpreted as: 850 x .8 = 680 sf

10% low could be interpreted as: 850 x .9 = 765 sf

COMPARISON PLANS

Day School

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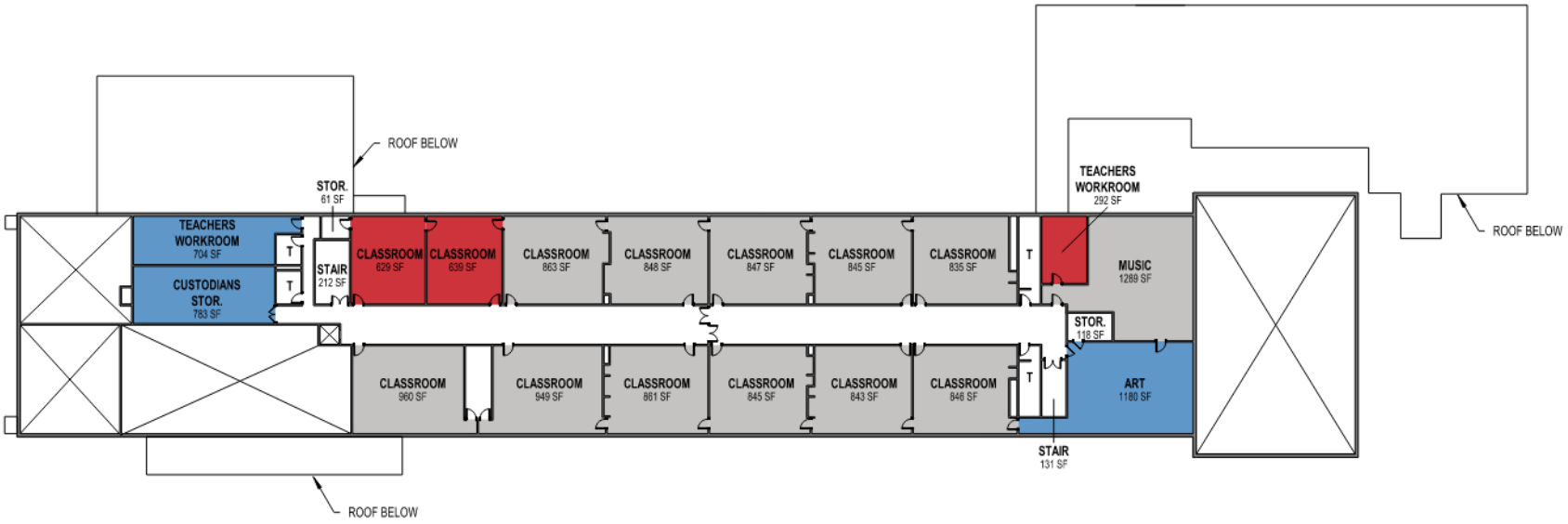


FIRST FLOOR PLAN

COMPARISON PLANS

Day School

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SECOND FLOOR PLAN

Schedule of Meetings

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- Community Presentation 1 – Feb 2023
  - Grade configuration discussion
- Community Presentation 2 – March 2023
  - Preliminary Master Plan options discussion
- Community Presentation 3 – May 2023
  - Final Master Plan options discussion





Next Steps

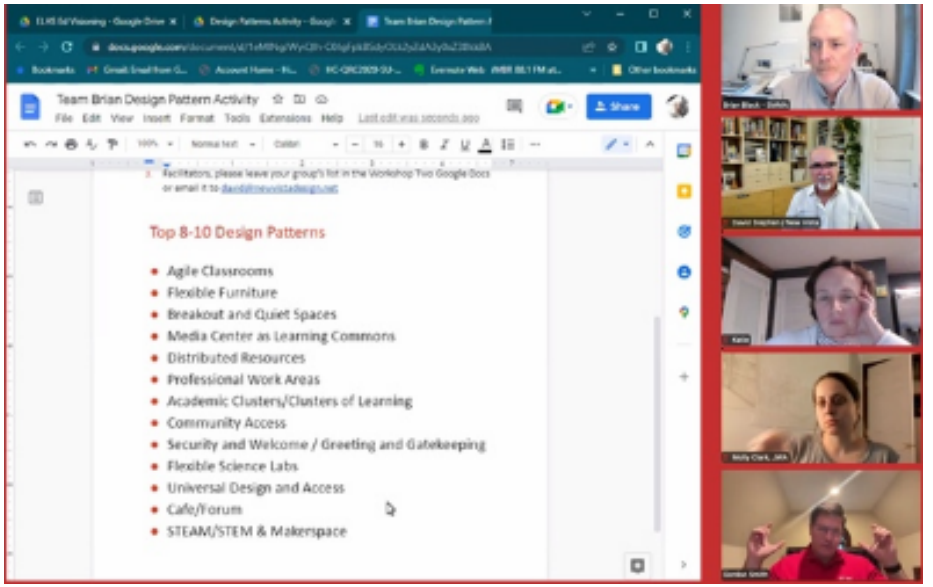
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- Community Presentation 1 – Feb 2023
  - *Grade configuration discussion*
- Develop Master Plan Options
- Develop 10 Year Capital Plan
- Present Master Plan Options to Leadership and Community
- Develop Conceptual Cost Models

Community Presentation #1 Agenda

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Mentimeter Tool

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Share your Blue Sky aspirational ideas for the renovated and/or new ELHS facility here:

Issue or Question

Interdisciplinary teacher planning rooms where interdisciplinary projects can be launched

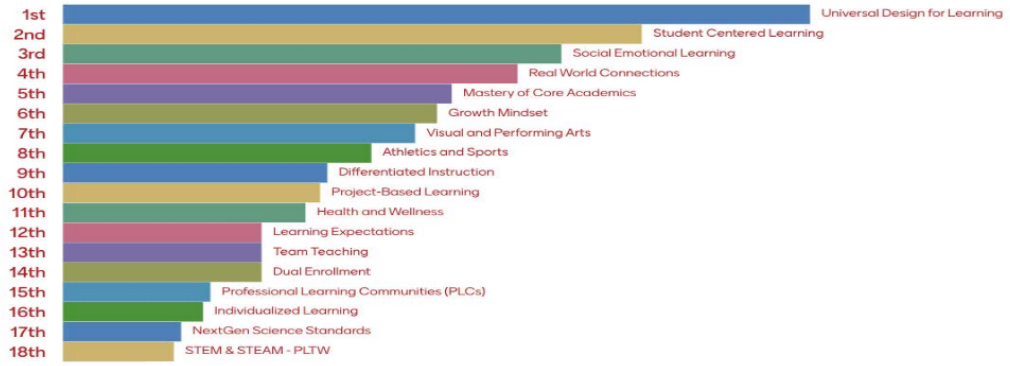
Roof top garden! Studies have been done to show how they are good to promote good social emotional well being. They are also good for the environment and can be used as a learning space

Participant's Input

STEAM Lab where science, math, robotics and the arts can come together. Maker spaces available for all departments.

Spaces where real world learning and ideas are all around the students

I would really love to see a beautiful outdoor learning space but it really needs to be connected to the school, covered but with seating that is usable. Rocks are not condusive to learning!A central library with fiction books/media and group space



What 3 words best describe the culture of teaching and learning at ELHS?



Elementary Schools Grade Configuration Issues

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Educational and Social/Emotional Impacts of Student Transitions

Physical Impacts of building components:

- Toilet fixtures
- Lockers
- Casework
- Playgrounds

Bussing

Redistricting

PreK - 2 Schools

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

3 - 5 Schools

- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

Elementary Schools Grade Configuration

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PreK – 2 & 3-5 (current)

Pros **Cons**

PreK - 5

Pros **Cons**

Early Childhood PreK-K, 1-5

Pros **Cons**

PreK - 2 Schools

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

3 - 5 Schools

- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

Elementary Schools Grade Configuration

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Mentimeter Questions

PreK-2 & 3-5 Pros

PreK-2 & 3-5 Cons

PreK-5 Pros

PreK-5 Cons

PreK-K & 1-5 Pros

PreK-K & 1-5 Cons

PreK - 2 Schools

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

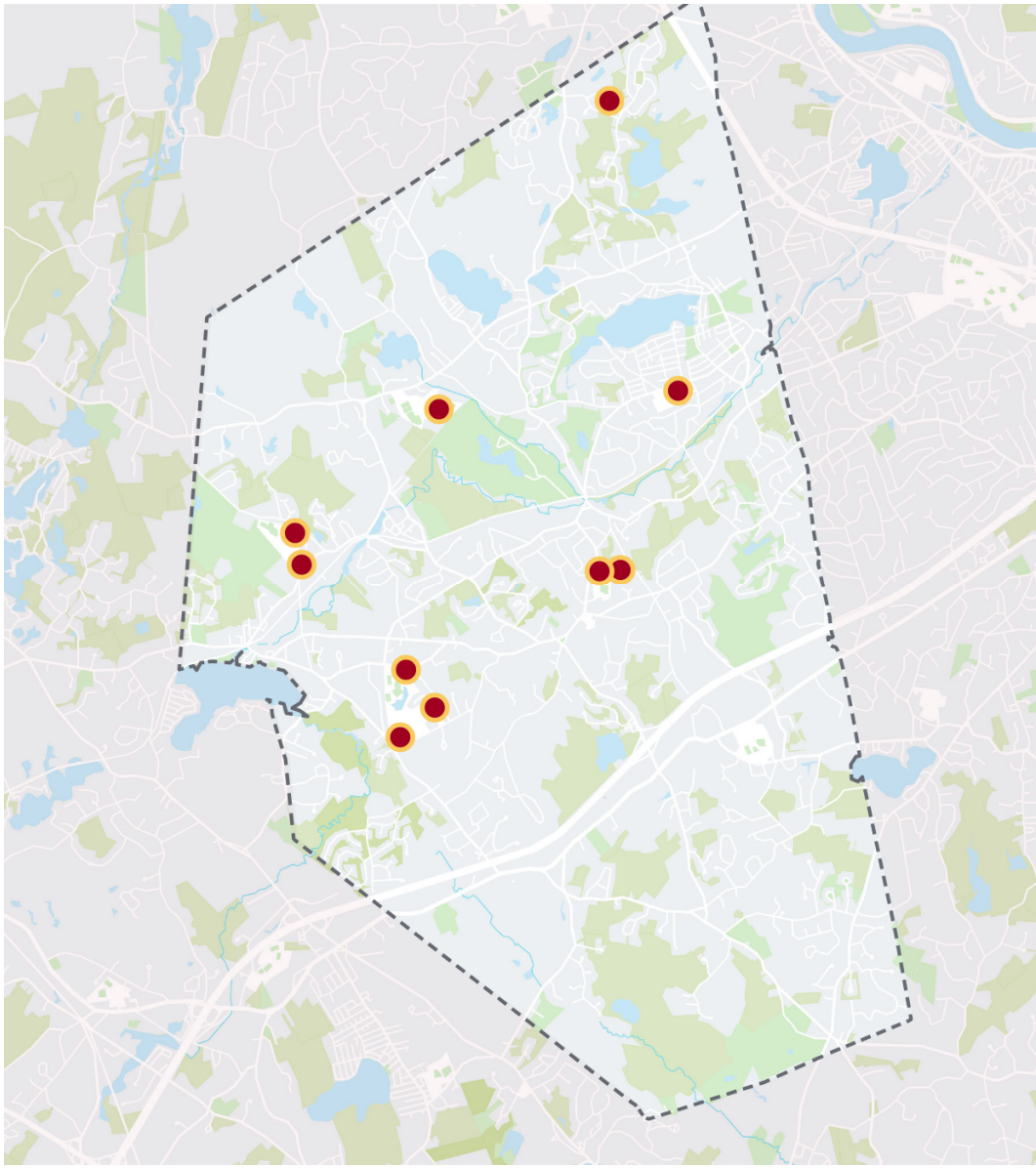
3 - 5 Schools

- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

Preference of Configuration

☐ PreK-2 / 3-5 ☐ PreK-5 ☐ PreK-K / 1-5

Discussion



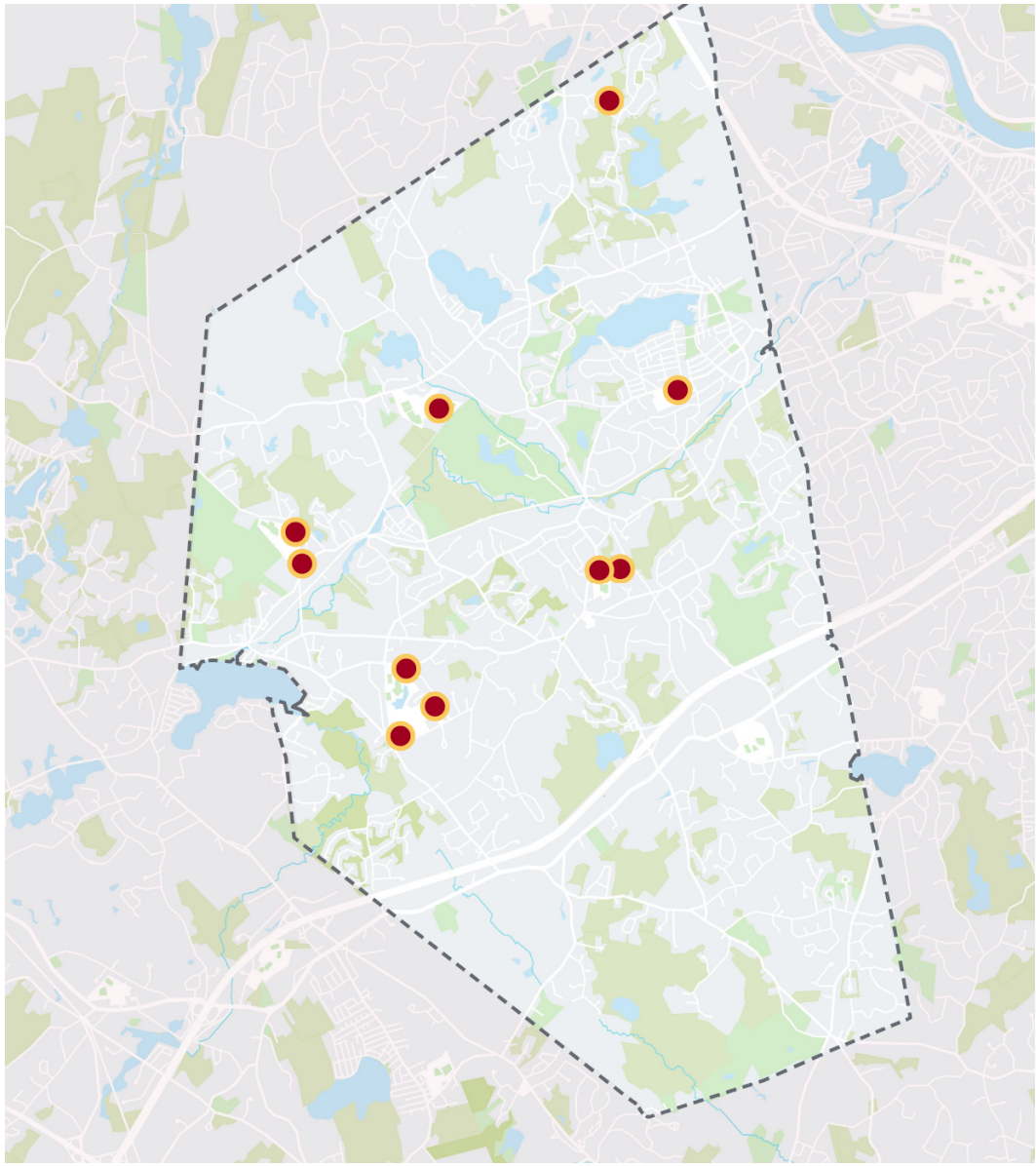
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Westford Public Schools

Westford Public Schools Master Plan

Elementary Grades Options Discussion

04.24.2023



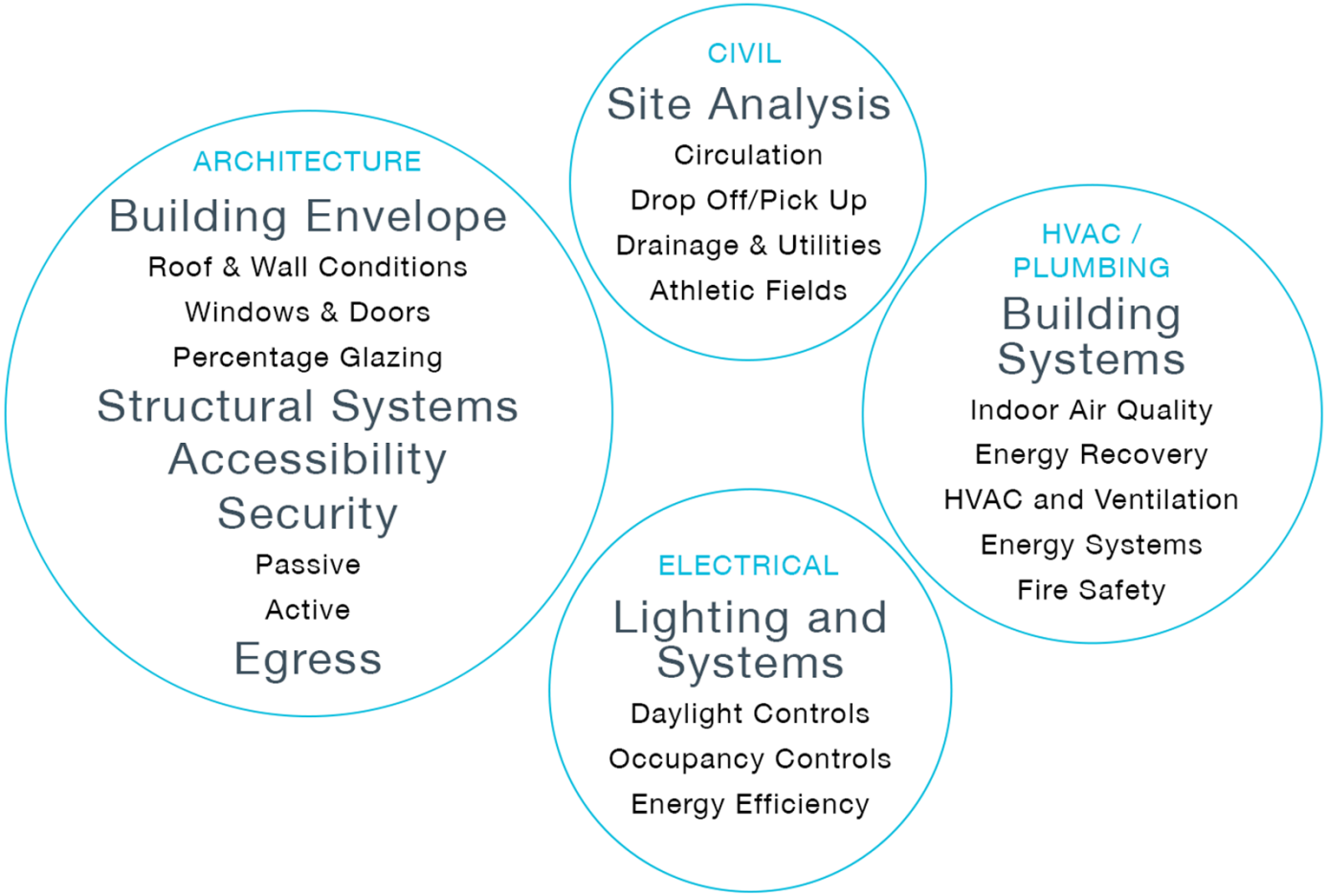
Agenda

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- Tasks Completed to Date
  - Facilities Assessment
  - Educational Adequacy
  - MSBA Statement of Interest
- Long Term Options: 1, 2 & 3
- Next Steps
  - Community Discussion #2
  - Conceptual Cost Models (2023 $)

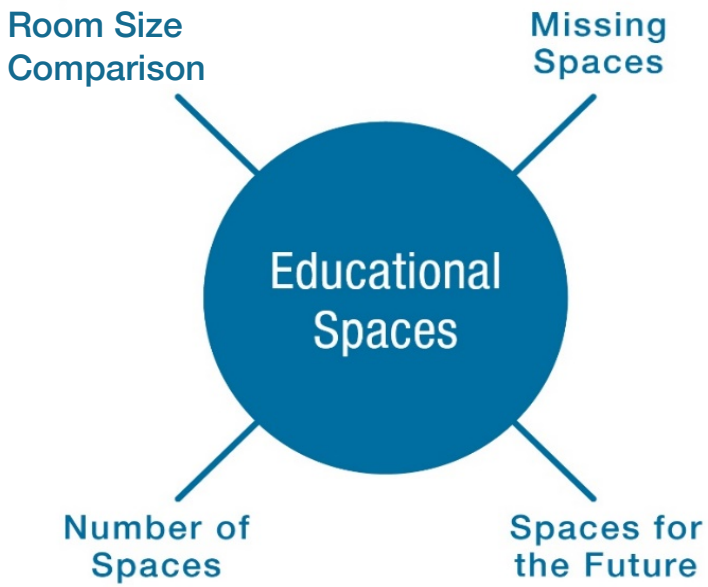
Elements of Facilities Assessments

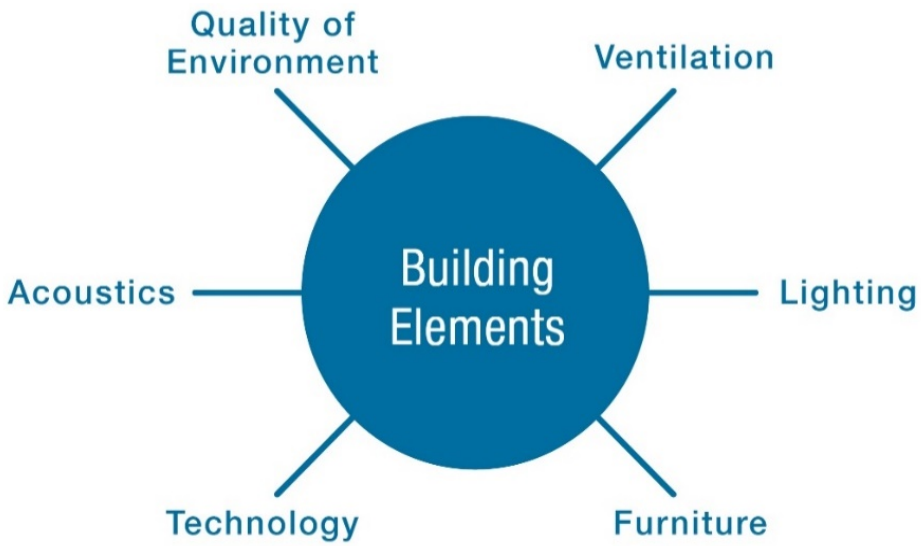
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Educational Effectiveness Criteria





Schools Identified as in Need of Comprehensive Renovations or more

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Abbot Elementary School

Colonel John Robinson School

Norman Day Elementary School







MSBA Statement of Interest (SOI)

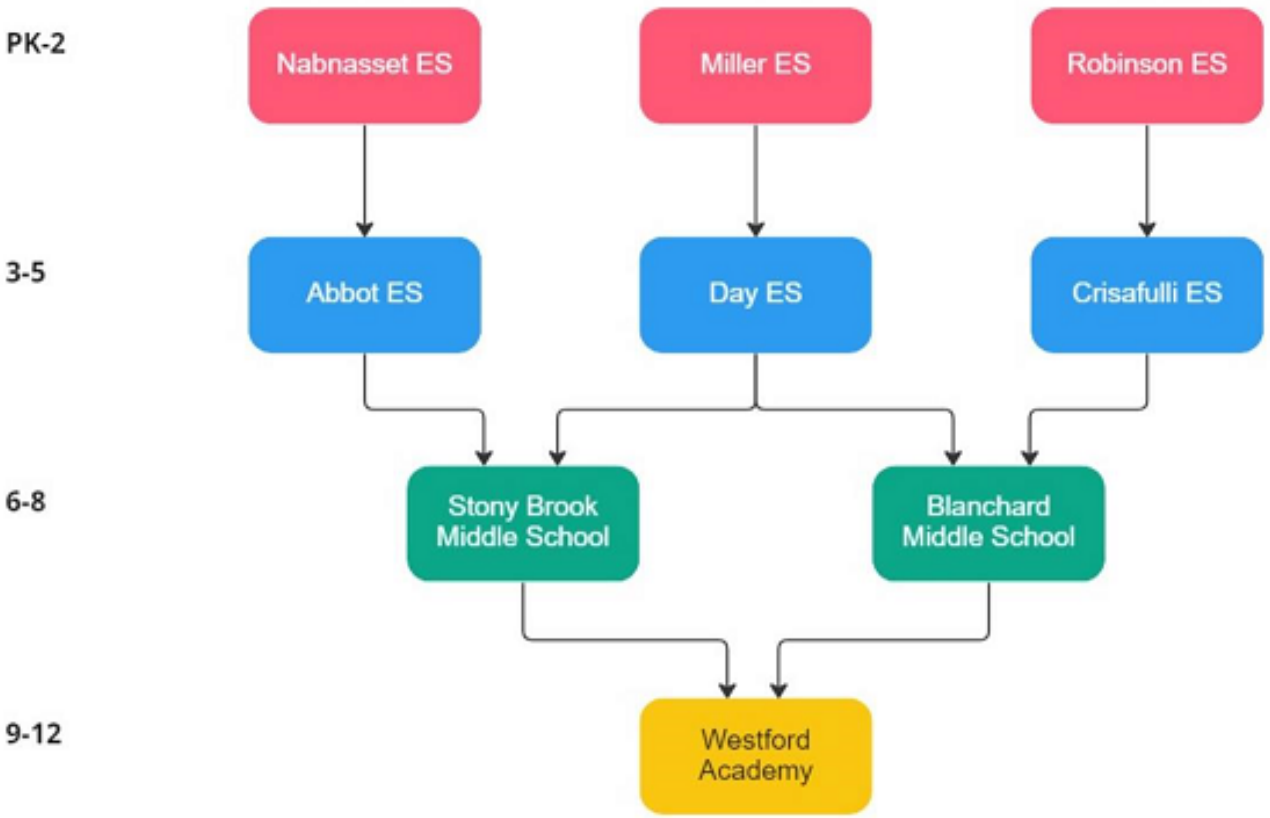
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The goals of this MSBA review include:

- To determine those schools that are the most urgent and needy relative to the pool of SOI submittals filed in that year. To collaborate with districts on the potential project that they have identified as the priority school
- To understand the range of options each district faces when planning for district-wide educational facilities
- Colonel John Robinson School – Comprehensive renovation or replacement, Statement of Interest (SOI) submitted to the MSBA 4/14/2023

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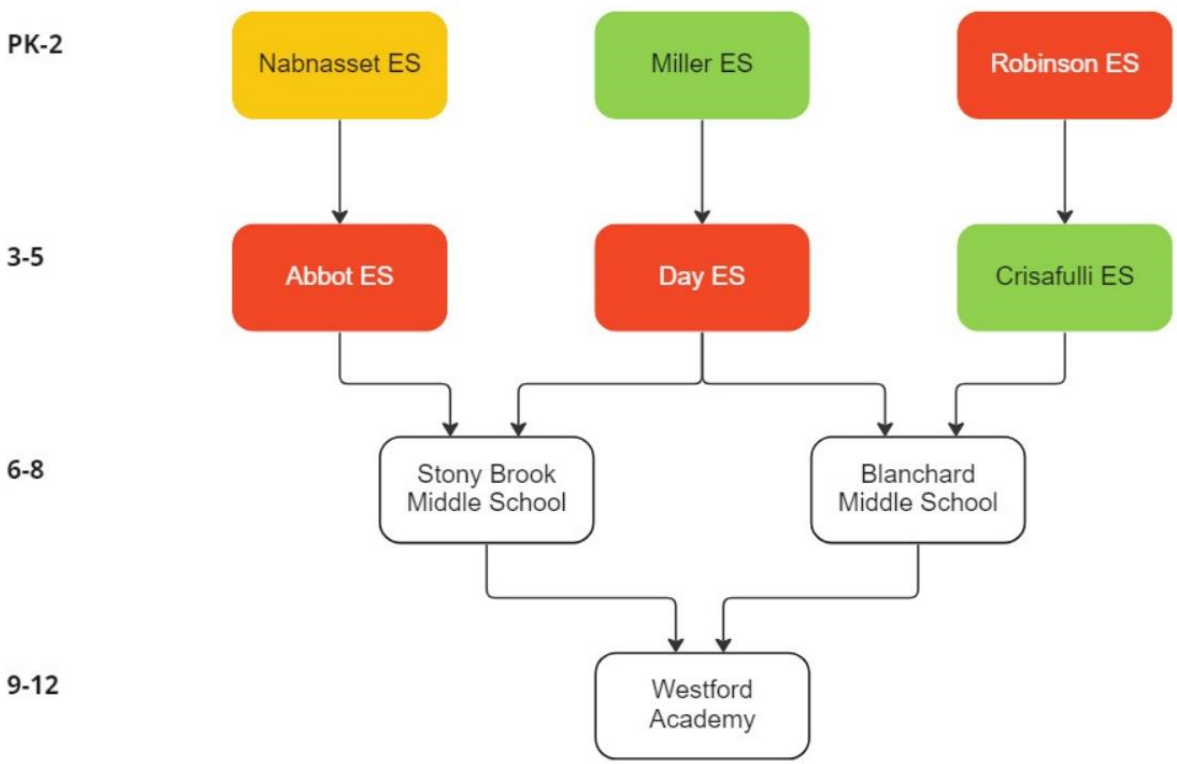
Current Grade Configuration

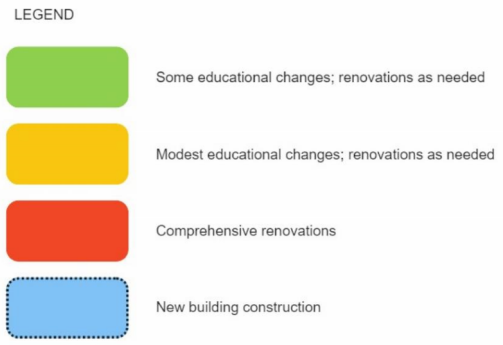


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Option 1

Current Grade Configuration





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Option 1

Status Quo – Renovate or affect varying degrees of physical upgrades and educational changes

PreK - 2 Schools

- Colonel John **Robinson** School – Comprehensive renovation or replacement **(Priority 1),** Statement of Interest (SOI) submitted to the MSBA 4/14/2023
- **Nabnasset** Elementary School – some educational changes; renovations as needed
- **Rita Miller** Elementary School - modest educational changes

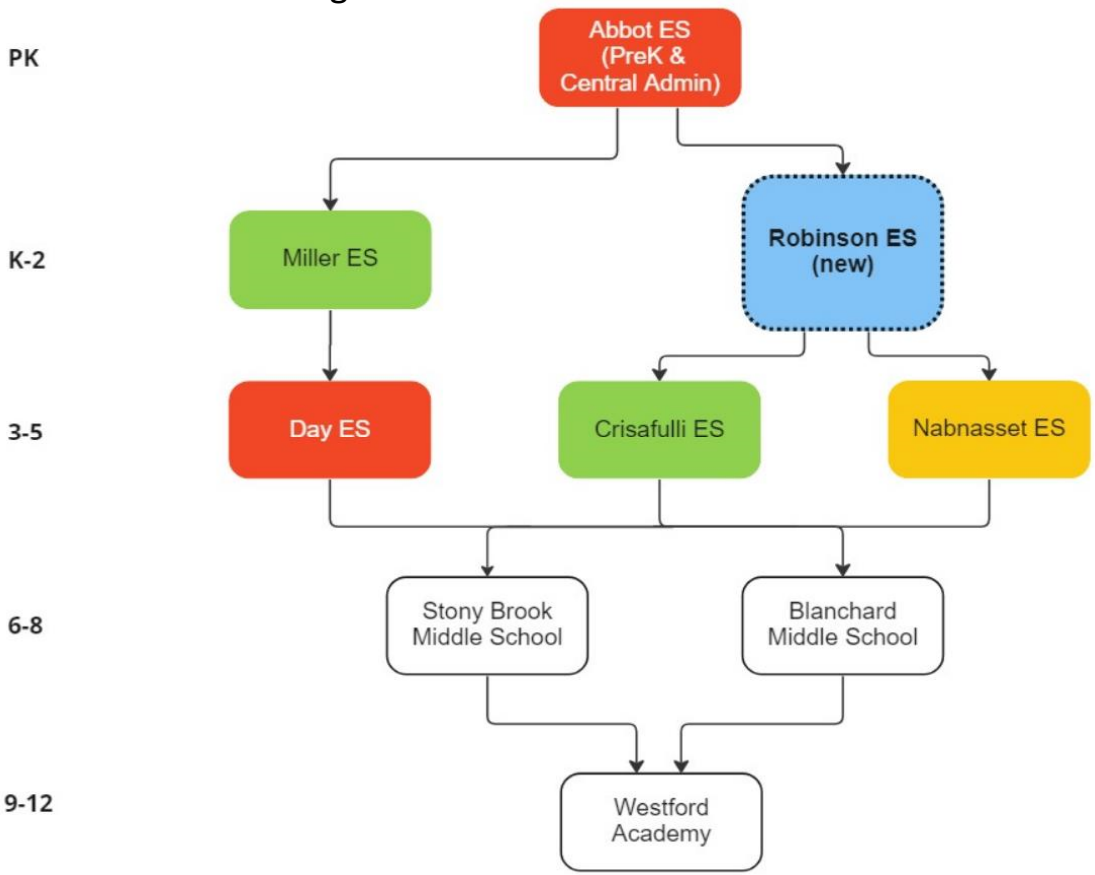
3 - 5 Schools

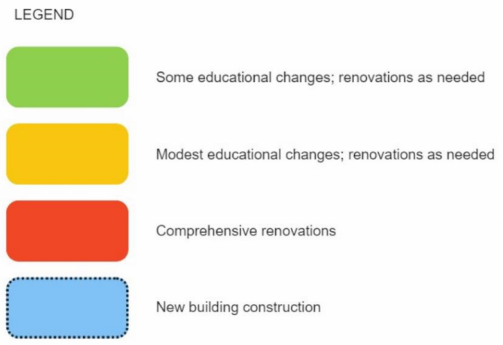
- **Abbot** Elementary School - Comprehensive renovation **(Priority 2)**
- **Norman Day** Elementary School – Comprehensive or substantial renovations **(Priority 3)**
- **Crisafulli** Elementary School - modest educational changes

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Option 2

Current Grade Configuration





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Option 2 - One New School w/ Current Grade Configuration

K - 2 Schools

- Colonel John **Robinson School** – Replace with a large new building (K-2). Location to be determined, to replace Robinson and Nabnasset
- **Nabnasset** Elementary School – converted to a 3 - 5 school
- **Rita Miller** Elementary School - modest educational changes

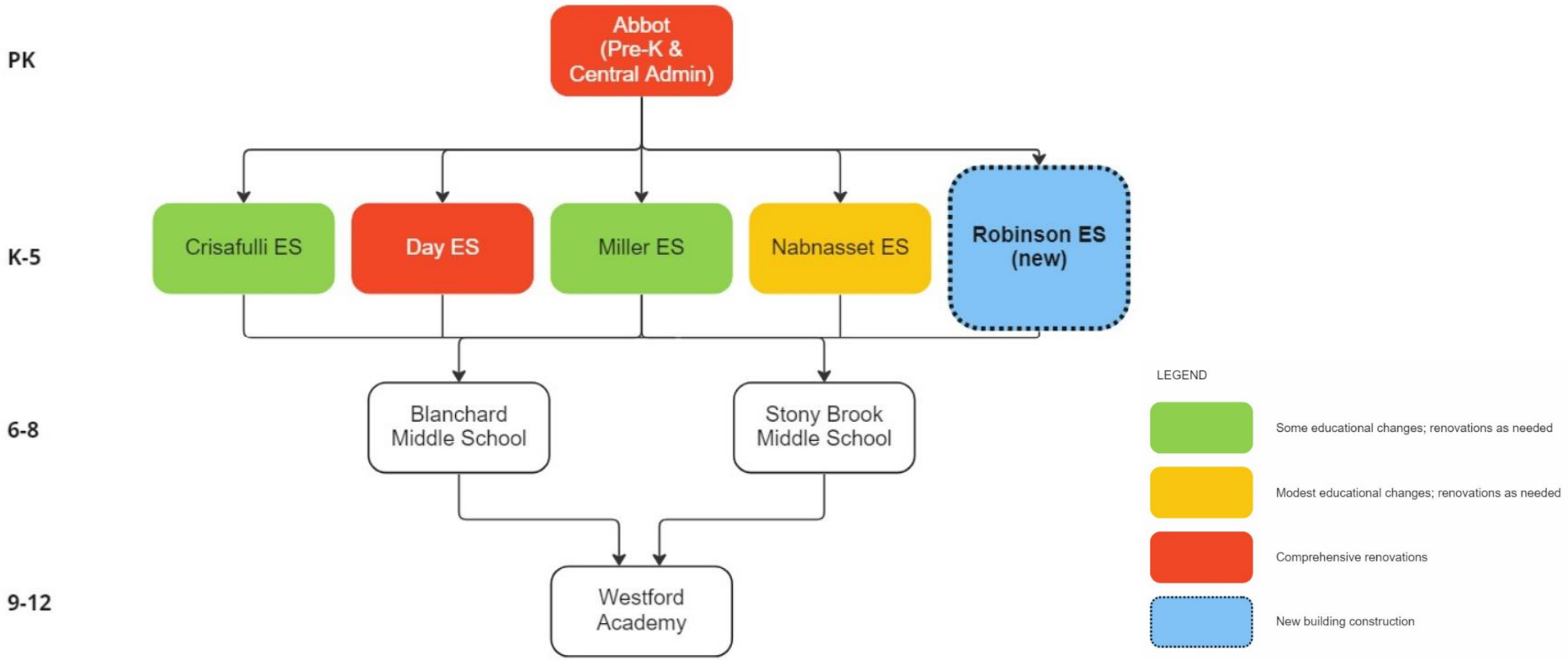
3 - 5 Schools

- **Abbot** Elementary School – renovated to serve all PreK and Central Office Administration
- **Norman Day** Elementary School – Comprehensive or substantial renovations
- **Crisafulli** Elementary School - modest educational changes
- **Nabnasset** Elementary School – converted to a 3 - 5 school, some educational changes; renovations as needed

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Option 3

Alternate Grade Configuration: PreK, K-5



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Option 3 - K-5- One New School to Replace Two

K - 5 Schools

- Colonel John **Robinson School** – Replace with a large new building (K-5).
  Location to be determined, to replace Robinson and Abbot populations. This could be a single school or 2 schools in a single building but with their own identities.
- **Nabnasset** Elementary School – some educational changes; renovations as needed for reconfiguration and repairs
- **Rita Miller** Elementary School - modest educational changes, renovations as needed for reconfiguration
- **Abbot** Building – renovated to serve all PreK and Central Office Administration
- **Norman Day** Elementary School – Comprehensive or substantial renovations, renovations as needed for reconfiguration
- **Crisafulli** Elementary School - modest educational changes, renovations as needed for reconfiguration

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Next Steps

- Community Meeting #2 - Options
- Develop a conceptual cost model using current, relevant cost-per-square foot information for each of the three conceptual master plan alternatives, the cost model will include construction costs and indirect costs normally part of a Massachusetts school project
- Assemble Final Report

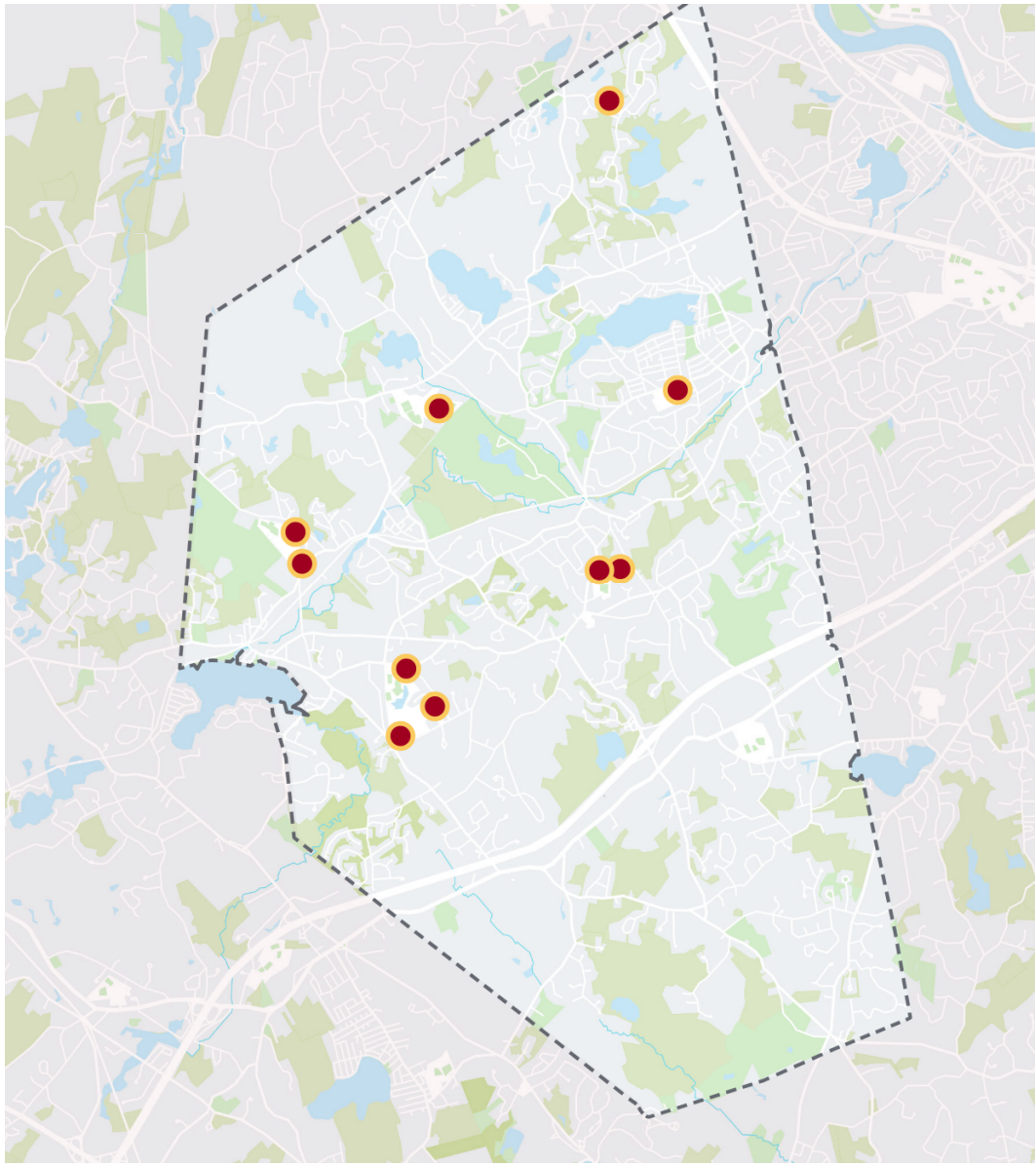
SMMA

Westford Public Schools

Westford Public Schools Master Plan

School Committee Update

06.20.2023



SMMA

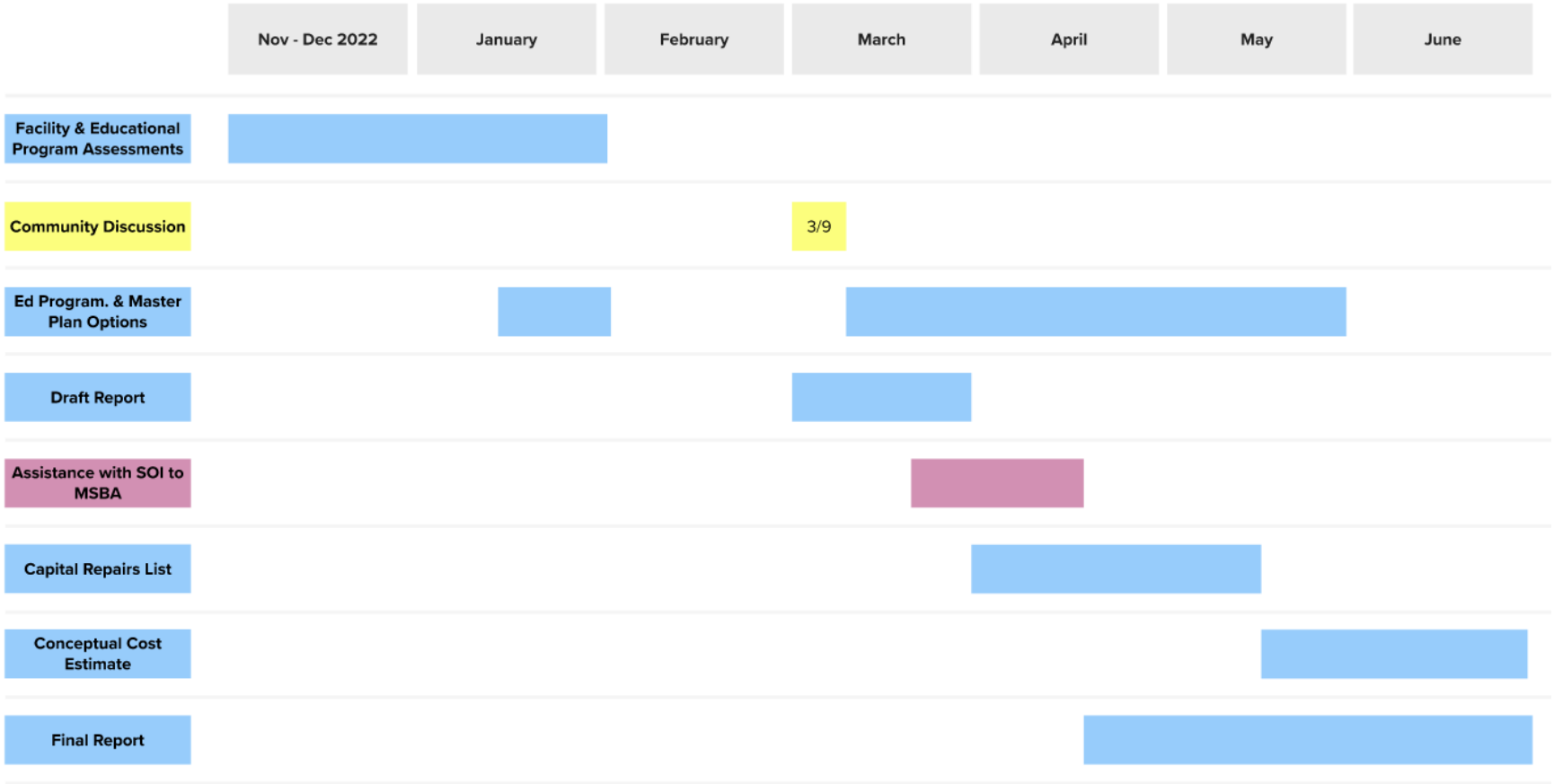
Master Plan Study Scope & Status

- Facilities Assessment of all School Department Buildings
  - Complete – 450 page +/- Report
  - Identification of Capital Maintenance Items
- Educational Adequacy Assessment
- Long Term Options Development: 1, 2 & 3
- MSBA Statement of Interest submitted 4/14/23
- Conceptual Costs Models (2023 $) – in Draft form
- Assemble Final Report - Outstanding

Study Schedule

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06.20.23 - Schedule Recap



Big Picture

SMMA

- Projected enrollments indicate a stable population for the next 10 years
- All schools use all classrooms and other teaching environments
- Three schools designated as in need of Comprehensive Renovation or Replacement
- Potential new school may replace multiple school communities, but building would likely be repurposed
- Grade configuration change is possible but could be multiple variables to if and when
- Numerous Capital Maintenance items across the district

What This Study Yields – Focus on Elementary Schools

SMMA

A menu of options by building that are dependent upon the earliest decisions:

When will the Robinson School (SOI) be accepted into the MSBA pipeline? If so:

The resulting MSBA study will explore

- What might be the resulting schedule?
- What might be the design size? 350 students or 700 students?
- What will the grade configuration be?

Schools Identified in Need of Replacement or Comprehensive Renovations

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Oldest:

- Abbot Elementary School
- Colonel John Robinson School
- Norman Day Elementary School

(Capital Maintenance Repairs also identified)







Schools Identified in need of Some Renovations

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Varying Ages:

- Nabnasset Elementary School
- Blanchard Middle School
- Westford Academy

(Identified in Capital Maintenance Repairs)







Capital Maintenance Repairs - All

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- **PreK - 2 Schools**
  - Colonel John Robinson School
  - Nabnasset Elementary School
  - Rita Miller Elementary School
- **3 - 5 Schools**
  - Abbot Elementary School
  - Crisafulli Elementary School
  - Norman Day Elementary School
- **Middle Schools**
  - Blanchard Middle School
  - Stony Brook Middle School
- **High School**
  - Westford Academy



















Day Elementary School – Case Study Options

SMMA

Building Replacement: Size TBD, Timing TBD - $52,000,000

Building Comprehensive Renovation: Timing TBD - $41,000,000

Capital Maintenance - $24,000,000 (full list)

- Prioritize Items needed while waiting for replacement or renovation
- Determine schedule

(2023 $)

Day Elementary School Capital Maintenance Items

SMMA

Building Components or Systems Repairs or Replacement – 45 line Items

Most Important: (19 line items) examples:

- Replace Roof
- Replace lift with elevator
- Renovate toilet rooms w/ handicapped accessible fixtures
- Install sprinkler system
- New HVAC system
- New automatic temperature controls
- New clock / Public Address system

System Wide Components Costs

SMMA

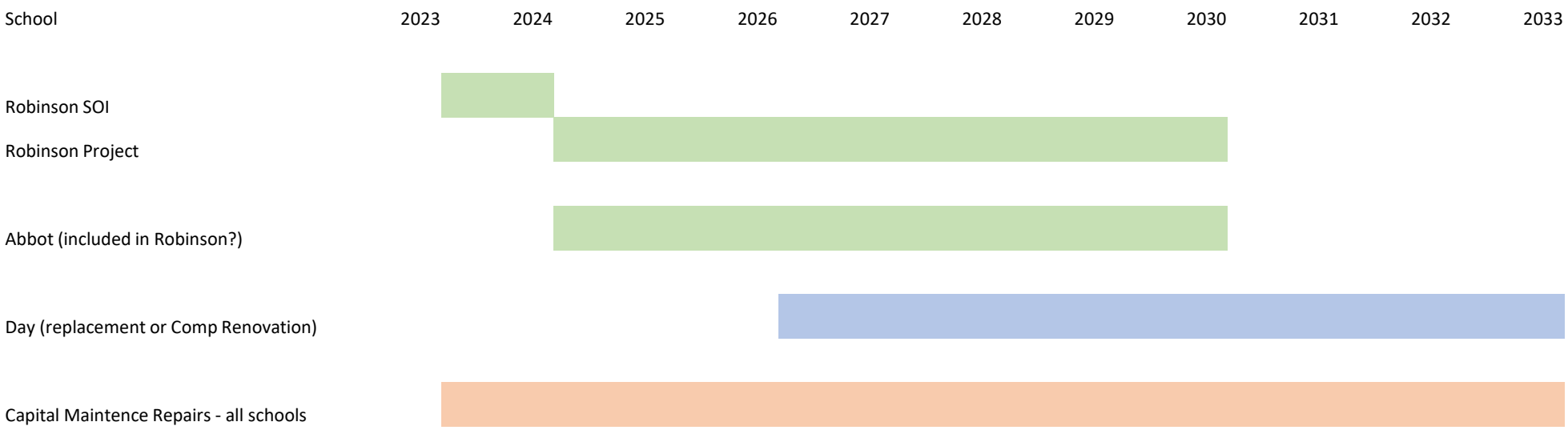
Options (variables)

• New schools for 350 students	$52,000,000
• New schools for 700 students	$89,000,000
• Comprehensive Renovations	$39,000,000 - $41,000,000
• Capital Maintenance Repairs	$150,000,000

(2023 $)

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Speculative Schedule



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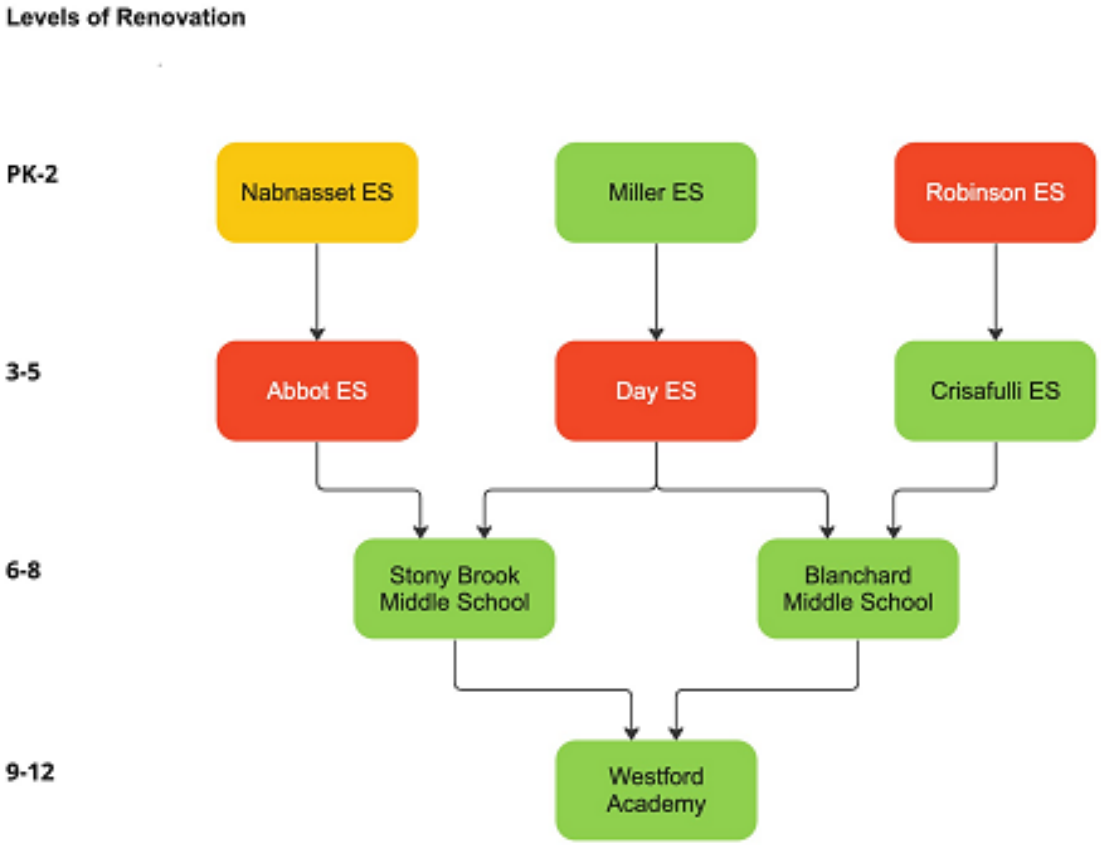
Final Steps

- Refine conceptual cost model
- Complete Report

Discussion

Current District Configuration

SMMA



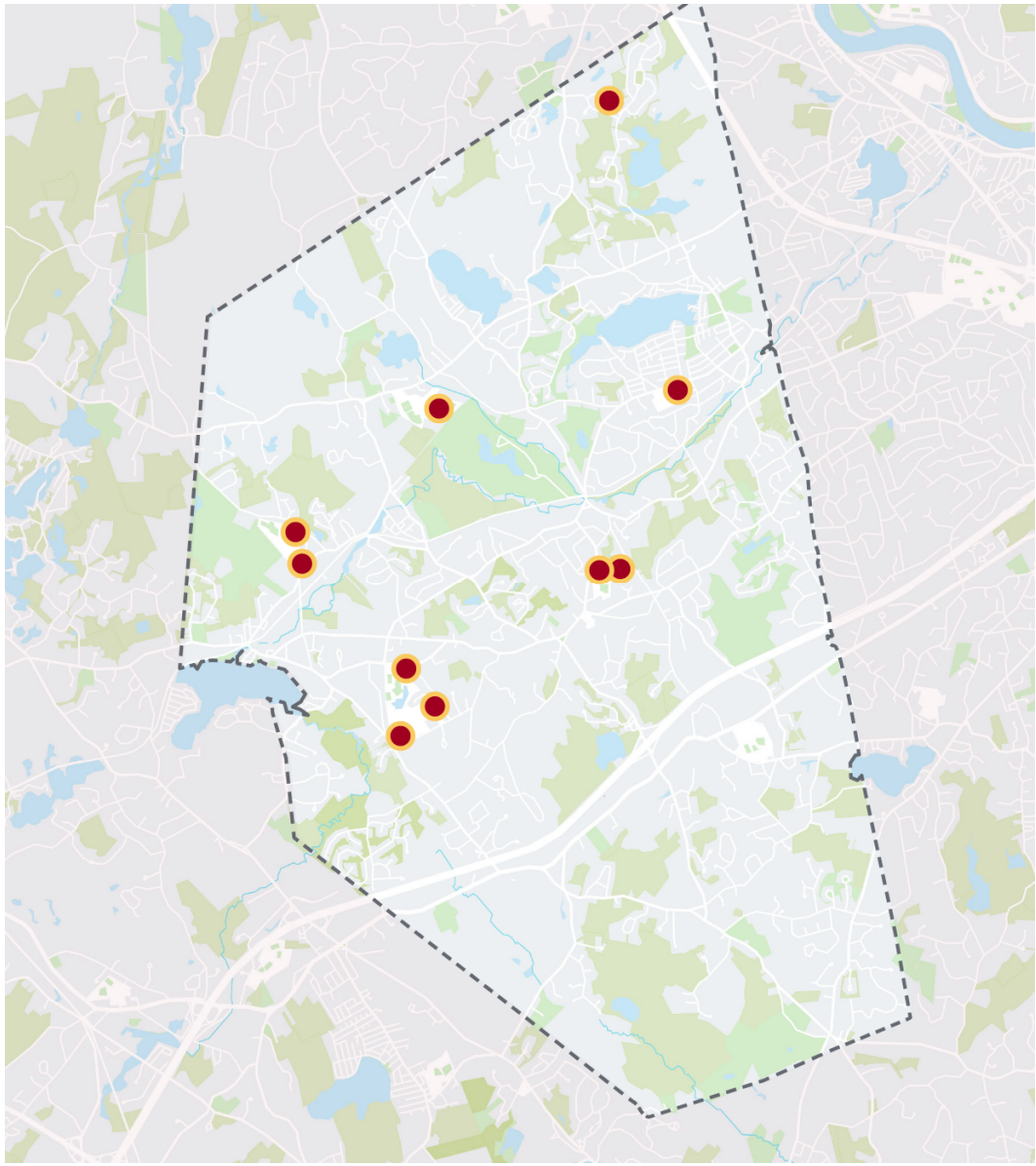
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Westford Public Schools

Westford Public Schools Master Plan

MSBA Statement of Interest Discussion

03.27.2023



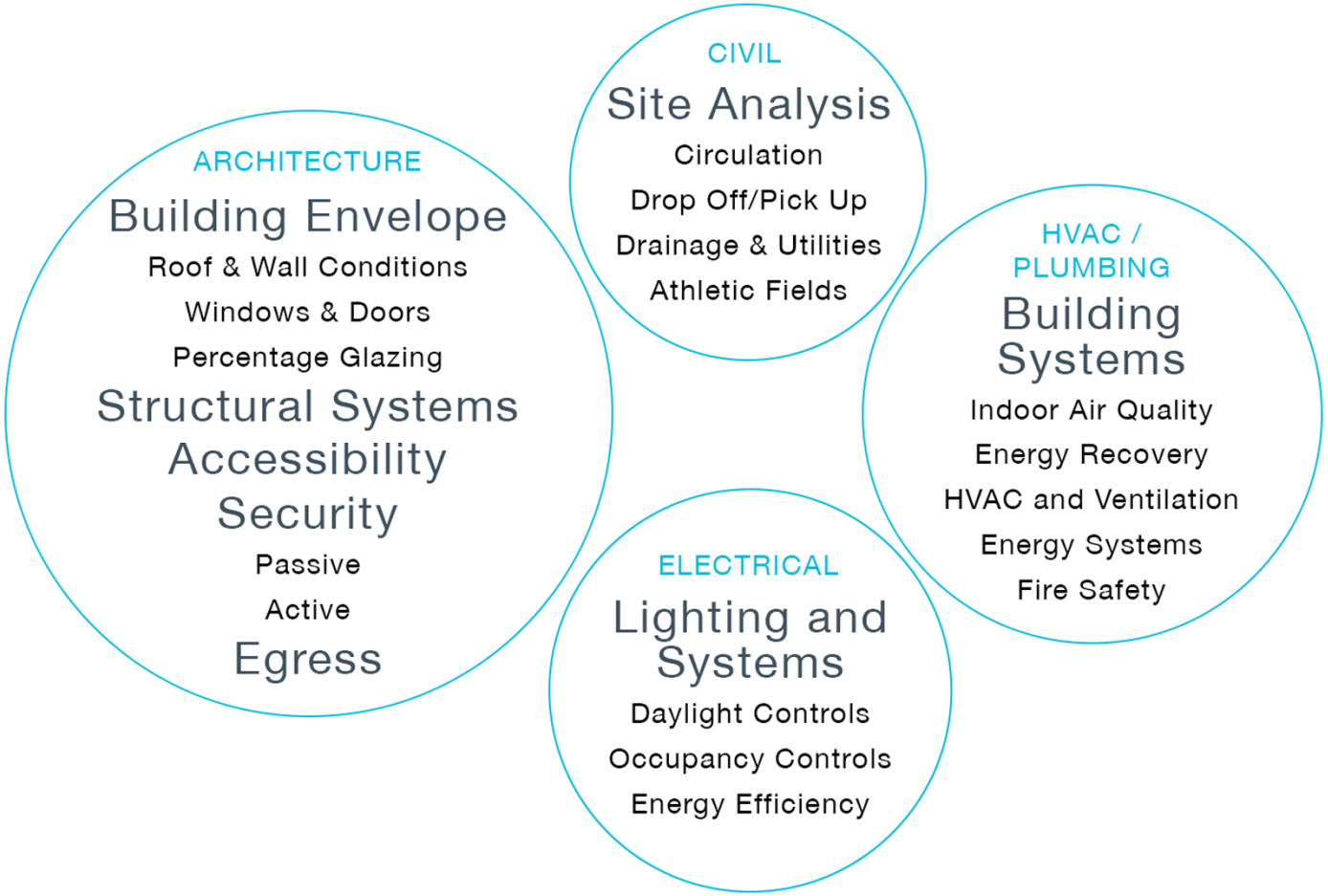
SMMA

Agenda

- Identification of School
  - Facilities Assessment
  - Educational Adequacy
- MSBA Statement of Interest
  - Process
  - Schedule
- Next Steps

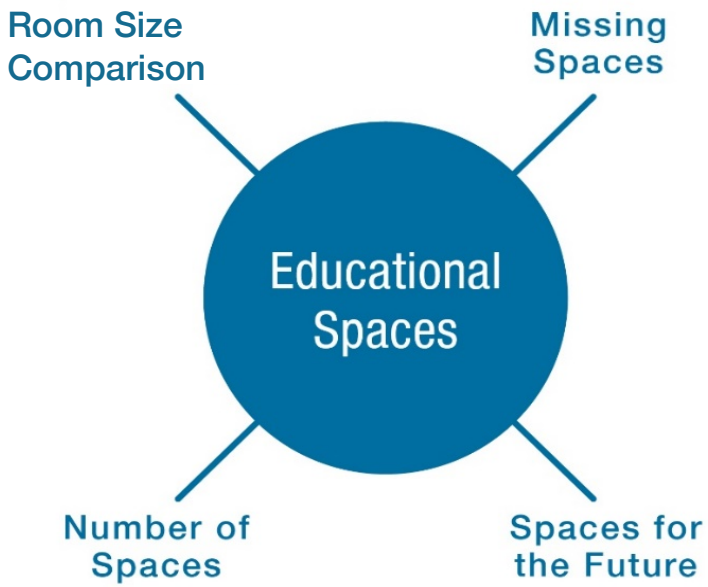
Elements of Facilities Assessments

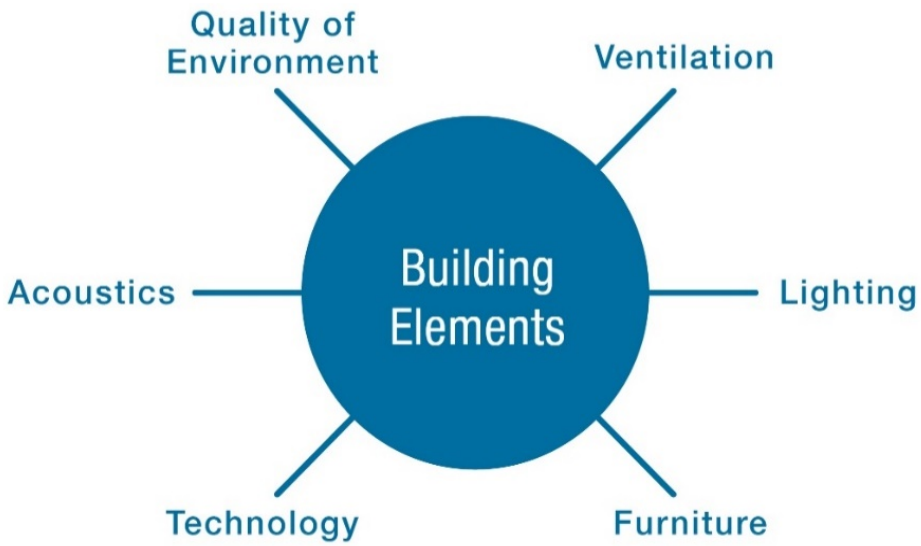
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Educational Effectiveness Criteria





Schools Identified as in Need of Comprehensive Renovations or more

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Abbot Elementary School

Colonel John Robinson School

Norman Day Elementary School







Findings for Facilities Assessments – Robinson ES

SMMA

- **Exterior Envelop, Interior materials** – in need of repair, replacement, issues of accessibility
- **Plumbing** – most all plumbing is original - most is beyond their expected and useful life; some is non-ADA compliant.
- **Fire Protection** - There is no fire protection system
- **Heating and ventilating** - The building is served by original (1969) equipment - most are beyond their expected and useful life, no air-conditioning
- **Electrical** - original (1969) in poor condition, dated and beyond their useful life expectancy. Insufficient to serve contemporary educational needs.

Educational Adequacy – Robinson ES

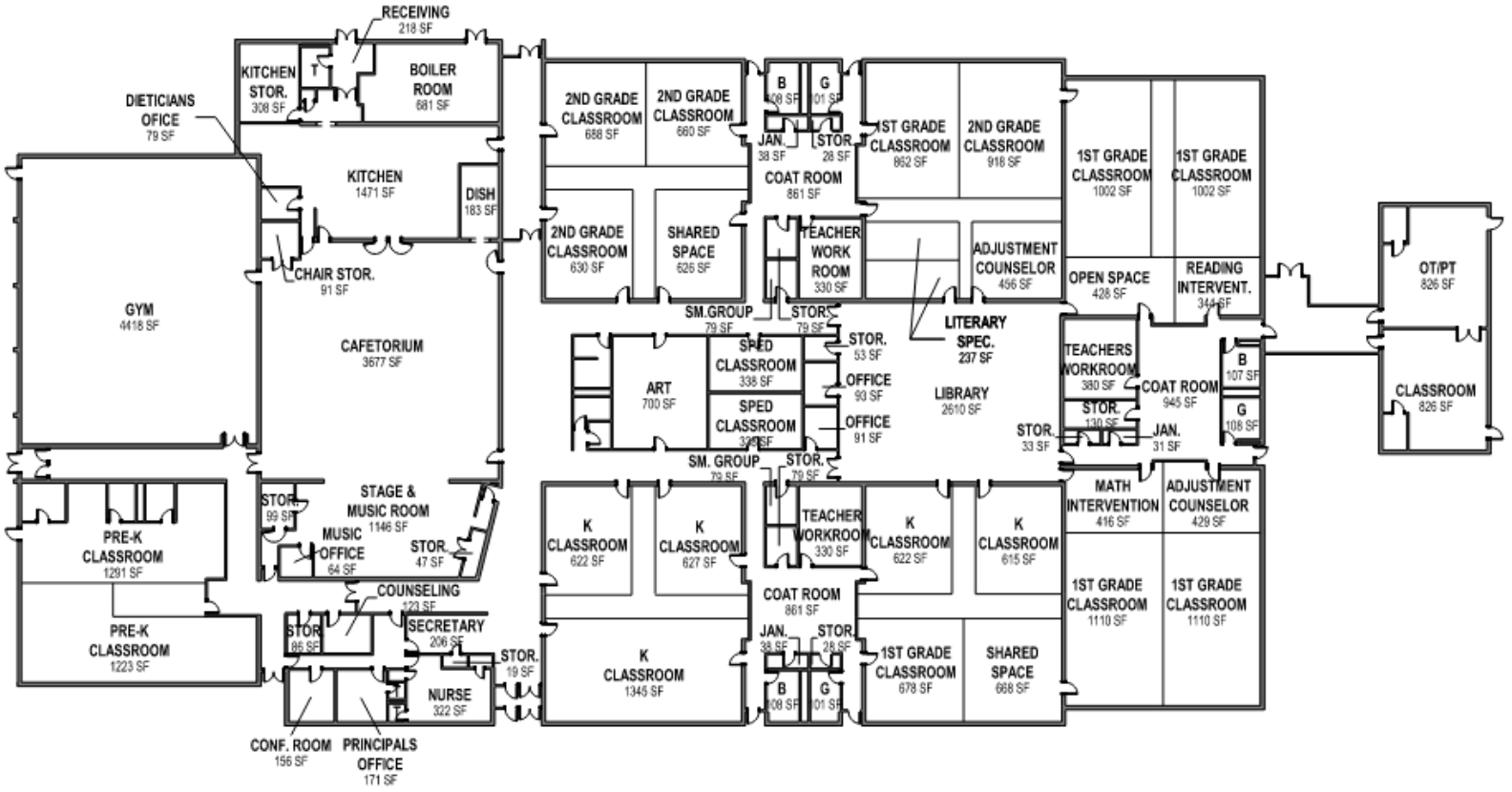
SMMA

- Explore alternate grade configuration
- Open Plan Design - no walls between the learning environments
- Many classroom spaces are more than 20% smaller than the MSBA guidelines
- Improve opportunities for STEM education in classrooms
- Need to improve acoustics in learning environments
- Need to improve heating & ventilation, add air conditioning

CURRENT USE PLANS

Robinson School

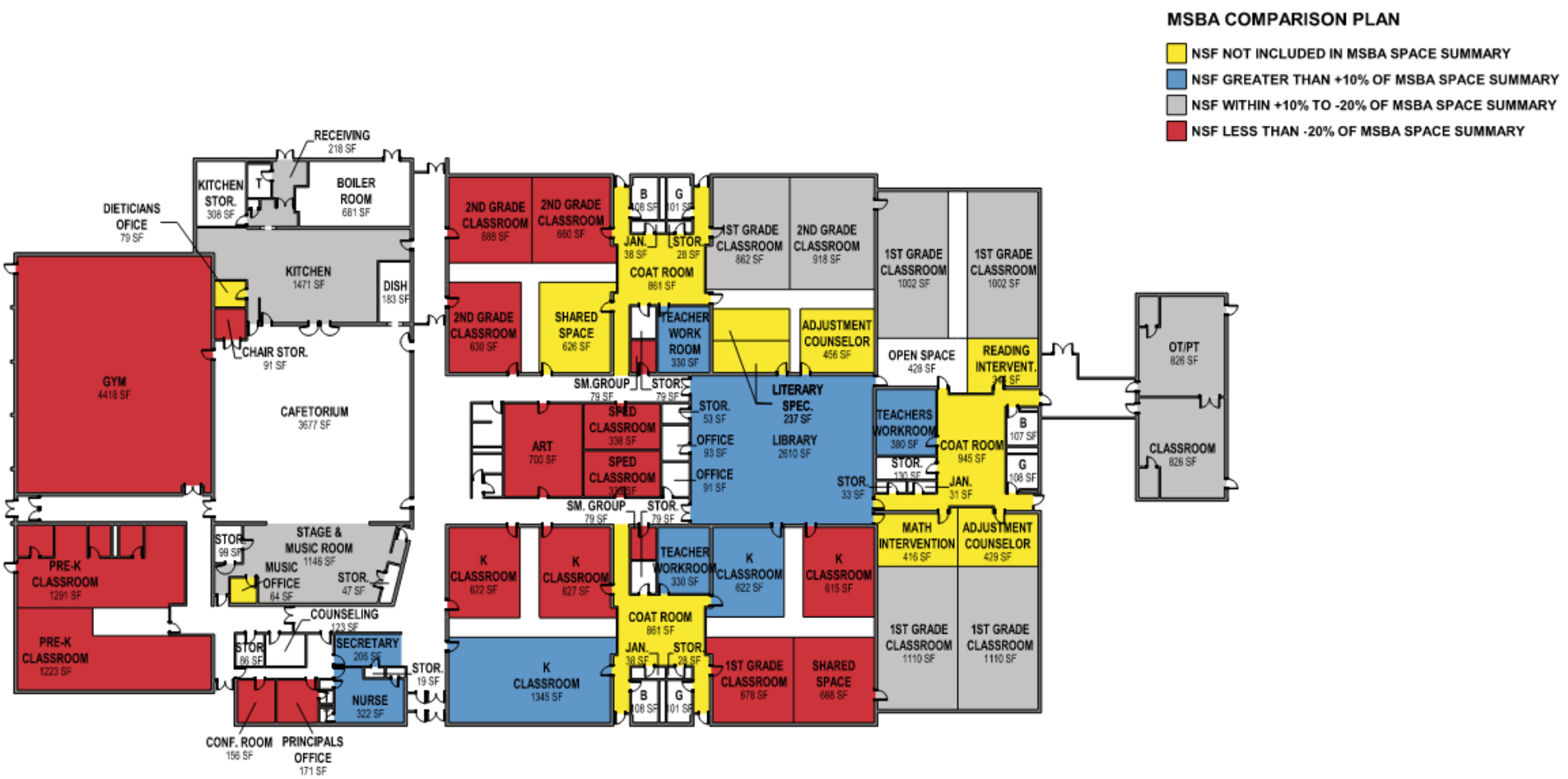
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FLOOR PLAN

Comparison Plan

SMMA



MSBA Statement of Interest (SOI)

SMMA

The SOI is the first step in the MSBA Grant process

The Massachusetts School Building Authority's (the "MSBA's") grant program is a non-entitlement, competitive program, and its grants are distributed by the MSBA Board of Directors based on need and urgency, as expressed by the district and validated by the MSBA. The MSBA completes an exhaustive review of available information regarding all districts that submit a Statement of Interest ("SOI") for the Core Program each year.

https://www.massschoolbuildings.org/Working_With_Us/districts



Massachusetts School Building Authority

Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

MSBA Statement of Interest (SOI)

SMMA

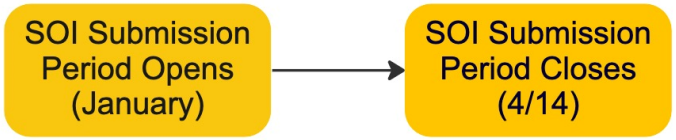
The goals of this MSBA review include:

- To determine those schools that are the most urgent and needy relative to the pool of SOI submittals filed in that year. The MSBA considers many factors when looking at the totality of the SOIs including, but not limited to, the age of the building, the amount of space per student, the current and projected enrollment, the condition of the major systems of the school, the general environment of the building and the appropriateness of the building to the educational mission;
- To collaborate with districts on the potential project that they have identified as the priority school if they are filing more than one SOI for that given year;
- To understand if the MSBA is currently partnering with the district on another project already underway; and
- To understand the range of options each district faces when planning for district-wide educational facilities.

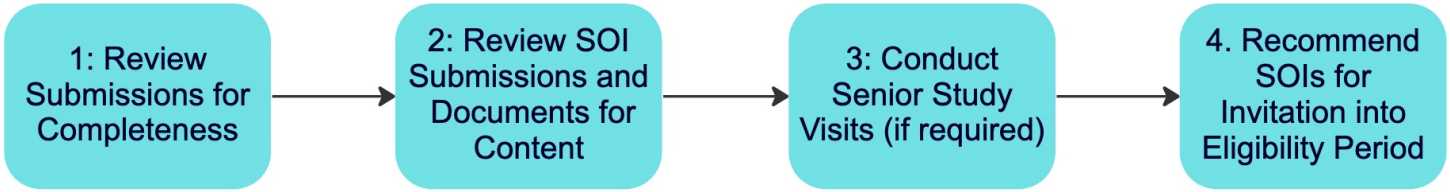
MSBA SOI Process & Schedule

SMMA

SOI Submission to MSBA

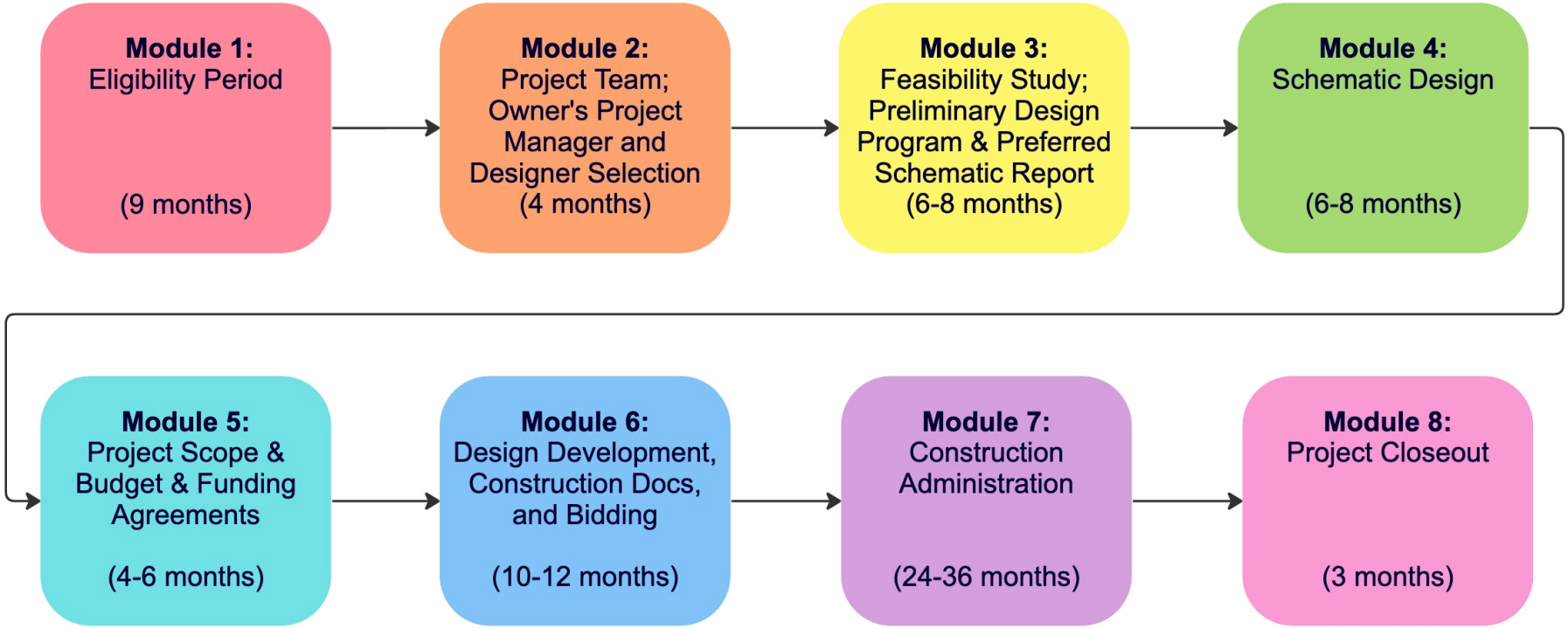


MSBA SOI Process



MSBA Full Process & Schedule

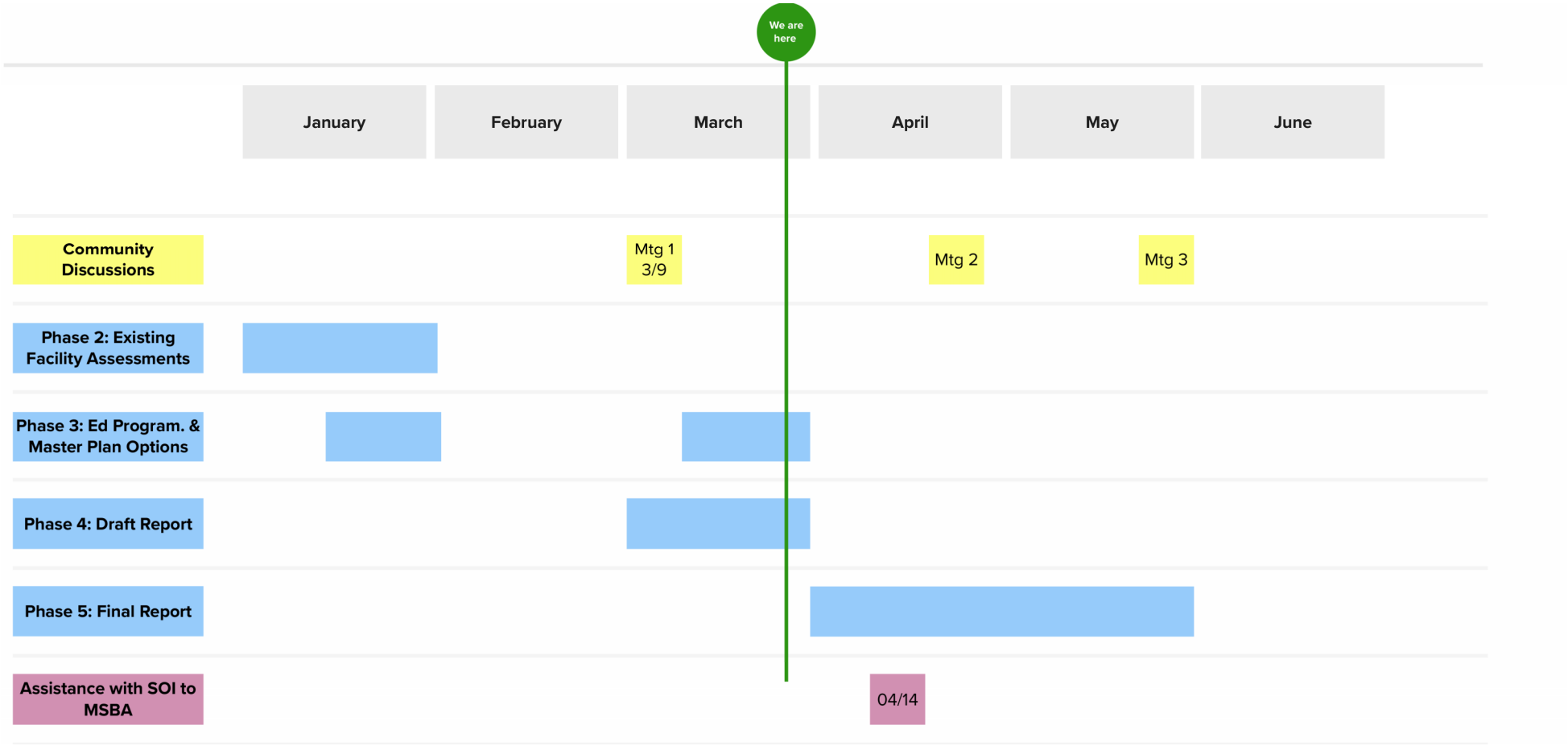
SMMA



* The duration of a project can range from 5 1/2 to 7 years, depending on complexity and approvals by the community and the MSBA.

SMMA

Study Completion Schedule (revised)



Next Steps for Filing the SOI w/ the MSBA

SMMA

- Draft of the SOI is underway
- Requires approvals by the School Committee and Select Board (including meeting minutes)
- Signatures by: Superintendent, School Committee Chair & Chair of the Select Board
- Submit to the MSBA by April 14

SMMA

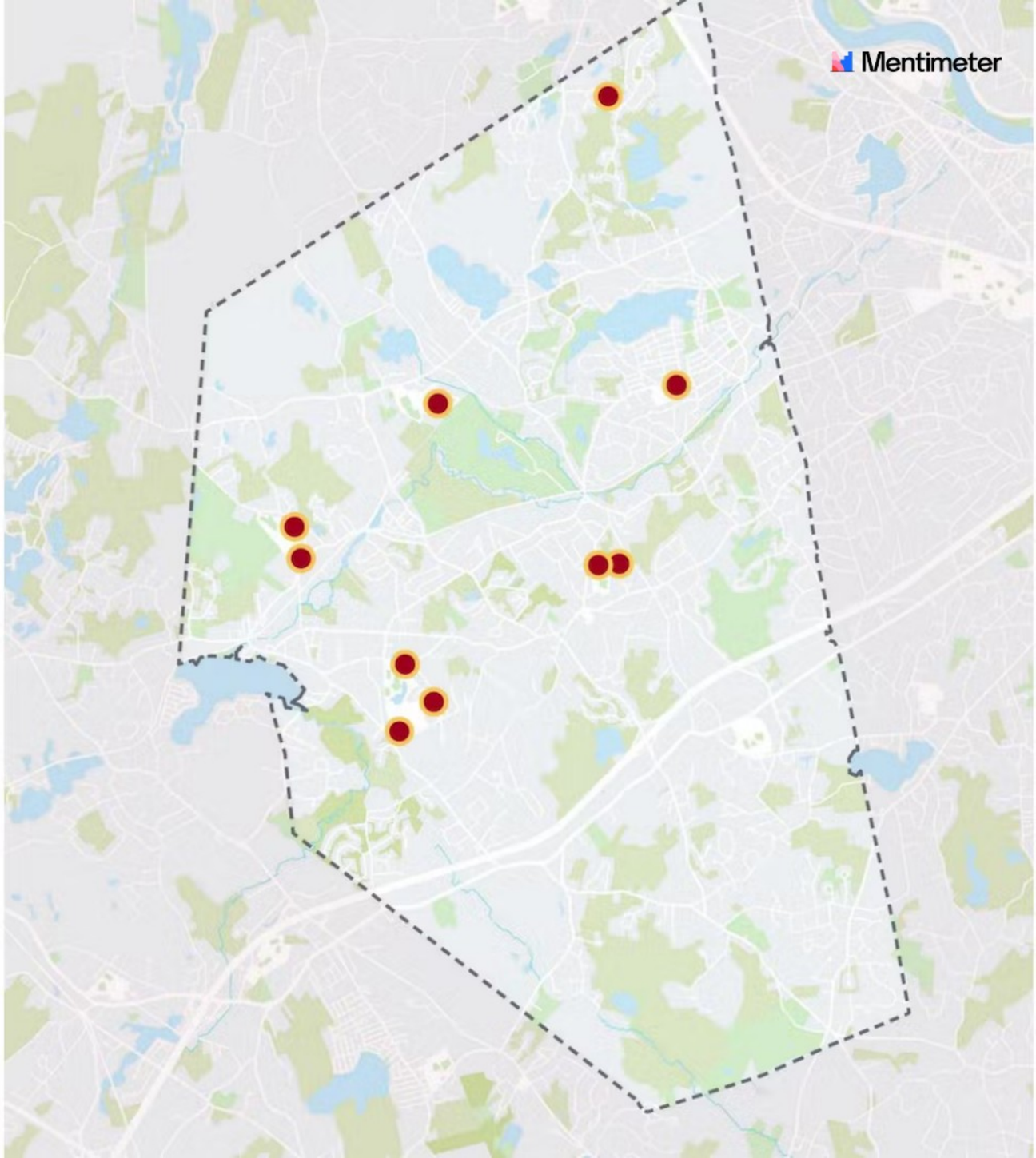
Westford Public Schools

Master Plan

Community Discussion #1

- Scope of Master Plan
- Grade Configuration Discussion

March 9, 2023



INTRODUCTION

Project Team



Philip J. Poinelli, FAIA, LE Fellow, ALEP
Principal, Educational Facilities Planner



Rosemary Park, AIA
Project Manager



Ben Williams
Project Architect

Interactive Discussion

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- Internet device: computer, tablet, smart phone
- Log on to: menti.com
- Enter code 7200 9746

Mentimeter

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School Committee Presentation, 1/30/23

Previous presentation available at:
https://www.youtube.com/watch?v=eHd_jfU6Yhs&t=688s

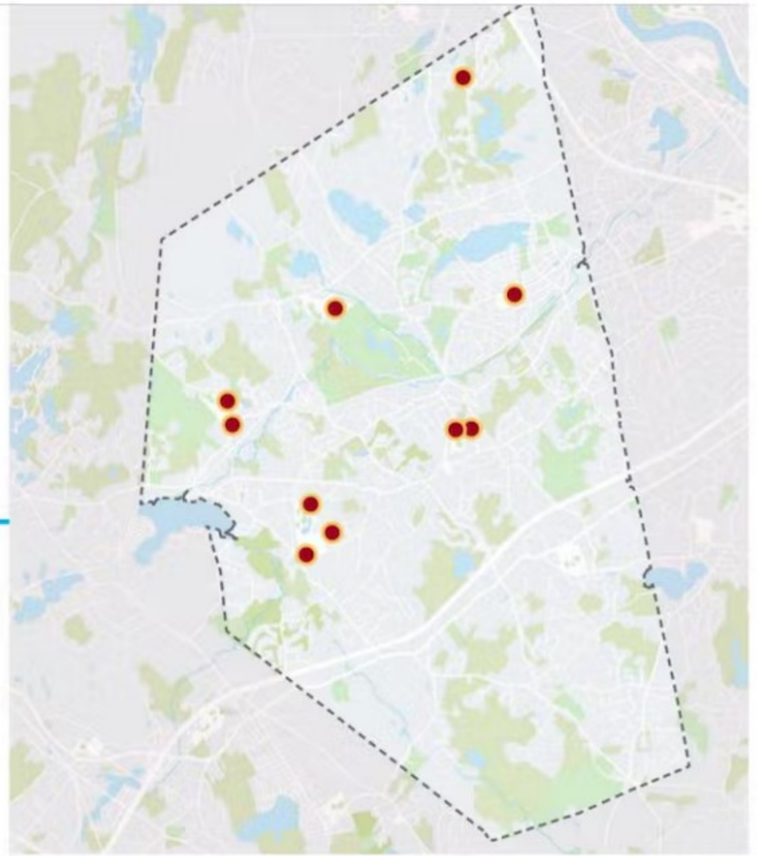
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Westford Public Schools

Westford Public Schools Master Plan

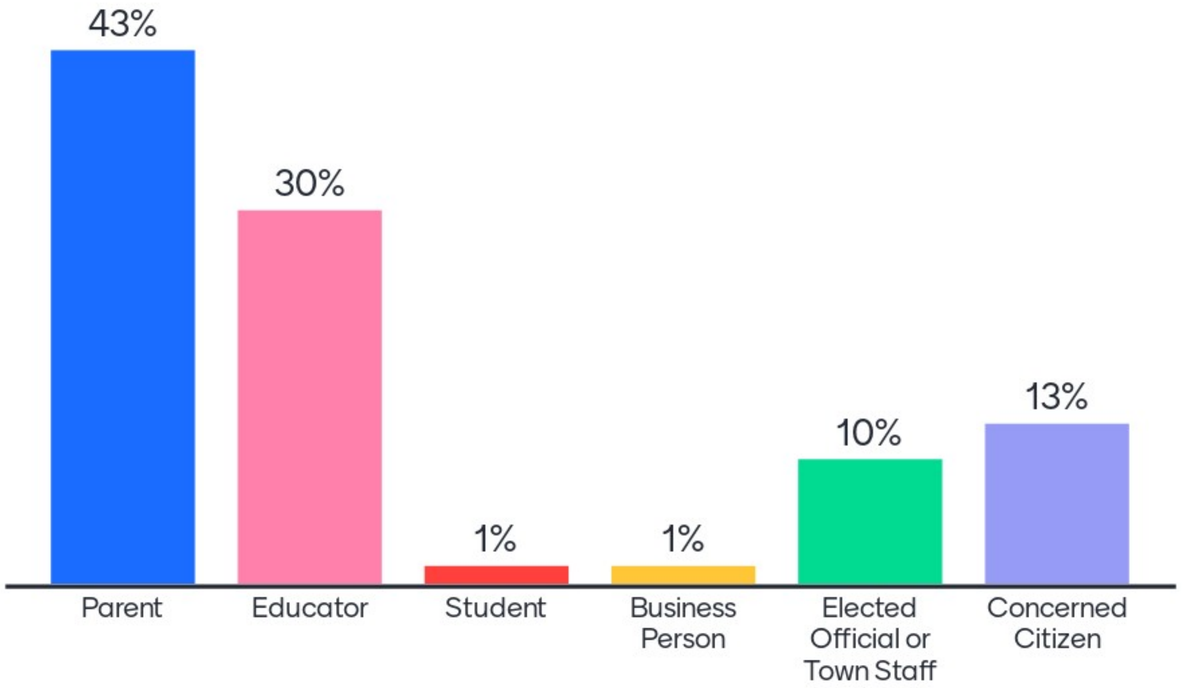
School Committee - Review of Project Goals, Enrollment, and Community Meetings

01.30.2023



Who Are You? (note: all input on Mentimeter is anonymous)

Mentimeter



Agenda / Scope of Study

- Enrollment Projections (10 Years)
- Review of Building Conditions
- Review of Educational Effectiveness
- Class Sizes Across All Schools
- Grade Configuration Discussion
- Schedule

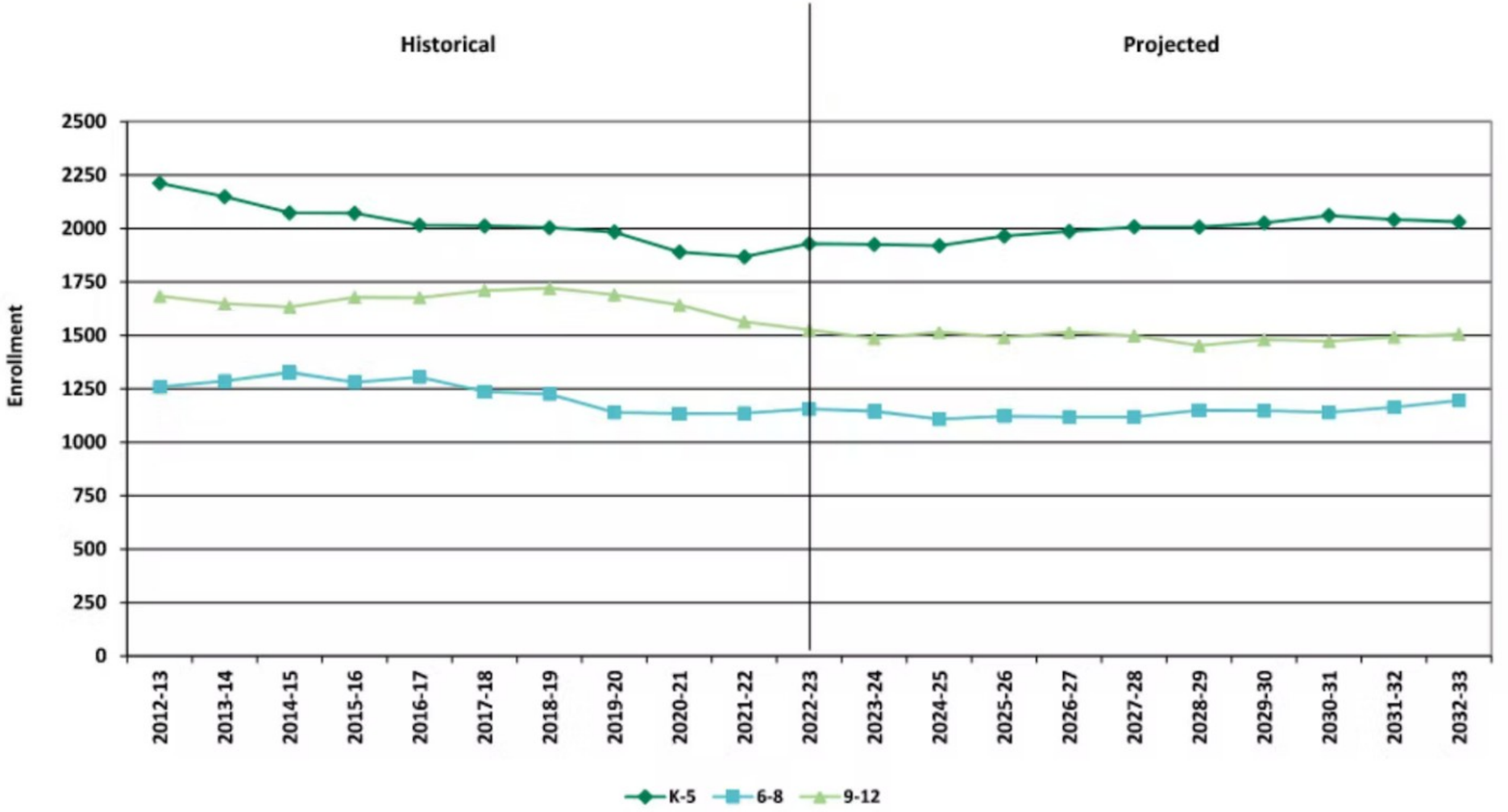
Mentimeter

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Enrollment Projections

NESDEC

Historical & Projected Enrollments in Grade Combinations



Elementary Schools

High School

Middle Schools

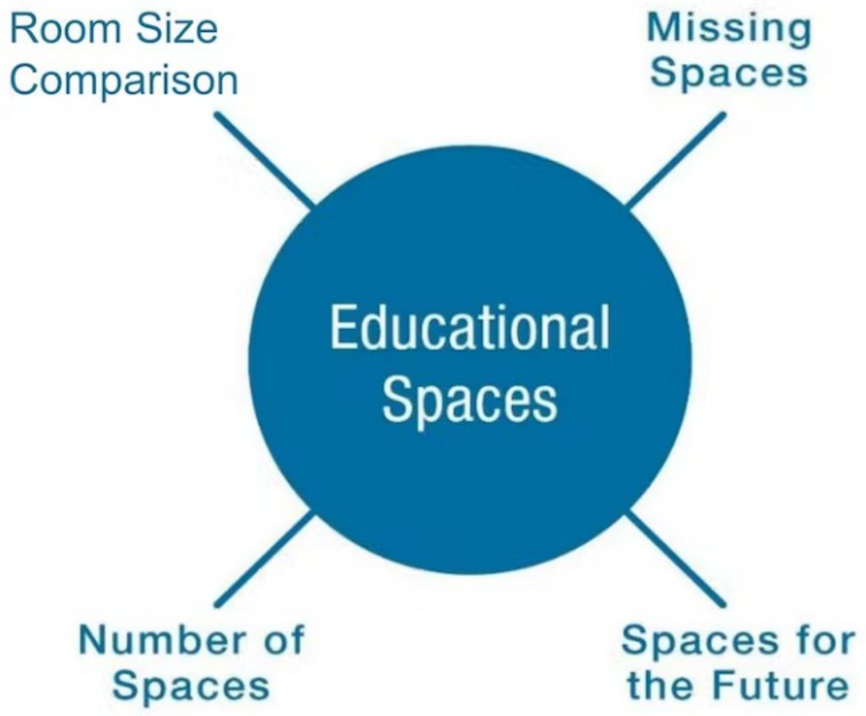
Building Condition Reviews

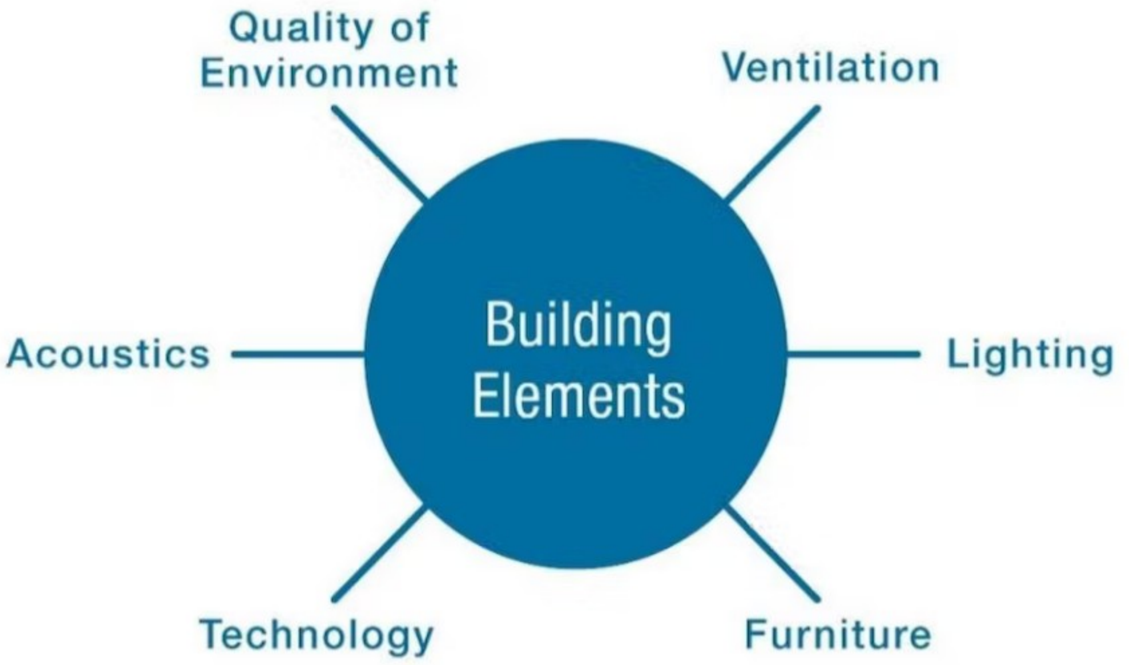
- Site
  - Circulation, Playgrounds, Parking, Infrastructure & Utilities, Plantings
- Structural
  - Lateral Bracing, General Condition
- Architectural
  - Interior and Exterior Materials, Handicapped Accessibility, Safety & Security
- Plumbing
  - Toilet Rooms, Classrooms, Handicapped Accessibility
- Fire Protection – present or not
- Heating Ventilation and Air Conditioning (HVAC)
  - Heating Equipment, Ventilation
- Electrical
  - Lighting, Power, Emergency, Fire Alarm, Communication, Data

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Educational Effectiveness Criteria





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Class Sizes Across Schools

PreK - 2 ELEMENTARY SCHOOLS								Totals	Avg
Colonel John Robinson School									
PK	15	16						31	
K	21	21	22	21	20			105	21
1	21	22	21	22	22			108	21.50
2	20	20	20	21	19			100	20
Total								344	20.83
Nabnasset Elementary School									
PK	13	19						32	
K	21	21	21	21	21			105	21
1	20	20	21	20	21			102	20
2	20	20	20	20	19	19	19	137	20
Total								376	20.33
Rita Miller Elementary School									
PK	1	14	16	6				37	
K	20	20	18	20				78	20
1	19	18	19	17	20			93	18.5
2	23	23	22	22				90	23
Total								298	20.5

3 - 5 ELEMENTARY SCHOOLS									
Abbot Elementary School									
3	16	17	17	16	18	17	17	118	16.5
4	20	20	20	20	20	19		119	20
5	18	18	17	18	18	18	18	125	18
Total								362	18.17
Norman Day Elementary School									
3	21	21	21	20	20			103	21
4	20	20	21	21	21			103	20
5	20	20	19	20	20	20		119	20
Total								325	20.33
Crisafulli Elementary School									
3	20	20	20	21	20			101	20
4	20	20	20	19	21	20		120	20
5	17	20	21	19	20	19		116	18.5
Total								337	19.5

Grade Configuration of Schools

» **PreK - 2 Schools**

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

» **3 - 5 Schools**

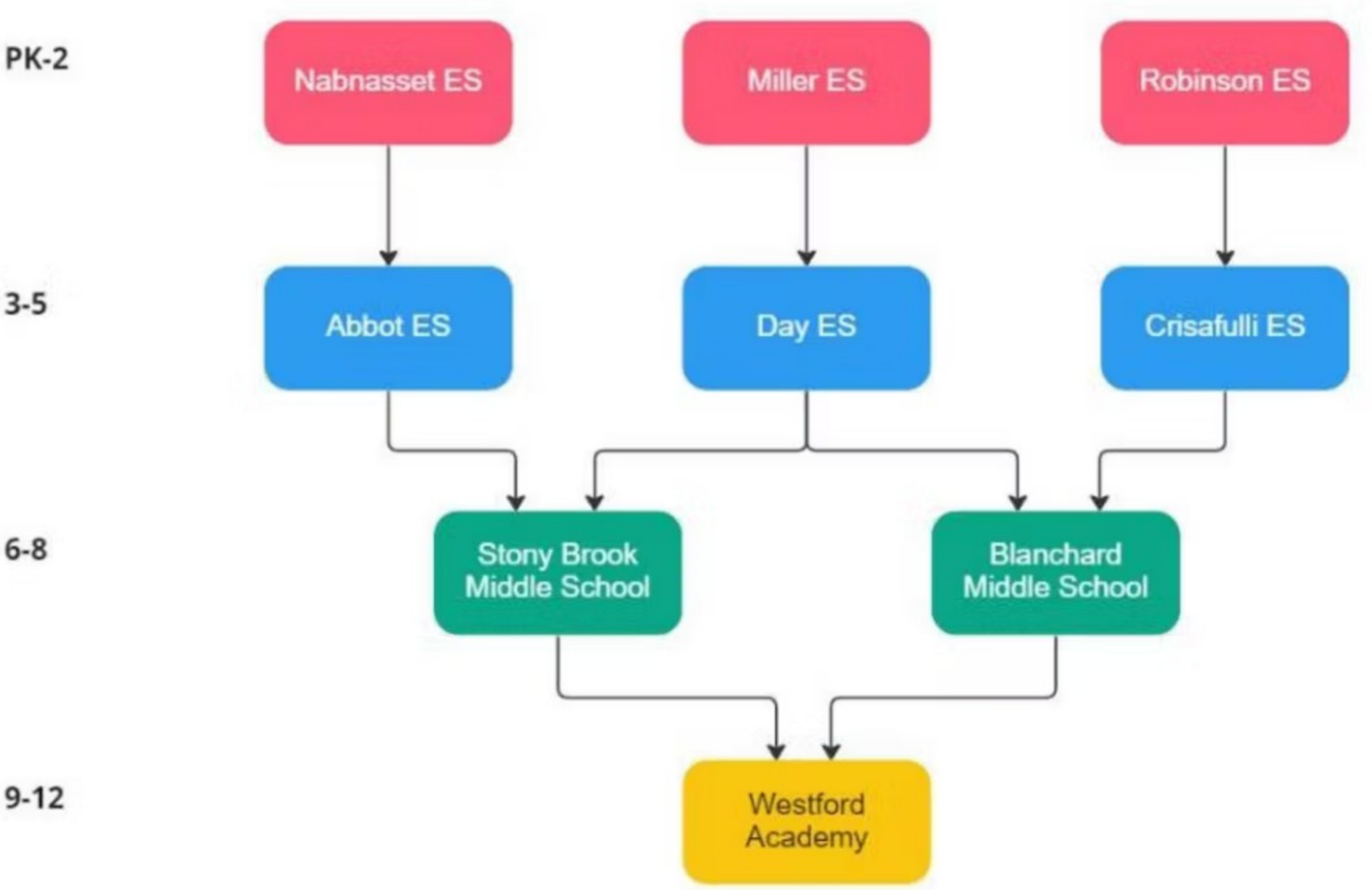
- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

» **Middle Schools**

- Blanchard Middle School
- Stony Brook Middle School

» **High School**

- Westford Academy



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Current Elementary Schools

	Current PreK-2, 3-5				
PreK - 2	PreK	K	1	2	
Colonel John Robinson School	2	5	5	5	17
Nabnasset Elementary School	2	5	5	7	19
Rita Miller Elementary School	4	4	5	4	17
total classrooms	8	14	15	16	53
3 - 5	3	4	5		
Abbot Elementary School	7	6	7		20
Norman Day Elementary School	5	5	6		16
Crisafulli Elementary School	5	6	6		17
total classrooms	17	17	19		53
				total	**106**

Needed for Current PreK-2, 3-5	
PreK	8
K	14
1	15
2	16
3	17
4	17
5	19
	106

Mentimeter
SMMA

Alternate Configuration of Elementary Schools

» Dr. Christopher Chew, Superintendent

Explore the possibility of a unified K-5 configuration

- True neighborhood schools
- Eliminate a school building transition

Interactive Discussion

Mentimeter

- Internet device: computer, tablet, smart phone
- Log on to: menti.com
- Enter code 7200 9746

Mentimeter Tool

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Share your Blue Sky aspirational ideas for the renovated and/or new ELHS facility here:

← Issue or Question

Interdisciplinary teacher planning rooms where interdisciplinary projects can be launched

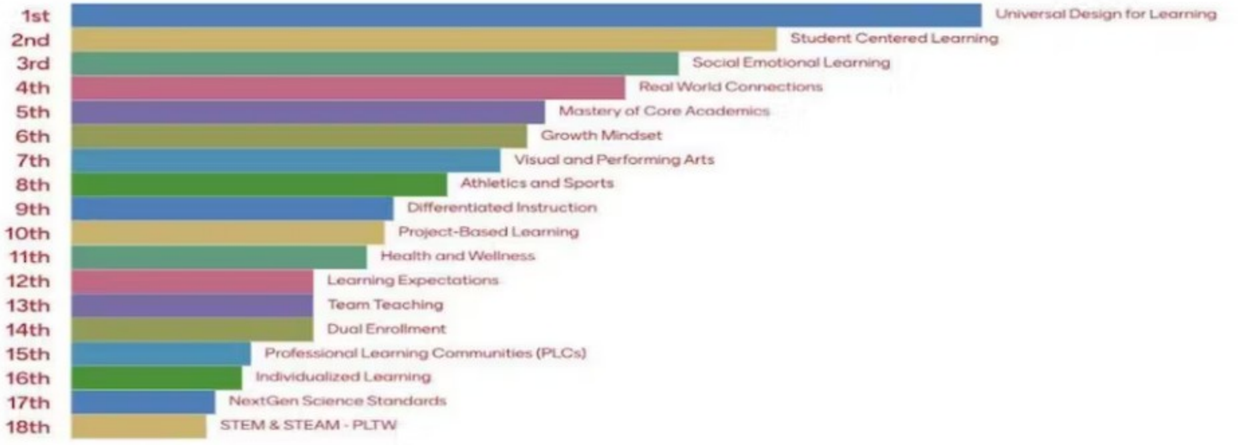
Roof top garden! Studies have been done to show how they are good to promote good social emotional well being. They are also good for the environment and can be used as a learning space

← Participant's Input

STEAM Lab where science, math, robotics and the arts can come together. Maker spaces available for all departments.

Spaces where real world learning and ideas are all around the students

I would really love to see a beautiful outdoor learning space but it really needs to be connected to the school, covered but with seating that is usable. Rocks are not condusive to learning!A central library with fiction books/media and group space

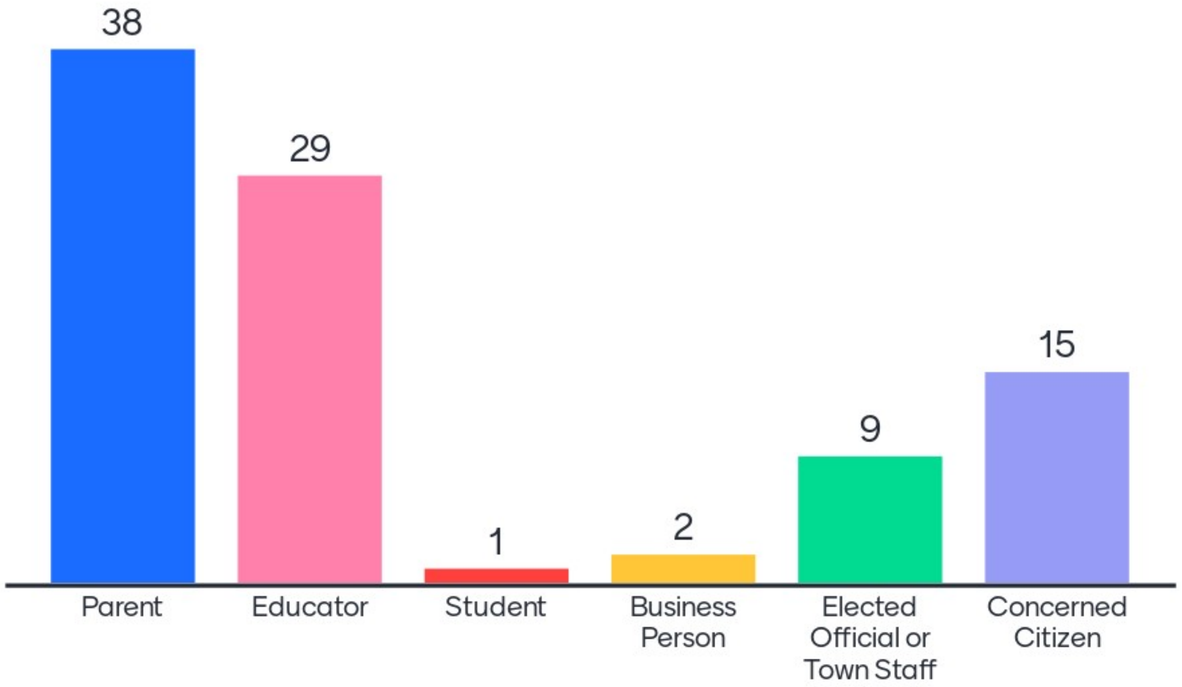


What 3 words best describe the culture of teaching and learning at ELHS?



Who Are You? (note: all input on Mentimeter is anonymous)

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Parents – Which School(s) do Your Children Attend?

» **PreK - 2 Schools**

- Colonel John Robinson School
- Nabnasset Elementary School
- Rita Miller Elementary School

» **3 - 5 Schools**

- Abbot Elementary School
- Crisafulli Elementary School
- Norman Day Elementary School

» **Middle Schools**

- Blanchard Middle School
- Stony Brook Middle School

» **High School**

- Westford Academy













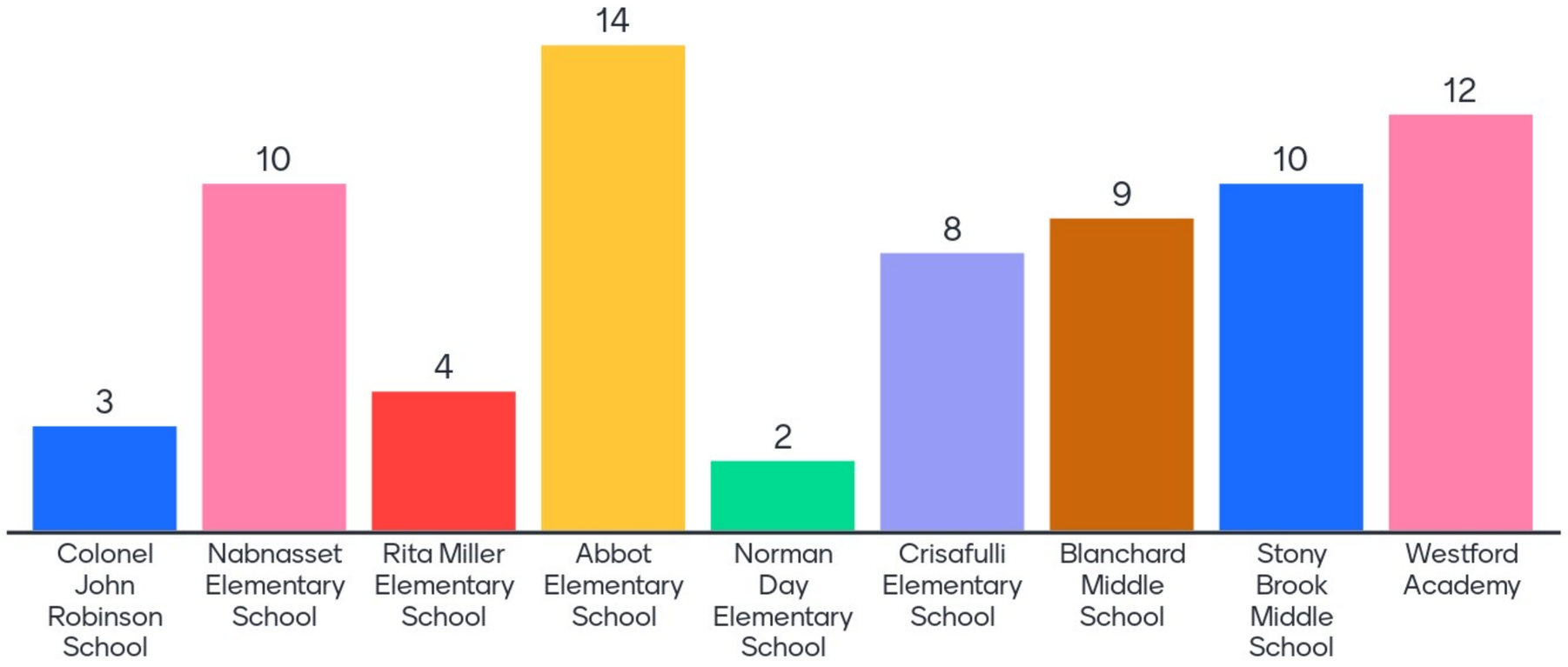






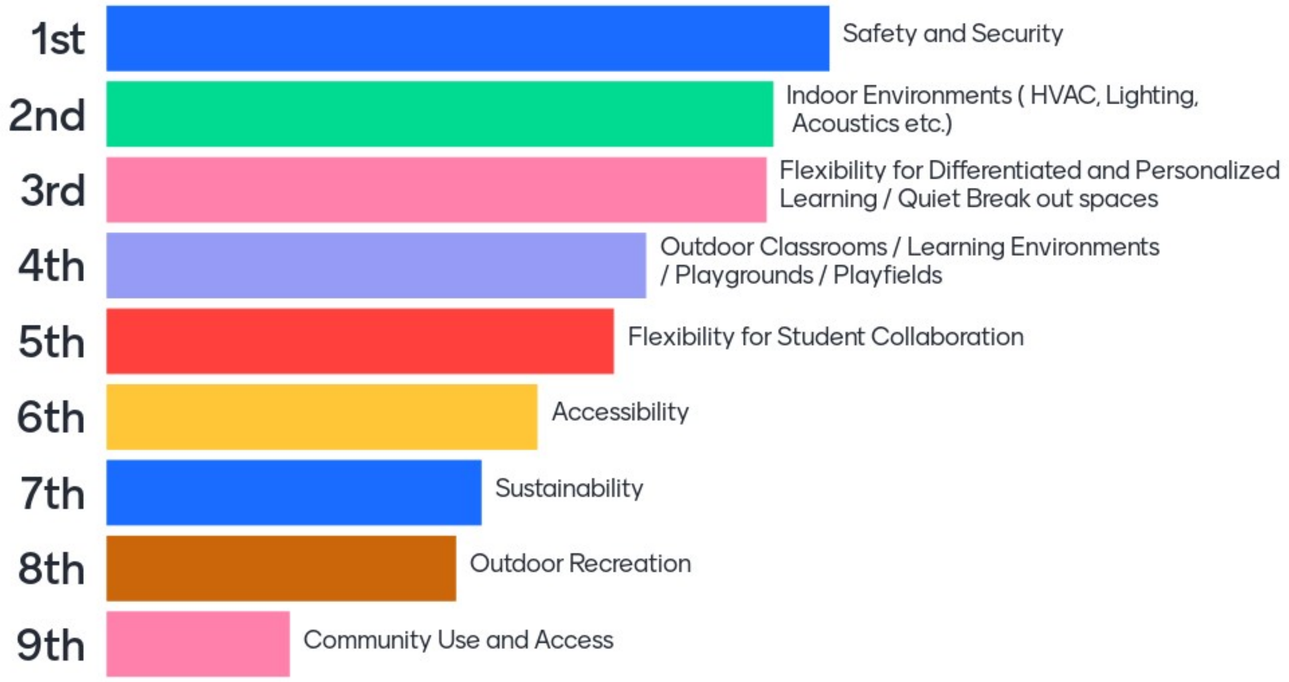
Parents – Which School(s) do Your Children Attend? (multiple entries allowed)

Mentimeter



What are your top priorities for the Elementary Schools

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Please include other Priorities you may have

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Cost

equity across buildings

Staff facilities

Focus on emotional learning

Equity amongst schools

Air quality

Continuity

Cost

Advance courses in high school

50

Please include other Priorities you may have

Mentimeter

- Equity across buildings
- Instructional quality
- Appropriate space for music and the arts
- Students per classroom
- Air quality
- Healthy environment / resources for teachers!
- Related services space
- Cost
- Equity across building

50

Please include other Priorities you may have

Mentimeter

SEL

Cost of this proposal

Efficient bus routes = Healthier school start times

Staffing

social emotional support services

I would like my kids to attend the schools we bought our house intentionally for them to attend

Stem electives in high school

Continuity with siblings

The toll on Miller/Day students being split between Stoney Brook and Blanchard is very high and must end.

50

Please include other Priorities you may have

Mentimeter

- Avoiding Day school split between middle schools
- Cost
- Length of bus ride
- Students per classroom
- Environmentally friendly
- Equity across schools; social emotional learning
- Room for community and school admin
- Teacher retention
- Even though it likely won't benefit my 5 kids I do think there would be huge benefits to a K-5 or even K-4 schools vs current set up.

Please include other Priorities you may have

Mentimeter

Class size

Environmentally conscious

Convenience for parents - dropping off & picking up elementary kids in one place

Attention to smaller support programs in terms of spacing and resources

Space to creative expression within the buildings

Cost

Inclusion and continuum of options for all students

Improved service options, beyond REACH.

was this for elementary only at this pt?

50

Please include other Priorities you may have

Mentimeter

- Cost
- Equity across buildings
- Early childhood center
- School start times
- School start times for older grades
- Equity for all kids - in special education and the general classroom
- Later start time for WA
- Healthy environment with building services
- Being able to support all children

50

Please include other Priorities you may have

Mentimeter

- Bus route impacts
- Open and natural lighting for learning spaces
- More parking at WA
- School start times
- Healthy school start times
- Keeping REACH with a consistent peer group K-12
- Better scheduling
- Parking and bus/car pick up that is intuitive
- more support for kids with anxiety

50

Please include other Priorities you may have

Mentimeter

Building repairs instead of quick fixes.

I don't want my K kids going to school with 5th graders.

Welcoming entrances that are clearly identified

Improved school calendar

Currently Westford spends far less per pupil than other towns; they need to invest more into their students and staff...it's shameful. The town is short changing our students and constantly making cuts to our programs. Shane on all the cuts.

of public facilities

School starts too early for middle schoolers

Efficient bus routes = cost savings

Equity of opportunities across regardless of which building you are

50

Please include other Priorities you may have

Mentimeter

Separate 6th grade

Accessibility for all

Anti bullying, including cyber

Outdoor spaces at Blanchard

Children taught that they can say no to bullies and bullies being taught that they can't turn it around and say they are not being included....

Pay per more pupil...stop short changing our students...they deserve better!!!!

Staffing appropriate to student population/needs instead of exact same across buildings

School start and end times

Parking lot safety

50

Please include other Priorities you may have

Mentimeter

start after 8am for WA

Healthy school start times for all

More facilities for handwashing

School start time for high school

Buildings designed for the ages of their students - from bathrooms, to playgrounds, to lockers

More thoughtful education around diversity and inclusion

Transport efficiency

K-5

Honors classes in elementary ages

Please include other Priorities you may have

Mentimeter

Who is paying for all these renovations?

Sidewalks near schools

Collaboration across multiple grade level teacher.

The challenge of having kids in the same family split prek-2 and 3-5 for bus pick up/drop off and parent pick up and drop off

Improve classroom layout at robinson

For too long, we prided ourselves on spending the least on our students. It was the wrong thing to be proud of.

Equity for special education and general education students

More parking at WA

Fewer transitions for students and improved home-school communication

Please include other Priorities you may have

Mentimeter

Pickup and drop off at elementary schools

Spending on keeping reading teachers

WA won't let kids drop a class if they got an override but bomb the class, creates a ton of unnec stress

Start time for k-2 is too late.

Healthier school lunch choices

Efficiency... specialists can more easily serve buildings and collaborate. 9 school buildings has a lot of overlap.

bathrooms for all gender identities

We need to look harder at our special education program. We don't recognize or acknowledge neurodiversities, nor do we have the supports in our district to support those children.

French fries are not a vegetable

50

Please include other Priorities you may have

Mentimeter

Smaller Spaces for support staff

K-5 schools

Important to keep kids together to preserve friendships. Don't redistrict. Do not want 5th graders with kindergartners.

This is a waste of our limited budget when we are making so many cuts

If WA starts later, it will be the death of WA swimming as they rely on being able to use the pool at that time

Kids learn that transitions are not as scary - the adjust!

There are multiple classes in each grade which means more opportunities to mix students together.

The schools can really tailor needs and conversations to the appropriate age groups

Do not mix fifth graders with kindergartners or first graders. They are different developmental stages (foul language, crushes, tooth fairy).

Please include other Priorities you may have

Mentimeter

Opportunity to keep early childhood students together and form a tight community

Too many transitions

School is further away

Transitions

Too frequent transitions

Neighborhood schools

The transitions are frequent and stress building

The school timings are challenging for drop off and pick up

Continuity

50

Please include other Priorities you may have

Mentimeter

Build long term relationships with friends and teachers

Start times may be easier to change. Elementary early start time , MS / HS later start time

more established long term PTO

50

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

I don't see any pros

I don't see any pros

Central administration offices

Hard to find pros.

Prek-2 remains more innocent

Opportunity to meet more students who may not live in your neighborhood

Love the fact they are with kids just a few years on either side of them

Grouping similar ages

Grouping grades according to standards, curricula, and formative skill building

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Separation of age groups

Buildings wouldn't need modifications

Provides more classes per grade in a building so that it can be easier to separate kids who need to be separated from each other for any reason

Smaller communities of similarly aged children

Nothing

the age gap between the lowest and highest ages is low

focused bandwidth of school leaders

Grouping of similar ages

Buildings setup to support age groups

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Small/closer age groupings

More classrooms at the same level

More developmentally appropriate.

Culture is geared toward age bracket

love that my k children aren't with 5th graders, older children

School milieu geared to a specific age group

Smaller tight knit school community

Administration is located in their own building.

3rd graders have great pride when they move up, helps them learn how to make transitions from an early age

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

collaboration with more teachers teaching same grade

I like the size of each grade...students have more choices for teachers.

Bigger network for kids starting at K.

Developmental common ages

More classes of same grades together

Builds community better.

Pk - k for early childhood center

More resource sharing among classrooms of the same grade

You can focus on the SEL needs of similar aged children

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

4-5 graders and K and 1st graders aren't ideal to be mixed together.

the children feel excited to graduate to upper elementary, it's a good transition for them

More sections per grade can be helpful for placement

Developmental common ages

Chances for those children to meet more of their same age peers

Age gaps are smaller

Buses don't have 12 year olds with 5 year olds.

K-2 Primary feel and programs for that culture

There are multiple sections of each grade level which means a greater opportunity to mix students up.

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Educational specialists and services available focused targeted developmental stages

Schools are geared for more precise ages

Ages and maturity levels are similar with this setup

Physically grouping younger kids together.

More opportunities for students to be leaders

Our school libraries would dramatically have to change if we combine schools....keep it how it is.

Developmentally common ages

More classes per grade level

Playground requirements are different for K vs 5th graders

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

To many transitions of schools

siblings not attending same school

Parents can have up to three different drop off and pick up times

None

Siblings are some into different buildings - difficulties for single parents

Splitting staff members between schools

As an educator, the transition is difficult grades 2-3

No cons

Anxiety of changing schools

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Anxiety for siblings when not in same school at the young age

Need to re-create school community every 3 years

Lessens the amount of continuity that can be provided to support students from year to year

Special education students have too many transitions. It is challenging for student support staff with this configuration.

Less continuity with PTO

Most districts do not split like this

Splitting siblings

3rd graders feel lost for months at the beginning of the year

Students often lose their "safe person" when they transition. A big issue for kids with anxiety

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Some kids love the change.

Disjointed staff communication

So much time to build school pride and community

None

Students can find the people they are comfortable with and keep them as a reaource

efficiency in resources/operating costs

Intermediate faculty have more opportunities to collaborate with primary faculty.

Easier communication for staff members K-5

Easier to volunteer!

Pros - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Less staff split between buildings

Cost?

Major overhaul of 3-5 buildings would be needed.

To make this a reality, would it cost too much money to make it worth it?

43

Cons - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

- Too many changes
- Too many transitions.
- Anxiety for kids when moving schools
- None
- Transition of schools
- Extra drop offs
- More transitions
- Higher cost for bussing
- transitions

37

Cons - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Family stressors (schedule alignment, children are separated)

None. It's the best!

Start time for k-2 is so late. Is it because of the bus schedule?

Transitions

Less efficient bus routes

Kids are older now but we're never in same school. Difficult for working parents

Different setups then surrounding towns

Difficult for families to have kids in more schools

Too many transactions

37

Cons - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

various school start times for siblings

Transitions.

Lack of role models for the younger students. Paired class buddies cannot happen.

Splitting siblings for drop off and pick up

Drop off in parent volunteers after k-2.

Not a fan of this configuration

Multiple bus schedules for the family.

Lost opportunity to create buddy classes between younger /older grades (reading buddies)

Separation of siblings, too many transitions, not neighborhood schools,

Cons - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Dropoff pickup challenges for parents

Takes longer to drop off pick up

It's been positive for my child.

No continuity- students will develop a better sense of community in a K-5. Educators and administrators support this model.

Transition between schools, huge increase in expectations

Anxiety from changing schools

Lack of an opportunity for peer leadership between older grades and younger grades

Student doesn't have the ability to grow with the staff... especially students in special ed having to work with entirely new staff, liaison, etc.

Anxiety created with the constant changing of staff due to switching schools

Cons - Current Grade Configuration (PreK-2 and 3-5)

Mentimeter

Just when they build a relationship or trust with administration they are sent off to start all over again

37

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Keep siblings together

Less transitions

More continuity

Siblings more likely to be together

More kids can walk to school - healthier, fewer buses needed

Less bussing.

Fewer transitions

Better collaboration

Consistent times and schedules for families with multiple children.

47

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Help staff get to know students and vice versa

None

The last slide allowed only one answer, some voices may not be heard.

Keep siblings together

Siblings can remain together.

Peer leadership

Less transitions

Better supportive of working families

None

47

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

- Easier logistics on the familes
- Less transitions
- Familiar staffing for more years
- No racing between schools for drop off and pick up
- None. More problems than it's worth.
- Neighborhood schools
- Less transitions
- Unified school and bus schedules for siblings.
- Role modeling by older students

47

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

It would help teachers know the history of their students

less transitions - bussing

Easier on bus drop off-pick up, parent drop off /pick up

Consistency = less anxiety

Teacher Collaboration and Classroom Sharing Experiences

More familiarity with school building and staff

Staff knows families better.

Fewer transitions

Older students can take on more of a mentor and leadership role for younger students

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Time to really feel comfortable, get to know the staff, feel a sense of belonging

Neighborhood schools, less transitions, easier for parents with schedules

Create a stronger community environment

More coherence with curriculum and staff pd

Gives students and families a home

Sense of community- school feels like a family. Educators watch students grow.

Same schedule for siblings.

Less bus stop times for multiple children

Larger school community which provides opportunities for students to be with staff longer. Develop a real sense of belonging

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Families can invest in volunteering in one school community/pto over many years instead of being split

I couldn't answer the last question twice either

Students get to know the place and staff and stick with them through the years

More efficient bussing

Perhaps staff wouldn't be working at multiple buildings like they do now.

Continuity

No transition, just have separate wings/ areas

Siblings together longer

Longer time to develop school spirit. Not switching mascots so often. 😆

47

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

This may benefit parents. Not students.

Easier on parents schedule

Ability to have older mentors for younger students

Staff split between schools may have a better sense of belonging

Easier schedules for parents, better for siblings, less transitions

I couldn't submit multiple answers last time, so that data might have been skewed

Benefits for children in special education

Easier to schedule conferences at one school

Classroom sharing.

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Same start time across multiple years

Opportunity for mentor programs between older and younger students

Parent volunteer opportunities increase and there's continuity as parents stick around longer

Is there research/ best practices to turn to?

Continuity, easier for families with multiple children, bussing- this could possibly help the school start times, traffic would be less at school car line assuming more siblings at the same schools.

Less time on the bus

Students would have teachers who know them through the k-5 years. Ideal for observing possible changes that could signal need for help.

Correct - last slide didn't allow multiple answers

Siblings in one school

47

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Consistentcy,

Older grades being role models for younger

Better able to connect with previous teachers- continuity of communication

Better for building community

Shorter bus rides

Easier on parents/dropoff

Continuity

Not worried at all about the difference in age groups. K will not be near 5th. Recess and lunch will be different. Busses can have K up front as they do now.

Easier for working parents

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

More engagement in ptos

Parents may feel more invested in the school and inclined to offer more participation

Better home-school communication

Value of art, music, pe teachers to be part of ist/iep teams who have known students since K.

Older students could mentor younger ones

Ms have more role models

Ks have more role models

K-5 or k-6 is norm, right?

Possibly creates more resiliency in younger kids

Pros - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Stronger relationships between parents & school staff

Peer leadership, activities with different grade levels, stronger unity.

Leadership opportunities for the older kids

Less transitions

Schedule alignment is difficult

Allows younger students examples of more growth and achievement.

Start times may be able to change easier. Elementary can go early, MS and HS can go later

Space necessary

No cons, other than it's a change. Working parents of multiple kids would be a big benefit

47

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

None

When will they eat lunch?

change is hard :)

I'd hate to be the 3-5th grades stuck in the Robinson building

I don't see any

Building modifications would be necessary

None

Fewer sections could mean less teacher collaboration

Fewer students to meet before middle school

39

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

The special teachers can be more focused on tighter age ranges

Schedule alignment is difficult

I can't think of any

Fewer sections for each grade may make it hard to split up kids who need to be separated for bullying or other reasons

Adapting facilities within the different age groups (toilets, bubblers, etc)

Bigger age gaps

Prek and k in early learning center

Do we have the space capacity for everyone in all grades?

None

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Too broad a spectrum on age and maturity levels

Cost for building modifications

Potential bus issues between peers

Students facing bullies would have less opportunities to switch schools.

Money....how is the town affording this idea?

Adjust before school and after school programs. Not really a con, but something to consider.

Bathroom and playground modifications

Tough for younger grades to be at abbot

There would be fewer number of classes per grade so there would be fewer ways to mix up students.

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Huge age gap between a 4 yo and an 11 yo

All of the buildings are not designed for K-5 population - may need building and playground modifications

Students would know fewer of their middle school peers ahead of time

Less flexibility to redistribute students from year to year (because of fewer sections)

Costs to figuring out all the new bussing

Less opportunity to meet more peers

Space necessary for this

each grade level is fragmented into 6 buildings - could impact equity

I would not want first grade eating with fifth grade. I would not want them to share playground time either.

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Lunch question - they are already eating so early. How would you fit in 5 grades of lunch into one day/Cafe?

K on same bus as 5th graders - inappropriate conversations/phone use, etc

More resources needed for things like school plays where now there would be 6 instead of 3.

The Robinson school is a challenge.

Traveling staff may find a home

I do not want my K on the bus w a 5th grader

Cost to make changes

The social needs of these kids are very different from K-2 vs. 3-5

Would preschool be in a separate location?

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

Cost

Modifications to buildings; staff will get split up

would pre-k program stay at all schools?

Cost considerations when we can't even pay our teachers and aides fair wages

5 year olds would be on buses with 11 year olds

Will this require an override to pay for these changes?

Benefits outweigh cons for me

It'll be more difficult to establish horizontal consistently, creating inequity for students across town

Age gap.

Cons - Alternate, Unified Grade Configuration (PreK and Grades K-5)

Mentimeter

The change will initially separate friends as the "new lines" are drawn; younger children will have more exposure to challenging behaviors exhibited by older students

Supporting academics for bigger age range is challenging

School assemblies, etc. would be hard to pitch for 5 year olds and 11 year olds

Bullying is a result of school culture, not age differences

Combining kids of this too great of an age range will see a higher increase in bully situations. I disagree— age differences can lead to bullying

No opportunity to experience transition until junior high. Don't want K riding with 5th graders

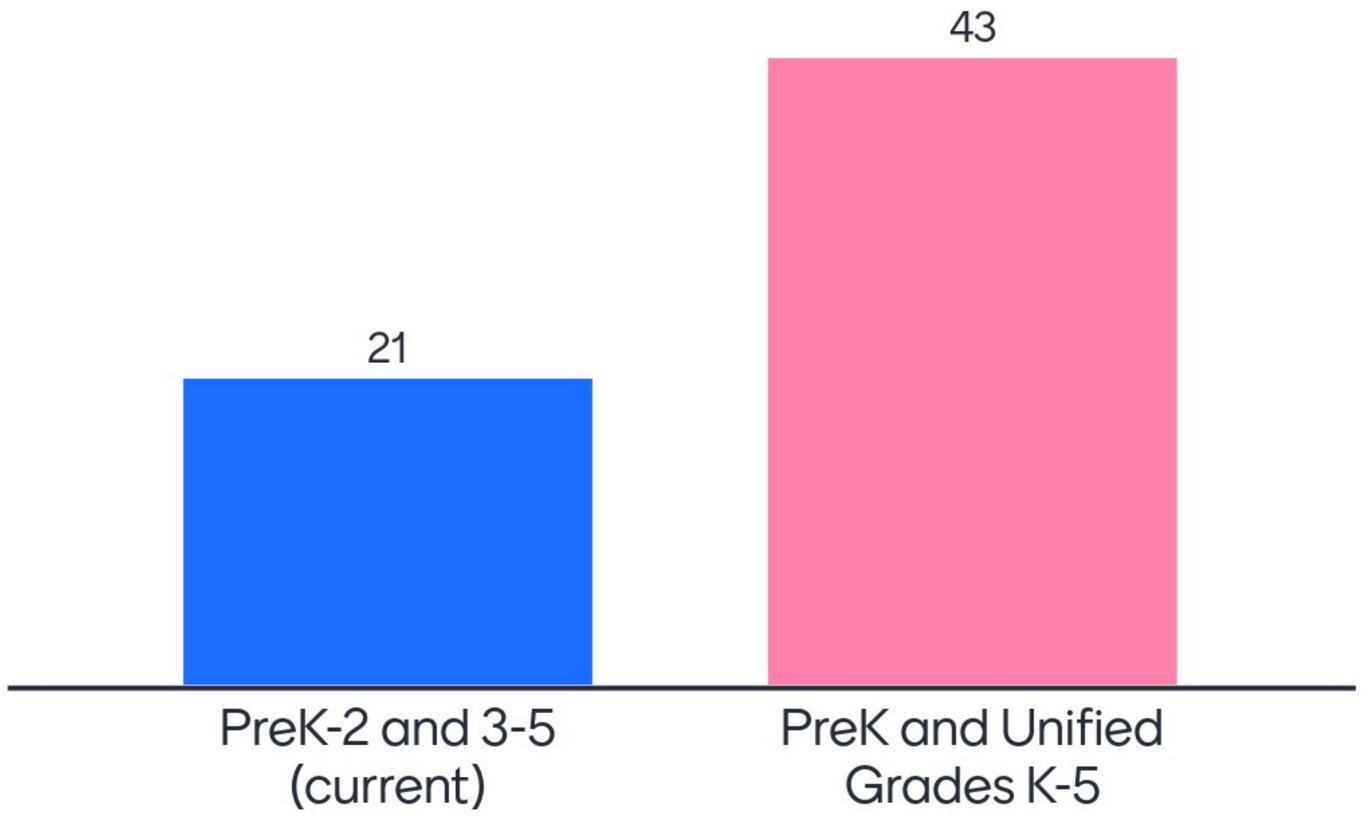
Benefits would not outweigh cost or be more meaningful than teachers being cut

How about instrumental education?

Some challenges with younger students being exposed to behavioral issues with older students

Preference of Grade Configuration

Mentimeter

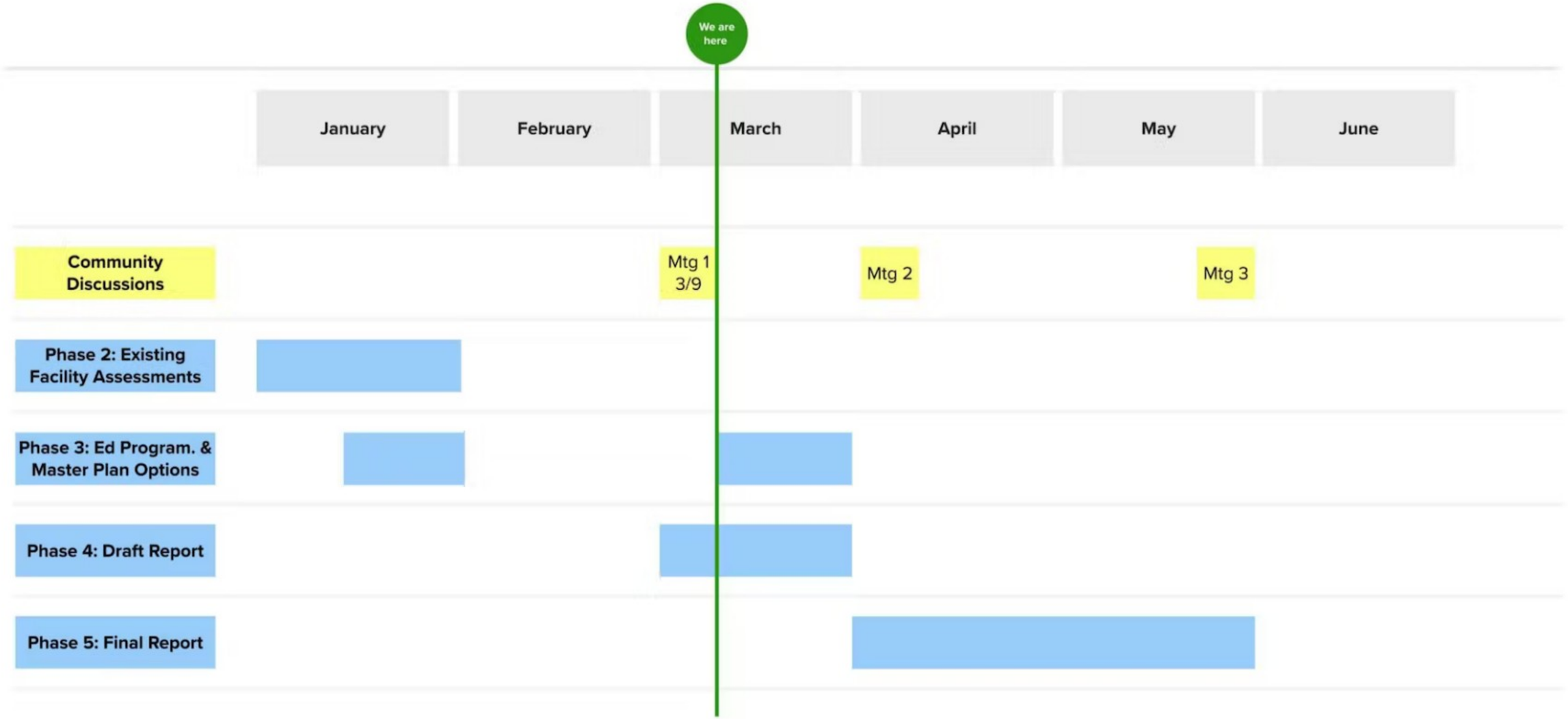


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Mentimeter

SMMA

Schedule



Mentimeter

SMMA

Additional Community Input

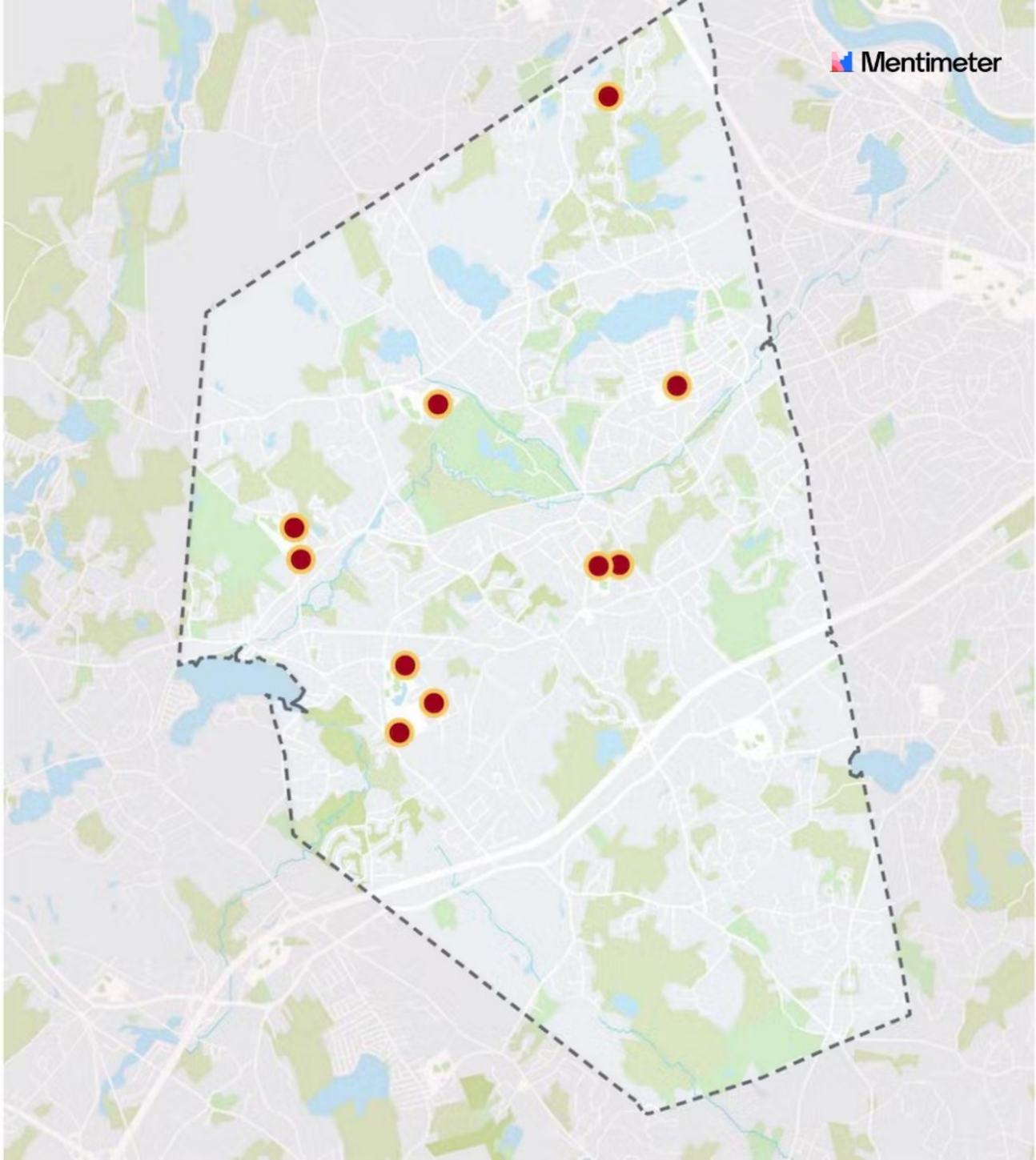
If you have additional thoughts on anything discussed this evening, you can add them through this link.

masterplan@westfordk12.us

All emails sent to this address will go to

- Dr. Chew, Superintendent
- Chris Sanders, Chair, Westford School Committee
- Jeff Goodwin, Facilities Director (Town and Schools)

Thank You



Appendix 3 – Existing Facilities Assessments

SMMA

Appendix 3

Facilities Assessments

Appendix 3 includes individual school reports for ten school buildings, including the District Offices. Each report includes criteria to evaluate the physical and educational operations.

Introduction

During November and December of 2022, representatives of SMMA visited ten school facilities to assess the physical building systems and the educational strategies in each building.

Facilities Staff of the Westford Facilities Department, led Jeff Goodwin, Director of Facilities, reviewed concerns and conditions of existing buildings with SMMA's team of architects, engineers, and educational planner during on site tours of each facility.

Prior to visiting the building, Westford provided building documentation for SMMA to use as the basis for defining existing conditions and define categories and criteria to be reviewed during each building assessment.

Educational Faculty, District Administrators, Students, and Community members, led by Christopher Chew, Superintendent of Schools, reviewed goals to provide equitable, forward-looking educational facilities, with an emphasis on primary educational facilities. The assessment will also review the current condition of the district offices and the opportunity to replace or consolidate the administration.

This report, however, is not intended to represent an exhaustive study of building and its systems. No destructive testing was undertaken to arrive at the study conclusions. Certain assumptions of unseen conditions are made based on existing drawings, documentation, input from district personnel and experience of the team.

Summary of Observations

Site and Landscape
Sites meet the functional needs of students and teachers. The varying ages of school buildings, play, and site elements create a disparity in the individual student's experience from one school to the next. Each school provides age-appropriate play and recreation for current attending student populations. Changes to student population may require play areas to be expanded to provide accessibility and opportunity for younger students.

Pedestrian paving material varies and at some school properties pavement conditions may create inaccessibility for disabled individuals. Several schools, including Robinson School and Stony Brook Middle School display extraordinarily poor pavement conditions.

Parking at school buildings is sufficient, however the condition of bituminous concrete pavement from building to building varies.

Structural Systems
The structure that was observable at all school buildings was in fair and/or serviceable condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Exterior Envelope Systems

The walls that were observable at all school buildings were in fair and/or serviceable condition. Some amount of degradation at sealant joints was noted at windows throughout the district. Windows were in fair to serviceable condition. Buildings that integrate a wall cavity with through wall flashing show signs of moisture saturation at some locations. Entrances are in fair to good conditions in most locations. Roof systems vary between the schools from poor and failing to fair and serviceable.

Interior Envelope Systems

The walls that were observable at all school buildings were in fair and/or serviceable condition. Entrances are in fair to good conditions in most locations. Ceiling systems show some signs of water intrusion, particularly at expansion joints, at some schools. Floor systems are in fair to serviceable condition.

Plumbing Systems

Abbott, Day and Robinson Elementary Schools' existing domestic water, sanitary & vent, storm drainage and natural gas systems are original to the buildings, in poor condition, and require total replacement. Existing equipment, fixtures and trims are outdated and do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements.

Crisafulli and Miller Elementary Schools' existing domestic water, sanitary & vent, storm drainage and natural gas systems are in fair to good condition. Existing equipment, fixtures and trims are original, some fixtures do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements.

Stony Brook Middle School's existing domestic water, sanitary & vent, storm drainage, natural gas and acid (lab) waste systems at Stony Brook middle school are original to the building and in fair to good condition. Existing equipment, fixtures and trims are original, in fair to good condition. Some fixtures do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements.

Blanchard Middle School's existing domestic water, sanitary & vent, storm drainage, natural gas and acid (lab) waste systems are original to the building, in fair condition. The existing equipment, fixtures and trims are original and in fair condition. Some fixtures do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements.

Westford Academy's existing domestic water, sanitary & vent, storm drainage, natural gas and acid (lab) waste systems at Westford Academy are original to the 1973 building, in fair to poor condition, are very close to reaching their useful life expectancy. The plumbing systems are not expected to last a few more years without exhibiting widespread problems and possible failure. Existing equipment, fixtures and trims are original to the 1973 building, in fair condition. Most of the fixtures do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements. Acid neutralization tanks require work and maintenance to prevent strong odors.

District Office's existing domestic water and sanitary & vent systems are original, in fair to good condition. Existing equipment, fixtures and trims are original, in fair to good condition. Some fixtures do not comply with current accessibility and water conservation requirements and will require repairs to meet all current requirements. Water heaters in all schools were replaced between 2013 and 2019, in fair to good condition, well maintained and require normal/regular maintenance. The electric water heater installed in 2013 at Millennium school is close to reaching its useful life expectancy and has exceeded its warranty. It will soon require a replacement.

0 – Poor –Failed
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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Fire Protection Systems
Abbott, Robinson, and *Day Elementary Schools* do not have automatic fire protection systems.

District Office, Westford Academy, Stony Brook Middle, Blanchard Middle, Crisafulli Elementary, Miller Elementary, Nabnasset Schools have existing automatic fire protection systems and are in fair to good condition.

Fire pump is only present at Westford Academy, in fair to good condition.

Ansul fire suppression is provided at all schools except Robinson and Day Elementaries. Abbot, Miller and Crisafulli Elementary schools have insufficient number of nozzles within their hoods.

Mechanical Systems
Abbot, Day, and Robinson Schools' mechanical systems, distribution and equipment are at or beyond their life expectancy.

Westford Academy's mechanical systems, distribution and equipment are well maintained, but reports from facilities staff indicate significant repairs are required on a regular basis, well beyond normal maintenance.

The mechanical systems, distribution, and equipment at Blanchard Middle, Stony Brook Middle, Crisafulli Elementary, Miller Elementary, and Nabnasset Elementary are generally in good condition and require normal maintenance.

Electrical Systems
Abbot Elementary School - the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in fair-to-poor condition, however, dated and beyond their useful life expectancy, except for a few recent upgrades as outlined.

Robinson Elementary School - existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in poor but operational condition, dated and beyond their useful life expectancy, except for a few recent upgrades as outlined.

Day Elementary - existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in fair operational condition, however, most of electrical systems components are beyond their useful life expectancy as outlined below.

Nabnasset Elementary School - existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system are in good operational condition.

Blanchard Middle Schools - existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system are in fair/poor operational condition, dated and reaching their useful life expectancy as outlined below. There are also specific unsafe electrical system components that require attention and Code violations as outlined below.

Westford Academy and Miller Elementary, Crisafulli Elementary and Stony Brook Middle Schools - existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system, Lightning prevention and Grounding systems are in good operational condition.

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N/A – Not Applicable/Missing
NC – Not to Code

Fire Alarm Systems
The existing fire alarm system is in good operational condition at *Westford Academy, Crisafulli Elementary, Nabnasset Elementary* and *Stony Brook Middle School.*

The existing fire alarm system is in good operational condition at *Miller Elementary School,* however additional devices are needed for improved functioning of the overall system.

The fire alarm system is in fair operational condition at *Blanchard Middle School*. Some areas need improved signal coverage. Additional devices are needed throughout the facility.

The existing fire alarm system coverage is insufficient and in violation of code at *Abbot Elementary School*, *Day Elementary School, and Robinson Elementary School.*

Communication and Security Systems
The data network structured cabling systems throughout the School District are comprised of Category 5e horizontal cabling, a standard that is more than 20-years old and will not support emerging network technologies or educational program demands for bandwidth. Network switches installed within 10 years and functioning.

All Schools are equipped with the unified Cisco VoIP system that was installed within last 5 years. The VoIP system is interfaced with PA system in each school. Wider Area Network services are available to all Schools and Municipal Buildings via the Town owned dark fiber network.

AV Systems that serve larger spaces including Gymnasiums, Cafeterias and Auditoriums are past their useful life expectance. Public Address and Clock Systems are past their useful life expectancy throughout the School District.

Electronic Security Systems were updated throughout the School District within the past five years. All systems are functioning and in good working order.

Existing Energy Use Assessment

The Westford Schools energy use assessment revealed total energy use, EUIs (Energy Use Intensity), falls into two ranges, each demonstrating the impact and variability in building age, mechanical systems, and programmatic use.

Westford Academy, *Blanchard Middle School*, *District Office*, and *Nabnasset School* range within EUIs of 50-74 kBtu/SF/yr.

Stony Brook Middle School, *Crisafulli Elementary*, *Miller Elementary, Robinson Elementary, Abbot Elementary,* and *Day Elementary* Schools range within EUIs of 75-100 kBtu/SF./yr.

Most schools have partial cooling systems which benefit the EUI. Energy use would likely be much higher with fully cooled schools. Many facilities underwent systems upgrades, renovations and additions, improving the overall efficiency of the facility.

Programmatic use also has a significant effect on energy use and explains why some of the newer buildings may have higher Energy Use Intensities than expected. The Westford Schools masterplan offers opportunities

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N/A – Not Applicable/Missing
NC – Not to Code

to address and improve facilities' energy use through planned renovation and upgrades, likely between 20%-40%, pending on level of building systems upgrades and/or replacements.

Most of the Westford school facilities future capital projects will be required to comply with the 2023 Massachusetts Energy Code. The Code requires electrification of heating systems, mostly achieved through efficiency heat pump equipment. Building alterations' requirements are more stringent than the previous code. The Code requirements result in EUIs targets of 30-35 kBtu/SF/yr. for school buildings, pending building program and size.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

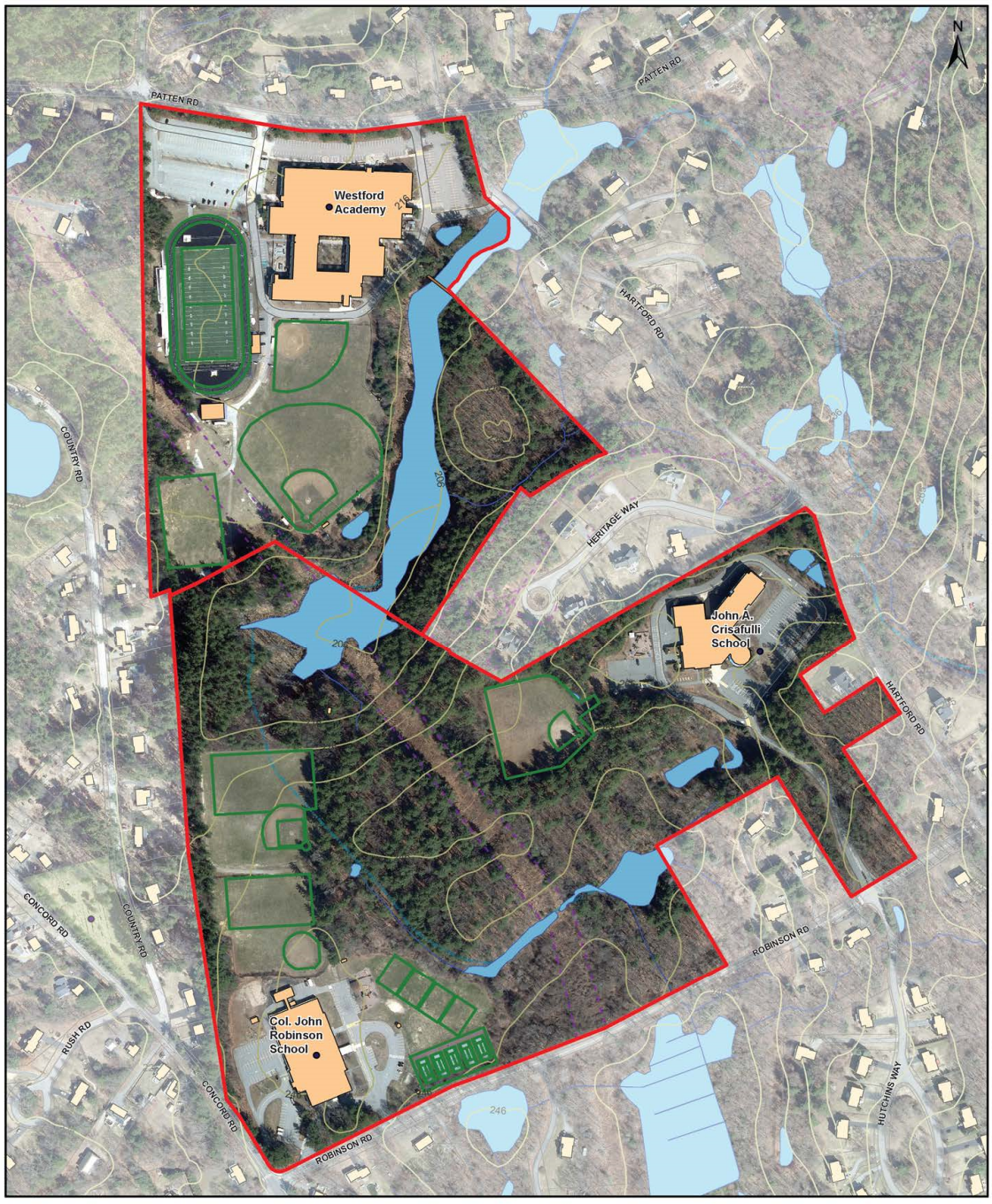
Name of School:	Westford Academy	
Address:	30 Patten Road, Westford MA	
Name of Owner:	Town of Westford	
Grade Levels Served:	9-12	
Student Population:	1,614	
Years in Service:	50	
Year Constructed:	1973	*Designer:* Korslund, LeNormand & Quann, Inc
Additions:	2000	*Designer:* DRA
Existing Drawings:	1971 & 1998	

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.2 CONSTRUCTION CLASSIFICATION DATA:

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Addition 1:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	296,000

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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Westford Academy, John A. Crisafulli School & Col. John Robinson School

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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2.1.3.1 Site & Landscape

Summary:
This report is based on visual observations during a site visit on December 5, 2022. The day was overcast, and cold. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Westford Academy High School is located centrally in the western portion of Westford, north of Interstate 495. The 37.9-acre parcel is adjacent to the Robinson and Crisafulli school parcel and walking paths connect the three schools. The parcel includes the high school building, football and track stadium to the west, recreational fields to the south, and parking lots to the north, east and west. The site elements at Westford Academy High School are overall in fair/good condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The campus contains a track and field and football stadium with bleachers, concession, restroom, and facilities buildings, scoreboard, and press box. There are softball, baseball, and soccer fields to the south and a ropes course with climbing wall to the east. Tennis courts and pickleball courts are located at the Robinson School. Upon a visual assessment all recreational elements appear in good condition.

Site Accessibility and Pedestrian Pathways:

Pedestrian pathways around the campus and through the parking lots are well marked. Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. Most doors are accessible, and there are signed and striped accessible parking spaces throughout the campus. There are ramps to the stadium seating and press box. This school also has a central courtyard containing landscaped areas, concrete stairs, bituminous walkways, and a wood stage. The area appeared to be in good condition. While the upper and lower portions of the courtyard are not accessible to each other, they are accessible from inside the building.

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School walkways are bituminous concrete and plaza areas are concrete pavement. Both the bituminous walkways and concrete plazas are in fair condition. Bituminous paving is in fair condition in most places. There are many instances of minor potholes, raveling, and cracking, in the bituminous walkways. Some of the concrete plazas show weathering because the porticos do not have gutters and runoff has begun to erode the concrete. Other areas of concrete plaza have some spalling.

Vehicular Traffic:

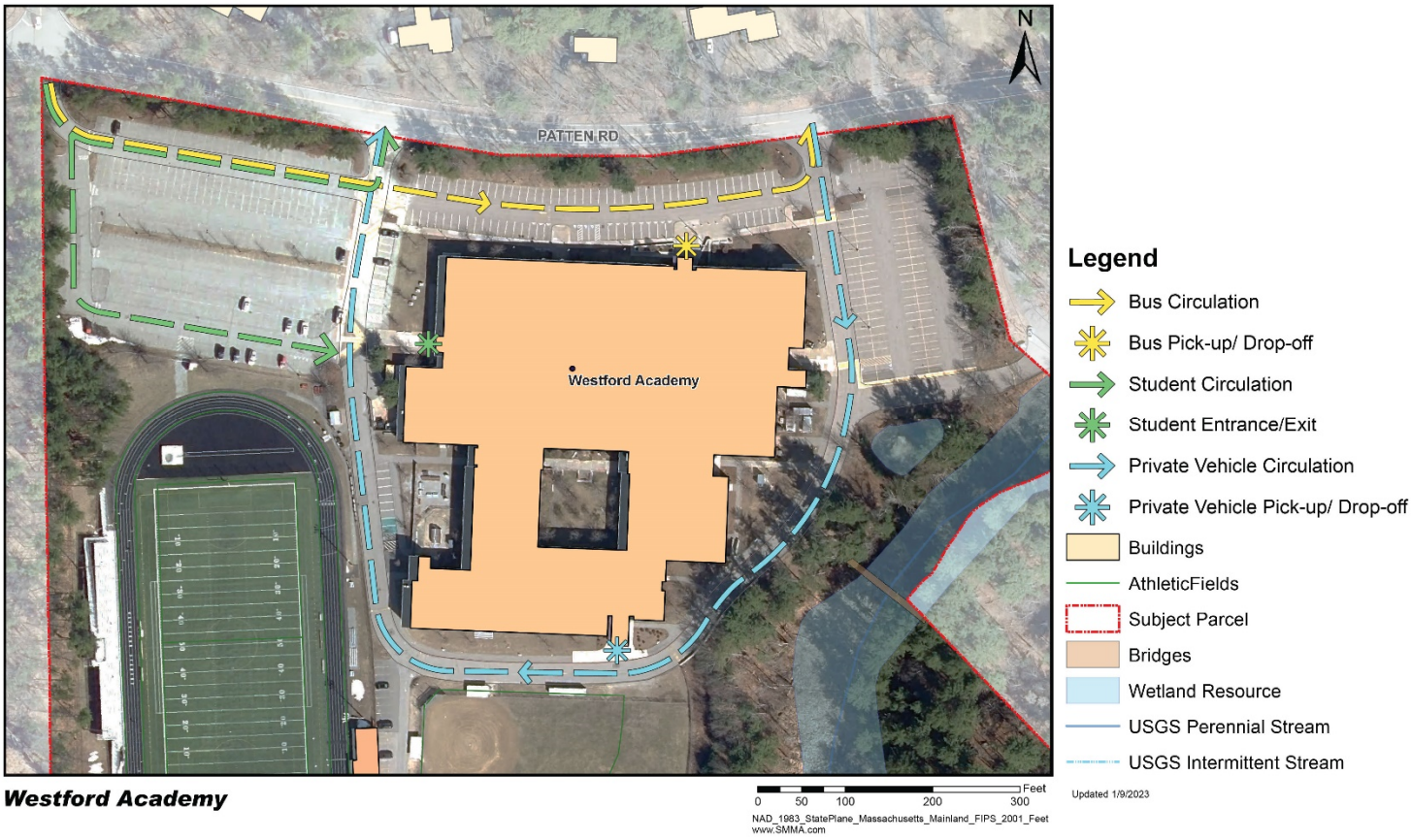
Morning arrival at Westford Academy is overseen by two staff to assist in directing traffic, while afternoon dismissal averages six staff. The arrival sequence for buses is to turn into the western most entrance to the school off Patten Road and drive east along the front of the school building, driving the wrong way against the one-way marked direction for the driveway. Students arriving by bus are delivered or picked up from the Front Entrance. Buses then depart the site by turning left out of the eastern most curb cut on Patten Road. Private vehicles (cars) delivering students enter the campus through wend their way through to the back of the school and deliver students to the south (back) entrance. Once students have been delivered or picked up cars continue around the school and exit via the middle curb cut on Patten Road. There is often conflict in the morning between cars and buses entering and exiting the eastern most curb cut. Student drivers enter using the western most curb cut on Patten Road then park in the west parking lot and enter the school through the west entrance. Teachers use the eastern most curb cut on Patten Road and park in the east parking lot. There is a gated emergency drive to Hartford Road at the east/southeast of the school. There is also additional parking to the south of the building along the softball and football fields.

Parking at the school is concentrated on the north side of the property with approximately 270 spaces for student parking in the northwestern lot, around 80 spaces in the north-central lot for visitors and administration, and about 115 spaces in the northeast lot for faculty and staff and about 25 spaces on the south side of the building near the softball field. Roadways and parking lots on the property are paved with bituminous concrete, there are some areas of cracking, potholes, deteriorating edges, and patching, however there are some areas that are new. For the most part the pavement on site is in fair/serviceable condition.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. Most fencing on the campus is in good condition. However, the fencing on the property is mostly new and therefore in good condition.

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Westford Academy

Site & Landscape Systems Data:

Land Use Type: Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Grassland, Impervious, Palustrine Emergent Wetland, Palustrine Forested Wetland. *(per MassGIS)*

Zoning: Residence A

Lot Area: 37.9 AC

Topography: Gradual slope on west side down to the Boutwell Brook, mounding form on east side of the Brook (See map for more information.)

Wetlands: Present

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INFRASTRUCTURE & UTILITES

	Description	Source	Comments
Water	Town Water	T. Griffin	-
Electricity	Underground Wires	T. Griffin	-
Gas Provider	National Grid	T. Griffin	Primarily burn gas but the boilers can burn oil too
Oil Tank	Underground	T. Griffin	2 - 10,000 gallon tanks underground, currently holding approx. 2,000 gallons in each tank
Storm Water Management	Storm water drains and retention ponds	T. Griffin	Catch basins are cleaned out yearly but the ponds not cleaned
Sanitary	Septic tank for solids & wastewater treatment plant with leach field	T. Griffin	-
Irrigation	Yes – limited	T. Griffin	Courtyard is irrigated. Athletic fields - well-fed

**If septic system – verify if aggregate systems applies*

PAVEMENTS

	Surface	Source	Condition	Comments
Roadways	Bituminous	VI	2/3	Most bituminous. is in fair/serviceable condition. However, there are a few areas of edge failing and many minor cracks.
Ped. Paths in parking	Painted bituminous	VI	2/3	The painted pedestrian paths are clearly marked; however, the solid paint is cracking.
Walkways	Mostly bituminous concrete	VI	2/3	Mostly fair/ serviceable. Some large cracks throughout the site and failings where bituminous. and concrete meet.

Plazas	Concrete pavement	VI	2	Mostly fair/serviceable, though some areas of large cracks and spalling.
Curbs	Mostly granite curbing, some bituminous on exterior border	VI	4/2	Granite is in good condition, however there are some areas of bituminous curb that have failed.

PARKING

	Spaces	**Material**	**Condition**	**Comments**
Parking Lot – North	79 (2 ADA)	Bituminous	2	Pavement is in fair condition. There are some cracks but suitable for parking.
Parking Lot – East	115 (2 ADA)	Bituminous	2	Pavement is in fair condition. There are some cracks but suitable for parking.
Parking Lot – West	273 (3 ADA)	Bituminous	2	Pavement is in fair condition. There are some cracks but suitable for parking.
Parking Lot – South	25 (1 ADA)	Bituminous	3	New
Accessible Parking	8 total	Bituminous	2-3	-
Charging Stations	Yes 4 spaces	Bituminous	2-3	2 charging stations
Service / Loading Dock	2	Concrete	2-3	-
Bike Racks	20 (spaces)	Concrete	2-3	2 wavy bike racks at West entry

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SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	Concrete	Yes	2-3	North Entry does have a curb cut.
Curb Cut - other doors	Concrete	Yes	3	South Entry does have a curb cut.
Curb Cut - Street	Bituminous	Yes	3	Walkway from street entering site has curb cuts
Walkways	Bituminous	Yes	2	The bituminous. walkways appear to meet compliance of slope
Site Ramp	Concrete	Yes	4	North entry ramp is in good condition, though there is no curb cut to easily access the entry from the entrance drive.
Public Street	Bituminous	-	3	Lacks a tactile warning mat and does not have a crosswalk painted through driveway.
Main Entry	Concrete	Yes	2	Main entry is accessible and in fair condition.
Secondary Entries	Concrete	Yes	3/4	All at grade doorways appear accessible. There is an integrated site ramp adjacent to the north entry.
Plazas	Concrete	Yes	2	Slopes appear compliant
Courtyards	Mixed	Partial	3/4	Upper part of courtyard is not accessible from lower part, but both are accessible from building. Stage is not accessible.

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FIELDS

	Surface	*Source*	*Condition*	*Comments*
Track (stadium)	Resilient Surface	VI	4	Newer
Football in Track	Synthetic	VI	4	Newer
Softball / Flex	Natural	VI	4	Newly refurbished ground
Baseball / Flex	Natural	VI	4	Newly refurbished ground
Flex - Southwest	Natural	VI	3	Fair
Basketball hoops in East parking	Bituminous	VI	3	Improvisational court - Pavement in fair condition, some cracks, no pavement markings for basketball.
Climbing wall & Ropes course	Mixed	VI	3	Fair/Good, no in-depth assessment performed

LANDSCAPE

	Comments:
Lawn	Present. Most appeared good but winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	Present. Winter conditions make assessment difficult.
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	N/A

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Greenhouse	Present. Currently being integrated into curriculum
Raised Beds	Present. New

ADDITIONAL SITE FEATURES

	Material	Condition	Comments
Site Lighting	Refer to Electrical Section	-	pole lighting in parking lots, sport lighting for stadium
Fire Hydrants	Standard	3	East and west of north entrance, outside service area for auditorium and on south side near stadium service buildings.
Waste Management	Varies	3	Recycling & garbage: west side at loading dock.
Retaining Walls	Concrete	3	Retaining walls appear in fair/good condition on visual inspection.
Fencing	Chain link, stockade	4/3	Most chain link fencing is excellent, some is good. The wood stockade fencing appeared in fair/good condition.
Gates	Steel	3	-
Flagpole	Steel	3	-
Outdoor Classroom	N/A	-	-

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BUS OPERATIONS:

Number of Buses:	14 Routes
Bus Drop/Pick-Up Area:	Northwest Entry, Front of school Drop/Pick-Up Area
Private Vehicle Drop/Pick-Up Area:	Northeast Entry, South loop Drop/Pick-up Area
Signage:	Adequate

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2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 19, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings dated January 14, 1998, were obtained on site to supplement the study.

Systems:

The original multi-story building was constructed in 1973. The foundation was observed to consist of concrete foundation walls and shallow continuous spread footings. Design drawings indicate isolated concrete shallow spread footings at column locations. The ground-level and subgrade floors are concrete slab-on-grade. The typical building structure consists of structural steel girders and secondary beam and joist framing supported by steel columns with running-bond CMU walls, which serve as the lateral system for the original structure.

Typical floor and roof structures were observed to be composite concrete and metal floor deck and metal roof deck, respectively. The finished floor surfaces showed signs of slab cracking in multiple locations throughout the building. Observation of the structural slabs beneath these locations was prohibited by the finished flooring.

The steel framing was observable in mechanical areas and storage closets as well as the boiler room and noted to be in fair condition. Multiple typical locations for masonry lintels and bond beams were observed to exhibit cracking. The upper and lower gymnasiums have steel roof joist framing supported by steel columns. A vertical crack was seen extending along a control joint from finished floor to the top of the CMU wall at the center of the interior wall of the upper-floor gymnasium adjacent to the corridor.

An addition to the building was constructed in 2000. The observable foundation matches that of the existing building. The vertical structure of the addition consists of structural steel columns and running-bond CMU walls. The steel framing was exposed in the mechanical rooms and bus lobby area. The bus lobby atrium roof framing consists of metal roof deck supported by steel roof joists which tie into steel wide-flange girders supported by square hollow structural steel columns. The finished floor surfaces showed signs of slab cracking in multiple locations throughout the building addition. Observation of the structural slabs beneath these locations was prohibited by the finished flooring.

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The building exterior foundation and façade was observed. While in fair and serviceable overall condition, some cracking and spalling along the exterior foundation wall was observed. Exposed rebar was observed in the foundation wall near the outside corner of the lower gymnasium.

STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings, isolated shallow spread footings at columns	-	3
Vertical Support System:	Structural steel columns, running-bond CMU walls	Mortar and seal joint cracks observed in multiple locations at control joints and wall joints	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Wide-flange structural steel girders and secondary joists/bar joists	Signs of cracking in multiple locations of finished floor	3
Roof Framing Systems:	Metal roof deck supported by wide-flange structural steel girders and secondary joists/bar joists	-	3
Lateral Force Resisting System	Running-bond CMU walls	Cracking at typical door and window lintels	3

Addition (2000)

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings, isolated shallow spread footings at columns	Exposed rebar at one location at exterior wall	3
Vertical Support System:	Structural steel columns, running-bond CMU walls	Mortar and seal joint cracks observed in multiple locations at control joints and wall joints	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Composite concrete/metal deck supported by wide-flange structural steel girders and secondary joists/bar joists	Signs of cracking in multiple locations of finished floor	3
Roof Framing Systems:	Metal roof deck supported by wide-flange structural steel girders and secondary joists/bar joists	-	3
Lateral Force Resisting System	Running-bond CMU walls	Cracking at typical door and window lintels	3

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2.1.3.3 Exterior Envelope Systems

Main Canopies & Ancillary Canopies:

The main canopies at the primary entrances are composed of architectural exposed steel. A metal standing seam roof covers decking. Steel columns are wrapped in prefabricated metal enclosures. The canopy drains discharge directly onto the concrete walk. The metal fascia around the end of each canopy is in fair condition.

The prefabricated metal enclosures are in fair condition. Coatings on the enclosures have limited signs of damaged. Sealant joints at joints appear in fair to good condition.

A plaster soffit at the front of the school shows signs of degradation over the facade and is in condition is fair to good. The underside of the canopy appears to be dirty and outside façade appears to have minor staining generated by weathering of the adjacent metal logo and lettering.

Ancillary canopies are located off stairwells and tucked within the brick wall along the perimeter of the building and are in good condition. Brick relieving angles show rust along the face from drainage running down the face of the brick façade on the outside wall.

Along the addition, where metal panel is used as the primary façade above a precast band, a dark grey stain can be seen. Due to the coloring, the asphalt fabric flashing may have softened and stained the edge.

At two lower level canopies that sit outside the envelope, drainage discharge has saturated and stained a portion of masonry. Significant algae growth and staining can be seen. Outboard metal structure and metal paneling sections have also taken on pests.

Exterior Wall System:

The original wall section of the school is composed of 3-5/8 inch face brick over four inch concrete masonry units, with a 1-3/8” air space. Thru wall flashing is located at each floor level.

Where windows are located, the wall is composed of a plaster system over 6” concrete masonry units and 1” of rigid insulation.

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Existing drawings do not indicate if damp proofing or another moisture barrier was utilized in the cavity to facility drainage to the flashing.

In the addition, designed in 1998 different wall sections were used in their construction. Existing drawings were not available for review of their construction; however, we assume two typical wall construction types given the designer and vintage.

Walls that define the outside perimeter of the lobby, including within the courtyard, we presume consist of a composite masonry wall system with a combination of face brick, split faced CMU and metal paneling over a 2-3/8 inch air space and backup CMU. Two-inch rigid insulation is located inside the wall cavity over damp proofing and flashing systems to provide increased thermal performance and drainage.

Along the classroom wings, including in the courtyard, we presume the walls consist of a combination of face brick, split faced CMU, and/or metal paneling over a 1-7/8" air space and backup six-inch metal studs with exterior gypsum sheathing. Two-inch rigid felt is used in these locations in lieu of damp proofing and and fabric flashing is used to transition to flashing systems and weeps at the base of the wall to provide drainage. Fiberglass batt insulation is provided within the stud cavity to provide greater thermal resistance.

Flashing is in varying conditions and depending on type and location. Flashing used in the original portions of building are copper and those in the addition are copy with asphalt fabric transitions.

Where relief angles are located near storefront, surface rust are shown and demonstrate degradation of the galvanized coatings.

Windows are composed of insulated glass units and installed into aluminum window framing or storefront. The condition of windows in the original portion of building are fair to good. Storefront installed with the 1998 renovation and addition are in good condition.

Along the elevation or the original building, minor amounts of algae staining appears on plaster sections below windows.

Sealant at windows and control joints is in varying states of degradation. Window sealant in areas around the original portion of building have pulled about from joints on either side and are cracking along the face, indicating the deterioration of the organic material in the sealant.

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An expansion between the original building and new has noticeable signs of cracking along the perimeter. Daylight could be seen along the expansion joint cover, indicating backup membrane or insulation may not be present in the wall cavity.

Fiber-reinforced translucent sandwich panels are used to provide a clerestory natural light into the gymnasium, while eliminating glare for target sports. The system is in good condition.

Exterior Entrances:

The main entrance is composed of two eight-foot-wide door openings. An aluminum storefront supports two pairs of doors with large glass lites and glazed transoms above. Lever style hardware is used to enter the school and panic hardware to exit from inside. Continuous hinges and a full set of gasketing is provided for each door assembly. One of the entrances includes electronic access hardware and an automatic operator for access by handicap individuals. These doors are in fair to good condition.

Vinyl door numbering is smaller than required by code at exterior entrances and difficult to read from 36 feet away. The distance away from the door established the height of numbering on entrances at the perimeter of the school and within egress corridors on the interior.

Egress entrances are aluminum and feature lever style handles, stainless door pulls and mechanical cylinders. Some doors are aluminum in aluminum frames, typically at stairways. Egress doors near either gymnasium or auditorium are hollow metal doors in hollow metal frames. Surface mounted panic bars with top and bottom latching are use throughout. The lower rod impacts the clear with of the lower ten inches of the door and is not allow under the code.

Service entrances are typically hollow metal doors in hollow metal frames, featuring lever style door handles and mechanical cylinders. Entrances that receive or provide outside services or receive delivers incorporate electronic access hardware.

Several doors were noted around the courtyard or entrances near the lower levels with deteriorating gasketing, with brushes that had been lost, or silicone sealant torn. Daylight and cold air were observed through these spaces.

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Roof Systems:

The roof installation remains at the school and is composed a fully adhered EPDM system over 3 inches of insulation, installed over galvanized metal decking.

The EPDM system is in poor condition. At the perimeter of the system, patches can be see from leaks. Locations of membrane have become loose over time. Attempts to seal around roof curbing has crack with UV exposure. Wall flashing on the roof is in varying conditions, with membrane tearing or pulling away in some locations. Where roof sections were to discharge from higher roofs to gutters, positive drainage is disrupted and attempts to reseal has resulted in puddling.

Near the science labs attempts to relocate PVC vent piping has occurred. The piping is not properly mounted and given the distance may not function as intended.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick on CMU	-	2-3,
Roof Assembly:	Fully Adhered EPDM	-	2
Roof Drains:	Cast Iron	-	2
Flashing:	Copper Thru Wall Flashing	-	2
Canopies/Overhangs:	Metal Deck, Plaster	-	2,3
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,1
Skylights/Clerestory:	Fiber-reinforced translucent sandwich panels	-	3
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	2
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2
Louvers & Vents	Aluminum and Steel	-	2
Exterior Door Hardware	Levers with Exterior Cylinders at Continuous Hinges, Thresholds Vary	-	3,2,2

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Weatherstripping and Thresholds	Silicone & Brush	-	3
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2
Roof Access	Steel	-	3
Gutters and Downspouts	N/A	N/A	-

Addition (2000)

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick or CMU on CMU	-	3, 3
Exterior Wall Assembly	Metal Panel, on Metal Stud	-	3,3
Roof Assembly:	Fully Adhered EPDM	-	2
Roof Drains:	Cast Iron	-	2
Flashing:	Copper Thru Wall Flashing with Asphalt Fabric	-	2
Canopies/Overhangs:	Metal Deck	-	2
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,1
Skylights/Clerestory:	Fiber-reinforced translucent sandwich panels	-	3
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	2
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2
Louvers & Vents	Aluminum and Steel	-	2
Exterior Door Hardware	Levers with Exterior Cylinders at Continuous Hinges, Thresholds Vary	-	3,2,2
Weatherstripping and Thresholds	Silicone & Brush	-	1-2
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2
Roof Access	Steel	-	3

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N/A – Not Applicable/Missing
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Gutters and Downspouts	N/A	N/A	-

2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose most interior spaces within the original building and is in fair to good condition.

Fabric Covered Panels are utilized in some spaces like the main lobby, cafeteria, gymnasium, and music rooms to absorb sound.

Sheetrock Walls (GWP) Compose the main administration area, classroom spaces in the addition, ancillary walls and enclosures in various parts of the building.

Wood Sills: At some openings wooden sills are typical at windows. When window hopper windows are opened to introduce ventilation and then heated, the wood degrades rapidly due to expansion and contraction.

Rated Partitions Types vary from location to location in the school, but compartmental one wing from another with 1 hour wall assemblies, built from a combination of masonry, sheetrock and other materials. In some spaces, like the mechanical room, or in vestibules leading from the gymnasium and auditorium that penetration joints and entrances must also carry adjacent wall ratings. Doors intended to be closed at all times are held open or retrofits in the building left through-wall penetrations improperly sealed.

An interior expansion joint installed just outside of an egress stair coming from the gymnasium no longer has a cover. The masonry at this location is open in a rated wall.

Off the gymnasium, where electrical systems have penetrated into the gymnasium through rated walls, penetrations have not been repaired to meet rating requirements. Doors off, equipped with closers have been disassembled.

Louvers with Gymnasiums have been badly damaged due to the functions of the space. The louver material may be insufficient to hold up to sport contact.

Protective Padding wraps the perimeter of the gym and is in fair condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Wood Athletic Flooring (WAF) is utilized in both the main and small gymnasiums. Sections were noted at exterior entrances that were starting to buckle to moisture and/or temperature changes near the slab. Vented base at the transition from the flooring to the wall has come free of adhesive, typically at jamb conditions near door openings.

Ceramic Wall Tile is used within the locker room spaces and is in fair to good condition.

Plywood Enclosure: In the main gymnasium, plywood sheathing is installed over wood stud and topped with framing that returns to the perimeter CMU and toped with chicken wire.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: Rated HM Doors and Frames, with glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens.

Stair/Cafeteria Egress Doors: Rated WD Doors in HM Frames, with assumed rated glazing, continuous hinges, operable closures, rim devices, removable mullions and fixed door pulls with mechanical cylinders.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

Doors serving education spaces or egress doors with panic devices should not receive pad locks, flush bolts, or dead bolts that override the ability to egress in case of an emergency.

Rated egress doors that replaced butt hinge with continuous hinges have left mortised void in door and frame.

Salt corrosion at the bottom of hollow frames common. Surfaces starting to rust.

Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, , and other ancillary spaces, like storage rooms.

Ceramic Tile Floor (CT) is located within bathroom and locker room spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required.

Flooring in the shower areas is stained and shows signs of aging.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. A few areas of cracking were observed in the kitchen. Locations near the walk-in refrigerator and other locations.

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Epoxy Floor Coatings are see in the locker room spaces and appear to be in good condition. In a few instances shrinkage cracks from the slab below has telegraphed through to the surface of the floor.

Carpet (CPT) is used in the auditorium, administrative spaces, and library. Two types, both tile and broadloom styles are seen throughout.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. This results in mismatching tile and tiles that may not maintain equivalency in acoustical absorptive performance.

Roof leaks or leaks around window openings have required replacement of ceiling tile systems throughout the school. Spaces with immediate adjacency to the roof on the third or second floors require the most frequent attention.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

Gypsum Soffits (GWB) are in spaces that make use of ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are located through entrances and corridors.

Exposed to Structure (ETS) can be seen in the gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

Adhered Tectum Ceiling Panels (ATCP) are used within the band room to assist in the absorption of sound.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU	3	VCT	2-3	ACP	2
Library	CMU & GWB	3	CPT-BL	2-3	ACP	2-3
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	2-3
Auditorium	CMU, Acoustic Panels,	3,3	CPT-BL, Conc.	2-3	ACP, GWB, Acoustic Reflectors	3,3
Stage	CMU	3	WD	3	ETS	3
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	3
Small Gym	CMU	3	WAF	2-3	ETS	3
Weight Room:	CMU	2	RF, VCT	2,1	ACP	1-2
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3, 2-3
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Strings/Band Room	CMU & GWB	3,2	VCT	2	ATCP, ACP	2,2
Choral Room:	CMU	3	VCT	2-3	ACP, GWB	2-3
Entry Vestibules:	CMU	3	MAT	2-3	GWB	2-3
Corridors:	CMU	3	VCT	2	ACP, GWB	3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU	3	CT	3	GWB	2-3
Stairs:	CMU & GWB	2-3	RT/RSN	2	ACP	2-3
Offices:	CMU &/or GWB	3	CPT-T	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-T	3	ACP	3
Kitchen Cooking/Prep Area:	CMU	3	QT	2	ACP	3
Kitchen Storage:	CMU	3	QT	3	ACP	2-3
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2-3
Mechanical Room:	CMU	2	PTD Conc.	2	ETS	2-3

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”		Yes	3
Door – Service:	HM	-	3’-0”	2 HR	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	1 HR	Yes	3
Auditorium Egress Doors	WD	No	6’-0”	2HR	Yes	3

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR ENVELOPE SYSTEMS:

Addition (2000)

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	GWB	2-3	VCT	2-3	ACP	3
Science Classrooms:	GWB	2-3	VCT	2-3	ACP	3
Art Classrooms:	GWB	2-3	VCT	2-3	ACPT	3
Language Lab	GWB	2-3	VCT	2	ACP	3
Life Skills	GWB	2	VCT	2-3	ACP	3
Entry Vestibules:	CMU	3	MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	TZO	2-3	ACP, GWB	3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Stairs:	CMU & GWB	2-3	RT/RSN	2	ACP	2-3

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom:	WD	Yes	3’-0”		Yes	3
Door – Service:	HM	-	3’-0”		Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	1 HR	Yes	3

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 19, 2022, and review of original construction documents dated January 14, 1998. The building was built in 1973 and addition/renovation in 2000. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the boiler room with two (2) pressure reducing valves. The existing 4" water meter is still in good condition. The existing water service does not include a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and almost at the end of its useful life expectancy and it is not expected to last a few more years without exhibiting widespread problems. Pipe insulation is original, and in fair to poor condition. Some exposed pipes are not insulated. The domestic cold water piping installed in 2000, is assumed to be in fair to good condition, and expected to last not more than 30 years before it will exhibit widespread problems.

Some cold water piping in the boiler room were replaced and not insulated.

Some pipe insulation in the boiler room is in poor condition.

The 2" reduced pressure backflow preventer for HVAC make-up is in fair to poor condition. The air gap fitting is corroded and in poor condition. The pipe insulation is in fair to poor condition. The PVC jackets are damaged.

There is a separate backflow preventer for non-potable cold water in the science room. It is located in a storage room across from elevator 1. The backflow preventer and air gap fitting are in poor condition. The pipe insulation is in poor condition.

Domestic Hot Water

Domestic hot water for the facility is supplied from two (2) gas-fired water heaters manufactured by Lochinvar. The water heaters were installed on March 04, 2017, and it is located in the boiler room, and in fair to good condition. The circulation pump was installed on April 06, 2021, and in fair to good condition. The mixing valves and pressure reducing valve, are in fair to poor condition. There is no expansion tank for hot water system, still in good condition. There is a condensate neutralizing unit and pipe discharging into a floor drain. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and almost at the end of its useful life expectancy and it is not expected to last a few more years without exhibiting widespread problems. Pipe insulation is original, and in fair to poor condition. Some exposed pipes are not insulated. The domestic hot water piping installed in 2000, is assumed to be in fair to good condition, and expected to last not more than 30 years before it will exhibit widespread problems.

Some hot water piping in the boiler room were replaced and not insulated. Some pipe insulation in the boiler room is in poor condition.

There is a separate backflow preventer for non-potable hot water in the science room. It is located in a storage room across from elevator 1. The backflow preventer and air gap fitting are in poor condition. The pipe insulation is in poor condition.

The mixing valve installed in a storage room across from elevator 1, supplies tempered water to all emergency showers/emergency eyewashes in science rooms. The developed length of the supply piping from the main to each individual emergency equipment fixture connection exceeds the current Board Policy requirement of 15 feet. The mixing valve is in fair condition. Pipe insulation in fair condition.

Natural Gas

The existing 14” gas header with five (5) 4” gas risers enters the building through the fire pump. The existing natural gas system includes a gas meter, valves, and gas regulator. The gas meter is located outside of the fire pump. The gas piping is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition, and almost at the end of its useful life expectancy and it is not expected to last a few more years without exhibiting widespread problems.

Gas piping for the gas-fired kitchen equipment is in fair condition.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in fair condition due to its age. Sanitary drainage piping is original to the building, and almost at the end of its useful life expectancy and it is not expected to last a few more years

without exhibiting widespread problems. The sanitary drainage piping installed in 2000, is assumed to be in fair to good condition, and expected to last not more than 30 years before it will exhibit widespread problems.

All kitchen equipment is original and in fair condition. The kitchen's triple pot sink is provided with grease trap that is installed below slab and therefore could not be observed. The waste piping below the triple pot sink is original and in fair condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22. The waste piping below the food prep sink is in fair to poor condition.

The duplex sewage ejector pump in the boiler room is in fair to good condition. It was reported that the duplex sewage ejector pump was replaced seven years ago.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in fair condition due to its age. Storm drainage piping is original to the building, and almost at the end of its useful life expectancy and it is not expected to last a few more years without exhibiting widespread problems. The sanitary drainage piping installed in 2000, is assumed to be in fair to good condition, and expected to last not more than 30 years before it will exhibit widespread problems.

The existing roof drains with cast iron dome strainers are all original, in fair condition.

Acid (Lab) Waste

The existing acid (lab) waste system is collected below the slab and is therefore not visible and could not be observed. Acid (lab) waste piping is original to the building, and almost at the end of its useful life expectancy and it is not expected to last a few more years without exhibiting widespread problems. The acid (lab) waste piping installed in 2000, is assumed to be in fair to good condition, and expected to last not more than 30 years before it will exhibit widespread problems.

There are two (2) locations of acid neutralization tanks. One is located in storage room across from an elevator and the other one is located in storage room inside the dark room. Both acid neutralizing tanks are giving off a strong odor. Both tanks are not tightly sealed.

There is an acid (lab) vent pipe on the roof that is offset to be away from fresh air intake and the material is PVC. PVC is not an approved material for acid (lab) waste system. The approved material is polypropylene.

Acid (lab) vents through roof are in fair to good condition.

Fixtures:

All plumbing fixtures are original, and in fair condition.

Women's Locker Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 19" and 17" from the finished floor to the top of the seat.

Lavatories are counter type, vitreous china with single lever faucets, generally in fair to good condition. Pipes below the lavatories are not insulated.

Nurse's Suite Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 18" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with hot and cold water handles and faucet, in fair to good condition. Pipes below the lavatory are insulated.

Special Ed. Room 127:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition.

Lavatory is wall-hung type, vitreous china with single lever faucet, in fair to good condition. Pipes below the lavatory are insulated.

*Life Skills 125:*Water Closet is floor mounted, tank type, vitreous china, in fair to good condition.

Lavatory is wall-hung type, vitreous china with single lever faucet, in fair to good condition. Pipes below the lavatory are insulated.

Band Room/Music Room:

Sink is stainless steel, non-ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucet and bubbler, in fair to good condition.

Nurse's Suite:

There are two (2) stainless steel sinks, ADA compliant, self- rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucets and bubblers, in fair to good condition.

Teacher's Dining:

Sink is vitreous china, non-ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucet and bubbler, in fair condition. Pipes below the sink are not insulated and corroded.

Library Office:

Sink is stainless steel, non-ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucet and bubbler, in fair to good condition.

Special Ed. Room 127:

Sink is stainless steel, non-ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucet and bubbler, in fair to good condition. The mounting height is 29-3/4" from the finished floor to the counter.

Life Skills:

Sinks are stainless steel, non-ADA compliant, self-rimming/drop in single and double compartments with hot and cold water wrist blade handles and gooseneck faucets, in fair to good condition.

Classroom 117 (Art Room):

There are two (2) stainless steel sinks, non-ADA compliant, self- rimming/drop in single compartment with hot and cold water wrist blade handles, gooseneck faucets, in fair condition. Clay traps are installed below the sinks.

Science Room 231:

Lab sinks are integral to the countertop, in fair condition. All lab sinks are non-ADA compliant. Faucets are non-ADA compliant, with hot & cold water handles and vacuum breakers, in fair to good condition.

Gas turrets are deck mounted, in fair to good condition.

Freestanding emergency shower/eyewash unit was installed in this room.

Fume hood with integral sink and faucet with hot & cold water handles and vacuum breaker, non-ADA compliant. Faucet and gas turrets are in fair to poor condition.

Science Prep Room:

Lab sink is integral to the countertop, in fair condition. Lab sink is non-ADA compliant. Faucet is non-ADA compliant, with hot & cold water handles and vacuum breakers, in fair to good condition.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Miscellaneous Fixtures:

The custodian's mop sinks are original, floor mounted, and in fair condition.

Drinking fountains installed within the building: Bi-level unit, ADA compliant, recessed with built-in chiller and push button activation, electric water coolers, in good condition.

The drinking fountain installed in the gym is stainless steel, recessed in wall, non-ADA compliant, non-electric, with no built-in chiller, in fair condition.

There is no emergency shower/eyewash unit present in the boiler room.

There is no emergency eyewash in the Nurse's Suite.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents dated January 14, 1998, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

The existing service sink in the boiler room is not in use, in poor condition. The trap below the service sink is corroded.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4"	4"	No	N/A	Copper	City	49	2
Gas Service:	14" Gas Header	Not Accessible, Unknown	Yes	N/A	Black Steel	Gas company	49	2

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	2	Due to age
Domestic Hot Water:	Copper	3	Mineral-fiber	2	Due to age
Sanitary Waste & Vent:	Cast iron	3	N/A	N/A	-
Storm Drainage:	Cast Iron	3	Mineral-fiber	2	Due to age
Gas:	Black Steel	3	N/A	N/A	-

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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Non-Potable (Lab) CW:	Copper	3	Mineral-fiber	2	-
Non-Potable (Lab) HW:	Copper	3	Mineral-fiber	2	-
Acid (Lab) Waste & Vent:	Polypropylene	3	N/A	N/A	-
Kitchen Waste:	Cast Iron	3	N/A	N/A	-
Tempered Water:	Copper	3	Mineral-fiber	2	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing, tank-type/Gas-fired	5	3	-
Sanitary Ejector Pump:	Duplex/Electric	7	3	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 10 years	2	-

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall and floor	See Above	Yes & No	3	-
Urinal:	Wall mount	See Above	Yes & No	3	-
Lavatory:	Wall mount	See Above	Yes & No	3	-
Drinking Fountain/Water Cooler:	Wall mount	See Above	Yes & No	4 & 2	-
Classroom Sink:	Counter	See Above	Yes & No	3	-
Classroom STEM Sink:	Counter	See Above	No	3	-
Classroom Drinking Fountain:	Deck mount	See Above	No	3	-
Mop Sink:	Floor	Janitor's Closet	N/A	2	-
Showers:	Floor	See Above	Yes & No	3	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Miscellaneous Fixtures	**Type**
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted, non-freeze
Floor Drain:	Floor mounted, Type varies by location.
Emergency Shower/Eyewash	Freestanding
Emergency Location	Science Rooms
Lab Faucets	Deck mounted
Lab Gas Cocks:	Deck mounted

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 19, 2022, and review of original construction documents dated January 14, 1998. The building was built in 1973 and additions/renovations in 2000.

Services:

The 8" fire service enters the building in the fire pump room. The existing 8" fire service includes a fire pump, jockey pump, double check valve assembly, supervised O.S. Y. gate valves, fire protection risers with wet alarm valves and main flow switch, sprinkler drain, 4 inch main from existing fire department connection, in fair to good condition.

The opening around the sprinkler pipe as it leaves the fire pump room, through the two-hour fire rated wall is not fire stopped. This is not in compliance with the code.

Systems:

Wet-pipe sprinkler system was installed in 2000, throughout the facility. Wet alarm valve and riser are in the fire pump room.

Existing sprinkler head types are recessed, pendant, concealed, upright and sidewall sprinkler heads. The wet sprinkler piping and sprinkler heads are in fair to good condition, and it is expected to last in less than 30 years before it will exhibit widespread problems. The fire pump and jockey pump are in fair to good condition, and it is expected to last a few more years before it will exhibit problems. Some pipes are exposed but majority is installed above the ceiling.

There are no sprinkler heads installed in the fire pump room.

Gym:

There are upright sprinkler heads installed close to the ductwork. The sprinkler head's spray pattern might be obstructed by the ductwork. Not in compliance with NFPA-13.

Band Room/Music Room:

There are upright sprinkler heads installed close to the ductwork. The sprinkler head's spray pattern might be obstructed by the ductwork. Not in compliance with NFPA-13.

Black Box Theater:

Ceiling tiles are missing rendering sprinkler protection ineffective. This is a code violation and not NFPA-13 compliant.

Corridor outside of Library:

There are a lot of sprinkler heads installed about one foot from the surface mounted light fixtures. The sprinkler head's spray pattern will be obstructed by the surface mounted light fixtures. Not in compliance with NFPA-13.

Boiler Room:

Some upright sprinklers are installed above pipes and conduits. The sprinkler head's spray pattern will be obstructed by the pipes and conduits.

Storage Room (Clothes/Uniforms):

Ceiling tiles are missing rendering sprinkler protection ineffective. This is a code violation and not NFPA-13 compliant.

Teacher's Dining:

Sprinkler heads were installed close to surface mounted light fixtures. The sprinkler head's spray pattern will be obstructed by the surface mounted light fixtures. Not in compliance with NFPA-13.

S17-2 Stair:

There is a sprinkler head installed close to a ductwork. The sprinkler head's spray pattern might be obstructed by the ductwork. Not in compliance with NFPA-13.

WABC Studio:

There are sprinkler heads with guards installed close to cable trays and ductwork. The sprinkler head's spray pattern might be obstructed by the cable trays and ductwork. Not in compliance with NFPA-13.

The soffit outside of the cafeteria (where electric water cooler was installed) has no sprinkler head.

The soffit near the catwalk entrance and between the men's and women's toilet rooms (where electric water cooler was installed) has no sprinkler head.

Electrical Closets:

Main Electrical Room, Electric Room/Pump Room, *Electrical Closets* near elevator, *Elec. Room* near the elevator and fire door: No sprinkler heads installed in these rooms.

Electrical Room inside the gym:

There are no sprinkler heads installed in this room. The electrical panels installed are not emergency panels. The electrical room door is two-hour rated.

Emergency Electric Room:

Two (2) sprinkler heads with water shields were installed in this room.

Gym:

There are some sprinkler heads installed close to ductwork. The sprinkler head's spray pattern might be obstructed by the ductwork. Not in compliance with NFPA-13.

There is no heat in vestibule 288D, adjacent to lobby 288A, then the sprinkler head installed in the vestibule will freeze.

Weight Room:

There are several sprinkler heads without escutcheon plates in this room.

MDF Room: Two (2) sprinkler heads with water shields were installed in this room.

Ansul Fire Suppression System

Kitchen:

The kitchen hoods #1 & #2 have ansul fire suppression system in fair condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer / Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	8”	Yes/DCVA	Stainless Steel	N/A	Black Steel	3	-
Fire Pump:	Not Accessible	N/A	Cast Iron	N/A	N/A	3	Replaced 7 years ago.

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes. Nine (9) sprinkler zones	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendent; concealed; upright; sidewall	Chrome Plated and Natural Brass	-

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally well maintained but it has been reported that there are significant repairs required on a regular basis, well beyond normal maintenance.

Systems:

The four (4) original boilers were replaced with three (3) Weil-McLean dual fuel hot water boilers in 2012. The boilers are controlled through a local boiler control panel and are not connected to the Siemens BMS. Heating hot water is distributed through a primary/secondary arrangement with multiple secondary zones. There is no chemical water treatment in the hot water system.

There are two (2) 10,000-gallon double wall underground fuel oil storage tanks adjacent to the *Boiler Room* installed in 1998, as well as an indoor fuel oil storage tank and a duplex pump set. The boilers have not run on oil in years and much of the fuel oil was burned off, leaving approximately 2,000 gallons of fuel oil in each tank.

The building is conditioned by rooftop units and is primarily heated and ventilated only.

The *Offices*, part of the *Cafeteria*, *Interior classrooms in Part C, Auditorium* and *Library* are served by dedicated rooftop units with DX cooling. It was reported that the compressors on these units are failing at a rapid rate. It was also reported that both compressors were recently replaced on the *Auditorium* rooftop unit (RAC-1D), and that the *Office* rooftop unit (RAC-1B) needs a new compressor even though the compressor was replaced about ten years ago.

It was reported that many of the rooftop unit heating coil actuators are inoperable, and that wind driven rain is getting into both AHU-1E and RAH-2E.

The *Band Room/Uniform Storage Room* reportedly experience low humidity in the winter and high humidity in the summer, with mold found on the uniforms over the summer. The adjacent Trainers Room contains a large ice machine, two refrigerators, and a washer & dryer, and was noticeably warm during our visit. It was also reported that there is an opening above the ceiling between the two

spaces to provide cooling to the *Trainer's Room*, which could be contributing to the issue.

The exhaust ducts from the *Acid Tank Rooms* appear undersized. Strong odors were noted in these spaces.

In many classrooms teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

Several classrooms have been converted to offices and now have window air conditioners.

The low return registers in the *Gym* are damaged and portions are missing completely, while other portions are blocked by Gym padding.

The special education classrooms have portable air conditioners.

There were a number of clothes washers/dryers throughout the building, but it was unclear where any of these dryers vented to.

MDF/IDF Rooms have dedicated wall mounted split systems for cooling. It was noted that the exhaust duct in *IDF Room* at 233 is not capped but stuffed with a rag.

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

A duplex fuel oil pump set in the Boiler Room, along with an indoor fuel oil tank in the Generator Room, have been abandoned in place along with the emergency generator.

The automatic temperature controls are not connected to a district wide front end, or to any other school building. The controls are a combination of Siemens Apogee DDC controls with an operator workstation, and York controls at the rooftop units. (The Siemens Apogee system at Westford Academy is a different version than the Apogee system at Miller, Crisafulli, Stony Brook and Blanchard.) It was reported that there were ongoing control issues, such as dampers commanded open that remain in the closed position as witnessed during the walk through, and that the Siemens system is original to the building and in need of an update. The York controls are obsolete and replacement parts are no longer available.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	Dual fuel	Hot water boiler	Weil-Mc Lean	2012	3
Heating Equipment #2:	Dual fuel	Hot water boiler	Weil-McLean	2012	3
Heating Equipment #3:	Dual fuel	Hot water boiler	Weil-McLean	2012	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	Fifteen (15) base mounted end suction pumps in Boiler Room: five (5) primary pumps and ten (10) secondary pumps	Bell & Gossett	2000	3
	Two (2) in-line tertiary pumps in First Floor Closet	Bell & Gossett	2000	3
Cooling Distribution Equipment:	NA	-	-	-
Air Distribution Equipment:	Five (5) RTU's with DX cooling serving Office/half of Cafeteria/Teacher Dining, Library, Interior classrooms and perimeter offices on 1C, Interior classrooms on 2C, and the auditorium.	York	2000	2
	Six (6) RTU's with DX coil for future cooling (no condenser) serving half of Cafeteria, classrooms on 1C & 2C, spaces adjacent to Auditorium, classrooms on 1F, classrooms on 2E, classrooms on 2F	York	2000	2
	One (1) indoor air handling serving the Band Room*	York	2000	2
	One (1) rooftop air handling unit serving Locker Rooms/Gym Storage/Weight Room/Aerobics	York	2000	2
	Two (2) heating & ventilating units serve the Boiler Room	York	2000	2

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	VAV heating & ventilation and	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.

	finned tube radiation				
Interior Classrooms-1C:	VAV heating & cooling (RAC-1C)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Interior Classrooms-2C:	VAV heating & cooling (RAC-2C)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Theatre Classroom 109:	Ceiling mounted split system	Refer to Controls Section	Liebert	N/A	3
Science Classrooms:	VAV heating & ventilation and finned tube radiation	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Science Classrooms:	Roof mounted exhaust fans for double sided fume hoods	Refer to Controls Section	N/A	2000	3
Art Classrooms:	VAV heating & ventilation and finned tube radiation	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Art Classroom:	Kiln exhaust (2) Vent-a-Kiln type One not in use	Refer to Controls Section	N/A	2000	3
Art Room:	Portable air filtration system	Refer to Controls Section	Jet	N/A	3
Music Classroom (Band):	Indoor heating & ventilating unit (AHU-1A)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Music Classroom (Choral):	VAV heating & cooling (RAC-1C)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Offices:	VAV heating & cooling (RAC-1B)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Library:	VAV heating & cooling (RAC-2B) and finned tube radiation	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Auditorium:	All air heating and cooling (RAC-1D)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Cafeteria-east:	Constant volume ventilation air (RAH-1B) and finned tube radiation	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Cafeteria-west:	VAV heating & cooling (RAC-1B)	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.

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Gymnasium:	Unit ventilators (4)	Refer to Controls Section	Herman Nelson	1973	3
Aux Gymnasium:	H&V Units (2)	Refer to Controls Section	York	2000	2
Multipurpose Room:	NA	Refer to Controls Section	-	-	-
Kitchen:	Unit ventilator	Refer to Controls Section	Herman Nelson	1973	3
Corridors:	Air from adjacent units and FTR/radiant panels	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Toilets:	Exhaust & convector	Refer to Controls Section	N/A	See Distribution Section.	See Distribution Section.
Locker Rooms:	Constant volume heating & ventilation air (RHU-1E)	Refer to Controls Section	N/A	See Distribution Section	See Distribution Section

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Kitchen Hood #1 roof exhaust fan	N/A	1973	3
Equipment 2:	Kitchen Hood #2 upblast exhaust fan	Greenheck	2000	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	NA			

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	DDC	Siemens Apogee	2000	2
	DDC at RTU's	York ISN	2000	1

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system, Lightning prevention and Grounding systems are in good operational condition.

Services:

Electrical – National Grid. Initiates at the existing street utility poles and extend underground towards the school building. Electrical service terminates at the outdoor pad-mounted utility transformer.

Telephone – Verizon. Initiates at the existing street utility poles and extend underground towards the school building.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is wall-mounted adjacent to the transformer. Transformer appears in good operational condition. No specific issues were reported.

Generator:

Outdoor 275kW 277/480v 3ph 4w diesel-fired emergency generator, by Blue Star Power Systems, with skid-base tank. It replaced recently the “older” one (still present but no operational at the lower level), in good operational condition. Supports Life-safety and Standby loads via two separate ATS’s.

Distribution System:

The utility transformer’s secondary feeder is terminated in a 2,500 Amp 277/480v 3 phase 4 wire Main Switchboard manufactured by Square D. The switchboard is in the *Main Electric* room at the ground level. It’s equipped with a 2,500 Amp Main Service Disconnect, Utility section, Fire pump section, Surge protection device, and downstream circuit breaker. The Main Switchboard supplies Normal power to two motor control centers, MCC1 and MCC2, both elevators (one of them via another distribution panel), Auditorium stage dimming panel and to several other Normal power school building loads and panels, also to sports lighting and

WWTP.

Emergency power is supplied from the Generator via two ATS's to distribution panel MDE, motor control center MCCE and to several other Standby and Life-safety building loads and panels.

The main switchboard and downstream power distribution equipment were observed in good operational condition.

The quantity of receptacles in various spaces appear to be adequate for the respective space programs, except for Library. In kitchen and in a few typical and science classrooms the non-GFI receptacles near sinks were observed, and those shall be replaced with the GFI protection.

Lighting Systems:

Exterior lighting:

Majority of the original HID pole-mounted and wall-mounted lights were replaced with LED type. Pedestrian post light, decorative pole-mounted lights in the courtyard and the main canopy lights remained "older". All exterior lights are time-controlled. Overall, the exterior lighting is in good operational condition and provides adequate illumination.

Interior lighting:

Overall, the lighting fixtures installed throughout the building are in good operational condition. In general, interior lighting system consists of recessed and pendant fluorescent lighting fixtures, but they are non-dimmable type and not of energy-efficient type. Lighting in corridors on 1st and ground floors was recently updated with 2'x2' and 2'x4' "basket" type LED lights with integral occupancy sensors. Lighting systems in both *Gymnasiums* and *Library* were also recently upgraded to LED lights with integral occupancy sensors. *Locker rooms* and *bathrooms* are equipped with 1'x4' lensed troffers with T8 fluorescent lamps. The *Band room* has 2'x'2 pendant fluorescent lights. *Auditorium* has a combination of incandescent and fluorescent lights, and the stage has a separate "theatrical" lighting system – all *Auditorium* lights appear in good operational condition. The *Choral room* has 2'x2' lensed troffers with T8 lamps. The kitchen is equipped with 1'x4' lensed troffers with T8 lamps. The main lobby is equipped with fluorescent downlights supplemented with linear wall washers and decorative sconces. *Classrooms* and similar educational spaces have various lighting combinations: linear pendants with T8 lamps; 2'x2' and 2'x4' lensed recessed lights with T8 lamps; 2'x4' parabolic troffers with T8 lamps. *Office and Nurse areas* have 2'x4' and 2'x2' parabolic recessed lights with T8 fluorescent lamps. *Corridors* on 2nd floor have "older" surface-mounted lensed lights showing some deterioration signs.

In general, lighting illumination levels are found to be adequate throughout the building, except for the several bathrooms and the 2nd floor corridors.

Dedicated emergency egress lights and exit signs are supported by the Generator.

Lighting controls:

Recent updates include occupancy sensors integrated with new LED lights in Gymnasiums, Library, and corridors. There is no programmable TC-controlled lighting control system for interior lighting,

and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures can't be dimmed down during sufficient natural daylight times.

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, all appear to be in good operational condition.

The lightning prevention system is implemented by a lightning prevention mast mounted at the top of the boiler stack; all appear to be in good condition.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	277/480	3 phase 4 wire	1973	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	1973	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor/ 275KW	Diesel	277/480v 3ph 4w	Recent replacement	4

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Switchboard	277/480v 3ph 4w	Main Electric room	1998	4
	Panels and transformers	277/480 3ph 4w	Throughout	1998	4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	4
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria:	Standard	1ph/120v	Grounded	4
	Corridor:	Standard	1ph/120v	Grounded	4

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N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	Linear; 2'x4' parabolic/ other/ T8 fluorescent	Pendant and recessed	1998	4
	Offices:	2'x2' and 2'x4' parabolic/ T8 fluorescent	Recessed	1998	4
	Library:	2'x2' LED and fluorescent	Recessed and wall brackets	1998 and recent upgrades	4
	Gymnasium:	2'x4' LED	Pendant	Recent upgrade	4
	Cafeteria:	Downlights with deco trims and pendants	Recessed and pendant	1998	4
	Corridor:	2'x2' and 2'x4' "basket" style LED, downlights,	Recessed	Recent upgrade	4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, Pedestrian, and perimeter wall-mounted	LED and HID lights	Pole-mounted and perimeter wall-mounted	Recent replacements with LED type	4

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to Generator	Various	Various	1998	4

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	1998	4
	FA signaling	Notifier and other	Various	2002	4

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2.1.3.9 Fire Alarm Systems

Summary:

In general, the existing fire alarm system is in good operational condition.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable, by Honeywell Notifier. The radio box is manufactured by AES IntelliNet. Both are in the Boiler room at the ground level.

Devices:

Remote graphic LED annunciator at the ground level entrance door. Smoke detectors, pull stations, horn/strobes, strobe only units, in adequate acceptable installation concept.

Recently added BDA system is reported as fully operational.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Honeywell Notifier	Horn/strobes and Strobes	1998	4

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Horn/strobe	None	1998	4
Offices:	None	Horn/strobe and Strobe	None	1998	4
Gymnasium:	Smoke	Horn/strobe	Yes	1998	4
Cafeteria:	Smoke	Horn/strobe	Yes	1998	4
Lobby/Corridor	Smoke	Horn/strobe	Yes	1998	4
Kitchen:	None	Horn/strobe	Yes	1998	4
Toilets:	None	Strobe	None	1998	4
Basements:	N/A	N/A	N/A	N/A	N/A

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2.1.3.10 Communications & Security Systems

Security system

System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria and Gymnasium local AV systems are passed its useful life expectancy. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis camera & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

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PUBLIC ADDRESS SYSTEMS	Device Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

2.1.3.11 Accessibility Systems

General Egress:

Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. Appropriate signage has been provided at doorways with braille.

The *elevators* can lift a person in a normal wheelchair. Class of Elevator is unknown.

Ramps are approximately located at level transitions with proper handrails and guardrails, where applicable.

Stairs feature appropriate guard and handrail heights, cross sections and extensions.

Auditorium:

The auditorium is equipped with an appropriate number of locations for handicap individuals to sit at different sections of the seating area. Wheelchair access to the stage is through an adjacent lift.

Band and Auditorium corridors adjacent to band have become hallways to store risers, old desks, and other equipment. Using corridors for storage reduces the overall width of hallways for general egress, but also a wide enough accessible route for handicap individuals.

Egress Stairs outside the auditorium have become storage locations for misc. materials related to the theater arts program and obstruct egress out of the auditorium.

Classroom Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces feature sinks that incorporate appropriate knee space for student use and are mounted for accessibility except within sections of original casework in the school.

Markerboards and Tackboards are mounted 40” to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48”.

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

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Locker Rooms: Shower spaces are not accessible. The required space for maneuvering into and out of a shower receptor is not provided. Accessories do not meet the needs of a user.

Bathroom Spaces:

Fixtures: Current configuration of many bathroom fixtures meets the requirements of students and staff at the high school.

Toilet compartments and Fixtures maintain appropriate maneuvering clearances and clear spaces with exceptions in the locker rooms and a handful of drinking fountains across the school. Grab bars and toilet accessories are appropriate mounted for support of students or adults.

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance:	9'-0"	-	-	-
Exterior/Egress Doors:	6'-0"	HM or AL	Lever Style Handle, with automatic operator at main doors.	3
Signage:	Present	Plastic		2

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Entrance Vestibules:	9'-0"	-	-	-
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style Handle	2-3
Offices:	3'-0"	WD	Lever Style Handle	2-3
Library:	6'-0"	WD	Lever Style Handle	2-3
Stage:	6'-0"	WD	Lever Style Handle	2-3
Gymnasium:	6'-0"	WD	Lever Style Handle	2-3
Cafeteria:	6'-0"	WD	Lever Style Handle	2-3
Kitchen:	3'-0"	WD	Lever Style Handle	2-3
Cross Corridors:	6'-0"	WD	Lever Style Handle	2-3
Stairs:	6'-0"	WD	Lever Style Handle	2-3
Toilets:	3'-0"	WD	Lever Style Handle	2-3

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VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Elevator 1:	4'-0"x 5'-4"	2500	Laminate, Rubber Flooring	2
Elevator 2:	TBD	2500	Laminate, Rubber Flooring	2
Auditorium Lift	TBD	TBD	TBD	2

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	4'-9"	RF/RSN	Compliant	2
Stair 2	7'-6"	RF/RSN	Compliant	2
Stair 3	4'-9"	RF/RSN	Compliant	2
Stair 4	4'-0"	RF/RSN	Compliant	2
Stair 5	4'-9"	RF/RSN	Compliant	2
Stair 6	4'-9"	RF/RSN	Compliant	2
Stair 7	4'-9"	RF/RSN	Compliant	2
Stair 8	5'-0"	RF/RSN	Compliant	3
Stair 9	7'-10"	RF/RSN	Compliant	2

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4".
Controls/Switches	Yes	-
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

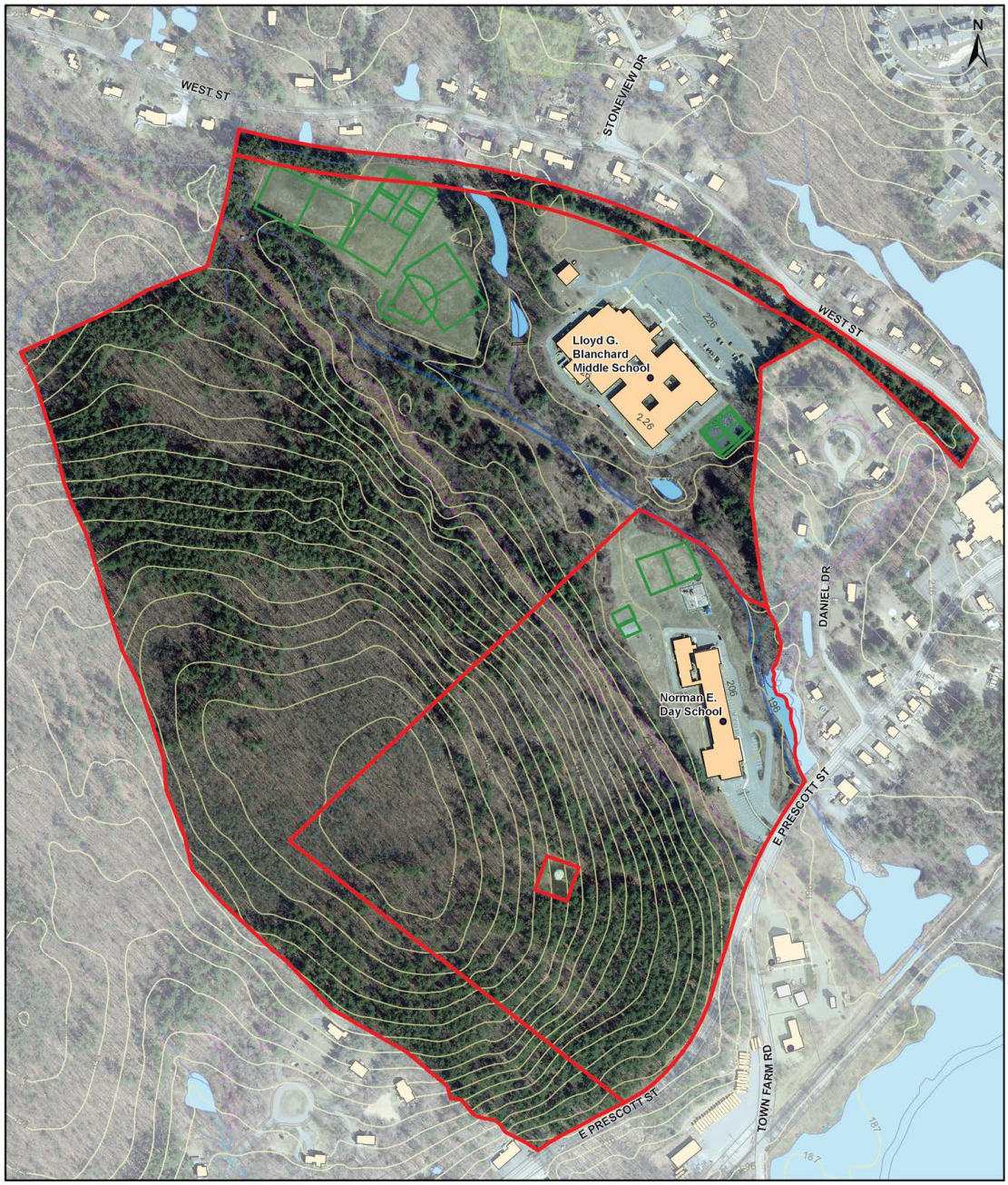
Name of School:	Blanchard Middle School
Address:	14 West Street, Westford MA
Name of Owner:	Town of Westford
Grade Levels Served:	6-8
Student Population:	741
Years in Service:	31
Year Constructed:	1992
Designer:	Alderman and MacNeish
Existing Drawings:	1990

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2.1.2 CONSTRUCTION CLASSIFICATION DATA:

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Addition 1:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	109,556

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Lloyd G. Blanchard Middle & Norman E. Day School

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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 5, 2022. The day was overcast, and cold. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Lloyd G. Blanchard Middle School is situated in the eastern portion of Westford close to Day Elementary, and near the border with Groton. The surrounding properties are mostly conservation land which include some trails, industrial and commercial use, including the Westford Sportsman's club, and residential parcels. The 85.62-acre parcel is adjacent to the Norman E. Day School and includes the school building, water treatment plant with leach field, trails, soccer fields, softball field, and basketball courts. There is a perennial stream that runs northwest to the south of the middle school building. The school has one large parking lot located in the front of the building with only one entrance and exit for vehicular circulation to and from the site. The site elements at are overall in fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The leach field north of the school and east of the water treatment plant building is the primary play area for recess. Within this space there is a Ga-Ga Ball pit. This space is at a higher elevation than the school and the slopes show major erosion lines. This erosion has exposed some piping in the lawn and created large divots and holes in the ground, creating potential tripping hazards for those who may use this space. South of the building, there are two full basketball courts connected by a driveway. To the east, there are several soccer fields and a softball field separated from the main campus by forested wetland and grade change. A trail that has wooden steps and a bridge runs through the woods.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Parking Lots and Pedestrian Pathways:

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. However, the condition of pavements in many places due to large cracks, holes, and changes in material from repairs may not be compliant. There are two pathways from the parking lot and school to the soccer fields and the softball field, one is not accessible, and the other may not be accessible. The driveway to the basketball courts may exceed acceptable slopes to meet accessibility requirements. The accessible parking spaces have signage in between each space.

Walkways are mostly bituminous concrete; the front plaza entrance is concrete pavement. The bituminous walkways are in fair/poor condition, especially in areas where pick-up/drop-off areas are located. Throughout the site, the walkways show raveling, cracking, patching, and overall deterioration.

Vehicular Traffic:

Both Private Vehicle and bus pick-up/drop-off routes enter the site through the main entry drive off West Street. The location of bus pick-up and drop-off areas are in the front of school, whereas private vehicle pick-up and drop-off routes are directed around the back of the school, with the main pick-up/drop-off area being on the southeast side of the school. All vehicular circulation departs through the exit drive, just south of the entrance road.

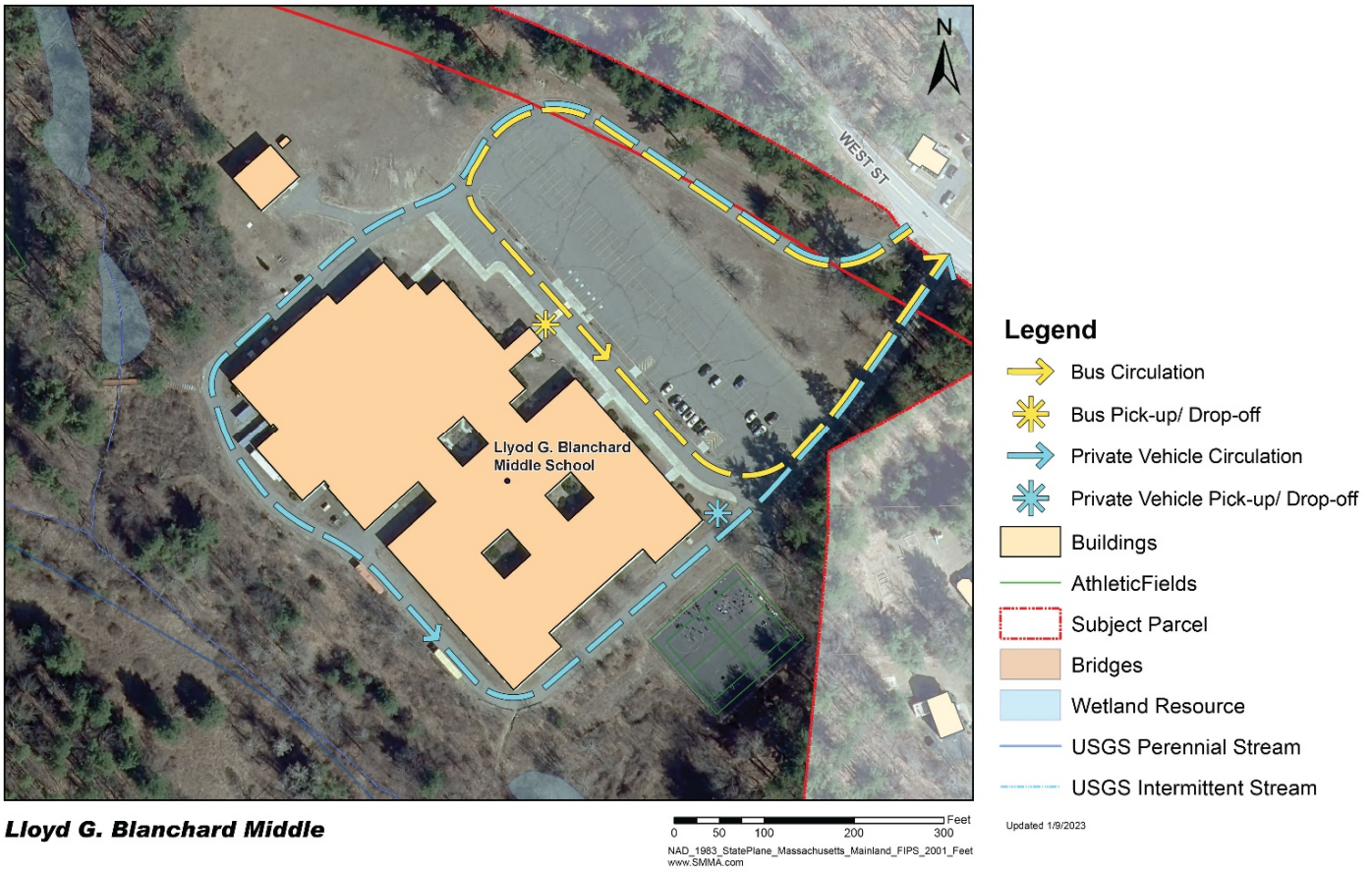
The road and parking lot are in fair/good condition, being constructed out of bituminous concrete. There are some cracks and divots located within the parking lot, especially in areas adjacent to lawn and where some utilities are located. The bituminous material has cracking and divots within the accessible spaces and accommodation aisles.

Landscape Elements:

Fencing within the soccer fields and in some places around the school is deteriorating, with slanting sections and holes in some areas of the mesh. Vegetation has started to take over areas close to the wooded perimeter.

Winter conditions make assessment of trees and other landscape elements on the property difficult. Most lawn areas around the school appeared in poor condition, with no grass being present in areas adjacent to bituminous materials. In other places, there are divots, holes, and desire paths.

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2 – Fair – Serviceable/Maintenance Required
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N/A – Not Applicable/Missing
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Lloyd G. Blanchard Middle

Site & Landscape Systems Data:

Land Use Type	Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Grassland, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning	Residence A
Lot Area	85.62 AC
Topography	Sloping downward from Kissacook Hill towards Reed Brook, gradual increase towards existing building. (See map for more information)
Wetlands	Present

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INFRASTRUCTURE & UTILITES

	Description	**Source**	**Comments**
Water	Town Water	J. Copley	
Electricity		J. Copley	
Gas Provider	National Grid	J. Copley	
Oil Tank	Underground	J. Copley	Installed +/- 2017. Tanks not used.
Storm Water Management	Town Catch Basins (No Subsurface Treatments/ Retention Ponds)	J. Copley	
Sanitary	On Site Sewage Plant	J. Copley	
Irrigation	N/A	J. Copley	

PAVEMENTS

	Surface	***Source***	***Condition***	***Comments***
Roadways	Bituminous concrete /Natural	VI	2/3	Bit. con. is in fair/poor condition, many edges are deteriorating, major cracking and patching in many areas, especially near utilities. Naturalized road is fair, but not a major accessible route
Walkways	Bituminous concrete	VI	2	Bit. con. is cracking in many places. Uneven material at front of school, side entrances have loose con. in many places
Plazas	Bituminous concrete/ crushed stone	VI	2/3	Bit. con. in front of school is good condition, courtyard in center of school not accessible
Curbs	Granite/ Bituminous concrete	VI	2/3	Curbs are in good condition where present, bit. con. in need of repair for some areas within parking lot

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PARKING

	Spaces	Material	Condition	Comments
Parking Lot – Northeast	186	Bituminous	3	Parking in good condition, some cracking in areas,
Accessible Parking	6	Bituminous	2	Pavement cracked in some places, signs in between two spots, aisle used as walkway for main entrance
Charging Stations	N/A	-	-	-
Service / Loading Dock	3	Bituminous	3	Bituminous in good condition, vehicles parked within lawn to create space for access
Bike Racks	N/A	-	-	-
Visitor Spaces	9	Bituminous	3	Bituminous in good condition, properly striped and adequate signage

SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	Bituminous concrete	No	1	Curb cut at main entry is in poor condition with no tactile warning mat
Curb Cut - Other doors	Bituminous concrete	No	1	No curb cut at plaza near visitor parking, no tactile warning mat
Curb Cut - Street	Bituminous concrete	Yes	4	Visually slope is correct, tactile warning mats on both sides of sidewalk between street and ADA parking

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Walkways	Bituminous concrete	No	1	Lots of cracking and patching that has deteriorated
Main Entry	Bituminous Concrete	Yes	4	Accessible route to front entrance, bit. con. has minimal cracking
Secondary Entries	Bituminous concrete	Yes	3/4	Proper landing pad, some cracks and other hazards
Plazas –	Bituminous Concrete	Yes	4	Accessible route to front plaza, minimal disturbance in bit. con. with seating accessible
Courtyards – Central Area	Concrete pavers, mulch, loose stone	No	2	No accessible entrance for both doors (1 step at each door) material does not provide accessible route

FIELDS

	Surface	***Source***	***Condition***	***Comments***
Basketball Courts (2 Full Size)	Bituminous concrete	VI	2	Bit. con. cracking in many places, fence in fair condition most places, gate does not have a proper lock, no striping for courts, baskets may need replaced
Soccer Fields (All)	Turf Grass	VI	3	Turf looks maintainable (hard to assess with winter conditions). Fencing surrounding fields need repair
Ga-Ga Ball Pit	Mulch	VI	3	Fresh layer of mulch, Wooden fence in good condition

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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult. Recess lawn has utility pipes showing.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	N/A
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	Present. Winter conditions make assessment difficult.
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	**Condition**	**Comments**
Site Lighting	See Electrical Section	-	13 light poles on site
Fire Hydrants	Standard	3	South of school, located within opening of guard rails on trial to Day Elementary
Waste Management	Varies	3	Dumpsters located between school and utility building
Book Donation Bin	Unknown	4	Book donation bin located next to waste dumpster
Retaining Walls	N/A	-	-
Fencing	-	2	Overgrown with vines in some areas, some are bent and need repair/replaced

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Gates	Chain link	2	Some locked with additional chains, others have bent/missing arm locks
Flagpole	Metal	3	Good condition
Outdoor Classroom	-	2	Moveable picnic tables and benches
Bicentennial Tree/ Placard	Lindon Tree/ Granite	2/3	Moderately healthy tree. Stone still legible. Area around tree needs maintenance.

BUS OPERATIONS:

Number of Buses	12
Bus Drop/Pick-Up Area	Northeast Entry
Private Vehicle Drop/Pick-Up Area	East Side of Building
Signage	N/A

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2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 9, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements.

Original structural design drawings dated April 20, 1990, were obtained while on site for later review to supplement the study.

Systems:

The school is a one-story building with multi-story mechanical rooms constructed in 1992. The foundation consists of a concrete slab-on-grade supported by continuous concrete foundation walls and footings. Typical roof framing consists of structural steel girders with a secondary wide-flange beam or joist system supported by wide-flange and square hollow tube steel columns and stack-bond CMU walls supporting the metal roof deck. The steel joists were exposed and therefore observable in the mechanical and boiler rooms. The gymnasium used a steel girder roof framing. A horizontal crack was observed along the CMU wall shared between the gymnasium and corridor. The crack was noted to be at a similar elevation to the adjacent mechanical mezzanine level. No signs of buckling were observed along the crack. Roof framing for other portions of the building were unobservable. Finished ceiling and flooring prevented observation of the structure in the auditorium. The overall building structure observed on site was noted to be in fair and serviceable condition.

The head custodian mentioned there are three areas of the school that experience seasonal water infiltration at the joint between the base of the exterior walls and the top of the foundation walls. These areas were viewed, and no signs of structural degradation were observed on either side of the walls.

The original building foundation and façade was observed. One corner location at the back side of the building was noted to have cracked and spalled. Overall, the exterior was noted to be in fair and serviceable condition.

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at perimeter, isolated shallow spread footings at columns	Signs of groundwater infiltration in multiple locations at building corners, no structural defects observed	3
Vertical Support System:	Structural steel columns, stack-bond CMU/masonry walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Concrete floor slab supported by structural steel wide-flange girders and beams or joists	-	3
Roof Framing Systems:	Metal roof deck supported by structural steel wide-flange girders and beams or joists		3
Lateral Force Resisting System	Stack-bond CMU/masonry walls	Horizontal crack in gymnasium	3

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2.1.3.3 Exterior Envelope Systems

Main Canopy:

The main canopy is composed of plaster veneer soffit with metal inset vents over steel framing. Square type columns support the canopy with protective masonry bases, composed of granite faces on two sides and the top, and two sides filled in with face brick. The original building details indicate the masonry is tied to the steel columns and grouted solid. Over time vertical joints and joints at the base of the pier have begun to deteriorate and separate. The canopy is in fair to good condition.

A single gutter collects runoff from the canopy and discharges at the base of the façade into crushed stone. Gutter is formed copper and minimal oxidized and remains in fair condition.

Ancillary canopies are built of similar plaster materials and supported at the perimeter by exterior walls and a relieving angle at the angle at the perimeter. Weeps are placed at good frequencies and canopy is in good condition.

Exterior Wall System:

The primary wall system on the exterior is composed of 3-5/8" red face brick over a 2 inch gap, infilled with 1 ½" rigid insulation over 8 inch CMU block.

Window frames are aluminum and sit on top of granite sills and are in good condition. Sealant at perimeter is fair condition.

Sealant at control joints and at the perimeter of door and window systems appears to contain organic material that shows signs of cracking and in limited cases is falling out.

Flashing is in varying conditions and depending on type and location, degradation appears to be staining CMU on the elevations of the building. There are also some minor algae residues that has stained the masonry.

Loose lintel above mechanical exhaust has had its coats stripped away due to proximity to the mechanical systems.

At two locations around the perimeter, it appears that the lowest course of brick and in one case, the foundation was broken. The foundation is close to a perimeter drive that goes around the building. When snow accumulates and pushes against the foundation, snow melt may have a negative impact and

necessitated a parge coat at the foundation. The parge coat is in fair condition.

Exterior Entrances:

The main entrance is composed of two pairs of six-foot-wide entrances in aluminum storefront, with a separate single accessory leaf. Each feature panic hardware and create a secure entry vestibule with electronic access control and intercom, video, and surveillance window opening.

Subordinate entrances are aluminum and feature fixed, bronze level style door pulls and mechanical cylinders. Signage is not visible at a distance.

Service entrances are typically hollow metal doors in hollow metal frames, featuring continuous hinges, fixed door pulls and mechanical cylinders. Entrances that receive or provide outside services or receive deliveries incorporate electronic access hardware. (In one instance a door utilizes a non-handicap compliant knob style handle. In limited cases, the set of gasketing at the door perimeter needs replacement.)

For doors serving strictly as egress from assembly spaces, no hand is provided on outside.

Salt corrosion at the bottom of hollow frames is common. Surfaces are starting to rust.

One overhead door at the Makerspace (former wood shop) is made of a corrugated door with limited internal insulation. Gasketing at jambs have weathered. Door assembly is in fair to poor condition. The drive that abuts the overhead door has settled down a couple of inches and poses a tripping hazard into the classroom.

Where walkways around the building abut to level landings at egress entrance, the subgrade has settled and poses a tripping hazard.

Roof Systems:

The roof is composed of a mechanically fastened PVC roof system installed over 4 inches of insulation, on a galvanized metal deck. The report from *Roof Consulting Services, Inc,* in 2018, 20 wet locations or almost 785 sq feet of wet material were detected on the roof because of the use of infrared moisture services. No detail is available on the year of installation however the installation is failing.

During SMMA's review of the roof, stripping at metal edging around the roof was loose, residue indicated areas ponding, and leak areas

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remain. Drain covers were missing in some locations and membrane was loose and bubbling in some locations, indicating the former intrusion of water at one time.

Copper through wall flashing also appears to be installed low in comparison to the roof level.

Areas of brick on the roof also show signs of masonry control joints deterioration.

Photovoltaic Panels are mounted onto the eastern most wing roof and appear in good condition.

Windows:

Window framing is aluminum and contains insulated glass units. The window framing and glazing are in good condition. Sealant at perimeter of window openings have been cracking along the face indicate degradation.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick on CMU, Fabric Flashing at Base of Wall	-	2-3
Roof Assembly:	PVC Membrane over Insulation	-	0,1
Roof Drains:	Cast Iron	-	1
Flashing:	Galvanized or Copper Thru Wall Flashing	-	1-2
Canopies/Overhangs:	Plaster	-	2-3
Windows:	1” Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,2
Skylights/Clerestory:	N/A	-	-
Glazed Curtain Wall/Storefront	Aluminum Storefront		2
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2
Louvers & Vents	Aluminum and Steel	-	2
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries,	-	3

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	Continuous Hinges, Thresholds Vary		
Weatherstripping and Thresholds	Silicone & Brush	-	3
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Narrow Ships Ladder Style	2
Gutters and Downspouts	Copper	N/A	1-2

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2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose most interior spaces. The walls are in good to fair condition.

Sheetrock Walls (GWP) Compose retrofit partition in spaces created for special education programs, physical education programs, ancillary walls, and enclosures in various parts of the building.

Perforated metal absorptive panels (PMAP) are installed in music spaces and are in fair condition.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: Rated HM Doors and Frames, with glass lites, steel butt hinges, manual hold opens, duel surface rod panic bars, with level style hardware, and mechanical cylinder. The bottom rod is not allowed on as it is a potential obstruction to a handicap individual.

Manual hold opens prevent these rated doors from closing and separating portions of the building in the event of fire or smoke, as the door will not be released by a fire alarm or close with closing devices.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

Bathroom doors are hollow metal doors in hollow metal frames with fixed stainless door pulls. Doors hangs on stainless butt hinges and feature louvers. At the gender-neutral toilet rooms, a thumb turn lock has been used. This may be a security risk. The lock is located above reach requirements for a person in a wheelchair.

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Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, , and other ancillary spaces, like storage rooms.

Terrazzo (TZO) is located within the main corridor near the entrance, cafeteria, .

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair condition.

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Broadloom Carpet (CPT-BL) is installed in administrative offices and classroom spaces is fair condition.

Emergency Aisle Lighting is not present in the auditorium.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout corridors, classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. Roof leaks are consistent problem and staining occurs in corridors, classrooms, and other spaces. In areas where repeated tile changing has occurred, suspension framing is falling apart.

Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare.

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These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU	2-3	VCT	2-3	ACP	3
Commons	CMU & GWB	2-3	CPT-BL	2-3	ACP	2-3
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	2-3
Makerspace	CMU	2	Conc.	2	ETS, Acoustic Baffles	2,2
Auditorium	CMW, Wood Baffles over Fabric	2,2	CPT, Conc.	2	Plaster	3,3
Stage	CMU	3	WD	1-2	ETS	2
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	2
Weight Room:	CMU	3	Padded Rubber Floor or Carpet/BL	2,2	ACP, Ceiling Baffles	2, 2
Cafeteria:	CMU & GWB	3	TZO	2-3	ACP, GWB	3, 2-3
IMC/Library:	CMU	2-3	CPT-BL	2	ACP	2
Music Room	CMU, WD Paneling, PMAP	2,2,2	CPT-BL	2	ACP	2
Entry Vestibules:	CMU, BR	3	MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	TZO	3	ACP, GWB	3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU, CT	3	CT	3	GWB	2-3
Offices:	CMU or GWB	3	CPT-BL	3	ACP	2
Nurse:	GWB	3	VCT	3	ACP	2
Ancillary Admin Space:	GWB	3	CPT-BL	3	ACP	2
Kitchen Cooking/Prep Area:	CMU	3	QT	2	ACP	2
Kitchen Storage:	CMU	3	QT	3	ACP	2
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2
Mechanical Room:	CMU	3	Conc.	3	ETS	2

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”		No	
Door – Service:	HM	-	3’-0”		No	
Door – Corridor/Egress:	HM	Yes	6’-0”	1 HR	No	

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2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 09, 2022, and review of original construction documents dated April 20, 1990. The building was built in 1992. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the mechanical room. The existing 4" water meter is in fair to good condition. The existing water service includes a reduced pressure backflow preventer, in fair to good condition.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair condition, and it is expected to last about 20 more years before it will exhibit widespread problems. Pipe insulation is original and in fair to poor condition. Some exposed pipes are not insulated.

There is no separate backflow preventer for cold water in the science room.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar. It was reported that the water heater was replaced seven years ago, and it is located in the mechanical room, and in fair to good condition. There is only one (1) circulation pump, in fair condition. There are two (2) mixing valves and a pressure reducing valve, in poor condition. There is no expansion tank for hot water system. There is a condensate neutralizing unit before pipe discharges into a floor drain. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair condition, and it is expected to last about 20 more years before it will exhibit

widespread problems. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

There is no separate backflow preventer for hot water in the science room.

Natural Gas

The existing 6" natural gas system enters the building through the mechanical room. The existing natural gas system includes a gas meter, valves, and gas regulator. The gas meter is located outside of the mechanical room. The gas piping is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition, and it is expected to last about 20 more years before it will exhibit widespread problems.

Gas piping for the gas-fired kitchen equipment is in poor condition.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in fair condition due to its age. Sanitary drainage piping is original to the building, and it is expected to last about 20 more years before it will exhibit widespread problems.

All kitchen equipment is original and in fair condition. The kitchen's triple pot sink is provided with grease trap that is installed below slab and therefore could not be observed. The waste piping below the triple pot sink is original and in poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22. The waste piping below the food prep sink is in fair condition.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in fair condition due to its age. Storm drainage piping is original to the building, and it is expected to last about 20 more years before it will exhibit widespread problems. The existing roof drains with cast iron dome strainers are all original, in fair condition. The cast iron dome strainers show signs of corrosion.

Acid (Lab) Waste

The existing acid (lab) waste system is collected below the slab and is therefore not visible and could not be observed. Acid (lab) waste piping is original to the building, and it is expected to last a few more years before it will exhibit widespread problems. Acid neutralization system is installed below slab therefore it could not be observed. Per verbal reports, the system is maintained yearly.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Fixtures:

All plumbing fixtures are original, and in fair condition.

Per original construction documents, plumbing fixtures mounting heights are the following:

ADA WC = 18" from the finished floor to the top of the seat.

Non-ADA WC = 20-1/4" from the finished floor to the top of the seat.

ADA UR = 15" from the finished floor to the rim.

Non-ADA UR = 22" from the finished floor to the rim.

ADA LAV = 32" from the finished floor.

Non-ADA LAV = 31" from the finished floor.

Girls Toilet Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The flush valves installed are old, not lever type, and not water saving type.

Lavatories are wall-hung type, vitreous china with single lever and hot & cold water faucets that are manually operated with different types of handles, generally in fair to good condition. Pipes below the lavatories are not insulated.

Boys Toilet Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The flush valves installed are old, not lever type, and not water saving type.

Urinals are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The flush valves installed are old, not lever type, and not water saving type. The urinals are installed at different heights.

Lavatories are wall-hung type, vitreous china with faucets that are manually operated, generally in fair to good condition. Pipes below the one of the lavatories are insulated with black material.

Boys Locker Room:

Water closets, urinals, lavatories, and showers are non-ADA compliant.

Science Room:

Lab sinks are integral to the countertop, non-ADA compliant, in fair condition. Faucets are non-ADA compliant, with hot & cold water handles and vacuum breakers, in fair to good condition.

Gas turrets are deck mounted, in fair to good condition.

Emergency Shower/Emergency Eyewash was installed. However, the emergency eyewash is non-ADA compliant.

6th Grade Science Room: Lab sinks are integral to the countertop, non-ADA compliant, in fair condition. Faucets are non-ADA compliant, with hot & cold water handles and vacuum breakers, in fair to good condition. There is no emergency shower/emergency eyewash installed in this room.

Dark Room: Sink is stainless steel, non-ADA compliant, self-rimming/drop in single compartment with single lever faucet. Sink is in fair condition, faucet is old. There is a small pvc pipe that discharges directly into the sink.

Art Room: Sinks are stainless steel, self-rimming/drop in single compartment. Faucets are non-ADA compliant, with hot and cold water handles and vacuum breakers, in fair to good condition. Plaster traps are not installed below the sinks.

Nurse's Suite: Sink is wall mounted, vitreous china with hot & cold wrist blade handles, gooseneck faucet with eyewash. Pipes below the sink are insulated with black material.

Teacher's Dining: Sink is stainless steel, self-rimming/drop in single compartment, non-ADA compliant with gooseneck faucet, in fair condition.

Wood Shop: The two-bay sink is stainless steel, self-rimming/drop in, non-ADA compliant with gooseneck faucet, in fair condition.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition. One of the hand sinks in the kitchen is not operational.

Miscellaneous Fixtures:

The custodian's mop sinks are original, floor mounted, and in fair condition.

Drinking fountains installed within the building: Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition. In some areas, two types of drinking fountains were installed, one unit does not have a built-in chiller and the other one does have a built-in chiller with bottle filling station. The two (2) drinking fountains were installed at different heights.

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents dated April 20, 1990, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Existing hose bibbs have atmospheric vacuum breakers.

Existing wall hydrants are wall mounted, non-freeze type.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4”	4”	No	N/A	Copper	City	30	3
Gas Service:	6”	Not Accessible	Yes	N/A	Black Steel	Gas company	30	3

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	1	Due to age
Domestic Hot Water:	Copper	3	Mineral-fiber	1	Due to age
Sanitary Waste & Vent:	Cast Iron	3	N/A	N/A	-
Storm Drainage:	Cast Iron	3	Mineral-fiber	3	-
Gas:	Black Steel	3	N/A	N/A	-
Non-Potable (Lab) CW:	Copper	3	Mineral-fiber	2	Due to age
Non-Potable (Lab) HW:	Copper	3	Mineral-fiber	2	Due to age
Acid (Lab) Waste & Vent:	Polypropylene	3	N/A	N/A	Due to age
Kitchen Waste:	Cast Iron	3	N/A	N/A	-
Tempered Water:	Copper	3	Mineral-fiber	2	-

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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing, tank-type	7	3	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 10 years	2	-

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall mount	Girls; Boys, Staff	Yes & No	3	-
Urinal:	Wall mount	Boys	Yes & No	3	-
Lavatory:	Wall mount	Girls; Boys; Staff	Yes & No	3	-
Drinking Fountain/Water Cooler:	Wall mount	Corridors and Gym	Yes & No	3	-
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	Counter	See Above	No	3	-
Classroom Drinking Fountain:	N/A	N/A	N/A	N/A	-
Mop Sink:	Floor	Janitor's Closets	N/A	2	-
Showers:	Free-standing	Locker Rooms	No	3	-

Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted, non-freeze
Floor Drain:	Floor mounted, Type varies by location
Emergency Shower/Eyewash	Freestanding/counter (emergency eyewash)
Emergency Location	Science Rooms
Lab Faucets	Deck mounted
Lab Gas Cocks:	Deck mounted

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 09, 2022, and review of original construction documents dated April 20, 1990. The building was built in 1992.

Services:

The 8” fire service enters the building in the mechanical room. The existing 8” fire service includes a double check valve assembly, supervised O.S. Y. gate valves, fire protection riser with wet alarm valve, main flow switch, sprinkler main drain, 4 inch main from existing fire department connection, in fair to good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility. Wet alarm valves and risers are located in the mechanical room. Existing sprinkler head types are recessed pendant and upright sprinkler heads. The wet sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 20 more years before it will exhibit widespread problems. Some pipes are exposed but majority is installed above the ceiling.

Mechanical A & B:

Sprinkler heads are not installed below the ductwork that is over 4 feet wide. Not in compliance with NFPA-13.

Storage near the Mechanical Room:

Overhead door that creates an obstruction more than 4 feet wide in the “open” position is not protected with sprinklers below/beneath the opened overhead door. Not in compliance with NFPA-13.

Electrical Room:

There are no sprinkler heads installed in this room. The electrical panels installed are not emergency panels. There are items in this room like supplies in boxes, lawn mowers, etc. This room is currently used as a storage. The electrical room door is two-hour rated.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

STEM Lab:

Sprinkler heads are not installed below the ductwork that is over 4 feet wide. Not in compliance with NFPA-13.

STEM Lab and Weights/Exercise Room:

There are baffles that hang less than 18" from the ceiling. Sprinkler heads' spray pattern will be obstructed by the baffles. Not in compliance with NFPA-13.

Auditorium:

Sprinkler heads are not installed at the soffits at the auditorium entrances.

AV Room, Storage Room (near Music Room), Boys Locker:

Sprinkler heads were installed close to a surface mounted light fixture. The sprinkler head's spray pattern will be obstructed by the surface mounted light fixture. Not in compliance with NFPA-13.

Some sprinkler heads have no escutcheon plates.

Ansul Fire Suppression System

Kitchen:

The kitchen hood has ansul fire suppression system in fair condition.

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	8"	Yes/DCVA	Epoxy coated cast iron	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes. There are (10) sprinkler zones	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendant, upright	Chrome Plated and Natural Brass	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally in good shape, requiring only normal maintenance.

Systems:

The five (5) original boilers were replaced with two (2) Buderus gas fired hot water boilers in 2015. The boilers and hot water pumps are controlled by a Siemens DDC panel. Heating hot water is distributed through a primary/secondary arrangement with multiple secondary zones. It was reported that the boilers cannot keep up on a cold day, and the primary pumps may be undersized. Some pipe insulation is missing in the Boiler Room. There is no chemical water treatment in the hot water system.

The building is conditioned by all air central systems and is primarily heated and ventilated only.

The *Library, Auditorium, Offices* and two *Conference/Classrooms* off the Library (formerly computer classrooms) are served by five (5) dedicated indoor air handling units with DX cooling.

The remaining spaces are served by eleven (11) indoor air handling units.

It was noted that duct insulation was damaged in multiple locations in the fan rooms.

Smaller classrooms originally had a movable partition between the two spaces, in the academic wing. The partitions were removed. Now larger classrooms have multiple boxes and thermostats with conflicting operations.

Storage Rooms have been converted to small group rooms in the academic wings. No HVAC modifications were made so these spaces have no ventilation air.

The original *Gym Storage Room* has been converted to a *Fitness Room*. No ventilation is provided in this space.

Both low and high return registers in the *Gym* are damaged.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

One of the low return registers in the *Auditorium* is damaged.

There was no ventilation noted in the *Acid Tank Room*.

In many *classrooms* the finned tube radiation air intake grilles at the base of the casework are covered with dust and teaching materials block the discharge grilles at the rear of the casework. Clearing the grilles would improve heating effectiveness.

The original grade mounted dust collector is no longer used and has been abandoned in place. All original ductwork remains in what is now the *STEM Workroom*.

Exhaust fans C-6 (*Auditorium)* and C-8 (*Offices)* were recently replaced.

MDF/Server Room off the *library* has a dedicated wall mounted split system for cooling.

Window air conditioners are installed in classrooms to accommodate special needs students. These units are relocated annually as the students move.

Many classroom windows were open during the walk through even though it was a cold December day. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

The automatic temperature controls are not connected to a district wide front end, but are interconnected with the Miller, Stony Brook and Crisafulli Schools' DDC systems. The controls are a combination of Siemens Apogee DDC controls with an operator workstation, and pneumatic controls. The Siemens DDC system is reportedly running on Windows 7, and was upgraded about six years ago.

It was reported that there are problems with the pneumatic system, and leaks are difficult to find.

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	Gas	Hot water boiler	Buderus	2015	3
Heating Equipment #2:	Gas	Hot water boiler	Buderus	2015	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	Six (6) base mounted end suction secondary pumps-zoned 2 per zone	Aurora	2011	3
	Two (2) in-line primary pumps	Bell & Gossett	2015	3
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	Three (3) indoor air handling units in Fan Room A serving A wing classrooms	Trane	1992	3
	Two (2) indoor air handling units in Fan Room B serving B wing classrooms	Trane	1992	3
	One (1) indoor air handling unit with DX cooling in Fan Room B serving the Library	Trane	1992	3
	Two (2) ceiling mounted air handling units with DX cooling in Part B classrooms* (B4&B5)	Trane	1992	3
	Six (6) indoor air handling units in Fan Room C serving the Locker Rooms, STEM, Cafeteria, Band and Gymnasium.	Trane	1992	3
	One (1) indoor air handling unit with DX cooling in Fan Room C serving the Auditorium and Music Rooms	Trane	1992	3
	One (1) ceiling mounted air handling unit with DX cooling in Part C serving the Offices*	Trane	1992	3

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	VAV heating & ventilation and finned tube radiation (AHU-	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above

	A-1, A-2, A-3, B-1 & B-2)				
Science Classrooms:	VAV heating & ventilation and finned tube radiation (AHU-A-2 & A-3)	Refer to Controls Section	See Distribution N/A	See Distribution Above	See Distribution Above
Science Classrooms:	Roof mounted exhaust fans (EF-A-4, A-5, A-6 & A-7) energized via wall mounted manual switch	Refer to Controls Section	N/A	1992	3
Art Classrooms:	VAV heating & ventilation and finned tube radiation (AHU-B-2)	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Art Classroom:	Kiln exhaust-roof mounted exhaust fan	Refer to Controls Section	N/A	1992	3
Music Classroom A&B:	Constant volume heating & cooling (AHU-C-4)	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Former Computer Lab A:	Constant volume heating & cooling (AHU-B-4) and finned tube radiation	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Former Computer Lab B:	Constant volume heating & cooling (AHU-B-5) and finned tube radiation	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
SEEL Classroom:	Wall mounted split system	Refer to Controls Section	Fujitsu	N/A	3
Offices:	VAV heating & cooling (AHU-C-8) and finned tube radiation	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Library:	VAV & constant volume heating & cooling (AHU-B-3) and finned tube radiation	Refer to Controls Section	N/A	1992 New air cooled condensing unit in 2010	See Distribution Above
Auditorium:	VAV heating & cooling (AHU-C-6)	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Cafeteria:	Constant volume ventilation air	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above

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N/A – Not Applicable/Missing
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	(AHU-C-3) and custom finned tube radiation				
Gymnasium:	Constant volume heating & ventilation air (AHU-C-5) and unit heaters	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
STEM:	Constant volume ventilation air (AHU-C-2) and unit heaters	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Kitchen:	Intake Hood and unit heater	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Corridors:	Ventilation / exhaust air and convectors.	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Toilets:	Exhaust air	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above
Locker Rooms:	Constant volume heating & ventilation air (AHU-C-1 & C-7) and unit heaters	Refer to Controls Section	N/A	See Distribution Above	See Distribution Above

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Upblast exhaust fan serving hood	N/A	1992	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	DDC for boilers and pumps	Siemens	2015	3
	All else electro-pneumatic	Siemens	1992	3

Notes: * Associated heating coil and air cooled condensing unit replaced approximately five years ago.

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N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system are in fair operational condition and reaching their useful life expectancy as outlined below. There are also specific unsafe electrical system components that require attention, and Code violations as outlined below.

Services:

Electrical – National Grid. Service initiates at the existing street utility pole and extends underground towards the school building. Electrical service terminates at outdoor the pad-mounted utility transformer. Some issues with Electrical service were reported, such as occasional service voltage spiking.

Telephone – Verizon. Service initiates at the existing street utility pole and extends underground towards the school building.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is inside of the building, located near the Main Switchboard. No specific issues were reported.

Generator:

The outdoor 100KW 120/208v 3ph 4w gas-fired generator is reported in poor condition due to an accident about 3-5 years ago, when it possibly got hit by a lightning strike (not confirmed) and caused significant damage to some building equipment including boilers and hot water heaters. At the same time, most of the school's dedicated emergency lights and many fire alarm devices were damaged and therefore had to be replaced, however, the associated original emergency lighting and fire alarm wiring is still in place and may be in an unsafe condition. The emergency generator currently supports the school building equipment and sewage treatment plant equipment via two Automatic Transfer Switches (ATS) manufactured by Kohler. Both ATS's appear in good operational condition.

Distribution System:

The utility transformer's secondary feeder is terminated in 3,000 Amp 120/208v 3 phase 4 wire Main Switchboard manufactured by Siemens.

It's in the Main Electric room. The Distribution panel is equipped with 3,000 Amp Main Disconnect switch, Utility CT metering compartment, and downstream circuit breakers feeding panels in the same room and other panelboards located throughout the building. All power distribution equipment and associated power feeders are original and now reaching the end of their useful life expectancy, which is usually about 30-40 years.

The quantity of receptacles in various spaces appears to be adequate for the respective space programs. Receptacles throughout the school building are in fair operational condition, however, it was reported that circuit breakers in classrooms are tripping occasionally due to circuits overloading when window A/C units turn on. A few receptacles in the kitchen area and Art were noticed to be non-GFI and shall be replaced accordingly.

Lighting Systems:

Exterior lighting:

Exterior lighting consists of LED pole-mounted lights and a mixture of older and recently added LED type wall-mounted perimeter and canopy lights. The old lights are mostly nonoperational. The newer LED lights are in good operational condition. Exterior lights are time controlled. Overall, the exterior lights provide adequate illumination.

Interior Lighting:

In general, lighting fixtures appear in fair operational condition. The majority of lights are 2'x'4'recessed parabolic troffers with T8 fluorescent lamps. Locker rooms and kitchen have 1'x4' surface-mounted wraparounds with T8 fluorescent lamps, STEM room is equipped with linear pendants with T12 lamps. Auditorium "house" and "stage" lighting is in fair operational condition. In general, illumination levels throughout are found to be adequate, however, lights are non-dimmed and not of energy-efficient type, except for Gym. Gym lighting was recently upgraded with 2'x2' LED dimmable pendant lights with integral occupancy sensors. They appear to be in good operational condition. Exit signs are LED and appear to be in good operational condition.

Emergency lighting is provided by means of dedicated emergency lights connected to the emergency generator power distribution system. Some of these lights may not be operational due to the generator accident described above, and therefore the emergency lighting in general can't be considered fully reliable. It was reported that emergency lighting illumination in the designated "Town Shelter" area (Gym and Cafeteria) is insufficient and shall be improved. Some bathrooms were observed lacking emergency lighting.

Lighting Controls.

Except for occupancy sensors in Gym, no other automatic lighting controls were observed. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building.

Emergency Devices:

Emergency devices include exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. A few areas require additional Fire Alarm notification devices as outlined below.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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NC – Not to Code

There is no Lightning protection/prevention system.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	120/208	3 ph 4 wire	Original	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad-mounted	National Grid	Outdoor	Original	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor/	Natural Gas	3 ph 4 wire	1992	1
	100 KW				

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Switchboard	120/208v 3ph 4w	Main Electric room	1992	2
	Panelboards	120/208v 3ph 4w	Throughout	1992	2

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom/Art*	Standard	1ph/120v	Grounded	3
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria/Kitchen:	Standard	1ph/120v	Grounded	4/3
	Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	2'x4' parabolic/ T8 fluorescent	Recessed	1992	4
	Offices:	2'x4' parabolic/ T8 fluorescent	Recessed	1992	4
	Library:	2'x4' parabolic/ T8 fluorescent	Recessed	1992	4

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N/A – Not Applicable/Missing
NC – Not to Code

Gymnasium:	2'x2' lensed/ LED	Pendant	Recent upgrade	4
Cafeteria:	2'x4' parabolic/ T8 fluorescent	Recessed	1992	4
Corridor:	2'x4' parabolic/ T8 fluorescent	Recessed	1992	4

SITE LIGHTING

	Location:	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road and perimeter walls	LED	Various	Various	4

EMERGENCY LIGHTING

	Type:	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to generator	Various	Ceiling	Original and replaced	1

EMERGENCY DEVICES

	Type:	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	4
	FA signaling	Various	Various	Various	1-3

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

In general, the fire alarm system is in fair operational condition, however, some school areas need improvements for signaling device coverage. Some classrooms and bathrooms are missing signaling devices, horn/strobes or strobe only, required by Code. Corridors would benefit from adding smoke detectors, for the earlier fire alarm announcement. *Auditorium* and *Library* need a few additional horn/strobes.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is zoned type, manufactured by Mircom. The radio box is manufactured by Digitize. Both are in the Main Electric room.

Devices:

Outdoor key (knox) box is at the main entrance door. FA remote annunciator and graphic map are in the main entrance vestibule. Hard-wired heat/ smoke detectors, pull stations, horn/strobes, strobe only units are original and reaching their useful life expectancy with associated original wiring.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	H-W Zoned	Mircom	Horn/strobes	Original with upgrades	3

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Horn/strobes	None	Original	1-3
Offices:	None	Horn/strobes	None	Original	4
Gymnasium:	None	Horn/strobes	Yes	Original	4
Cafeteria:	None	Horn/strobes	Yes	Original	4
Lobby/Corridor	None	Horn/strobes	Yes	Original	2
Kitchen:	None	Horn/strobes	Yes	Original	4
Toilets:	None	None	None	None	1
Basements:	N/A	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria local AV systems is passed its useful life expectancy. Portable local AV system in Gymnasium. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detectrion	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

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N/A – Not Applicable/Missing
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PUBLIC ADDRESS SYSTEMS	Device Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, and classrooms.

Braille signage at doorways is not present.

Handrails, where provided, do not meet handrail cross section or hand rail extension requirements.

Educational Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces do not feature sinks that incorporate appropriate knee space for student use.

Markerboards and Tackboards are mounted 42" to bottom of writing and display surfaces used within the classroom spaces. This teaching surfaces are also frequently located behind casework.

This may be high for some students. Side reach for individuals in a wheelchair is limited to 48".

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Library: Book stacks line the walls on the north side of the Individual Materials Center. The current arrangement of stack creates a series of alcoves that are in excess of 24 inches deep. The width of the alcoves is 36 inches and nearly 48 inches deep. Turnaround areas are necessary for a handicap individual to maneuver.

Science Labs: Lab benches do not meet required heights or clearances for use by handicap individuals. See section on plumbing for more information on fixtures.

Bathroom Spaces:

Fixtures: Mounting heights for toilet and lavatory fixtures does not meet accessibility requirements.

Toilet compartments and fixtures do not maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are not consistently provided.

Accessible Shower: Shower spaces in the lower rooms are not accessible. Shower dimensions and associated bars, bench and equipment do not meet standards.

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ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-4"			
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Lever Style Trim with Automatic Operator	3
Signage:	Not Present	-	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Offices:	3'-0"	WD	Lever Style	3
Library:	6'-0"	WD	Level Style	3
Stage:	3'-0"	WD	Fixed Pull Style	3
Gymnasium:	3'-0"	WD	Fixed Pull Style	3
Cafeteria:	3'-0"	WD	Fixed Pull Style	3
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Stairs:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
N/A:	-	-	-	-

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
N/A	-	-	-	-

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
N/A				

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	
Tables & Seating - Cafeteria	Yes	
Drinking Fountains	No	Recessed Type in Gym
Controls/Switches	Yes	
Signage	No	Not Present

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

Name of School:	Stony Brook Middle School
Address:	9 Farmers Way, Westford MA
Name of Owner:	Town of Westford
Grade Levels Served:	6-8
Student Population:	675
Years in Service:	20
Year Constructed:	2003
Existing Drawings:	2001

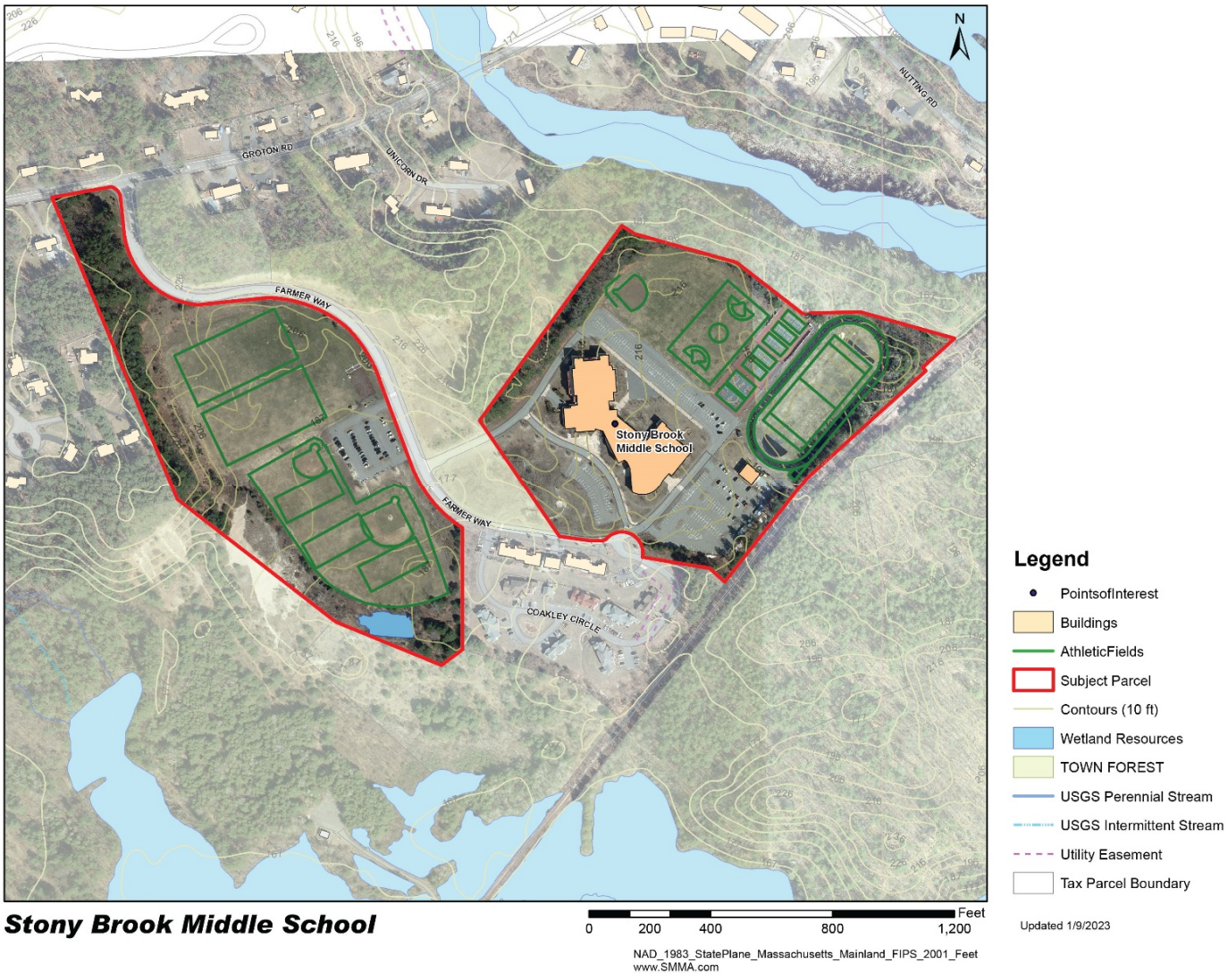
Designer: DRA

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2.1.2 CONSTRUCTION CLASSIFICATION DATA:

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	119,130

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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Stony Brook Middle School

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The day was overcast, cold and there was snow covering the ground in some places. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Stony Brook Middle School is centrally located in the northern part of Westford, surrounded by conservation land and residential parcels. The 22.36-acre parcel has the school building, amphitheater adjacent to the school's main entrance, track and football field to the east, and parking lots to the south, north and east. The parcel is adjacent to recreational fields across Farmer Way to the west of the building and the Stony Brook Rail Trail. The site elements are overall in fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The campus contains a track and football field, tennis and basketball courts, and a softball field to the east. There are softball, baseball, and soccer fields to the west across Farmer Way. Upon a visual assessment all recreational elements appear in fair condition. The tennis and basketball courts managed by the school had significant cracks along boundary lines, however these should not interrupt play; the perimeter fencing was in good condition. One basketball court was confusing in the way it was painted, the posts and striping had been shifted, but the previous striping was not painted over. Tennis courts managed by the town had damaged fences. The campus also had solar chargers posted around the athletic fields.

Site Accessibility and Pedestrian Pathways:

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. Most exterior doors are accessible,

and there are assigned parking spaces throughout the campus. There

are some walkways with uneven pavement and vegetation in the pathway which would make accessibility noncompliant and difficult. The seating at the amphitheater in front of the school is not accessible, but the lower area is accessible via paved pathway between the parking lot and Farmers Way.

School walkways are bituminous concrete and plaza areas are both bituminous and concrete pavement. Both the walkways and plazas are in fair/poor condition. The bituminous concrete is in fair condition in most places. There are many instances of potholes, raveling, upheaving, root cracks and linear cracking in the bituminous walkways. Concrete plazas show weathering, spalling, uneven patching, punchouts and corner breaks.

Parking at the school is concentrated on the east side of the property with some parking on the south side. The southeastern parking lot has about 170 spaces and the southwestern lot has about 40 paces they are used primarily for faculty staff. The north parking with about 125 spaces lot is primarily used as bus staging and overflow parking for special events. The roadways and parking lots are bituminous concrete, there are some areas of fatigue cracking, potholes, deteriorating edges, rutting, and patching, however for the most part the pavement is in fair/serviceable condition.

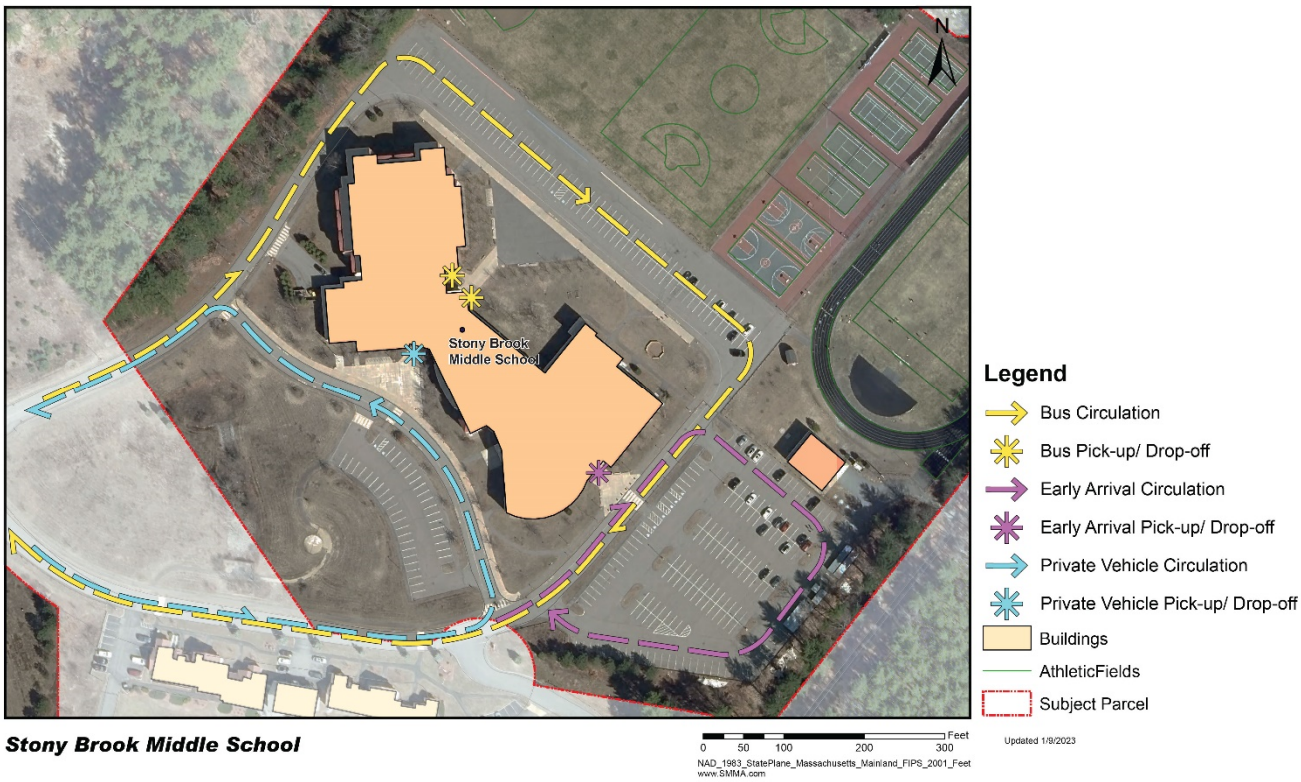
Vehicular Traffic:

The sequence for bus arrival and departure is to turn into the western most entrance to the school off Farmers Way and drive along the side of the school building to the north parking lot where buses stage. Students arriving by bus are delivered or picked up from the Back Entrance. Buses then depart the site by following Farmer Road around the school and leave the site. Private vehicles (cars) delivering students follow Farmer Way to the front of the school and students enter the building through the main front entrance. Once students have been delivered or picked up cars continue around the school and exit to the left and back out Farmer Way. Teachers and staff park in the east parking lot or the front.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. However, this property has sandy soil based on a visual inspection. Most fencing on the campus is in good condition. Vine growth was observed on the fencing surrounding the recreational fields to the south. However, the fencing on the property is in good condition.

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Stony Brook Middle School

Site & Landscape Systems Data:

Land Use Type:	Deciduous Forest, Developed Open Space, Evergreen Forest, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning:	Residence A
Lot Area:	22.36 AC
Topography:	Depression in the east corner of parcel, gradual mounding form peaking near middle of parcel (See map for more information.)
Wetlands:	Present

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INFRASTRUCTURE & UTILITES

	Description	***Source***	***Remark***
Water	Town Water	R.Harbaum	-
Electricity	Underground Wires	R.Harbaum	-
Gas Provider	National Grid	R.Harbaum	-
Oil Tank	Above ground	R.Harbaum	Integrated into generator
Storm Water Management	Detention basin	R.Harbaum	Front detention basin seems functional, has lots of vegetation. But the sandy soil drains well.
Sanitary	Wastewater Treatment Plant on site	R.Harbaum	Leach field is under southeast parking lot. (Plant also treats neighboring homes)
Irrigation	Yes	R.Harbaum	Well water for fields and trees.
Other	Acid tank	R.Harbaum	Located at Installed for science, rarely used.

**If septic system – verify if aggregate systems applies*

PAVEMENTS

	Surface	***Source***	***Condition***	***Comments***
Roadways	Bituminous pavement and some crushed stone	VI	2/3	Bit. con. is in fair/poor condition, many edges are crumbling, there is significant cracking, raveling, and patching. Crushed stone areas have pits and potholes.
Walkways	Concrete & bituminous	VI	2/3	Concrete Bit. con. is cracking along perimeter walkways. Most places where walkways meet concrete plazas are large margins and deep cracks. Some bituminous walkways are upheaving and shoving causing tripping hazards. The worst areas are in the front walk near the 'Overlook' and on the north side of the building.

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Plazas	Concrete & bituminous pavement	VI	1/2	Concrete is in poor condition in most places. Years of patching have created uneven surfaces with pitting, spalling and punchouts.
Curbs	Granite & bituminous concrete	VI	4/3	Granite curbing is fair/good in most places. Bituminous is fair/poor in some places.

PARKING

	Spaces	***Material***	***Cond.***	***Comments***
Parking Lot – East/North	123 (2 ADA)	Bituminous	2/3	Bit. con. is in fair/good condition. Not often used for parking. Mostly used for buses at arrival and dismissal.
Parking Lot – East/South	172 (6 ADA)	Bituminous	2	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Parking Lot – West/South	42 (2 ADA)	Bituminous	2	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Accessible Parking	6	Bituminous	2/3	Some striping failing.
Charging Stations	N/A	-	-	-
Service / Loading Dock	2	Bituminous	3	Bituminous in fair / good condition
Bike Racks	32 (spots)	Steel (U shape)	3/4	10 racks at front & 6 racks at back.

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SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	Concrete	Yes	3	Curb cut at main entry is in fair condition lacks a tactile warning mat.
Curb Cut - other doors	Concrete	Yes	3	South Entry does not have a curb cut, but does have an adjacent ramp into the building.
Curb Cut - Street	Bituminous	Yes	3	Walkway from street entering site does have a curb cut, but the lip may not be compliant.
Walkways	Bituminous & Concrete	Yes / No	2	The walkways appear to meet compliance of slope. Some walkways to the north and west of the building are upheaving and shoving making the walkway impassable for someone in a wheelchair.
Site Ramp	none	-	-	-
Public Street	Bituminous	Yes		Public street only has sidewalk on east side of Farmer Road.
Main Entry	Concrete	Yes	2/3	Main entry is accessible and in fair/poor condition.
Secondary Entries	Bit.Con. or Concrete	Yes	3/4	All at grade doorways appear accessible.
Plazas	Concrete or Bit.Con.	Yes	2/3	Plazas have appropriate slope for ADA compliance, however the condition of the pavement may create trip hazards in some areas.
Courtyards	None	-	-	-

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FIELDS

	Surface	***Source***	***Cond.***	***Comments***
Track	Resilient surface	VI	4	Snow cover prevented a thorough inspection. However exposed surfaces appeared in excellent condition.
Football Field (in track)	Natural Lawn	VI	3	Snow cover prevented a thorough inspection. However exposed surfaces appeared in good condition.
Tennis Courts (school)	Bit. Con.	VI	3	Fair condition, some cracking. Cracking may not interfere with play. Fences are in good condition.
Tennis Courts (town)	Bit. Con.	VI	4	Fair/good condition, fence is falling over to the east toward the track.
Basketball Courts	Bit. Con. / Concrete	VI	2	Fair condition, significant cracking along court edges. Cracking may not interfere with play. Fences are in good condition.
Soccer / Flex (rear of school)	Natural Lawn	VI	3	Snow cover prevented a thorough inspection. However exposed surfaces appeared in good condition.
Softball (rear of school)	Natural Lawn	VI	3	Snow cover prevented a thorough inspection. However exposed surfaces appeared in good condition.
Soccer / Flex /Softball / Baseball (Farmer Way)	Natural Lawn	VI	3	From a distance all facilities appear fair; ground and fence are in fair condition. A thorough inspection was not conducted at the facilities across Farmer Way from the school.

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3 – Fair/Good – Functioning, Maintained
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N/A – Not Applicable/Missing
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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	Present.
Woodland /Forest	Present.
Swales	Present. Winter conditions make assessment difficult.
Meadows	N/A
Greenhouse	Present. This is a sheet plastic / high tunnel type structure that appeared ready for next seasons plantings.
Raised Beds	N/A

ADDITIONAL SITE FEATURES

	Material	**Condition**	**Comments**
Site Lighting	See Electrical Section	-	Poles
Fire Hydrants	Standard	3	4 hydrants, one at each corner of the school, NE, SE, SW, NW.
Waste Management	Varies	2-3	Dock at North end of school, appropriate sized, barrels and dumpsters.
Retaining Walls	N/A	-	None
Fencing	Chain Link	3	Most fencing is fair/good.

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Gates	Steel	3	The only gates are located at the track.
Flagpole	Steel	3	-
Outdoor Classroom	Crushed Stone (Amphitheater)	2	Lawn amphitheater has been enhanced with crush stone and brick edging. Small benches at the top level. Only the lowest level is ADA accessible.
'Overlook' Platform & Railing	Concrete & Aluminum	2	The railings and pathway are overgrown, paving is shoving.

BUS OPERATIONS

Number of Buses: 10

Bus Drop/Pick-Up Area: Northeast Entry

Private Vehicle Drop/Pick-Up Area: West Entry – Early delivery of special programs participants (music etc.) enter at South Auditorium entry.

Signage: Adequate

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N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 9, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings dated October 30, 2001, were obtained, and reviewed to supplement the study.

Systems:

The original multi-story building was constructed in 2003. The foundation consists of continuous concrete foundation walls and shallow footings and isolated shallow footings at columns. The ground floor is a concrete slab-on-grade. The maintenance crew mentioned the ground floor was sanded and re-topped following a flood event within the first year of the building's service. Typical floor and roof framing consists of structural steel girders and secondary beam and joist framing. The floors are composite reinforced concrete and metal floor decks. The roof is metal deck. Design drawings indicate the lateral system to be supported by braced frames throughout the building. The gymnasium uses a steel joist roof framing system supported by steel columns. Structural steel framing for most portions of the building were unobservable due to architectural finishes and CMU fire protection walls and encasements. The structure observed on site was noted to be in fair and serviceable condition.

A vertical crack (roughly ¾-in wide) was observed along a construction joint near a stairway entrance at the front of the building adjacent to the auditorium stage area. The crack was seen to extend from the ground floor into the first-floor ceiling and occurred near the sealant bonding the CMU wall to the joint. The head custodian for the school mentioned the building was built on a site previously occupied by large sand pits. Other construction joints in the building were checked and no observable defects were found.

The original building foundation and façade was unobservable due to the masonry façade extending all the way to the existing grade. Overall, the exterior was noted to be in fair and serviceable condition.

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at walls, isolated shallow spread footings at columns	-	3
Vertical Support System:	Structural steel columns, running-bond CMU walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Composite concrete and metal roof deck supported by structural steel girders and secondary beams/joists	-	3
Roof Framing Systems:	Metal roof deck supported by structural steel girders and secondary beams/joists	-	3
Lateral Force Resisting System	Concentrically braced structural steel frames, running-bond CMU walls	¾-in wide vertical crack observed in one location at first floor	3

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2.1.3.3 Exterior Envelope Systems

Main Canopies & Ancillary Canopies: The main canopy and ancillary canopies are composed of soffits built from an exterior insulating finish system. Each element appears in good condition. A similar canopy is located on the other end of a central school lobby.

Exterior Wall System: Two typical wall types compose the exterior wall enclosure.

The auditorium, cafeteria, and gymnasium spaces of the building utilizes a composite wall system with a combination of face brick, split faced CMU, and/or precast panel over a 2-3/8 inch air space and backup CMU. Two-inch rigid insulation is located inside the wall cavity over damp proofing and flashing systems to provide increased thermal performance and drainage.

The classroom wing of the building utilizes a combination of face brick, split faced CMU, and/or precast panel over a 1-7/8" air space and backup six inch metal studs with exterior gypsum sheathing. Two-inch rigid felt is used in these locations in lieu of damp proofing and fabric flashing is used to transition to flashing systems and weeps at the base of the wall to provide drainage. Fiberglass batt insulation is provided within the stud cavity to provide greater thermal resistance.

Flashing is in varying conditions and depending on type and location, degradation appears to be staining CMU on the elevations of the building. There are also some minor algae residue that has stained the masonry.

Some areas of the two wall types appear to be over saturated at corners due to oversaturation and potential drainage issues within the masonry. Drainage of pitched, metal, standing seam roof edges erode adjacent vertical masonry joints. Wall and roof transitions and a low sloping roof may also contribute.

Gymnasium: Fiber-reinforced translucent sandwich panels are used to provide a clerestory natural light into the gymnasium, while eliminating glare for target sports. The system is in good condition.

Exterior Entrances: The main entrance is composed of two pairs of six-foot-wide entrances in aluminum storefront, with a separate single accessory leaf. Each feature panic hardware and create a secure entry vestibule with

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Subordinate entrances are aluminum and feature fixed, stainless door pulls and mechanical cylinders. Signage is not visible at a distance and in some cases is degrading due to sun exposure.

Service entrances are typically hollow metal doors in hollow metal frames, featuring lever style door pulls and mechanical cylinders. Entrances that receive or provide outside services or receive delivers incorporate electronic access hardware.

Roof Systems: The original roof installation remains at the school and is composed of two systems, installed in 2002. Most of the roof utilizes a fully adhered EPDM system over wood fiber board and insulation, installed on metal decking. Two mechanical penthouses and the roof of the library feature pitched, standing seam metal roofs.

The EPDM system is in poor condition and requires maintenance at mechanical penetrations and a several flashing terminations along the perimeter. Standing water was witnessed at building corners where patches appear to have been attempted. The installed slope as indicated in details and roofing reports is 1/8 inch over a foot. This drainage slope may not be aggressive enough to keep up with discharge from adjacent metal standing seam roofs.

The standing seam system is in fair condition, with ongoing maintenance. Additionally, sealant has been installed where valleys and gables terminate.

Photovoltaic Panels are mounted onto the eastern most wing roof and appear in good condition.

Windows: Window framing is aluminum and contain insulated glass units. The window framing and glazing are good condition. Sealant at perimeter of window openings have been to crack along the face indicated degradation and have also delaminated along the edge indicated a failure of the primer at time of installation.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick on CMU	-	2-3
Roof Assembly:	Fully Adhered EPDM, Metal Standing Seam	-	1,2
Roof Drains:	Cast Iron	-	3

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NC – Not to Code

Flashing:	Galvanized or Copper Thru Wall Flashing	-	3
Canopies/Overhangs:	EIFS and AESS	-	3-4
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,2
Skylights/Clerestory:	Unitized Prefabricated Metal and Glass System, Fiberglass Translucent Sandwich System	-	3,3
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	3
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2
Louvers & Vents	Aluminum and Steel	-	3
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	3
Weatherstripping and Thresholds	Silicone & Brush	-	3
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder – No guard present at roof.	3
Gutters and Downspouts	N/A	N/A	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.4 Interior Envelope Systems

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: Rated HM Doors and Frames, with wire glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens. Panic bar enclosure end is missing.

Stair/Cafeteria Egress Doors: Rated WD Doors in HM Frames, with assumed rated glazing, continuous hinges, operable closures, rim devices, removable mullions and fixed door pulls with mechanical cylinders.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

Salt corrosion at the bottom of hollow frames common. Surfaces starting to rust.

Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, , and other ancillary spaces, like storage rooms.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. This results in mismatching tile and tiles that may not maintain equivalency in acoustical absorptive performance.

Roof leaks or leaks around window openings have required replacement throughout the school. Spaces with immediate adjacency to the roof on the third or second floors require the most frequent attention.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU &/or GWB	3	VCT	2-3	ACP	3
Commons	CMU & GWB	3	CPT-BL	2-3	ACP	3
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	3
Makerspace	CMU	3	VCT	2	ETS	2
Auditorium	GWB over CMU, Acoustic Panels,	3	CPT, Conc.	3	ACP, GWB, Acoustic Reflectors	3,3
Stage	CMU	3	WD	3	ETS	3
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	3
Weight Room:	CMU	3	CPT-BL	2-3	ACP	3
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3
Library:	GWB	3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & GWB	3	VCT	2-3	ACP/GWB	2-3
Entry Vestibules:	CMU, BR	3	MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	VCT	2	ACP, GWB	3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU, CT	3	CT	3	GWB	2-3
Stairs:	CMU & GWB	3	RT/RSN	2	ACP	2-3
Offices:	CMU or GWB	3	CPT-BL	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-BL	3	ACP	3
Kitchen Cooking/Prep Area:	CMU & CT	3	QT	2	ACP	3
Kitchen Storage:	CMU	3	QT	3	ACP	2-3
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2-3
Mechanical Room:	CMU	3	Conc.	3	ETS	2-3

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”	-	Yes	3
Door – Service:	HM	-	3’-0”	2 HR	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	2 HR	Yes	3

Abbreviations:

CMU	*Concrete Masonry Unit*	CT	*Ceramic Tile*
BR	*Facebrick*	PT	*Porcelain Tile*
ALUM	*Aluminum*	CPT-BL	*Carpet – Broadloam*
HM	*Hollow Metal*	CPT-T	*Carpet - Tile*
VCT	*Vinyl Composition Tile*	TZ	*Terrazzo*
ACP	*Acoustic Tile Ceiling*	VT	*Vinyl Treads*
GWB	*Gypsum Sheathing*	PL	*Plaster*
SCFT	*Structural Clay Facing Tile*	WD	*Wood*

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 09, 2022, and review of original construction documents dated October 31, 2001. The building was built in 2003. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the BFP Plumbing Room C114. The existing 4" water meter is still in good condition. The existing water service includes a 4" reduced pressure backflow preventer. The backflow preventer is corroded and in poor condition.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair condition, and it is expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original, stained and in poor condition. Some exposed pipes are not insulated.

There is no separate backflow preventer for cold water in the science room.

The exposed pipe insulation in the kitchen is in fair to poor condition.

The exposed pipe insulation in the woodshop is in good condition.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar. The water heater was installed on March 01, 2016, and it is located in the boiler room, and in fair to good condition. There are three (3) circulation pumps, one was installed on September 17, 2015, second one was installed on December 06, 2021, in fair condition. The installation date for the third circulation pump was not listed. There are two (2) mixing valves, one for 120 degree hot water and the other one is for tempered water. The mixing valves and pressure reducing valve, are

in fair condition. There is a floor mounted expansion tank for hot water system, still in good condition. There is no condensate neutralizing unit and there is no floor drain nearby. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair condition, and it is expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original, stained and in poor condition and some exposed pipes are not insulated.

There is no separate backflow preventer for hot water in the science room.

The exposed pipe insulation in the kitchen is in fair to poor condition.

The exposed pipe insulation in the woodshop is in good condition.

Natural Gas

The existing 6" natural gas system enters the building through the receiving area. The existing natural gas system includes a gas meter, valves, and gas regulator. The gas meter is located outside of the receiving area. The gas piping is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition, and it is expected to last about 30 more years before it will exhibit widespread problems.

Gas piping for the gas-fired kitchen equipment is in fair to poor condition.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in fair to good condition due to its age. Sanitary drainage piping is original to the building, and it is expected to last about 30 more years before it will exhibit widespread problems.

Vents through roof are generally in fair condition. Some vents through roof show signs of corrosion.

All kitchen equipment is original and in fair condition. The kitchen's triple pot sink is provided with grease trap that is installed below slab and therefore could not be observed. The waste piping below the triple pot sink is original and in poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22. The waste piping below the food prep sink is in fair condition.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in fair to good condition due to its age. Storm drainage piping is original to the building, and it is expected to last about 30 more years before it will exhibit widespread problems. The existing roof drains with cast iron dome strainers are all original, in fair condition. The cast iron dome strainers show signs of corrosion.

Acid (Lab) Waste

The existing acid (lab) waste system is collected below the slab and is therefore not visible and could not be observed. Acid (lab) waste piping is original to the building, and it is expected to last a few more years before it will exhibit widespread problems. Per verbal reports, the acid (lab) waste piping from all lab sinks discharges into a limestone chip tanks. Currently, there are no limestone chips in the tanks.

Fixtures:

All plumbing fixtures are original, and in fair condition.

Per original construction documents, plumbing fixtures mounting heights are the following:

ADA WC (Student Areas) = 15” from the finished floor to the top of the seat.

ADA WC (Student Areas – 1st to 8th) = 17” from the finished floor to the top of the seat.

ADA WC (Teachers/Staff Areas) = 17” from the finished floor to the top of the seat.

Non-ADA WC (Student Areas) = 15” from the finished floor to the top of the seat.

Non-ADA WC (Teachers/Staff Areas) = 15” from the finished floor to the top of the seat.

ADA UR (Student Areas) = 15” from the finished floor to the rim.

ADA UR (Teachers/Staff Areas) = 17” from the finished floor to the rim.

Non-ADA UR (Student Areas) = 24” from the finished floor to the rim.

Non-ADA UR (Teachers/Staff Areas) = 24” from the finished floor to the rim.

ADA LAV (Wall-Hung) (Student Areas) = 30” from the finished floor.

ADA LAV (Wall-Hung) (Teachers/Staff Areas) = 34” from the finished floor.

Non-ADA LAV (Wall-Hung) (Student Areas) = 30” from the finished floor.

Non-ADA LAV (Wall-Hung) (Teachers/Staff Areas) = 32” from the finished floor.

Girls Toilet Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 16" and 18-1/4".

Lavatories are wall-hung type, vitreous china with single lever faucets, generally in fair to good condition. Pipes below one of the the lavatories are insulated.

Nurse's Suite Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition.

Lavatory is wall-hung type, vitreous china with single lever faucet, in fair to good condition. Pipes below the lavatory are insulated.

Science Rooms A322:

Lab sinks are integral to the countertop, in fair condition. There is one (1) ADA compliant lab sink and all others are non-ADA lab sinks. Faucets are non-ADA compliant, with hot & cold water handles and vacuum breakers, in fair to good condition.

Gas turrets are deck mounted, in fair to good condition.

There is an emergency shower installed in this room. The shower head is mounted from the ceiling. There is also an ADA compliant, recessed in wall, emergency shower installed in this room.

Science Room (Third Floor): Fume hood in this room is not being used.

Art Room B202: Sinks are stainless steel, self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet, in fair condition. There is one (1) ADA compliant sink, and all others are non-ADA sinks. Plaster traps are not installed below the sinks.

Woodshop: There is one (1) freestanding utility sink that is old and dirty, with hot and cold water wrist blade handles and gooseneck faucet, in poor condition.

Stage Storage: There is one (1) freestanding utility sink that is dirty, with hot and cold water wrist blade handles and gooseneck faucet, in fair condition.

Nurse's Suite: Sink is stainless steel, ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet with eyewash, in fair to good condition.

Teacher's Dining: Sink is stainless steel, ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet, in fair to good condition.

There are four (4) stations in the old home economics room. This room is currently not being used as home economics room. One station has stainless steel sink, ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet. Other three

stations have stainless steel sink, non-ADA compliant, self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

Miscellaneous Fixtures:

The custodian's mop sinks are original, floor mounted, and in fair condition.

Drinking fountains installed within the building: Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition.

There is an emergency shower unit present in the boiler room.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents dated October 31, 2001, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

Existing hose bibbs have no atmospheric vacuum breakers.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4"	4"	No	N/A	Copper	City	19	3
Gas Service:	6"	Not Accessible	Yes	N/A	Black Steel	Gas company	19	3

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	3 & 1 (Boiler Room)	Due to age
Domestic Hot Water:	Copper	3	Mineral-fiber	3 & 1 (Boiler Room)	Due to age
Sanitary Waste & Vent:	Cast Iron	3	N/A	N/A	-
Storm Drainage:	Cast Iron	3	Mineral-fiber	3	-
Gas:	Black Steel	3	N/A	N/A	-
Non-Potable (Lab) CW:	Copper	3	Mineral-fiber	2	-

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N/A – Not Applicable/Missing
NC – Not to Code

Non-Potable (Lab) HW:	Copper	3	Mineral-fiber	2	-
Acid (Lab) Waste & Vent:	Polypropylene	3	N/A	N/A	-
Kitchen Waste:	Cast Iron	3	N/A	N/A	-
Tempered Water:	Copper	3	Mineral-fiber	2	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing, Tank-type/Gas-fired	6	3	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 10 years	2	-

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall mount	Refer to Above.	Yes & No	3	-
Urinal:	Wall mount	Refer to Above.	Yes & No	3	-
Lavatory:	Wall mount	Refer to Above.	Yes & No	3	-
Drinking Fountain/Water Cooler:	Wall mount	Refer to Above.	No	3	-
Classroom Sink:	Counter	Refer to Above.	Yes & No	3	-
Classroom STEM Sink:	Counter	Refer to Above.		3	-
Classroom Drinking Fountain:	N/A	-	N/A	N/A	-
Mop Sink:	Floor	Janitor's Closet	N/A	2	-
Showers:	Freestanding	Refer to Above.	Yes & No	3	-

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N/A – Not Applicable/Missing
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Miscellaneous Fixtures	**Type**
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted, non-freeze
Floor Drain:	Floor mounted, Type varies by location
Emergency Shower/Eyewash	Freestanding, Ceiling mounted and Recessed (wall)
Emergency Location	Science Rooms
Lab Faucets	Deck mounted
Lab Gas Cocks:	Deck mounted

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 09, 2022, and review of original construction documents dated October 31, 2001. The building was built in 2003.

Services:

The 6" fire service enters the building in the BFP Plumbing C114 room. The existing 6" fire service includes a double check valve assembly, supervised O.S. Y. gate valves, fire protection risers with wet alarm valves, main flow switch, sprinkler main drain, 4 inch main from existing fire department connection, in fair to good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility. Wet alarm valves and risers are in the BFP Plumbing C114 room. Existing sprinkler head types are recessed pendant, concealed and upright sprinkler heads. The wet sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 30 more years before it will exhibit widespread problems. Some pipes are exposed but majority is installed above the ceiling.

STEM Shop:

Sprinkler heads are not installed below the ductwork that is over 4 feet wide. Not in compliance with NFPA-13.
One row of upright sprinkler heads were installed between two (2) round ductwork. The sprinkler's spray pattern will be obstructed by the round ductwork. Not in compliance with NFPA-13.

STEM Classroom:

Ceiling tiles are missing rendering sprinkler protection ineffective. This is a code violation and not NFPA-13 compliant.

Sprinkler heads are not installed in the soffit near the stage.

Ansul Fire Suppression System

Kitchen:

The kitchen hood has ansul fire suppression system in fair condition.

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2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	6”	Yes/DCVA	Stainless Steel	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendent; concealed; upright	Chrome Plated and Natural Brass	-

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally in good shape, requiring only normal maintenance.

Systems:

Four (4) gas fired boilers provide heating hot water for the building. Two hot water pumps provide distribution with one being a standby. The hot water system contains the original glycol, which is now over 20 years old. There is no chemical water treatment in the hot water system.

The building is conditioned by all air central systems and is primarily heated and ventilated only.

The *Library, Computer classrooms, Offices, Gymnasium, Auditorium* and *Music classrooms* are served by dedicated rooftop units with DX cooling.

The remaining spaces are served by five (5) rooftop heat recovery units but it has been reported that one wheel is not currently functioning.

A portable air conditioning unit has been added to the *Teachers' Dining Room*, with an opening cut in the wall to reject heat to the adjacent Boiler Room.

The Donaldson dust collector in the original *STEM Shop Storage Room* has been abandoned in place. This space appears to now be used for storage and growing plants. Access to the dust collector is limited due to all the items stored in the space. Existing dust collector ductwork in the adjacent STEM space is being used as shelving. Window air conditioners have been added in both STEM Rooms.

In many classrooms teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The *MDF Room* and *Elevator Machine Room* have dedicated wall mounted split systems for cooling.

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2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

The automatic temperature controls are not connected to a district wide front end, but are interconnected with the Miller, Blanchard and Crisafulli Schools' DDC systems. The building has a Siemens Apogee DDC system that is reportedly running on Windows 7, and an operator workstation. The Siemens DDC system was upgraded about six years ago.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	Gas	Hot water boiler	Buderus	2003	3
Heating Equipment #2:	Gas	Hot water boiler	Buderus	2003	3
Heating Equipment #3:	Gas	Hot water boiler	Buderus	2003	3
Heating Equipment #4:	Gas	Hot water boiler	Buderus	2003	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	Two (2) base mounted end suction pumps and four (4) inline pumps	Taco	2003	3
Heating Distribution Equipment:	One (1) inline pump/30% glycol tank	N/A	2003	3
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	Six (6) RTU's with DX cooling serving Special Ed. & Computer classrooms in A, Library, Gym, Music in D, Offices and the Auditorium	Trane	2003	3
	Five (5) RTU's with heat recovery wheels, no mechanical cooling serving classrooms in A, Cafeteria, classrooms and Lobby in B, Locker Rooms and Lobby in D	Trane	2003	3
	One (1) gas fired makeup air unit	Greenheck	2003	3
	One (1) heating & ventilating unit serves the Boiler Room	Trane	2003	3

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	VAV heating & ventilation and finned tube radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Classrooms & Lobby B:	VAV heating & ventilation and finned tube radiation/panel radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Science Classrooms:	Constant volume heating & ventilation (RTU-1&2) and finned tube radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Science Classrooms:	Utility sets on roof for fume hoods (EF-6&7)	Refer to Controls Section	N/A	2003	3
Computer Classrooms:	VAV heating & cooling (RTU-3)	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Art Classrooms:	Constant volume heating & ventilation (RTU-1&2) and finned tube radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Art Classroom:	Kiln exhaust-roof mounted exhaust fan	Refer to Controls Section	N/A	2003	3
Music Classroom:	VAV heating & cooling (RTU-9) and finned tube radiation/panel radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Offices:	VAV heating & cooling (RTU-10) and finned tube radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Library:	VAV heating & cooling (RATU-6) and panel radiation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Auditorium:	Constant volume heating & cooling (RTU-11)	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Cafeteria:	Constant volume heating & ventilation	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

	(RTU-4), ceiling fans and finned tube radiation				
Gymnasium:	Constant volume heating & cooling (RTU-8)	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Multipurpose Room:	NA	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Kitchen:	Gas fired MAU	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Corridors:	Air from adjacent units and finned tube radiation/ convectors/ radiant panels	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Toilets:	Exhaust	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above
Locker Rooms:	Constant volume heating & ventilation (RTU-7)	Refer to Controls Section	N/A	Review Distribution Above	Review Distribution Above

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Kitchen hood upblast exhaust fan	N/A	2003	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Heat Recovery Wheel: RTU-1	N/A	2003	3
Equipment 2:	Heat Recovery Wheel: RTU-2	N/A	2003	3
Equipment 3:	Heat Recovery Wheel: RTU-4	N/A	2003	3
Equipment 4:	Heat Recovery Wheel: RTU-5	N/A	2003	3
Equipment 5:	Heat Recovery Wheel: RTU-7	N/A	2003	3

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	Siemens	DDC	2003	3

Notes:

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system, Lightning prevention and Grounding systems are in good operational condition.

Services:

Electrical – National Grid. Service initiates at the existing street utility poles and extend underground towards the school building. Electrical service terminates at the outdoor pad-mounted utility transformer.

Telephone – Verizon. Service initiates at the existing street utility poles and extend underground towards the school building.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is at the transformer's enclosure. Transformer appears in good operational condition. No specific issues were reported.

Generator:

Outdoor 230kW/ 287.5kVA 277/480v 3ph 4w diesel-fired emergency generator, by Kohler, with skid-base tank. Good operational condition. Supports Life-safety and Standby loads via three separate ATS's. The generator's remote annunciator is in the custodian's office.

Distribution System:

The utility transformer's secondary feeder is terminated in a 3,000 Amp 277/480v 3 phase 4 wire Main Switchboard manufactured by General Electric Spectra. The switchboard is in the Main Electric room on the 1st floor. It's equipped with a 3,000 Amp Main Circuit Breaker, digital metering unit and surge protection device. Normal and Emergency power sources are distributed throughout the building via a number of distribution panels and stepdown transformers installed in various electric rooms and closets. The main switchboard and downstream power equipment were observed in good operational condition. Standby power 250 Amp ATS-2 and 150 Amp ATS-3, installed in Normal power electric rooms, currently support elevator, dedicated

HVAC and plumbing equipment, kitchen refrigeration equipment, sewage lift station, and WWTP. The Life-safety 100 Amp ATS-1, installed in emergency closet, currently supports emergency egress lighting throughout the building and Auditorium lighting system.

The quantity of receptacles in various spaces appear to be adequate for the respective space programs. It was noticed that receptacles wired to panels equipped with surge protection devices are of a blue color. A few receptacles in the kitchen area were noticed to be non-GFI and shall be replaced accordingly. In science classrooms non-GFI receptacles new sinks assumed to be wired downstream of the adjacent GFI receptacles, which is an acceptable wiring/protection installation.

Lighting Systems:

Exterior lighting:

The original HID pole-mounted and most of original wall-mounted lights were replaced with LED type. A few original sconces were observed still installed but assumed not operational. Overall, the existing exterior lights are in good operational condition and provide adequate illumination. All exterior lights are wired via time clock (reported as disabled) and exterior roof-mounted photocells.

Interior lighting:

Overall, the original lighting fixtures installed throughout the building are in good operational condition. In general, interior lighting system consists of fluorescent pendants and recessed 2'x'2 and 2'x4' lensed and parabolic lighting fixtures with T8 lamps, but they are non-dimmable and not of energy-efficient type. Gym lighting was recently upgraded with lights containing T5 lamps. Classrooms are equipped with linear pendants with 2-step switching arrangement. Corridors, offices, bathrooms, kitchen, and other school building areas are equipped with recessed lensed and parabolic louver lights with T8 lamps. Cafeteria and corridors have a few dedicated "NL" (Night Lights) which always stay "on". In general, lighting illumination levels are acceptable.

Dedicated emergency egress lights and exit signs are supported by the Generator's Life-safety power. Exit signs are of LED type, in good operational condition.

Lighting controls: all classrooms are equipped with ceiling-mounted occupancy sensors. No other areas were observed with occupancy sensors. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and lighting fixtures can't be dimmed down during sufficient natural daylight times.

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, all appear to be in good operational condition.

The lightning prevention system is implemented by two roof-mounted lightning prevention masts and connection down to exterior perimeter grounding wire loop, all appear to be in good condition.

A 41 KVA Photovoltaic (PV) system with dedicated utility meter was recently installed on roof. It serves as an educational demonstration system and additional source of power for school.

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N/A – Not Applicable/Missing
NC – Not to Code

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	UG	277/480	3 phase 4 wire	2003	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	2003	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor /230KW	Diesel	277/480 3ph 4w	2003	4

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Switchboard	277/480 3ph 4w	Main Elec room	2003	4
	Panels and transformers	277/480 3ph 4w	Throughout	2003	4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	4
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria:	Standard	1ph/120v	Grounded	4
	Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	Linear/ T8 fluorescent	Pendant	2003	4
	Offices:	2'x4' parabolic/ T8 fluorescent	Recessed	2003	4
	Library:	Linear and downlights/ T8 CFL fluorescent	Pendant and recessed	2003	4
	Gymnasium:	2'x4' lensed/ T5 fluorescent	Pendant	Recent upgrade	4

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Cafeteria:	2'x2' lensed/ T8 fluorescent	Recessed	2003	4
Corridor:	2'x2' lensed/ T8 lamps	Recessed	2003	4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road and perimeter walls	LED lights	Pole-mounted and perimeter wall-mounted	Recent replacement with LED type	4

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to Life-safety power	Various	Various	2003	4

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	
Device 1:	Exit signs	Various	Various	Various	4
	FA signaling	Simplex	Various	Various	4

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3 – Fair/Good – Functioning, Maintained
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N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

In general, the existing fire alarm system is in good operational condition.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable Simplex model 4010. The radio box is manufactured by Digitize. The FACP is installed in the main vestibule.

Devices:

Outdoor red beacon strobe and key (knox) box at the main entrance door. Smoke detectors, pull stations, horn/strobes, strobe only units, in adequate acceptable installation concept.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Simplex 4010	Horn/strobes and Strobes	2003	4

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Horn/strobes	None	2003	4
Offices & Conf rooms:	None	None & Strobes	None	2003	4
Gymnasium:	None	Horn/strobes	Yes	2003	4
Cafeteria:	None	Horn/strobes	Yes	2003	4
Lobby/Corridor	Smoke	Horn/strobes	Yes	2003	4
Kitchen:	None	Horn/strobes	None	2003	4
Toilets:	None	Strobes	None	2003	4
Basements:	N/A	N/A	N/A	N/A	N/A

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2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria and Gymnasium local AV systems are passed its useful life expectancy. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	-	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

PUBLIC ADDRESS SYSTEMS	**Device Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**

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1 – Poor/Fair – Failure Expected
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Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. Appropriate signage has been provided at doorways with braille.

The elevator can lift a person in a normal wheelchair. Class of Elevator is unknown.

Classroom Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces feature sinks that incorporate appropriate knee space for student use and are mounted at 34" AFF.

Markerboards and Tackboards are mounted 40" to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48".

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathroom meets the requirements of students in middle school with water closets installed 15 to 17 inches AFF and lavatories at 30". (According to 521 CMR MAAB).

Water Closets in adult, single occupant bathroom are mounted 17" AFF to top seat. Lavatories are installed 34" AFF to rim. These spaces are appropriately sized for use by adults.

Toilet compartments and fixtures maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are appropriate mounted for support of students or adults.

Water Fountains are in proximity of students on each floor and have recently been updated to provide bottle filling capability.

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N/A – Not Applicable/Missing
NC – Not to Code

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-2"	WD or HM	Level Style or Fixed Door Pull	3
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Level Style or Fixed Pull	3
Signage:	Braille Present	Plastic	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Offices:	3'-0"	WD	Lever Style	3
Library:	6'-0"	WD	Level Style	3
Stage:	3'-0"	WD	Fixed Pull Style	3
Gymnasium:	3'-0"	WD	Fixed Pull Style	3
Cafeteria:	3'-0"	WD	Fixed Pull Style	3
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Stairs:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Elevator:	6'-7"x4'-3"	2500lb	Laminate, RF	3

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	5'-0"	RT/RSN	34/42	3
Stair 2	5'- 0"	RT/RSN	34/42	3
Stair 3	8'- 0"	RT/RSN	34/42	3

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**

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N/A				

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	
Tables & Seating - Cafeteria	Yes	
Drinking Fountains	No	Protusion into corridors exceed 4”.
Controls/Switches	Yes	
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

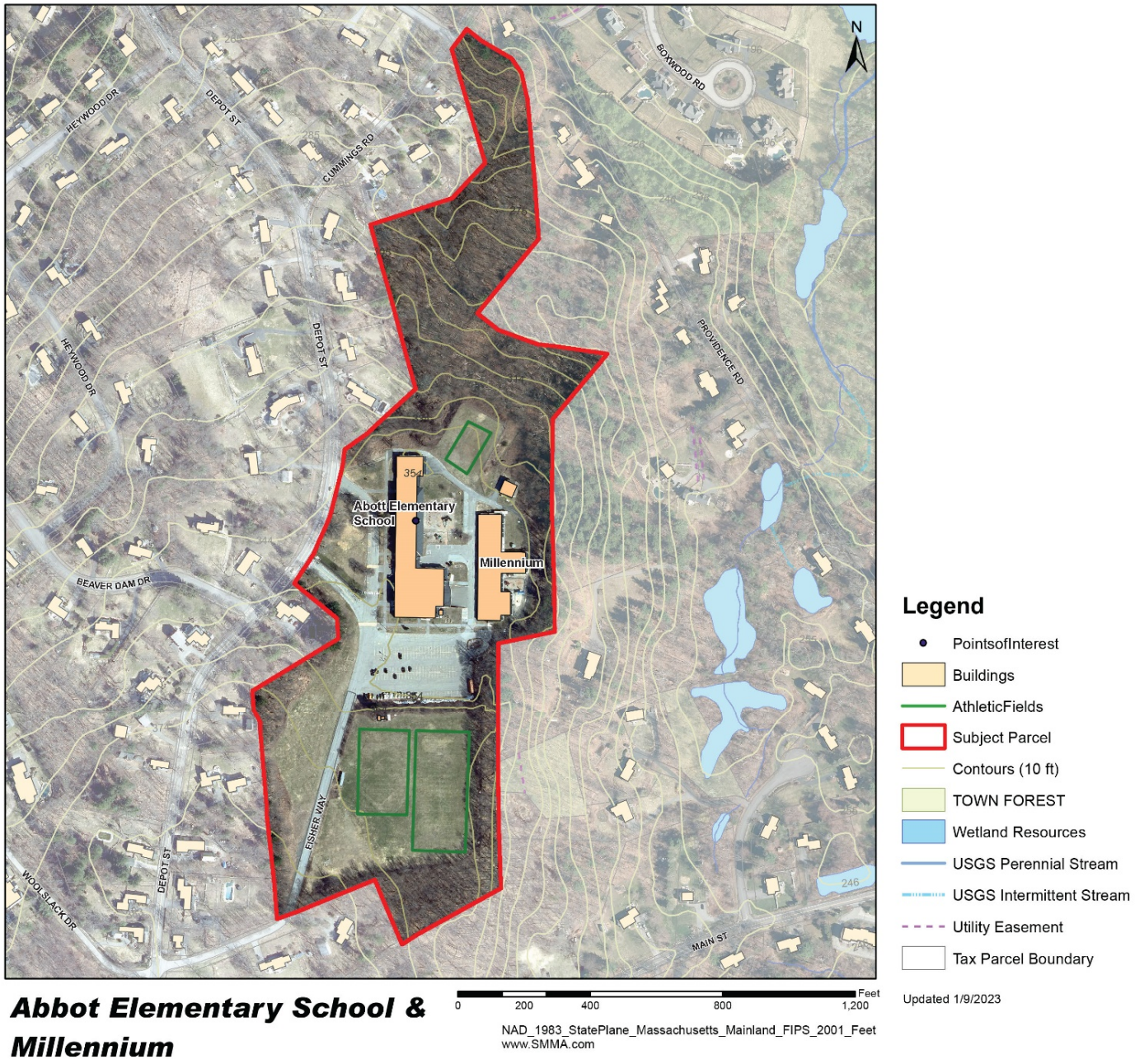
Name of School:	Abbot Elementary School		
Address:	23 Depot Street, Westford MA		
Name of Owner:	Town of Westford		
Grade Levels Served:	3-5,		
Student Population:	350		
Years in Service:	68		
Year Constructed:	1955	*Designer:* Irving W. Hersey Associates Architects & Engineers	*Engineer:* Richard D. Kimball Co. Engineers
Additions:	2005	*Designer:* Unknown	
	2012 - Elevator	*Designer:* LPBA Architects	
Existing Drawings:	1953, 2011		

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N/A – Not Applicable/Missing
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2.1.2 CONSTRUCTION CLASSIFICATION DATA:

Construction Type:	3B Non-Combustible Protected
Original Building:	Unknown
Addition 1:	3B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	56,816 SF

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Abbot Elementary School & Millennium

NAD_1983_StatePlane_Massachusetts_Mainland_FIPS_2001_Feet
www.SMMA.com

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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The day was overcast, cold, and there was a light coating of snow on the ground in some places. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Centrally located in Westford, just down the street from the town hall and surrounded by single family residential homes, Abbot Elementary School and Millennium School are at 25 and 23 Depot Street. The 32.07-acre parcel has two school buildings, two playgrounds, recreational fields, a water treatment plant with leach field, and a large parking lot. Currently, students are only attending the Abbot Elementary School, the Millennium School building is used as district offices. The site elements are overall in a fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Playgrounds:

The playground is at the rear of the building, adjacent to service and loading areas. It is primarily accessed through the cafeteria doors. Students egress from the building into a bituminous plaza that is part service area part playground. Moving north through the plaza area there is an outdoor classroom, playground with play structures, and an open field used for recess. There is also an area for basketball with three hoops, the area is about the size of three half-courts but are not striped with markings. The playground has a wood chip surface in both areas but was not inspected for compliant safety depth.

Site Accessibility and Pedestrian Pathways:

Site accessibility regarding walkway slopes and parking spaces seemed somewhat compliant. The slope of the rear play and loading plaza may exceed 2% slope that is acceptable for plazas. Most exterior doors are not accessible due to raised granite landings outside each door, however there are alternate routes in the vicinity. Several ramps have been built as alternative routes for accessibility

around the buildings. Accessible parking on the site at front of Abbot are not signed, spaces between Abbot and Millennium are well marked.

School walkways and plaza areas are bituminous concrete pavement. Both the bituminous plazas and walkways are in fair condition. Instances of raveling, cracking, rutting and a few small potholes were observed.

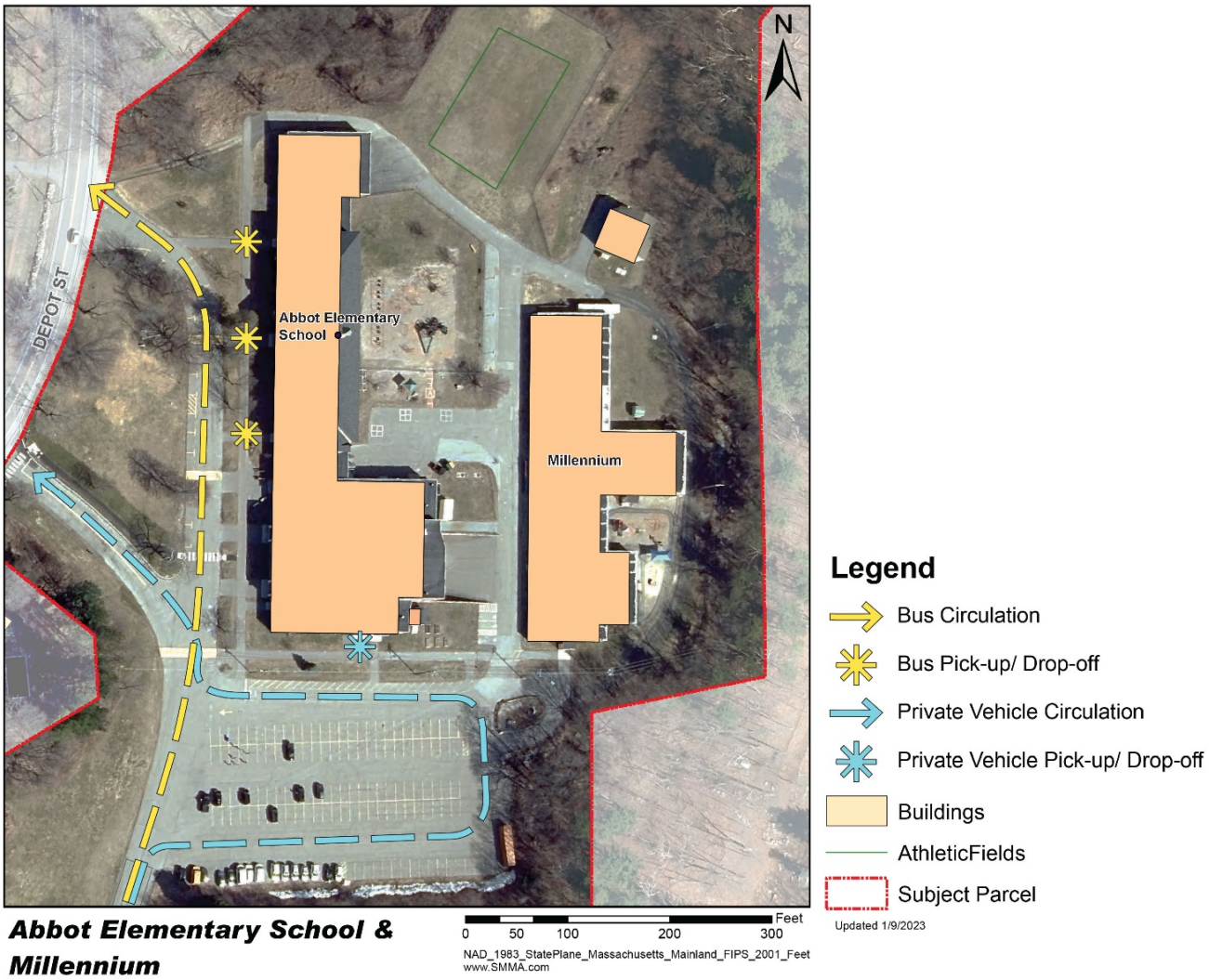
Vehicular Traffic:

The arrival sequence for buses is to pull to the front of the Abbot Elementary School, which is also called Academy Drive. Students arrive at or are dismissed from the front entrance of the building. Buses then leave the site via Academy Drive. Private vehicles (cars) delivering students enter the parking lot through Fisher Way and wend their way through the parking lot, to the South corner of the school. Once students have been dropped-off or picked-up cars depart the site via Fisher Way connecting to Depot Street. Teachers also use Fisher Way to enter and exit the site.

Parking for the buildings is concentrated on the south side of the site in a large lot with approximately 150 spots and about 12 spaces on the east side. All paving on the property is bituminous concrete paving without curbing. Some areas of bituminous pavement have deteriorating edges with many types of cracking including block, linear, and fatigue cracking, small potholes, rutting and patching. The roadways at the site are made of bituminous concrete and are generally, in fair condition. There is a crushed stone path behind the Millennium building that appeared unused because there was no disturbance to the snow covering the path.

The fencing at the playground and around the field north of the school is in good condition. Vine growth was observed and could damage the mesh if left untrimmed surrounding the recreational fields to the south.

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Abbot Elementary School & Millennium

SITE & LANDSCAPE SYSTEMS DATA:

Land Use Type:	Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning:	Residence A
Lot Area:	32.07 AC
Topography:	Sloping downward from south to north the whole parcel (See map for more information.)
Wetlands:	None

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INFRASTRUCTURE & UTILITES

	Description	Source	Comments
Water	Town Water	J.Fox	-
Electricity	Buried & Overhead Wires	VI	-
Gas Provider	National Grid	J.Fox	-
Oil Tank	Above ground	J.Fox	Used for generator only.
Storm Water Management	Surface swales	VI	-
Sanitary	Wastewater Treatment Plant on site	J.Fox	-
Irrigation	N/A	J.Fox	-

PAVEMENTS

	Surface	Source	Condition	Comments
Roadways	Bituminous pavement	VI	2/3	Bit. con. is in fair/poor condition, many edges are crumbling, there is significant cracking and rutting.
Walkways	Bituminous concrete, pavers at playground, and granite paving	VI	2/3	Bit. con. is cracking along most walkways. Most doorways have one granite step into the building. Small paver walkway to playground is in fair/good condition.
Plazas	Bituminous concrete	VI	3	Bit. con. is in fair condition in most places. Many instances of potholes, raveling, cracking, and rutting.

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Pathway	Crushed stone	VI	3	The path was snow covered on the day of inspection, but the surface appeared smooth without significant potholes.
Curbs	N/A	VI	-	N/A

PARKING

	Spaces	***Material***	***Condition***	***Comments***
Parking Lot	150 (8 EV)	Bituminous	2	Bituminous in this area has significant cracking of various types including fatigue, linear, and block cracks, rutting, and raveling in many places. The pavement is suitable for parking, but there are many areas where pavement becomes walkway that should be assessed for repair.
Parking – Entry Drive	12 (2 ADA)	Bituminous	2	ADA Parking was unsigned. Pavement is cracking and rutted. Striping is faded.
Accessible Parking	5 total	Bituminous	2	Bit. con. is in fair condition. Spaces at front of Abbot are not signed, spaces between Abbot and Millennium are well marked.
Charging Stations	4 (8 spaces)	Bituminous	2	-
Service / Loading Dock	+/- 12	Bituminous	2	Bit. con. is in fair condition, a lot of block, linear and fatigue cracking.
Bike Racks	N/A	-	-	-

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SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	N/A	-	-	There are no curbs on site.
Curb Cut - other doors	N/A	-	-	-
Curb Cut - Street	Bituminous	Unknown	3	Walkway from street entering site does have a curb cut.
Walkways	Bituminous	Yes	2	The bit.con. walkways appear to meet compliance of slope
Site Ramp	Wood	Yes	4	-
Public Street	Bituminous			Public street only has sidewalk from Depot Street.
Main Entry	Wood	Yes	4	Main entry is accessible, ramp is in good condition.
Secondary Entries	Wood or granite steps	No / Yes	3/4	Most doorways have granite steps that are not accessible. There is a separate site ramp at the front or back entry.
Plazas	Bituminous	No	2/3	Slope of rear plaza most likely exceeds 5% slope in one area and appeared to exceed 2% in others.
Courtyards	N/A	-	-	There is no courtyard.

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FIELDS

	Surface	***Source***	***Condition***	***Comments***
Open Field - Flex	Natural Lawn	VI	3	Fair; ground and fence are in fair condition. This field appeared to be a leach field for water treatment plant.
Playground – Abbot (Rear)	Wood chip, Grass, Bit.con.	VI	1	Bituminous is in poor condition, lots of cracking. Play equip. is in fair/good condition. However, the wood chips need to be refilled immediately. The footings of many of the play structures are exposed causing a hazard.
Basketball Courts	Bituminous	VI	2	The pavement is cracked in the area, backboards were chipped, there was no padding on the posts, and no painted lines for courts. There were nets on the hoops.
Playground - Millennium (Rear)	Wood chip, Bit.Con, Grass	VI	1	Fair; appeared to be abandoned. Playground should be inspected for safety before use by an school programs.
Ballfield / Flex	Natural Lawn	VI	3	Adjacent School – on same parcel but maintained by recreation. Dept. Fair; ground and fence are in fair/good condition.

LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Riparian Areas	Present. Winter conditions make assessment difficult.
Woodland/Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	None
Greenhouse	None
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Cond	Comments
Site Lighting	See Electrical Section	2	No pole lighting observed, most exterior lighting appeared to be building mounted.
Fire Hydrants	Standard	4	Front of Abbot school and in the playground between Abbot School and the Millennium building.
Waste Management	Steel Dumpsters	3	Recycling & Garbage dumpsters are located outside the cafeteria. This is also a play area, there appeared to be a conflict of use in this area.
Retaining Walls	Concrete	2	Loading area appeared to be in fair/serviceable condition.
Fencing	Chain Link	3	Most fencing is good/fair. Though there is significant growth on fencing around the recreation fields.
Gates	Chain link / steel	3	Good condition. They are opened for service access only.
Flagpole	Steel	3	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
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NC – Not to Code

Outdoor Classroom	Wood / composite Benches	3	Small arrangement of benches with concrete footings and a white board.

BUS OPERATIONS

Number of Buses: 8

Bus Drop/Pick-Up Area: Front Entry along Fisher Way

Private Vehicle Drop/Pick-Up Area: South corner of building.

Signage: Minimal

0 – Poor –Failed
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 16, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Most structural elements were not exposed to view and unobservable. Original structural design drawings were not obtained and reviewed to supplement the study.

Systems:

The school is a multi-story building originally constructed in 1955. Renovations were later performed for the library area. An elevator room addition was constructed in 2011. The foundation consists of continuous concrete foundation walls and footings. The first floor is a concrete slab-on-grade. Typical elevated floor framing consists of steel girders and a secondary joist system supported by steel columns and running-bond CMU walls which support concrete floor slabs. The roof framing consists of timber joist framing supported by sloped structural steel roof trusses. The CMU walls make up the lateral system for the building. The steel framing was almost entirely unobservable due to architectural finishing in all areas of the building. Ceiling tiles were removed for visual inspection in one location to verify the nature of the underlying steel structure. Painted finishes of HSS steel columns were exposed flush along the CMU walls in some areas. On-site inspection was primarily limited to the running-bond CMU walls, as well as the concrete walls and underside of the first-floor slab in the boiler room and the steel and timber roof truss framing system in the attic. The overall visible building structure was noted to be in fair condition.

Vertical cracks were noted at the CMU walls in the first-floor music room and adjacent practice rooms at the corner of the building. These cracks were located toward the top of the walls and continuing above the drop ceiling next to window openings of the practice room and music room. No signs of previous repairs were noted at these locations.

0 – Poor –Failed
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The original building foundation and façade was observed. Chipping and spalling were observed on the exterior concrete wall bordering the boiler room. Rough openings in the concrete wall were placed at the access doors for the boiler and mechanical rooms with timber framing around these doors. Spalling with exposed coarse aggregate was observed at the corners of these wall openings. The overall condition of the concrete foundation along the perimeter of the building was noted to be in fair condition, with cracking in some areas.

STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at perimeter	-	3
Vertical Support System:	Steel columns, running-bond CMU/masonry walls, concrete walls at boiler room level	Spalling and deterioration at boiler room wall exterior	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Structural steel joists, wide-flange girders	-	3
Roof Framing Systems:	Wood-framed joists supported by sloped structural steel trusses	No observed signs of water damage	3
Lateral Force Resisting System	Running-bond CMU/masonry walls*	Vertical cracking in some areas	3

* The existing building does not appear to have a deliberate Lateral Force Resisting System. The original structure was designed prior to 1970, which is when the Massachusetts building code first required a deliberate structural system design to resist seismic and wind loads. By default, the existing masonry walls appear to provide resistance to these lateral loads. If future building modifications are planned for this building, an evaluation of the existing structure and proposed modifications may be required to determine if lateral upgrades would be required for a future renovation.

Addition 1 (Elevator Area, 2011)

	Material	Remarks	Condition:
Foundation System	Unknown	-	N/A
Vertical Support System:	Steel columns, running-bond CMU/masonry walls	--	4
Ground Floor Framing System:	Concrete slab-on-grade (presumed, not verified)	-	N/A

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Upper Floor Framing Systems:	Structural steel wide-flange girders (presumed, not verified)		N/A
Roof Framing Systems:	Unknown	-	N/A
Lateral Force Resisting System	Running-bond CMU/masonry walls (presumed, not verified)	-	N/A

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2.1.3.3 Exterior Envelope Systems

Exterior Wall System:

The primary wall system at Abbot is a traditional masonry load bearing walls wall composed of face brick over concrete masonry units, with copper thru wall flashing at the base. Copper thru-wall flashing at the base of the walls have begun to oxidize and appear in good condition.

Copper flashing also acts as a metal flashing cap to top portions of brick wall that extend proud of the wall. The top of walls have oxidized and may be pitting. Sealants have deteriorated.

Ornamented wood pilaster and cladding define the front elevation of the school. Paint coatings have become worn and peeled from the wood. Moisture has begun to deteriorate wood material.

Windows were replaced to match original windows, with aluminum, new single hung windows with transom above. Sealant around existing wood window trim is in good condition. Existing stone sills are dirty from runoff residue over the years.

Louvers around the perimeter are formed metal with galvanized coatings at ground level and on the roof. Coatings are deteriorated and louver blades are often deformed. Sealant around louvers has shown signs of deterioration.

In some cases, gaps between metal are greater than 1/4”, which increase the risk of pest intrusion. Pest screens are located within the assembly. In some instances, where louvers were damaged to a greater extent, exterior sheathing provides a cap.

Sections of the foundation show exposed aggregate. Attempts to apply a parge coat to the base can be seen in some locations.

Exterior Entrances:

The main entrance is composed of three pairs of doors, each equipped with fixed door pulls. The primary door serving the general population of students and visitors features a mechanical cylinder. Two openings are equipped with intercom and camera for access, one with an automatic operator. The entrances are in fair to good condition.

Egress doors located around the school are hollow metal in wood or metal frames. The doors utilize pull style handles and a manual

cylinder for access from the outside. Loose lintels above doors show signs of rust.

Some doors, utilized for egress only include no handles or manual cylinders on the perimeter. On these doors perimeter gasketing needs to be address. The undercut of the door may not provide adequate seal and a drip cap above the doors at the gymnasium has been badly weathered.

Four-inch-tall vinyl numbers are applied to the face of each door opening for identification by emergency responders. These numbers are fair condition and are difficult to read from 36 feet. (The height of the numbers is determined by the distance a responder may view the door from the road.)

Exterior landings are composed of granite slabs. Joints in the slabs have deteriorated and separated larger that ¼ inch and pose a hazard to occupants exiting. It each instance granite slabs and steps create a non-uniform landing, immediately outside the doors.

During egress at each door, a person must step down first and then proceed. Landing is more than ½", the minimum height for accessible entrance through a door. Subgrade conditions under granite slabs have settled and drain water toward the lower course of brick, resulting in over saturation of the foundation wall. Organic staining has accumulated at the corners of entrance landings.

Where pediments are flashed into the front elevation, sealant has deteriorated. Copper flashings direct water to either side of the opening and drainage flows down the face of the brick façade. Over time, water has eaten away grout joints at the coursing of brick between the windows and pilasters.

Decorative guard rails from some entrances are rusting adjacent to several of the exits.

Where condensers are located on the outside of the building surface mounted conduit and refrigerant insulation absorb and hold water for moisture at the base walls, causing staining at the face brick and top of foundation. Air conditioning systems drain condensate to the outside via cores in the side of the brick wall. Sealant at these locations is showing signs of deterioration.

Basement Entrances and Window:

At the basement utility spaces, foundation walls are in varying states of disrepair. See structural section for conditions.

Entrances are wood doors framed into wood stud walls. These walls have been sheathed with plywood on only side and framed to the larger original opening. Knob style handles or a fixed pull with hasp and pad lock are used to secure spaces. In each case these doors are in poor condition.

Exterior Soffits:

Composed of wood, exterior soffits above doorways have become dirty over the years, coatings have begun to peel at the edges and fasteners have begun to rust.

Roof Systems:

Three different roof systems occur over the Abbot.

The primary system is an asphalt shingles over felt on wood roof decking.

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Areas of flat roofs outside this system sit above the administration, cafeteria, gym, and library.

A fully adhered EPDM system has been installed and is in fair to serviceable condition.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	-	2
Roof Assembly:	Asphalt Shingles over Felt and Plywood, Fully Adhered EPDM over Insulation	-	2, 2, 2
Roof Drains:	Cast Iron	-	2,2
Flashing:	Galvanized or Copper Thru Wall Flashing	-	2
Canopies/Overhangs:	Wood	-	2
Windows:	1” Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,2
Skylights/Clerestory:	Unitized Prefabricated Metal and Glass System, Fiberglass Translucent Sandwich System	-	2
Glazed Curtain Wall/Storefront	Aluminum Storefront		3
Exterior Doors:	HM	-	2
Louvers & Vents	Formed Metal	-	1
Exterior Door Hardware	Fixed Pull Handles with Exterior Cylinders at Primary Entries, Butt Hinges, Thresholds Vary	-	2
Weatherstripping and Thresholds	Silicone & Brush	-	1-2
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4” Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder – No guard present at roof.	3
Gutters and Downspouts	N/A	N/A	-

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2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose the main corridors and classrooms.

Door opening installed without a loose lintel above. CMU shows signs of cracking.

Glazed Concrete Masonry Units (GCMU) are used in stairwells and restrooms at the perimeter and transition to CMU over 10ft above finish floor.

In one instance cracking can be see along joints going to the corner, at the intermediate landing.

Horizontal glazed openings between the hallway and classrooms contain unrated frames and wired glass. These are fair condition.

Sheetrock Walls (GWP) Compose partitions added within the original woodshop area and locker areas of the school to create classroom space or relocate the library.

Opening connecting two sides of library installed in a rated partition.

Wood Panel Partitions (WPP) compose the perimeter of the music room and provide no acoustical value. Entrances have been provided in the partitions and are in poor condition.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Classroom doors are 3ft 6in wide and incorporate wired glass lights for the upper half of the door leaf. Level style handles are utilized for access. Doors appear to be original and are in poor to fair condition.

Corridor/Stair/Egress Entrances: Hollow metal doors in wood frames are surrounded by original molding and wired glass transom and borrowed lites. These opening are not rated and do not separate building properly. Fixed door pulls and aged closers are held open.

Doors are not connected to magnetic holds and remain open in the event of a fire.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Rated Entrances: 2 Hour rated doors and frames are used at the music and library spaces within the renovated locker room area of the school. These doors feature level style handles and glass lites. Door, frame and hardware assemblies are in good condition.

Door opening leading into 5th grade classroom leads into an egress hallway used to store books. Wood Door installed into existing hollow metal frame and swings out. Door features a rim style panic bar and does not incorporate a closer.

Egress Doors outside the Stage do not swing toward appropriate egress. Face Veneer has delaminated and stripped away. Doors are not rated, and egress pathway is used for the storage of gymnasium equipment. Surface mounted pins engage with panic device. Surface mounted hardware does not meet accessible requirements.

Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, music rooms, and other ancillary spaces, like storage rooms. The condition varies depending on location. Floor system is cracking at a the floor slab at each entrance leading into the cafeteria. Rubber base is detached and missing in some locations.

Carpet: Broadloom Carpet (CPT-BL) is located within a few classrooms, the book room (former library, and main entrance and is in fair condition. *Carpet Tile (CPT-T)* is in the music room.

Ceramic Tile (CT) is in the floor of public restrooms and kitchen in the school. Where urinals extend to the ground, floors slope to fixture drains.

Rubber Floor and Rubber Treads (RF/RSN) have been installed over stairs, cafeteria platform, and elevator lobby. Rubber flooring appear in fair to good condition. Stair nosings do not incorporate detection strips.

Wood Flooring (WF-S) is located over the stage and has splintered and gashed over the years. Seal coatings have worn and layers have built up to provide tired appearance.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout main corridors on the first floor and classroom spaces. Plenum spaces created in classrooms and return to higher window head. The tiles and suspension grid system are in fair condition. Grid has discolored with age and staining of tiles. Tiles show damage at the perimeter.

Isolated areas, in bathrooms and perimeter of school have seen staining from adjacent plumbing.

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4 – Good – Fully Functional, New
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Adhered Ceiling Tiles (ACT) Perforated, acoustic tiles, original to the school are attached to the bottom of the deck with adhesive are in fair condition. This tiles are located in administrative spaces, gym, music room, stage, cafeteria, or back of house spaces.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

Spray Applied Acoustical and Thermal Insulation (SAI) can be see within stairwells in the main building.

Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the library, gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU	2	VCT	2-3	ACP	1-2
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	1-3
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	3
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3, 2-3
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & WPP	1-2	CPT-T	2	ACP	1-2
Entry Vestibules:	CMU	3	MAT	2-3	GWB	2-3
Corridors:	CMU	3	VCT	3	ACP	2
Public Restrooms:	GCMU & CMU	2	CT	3	ACP	2-3
Single Occupant Bathrooms:	CMU	3	CT	3	ACP	2-3
Stairs:	GCMU & CMU	2-3	RT/RSN	2	ACP, SAI	2
Offices:	CMU or GWB	3	CPT-BL	3	ACP	3
Nurse:	CMU	3	VCT	3	ACP	3
Ancillary Admin Space:	CMU	3	CPT-BL	3	ACP	3
Kitchen Cooking/Prep Area:	CMU	3	QT	3	ACT	3
Kitchen Storage:	CMU	2	VAT & VCT	1-2	ACT	2-3
Shipping/Receiving:	CMU	3	Conc.	3	ACP	2-3
Mechanical Room:	CMU	3	Conc.	3	ETS	2

Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:

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Door – Classroom/Admin:	WD	Yes	3’-6”	-	No	-
Door – Service:	HM	-	3’-0”	-	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	-	Yes	3

Renovation Area - Library

	Wall Material:	**Condition:**	**Floor Material:**	**Condition:**	**Ceiling Material:**	**Condition:**
Library:	GWB	3	CPT-BL	3	GWB	3
Music Room	GWB	3	CPT-BL	3	GWB	3
Entry Vestibules:	CMU	3	MAT	2-3	GWB	2-3
Corridors:	CMU & GWB	2, 3	VCT	3	GWB	2
Public Restrooms:	GCMU & CMU	2	CT	3	GWB	2-3

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Library & Music:	WD	Yes	3’-6”	-	No	3
Door – Corridor/Egress:	WD	Yes	6’-0”	-	Yes	3

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 16, 2022, and review of original construction documents. The building was built in 1955 and renovated in 2010. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the pump room. The existing water meter is in fair condition. The shut-off valves are in fair to poor condition. The existing water service does not include a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and has outlived/exceeded its useful life. Domestic cold water piping is not expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition. Some exposed pipes are not insulated. PVC jackets are not installed.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar and one (1) storage tank manufactured by State. The water heater and storage tank are located in the boiler room, and it is still in good condition. The circulation pump was installed on May 26, 2020, and in good condition. There is no expansion tank at hot water system. Mixing valve is not present. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and has outlived/exceeded its useful life. Domestic hot water piping is not expected to last a few more years

without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition and some exposed pipes are not insulated. PVC jackets are not installed.

Natural Gas

The existing natural gas system enters the building through the boiler room. The existing natural gas system includes a gas meter, valves, and gas regulator. Gas is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair to poor condition, and it is not expected to last a few more years before it will exhibit problems. Some gas pipes show signs of corrosion.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in poor condition due to its age. Sanitary drainage piping is original, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure.

All kitchen equipment is original. The kitchen's triple pot sink is provided with grease trap that is installed above slab, below the drain board. The waste piping below the triple pot sink and the piping downstream and upstream of the grease trap are original and in fair to poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22. The triple pot sink, two-compartment prep sink are original and in fair to good condition.

Per verbal reports, there is an odor (sewer) coming from toilets that are plugged.

Per verbal reports, there is water leaking from the second floor boy's toilet room to the first floor boy's toilet room. The cast iron pipes above the ceiling of the first floor boy's toilet room is corroded and in poor condition.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in poor condition due to its age. Storm drainage piping is original, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure. The existing roof drains with cast iron dome strainers are all original, in fair to poor condition.

Per verbal reports, water was coming out of the steamer's floor trough when there was rain. To resolve this issue, the existing floor trough was removed, and the existing kitchen waste pipe was cut and capped/plugged below slab. The existing slab opening was patched. The steamer was relocated next to the two compartment food prep sink. Open end drain with trap was provided for

the steamer to receive indirect waste. Possible reason for this issue is that one of the roof drains' storm piping is connected to the kitchen waste/sanitary pipe below slab.

Per verbal reports, an odor (grease) can be smelled in the kitchen area from time to time.

Fixtures:

All existing plumbing fixtures are original and do not meet current accessibility and water conservation requirements. The plumbing fixtures are in fair to poor condition.

Water closets, urinals and lavatories in the facility are original to the building.

Girls and Boys Toilet Rooms (First Floor):

The water closets are floor mounted, vitreous china with manual operated flush valves and non-ADA compliant, in fair condition. The mounting height is 16" from the finished floor to the top of the seat.

The urinals are floor mounted, outdated, vitreous china with manual operated flush valves, non-ADA compliant, in fair condition.

Lavatories are wall-hung type, vitreous china with single lever and hot & cold water faucets that are manually operated with different types of handles, generally in fair condition. The pipes below the lavatories are not insulated. Offset tailpiece drains are not installed. The mounting height is 30-1/2" from the finished floor.

Girls and Boys Toilet Rooms (Second Floor – near the Library/Reading Room):

The water closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 18-1/4" and 16" from the finished floor to the top of the seat.

The urinal is wall mounted, vitreous china with manual operated flush valve, in fair to good condition. The mounting height is 14-3/4" from the finished floor to the rim.

Lavatories are wall-hung type, vitreous china with single lever and hot & cold water faucets that are manually operated with different types of handles, generally in fair to good condition. The pipes below the lavatories are not insulated. The mounting heights are 33-1/2" and 33" from the finished floor.

Per verbal reports, there is an issue with plumbing fixtures not flushing in the girls and boys toilet rooms on the second floor.

There are no staff toilets on the second floor. Per verbal reports, the staff from the second floor will have to go down and use the staff toilets on the first floor.

There are two (2) Unisex Toilets in Math Intervention Room.

The water closets are floor mounted, tank type. Mounting height is 18" from the finished floor to the top of the seat. Lavatories are wall-hung type, vitreous china with manually operated single lever

faucets and non-ADA compliant. The pipes below the lavatories are not insulated. Offset tailpiece drains are not installed. Mounting height is 35" from the finished floor.

The existing water closet inside a small room in Math Lab was removed and existing services were plugged/capped.

There is a unisex toilet inside the copier room. The water closet and lavatory are non-ADA complaint and in fair condition.

Nurse's Suite Toilet:

The water closet is a floor mounted, vitreous china with manual operated flush valve. The mounting height is 16" from the finished floor to the top of the seat. The lavatory is a wall-hung type, vitreous china with manually operated faucet and non-ADA compliant. The pipes below the lavatory are not insulated. Offset tailpiece drain is not installed. The mounting height is 31-1/2" from the finished floor. The plumbing fixtures are in fair condition.

Stage:

There are two (2) toilet rooms in the stage area that are designated as Adults Only and Boys.

Adults Only Toilet:

The water closet is a floor mounted, vitreous china with manual operated flush valve and non-ADA compliant, in fair condition.

The lavatory is a wall-hung type, vitreous china with manually operated faucet and non-ADA compliant. The pipes below the lavatory are not insulated. Offset tailpiece drain is not installed.

Boys Toilet:

The water closet is a floor mounted, vitreous china with manual operated flush valve and non-ADA compliant, in fair condition.

The urinal is floor mounted, outdated, vitreous china with manual operated flush valves, non-ADA compliant, in fair condition.

The lavatory is a wall-hung type, vitreous china with manually operated faucet and non-ADA compliant. The pipes below the lavatory are not insulated. Offset tailpiece drain is not installed.

Sinks are present in the classrooms in the 5th grade wing only.

Classrooms 10 & 11:

The sinks are non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair condition.

Classroom 6:

There are two (2) sinks that are non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair condition.

Closet inside Classroom 6 (Old Dark Room):

The existing sink in this room is no longer being used. Sink is non-ADA compliant, stainless steel, self-rimming/drop in single compartment with single lever and swing spout faucet, in fair condition.

Classroom 7 (Art Room):

There are two (2) sinks that are non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and gooseneck, swing spout faucet, in fair condition. Plaster traps are not installed below the sinks.

Classroom 21:

The sink is non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair condition.

The sink in the teacher's lounge is non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair to good condition.

Mother's room:

The sink is wall-hung type, vitreous china with manually operated faucet and non-ADA compliant. The pipes below the lavatory are not insulated. Offset tailpiece drain is not installed.

Closet room (used to be dark room) inside the library/reading:

The sink is non-ADA compliant, vitreous china, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair to poor condition.

There is no sink installed in the Nurse's Suite.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

Miscellaneous Fixtures:

The custodian's mop service sinks are original, wall mounted, enameled cast iron and in fair to poor condition.

There are two (2) types of drinking fountains installed within the building: Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, in fair condition and single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition.

There is no eyewash unit installed in the *Nurse's Suite*.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

Existing hose bibbs have no atmospheric vacuum breakers.

Some CW and HW piping in the boiler room are not hung from the deck. The pipes are hung from another pipe. This is a code violation.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	3”	-	No	N/A	Copper	City	67	1 (Due to age)
Gas Service:	2”	Not Accessible	Yes	N/A	Black Steel	Gas company	67	1 (Due to age)

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	1	Mineral-fiber	1	Due to age
Domestic Hot Water:	Copper	1	Mineral-fiber	1	Due to age
Sanitary Waste & Vent:	Cast Iron	1	N/A	N/A	Due to age
Storm Drainage:	Cast Iron	1	Mineral-fiber	1	Due to age
Gas:	Black Steel	1	N/A	N/A	Due to age
Non-Potable (Lab) CW:	N/A	N/A	N/A	N/A	-
Non-Potable (Lab) HW:	N/A	N/A	N/A	N/A	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	1	N/A	N/A	Due to age
Tempered Water:	N/A	N/A	N/A	N/A	-

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N/A – Not Applicable/Missing
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Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Gas-fired with storage tank	5 (+)	3	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 10 years	3	-

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall and floor mount	See Above	No	2 & 3	Due to age
Urinal:	Wall and floor mount	See Above	No	2 & 3	Due to age
Lavatory:	Wall	See Above	No	2	Due to age
Drinking Fountain/Water Cooler:	Wall mount	See Above	No	4 & 3	-
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	N/A	-	N/A	N/A	-
Classroom Drinking Fountain:	N/A	-	N/A	N/A	-
Mop Sink:	Wall mount	Janitor's Closets	N/A	2	Due to age
Showers:	N/A	-	N/A	N/A	-

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N/A – Not Applicable/Missing
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Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted
Floor Drain:	Floor mounted, Type varies by location
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

There is no fire protection system in the existing facility, original 1955 building and the addition.

Ansul Fire Suppression System

Kitchen:

The existing kitchen hood has ansul fire suppression system. However, there is only one (1) nozzle above the 2-burner range. The number of nozzles does not provide adequate protection.

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2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are at or beyond their life expectancy.

Systems:

There are two boilers which provide heating hot water for the building. The Three (3) original hot water pumps have newer motors and all new valving. Two pumps run and one is a standby. The hot water system contains glycol which is about five years old. There is no chemical water treatment in the hot water system.

There is a 10,000-gallon double wall underground fuel oil storage tank installed about seventeen years ago, but the boilers have not run on oil in years. Records found in the Boiler Room indicate 7,700 gallons of fuel oil were delivered in 2019 but it is unclear how much oil remains in the tank.

The building is conditioned by unit ventilators and is primarily heated and ventilated only.

The Offices have a ceiling mounted split system with DX cooling. The *Gym* has a supply fan with associated duct mounted hot water coil. The classrooms and cafeteria are served by unit ventilators.

There was no makeup air in the *Kitchen*, and the *Music Room* and *Corridors* do not have ventilation. Additionally, there was no exhaust noted in the *Library.*

Uninsulated hot water piping to unit ventilators was noted throughout the building. It was reported that when the old asbestos containing insulation was removed, new insulation was not installed.

Although it presumably met code when installed, the kitchen hood exhaust duct does not meet current code for grease laden duty.

Many spaces have been subdivided such that the thermostat is in one room and the controlled device is in the other. This layout prevents the equipment from satisfying the required load in either space.

All exhaust fans in the main building are located in the Attic, reportedly original to the building and discharge through four (4) small louvers in the cupola. The Attic was not accessible during the walk through.

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In many *classrooms* teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The *MDF Room and the Server Room* are not air conditioned. The *MDF Room* was noticeably warm during the walk through.

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

The emergency generator is between the two boilers in the Boiler Room and the radiator exhaust vents directly into the Boiler Room. Over time, the air temperature in the Boiler Room could increase to a point that will impact the performance of the generator.

The indoor fuel oil storage tank and piping for the emergency generator do not have containment.

The automatic temperature controls are not connected to a district wide front end, or to any other school building. The building has pneumatic controls with some newer controls added at the Gym unit. It was reported that the CCI/Tridium energy management system is functioning, but there is no access to the system.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	**Energy Source:**	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Equipment #1:	Dual fuel	Hot water boiler	Buderus	2010	3
Heating Equipment #2:	Dual fuel	Hot water boiler	Buderus	2010	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Distribution Equipment:	Three (3) base mounted end suction pumps	Bell & Gossett	1953	3
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	N/A	-	-	-

Terminal Equipment:	**Type:**	**Controls:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Typical Classrooms:	Unit ventilator and finned tube radiation	Refer to Controls Section	Herman Nelson	1953	1
Science Classrooms:	N/A	-	-	-	-
Art Classrooms:	Unit ventilator and finned tube radiation	Refer to Controls Section	Herman Nelson	1953	1

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Music Classroom:	Finned tube radiation	Refer to Controls Section	N/A	N/A	3
Offices:	Split system in ceiling and finned tube radiation	Refer to Controls Section	Goodman	2014	3
Old Offices	Wall mounted split systems and finned tube radiation	Refer to Controls Section	Panasonic	2012	3
Library:	Unit ventilator	Refer to Controls Section	AAF	1997	2
Cafeteria:	Unit ventilators & ceiling fans	Refer to Controls Section	Herman Nelson	1953	1
Gymnasium:	Supply fan & hot water coil/finned tube radiation	Refer to Controls Section	Trane	1953	1
Kitchen:	Cast iron radiators	Refer to Controls Section	N/A	1953	2
Corridors:	Cast iron radiators/finned tube radiation	Refer to Controls Section	N/A	1953	2
Toilets:	Exhaust & Finned tube radiation	Refer to Controls Section	N/A	1953	2
Locker Rooms:	N/A	-	-	-	-

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Kitchen hood upblast exhaust fan	N/A	2017	3
Equipment 1:	Kitchen hood exhaust duct	N/A	1953	NC

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	Pneumatic	N/A	1953	1
	Gym unit only	Trane	2020	3
	Energy management system (controls pumps, exhaust fans and a couple space sensors)	CCI/Tridium	2008	1

Notes:

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in fair-to-poor condition, dated and beyond their useful life expectancy, except for a few recent upgrades as outlined below. There are also specific concerns and non-compliances with the current Code requirements as outlined below.

Services:

Electrical – National Grid. Service initiates at the existing street utility pole and extend overhead and underground towards the school building. Electrical service terminates at indoor utility transformer.

Telephone – Verizon. Service initiates at the existing street utility pole and extend overhead and underground towards the school building.

No issues with services were reported.

Transformer:

The indoor vault-mounted utility transformer is owned and maintained by the Town of Westford. The utility meter is inside of the building, located at the main distribution panel. Transformer is reported to have an ongoing leaking issue and shall be repaired or replaced to correct this condition.

Generator:

The indoor 60kW/75 KVA 120/208v 3ph 4w diesel-fired emergency generator, manufactured by Blue Star Power Systems, appears in fair operational condition. It's installed in the lower level Boiler room. It currently supports refrigeration equipment, boilers, MDF equipment, and a few dedicated emergency lighting fixtures. The generator's ATS and all incoming and outcoming power feeders are beyond their useful life expectancy and shall be replaced.

Distribution System:

The utility transformer's secondary feeder is terminated in 120/208v 3 phase 4 wire Main Distribution panel manufactured by Kelek (the Amperage rating is not labeled, estimated 1,600 Amp). It's in the Boiler room. The Distribution panel is equipped with a Main Disconnect Switch, Utility CT metering compartment, and downstream disconnect switches feeding panels in the same room and other panelboards located throughout the building. Most of

recessed panels in corridor walls have no working locks on them which represents an unsafe condition. An on-going issue with circuit breakers' tripping due to their overloading (especially in classrooms) is reported. The Main Distribution panel and all downstream power distribution equipment (panels) show significant deterioration signs and are beyond their useful life expectancy. They shall be replaced with associated power feeders.

Receptacles throughout the school building appear dated and many are in poor condition. A few receptacles in the kitchen area were noticed to be non-GFI and shall be replaced accordingly. Classrooms are equipped with just 2 receptacles, which is not sufficient for normal operation, and their occasional overloading is causing the associated circuit breakers tripping. Most of receptacles and associated branch wiring from respective panels are beyond their useful life expectancy and shall be replaced.

Lighting Systems:

Exterior lighting:

The parking lot lighting is provided by "street" lights on utility poles. They appear to be in good operational condition. Building-mounted lighting consists of recently added LED type perimeter lights. They are in good operational condition. Exterior lights are time-controlled.

Interior lighting:

Lighting fixtures throughout appear dated, and most of them are probably original. The majority of lights are 2'x4' lensed troffers and surface-mounted 4ft long wraparounds with T8 fluorescent lamps, non-dimmed and not of energy-efficient type. Recent lighting upgrades include new LED lights in Multipurpose, Library and Music rooms. The multipurpose room was equipped with 2'x2' LED lights with integral occupancy sensors – they provide adequate and even lighting illumination. Library and Music rooms were equipped with 4ft long LED strips, which appear a bit too bright. In general, illumination levels throughout are adequate, however, the 4ft long wraparounds appear beyond their useful life expectancy and shall be replaced with associated original branch wiring from respective panels.

Emergency lighting:

Emergency lighting is provided by means of emergency battery units with integral and remote light heads. In general, emergency lighting distribution is adequate, except for a few locations where emergency lights shall be added (e.g., bathrooms). Several non-electrical exit signs (printed on paper with word "Exit" were observed, and those shall be replaced with electrical LED type.

Lighting controls: recent upgrades include a limited amount of added occupancy sensors – in Multipurpose, Library and Music rooms. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures are of non-dimmable type.

Emergency Devices:

Emergency devices include exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. Exit signs need some upgrading as outlined above. The Fire Alarm notification

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devices are observed in inadequate and unacceptable installation condition, and require substantial modifications as outlined below. There is no Lightning protection/prevention system.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	120/208	3 phase 4 wire	1955	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Indoor	National Grid	Vault at lower level	1955	1

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Indoor/ 60kW	Diesel	3 phase 4 wire	Unknown	1

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Distribution panelboard	120/208v 3ph 4w	Boiler room	1955	1
	Panelboards	120/208v 3ph 4w	Throughout	1955	1

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	2
	Offices:	Standard	1ph/120v	Grounded	3
	Library:	Standard	1ph/120v	Grounded	2
	Multipurpose:	Standard	1ph/120v	Grounded	3
	Cafeteria:	Standard	1ph/120v	Grounded	3
	Corridor:	Standard	1ph/120v	Grounded	2

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	4ft wraparound & 2'x4' lensed/ T8 fluorescent	Surface & Recessed	1955 & Unknown	3 & 4
	Offices:	2'x4' parabolic/ T8 fluorescent	Recessed	Unknown	4

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Library & Music rooms:	4ft long LED	Pendant	Recent upgrade	4
Multipurpose:	2'x2' lensed/ LED	Surface	Recent upgrade	4
Cafeteria:	2'x4' basket lensed/ T8 fluorescent	Recessed	Unknown	3
Corridor:	4ft wraparound & 2'x4' lensed/ T8 fluorescent	Surface & Recessed	1955 & Unknown	3 & 4

SITE LIGHTING

	Location:	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road, perimeter walls	Street utility lights and LED	Pole-mounted and perimeter wall-mounted	Recent upgrades	4

EMERGENCY LIGHTING

	Type:	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Emergency battery units with integral and remote light heads	Various	Various	Various	3

EMERGENCY DEVICES

	Type:	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	3
	FA signaling	Various	Various	Various	2

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2.1.3.9 Fire Alarm Systems

Summary:

The school building is not equipped with a Fire protection system (sprinklers) and therefore the fire alarm system shall incorporate a full smoke detection coverage. It was observed that the heat and smoke detectors are provided only in a small number of spaces, which is non-compliant with the current Code requirements. At the same time, many spaces, including classrooms, copy, bathrooms, etc., are not equipped with fire alarm notification devices (horn/strobes), and some other areas are equipped inadequately (corridors) and should be upgraded accordingly. Most of heat detectors are still old (original) with associated old wiring. Overall, the fire alarm system requires significant upgrading. Old equipment and wiring are beyond their useful life expectancy and shall be replaced/upgraded to comply with the Code.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is zoned type, manufactured by FCI. It appears in good operational condition. The radio box is manufactured by Digitize. Both are in corridor at the entrance used by Fire Department as a main access point. The FA remote annunciator was not observed anywhere.

Devices:

Hard-wired heat and smoke detectors, pull stations, horn/strobes, strobe only units are dated, in inadequate and unacceptable installation condition.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Zoned	FCI, Simplex, mixed with other/no name	Horn/strobes and Strobes	Original and recent upgrades	1

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	None	None	N/A	1

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Offices:	Smoke	Horn/strobe	None	Original and a few recent upgrades	4
Gymnasium:	None	Horn/strobe	Yes	Original and a few recent upgrades	1
Cafeteria:	Smoke	Horn/strobes	None	Original and a few recent upgrades	3
Lobby/Corridor	Smoke and Heat	Horn/strobes	Yes	1995	2
Kitchen:	Heat	None	Yes	1995	2
Toilets:	None	None	None	N/A	1
Basements:	N/A	N/A	N/A	N/A	N/A

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2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria and Gymnasium local AV systems are passed its useful life expectancy. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
CCTV:	IP Based	Axis Cameras & ExacVision Server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

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PUBLIC ADDRESS SYSTEMS	**Device Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Classrooms:	2-way w/ push to talk	Roland	Ceiling	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2
DATA SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

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2.1.3.11 Accessibility Systems Narrative

General Egress: Maneuvering clearances at doorway do not meet accessible requirements for operation of doors. Stairs do not feature handrails, guardrails or treads complying with required heights, extensions, or requirements to be continuous from one level to another. Braille is not placed for identification of spaces.

Elevator

The elevator installed in 2011 has a load capacity of 3500lbs and appears to accommodate service and passenger service. The interior cab is surfaced in stainless steel with rubber flooring. The elevator is in good condition.

Classroom Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces feature sinks that incorporate appropriate knee space for student use and are mounted at 34" AFF.

Markerboards and Tackboards are mounted 28" to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students.

Bathroom Spaces:

Fixtures: Current configuration of bathrooms are not accessible.

Toilet compartments and fixtures do not maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are not mounted for support of students or adults.

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-0"	WD or HM	Level Style or Fixed Door Pull	3
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Level Style or Fixed Pull	3
Signage:	Braille Present	Plastic	-	-

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INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-6"	WD	Lever Style	1-2
Offices:	3'-0"	WD	Lever Style	3
Library:	3'-0"	WD	Level Style	3
Gymnasium:	3'-6"	WD	Fixed Pull Style	3
Cafeteria:	3'-6"	WD	Fixed Pull Style	3
Kitchen:	3'-6"	WD	Lever Style	2
Cross Corridors/Stairs:	5'-0"	WD	Lever Style/Panic HW	2
Toilets:	3'-6"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Elevator:	6'-7"x5'-0"	3500lb	SS, RF	3
Lift	Stage	Unknown	-	2

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	4'-10"	RT/RSN	NC	2
Stair 2	4'- 10"	RT/RSN	NC	2
Stair 3	8'- 0"	RT/RSN	NC	2
Stair 4	8'- 0"	RT/RSN	NC	2

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36"	WD		

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	No	
Tables & Seating - Cafeteria	Yes	
Drinking Fountains	No	
Controls/Switches	Yes	
Signage	No	

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

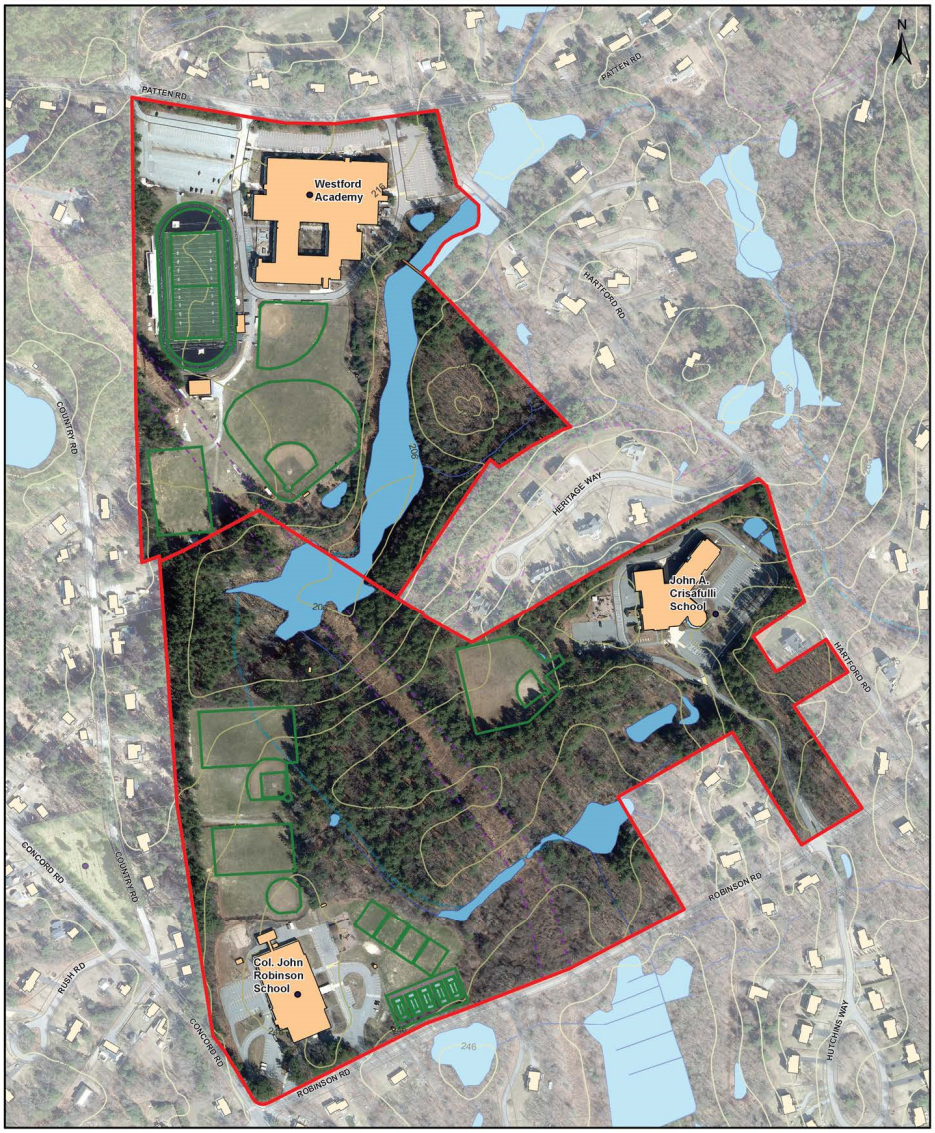
Name of School:	Crisafulli Elementary School		
Address:	13 Robinson Road, Westford MA		
Name of Owner:	Town of Westford		
Grade Levels Served:	3-5		
Student Population:	433		
Years in Service:	21		
Year Constructed:	2002	*Designer:* DRA	Engineers Design Group
Existing Drawings:	2001		

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.2 CONSTRUCTION CLASSIFICATION DATA:

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	79,220

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Westford Academy, John A. Crisafulli School & Col. John Robinson School

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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 5, 2022. The day was overcast, and cold. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

John A. Crisafulli School is located centrally in the western portion of Westford, north of Interstate 495. The 68.8-acre parcel is shared with Colonel John Robinson School and is adjacent to the Westford Academy parcel; walking paths connect the three schools. Crisafulli School has one play area, one parking lot with basketball hoops and a softball field to the west of the building, and two parking lots to the east. The site elements are overall in fair/good condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The playground on the west side of the school has play structures, basketball hoops and overflow parking and a softball / mixed use field. All play elements appear in fair / good condition. However, the wood chip surface needs to be inspected for safety depth. The softball field was closed for use as indicated by a sign at the entrance. The field and fencing appeared in fair/serviceable condition.

Site Accessibility and Pedestrian Pathways

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. There are marked parking spaces in the parking lot. The walkways and plazas appear to meet compliance for slope.

School walkways are bituminous concrete with plaza areas made of concrete pavement. The bituminous walkways are in fair condition, especially in areas that meet concrete plazas. There is raveling, linear cracking, and edges into lawn are deteriorating. Concrete plazas are in fair condition with some spalling and cracking. Most of the granite and bituminous curbing is in good condition.

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Vehicular Traffic:

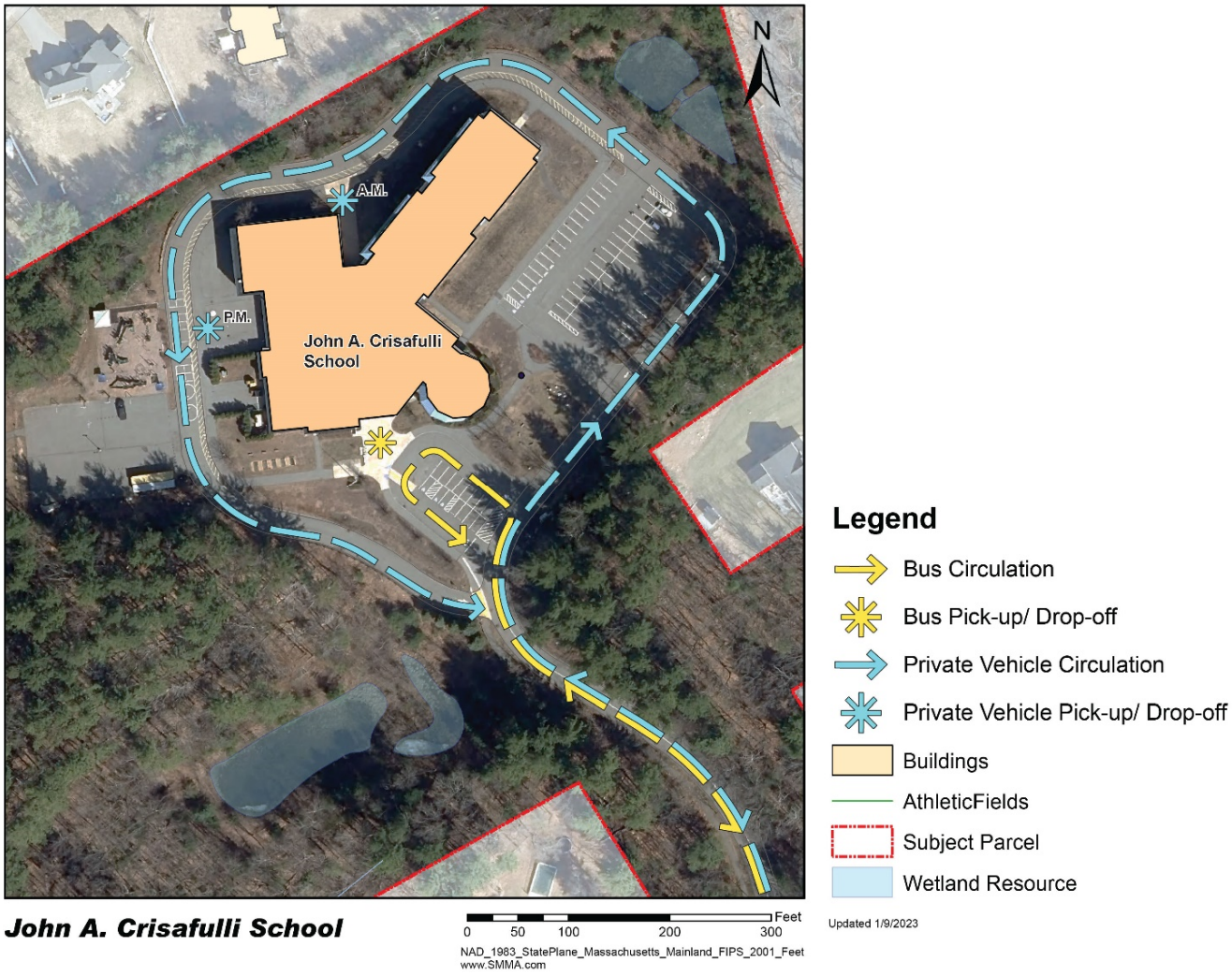
The arrival sequence for buses is to pull up to the school in the first loop and drop-off or pick-up students from the main (south) entrance. Private vehicles (cars) delivering students stay to the right and drive around the school to deliver students to the north entrance of the building. In the afternoons, cars pick up students on the west side of the building after following the same entry route. They then exit past the playground back to the exit drive and out onto Robinson Road.

Parking at the school is concentrated on the east side of the school. All lots are bituminous concrete paving, with cracks and patching. Some areas of bituminous pavement have deteriorating edges and block cracking. Roadways at the school are made of bituminous concrete and are generally in good condition. There are several areas of patched pavement on the west side of the building that appeared to be in poor condition.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. The chain link fencing and guard rail on the property appeared in fair / good condition. There are raised bed planters east and west of the school that appear in good condition.

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John A. Crisafulli School

Site & Landscape Systems Data:

Land Use Type: Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Grassland, Impervious, Palustrine Emergent Wetland, Palustrine Forested Wetland **(per MassGIS**)

Zoning: Residence A

Lot Area: 68.8 AC

Topography: Plateau near Southwest corner, sloping downward to the Northwest, and upward toward the Northeast (See map for more information.)

Wetlands: Present

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INFRASTRUCTURE & UTILITES

	Description	Source	Comments
Water	Town Water	J. Goodwin	Service comes from Robinson Rd.
Electricity	Underground Wires	J. Goodwin	Service comes from Hartford Rd.
Gas Provider	National Grid	J. Goodwin	Service comes from Robinson Rd.
Oil Tank	Above Ground	J. Goodwin	Supports Generator
Storm Water Management	Detention basins	J. Goodwin	Located in the front and back of the Site.
Sanitary	Wastewater Treatment Plant at High School	J. Goodwin	-
Irrigation	Small serving Gardens	J. Goodwin	-

**If septic system – verify if aggregate systems applies*

PAVEMENTS

	Surface	Source	Condition	Comments
Roadways	Bituminous pavement	VI	2/3	Bit. con. is in fair condition, there is significant cracking and patching.
Walkways	Mostly bituminous concrete	VI	3	Bit. con. has linear cracking along most walkways. Most places where walkways meet concrete plazas are large margins and deep cracks.
Plazas	Concrete pavement	VI	2/3	Concrete is in fair condition, punchout and corner brakes in some places.
Curbs	Granite & bituminous	VI	2	Granite is in good condition, vegetation is growing between curbs and pavements.

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PARKING

	Spaces	Material	Condition	Comments
Parking Lot – East	15 (3 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Parking Lot – South	67 (3 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Accessible Parking	6	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Service / Loading Dock		Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Bike Racks	14 (spots)	Steel	3	U shape, 7 racks at front entry

SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry (south)	Concrete	Yes	4	Curb cut at main entry walkways appear to meet compliance of slope
Curb Cut - other doors (north)	Concrete	Yes	2	Curb cut at main entry walkways appear to meet compliance of slope
Curb Cut - Street	Bituminous	No	3	Walkway from street entering site does have a curb cut, but the lip may not be compliant.

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Walkways	Bituminous	Yes	2	The bit. con. walkways appear to meet compliance of slope
Site Ramp	N/A	-	-	-
Public Street	Bituminous	-	-	Public street does not have sidewalk on Robinson Road.
Main Entry	Concrete	Yes	3	Main entry is accessible and in fair condition.
Secondary Entries	Bit. Con. or Concrete	Yes (Majority of Areas)	3	All at grade doorways appear accessible. There is one door on the west side of the building that is not accessible.
Plazas	Concrete	Yes	3	Plazas appear to meet compliance of slope

FIELDS

	Surface	Source	Cond.	Comments
Basketball Courts	Bituminous	VI	3	Basketball courts are not painted and lacked backboards, but there were smaller hoops placed later for more age-appropriate play.
Playground - Rear	Wood chip	VI	2 / NC	Structures are in good condition overall. Visible footings on play equipment and benches imply that wood chip depth is not compliant. Depth should be inspected for code compliance.
Ballfield /Flex	Natural Lawn	VI		Signage said field closed keep off. Fair; ground and fence are in fair condition.

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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	N/A
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	N/A
Greenhouse	N/A
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Comments
Site Lighting	See Electrical Section	Pole Lighting
Fire Hydrants	4	Directionally Around Building.
Waste Management	Varies	Recycling & Garbage: west side loading dock
Fencing	Chain Link	Most fencing is fair/good
Gates	N/A	-

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Flagpole	Steel	Flagpole is in fair to good condition.
Outdoor Classroom	N/A	-

BUS OPERATIONS

Number of Buses:	10
Bus Drop/Pick-Up Area:	South Entry
Private Vehicle Drop/Pick-Up Area:	AM: north entry drop off, PM dismissal: west entry pickup
Signage:	Adequate

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2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 20, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings dated March 15, 2001 were obtained and reviewed to supplement the study.

Systems:

The original multi-story building was constructed in 2002. The foundation consists of continuous concrete foundation walls with shallow spread footings and shallow isolated footings at columns. The ground floor is concrete slab-on-grade. Typical floor and roof framing uses steel girders and secondary beam or joist framing. The floors are composite reinforced floor decking. The roof is metal deck. Design drawings indicate the lateral system to be supported by running-bond CMU walls and moment-framed steel connections. The gymnasium uses a steel girder roof framing system supported by steel columns. Structural framing for most portions of the building were unobservable due to architectural finishes and CMU fire protection encasements. The structure observed on site was noted to be in fair and serviceable condition.

Vertical cracks were observed along the CMU walls of the gymnasium in two locations. One ran the full height of the wall from finished floor to the bottom of the steel girder running along the top of the wall. The other crack occurred in the corner near the access door to the main lobby area and extended from a mechanical duct opening down to the finished floor. On the second floor, a moderate vertical crack was observed near the corner of the CMU wall between stairway 3 and an electrical closet across from the library entrance. From inside the electrical closet, an HSS column was observed in the same corner of this room with no bonding work between the connecting CMU walls behind the column. The wall bordering stairway 3 was shimmed to the column, but there were no signs of sealant along this wall joint. Inside the library, a horizontal mortar crack was observed on the CMU wall bordering the library and room 215. Throughout the building, minor mortar cracks were observed at multiple doorway lintels. Signs of cracking along the finished floor were noticed inside door thresholds between the cafeteria and lobby area. Indication of potential slab cracking was observed in the lobby extending from the corner of the music room nearest the cafeteria to the corner of room 113. Due to finished flooring, observation of the concrete slab itself was unable to be performed.

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The original building foundation and façade was unobservable due to the masonry façade extending all the way to the existing grade. Overall, the exterior was noted to be in fair and serviceable condition.

STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at base of walls, isolated shallow spread footings at column locations	-	N/A
Vertical Support System:	Structural steel columns, running-bond CMU walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade (unobservable)	Indications of slab cracks in main lobby, cafeteria, and near expansion joints	N/A
Upper Floor Framing Systems:	Structural steel wide-flange girders and secondary beams or joist system supporting composite concrete/metal floor deck	-	3
Roof Framing Systems:	Structural steel wide-flange girders and secondary beams or joist system supporting metal roof deck	-	3
Lateral Force Resisting System	Running-bond CMU walls, structural steel moment frames	Vertical cracking in CMU at multiple locations throughout building, particularly gym and library areas	3

2.1.3.3 Exterior Envelope Systems

Main Canopies & Ancillary Canopies:

The main canopy at the front of Crisafulli is composed of a architecturally exposed structural steel truss, supported by columns with precast concrete bases. Soffits are composed of an exterior insulating finish system. Each element appears in good condition. A similar canopy is located on the other end of a central school lobby.

Ancillary Canopies are constructed from exterior insulating finishing systems and are in good condition.

Exterior Wall System:

Two typical wall types compose the exterior wall enclosure.

The administration, cafeteria, and gymnasium spaces of the building utilizes a composite wall system with a combination of face brick, split faced CMU, simulated stone , and/or precast panel over a 4-1/2" air space and backup CMU. Two-inch rigid insulation is located inside the wall cavity over damp proofing and flashing systems to provide increased thermal performance and drainage.

The classroom wing of the building utilizes a combination of face brick, split faced CMU, simulated stone, and/or precast panel over a 1-3/4" air space and backup six inch metal studs with exterior gypsum sheathing. Two-inch rigid felt is used in these locations in lieu of damp proofing and and fabric flashing is used to transition to flashing systems and weeps at the base of the wall to provide drainage. Fiberglass batt insulation is provided within the stud cavity to provide greater thermal resistance.

In either type, metal fragments remaining in CMU mix create minor rust stains.

Snow melt and rain that drain onto horizontal top of simulated stone bands introduce an increased amount of moisture to topping courses of masonry and have left minor staining. In some cases grout between simulated stone sills has been completely washed away at jamb locations.

Where CMU courses create a top band, the modern bond pattern required corners to be mitered. Joints at this location show minor increases in freeze and thaw that may degrade more quickly.

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Flashing is in varying conditions and depending on type and location, degradation appears to be staining CMU on the elevations of the building.

Copper thru-wall flashing at the base of the walls have begun to oxidize and appear in good condition.

Pitched roofs over some parts of the building drip onto precast panel, which have introduced minor dust staining, from over saturation.

Where elevation geometry returns at acute angles or overlaps, minor cracking has been observed. Brick work at these locations appear to have separate from grout joints.

At the gymnasium, red CMU block frames upper windows. Where, the masonry creates a sill condition and head condition, increased moisture appears sits on the soldier course that sit proud of surround CMU and may result in stains in the masonry and additional moisture infiltration may be the source of efflorescence in adjacent masonry.

Exterior Entrances:

The main entrance is composed of two pairs of six-foot-wide entrances in aluminum storefront, with a separate single accessory leaf. Each feature panic hardware and create a secure entry vestibule with

Subordinate entrances are aluminum and feature fixed, stainless door pulls and mechanical cylinders. Signage is not visible at a distance and in some cases is degrading due to sun exposure.

In some instances, egress doors discharging from space, like the cafeteria, do not exit on a level landing which connects to a walkway on the outside of the building.

Service entrances are typically hollow metal doors in hollow metal frames, featuring fixed door pulls and mechanical cylinders. Entrances that receive or provide outside services or receive delivers incorporate electronic access hardware.

Where pairs of doors are located, removable mullions have been installed and have degraded at the threshold due to exposure to moisture and salt.

Where lintels are installed and exposed to interior spaces, some rust spots have appeared.

Roof Systems:

The original roof installation remains at the school and is composed of two systems, installed between 2001 & 2003. Most of the roof utilizes a fully adhered EPDM system over insulation, installed on metal decking. Two mechanical penthouses and the roof of the library feature pitched, standing seam metal roofs.

The EPDM system is in fair to poor condition condition and requires maintenance at mechanical penetrations and a several flashing terminations along the perimeter.

The standing seam system is in fair condition, with ongoing maintenance. Additionally, sealant has been installed where valleys and gables terminate.

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Where EPDM membrane terminate to the metal standing seam system, moisture has penetrated into the thru wall flashing and into tears in the membrane created by ice. Leaks within spaces have occurred near in-between sloped penthouses. Leaks also have appeared at expansion joint between the classroom wing gym & administration wings. Isolated membrane patches can be seen over the roof. Bubbles in the patches remain, indicating the prior or ongoing presence of water.

During snow events snow accumulates over access hatches impeding roof access for snow removal.

No guard system is provided around roof access hatches. Guard rails are not provided where equipment is located within 10ft of roof edges.

Windows: Window framing is aluminum and contain insulated glass units. The window framing and glazing are good condition.

In some locations, leaks have occurred above the head condition, which may be due to the failure air and vaper barrier transitions to flashing and weeps on the exterior walls. Sheetrock enclosing round duct work show signs of leaks.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	Snow piling up near entrances has infiltrated and eroded grout.	2-3
Roof Assembly:	Fully Adhered EPDM, Metal Standing Seam	-	2,3
Roof Drains:	Cast Iron	-	3
Flashing:	Galvanized or Copper Thru Wall Flashing	-	3
Canopies/Overhangs:	EIFS and AESS	-	3-4
Windows:	1” Insulated Tempered Glass Units Aluminum Framing. Organic	-	3
Skylights/Clerestory:	Unitized Prefabricated Metal and Glass System, Fiberglass Translucent Sandwich System	-	3,3
Glazed Curtain Wall/Storefront	Aluminum Storefront		3
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2

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Louvers & Vents	Aluminum and Steel	-	3
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	3
Weatherstripping and Thresholds	Silicone & Brush	-	3
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4” Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder – No guard present at roof.	3
Gutters and Downspouts	N/A	N/A	-

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2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose the majority of interior partitions. Fabric Covered Panels are utilized in some spaces like the main lobby, cafeteria, gymnasium, and music rooms to absorb sound.

Sheetrock Walls (GWP) Compose ancillary walls and enclosures in various parts of the building.

Interior Expansion Joint Gasketing has been impacted by roof leaks over time.

Wood Sills: At some openings wooden sills are located adjacent to wall mounted wall mounted convection heating. When window hopper windows are opened to introduce ventilation and then heated, the wood degrades rapidly due to expansion and contraction.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: 2-Hour Rated HM Doors and Frames, with wire glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens. Panic bar enclosure end is missing.

Stair/Cafeteria Egress Doors: 2-Hour Rated WD Doors in HM Frames, with assumed rated glazing, continuous hinges, operable closures, rim devices, removable mullions and fixed door pulls with mechanical cylinders.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

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Flooring Systems:

Vinyl Composite Tile (VCT) is in corridors, classrooms, small group educational spaces, music rooms, and other ancillary spaces, like storage rooms. The condition varies depending on location. Floor system is cracking at a the floor slab at each entrance leading into the cafeteria.

Minor wax staining can be seen between spaces. Shrinking cracking from the slabs haven transferred up into some sections of VCT, in spaces like the main lobby. VCT outside exterior doors shows signs of cracking due to service goods moving into and out of the building.

VCT has been stained due to water intrusion at along the building expansion joint.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. This results in mismatching tile and tiles that may not maintain equivalency in acoustical absorptive performance.

Roof leaks or leaks around window openings have required replacement throughout the school. Spaces with immediate adjacency to the roof on the third or second floors require the most frequent attention.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the library, gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

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INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU &/or GWB	2-3	VCT	2-3	ACP	2-3
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	2-3
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	3
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3, 2-3
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & GWB	3	VCT	2-3	ACP/GWB	2,3
Entry Vestibules:	CMU	3	VCT, MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	VCT	2	ACP	2-3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU	3	CT	3	GWB	2-3
Stairs:	CMU & GWB	2-3	RT/RSN	2	ACP	2-3
Offices:	CMU or GWB	3	CPT-T	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-T	3	ACP	3
Kitchen Cooking/Prep Area:	GWB	3	QT	3	ACP	3
Kitchen Storage:	CMU or GWB	3	QT	3	ACP	2-3
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2-3
Mechanical Room:	CMU	3	Conc.	3	ETS	2-3

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”	-	Yes	3
Door – Service:	HM	-	3’-0”	2 HR	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	2 HR	Yes	3

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2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 20, 2022. The building was built in 2002. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the boiler room. The existing 4" water meter and shut-off valves are in fair to good condition. The existing water service includes reduced pressure backflow preventers, one is in good condition, and the other one appears to be original and in poor condition. Air gap fitting of one of the backflow preventers is corroded and in poor condition. The indirect waste piping from the air gap is discharging into a bucket. Indirect waste piping should discharge into a floor drain.

One of the backflow preventers is not readily accessible due to items stored in front of it.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original and in poor condition. Some exposed pipes are not insulated.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar. The water heater was manufactured in 2017, and it is located in the boiler room, and it is still in good condition. There are two (2) circulation pumps, installed on December 15, 2022, and in good condition. The mixing valve is in fair to poor condition and it is not readily accessible. It is located behind the atmospheric vessel. There is no expansion tank for hot water system. Condensate neutralizing unit is present. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

Natural Gas

The existing natural gas system enters the building through the boiler room. The existing natural gas system includes a gas meter, valves, and gas regulator. The gas piping is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition. Some gas piping show signs of corrosion and in poor condition.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in fair to good condition due to its age. Sanitary drainage piping is original to the building, and it is expected to last about 30 more years before it will exhibit widespread problems.

The floor drain in the penthouse was dry and giving off an odor. A trap primer should be installed on the floor drain trap to maintain water in the trap.

All kitchen equipment is original and in fair to good condition. The kitchen's triple pot sink is provided with grease trap that is installed below slab and therefore could not be observed. The waste piping below the triple pot sink is original, corroded and in poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in fair to good condition due to its age. Storm drainage piping is original, and it is expected to last about 30 more years before it will exhibit widespread problems. The existing roof drains have plastic dome strainers. It should be replaced with cast iron dome strainers. Some dome strainers are missing, and some are broken.

Fixtures:

All existing plumbing fixtures are original and in fair to good condition.

Girls Toilet Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 16-1/2" and 16" from the finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with single lever faucets, in fair to good condition. Pipes are insulated below one of the lavatories. The mounting heights are 30" from the finished floor.

Girls Toilet Room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 16-1/4" and 15-1/2" from the finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with single lever faucets, in fair to good condition. Pipes are insulated below one of the lavatories. The mounting heights are 30-1/2" from the finished floor.

Unisex Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 16-1/2" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with faucet, in fair to good condition. The mounting height is 34" from the finished floor.

Classroom 115 Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 17-3/4" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with single lever faucets, in fair to good condition. Pipes are insulated below the lavatory. The mounting height is 34" from the finished floor.

Nurse's Suite Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 17-1/2" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with single lever faucet, in fair to good condition. Pipes are insulated below the lavatory. The mounting height is 34" from the finished floor.

The lavatory outside of the toilet is wall-hung type, vitreous china with hot and cold handles and gooseneck faucet, in fair to good condition. Pipes are not insulated below the lavatory.

Kitchen Staff Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 18-1/4" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with faucet, in fair to good condition. Pipes are insulated below the lavatory. The mounting height is 33-3/4" from the finished floor.

Special Ed. Program 113 (Used to be Science Room):

There are seven (7) sinks in this room. Sinks are stainless steel, self-rimming/drop in single compartment with hot and cold water handles and gooseneck faucet, in fair to good condition.

Storage Room inside Room 113: There are two (2) reduced pressure backflow preventers in this room for the non-potable cold and non-potable hot water that supplies the old science room.

Since Room 113 is now being used as a regular classroom and not as a science room, all sinks in this room should be disconnected from the non-potable cold and non-potable hot water systems and to be connected to the domestic cold and hot water systems.

Art Room 117:

There are two (2) sinks in this room. One is single compartment and the other one is double bowl. Sinks are stainless steel, self-rimming/drop in single compartment with hot and cold water handles and gooseneck faucet, in fair to good condition. Plaster trap is not installed below the sink.

Nurse's Suite (Exam Room):

Sink is stainless steel, ADA compliant (with knee clearance) self-rimming/drop in single compartment with hot and cold water wrist blade handles and gooseneck faucet with eyewash, in fair to good condition.

Teacher's Lounge:

Sink is stainless steel, non-ADA compliant, self-rimming/drop in single compartment with gooseneck faucet, in fair to good condition.

Classrooms 105; 107; 214 (OT/PT); 215 (Band Room):

Sinks in these rooms are stainless steel, ADA and non-ADA compliant with hot and cold water wrist blade handles and gooseneck faucet, and deck mounted bubblers, in fair to good condition.

Classroom 307:

Sink is stainless steel, ADA compliant, with hot and cold water wrist blade handles and gooseneck faucet, and deck mounted bubbler, in fair to good condition. The bubbler in this room is not fully operational (not enough water coming out of the spout).

Library Storage Room 217A: Sink is stainless steel, ADA compliant, with hot and cold water wrist blade handles and gooseneck faucet, in fair to good condition.

Miscellaneous Fixtures:

Custodian's mop sinks are original, floor mounted, and in fair to poor condition.

Drinking fountains installed within the building: Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition.

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4”	4”	No	N/A	Copper	City	20	3
Gas Service:	6”	Not Accessible	Yes	N/A	Black Steel	Gas company	20	2

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	1	-
Domestic Hot Water:	Copper	3	Mineral-fiber	1	-
Sanitary Waste & Vent:	Cast Iron	3	N/A	N/A	-
Storm Drainage:	Cast Iron	3	Mineral-fiber	3	-
Gas:	Black Steel	2	N/A	N/A	-
Non-Potable (Lab) CW:	Copper	3	Mineral-fiber	2	-
Non-Potable (Lab) HW:	Copper	3	Mineral-fiber	2	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	3	N/A	N/A	-
Tempered Water:	N/A	N/A	N/A	N/A	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Gas Fired	5	3	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	20	2	-

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall mount	See Above	Yes & No	3	-
Urinal:	Wall mount	See Above	Yes	3	-
Lavatory:	Wall mount	See Above	Yes & No	3	-
Drinking Fountain/Water Cooler:	Wall mount	See Above	No	3	-
Classroom Sink:	Counter	See Above	Yes & No	3	-
Classroom STEM Sink:	N/A	-	N/A	N/A	-
Classroom Drinking Fountain: (Bubbler)	Deck mount	See Above	Yes	3	-
Mop Sink:	Floor	Janitor's Closets	N/A	2	-
Showers:	N/A	-	N/A	N/A	-

Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted
Floor Drain:	Floor mounted, Type varies by location
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 20, 2022. The building was built in 2002.

Services:

The 6" fire service enters the building in the boiler room. The existing 6" fire service includes a double check valve assembly, supervised O.S. Y. gate valves, fire protection riser with wet alarm valve, main flow switch, sprinkler main drain, 4 inch main from existing fire department connection, in fair to good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility. Wet alarm valve and riser are located in the boiler room. Dry-pipe sprinkler system was installed for the penthouses. Dry alarm valve and riser are located in Janitor's Closet 3. A pressure switch was replaced last fall. Sprinkler drain for dry system discharges into janitor's sink. Existing sprinkler head types are recessed pendant, upright and dry pendant sprinkler heads. The wet and dry sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 30 more years before it will exhibit widespread problems. Some pipes are exposed but majority is installed above the ceiling.

Boiler Room: There is a ductwork that is about 4 feet wide that is not protected with sprinkler heads below. Not in compliance with NFPA-13.

Stair 2: Sprinkler heads are not installed below the stair landings.

Stair 3: Sprinkler heads are not installed below the stair landings. Sprinkler heads are not installed in the soffit above the stair door.

Art Room Storage 117: A sprinkler head was installed close to the surface mounted light fixture. The sprinkler head's spray pattern will be obstructed by the surface mounted light fixture. Not in compliance with NFPA-13.

Library 217: Sprinkler heads are not installed in the soffit of the reading nook near the exit door. Not in compliance with NFPA-13.

Classroom 307: A sprinkler head was installed about 2 feet away from the ceiling fan. The sprinkler head's spray pattern will be obstructed by the ceiling fan. Not in compliance with NFPA-13.

Gym: Two (2) upright sprinkler heads were installed close to ductwork. The sprinkler head's spray pattern might be obstructed by the ductwork. Not in compliance with NFPA-13.

There are some sprinkler heads without escutcheon plates.

Ansul Fire Suppression System

Kitchen:

The existing kitchen hood has ansul fire suppression system. However, there is only one (1) nozzle above the 2-burner range. The number of nozzles does not provide adequate protection.

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	6"	Yes/DCVA	Stainless Steel	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes	3	-
	Penthouses	Dry-pipe sprinkler system	Yes	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendent, upright, dry pendent, sidewall	Chrome Plated and Natural Brass	-

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally in good shape, requiring only normal maintenance.

Systems:

There are two (2) gas fired firetube boilers which provide heating hot water for the building. Two hot water pumps run under normal load, with the third as a standby. It has been reported that on colder days, the standby pump is also needed. The hot water system contains the original glycol, which is now over 20 years old. There is no chemical water treatment in the hot water system.

The building is conditioned by all air central systems and is primarily heated and ventilated only.

The *Library, Cafeteria, Computer Classrooms* (*now Special Education Classrooms 212 & 214), Offices, Teacher Dining* (now *Special Needs Changing Room 120)* and *Music Room* are served by dedicated rooftop units with DX cooling. *Special Education classrooms 214 & 212* currently have portable air conditioners due to a reported compressor failure in RTU-10 a couple years ago.

The *classrooms* are ventilated by two (2) heat recovery air handling units, but the heat recovery wheels are not currently functioning. It has been reported that the wheels were never wired when installed and were only recently brought online.

There is also a rooftop heat recovery unit that serves the classroom corridors.

In many classrooms teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The *IDF Room* on the first floor has no HVAC. The *MDF/Server Room* on the second floor has a dedicated Liebert split system for cooling.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

The *Elevator Machine Room* has a wall mounted split system for cooling.

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

It was noted that the screws have come off one of the roof mounted exhaust fans and the housing is presently held on with bungee cords.

The automatic temperature controls are not connected to a district wide front end, but are interconnected with the Blanchard, Stony Brook and Miller Schools' DDC systems. This building has a Siemens Apogee DDC system that is reportedly running on Windows 7, and an operator workstation. The Siemens DDC system was upgraded about six years ago.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	Gas	Firetube hot water boiler	Cleaver Brooks*	2002	3
Heating Equipment #2:	Gas	Firetube hot water boiler	Cleaver Brooks*	2002	3
Cooling Equipment #1:	NA	-	-	-	-
Exhaust Equipment#1:	NA	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	Three (3) base mounted end suction pumps	Taco	2002	3
Cooling Distribution Equipment:	NA			
Air Distribution Equipment:	Two (2) Indoor Heat Recovery Air Handling Units serving classrooms**	McQuay	2002	3
	One (1) RTU with Heat Recovery serving the corridors both floors	Aaon	2002	3
	Two (2) H&V units serving Gymnasium	McQuay	2002	3
	Five (5) RTU's with DX cooling serving Library, Cafeteria, Special Ed. 212 & 214, Offices & Lobby	McQuay	2002	3
	Two (2) Packaged RTUs with DX cooling serving Special Needs Changing Room 120 & Music Room	Trane	2002	3
	One (1) gas fired make up air unit serving Kitchen	N/A	2002	3
	One (1) H&V unit serving the Boiler Room	McQuay	2002	3

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	Constant volume heating & ventilation air (AHU-4, 7 & 8) and finned tube radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Science Classrooms:	NA	-	N/A	-	-
Art Classrooms:	Constant volume heating & ventilation air (AHU-7) and finned tube radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Art Classroom:	Kiln exhaust – inline exhaust fan	Refer Controls Section	N/A	2002	3
Music Classroom:	Constant volume heating & cooling (RTU-11)	Refer Controls Section	N/A	See Distribution	See Distribution
Special Ed. 212 &214:	Constant volume heating & cooling (RTU-10) and finned tube radiation *Note:* RTU-10 currently inoperable	Refer Controls Section	N/A	See Distribution	See Distribution
Offices:	VAV heating & cooling (RTU-12) and finned tube radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Library:	Constant volume heating & cooling (RTU-1) and panel radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Auditorium:	NA	-	N/A	See Distribution	See Distribution
Cafeteria:	Constant volume heating & cooling (RTU-6), ceiling fans and panel radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Special Needs Changing 120:	Constant volume heating	Refer Controls Section	N/A	See Distribution	See Distribution

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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	& cooling (RTU-9)				
Gymnasium:	Heating & ventilation (AHU-2 & 3)	Refer Controls Section	N/A	See Distribution	See Distribution
Multipurpose Room:	NA	-	N/A	See Distribution	See Distribution
Kitchen:	Gas fired make up air unit (MAU-1) and hot water cabinet unit heaters	Refer Controls Section	N/A	2002	3
Corridors:	Constant volume heating & cooling (RTU-13) and finned tube radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Toilets:	Exhaust & convector/ finned tube radiation	Refer Controls Section	N/A	See Distribution	See Distribution
Locker Rooms:	NA	-			

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Kitchen hood upblast exhaust fan	N/A	2002	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Heat Recovery Wheel: AHU-4**	Al Rotor	2002	0
Equipment 2:	Heat Recovery Wheel: AHU-7**	Al Rotor	2002	0
Equipment 3:	Heat Recovery Wheel: AHU-8**	Aaon	2002	0

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	DDC	Siemens	2002	3

Notes:

* Approximately 30 tubes/boiler cracked & were replaced within the last three years
** Two of the three heat recovery wheels are not functioning.
1. There is no RTU/AHU-5.

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system, Lightning prevention and Grounding systems are in good operational condition.

Services:

Electrical – National Grid. Initiates at the existing street utility poles and extend underground towards the school building. Electrical service terminates at the outdoor pad-mounted utility transformer.

Telephone – Verizon. Initiate at the existing street utility poles and extend underground towards the school building.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is at the transformer's enclosure. Transformer appears in good operational condition. No specific issues were reported.

Generator:

Outdoor 230kW/ 287.5kVA 277/480v 3ph 4w diesel-fired emergency generator, by Caterpillar, with 600-gallon skid-base tank. Good operational condition. Supports Life-safety and Standby loads via two separate ATS's. A 250 Amp Standby power ATS-2 is installed in the Main Electric room, and 150Amp Life-safety ATS-1 is in the main Emergency room. The generator's remote annunciator is in the corridor outside of the Main Electric room.

Distribution System:

The utility transformer's secondary feeder is terminated in a 1,600 Amp 277/480v 3 phase 4 wire Main Switchboard manufactured by Cutler-Hammer. The switchboard is in the *Main Electric* room on the 1st floor. It's equipped with a 1,600 Amp Main Circuit Breaker, digital metering unit and surge protection device. Normal and Emergency power sources are distributed throughout the building via a number of panels and stepdown transformers installed in various electric rooms and closets. The main switchboard and

downstream power distribution equipment were observed in good operational condition. The elevator, boilers with dedicated pumps, water heater, kitchen refrigeration equipment, *MDF* equipment are supported by Standby power.

The quantity of receptacles in various spaces appear to be adequate for the respective space programs. It was noticed that receptacles wired to panels equipped with surge protection devices are of an orange color, which is somewhat confusing because orange color usually identifies IG (Isolated Ground) system but not surge protection. A few receptacles in the kitchen area were noticed to be non-GFI and shall be replaced accordingly. In a few classrooms non-GFI receptacles near sinks shall be replaced with GFI protection too.

Lighting Systems:

Exterior lighting:

The original HID pole-mounted and wall-mounted lights were replaced with LED type. Overall, the existing exterior lights provide adequate illumination, however, it was reported that a few of the parking lot pole-mounted lights may not be properly operational and planned to be replaced again. All exterior lights are time-controlled.

Interior lighting:

Overall, the original lighting fixtures installed throughout the building are in good operational condition. In general, interior lighting system consists of fluorescent pendants and recessed lighting fixtures with T8 lamps, but they are non-dimmable and not of energy-efficient type. There are a few recent updates including new LED lights in the main lobby area, however, it was reported that a few of them may not be properly operational and are planned to be replaced again. *Gym* lighting was also recently upgraded with lights containing T5 lamps, however, the illumination level here appears to be inadequate and uneven.

Classrooms are equipped with linear pendants, and lamps are switched here alternately. A few classrooms were observed with burnt-out lamps that require replacement.

Same for the *Library* - a few lamps were observed not operational.

Corridors, offices, bathrooms, kitchen and other school building areas are equipped with recessed parabolic louver lights with T8 lamps. Cafeteria and corridors have a few dedicated “NL” (Night Lights) which always stay “on”.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

In general, lighting illumination levels are acceptable except for the *gym*, one *stairway*, and one location in the *kitchen*, specifically above the sink where the kitchen staff reported insufficient illumination for work.

Dedicated emergency egress lights and exit signs are supported by the Generator's Life-safety power, however, a few exit signs were noticed to be non-electrical (printed on paper with word "Exit") and shall be replaced accordingly.

Lighting controls: recent updates include occupancy sensors in classrooms and in a few bathrooms. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures can't be dimmed down during sufficient natural daylight times.

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, all appear to be in good operational condition, except for a few locations where non-electrical exit sign shall be replaced with electrical, as described above.

The lightning prevention system is implemented by a roof-mounted lightning prevention mast and connections down to exterior perimeter grounding wire loop, all appear to be in good condition.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	UG	277/480	3 phase 4 wire	2002	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	2002	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor /230kW	Diesel	277/480 3ph 4w	2002	4

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

DISTRIBUTION SYSTEM	**Main Service Equipment:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Switchboard	277/480 3ph 4w	Main Elec room	2002	4
	Panelboards and transformers	277/480v 3ph 4w	Throughout	2002	4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	4
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria:	Standard	1ph/120v	Grounded	4
	Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	Linear/ T8 fluorescent	Pendant	2002	3
	Offices:	2x2 and 2x4 with parabolic louvers / T8 fluorescent	Recessed	2002	4
	Library:	Linear and downlights/ T8 fluorescent	Pendant and recessed	2002	4
	Gymnasium:	2'x4' troffers/ T5 fluorescent	Pendant	Recent upgrade	3
	Cafeteria:	Decorative and downlights/ fluorescent	Pendant and recessed	2002	4
	Corridor:	2'x2' and 2'x4' with parabolic louvers/ t8 fluorescent	Recessed and wall-mounted	2002	4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road and perimeter walls	LED lights	Pole-mounted and perimeter wall-mounted	Recent replacement with LED type	3

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to Life-safety power	Various	Various	Various	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	3
	FA signaling	Simplex	Various	2002	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

In general, the existing fire alarm system is in good operational condition.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable Simplex model 4010. The radio box is manufactured by Digitize. Both are in the Main Electric room on the 1st floor.

Devices:

Outdoor red beacon strobe and key (knox) box at the main entrance door. LCD type FA remote annunciator is in the main vestibule. Smoke detectors, pull stations, horn/strobes, strobe only units, in adequate acceptable installation concept.

Recently added BDA system is in on-going programming.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Simplex 4010	Horn/strobes and Strobes	2002	4

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Horn/strobes	None	2002	4
Offices:	None	Strobes	None	2002	4
Gymnasium:	None	Horn/strobes	Yes	2002	4
Cafeteria:	None	Horn/strobes	Yes	2002	4
Lobby/Corridor	Smoke	Horn/strobes	Yes	2002	4
Kitchen:	None	Horn/strobes	Yes	2002	4
Toilets:	None	Strobes	None	2002	4
Basements:	N/A	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.10 Communications & Security Systems

Summary:

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria local AV systems is passed its useful life expectancy. Portable local AV in Gymnasium. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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PUBLIC ADDRESS SYSTEMS	Device Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Classrooms:	2-way w/ push to talk	Roland	Ceiling	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka helix	N/A	20+ years	2

TELEPHONE SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
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N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. Appropriate signage has been provided at doorways with braille.

The ramp added to the cafeteria meets minimum width requirements, however rail extension or edge protection has not been provided.

The elevator can lift a person in a normal wheelchair. Class of Elevator is unknown.

Classroom Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces feature sinks that incorporate appropriate knee space for student use and are mounted at 34" AFF.

Markerboards and Tackboards are mounted 40" to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48".

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathroom meets the requirements of students in Kindergarten through Sixth Grade. (According to 521 CMR MAAB). Water Closets installed within Girls and Boys toilet rooms are mounted 15" AFF to top of seat. Lavatories are mounted 30" AFF to the rim.

Water Closets in adult, single occupant bathroom are mounted 18" AFF to top seat. Lavatories are installed 34" AFF to rim. These spaces are appropriately sized for use by adults.

Toilet compartments and fixtures maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are appropriate mounted for support of students or adults.

Water Fountains are in close proximity of students on each floor and have recently been updated to provide bottle filling capability.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-0"	WD or HM	Level Style or Fixed Door Pull	3
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Level Style or Fixed Pull	3
Signage:	Braille Present	Plastic	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Offices:	3'-0"	WD	Lever Style	3
Library:	6'-0"	WD	Level Style	3
Stage:	3'-0"	WD	Fixed Pull Style	3
Gymnasium:	3'-0"	WD	Fixed Pull Style	3
Cafeteria:	3'-0"	WD	Fixed Pull Style	3
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Stairs:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Elevator:	6'-4"x3'-7"	2500lb	Laminate, RF	3

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	5'- 4 ½"	RT/RSN	34/42	3
Stair 2	5'- 4 ½"	RT/RSN	34/42	3
Stair 3	5'- 4 ½"	RT/RSN	34/42	3

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N/A – Not Applicable/Missing
NC – Not to Code

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36”	WD	34/Not Applicable	1

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4”.
Controls/Switches	Yes	-
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

Name of School:	Day Elementary School	
Address:	75 East Prescott Street, Westford MA	
Name of Owner:	Town of Westford	
Grade Levels Served:	3-5	
Student Population:	422	
Years in Service:	58	
Year Constructed:	1965	*Designer:* Stoner Associates
Additions:	1999	*Designer:* LPBA Architects
Existing Drawings:	1963, 1998	

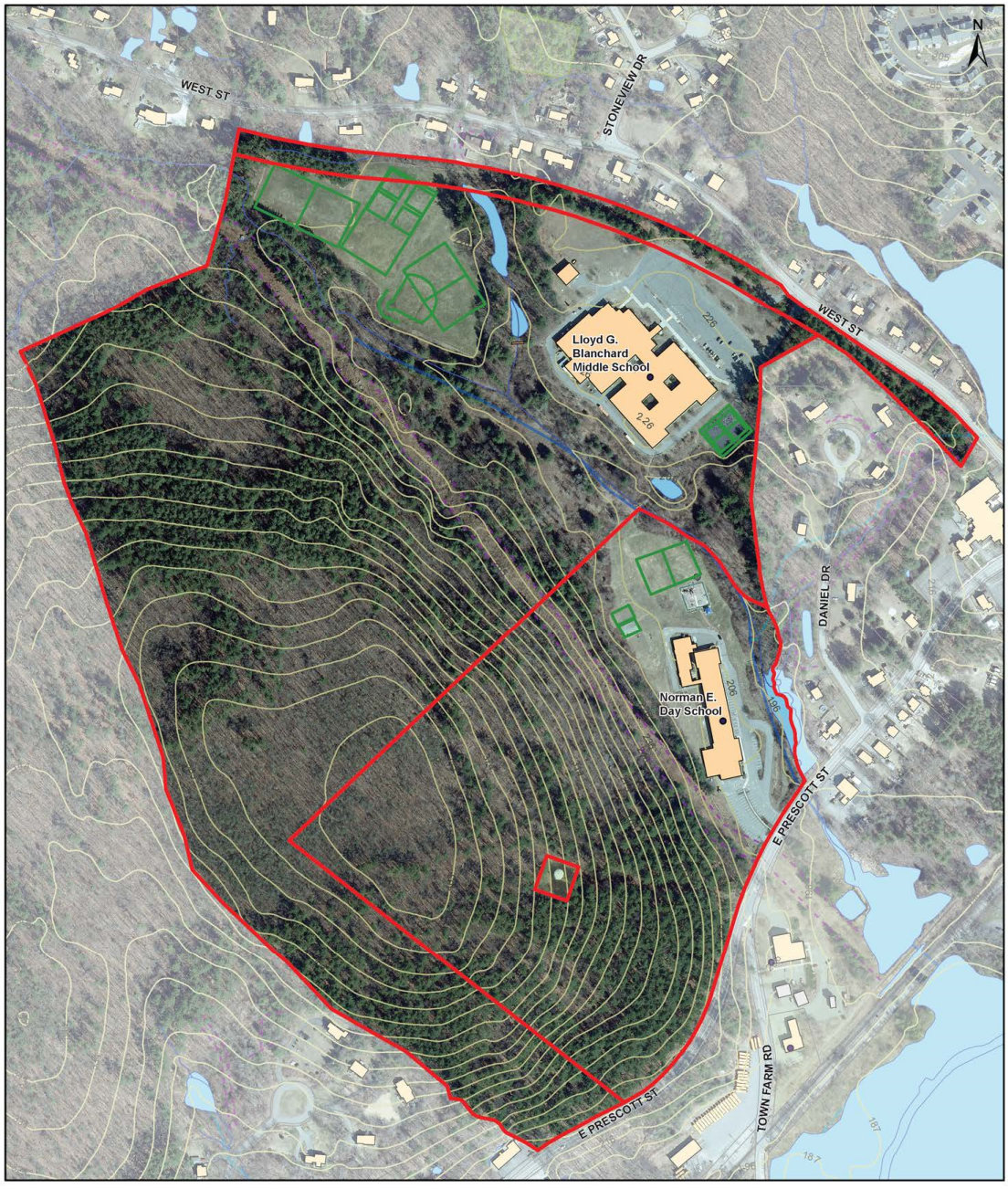
Condition Key Criteria

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.2 **CONSTRUCTION CLASSIFICATION DATA:**

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	TBD
Occupancy Group:	E – Educational (State Building Code)
Total:	60,456

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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Lloyd G. Blanchard Middle & Norman E. Day School

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 5, 2022. The day was overcast, and cold. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Norman E. Day School is situated in the eastern portion of Westford adjacent to Lloyd Blanchard Middle School, and near the town border with Groton. The surrounding properties are mostly conservation land, industrial and commercial use, including the Westford Sportsman's club, and residential parcels. The 40.1-acre parcel includes the school building, one play area to the north of the building, and parking lots to the east and south. The site elements are overall in fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The playground at the north side of the school has a recently installed brick walkway and picnic area. There is a basketball court to the west at a higher elevation than the playground. A large open field transitions the grade between and separates the two programmed play areas, the field also opens to the north. During the site visit the field was wet, presumably the change in elevation between the playground and basketball court causes it to be a low point on the site. The field transitions to woods and there is a walking path to Blanchard Middle School to the north at the far end of this field.

There is a small outdoor classroom with granite benches to the east set into the hill. The benches are in good condition. There is also a wood boardwalk and deck at the edge of the perennial stream to the east. The decking is deteriorating, it is not accessible, and is in poor condition.

Site Accessibility and Pedestrian Pathways:

Site accessibility regarding walkway slopes and accessible parking spaces appears compliant. There is no marked pedestrian

circulation from the playground to the front door of the school. Many classes have recess before lunch, which causes children to be led through the parking lot into the school's front entrance to the cafeteria.

School walkways are bituminous concrete with plaza areas made of concrete pavement. The bituminous walkways are in fair condition, especially in areas where they meet concrete plazas. There is raveling, linear cracking, and edges adjacent to lawn are deteriorating. Some of the bituminous curbing on the site is in poor condition with raveling and general deterioration.

Vehicular Traffic:

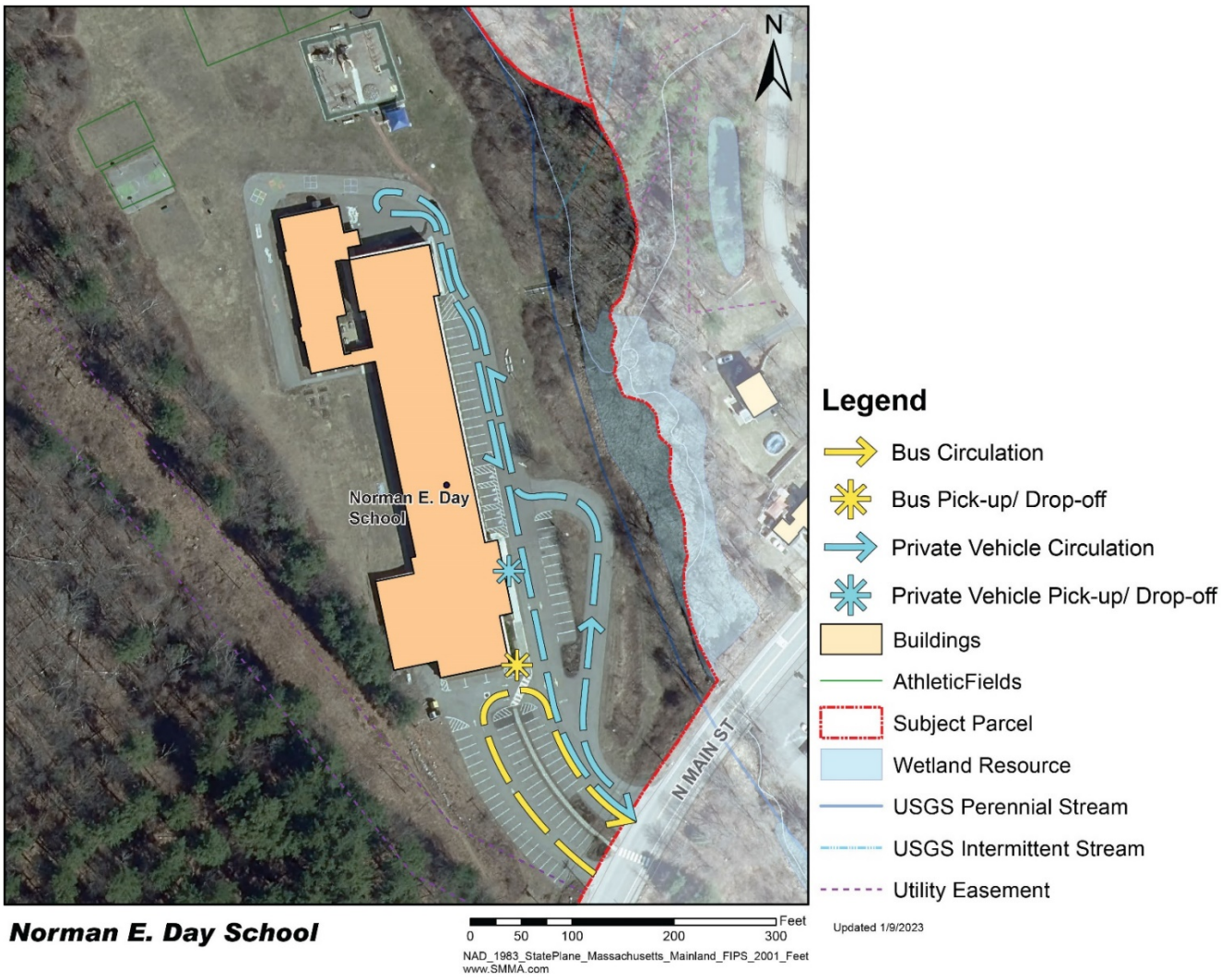
The arrival sequence for buses is to pull into the southwest entry on E. Prescott Street and drop-off and pick-up students from the south entrance of the building. Buses then leave the site from the eastern exit on E. Prescott Street. Private vehicles (cars) delivering students enter through the eastern curb cut on E. Prescott Street; however, they stay to the right and wend their way around to the north side of the of the building, U-turn and drive south to the main entrance. Once students have been dropped-off or picked-up cars continue straight and exit out the driveway.

Parking at the school is concentrated to the south with about 50 spaces and less parking, about 34 spaces, to the east side of the school including parking for visitors. All parking lots have bituminous concrete paving, with cracks and patching. Some areas of bituminous pavement have deteriorating edges and block cracking. The roadways at the school are made of bituminous concrete and are generally in fair condition. The building is sited at the bottom of a hill and the landform limits vehicular access to the back of the school; vehicles can only access three and a half sides of the building.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. There is one area of split rail fence at the front entrance that is in good condition. There are raised bed planters at the back of the school that are maintained by a third-party organization and a sandbox that is used to teach science and history.

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1 – Poor/Fair – Failure Expected
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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code



Site & Landscape Systems Data:

Land Use Type:	Deciduous Forest, Developed Open Space, Evergreen Forest, Grassland, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning:	Residence A
Lot Area:	40.1 AC
Topography:	Peak point of Kissacook Hill in West corner, sloping downward to the East (See map for more information.)

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Wetlands: Present

INFRASTRUCTURE & UTILITES

	Description	Source	Comments
Water	Town Water	J.DeMelo	-
Electricity	Underground Wires	J.DeMelo	-
Gas Provider	National Grid	J.DeMelo	-
Oil Tank	Underground	J.DeMelo	Installed +/- 2007. Used as reserve for outages.
Storm Water Management		J.DeMelo	-
Sanitary	Wastewater Treatment Plant at Blanchard	J.DeMelo	-
Irrigation	None	J.DeMelo	-

PAVEMENTS

	Surface	Source	Condition	Comments
Roadways	Bituminous pavement	VI	2	Bit. con. is in fair condition, many edges are crumbling, there is significant cracking and patching for access to utilities.
Walkways	bituminous concrete & concrete	VI	2/3	Bit. con. is cracking along most walkways. Concrete walkway from the street and at the front of the building is in good condition.
Plazas	Concrete pavement	VI	2/3	Concrete is in fair condition in most places.
Curbs	Concrete and bituminous	VI	4/1	A concrete curb is integrated into walkway and is in good condition. Where present bituminous is fair.

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NC – Not to Code

PARKING

	Spaces	Material	Cond.	Comments
Parking Lot – North/East	34 (6 ADA)	Bituminous	3	Bit. con. is in fair condition, cracking, rutting, and patching in some areas.
Parking Lot – South	50	Bituminous	3	Bit. con. is in fair condition, raveling, fatigue and linear cracking, rutting, and patching are all present.
Accessible Parking	6	Bituminous	3	
Service / Loading Dock	2	Bituminous	3	
Bike Racks	30	Steel	2	Freestanding galvanized rack.

SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	Concrete	Yes	4	Curb cut at main entry is in excellent condition with a tactile warning mat.
Curb Cut - Street	Concrete	Yes	2	Walkway from street entering site does have a curb cut, but no tactile warning mat.
Walkways	Bituminous & concrete	Yes	2	The bit. con. walkways appear to meet compliance of slope
Site Ramp	Concrete	Yes	4	Northeast entry ramp is in good condition.
Public Street	Bituminous			Public street only has sidewalk across from the school.
Main Entry	Concrete	Yes	4	Main entry is accessible and in great condition.
Secondary Entries	Bit.Con. or Concrete	Yes / No	3/4	Most at grade doorways appear accessible. Doors #2 & #3 are not accessible.

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N/A – Not Applicable/Missing
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Plazas	Concrete	Yes	4	Front concrete plaza appears to meet compliance of slope
Courtyards	Concrete	Yes	3	Small courtyard is accessible from school grounds.

FIELDS

	Surface	Source	Condition	Comments
Flex	Natural Lawn	VI	3	Fair; ground was very wet, seemed that maybe there was supposed to be a swale that was not connected.
Basketball Courts	Bit. Con.	VI	2	Fair condition, hoops had new nets
Playground	Wood Chip over Rubber Resilient Surfacing	VI	2	Equipment in fair condition. New brick path and picnic area. Wood chip depth / ground covering should be assessed for code compliance.

LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	N/A
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	An older lines swale was visible at the rear of the building; however, the material was broken up and overgrown, in poor condition.

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Meadows	N/A
Sandbox	Present. Used only for instructional science / history activities.
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Condition	Comments
Site Lighting	Refer to Electrical Section	-	Building mounted and floods on telephone poles in south parking lot.
Fire Hydrants	Standard	2	1 in south parking lot
Waste Management	Varies	3	Recycling & Garbage: south side at loading.
Retaining Walls	Fieldstone	1	Small field stone wall at back of building is failing.
Fencing	Chain Link	1/2	Most fencing is poor.
Gates	N/A	-	-
Flagpole	Steel	3	-
Outdoor Classroom	Granite	3	Small arrangement of granite benches
Boardwalk / decking	Wood	1/2	Decking was failing and the boardwalk is not accessible.

BUS OPERATIONS

Number of Buses:	7 buses; 1 van
Bus Drop/Pick-Up Area:	South Entry
Private Vehicle Drop/Pick-Up Area:	Main (east) Entry
Signage:	Adequate

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N/A – Not Applicable/Missing
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2.1.3.2 Structural Systems Narrative

Summary:

This report is based on visual observations during a site visit on December 2, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings were not available to supplement the study

Systems:

The original two-story building was constructed in 1965. The foundation was observed to consists of concrete foundation walls in one location with a ground level concrete slab-on-grade floor. The typical building structure is of steel girders and column framing with stack-bond CMU wall lateral system. The roof structure is tectum decking supported by steel bulb tees spanning between the steel girders. The steel framing was exposed throughout the building. The gymnasium has a steel joist roof framing system supported by steel columns. The structure observed on site was noted to be in fair and serviceable condition.

An addition to the original building was constructed around the gymnasium at the back of the school. The floor system and vertical support system was unobservable, and its construction unknown. The roof of the addition is a timber-framed sloped roof truss design. Inspection was limited to a single vantage point, where the wood framing appeared to be in serviceable condition.

The head custodian mentioned minor water infiltration concerns at one location near classroom 108 along the fire wall between the first and second floors. It was not expressed to be an ongoing issue and it appears to have been maintained to serviceability. No signs of water damage were observed on site.

The building exterior foundation and façade was observed. At the front-side corner of the gymnasium, the concrete foundation has exhibited one location of minor spalling with exposed rebar. The exterior was noted to be in serviceable condition.

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, presumed to have continuous shallow spread footings at perimeter and isolated shallow spread footings at columns	Spall with exposed rebar in one location at exterior corner of gymnasium	3
Vertical Support System:	Structural steel columns, stack-bond CMU walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	Tectum floor deck system supported by structural steel beams or joists	-	3
Roof Framing Systems:	Tectum roof deck system supported by structural steel beams or joists	-	3
Lateral Force Resisting System	Stack-bond CMU walls* (presumed, not verified)	-	3

* The existing building does not appear to have a deliberate Lateral Force Resisting System. The original structure was designed prior to 1970, which is when the Massachusetts building code first required a deliberate structural system design to resist seismic and wind loads. By default, the existing masonry walls appear to provide resistance to these lateral loads. If future building modifications are planned for this building, an evaluation of the existing structure and proposed modifications may be required to determine if lateral upgrades would be required for a future renovation.

Addition 1 (Northwest Wing)

	Material	Remarks	Condition:
Foundation System	Concrete walls, presumed to have continuous shallow spread footings at perimeter and isolated shallow spread footings at columns	-	3
Vertical Support System:	Unknown	-	N/A
Ground Floor Framing System:	Concrete slab-on-grade (presumed, not verified)	-	N/A
Upper Floor Framing Systems:	N/A	-	
Roof Framing Systems:	Sloped timber roof truss system	No signs of water damaged observed	3
Lateral Force Resisting System	Unknown	-	N/A

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1 – Poor/Fair – Failure Expected
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2.1.3.3 Exterior Envelope Systems Narrative

Main Canopy:

Main exterior canopy was added within the last ten years and is composed of steel tube framing. Coated metal fascia and soffits enclose the canopy.

Ancillary entry canopies outside accessory entrance feature wood soffits with formed end metal. In some cases, edge metal has been damaged. Wood soffit material is in poor to fair condition, in some cases slitting at the face.

Exterior Wall System:

Brick is installed over a 2-3/4" air space and 6" CMU Block. Damp proofing within the cavity is prevents water infiltration into the building and directs drainage out the base of the through copper thru-wall flashing. No insulation is present.

At *classroom addition*, brick is installed over a 1 inch airspace and exterior gypsum sheathing over metal stud. Stud cavity insulated with 6 inches of fiberglass batt insulation and outside face of gypsum has felt paper to prevent vapor intrusion. Self-adhered asphalt membrane at the base of wall and is in varying conditions. The original details for the foundation identified continuous metal flashing. These were not seen on site. Foundations appear to have faces eroding or pitting. Grouting on the bottom course of brick seems to be shearing off due to improper drainage from the wall cavity.

Gutters and Metal Soffits outside the addition are missing sections of vented paneling and surface rust.

Sealant around louvers in the addition appear cracked and chalky, which indicate they are in poor to fair condition.

Areas closer to paved shipping and receiving areas show grout joints that have been cracked and worn due to exposure to moisture, snow, and ice. A coating to reseal bottom course of soldier brick has failed.

Near the main entrance where a school size was removed, anchor penetrations remain open, and some brick spalling has occurred.

Window Openings were replaced within the last 10 years, with insulated glass units in aluminum frames. Sealant at each opening

is in fair condition. In some areas, sealant appears to have not properly adhered prior to curing. Face of sealant has begun degrading with exposure to the weight, showing a cracking on the outside face.

Fiberglass reinforce transparent panel system is used at gymnasium and appears to be in fair to good condition.

At window opening, outside custodial storeroom, a void exists at the parapet wall.

Existing Louvers are in fair condition. Protective coats and sealant at opening are failing.

Exterior Entrances:

Main Entrance Vestibule:

A new security vestibule and canopy was installed at Day School within the last 10 years. Aluminum storefront windows with insulated, tempered glass units compose the enclosure, installed over a half high wall of masonry on the outside. The vestibule incorporates one double door (two leafs) and two single leaf doors.

One single leaf incorporates an automatic door operator. All doors incorporate panic hardware, closers, continuous hinges, fixed door pulls, and manual cylinders.

The pair of doors utilizes top and bottom rods, surface mounted to *the face of the door.* Bottom rods do not meet requirements of accessibility codes to keep the bottom 10 inches of door surfaces free of impediments to egress and the clear width of the opening.

Ancillary Entrances:

FRP Faced doors have been installed into HM frames at accessory entrances with mortised door pulls and cylinders. All exterior entrances have been number with 4-inch-tall vinyl numbers for identification by emergency responders. Signage is not visible at a distance and in some cases is tearing off door faces. Coatings at all hollow metal door frames have oxidized.

Door frames in the addition wing, show signs of rust at the bottom.

Where ramps were installed at the gymnasium, brick at base of wall and top of foundation have seen corners broken and may allow snow or moisture to penetrate between ramp and wall.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Within the last ten years demolition of original exterior door frames to install new frames in walls has damaged brick work adjacent to the frames, left broken, with failing grout joints. Transition from interior to outside landing exceeds accessible requirements and poses a tripping hazard.

At corner of gymnasium top of foundation wall presents exposed rebar and has been broken, exposing interior of wall. Copper thru-wall flashing was damaged and has been bent up, preventing the draining of wall cavity.

Roof System:

The original building has a fully adhered, TPO membrane, cover board, 5 inches of base insulation and new edge metal was installed in 2007 over original tectum decking and is in fair condition. Where membrane is installed parapet walls, the adhered membrane appears to have come loose. Standing water and vegetative remain near the wall. Original copper thru-wall flashing remains at mechanical chimney and elevator shaft. Roofing system was not installed outside CMU elevator shaft and creates a thermal bridge. Where flashing has become brittle, rubber, self-adhering stripping has been used to address possible leaks.

The addition wing, built in 1998, features pitched roofs with dimensional asphalt shingles over felt underlayment, over plywood decking, and is in poor condition. Moisture issues on the interior of the addition has resulted wrapping of the cupola in plastic wrap.

Some areas of standing seam metal roofing are located over the enclosed connecting corridor and are in fair condition. Coatings over metal panels has started to deteriorate.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	-	2
Roof Assembly:	Fully Adhered TPO, Insulation	Replaced in 2007	2
Roof Drains:	Cast Iron	-	1
Flashing:	Copper	-	1-2
Canopies/Overhangs:	WD, Metal	-	1,3

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Organic Based Sealant at jambs has weathered.	-	3, 2
Skylights/Clerestory:	Original Skylights Infilled with Roof System.	N/A	2
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	3
Exterior Doors:	FRP,Alumn	-	2,3
Louvers & Vents	Coated Metal	-	1-2
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	2-3
Weatherstripping and Thresholds	Silicone & Brush	-	2
Exterior Access Control	Electronic	Added at Primary Entrances and Service Doors	3
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2
Roof Access	Steel	Fixed Access Ladder	2
Gutters and Downspouts	N/A	-	-

Addition and/or Renovated Areas - 1

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	3-5/8" face brick and/or split faced CMU over 1-7/8" air space and anchored with wire ties to non-loadbearing CMU or water-resistant building paper (with fabric flashing at transitions), exterior gypsum on metal stud framing, filled with 6" of batt insulation.	Weeps and Pea Gravel used at base of wall to facilitate drainage from wall cavity over asphalt cloth flashing. (Citation)	1-2
Roof Assembly:	Standing Metal Seam, Dimensional Asphalt Shingles over Felt and Plywood Deck	-	2,1-2
Flashing:	Felt to Asphalt Fabric	-	1-2
Roof Drains:	-	-	-
Canopies:	Painted, Steel Tube Framing, Factory Coated, Standing Seam Roofing and Metal Fascia and Soffits	-	3

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Organic Based Sealant at jambs has weathered.	One location in new wing, IGU has failed, cloudy.	3
Skylights/Clerestory:	None Present	-	-
Glazed Curtain Wall/Storefront	Aluminum	-	2
Exterior Doors:	Aluminum	-	2
Louvers & Vents	Coated Metal	-	2-3
Exterior Door Hardware	Lever Style with Unlockable Cylinder. Continuous Hinges. Threshold Types Vary	-	3,3,2
Weatherstripping and Thresholds	Silicone & Brush	-	2-3
Exterior Access Control	Card Access Provided at Main Entry Vestibule and Gym	-	4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder	3
Gutters and Downspouts	Preformed Metal Gutters	Empty at base of pier and freeze at base, expanding and deteriorating joints around the piers and oversaturating masonry.	1-2

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.4 Interior Envelope Systems Narrative

Wall Systems:

Glazed Concrete Masonry Units (GCMU) are used as the wall material within the main lobby, corridors, typical classrooms are in fair condition. Many decorative frames and display board have been mounted to main entry walls. Anchorage methods are unknown.

Wood Paneling (WP) also compose the lobby with the main entry corridor. The paneling is in fair condition. Wood paneling exceeds limits in area limits for decorative combustible materials with an egress. Materials are not appropriately rated and pose a risk to occupants.

Wooden Display Cases with Sliding Glass Fronts are mounted to the walls of the main lobby and exceed projection limits of 4 inches.

Typical classrooms also have CMU block in 4-5 courses at the top of walls to align with glazed openings that borrow daylight into corridor spaces. Metal frames are unrated and feature wire glass. Classrooms spaces are not properly compartmentalized from adjacent egress corridors.

Egress stairs connecting floors one and two in the original building incorporate decorative student and memorabilia and may pose a hazard.

Sheetrock Walls (GWP) compose ancillary walls and enclosures in various parts of the building.

An office spaces has been constructed within the corridor. A sheetrock wall has been installed to sequester an alcove between the dry storage room and shipping and receiving hallway. The partition stops a few feet below deck and provides a cased opening in lieu of a door.

Stage Curtain: The stage curtain at the cafeteria has been torn and worn with repeated use. The curtain separates stage functions and cafeteria functions. It also appears that the stage maintains an added function circulation, assisting in bus pick-up or drop-off.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

The stage does not maintain separation from adjacent spaces with rate doors or a fire curtain. Egress through the spaces with different uses may require separation with the use of a fire rated partition.

Concrete Masonry Units (CMU) compose interior partitions and service and storage areas.

Entrance Systems:

Main Egress Vestibule: Two single leaf doors discharge through to the secure vestibule. Doors are installed into aluminum storefront and feature panic bars that latch at the jamb. Doors are accessed from the outside with a fixed door pull. One leaf utilizes an electronic strike to control access to the building via a intercom and door release in the main office. An automatic door operator and push button is provided and is mounted within appropriate reach heights for handicap users.

Exterior Egress Entrances and vestibules are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet. (Code requires numbers to increase in size in response to distance, for legibility of responders viewing the building.)

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Where glass lites are included, wired glass is used and frequently covered with construction paper at classrooms.

Accessory Doors between Classrooms in Original Building: Knob style handles do not provide cylinders allowing for free access of teachers or students to adjacent classroom spaces.

Kitchen Doors: Two large, non-rated oversize wood leafs and one single leaf door opening separate the cafeteria from kitchen serving line and typically remain open in part during the day on outdated hold opens or surface mounted, manual bolts. The assembly space is not appropriately separated from the kitchen, stage, or classrooms with doors that may close in the event of smoke or fire.

In the kitchen locker room, staff bathroom spaces, and public bathrooms off the main lobby do not maintain appropriate clear width at door openings and do not meet accessibility requirements.

Public toilet room off main lobby features a mortised deadbolt which allow users to lock the space from inside the space.

Corridor/Stair/Cafeteria Egress Doors: Rated WD Doors in HM Frames, with borrowed lites, continuous hinges, operable closers, panic devices, level style door pulls separate the kitchen and adjacent stairwells from corridor spaces. These doors are held open on magnetic hold opens.

Rated door assemblies do not have stamped markings located on all doors and frames. (Rated corridors were introduced to some parts of the school with the addition in 1998.)

Service Entrances are wood doors and frames varying in single and double leaf configurations. Doors are in fair to good condition with level style hardware, butts style hinges, closers and mechanical cylinders. Hardware is in fair condition.

Doors with closer devices are frequently tied or held in open positions which damage the operation of the door and do not properly separate services spaces from egress corridors.

In some locations doors with original wood veneer are peeling and splitting.

Lockers within the school are sized for middle school age students and not suited for students between grades 3 to 5.

Flooring Systems:

Stone Floor Pavers (SFP): The main lobby of the school uses stone pavers. Flagstone is used immediately and transitions to *slate.* Both have been sealed over the years and are in fair condition. A walk off mat is located over the lobby floor to protect the stone from high traffic and intrusion of water and salt.

Vinyl Composite Tile (VCT) is located in corridors, cafeteria, classrooms, small group educational spaces, music rooms, and storage rooms. The condition varies depending on location. Floor system is cracking at the floor slab at each entrance leading into the cafeteria.

VCT, original to the building is in the dry storage and pot and storage space of the kitchen. The floor has aged and does not appear to have been maintained. Adjacent storage racks sit directly on the floor and tight against perimeter walls which make it difficult to monitor the intrusion of pests.

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NC – Not to Code

Area of VCT installed during the renovation and addition of 1998 incorporate a ramp to the new wing. Shrinkage cracks have telegraphed to the finished surface.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Painted Concrete (PTD Conc.) has been installed within the Custodial Storeroom/Office area and is in poor condition due to deliveries at the garage door for deliveries and the storage of building maintenance equipment.

Carpet Tile (CPT-T) & Broadloom Carpet (CPT-B) can be found in lieu of VCT in special education classroom and are in fair to good condition.

Ceiling Systems:

Plaster Ceilings (PC) are located over the lobby, the corridor outside they gymnasium and in special education classrooms. System is in fair condition. Mechanical systems, ductwork, piping, conduits and wiring are enclosed above and limited quantity of access doors limits diagnostic opportunities for systems or modification and replacement of old equipment.

Acoustic Ceiling Tile Systems (ACP) are located throughout custodial and service corridors, and music classroom spaces in the original building area. ACP systems are also located in the main corridors or the addition.

Suspension framing and tile panels are in poor to fair condition in service areas.

Music classrooms utilizing ACP systems have installed the ceiling low at approximately 7 ft 6 inch high before the ceiling returns to the

original tectum decking above. Acousticians recommend music spaces include ceilings of 15ft or more.

Gypsum Soffits/Ceilings (GWB) are in classrooms within the addition, corridor, and used for concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the classrooms, kitchen, cafeteria and mechanical room.

The kitchen is exposed to the original tectum decking over food preparation areas. Over the years, paint has been applied to seal the fiber-based decking. In some areas staining from roof leaks from are apparent.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition.

Skylight Soffits and Covers: Second floor spaces include metal frames with translucent plastic covers that are rusting and stained from old roof leaks. Roof staining can also be see in adjacent decking.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU, GCMU	3	VCT	2-3	ETS, PTD	2
Small Group Rooms:	CMU	3	VCT	2-3	ACP	1-3
Gymnasium:	CMU	2	WAF	2	ETS, PTD	3
Cafeteria:	CMU & GWB	3	VCT	2	ETS, PTD	2
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & GWB	2	VCT	2	ETS, ACP	2,1
Entry Vestibules:	CMU	3	SFP, MAT	2-3	PC	2-3
Corridors:	GCMU	2	VCT	2	ETS, PTD	2
Public Restrooms:	GCMU	2	QT	1-2	PC	2-3
Single Occupant Bathrooms:	CMU	3	CT	3	PC	2-3
Stairs:	GCMU	2-3	VCT, RT/RSN	2	ACP	2-3
Offices:	CMU or GWB	3	CPT-T	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-T	3	ACP	3

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Kitchen Cooking/Prep Area:	CMU	3	PTD Conc & QT	3,2	ETS, PTD	2
Kitchen Storage/Dry Storage:	CMU/GWP	3	VCT	1	ETS	2
Shipping/Receiving:	CMU	3	PTD Conc.	1	ACP	2
Mechanical Room:	CMU	2	PTD Conc.	1	ETS	2-3

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Classroom/Admin:	WD	Yes	3’-0”		Yes	2
Door – Service:	HM	-	3’-0”	2 HR	Yes	2
Door – Corridor/Egress:	HM	Yes	6’-0”	1-2 HR	Yes	2

Addition – 1998

	Wall Material:	**Condition:**	**Floor Material:**	**Condition:**	**Ceiling Material:**	**Condition:**
Typical Classrooms:	GWB	3	VCT	2-3	GWB	1-2
Small Group Rooms:	GWB	3	VCT	2-3	GWB	3
Corridors:	GWB	3	VCT	2	GWB	2
Public Restrooms:	CMU & CT	3	CT	3	GWB	1-2
Single Occupant Bathrooms:	CMU & CT	3	CT	3	GWB	1-2
Offices:	GWB	3	VCT	2	GWB	2

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Classroom/Admin:	WD	Yes	3’-0”	1HR	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	1 HR	Yes	3

Abbreviations:

CMU	*Concrete Masonry Unit*	CT	*Ceramic Tile*
BR	*Facebrick*	PT	*Porcelain Tile*
ALUM	*Aluminum*	CPT-BL	*Carpet – Broadloam*
HM	*Hollow Metal*	CPT-T	*Carpet - Tile*
VCT	*Vinyl Composition Tile*	TZ	*Terrazzo*
ACP	*Acoustic Tile Ceiling*	VT	*Vinyl Treads*
GWB	*Gypsum Sheathing*	PL	*Plaster*
SCFT	*Structural Clay Facing Tile*	WD	*Wood*
*	*Suspected Asbestos Containing Material, See Attached Report*		

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 02, 2022, and review of original construction documents dated October 01, 1963. The original building was built in 1965 and with addition in 1998. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the boiler room. Incoming domestic water piping and existing pressure reducing valves are in fair to poor condition. The existing 3" water meter and main shut-off valve are in fair condition. The existing water service does not include a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and has outlived/exceeded its useful life. Domestic cold water piping is not expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar and installed on June 12, 2018. The water heater is located in the boiler room and it is still in good condition. There is one (1) circulation pump installed on May 25, 2021, and it is in good condition. The inline expansion tank installed on March 13, 2014, and mixing valve are in fair condition. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition,

and has outlived/exceeded its useful life. Domestic hot water piping is not expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

Per verbal reports, there are issues of freezing plumbing pipes in the attic and in the 1998 addition. As a result, restrooms were closed to resolve the issue.

Some pipe insulation in the kitchen area is stained and in poor condition due to leaks.

Natural Gas

The existing natural gas system enters the building through the boiler room via a 3 inch gas main. The existing natural gas system includes a gas meter, valves, and gas regulator. Gas is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition, and is expected to last a few more years before exhibiting problems.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire under slab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in poor condition due to its age. Sanitary drainage piping is original, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure.

The kitchen's triple pot sink is relatively new and it is provided with grease trap that is installed above slab, below the drain board. The grease trap and piping are original and in fair to poor condition. Piping installation at triple pot sink is similar to piping diagram shown in 248 CMR.

Per verbal reports, venting is an issue in the toilet rooms. There is an odor coming out of the toilet rooms. Blocked sanitary pipe is another issue in the 1998 addition.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire under slab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible, and it is expected to be in poor condition due to its age. Storm drainage piping is original, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure. The existing roof drains with cast iron dome strainers are all original. A few roof drains have debris around them.

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Fixtures:

All existing plumbing fixtures are original to the 1965 and 1998 buildings and do not meet current accessibility and water conservation requirements. The plumbing fixtures are in fair condition.

There are two types of water closets installed within the building: Wall mounted, vitreous china with manual operated flush valves and non-ADA compliant in the original 1965 building and floor mounted, vitreous china with manual operated flush valves and non-ADA compliant in the 1998 addition.

Urinals are wall mounted, vitreous china with manual operated flush valves and non-ADA compliant.

Lavatories are wall-hung type, vitreous china with hot and cold-water faucets that are either self-metering/self-closing manual push down faucets or manually operated with different type of handles, generally in fair condition. Lavatories are original to the 1965 building and 1998 addition. A few of the lavatories are ADA compliant but majority is non-ADA compliant where pipe insulations and offset tailpiece drains are not installed below the lavatories.

Plumbing fixtures in the staff toilets including the kitchen staff toilets are non-ADA compliant.

Sinks are not present in all classrooms in the original 1965 building. However, there is a sink in each classroom in the 1998 addition, a total of five (5) classroom sinks. All classroom sinks are non-ADA compliant.

Sink in the *Teacher's Lounge* on the second floor is non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold levers and swing spout faucet, in fair condition.

Sink in the art room on the second floor is non-ADA compliant, stainless steel, self-rimming/drop-in single compartment with hot and cold levers and swing spout faucet, in fair condition. The sink has no plaster trap.

There are three (3) sinks in home economics room and none of them is ADA compliant.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

Miscellaneous Fixtures:

Custodian's mop service sinks in the 1965 building are wall mounted, enameled cast iron and in fair to poor condition. Custodian's mop sink in the 1998 addition is floor mounted and still in good condition.

There are four (4) types of drinking fountains installed within the building: The following fixtures are installed in the 1965 building. Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition. Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water cooler, in good condition. This unit is in the *cafeteria*. Single level unit, stainless steel,

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non-electric, without chiller, recessed in wall, non-ADA compliant drinking fountain, in fair condition. This unit is located in the gym. The following fixtures are installed in the 1998 addition. Bi-Level unit, ADA compliant, stainless steel, recessed with built-in chiller and push button activation, electric water cooler, in good condition.

There is no emergency shower/eyewash unit present in the *boiler room*. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents dated October 01, 1963, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4”	3”	Yes	N/A	Copper	City	57	1 (Due to age)
Gas Service:	3”	Not Accessible	Yes	N/A	Black Steel	Gas Company	57	1 (Due to age)

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	1	Mineral-Fiber	1	Due to age
Domestic Hot Water:	Copper	1	Mineral-Fiber	1	Due to age
Sanitary Waste & Vent:	Cast Iron	1	N/A	N/A	Due to age
Storm Drainage:	Cast Iron	1	Mineral-Fiber	1	Due to age
Gas:	Black Steel	2	N/A	N/A	Due to age
Non-Potable (Lab) CW:	N/A	N/A	N/A	N/A	-
Non-Potable (Lab) HW:	N/A	N/A	N/A	N/A	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	1	N/A	N/A	Due to age
Tempered Water:	N/A	N/A	N/A	N/A	-

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing, tank-type/Gas-fired	4	4	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 10 years	2	Due to age

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall and Floor mount	See Above	No	2	Due to age
Urinal:	Wall	See Above	No	2	Due to age
Lavatory:	Wall	See Above	No	2	Due to age
Drinking Fountain/Water Cooler:	Wall	See Above	No	4 & 3	-
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	N/A	See Above	N/A	N/A	-
Classroom Drinking Fountain:	N/A	See Above	N/A	N/A	-
Mop Sink:	Wall and Floor mount	See Above	N/A	2 & 3	Due to age
Showers:	N/A	See Above	N/A	N/A	-

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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Miscellaneous Fixtures	**Type**
Hose Bibb:	-
Wall Hydrant:	Wall mounted
Floor Drain:	Floor Mounted, Type varies by location.
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

There is no fire protection system in the existing facility, original building and addition.

Ansul Fire Suppression System

Kitchen:

The existing kitchen hood has no ansul fire suppression system.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

Although generally well maintained, the HVAC systems, distribution and equipment are beyond their useful life.

Systems:

The two (2) Weil McLean dual fuel hot water boilers were installed in the 1980's. Six (6) additional sections were added in the late 2000's but the building continues to experience limited heat during colder temperatures. The three (3) hot water pumps and piping are original to the building. Hot water piping runs throughout the building in trenches under the floor with access through floor panels. Much of the hot water piping in the *Boiler Room* is not insulated. There is no chemical water treatment in the hot water system.

The boiler feed tank is no longer in use and has been abandoned in place.

There is a 10,000-gallon double wall underground fuel oil storage adjacent to the *Boiler Room* installed about fifteen years ago. The boilers have not run on fuel oil in approximately seven years, and it is unclear how much oil remains in the tank.

The building is conditioned by unit ventilators and is primarily heated and ventilated only.

The *Offices, Teachers' Lounge* and *Computer Classroom* are served by dedicated units with DX cooling. Refrigerant pipe insulation and jacketing to outdoor condensers is damaged, in some cases exposing the refrigerant piping.

There are four (4) H&V units, serving the Kitchen, Cafeteria, and Gym. The hot water coil has been removed from the Cafeteria H&V unit. Return to the Cafeteria H&V unit is now under the ramp and clogged with dust.

Unit ventilators and unit ventilator controls are original to the building. It has been reported that not all valves are functioning and when there is a leak, the entire system must be drained for repairs. It was also reported that there is no temperature control of the unit ventilators, resulting in spaces being either hot or cold. Replacement parts are difficult to find and often not a perfect fit as the original equipment is no longer manufactured.

Some *classrooms* are exhausted through the closets and others have exposed ductwork and registers in the space. The latter classroom exhaust grilles are covered during the colder months to

prevent cold air from entering when the exhaust fans are not running. The exhaust fans are loud and turned off during instructional periods. As a result, there is no exhaust air from these *classrooms* for a good portion of the year.

There are a few *classrooms* that have been subdivided into two classrooms with no HVAC modifications. This has left the thermostat on one side of the partition and the unit ventilator on the other, as well as the exhaust register on one side and the exhaust fan switch on the other, resulting in control issues.

No ventilation was noted in the *Teachers' Lounge*.

The clothes dryer vents into the dumbwaiter shaft, although the dumbwaiter is no longer operable.

It has been reported that the 1998 addition has been problematic mechanically, with ventilation and humidity issues as well as pipe freeze ups. A dehumidifier and electric heat trace have been added in the attic.

In many *classrooms* teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The *MDF/Server Room* on the first floor is not conditioned. There is an exhaust duct from this space but there is no associated exhaust fan. Server equipment on the second floor is in the corner of a classroom with a wall mounted air conditioner, as well as in an unconditioned storage room.

Many *classroom* windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

The automatic temperature controls are not connected to a district wide front end, or to any other school building. The controls are pneumatic and are beyond their useful life.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	**Energy Source:**	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Equipment #1:	Dual Fuel	Hot Water Boiler*	Weil McLain	1982	1
Heating Equipment #2:	Dual Fuel	Hot Water Boiler**	Weil McLain	Late '80s	1
Cooling Equipment#1:	N/A	-	-	-	-
Exhaust Equipment #1:	N/A	-	-	-	-

Distribution Systems:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Distribution Equipment:	Three (3) base mounted end suction pumps	Bell & Gossett	1965	2
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	N/A	-	-	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Terminal Equipment:	**Type:**	**Controls:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Typical Classrooms:	Unit ventilators	Refer to Controls Section	Herman Nelson	1965	1
Art Classrooms:	Unit ventilators	Refer to Controls Section	Herman Nelson	1965	1
Art Classrooms:	Kiln & spray booth – inline exhaust fan***	N/A	N/A	N/A	1
Music Classroom:	Unit ventilators-horizontal & ducted****	Refer to Controls Section	Herman Nelson	1965	1
Computer Classroom:	Split heat pump	Refer to Controls Section	First Co.	2015	3
Main Office:	No HVAC	-	-	-	-
Principal/Vice Principal/Nurse/Copy:	Wall mounted split systems	Refer to Controls Section	Panasonic	Refer to Distribution	3
Teachers' Lounge:	Wall mounted split system	Refer to Controls Section	Panasonic	Refer to Distribution	3
Library:	Unit ventilators	Refer to Controls Section	Herman Miller	1965	1
Cafeteria:	Heating & ventilation(H&V-2), ceiling fans and finned tube radiation	Refer to Controls Section	AAF	1965	3
Gymnasium:	Heating & ventilation (Two (2)H&V-1	Refer to Controls Section	AAF	1965	2
Kitchen:	Ventilation/make up air (H&V-3)	Refer to Controls Section	AAF	1965	0
Corridors:	No ventilation CUH	-	-	-	-
Toilets:	Exhaust & CUH	Refer to Controls Section	-	1965	2
Locker Rooms:	Unit vents	Refer to Controls Section	Herman Nelson	1965	1

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Upblast exhaust fan serving hood	Greenheck	With new roof	4

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-
HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	Pneumatic	Honeywell	1965	1

Notes:

* Hot water valve inoperable - stuck in the open position. Burner replaced about 15 years ago.
** Additional sections added around 2000.
*** Exhaust fan is loud.
****Unit ventilator in Music Room is loud.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in fair operational condition, however, most of electrical systems components are beyond their useful life expectancy as outlined below. There are also specific concerns and non-compliances with current Code requirements as outlined below.

Services:

Electrical – National Grid, Initiates at the existing street utility pole and extend overhead and underground towards the school building. Electrical service terminates at outdoor the pad-mounted utility transformer.

Telephone – Verizon. Initiates at the existing street utility pole and extend overhead and underground towards the school building. No issues with services were reported.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is inside of the building, located near the main distribution panel. No specific issues were reported.

Generator:

The outdoor 50KW 120/208v 3ph 4w gas-fired generator by Olympian appears in fair operational condition. It currently supports kitchen refrigeration and mechanical equipment. No issues were reported.

Distribution System:

The utility transformer's secondary feeder is terminated in 800 Amp 120/208v 3 phase 4 wire Main Distribution panel manufactured by General Electric. It's in the Mechanical room. The Distribution panel is equipped with 800 Amp Main Disconnect switch, Utility CT metering compartment, and downstream circuit breakers feeding panels in the same room and other panelboards located throughout the building. Many corridor panels have no working locks on them which represents an unsafe condition. The Main Distribution panel and all downstream power distribution equipment, except for the 1998 building addition area, show significant deterioration signs and are beyond their useful life expectancy, and therefore shall be replaced with associated power feeders.

Receptacles throughout the school building excluding 1998 areas appear dated and many are in poor condition. A few receptacles in the kitchen area were noticed to be non-GFI and shall be replaced accordingly. Most receptacles and associated branch wiring from respective panels are beyond their useful life expectancy and shall be replaced.

Lighting Systems:

Exterior lighting:

A mixture of older and recently added LED type wall-mounted perimeter lights (about 10 years old) were observed. The newer LED lights are in good operational condition. Exterior lights are time-controlled.

Interior Lighting:

Lighting fixtures throughout, except for the 1998 building addition area, appear dated and show significant deterioration signs and lenses' color shift. Majority of lights are surface-mounted type in various sizes and 4ft long wraparounds with T8 fluorescent lamps, non-dimmed and not of energy-efficient type. The illumination levels in some areas were observed to be inadequate, especially in bathrooms. Gym lighting is of a newer type, equipped with T5 lamps. They appear to be in good operational condition. The lighting in the 1998 building addition consists of 2'x2' and 2'x4' surface-mounted troffers with T8 lamps, recessed fluorescent downlights and LED exit signs. They appear to be in good operational condition. Overall, the original and older lighting fixtures and associated branch wiring from respective panels are beyond their useful life expectancy and shall be replaced.

Emergency lighting is provided by means of emergency battery units with remote light heads. There is a reported ongoing issue with the emergency lighting – instead of operating for at least 90 minutes, as required by the current Code, they only remain operational for about 15 minutes. A few locations require additional exit signs.

Lighting controls:

Recent upgrades include a very limited number of added occupancy sensors. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures are of non-dimmable type.

Emergency Devices:

Emergency devices include exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. Exit signs need some upgrading as outlined about in Emergency lighting. The Fire Alarm notification devices are observed in inadequate and unacceptable installation condition, and require substantial modifications as outlined below.

There is no Lightning protection/prevention system.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	120/208	3 phase 4 wire	1965	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	1965	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor/ 50kW	Gas	120/208 3ph 4w	Unknown	3

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Distribution panelboard	120/208v 3ph 4w	Mechanical room	1965	1
	Panelboards	120/208v 3ph 4w	Throughout	1965 & 1998	1 & 4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	2 & 4
	Offices:	Standard	1ph/120v	Grounded	2
	Library:	Standard	1ph/120v	Grounded	2
	Gymnasium:	Standard	1ph/120v	Grounded	2
	Cafeteria:	Standard	1ph/120v	Grounded	2
	Corridor:	Standard	10h/120v	Grounded	2 & 4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	4ft wraparound/ 2'x4' lensed/ T8 fluorescent	Surface	1965 & 1998	2 & 4
	Offices:	4ft wraparound/ T8 fluorescent	Surface	1965	2
	Library:	4ft wraparound/ T8 fluorescent	Pendant	1965	2

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2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Gymnasium:	1'x'4' lensed/ T5 lamps	Pendant	Recent upgrade	4
Cafeteria:	2'x'2 lensed/ T8 lamps	Surface	1965	2
Corridor:	4ft wraparound/ T8 fluorescent	Surface	1965	2 & 4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Access road	Street utility lights	Pole-mounted and perimeter wall-mounted	Recent upgrades	3

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Battery units with remote heads	Various	Various	Various	1

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	2
	FA signaling	Various	Various	Various	1

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

The school building is not equipped with a Fire protection system (sprinklers) and therefore the Fire alarm system shall incorporate a full smoke detection coverage. It was observed that the heat/smoke detectors are provided only in a small number of spaces, which is considered a Code violation - none were observed in original building classrooms, Cafeteria platform area, a few bathrooms, and insufficient coverage was noticed in Gym, etc. At the same time, many spaces, including original building classrooms and bathrooms, are not equipped with the fire alarm notification devices (horn/strobes), and some areas are equipped inadequately, which is also a violation of the Code. A few pull stations are inaccessible for normal operation. Horn/strobes in corridors are installed further than 15 feet from corners and corridor ends and corner which doesn't comply with the current Code installation requirements. Most of existing heat/smoke detectors are still original with associated old wiring.

Overall, the fire alarm system requires significant upgrading to comply with original Code requirements. Old equipment and wiring are beyond their useful life expectancy and shall be replaced/upgraded to comply with the Code.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is zoned type, manufactured by FCI. The radio box is manufactured by Digitize. Both are installed in the administrative office area and appear in fair operational condition.

Devices:

Key box at the main entrance door. Remote annunciator is in the main vestibule, in fair condition. Hard-wired heat/ smoke detectors, pull stations, horn/strobes, strobe only units are in inadequate and unacceptable installation condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Zoned	FCI, Simplex, mixed	Horn/strobes and Strobes	Original and a few recent upgrades	1

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	None	None	N/A	1
Offices:	None	Horn/strobe	None	Original and a few recent upgrades	2
Gymnasium:	Heat	Horn/strobes	Yes	Original	3
Cafeteria:	Heat	Horn/strobes	Yes	Original	3
Lobby/Corridor	Heat	Horn/strobes	Yes	Original	1
Kitchen:	Heat	Horn/strobes	None	Original	2
Toilets:	None	None	None	N/A	1
Basements:	N/A	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.10 Communications & Security Systems

Summary:

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV System – Portable local AV system in Gymnasium with large flat panel display. Sound system is undersized for a full gymnasium. Portable AV system in cafeteria.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	10+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	10+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	10+ years	2
Master Clock:	Analog	Sapling	Rack	10+ years	2
Bells:	Thru PA	N/A	N/A	10+ years	2

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

PUBLIC ADDRESS SYSTEMS	Device Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Classrooms:	2-way w/ push to talk	Roland	Ceiling	10+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	10+ years	2
Console:	Analog PA	Roland	Rack	10+ years	2

DATA SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Library:	Category 5e	Draka helix	N/A	10+ years	2
Classrooms:	Category 5e	Draka helix	N/A	10+ years	2
Offices:	Category 5e	Draka helix	N/A	10+ years	2
Gymnasium:	Category 5e	Draka helix	N/A	10+ years	2

TELEPHONE SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms. Appropriate signage has been provided at most doorways with braille.

Stairwells and Ramps: Stair guard rails and handrails do not meet appropriate heights and do not continue from one floor to the other. Stair nosings do not include detection strips. The width of stairs do not meet minimum width requirements and limit egress capacity egressing down the stair. Storage of school supplies, equipment and materials is not allow and encumbers egress.

The ramp added to the cafeteria meets minimum width requirements, however rail extension or edge protection has not been provided.

The elevator can lift a person in a normal wheelchair. Class of Elevator is unknown.

Room signage is provided. The mounting of room numbers does not meet reach requirements.

Classroom Spaces:

Classroom Plumbing Fixtures: The original building incorporate sinks that are not accessible.

Markerboards and Tackboards are mounted 44” to bottom of writing and display surfaces used within the classroom spaces in the original section of building. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48”.

The addition includes markerboards at 34” AFF.

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathrooms do not provide adequate maneuvering circulation or approach to bathroom spaces or fixtures. Accessible accessories like grab bars, offset drains, or insulation at drain piping are not provided in the original building.

Fixture mounting height does not meet accessible requirements. See plumbing section for additional information.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	7'-8"	-	-	-
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Fixed Pull	3
Signage:	Braille Present	Plastic	-	2

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	2
Offices:	3'-0"	WD	Lever Style	2
Library:	3'-0"	WD	Level Style	2
Gymnasium:	3'-0"	WD	Fixed Pull Style	2
Cafeteria:	3'-0"	WD	Fixed Pull Style	2
Kitchen:	3'-0"	WD	Lever Style	2
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	2
Stairs:	6'-0"	WD	Lever Style/Panic HW	2
Toilets:	3'-0"	WD	Lever Style	2

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Lift	42"x62"	900lbs	Laminate/VCT	1-2

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	50"	RT/RN	Not Compliant	1
Stair 2	45"	VCT, RT/RSN	Not Compliant	2,1

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36"	WD	34/Not Applicable	1

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	No	Accessible Fixtures, Compartments, Accessories not present.
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4". Recessed DF in gym.
Controls/Switches	No	-
Signage	Yes	Braille signage available at all doors.

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Toilets:	3'-0"	WD	Lever Style	3

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	50"	RT/RN	Not Compliant	1
Stair 2	45"	VCT, RT/RSN	Not Compliant	2,1

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36"	WD	34/Not Applicable	1

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4".
Controls/Switches	Yes	-
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

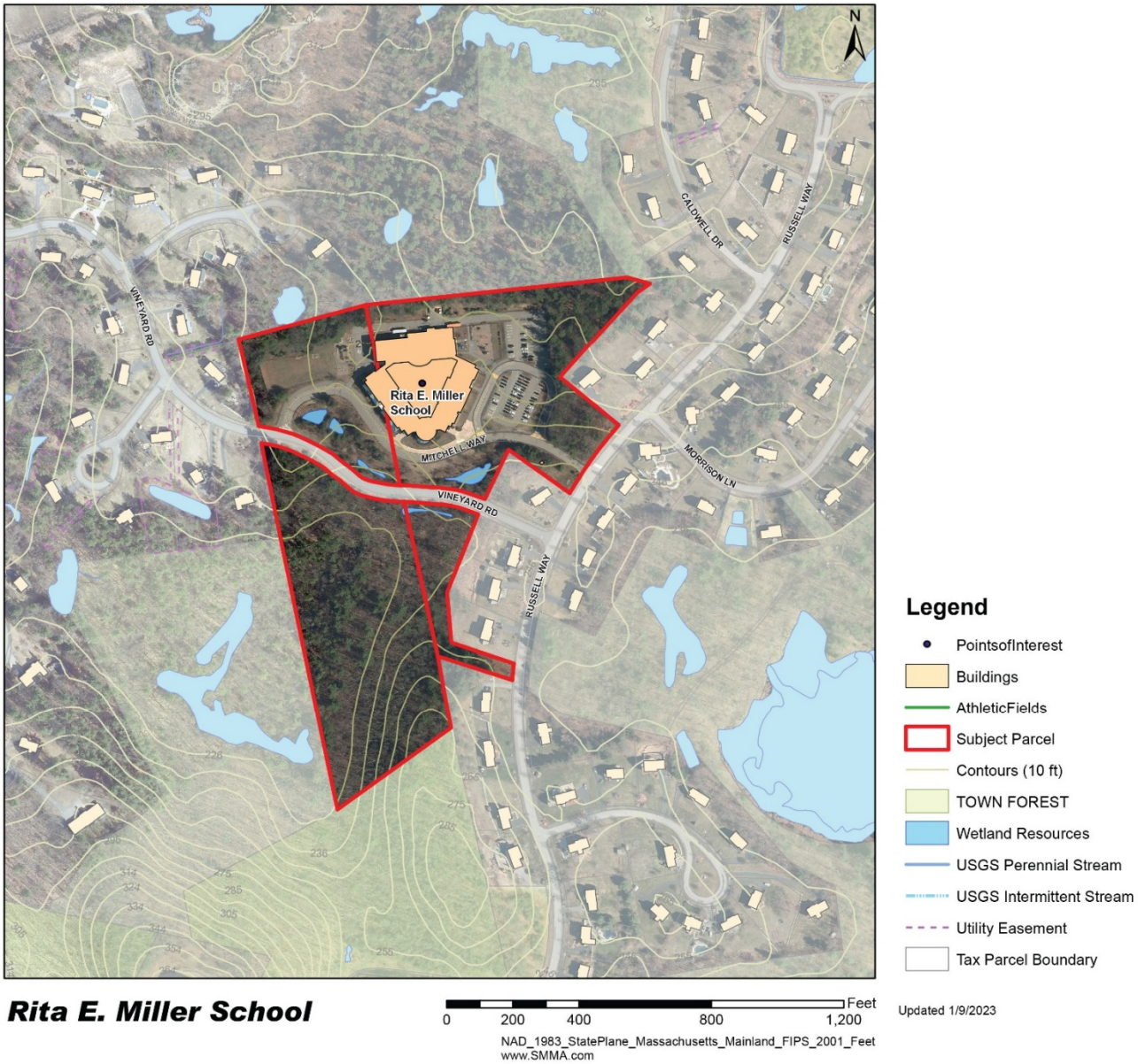
Name of School:	Miller Elementary School	
Address:	1 Mitchell Way, Westford, MA 01886	
Name of Owner:	Town of Westford	
Grade Levels Served:	PK-2	
Student Population:	380	
Years in Service:	21	
Year Constructed:	2002	*Designer:* DRA
Existing Drawings:	2001	

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.2 **CONSTRUCTION CLASSIFICATION DATA:**

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	90,463

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code



Rita E. Miller School

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The day was overcast, cold, and there was a light coating of snow on the ground in some places. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Rita E. Miller School is located in the northeast portion of Westford is surrounded by single family residences and conservation land, just south of the border with Tyngsborough. The 12.32-acre parcel has one school building, two play areas to the east and west of the building, stormwater detention ponds to the south, and two parking lots to the east. The site elements are overall in fair/good condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The playground on the east side of the school is for younger students. This fenced area includes play structures, shade structure, ride on toys, sandbox, and a picnic area. There is an additional play area to the west for older aged students and contains play structures, basketball hoop with paved area, picnic area, and a large open field. All play elements appear in fair/good condition. The playground has a wood chip surface in both areas but was not inspected for compliant safety depth. However, the depth in both play areas needs to be inspected to confirm safety requirements. After a visual inspection, the surface appeared non-compliant with current code.

The central courtyard at the school is extensive. Though the ground was covered with snow, the planting and paving seemed in good condition. There are several outdoor classrooms in the courtyard and includes a grass amphitheater.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Site Accessibility and Pedestrian Pathways:

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. There are marked parking spaces in the parking lot. The walkways and plazas appear to meet compliance for slope. The central courtyard appeared accessible from all entries.

School walkways are bituminous concrete with plaza areas made of concrete pavement. The concrete plazas are in fair condition with some spalling and uneven patching observed. The bituminous walkways are in fair condition, especially in areas that meet concrete plazas. There is raveling, linear cracking, and edges adjacent to lawn are deteriorating. Most of the granite and bituminous curbing is in good condition.

Vehicular Traffic:

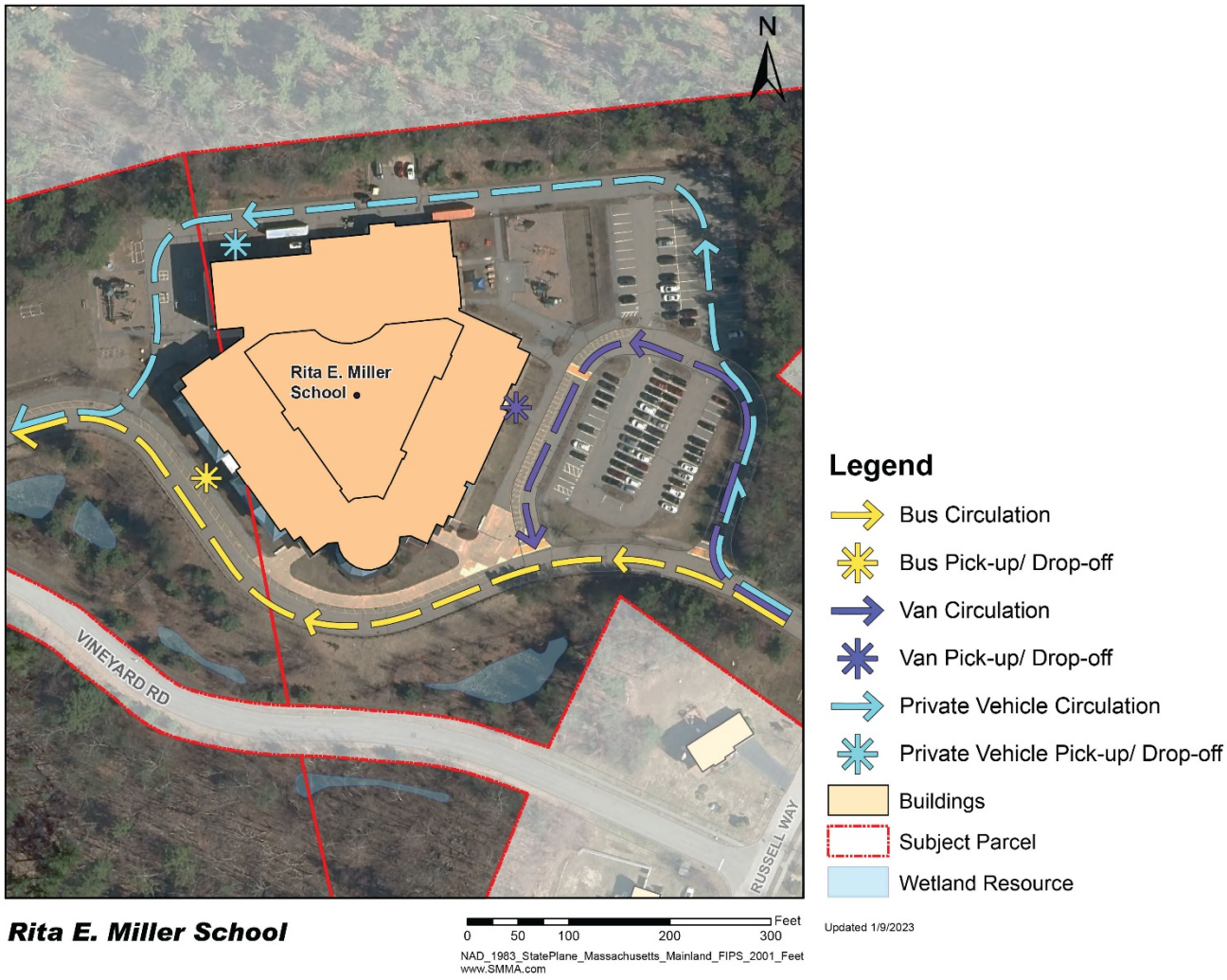
The arrival sequence for buses is to pull up to the school on Mitchell Way and drop-off or pick-up students from the west building entrance. Private vehicles (cars) delivering students enter the site via the one-way entrance on Mitchell Way, stay to the right and drive around the school to deliver students to the northwest side of the building. They cars exit past the playground back onto Mitchell Way. Vans drop-off and pick-up students via the one-way entrance on Mitchell Way and stay to the left to deliver students to the east side of the building. The administration said parents and legal guardians who park their car to escort their children into the school or who are trying to leave early from school often get stuck waiting for vans to depart, delaying their ability to leave the school property.

Parking at the school is concentrated on the east side of the school. All parking lots are bituminous concrete paving, with cracks and patching. Some areas of bituminous pavement have deteriorating edges and block cracking. Roadways at the school are made of bituminous concrete and are generally in good condition, however, there also appeared to be significant deterioration of pavement at cross walks and around manholes and catch basins.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. The chain link fencing on the property appeared in fair/good condition. There are raised bed planters east and west of the school that appear in good condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code



Site & Landscape Systems Data:

Land Use Type:	Deciduous Forest, Developed Open Space, Evergreen Forest, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning:	Residence A
Lot Area:	12.32 AC.
Topography:	Elevation rises from south and east to high points north of the school (See map for more information.)
Wetlands:	Present

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INFRASTRUCTURE & UTILITES

	Description	Source	Comments
Water	Town Water	M.Hernandez	-
Electricity	Underground Wires	M.Hernandez	-
Gas Provider	National Grid	M.Hernandez	-
Oil Tank	None	M.Hernandez	-
Storm Water Management	Detention ponds	2001 site drawings	-
Sanitary	Sewer / Septic System	M.Hernandez	Leach field west of building
Irrigation	None	M.Hernandez	2001 site drawings show irrigation in the courtyard.

PAVEMENTS

	Surface	Source	Condition	Comments
Roadways	Bituminous pavement	VI	2/3	Bit. con. is in fair condition, lots of rutting, fatigue cracking, potholes, and raveling. Pavement is failing around some manholes and catch basins.
Walkways	bituminous concrete & Concrete (only at front entry)	VI	2	Concrete walkways have joint spalling. The bit. con. has linear cracking on most walkways. Places where walkways meet concrete or bituminous plazas have large margins and deep cracks.
Plazas	Concrete pavement	VI	2/3	Concrete is in fair condition in most plazas. Some patching may cause trip hazard.
Curbs	Bituminous curbs & granite	VI	2/3	Bituminous and granite curb are in fair condition, some chipping in places.

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PARKING:

	Spaces	Material	Condition	Comments
Parking Lot – Northeast	59 (1 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Parking Lot – Southeast	56 (4 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Accessible Parking	5	Bituminous		Bit. con. is in fair condition, some cracking and patching but usable for parking.
Charging Stations	None			
Service / Loading Dock	5 spaces	Bituminous	3	Bit. con. is in fair condition, some cracking but usable for parking.
Bike Racks	30	Steel	1	U shape, 6 racks at front entry, 4 racks at front playground.

SITE ACCESSIBILITY

	Material	Code Compliance	Condition	Comments
Curb Cut - Main Entry	Concrete	Yes	2	Curb cut at main entry is in poor condition, concrete and asphalt are crumbling; no tactile warning mat.
Curb Cut - other doors	N/A	-	-	-
Curb Cut - Street	Concrete	Yes	3	Walkway from street entering site does have a curb cut and tactile warning mat. Though the crosswalk is not 90° angle to the road.
Walkways	Bituminous	Yes	2	The bit.con. walkways appear to meet compliance of slope

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Site Ramp	None	-	-	-
Public Street	Bituminous	-	-	Mitchell Way sidewalk and curb cuts appear to meet compliance of slope.
Main Entry	Concrete	Yes	3	Main entry is accessible and in great condition.
Secondary Entries	Bit.Con. or Concrete	Yes	3	All at grade doorways appear accessible.
Plazas	Concrete	Yes	3	Plazas appear to meet compliance of slope
Courtyards	Concrete & Bituminous	Yes	3	Entry to courtyard appear to meet compliance

FIELDS

	Surface	Source	Cond.	Comments
Playground - Front	Wood chip	VI	2 / NC	Structures are in good condition overall. Visible footings on play equipment and benches imply that wood chip depth is not compliant. Depth should be inspected for code compliance.
Playground - Rear	Wood chip	VI	2	Structures are in good condition overall. Depth should be inspected for code compliance.
Field – Leach field	Grass	VI	3	Lots of play happening here.

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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	Present. Winter conditions make assessment difficult.
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Comments
Site Lighting	Poles	Pole lighting, some base covers are rusted and pitted.
Fire Hydrants	Standard	2 east & 1 west of building.
Waste Management	Steel dumpsters	Garbage & Recycling dumpsters: north side service area
Retaining Walls	Modular	Appear in fair condition.
Fencing	Chain Link & stockade	Most fencing is in fair/good condition. Wood stockade at end of leach field was good, but lots of vine growth in the chain link in the area.
Gates	Chain link	
Flagpole	Steel	Flagpole is in fair/good condition.

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Outdoor Classroom	Grass amphitheater	In courtyard, appeared in good condition.

BUS OPERATIONS

Number of Buses:	7
Bus Drop/Pick-Up Area:	Northeast side
Private Vehicle Drop/Pick-Up Area:	West Entry
Van Drop/Pick-up Area:	East Side
Signage:	Adequate

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2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings dated March 15, 2001, were obtained while on site and reviewed to supplement the study.

Systems:

The school is a multi-story building constructed in 2002. The foundation consists of concrete walls supported by continuous shallow footings and isolated shallow spread footings at columns. The ground floor is a concrete slab-on-grade. Typical floor and roof framing consists of steel girders and secondary beams and joists supported by steel columns and running-bond CMU walls. The floors are composite concrete and metal decks. The roof is metal roof deck. The steel joists were exposed and observable in the mechanical and boiler rooms. The gymnasium and cafeteria use a steel joist roof framing system supported by steel square hollow tube columns. The library room roof framing consists of a radial sloped steel truss system. There are three rooftop mezzanine rooms with structural steel sloped roof trusses. The lateral force resisting system for the building consists of running-bond CMU walls and ordinary steel moment frames. The overall building structure observed on site was noted to be in fair and serviceable condition.

CMU wall joints and wall-to-column encasement joints were noticed to be cracking in multiple locations throughout the building, particularly near the boiler room area and both expansion joints. One column encasement across the corridor from the restrooms near the boiler room exhibited a vertical crack from ceiling to floor at the outside face of the wall. It was noted that this crack had been resealed. A crack was observed in the floor slab extending from the exterior door opening to the storage room adjacent to the boiler room. It was noted that the threshold appeared to be placed atop a continuous concrete slab pour between the exterior and interior of the building at this location. Both expansion joints were missing sealant to the CMU walls and the drop ceiling at these locations showed signs of water infiltration. Outside air draft was also noticed at these joints.

The original building foundation and façade was unable to be observed from the exterior due to covered finishes. Overall, the exterior surfaces were noted to be in fair and serviceable condition.

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at wall bases, isolated spread footings at columns	-	N/A
Vertical Support System:	Structural steel columns	-	3
Ground Floor Framing System:	Concrete slab-on-grade	Cracking at exterior door threshold near boiler room	3
Upper Floor Framing Systems:	Composite concrete and metal deck supported by structural steel girders and beams/joists	Cracking in floor deck observed in rooftop mezzanine	3
Roof Framing Systems:	Metal roof deck supported by structural steel girders and beams/joists or trusses in rooftop mezzanines and library	-	3
Lateral Force Resisting System	Running-bond CMU walls, structural steel moment frames	Cracks observed in multiple locations	3

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2.1.3.3 Exterior Envelope Systems

Main Canopies & Ancillary Canopies:

The main canopy and ancillary canopies are composed of soffits built from an exterior insulating finish system. Each element appears in good condition. A similar canopy is located on the other end of a central school lobby. Brick piers wrap steel columns that support the canopies. Loose lintels at some locations are beginning to show signs of rust due to degradation of galvanized coatings.

Exterior Wall System:

Two typical wall types compose the exterior wall enclosure.

The administration, cafeteria, and gymnasium spaces of the building utilizes a composite wall system with a combination of face brick, split faced CMU, simulated stone , and/or precast panel over a 4-1/2" air space and backup CMU. Two-inch rigid insulation is located inside the wall cavity over damp proofing and flashing systems to provide increased thermal performance and drainage.

The classroom wing of the building utilizes a combination of face brick, split faced CMU, simulated stone, and/or precast panel over a 1-3/4" air space and backup six inch metal studs with exterior gypsum sheathing. Two-inch rigid felt is used in these locations in lieu of damp proofing and and fabric flashing is used to transition to flashing systems and weeps at the base of the wall to provide drainage. Fiberglass batt insulation is provided within the stud cavity to provide greater thermal resistance.

Snow melt and rain that drain onto horizontal top of simulated stone bands introduce an increased amount of moisture to topping courses of masonry and have left minor staining.

Flashing is in varying conditions and depending on type and location, degradation appears to be staining CMU on the elevations of the building.

Copper thru-wall flashing at the base of the walls have begun to oxidize and appear in good condition.

Some areas of the two wall types appear to be over saturated due to limited spaces of weeps in the system.

Pitched roofs over some parts of the building drip onto precast panel, which have introduced minor dust staining, from over saturation.

Gymnasium:

Red face brick frames upper windows. Where, the masonry creates a sill condition and head condition, increased moisture appears sits on the soldier course that sit proud of surround CMU and may result in stains in the masonry and additional moisture infiltration may be the source of efflorescence in adjacent masonry. Details from the original building drawings the absence of a sill pan below the windows.

Courtyard:

At the building expansion joints, insulation and membrane installation appears to be missing as voids can be see at simulated bands. On the interior, cold air radiates through the cavity and can be felt on the face of expansion covers. Expansion joints are reported to be located where leaks occur. Leaks are present in adjacent ceilings and walls.

At the simulated stone sill some areas are stained due to continuous drainage of the metal standing seam roof edge. Vertical joints between simulated stone deteriorate and drain directly into the wall cavity. The presence of weeps can be seen, but may be too few to drain out cavity.

Additionally, in some locations weeps under simulated stone are not apparent as indicated in details. Stone appear to have been stained due to moisture. In some cases algae has accumulated.

Exterior Entrances:

The main entrance is composed of two pairs of six-foot-wide entrances in aluminum storefront, with a separate single accessory leaf. Each feature panic hardware and create a secure entry vestibule with

Subordinate entrances are aluminum and feature fixed, stainless door pulls and mechanical cylinders. Signage is not visible at a distance and in some cases is degrading due to sun exposure.

Service entrances are typically hollow metal doors in hollow metal frames, featuring fixed door pulls and mechanical cylinders. Entrances that receive or provide outside services or receive deliveries incorporate electronic access hardware.

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Where pairs of doors are located, removable mullions have been installed and have degraded at the threshold due to exposure to moisture and salt.

Where lintels are installed and exposed to interior spaces, some rust spots have appeared.

Courtyard Entrances utilize magnetic locks at the head of door frames. While doors are equipped with panic bars and swing into the school, doors do not release unless magnetic locks disengage via key override inside. No push to release button was seen inside the courtyard. This creates the possibility that occupants may become trapped in the courtyard.

Roof Systems:

The original roof installation remains at the school and is composed of two systems, installed in 2002. Most of the roof utilizes a fully adhered EPDM system over wood fiber board and insulation, installed on metal decking. Two mechanical penthouses and the roof of the library feature pitched, standing seam metal roofs.

The EPDM system is in fair to poor condition condition and requires maintenance at mechanical penetrations and a several flashing terminations along the perimeter.

The standing seam system is in fair condition, with ongoing maintenance. Additionally, sealant has been installed where valleys and gables terminate.

No guard system is provided around roof access hatches. Guard rails are not provided where equipment is located within 10ft of roof edges.

Windows:

Window framing is aluminum and contain insulated glass units. The window framing and glazing are good condition. Sealant at perimeter of window openings have been to crack along the face indicated degradation and have also delaminated along the edge indicated a failure of the primer at time of installation.

Windows at the library and some corridor show adhesive within the insulated space melting on glazed surfaces 2 and 3.

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EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	Snow piling up near entrances has infiltrated and eroded grout.	2-3
Roof Assembly:	Fully Adhered EPDM, Metal Standing Seam	-	2,2
Roof Drains:	Cast Iron	-	3
Flashing:	Galvanized or Copper Thru Wall Flashing	-	3
Canopies/Overhangs:	EIFS and AESS	-	3-4
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Sealant at Perimeter	-	3,2
Skylights/Clerestory:	Unitized Prefabricated Metal and Glass System, Fiberglass Translucent Sandwich System	-	3,3
Glazed Curtain Wall/Storefront	Aluminum Storefront		3
Exterior Doors:	Aluminum (Main Doors), HM (Service Doors)	Service Doors should be re-coated.	3,2
Louvers & Vents	Aluminum and Steel	-	3
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	3
Weatherstripping and Thresholds	Silicone & Brush	-	3
Exterior Access Control	Main and Primary Entrances	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder – No guard present at roof.	3
Gutters and Downspouts	N/A	N/A	-

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2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose most interior partitions. Fabric Covered Panels are utilized in some spaces like the main lobby, cafeteria, gymnasium, and music rooms to absorb sound.

Sheetrock Walls (GWP) Compose ancillary walls and enclosures in various parts of the building.

Interior Expansion Joint Gasketing has been impacted by roof leaks over time.

Wood Sills: At some openings wooden sills are located adjacent to wall mounted wall mounted convection heating. When window hopper windows are opened to introduce ventilation and then heated, the wood degrades rapidly due to expansion and contraction.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: Rated HM Doors and Frames, with wire glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens. Panic bar enclosure end is missing.

Stair/Cafeteria Egress Doors: Rated WD Doors in HM Frames, with assumed rated glazing, continuous hinges, operable closures, rim devices, removable mullions and fixed door pulls with mechanical cylinders.

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

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Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, music rooms, and other ancillary spaces, like storage rooms. The condition varies depending on location. Floor system is cracking at a the floor slab at each entrance leading into the cafeteria.

Minor wax staining can be seen between spaces. Shrinking cracking from the slabs haven transferred up into some sections of VCT, in spaces like the main lobby. VCT outside exterior doors shows signs of cracking due to service good moving into and out of the building.

VCT has been stained due to water intrusion at along the building expansion joint.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

Rubber Floor and Rubber Treads (RF/RSN) have been installed within stairwells and appear in good condition. Stair nosings do not incorporate detection strips.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. This results in mismatching tile and tiles that may not maintain equivalency in acoustical absorptive performance.

Roof leaks or leaks around window openings have required replacement throughout the school. Spaces with immediate adjacency to the roof on the third or second floors require the most frequent attention.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

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Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the library, gymnasium and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light and reduce glare. These are in fair to good condition. In some spaces, teachers have incorporated their own black out curtains on adjustable rods.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU &/or GWB	2-3	VCT	2-3	ACP	2-3
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	2-3
Gymnasium:	CMU	3	WAF	2-3	ETS, PTD	3
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3, 2-3
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & GWB	3	VCT	2-3	ACP/GWB	2,3
Entry Vestibules:	CMU, BR	3	MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	VCT	2	ACP, GWB	3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU	3	CT	3	GWB	2-3
Stairs:	CMU & GWB	2-3	RT/RSN	2	ACP	2-3
Offices:	CMU or GWB	3	CPT-BL	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-BL	3	ACP	3
Kitchen Cooking/Prep Area:	GWB	3	QT	3	ACP	3
Kitchen Storage:	CMU or GWB	3	QT	3	ACP	2-3
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2-3
Mechanical Room:	CMU	3	Conc.	3	ETS	2-3

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”		Yes	3
Door – Service:	HM	-	3’-0”	2 HR	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”	2 HR	Yes	3

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2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 14, 2022. The building was built in 2002. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the mechanical room. The existing 3" water meter is in fair condition. The shut-off valves and pressure reducing valve are in fair to poor condition. The existing water service includes two (2) reduced pressure backflow preventers, one is installed on April 01, 2020, in good condition, and the other one appears to be original and in poor condition.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original and in poor condition. Some exposed pipes are not insulated.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by State Industries. The water heater was installed on September 07, 2019, and it is located in the boiler room, and in good condition. There are two (2) circulation pumps, in fair condition. The mixing valve is in fair to good condition. There is no expansion tank for hot water system. There is no condensate neutralizing unit. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

Natural Gas

The existing natural gas system enters the building through the mechanical room. The existing natural gas system includes a gas

meter, valves, and gas regulator. The gas piping is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition. Some gas piping show signs of corrosion and in poor condition.

Fixtures:

All existing plumbing fixtures are original and in fair to good condition.

Per field measurements, plumbing fixtures mounting heights are the following:

WC = 11-1/2" from the finished floor to the top of the seat. This measurement was taken from a floor mounted type water closet.

Classroom SK = 24-3/4" from the finished floor to the top of the counter.

Girls Toilet Rooms:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 15-1/2" and 16" from the finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with single lever faucets, in fair to good condition. Pipes are insulated below one of the lavatories. The mounting heights are 30" from the finished floor.

Integrated PreK Room 114 Toilet:

Water Closet is floor mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 11-1/4" from the finished floor to the top of the seat. This water closet has drainage/flushing issues.

Lavatory is wall-hung type, vitreous china with hot and cold water faucet, in fair to good condition. The mounting height is 30" from the finished floor.

Kindergarten 111 Toilet:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 14-3/4" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with hot and cold water faucet, in fair to good condition. The mounting height is 30-1/2" from the finished floor.

Nurse's Suite Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 16-3/4" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with manual hot and cold water faucet, in fair to good condition. Pipes below the lavatory are not insulated. The mounting height is 34-1/4" from the finished floor.

Integrated PreK Room 114:

Sink is stainless steel, non-ADA compliant with hot and cold water handles and gooseneck faucet, and deck mounted bubblers, in fair to good condition. The sink does not drain properly. There is a water discharge issue for this bubbler.

Kindergarten Room 111:

Sink is stainless steel, non-ADA compliant with hot and cold water handles and gooseneck faucet, and deck mounted bubblers, in fair to good condition. There is a water discharge issue for this bubbler.

Classrooms 100; 101; 102:

A sink is present in every classroom. Sink is stainless steel, ADA compliant (with knee clearance) with hot and cold water handles and gooseneck faucet, and deck mounted bubblers, in fair to good condition.

Nurse's Suite and Main Office:

Pipes below the sinks are not insulated.

Miscellaneous Fixtures:

Custodian's mop sinks are original, floor mounted, and in fair condition.

There are three (3) types of drinking fountains installed within the building: Single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, in fair condition; single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition and bi-level unit, ADA compliant, non-recessed with built-in chiller and push button activation, electric water cooler, in fair condition.

There is no eyewash unit installed in the Nurse's Suite.

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4”	3”	Yes	N/A	Copper	City	20	3
Gas Service:	6”	Not accessible	Yes	N/A	Black Steel	Gas company	20	2

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	1	-
Domestic Hot Water:	Copper	3	Mineral-fiber	1	-
Sanitary Waste & Vent:	Cast Iron	3	N/A	N/A	-
Storm Drainage:	Cast Iron	3	Mineral-fiber	3	-
Gas:	Black Steel	2	N/A	N/A	-
Non-Potable (Lab) CW:	N/A	N/A	N/A	N/A	-
Non-Potable (Lab) HW:	N/A	N/A	N/A	N/A	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	3	N/A	N/A	-
Tempered Water:	N/A	N/A	N/A	N/A	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing/Gas-fired	3	4	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	20	2	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall and floor mount	See Above	No	3	-
Urinal:	Wall mount	See Above	No	3	-
Lavatory:	Wall mount	See Above	No	3	-
Drinking Fountain/Water Cooler:	Wall mount	See Above	Yes and No	3	-
Classroom Sink:	Counter	See Above	-	3	-
Classroom STEM Sink:	N/A	-	N/A	N/A	-
Classroom Drinking Fountain:(Bubblers)	Deck mount	See Above	-	3	-
Mop Sink:	Floor	Janitor's Closets	N/A	2	-
Showers:	N/A	-	N/A	N/A	-

Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted, non-freeze
Floor Drain:	Floor mounted, Type varies by location.
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 14, 2022, and review of As-Built drawings dated September 27, 2002. The building was built in 2002.

Services:

The 6" fire service enters the building in the mechanical room. The existing 6" fire service includes a double check valve assembly, supervised O.S. Y. gate valves, fire protection riser with wet alarm valve, main flow switch, sprinkler drain, 4 inch main from existing fire department connection, in fair to good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility. Wet alarm valve and riser are located in the mechanical room. Dry-pipe sprinkler system was installed for the penthouses. Dry alarm valves and risers are located in Janitor's Closets 2A and 2D. Sprinkler drains for dry system discharge into janitor's sinks. Existing sprinkler head types are recessed pendant, upright and dry pendant sprinkler heads. The wet and dry sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 30 more years before it will exhibit widespread problems. Some pipes are exposed but majority is installed above the ceiling.

Janitor's Closet 1A: Sprinkler head is installed close to surface mounted light fixture. The sprinkler's spray pattern will be obstructed by the surface mounted light fixture. Not in compliance with NFPA-13.

Stairs: Stairs landings do not have sprinkler protection.

Gym: There are upright sprinkler heads installed close to the round ductwork. The sprinkler's spray pattern might be obstructed by the ductwork.

Penthouse: A black steel pipe is installed in a *dry-pipe system.* Black steel pipe is not an approved material for *dry-pipe system*. Remove and replace it with galvanized pipe.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Ansul Fire Suppression System

Kitchen:

The existing kitchen hood has ansul fire suppression system. However, there is only one (1) nozzle above the 2-burner range. The number of nozzles does not provide adequate protection.

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	6”	Yes/DCVA	Stainless Steel	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes	3	-
	Penthouses	Dry-Pipe sprinkler system	Yes	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendent, upright, dry-pendent, sidewall	Chrome Plated and Natural Brass	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally in good shape, requiring only normal maintenance.

Systems:

There are two (2) gas fired firetube boilers which provide heating hot water for the building. Two hot water pumps run under normal load, with the third as a standby. It has been reported that on colder days, the standby pump is also needed. The hot water system contains the original glycol, which is now over 20 years old. There is no chemical water treatment in the hot water system.

The building is served by all air central systems and is primarily heated and ventilated only.

The Library, Cafeteria, Computer Room C203, Offices, Teacher Dining and *Music Room* are served by dedicated rooftop units with DX cooling.

The *classrooms* are ventilated by three (3) heat recovery air handling units but only one wheel is currently functioning. It has been reported that the wheels were never wired when installed and were only recently brought online.

The *Art Room* has a portable air conditioner.

In many *classrooms* teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The two (2) Gym H&V units are noisy and typically turned off during class. It has been reported that the freezestats trip frequently on these two units.

The two *IDF Rooms* on the first floor have no HVAC. *MDF/Server Room* on the second floor has a dedicated York split system for cooling, which replaced the original Liebert unit in 2019.

The *Elevator Machine Room* is ventilated only. There is no mechanical cooling in this space.

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is

unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

Window air conditioners are installed in classrooms to accommodate special needs students. These units are relocated annually for the summer program.

The automatic temperature controls are not connected to a district wide front end, but are interconnected with the Blanchard, Stony Brook and Crisafulli Schools' DDC systems. The building has a Siemens Apogee DDC system that is reportedly running on Windows 7, and an operator workstation. The Siemens DDC system was upgraded about six years ago.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	**Energy Source:**	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Equipment #1:	Gas	Firetube hot water boiler*	Cleaver Brooks	2002	3
Heating Equipment #2:	Gas	Firetube hot water boiler*	Cleaver Brooks	2002	3
Cooling Equipment #1:	NA	-	-	-	-
Exhaust Equipment#1:	NA	-	-	-	-

Distribution Systems:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Distribution Equipment:	Three (3) Base mounted end suction pumps	Taco	2002	3
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	Three (3) Indoor Heat Recovery Air Handling Units serving classrooms**	McQuay	2002	3
	Two (2) H&V units serving Gymnasium	McQuay	2002	3
	Four (4) RTU's with DX cooling serving Library, Cafeteria, Computer C203 & Offices	McQuay	2002	3
	Two (2) Packaged RTUs with DX cooling serving Teacher Dining & Music Room	Trane	2002	3
	One (1) gas fired make up air unit serving Kitchen	Greenheck	2002	3
	One (1) H&V unit serving the Boiler Room	McQuay	2002	3

Terminal Equipment:	**Type:**	**Controls:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Typical Classrooms:	Constant volume heating & ventilation air (AHU-4, 7 & 8)	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution

	and finned tube radiation***				
Science Classrooms:	N/A	-	-	-	-
Art Classrooms:	Constant volume heating & ventilation air (AHU-7) and finned tube radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Art Classroom:	Kiln exhaust-roof mounted exhaust fan	Refer to Controls	Greenheck	2002	3
Music Classroom:	Constant volume heating & cooling (RTU-11)	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Computer Classroom 203:	Constant volume heating & cooling (RTU-10) and finned tube radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Offices:	VAV heating & cooling (RTU-12) and finned tube radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Library:	Constant volume heating & cooling (RTU-1) and panel radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Auditorium:	N/A	-	-	-	-
Cafeteria:	Constant volume heating & cooling (RTU-6), ceiling fans and panel radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Teacher Dining:	Constant volume heating & cooling (RTU-9)	Refer to Controls	Refer to Distribution	Refer to Distribution	Refer to Distribution
Gymnasium:	Heating & ventilation (AHU-2 & 3)	Refer to Controls	Refer to Distribution	Refer to Distribution	Refer to Distribution
Multipurpose Room/ Corridor D101:	Constant volume heating & cooling (RTU-6) and panel radiation	Refer to Controls	Refer to Distribution	Refer to Distribution	Refer to Distribution
Kitchen:	Gas fired make up air unit (MAU-1) and hot	Refer to Controls	Greenheck	2002	3

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

	water cabinet unit heaters				
Corridors:	Air from adjacent units and finned tube radiation/radiant panels	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Toilets:	Exhaust & convector/ finned tube radiation	Refer to Controls	N/A	Refer to Distribution	Refer to Distribution
Locker Rooms:	N/A	-	-	-	-

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Upblast exhaust fan serving hood	Greenheck	2002	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Heat Recovery Wheel: AHU-4**	Al Rotor	2002	0
Equipment 2:	Heat Recovery Wheel: AHU-7**	Al Rotor	2002	0
Equipment 3:	Heat Recovery Wheel: AHU-8	Al Rotor	2002	2

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	DDC	Siemens	2002	3

Notes:

* Approximately 30 tubes/boiler cracked & were replaced within the last three years.
** Two of the three heat recovery wheels are not functioning.
***The hot water valves are located in casework, making them difficult to service and maintain.
1. There is no RTU/AHU-5.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system, Lightning prevention and Grounding systems are in good operational condition.

Services:

Electrical – National Grid. Initiates at the existing street utility poles and extend underground towards the school building. Electrical service terminates at the outdoor pad-mounted utility transformer.

Telephone – Verizon. Initiates at the existing street utility poles and extend underground towards the school building.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is at the transformer's enclosure. Transformer appears in good operational condition. No specific issues were reported.

Generator:

Outdoor diesel-fired emergency generator, by Caterpillar, with skid-base tank. Supports Life-safety and Standby loads via two separate ATS's. The generator's remote annunciator is in the corridor right outside the Mechanical room. The routine weekly generator's test is an ongoing issue – it was reported that generator would start but stop within 2 minutes, which indicates an issue with either controls or overloading. Since the generator supports the Life-safety loads, this issue should be resolved.

Distribution System:

The utility transformer's secondary feeder is terminated in a 1,600 Amp 277/480v 3 phase 4 wire Main Switchboard manufactured by Cutler-Hammer. The switchboard is in the Main Electric room on the 1st floor. It's equipped with a 1,600 Amp Main Circuit Breaker, digital metering unit and surge protection device. Normal and Emergency power sources are distributed throughout the building via a number of distribution panels and stepdown transformers installed in various

electric rooms and closets. The main switchboard and downstream power equipment were observed in good operational condition. The standby power 400 Amp ATS-2, installed in the Main Electric room, currently supports elevator, dedicated HVAC and plumbing equipment, kitchen refrigeration equipment, sewage pump station. The Life-safety 100 Amp ATS-1, installed in emergency closet, currently supports emergency egress lighting throughout the building and exterior entrance lights.

The quantity of receptacles in various spaces appear to be adequate for the respective space programs. It was noticed that receptacles wired to panels equipped with surge protection devices are of an orange color, which is somewhat confusing because orange color usually identifies IG (Isolated Ground) system but not surge protection. A few receptacles in the kitchen area were noticed to be non-GFI and shall be replaced accordingly.

Lighting Systems:

Exterior lighting:

Consists of pole-mounted and wall-mounted LED lights. In general, the existing exterior lights appear in fair condition, except it was reported that about eight of them require replacement. All exterior lights are wired via time clock. The time clock is reported as not operating properly and difficult to program and therefore should be replaced. It was also reported that the original court bollards were removed, but live wiring could still be there – this condition shall be examined and corrected to make the school outdoor area a safe environment.

Interior lighting:

Overall, the original lighting fixtures installed throughout the building are in good operational condition. In general, interior lighting system consists of fluorescent pendants and recessed 2'x'2 and 2'x4' lensed and parabolic lighting fixtures with T8 lamps, but most of them are non-dimmable and not of energy-efficient type. Gym lighting was recently upgraded with lights containing T5 lamps. The cafetorium has a combination of fluorescent recessed downlights and decorative pendants. Classrooms are equipped with linear pendants. Corridors, offices, bathrooms, kitchen and other school building areas are equipped with recessed lensed and parabolic louver lights with T8 lamps. Corridors have a few dedicated "NL" (Night Lights) which stay "on" at all times. In general, lighting illumination levels throughout are acceptable, except for Stair 2 where illumination is inadequate (unsafe) and should be upgraded.

Dedicated emergency egress lights and exit signs are supported by the Generator's Life-safety power. Exit signs are of LED type, in good operational condition.

Lighting controls:

All classrooms are equipped with wall-mounted occupancy sensors in corners. No other areas were observed with occupancy sensors. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and lighting fixtures can't be dimmed down during sufficient natural daylight times.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, exit signs and FA are in good operational condition, however, the amount of FA signaling devices in corridors may need to be upgraded as outlined below.

The lightning prevention system is implemented by two roof-mounted lightning prevention masts and connection down to exterior perimeter grounding wire loop, all appear to be in good condition.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	UG	277/480	3 phase 4 wire	2002	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	2002	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor	Diesel	277/480 3ph 4w	2002	2

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Switchboard	277/480 3ph 4w	Main Elec room	2002	4
	Panels and transformers	277/480 3ph 4w	Throughout	2002	4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	4
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria/ Kitchen:	Standard	1ph/120v	Grounded	3
	Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Interior Light Fixtures:	*Typical Classroom*	Linear/ T8 fluorescent	Pendant	2002	4
	Offices:	2'x2' parabolic/ T8 fluorescent	Recessed	2002	4
	Library:	Linear/ T8 fluorescent	Pendant	2002	4
	Gymnasium:	2'x4'/ T5 fluorescent	Pendant	Recent upgrade	4
	Cafeteria:	2'x2' lensed	Recessed	2002	4
	Corridor:	2'x2' lensed/ T8 fluorescent	Recessed	2002	4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road and perimeter walls	LED lights	Pole-mounted and perimeter wall-mounted	Recent replacement with LED type	2

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to Life-safety power	Various	Various	2002	4

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	2002	4
	FA signaling	Simplex	Various	2002	2

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

In general, the existing fire alarm system is in good operational condition, however, some areas appear in need of upgrading for signaling devices – it was noticed that signaling devices (specifically strobe light) in some corridors might be placed further than 15 feet from corridor's end, not in compliance with Code – all corridors shall be rechecked and modified if/where required accordingly.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable Simplex model 4010. The radio box is manufactured by Digitize. Both are installed in Storage 1A.

Devices:

Outdoor red beacon strobe and key (knox) box at the main entrance door. Smoke detectors, pull stations, horn/strobes, strobe only units - in general, in adequate acceptable installation concept except for corridors as outlined above.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Simplex 4010	Horn/strobes and Strobes	2002	3

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Horn/strobes	None	2002	3
Offices:	None	Horn/strobes and Strobes	None	2002	4
Gymnasium:	None	Horn/strobes	Yes	2002	4
Cafeteria:	None	Horn/strobes	Yes	2002	4
Lobby/Corridor	Smoke	Horn/strobes	Yes	2002	2
Kitchen:	None	Horn/strobes	None	2002	4
Toilets:	None	Strobes	None	2002	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Basements:	N/A	N/A	N/A	N/A	N/A

2.1.3.10 Communications & Security Systems

Summary:

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV Systems – Cafeteria local AV system is passed its useful life expectancy. Portable local AV system in Gymnasium. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis Camera & ExacVision Server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

Condition Key Criteria

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

PUBLIC ADDRESS SYSTEMS	Device Type:	Manufacturer:	Mounting:	Date of Installation:	Condition:
Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	Quantity/ Type:	Manufacturer:	CATV:	Date of Installation:	Condition:
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. Appropriate signage has been provided at doorways with braille.

The ramp added to the cafeteria meets minimum width requirements, however rail extension or edge protection has not been provided.

The elevator can lift a person in a normal wheelchair. Class of Elevator is unknown.

Classroom Spaces:

Classroom Plumbing Fixtures: Typical classroom spaces feature sinks that incorporate appropriate knee space for student use and are mounted at 34" AFF.

Markerboards and Tackboards are mounted 40" to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48".

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathroom meets the requirements of students in Pre-Kindergarten through Sixth Grade. (According to 521 CMR MAAB). Water Closets installed within Girls and Boys toilet fixtures are mounted 15" AFF to top of seat. Lavatories are mounted 30" AFF to the rim. Pre-Kindergarten Classrooms toilet fixtures are mounted 11-1/2" AFF with a lavatory height of 30".

Water Closets in adult, single occupant bathroom are mounted 18" AFF to top seat. Lavatories are installed 34" AFF to rim. These spaces are appropriately sized for use by adults.

Toilet compartments and fixtures maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are appropriate mounted for support of students or adults.

Water Fountains are located in close proximity of students on each floor and have recently been updated to provide bottle filling capability.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-0"	WD or HM	Level Style or Fixed Door Pull	3
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Level Style or Fixed Pull	3
Signage:	Braille Present	Plastic	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Offices:	3'-0"	WD	Lever Style	3
Library:	6'-0"	WD	Level Style	3
Stage:	3'-0"	WD	Fixed Pull Style	3
Gymnasium:	3'-0"	WD	Fixed Pull Style	3
Cafeteria:	3'-0"	WD	Fixed Pull Style	3
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Stairs:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
Elevator:	6'-4"x3'-7"	2500lb	Laminate, RF	3

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Stair 1	5'- 4 ½"	RT/RSN	34/42	3
Stair 2	5'- 4 ½"	RT/RSN	34/42	3
Stair 3	5'- 4 ½"	RT/RSN	34/42	3

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RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36”	WD	34/Not Applicable	1

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4”.
Controls/Switches	Yes	-
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

Name of School:	Nabnassett Elementary School	
Address:	99 Plain Road, Westford MA	
Name of Owner:	Town of Westford	
Grade Levels Served:	PK-2	
Student Population:	385	
Years in Service:	63	
Year Constructed:	1960	*Designer:* Unknown
Additions:	1963	*Designer:* Perley F. Gilbert Associates
	1996	*Designer:* DRA
Existing Drawings:	1963, 1995	

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N/A – Not Applicable/Missing
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2.1.2 **CONSTRUCTION CLASSIFICATION DATA:**

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	58,766

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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Nabnasset School

0 200 400 800 1,200 Feet
NAD_1983_StatePlane_Massachusetts_Mainland_FIPS_2001_Feet
www.SMMA.com

Legend

- PointsofInterest
- Buildings
- AthleticFields
- Subject Parcel
- Contours (10 ft)
- TOWN FOREST
- Wetland Resources
- USGS Perennial Stream
- USGS Intermittent Stream
- Utility Easement
- Tax Parcel Boundary

Updated 1/9/2023

0 – Poor –Failed
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2 – Fair – Serviceable/Maintenance Required
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N/A – Not Applicable/Missing
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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The day was overcast, cold and there was snow covering the ground in some places. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Nabnasset School is in the western portion of Westford in a predominantly residential area. The 21.98-acre parcel contains the school building, two play areas to the north and west of the building, and two parking lots to the east and north. The site elements are overall in fair/good condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings:

The playground on the north side of the school is for younger children. This fenced playground contains a sandbox, swings, including two accessible chair swings, climbing structures, and picnic tables, all appeared in fair/serviceable condition. There is an additional play area to the southwest with play structures, a ‘buddy’ bench, basketball hoop, funnel ball, swings, and a large open field. All play elements appear in fair/good condition. There is an outdoor classroom with wood benches to the west of the school that is set in the woods; the benches are in good condition. The path to the classroom was snow covered and may not be accessible.

Site Accessibility and Pedestrian Pathways:

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. There are marked parking spaces in each parking lot. The walkways and plazas appear to meet compliance for slope. The central courtyard appeared accessible from all entries.

School walkways are predominantly bituminous concrete with plaza areas made of concrete pavement. The bituminous walkways are in fair condition, especially in areas that meet concrete plazas where there is raveling, linear cracking, and edges into lawn are

deteriorating. Some of the bituminous curbing on the site is in poor condition with raveling and general deterioration. There is an additional paved pedestrian connection to the southeast of the school that appeared well used.

Vehicular Traffic:

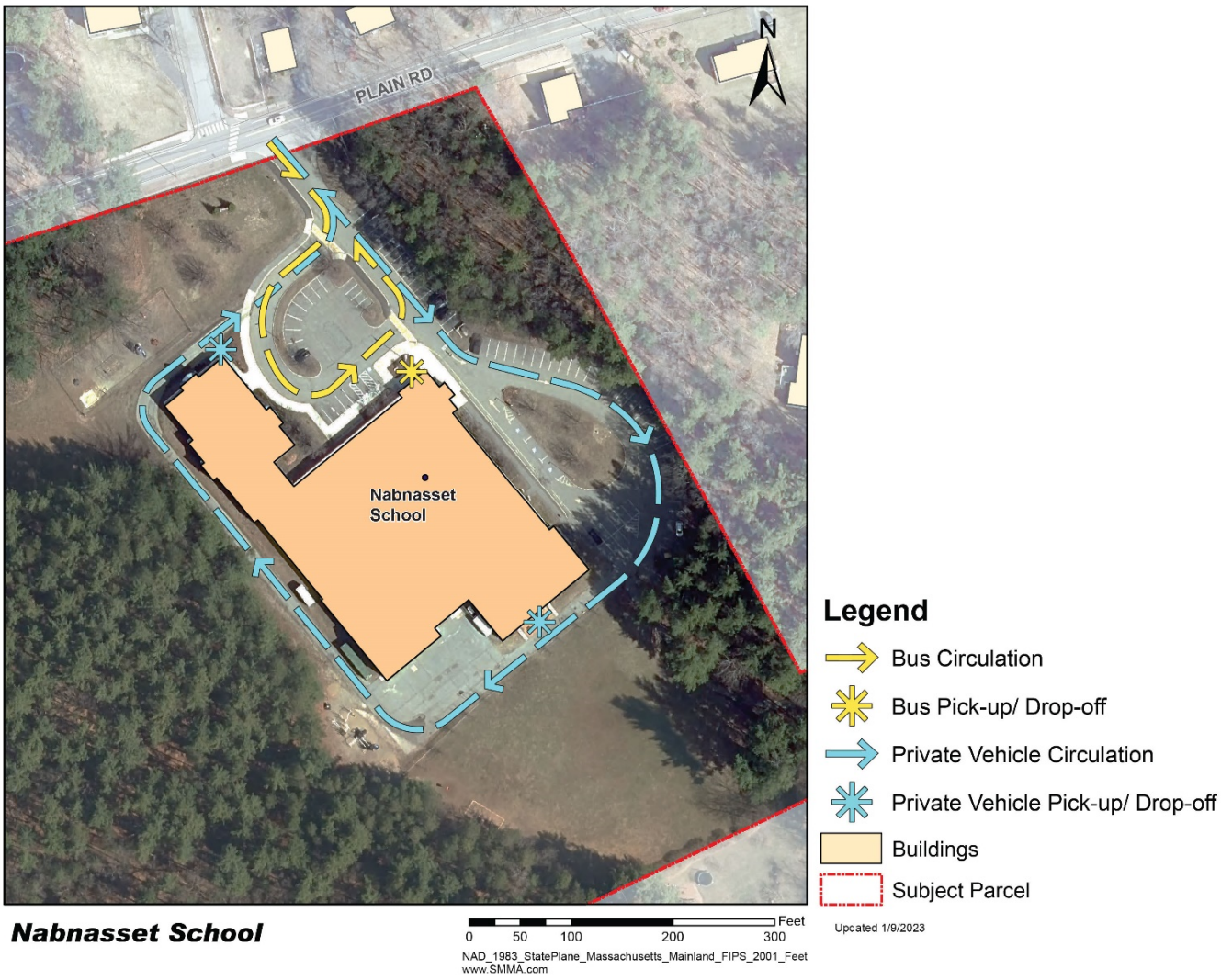
The arrival sequence for buses is to pull into the first loop at the school entry and drop-off or pick-up students from the north (main) building entrance. Private vehicles (cars) delivering students enter the site, stay to the left, and wend their way around to the second loop on the south side of the of the building, then depending on age, students will use the south entry or the northwest entry to enter the building. All buses and cars use the same main driveway.

Parking at the school is concentrated on the north side with about 35 spaces and the east side of the school with about 50 spaces. The north lot of the school appeared to have improvisational parking in unlined spaces that can create difficult maneuvering. All lots are bituminous concrete paving, with cracks and patching. Some areas of bituminous pavement have deteriorating edges and block cracking. Roadways at the school are made of bituminous concrete and are generally in good condition but there also appeared to be significant deterioration of pavement around manholes and catch basins.

Landscape Elements:

Winter conditions make assessment of trees and other landscape elements on the property difficult. The chain link fencing on the property appeared in fair/good condition. There are raised bed planters in the courtyard of the school that are maintained by school staff and parents.

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Site & Landscape Systems Data:

Land Use Type:	Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Impervious (per MassGIS)
Zoning:	Residence A
Lot Area:	21.98 AC
Topography:	Slight slope downward starting at the Southwest corner (See map for more information.)
Wetlands:	Not Present

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INFRASTRUCTURE & UTILITES

	Description	*Source*	*Comment*
Water	Town Water	T.Bennett	-
Electricity	Underground Wires	T.Bennett	-
Gas Provider	National Grid	T.Bennett	-
Oil Tank	None	T.Bennett	-
Storm Water Management	Sub-Surface precast concrete galleys	1995 Drawings	-
Sanitary	Sewer / Septic System	T.Bennett	Leach field NW of building
Irrigation	N/A	T.Bennett	-

PAVEMENTS

	Surface	**Source**	**Condition**	**Comments**
Roadways	Bituminous pavement	VI	2/3	Bit. con. is in fair condition, many edges are crumbling, there is significant cracking and patching. Pavement is failing around many of the manholes and catch basins.
Walkways	Concrete & bituminous concrete	VI	2	Concrete walkways are failing along curb lines. The bit. con. is cracking on most walkways. Most places where walkways meet concrete plazas are large margins and deep cracks. Many uneven patched bit. con. areas create a trip hazard.
Plazas	Concrete pavement	VI	3	Concrete is in fair / good condition in most plazas.
Curbs	Bituminous curbs & precast concrete curbs	VI	2/3	Some of the bituminous curbing at the school is failing. Concrete curb in fine condition, some chipping in places.

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PARKING:

	Spaces	Material	Installed	Comments
Parking Lot – North	35 (2 ADA)	Bituminous	Unknown	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Parking Lot – East	52 (2 ADA)	Bituminous	Unknown	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Accessible Parking	4	Bituminous	Unknown	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Charging Stations	N/A	-	-	-
Service / Loading Dock	-	Bituminous	-	-
Bike Racks	30 (spots)	Steel	1995(?)	3 racks, wavy shape.

SITE ACCESSIBILITY

	Material	**Code Compliance**	**Condition**	**Comments**
Curb Cut - Main Entry	Concrete	Yes	2	Curb cut at main entry is in poor condition, concrete and asphalt are crumbling; no tactile warning mat.
Curb Cut - Street	Concrete	Yes	3	Walkway from street entering site does have a curb cut and tactile warning mat. Though the crosswalk is not 90° angle to the road.
Walkways	Bituminous	Yes	2	The bit.con. walkways appear to meet compliance of slope

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Site Ramp	N/A	-	-	-
Public Street	Bituminous	-	-	Public street only has sidewalk across street, with one crosswalk from the west on Plain Road.
Main Entry	Concrete	Yes	4	Main entry is accessible and in great condition.
Secondary Entries	Bit.Con. or Concrete	Yes	3/4	All at grade doorways appear accessible.
Plazas	Concrete	Yes	3	Plazas are accessible
Courtyards	Concrete	Yes	4	One entry to courtyard is accessible and in great condition.

FIELDS

	Surface	*Source*	*Installed*	*Condition*	*Comments*
Ballfield /Flex	Natural Lawn	VI	N/A	3	Fair; ground and fence are in fair condition.
Playground - Front	Pea Gravel	VI	N/A	3	Structures are in good condition overall. Some peeling paint on talk-tubes. Pea gravel depth should be assessed for code compliance.
Playground - Rear	Pea Gravel	VI	N/A	3	Fair; Structures all appear in good general condition. There is a basketball hoop along the access drive. There are swings and a funnel ball game out along the field. Pea gravel depth should be assessed for code compliance. Snow cover prevented assessment of ground material under swings.
Field – Leach field	Grass	VI	N/A	3	Doesn't appear that too much play is happening on this field.

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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	N/A
Woodland /Forest	Present. Winter conditions make assessment difficult.
Raised Beds	Present – in Courtyard. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Comments
Site Lighting	Poles	Pole lighting on north & east side (main entrance). Small, stylized pedestrian poles at east side entrance.
Fire Hydrants	Standard	East side in parking loop.
Waste Management	Steel dumpsters	Garbage & Recycling dumpsters: east side in parking lot near service area
Retaining Walls	N/A	-
Fencing	Chain Link	Most fencing is in fair/good condition. There are a couple instances of bent posts. But fabric is intact, and members are connected.
Gates	N/A	-
Flagpole	Steel	Flagpole is in fair to good condition.

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Outdoor Classroom	Wood benches	Small arrangement of benches in woods. Wood benches are in fair to good condition.

BUS OPERATIONS

Number of Buses:	7
Bus Drop/Pick-Up Area:	North/East Entry
Parent Drop/Pick-Up Area:	North/West Entry
Signage:	Adequate

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2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings were not available to supplement the study.

Systems:

The original single-story building was constructed in 1960. The foundation was observed to use concrete walls. It is presumed there are continuous shallow spread footings at the base of the perimeter walls and isolated shallow spread footings at columns. This assumption was not verified in the field. The typical building structure consists of steel girders and secondary beam and joist framing supported by steel columns with running-bond CMU walls. The roof structure was unobservable. The steel framing was exposed in the media center. The structure observed on site was noted to be in fair and serviceable condition. Two locations in the media center exhibited cracking in the CMU walls.

An additional wing, cafeteria, and gymnasium was constructed in 1996. The foundation that was visible seemed to match that of the existing building. The vertical structure of the addition consists of steel columns with running-bond CMU walls. The steel framing is exposed in the gymnasium, cafeteria, and boiler room. The cafeteria and gymnasium have a steel roof truss framing system with secondary joist framing supported by steel columns. The roofing is metal roof deck. The boiler room roof is framed with wide-flange structural steel girders and secondary beams with fireproofing spray finish. Rectangular hollow structural steel braced frames were observed behind the cafeteria stage and in the boiler room, which is presumed to serve as the lateral system for the new portions of the building. No construction joints were seen at the connections between the original building and addition. No signs of cracking were observed in these areas.

The building exterior foundation and façade was observed. The exterior was noted to be in fair and serviceable condition.

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, presumed to have continuous shallow spread footings and isolated shallow spread footings at columns (not verified)	-	N/A
Vertical Support System:	Structural steel columns, running-bond CMU walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade	-	N/A
Upper Floor Framing Systems:	N/A	-	
Roof Framing Systems:	Structural steel girders and joist framing	-	3
Lateral Force Resisting System	Running-bond CMU walls*	Cracking observed in multiple locations in media center	3

* The existing building does not appear to have a deliberate Lateral Force Resisting System. The original structure was designed prior to 1970, which is when the Massachusetts building code first required a deliberate structural system design to resist seismic and wind loads. By default, the existing masonry walls appear to provide resistance to these lateral loads. If future building modifications are planned for this building, an evaluation of the existing structure and proposed modifications may be required to determine if lateral upgrades would be required for a future renovation.

Addition 1 (1996)

	Material	Remarks	Condition:
Foundation System	Concrete walls, presumed to have continuous shallow spread footings and isolated shallow spread footings at columns (not verified)	-	N/A
Vertical Support System:	Structural steel columns, running-bond CMU walls	-	3
Ground Floor Framing System:	Concrete slab-on-grade	-	3
Upper Floor Framing Systems:	N/A	-	-
Roof Framing Systems:	Structural steel girders and joist framing, wide-flange sloped steel trusses in gymnasium and cafeteria	-	3
Lateral Force Resisting System	Rectangular hollow structural steel braced framing, running-bond CMU walls	-	3

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2.1.3.3 Exterior Envelope Systems

Summary:

Exterior enclosures are in good condition. Windows were replaced with last major addition. Sealant joints between existing and new appear to be organic sealant and are degrading due to UV exposure and require replacement. Grades at perimeter of building appear to have raised up over the years near the cloth flashing and build of snow may create a dam condition and freeze into the wall cavity.

Existing canopies and overhangs appear to be in fair to good condition.

Wall patching noticed where louvers installed.

Main Canopy:

Main exterior canopy was added within the last ten years and is composed of steel tube framing with protective masonry piers. Metal facial wrap the perimeter of each canopy and transition to the metal standing seam roof above. Metal mesh panels have been installed over horizontal surfaces and voids to prevent birds or pests from building nests.

Typical Roof Canopy appears to be composed of exterior grade plaster board and protective coats have been impacted by moisture overtime. No control joints were installed and cracking can be found at some locations when joints might be needed.

Ancillary Canopies:

Service or Egress Entrances have plaster ceiling in varying states of repair. Exposed lintel need re-coating.

Exterior Wall Systems:

Three typical wall types compose the exterior.

The original construction appears to be brick installed over CMU and is in good condition. Copper thru-wall flashing is at the base of the wall. No weeps were present.

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With the renovation in 1995 two additional types introduced composite walls with 3-5/8" face brick and/or split faced CMU over 1-7/8" air space and anchored with wire ties to non-loadbearing CMU or water-resistant building paper (with fabric flashing at transitions), exterior gypsum on metal stud framing, filled with 6" of batt insulation. In some instances backup CMU is replaced with 6" metal stud.

Window Openings have been replaced across the building with the renovation in 1995. Aluminum framing and insulated glass units are in fair to good condition and infill with a new masonry cavity wall type below. Galvanized Fascia above window systems show degradation of coatings due to weathering over time.

Sealant installed at the perimeter of new or existing masonry has begun to crack due to UV light breakdown organic material in the sealant.

Louvers installation and removal has occurred over the years. Patched in brick can be found on the extent of the original elevations.

Weeps installed in areas of the 1995 addition area present vegetative growth. Asphalt fabric flashing used in this location appears to have liquified with exposure to sunlight and drainage may be encumbered in some locations.

Loose lintels at window opening at the gymnasium also show signs of rust and water infiltration where flashing should be located. Brick and flashing repair may be necessary.

Exterior Entrances:

Primary entrances utilize 6'-0" aluminum door openings with lever style hardware, conventional hinges, panic hardware and mechanical cylinders on the outside. The main entrance has been secured with electronic access hardware in recent years.

Ancillary Service and Egress entrances utilize hollow metal doors in hollow metal frames, with fixed door pulls or level style handles, mechanical cylinders, continuous hinges.

In some locations, services doors show signs of surface rust due to failing coating systems and exposure to weather and salt. This can be seen at the base of door frames and thresholds.

All doors have been numbered with 4" vinyl number which are tearing in some cases. The height of the characters are difficult to read from 36 feet in distance.

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Glass lites are located within all egress related doors.

Ramps and guards installed to provide egress from cafeteria do not provide required maneuvering clearances for handicap individuals. Approach to the doors handles exceeds reach requirements.

Roof Systems: The original roof was replaced with a fully adhered EPDM system over in 1995 with the addition of the new wing. In 2010 a fully adhered TPO system replaced the EPDM system over sections of the original building only. Metal standing seam roofing is located at main entrances.

The older sections of EPDM at corners and seams that are no longer properly adhered. Additional membrane has been installed over the years at corners, however joints at some locations appear to present bubbles under the membrane, indicate the presence of water at once point in time. Thru-wall flashing at the roof level has begun to pit and rust with exposure to weather. In some instances, drain covers are broken or missing.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	Snow piling up near entrances has infiltrated and eroded grout.	2
Roof Assembly:	TPO over Insulation	-	3
Roof Drains:	Cast Iron	-	3
Flashing:	Formed Metal	-	3
Canopies/Overhangs:	Painted Plaster Board	Moisture Damage from prior roof. No control joints installed.	2-3
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Organic Based Sealant at jambs has weathered.	Original Windows Replaced During Major Renovation, with . Exterior Wall Board or Metal Fascia at Head Needs to be Stripped and Recoated	3, 2
Skylights/Clerestory:	Original Skylights Infilled with Roof System.	N/A	N/A
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	-
Exterior Doors:	HM	Rusting at surface and jambs. Door Coatings starting to deteriorate.	1-2
Louvers & Vents	Coated Steel Grilles	Dents or Penetrations have degraded over time.	2
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries,	Heights vary.	2-3

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	Continuous Hinges, Thresholds Vary		
Weatherstripping and Thresholds	Silicone & Brush	-	2-3
Exterior Access Control	See Addition	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder	3
Gutters and Downspouts	Galvanized Metal	Downspouts misalign to below grade collection system.	1

Addition and/or Renovated Areas - 1

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	3-5/8" face brick and/or split faced CMU over 1-7/8" air space and anchored with wire ties to non-loadbearing CMU or water-resistant building paper (with fabric flashing at transitions), exterior gypsum on metal stud framing, filled with 6" of batt insulation.	Weeps and Pea Gravel used at base of wall to facilitate drainage from wall cavity over asphalt cloth flashing. (Citation)	2-3
Roof Assembly:	Fully Adhered EPDM Membrane and Insulation	-	1-2
Flashing:	Galvanized Metal	-	1-2
Roof Drains:	Cast Iron	-	1-2
Canopies:	Painted, Steel Tube Framing, Factory Coated, Standing Seam Roofing and Metal Fascia and Soffits	Masonry Pier Joints Weathered and Water is infiltrating. Metal mesh installed over horizontal surfaces subject to pest inhabitation.	1-2
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Organic Based Sealant at jambs has weathered.	One location in new wing, IGU has failed, cloudy.	3
Skylights/Clerestory:	N/A	-	-
Glazed Curtain Wall/Storefront	Aluminum	-	3
Exterior Doors:	Aluminum	-	
Louvers & Vents	Coated Metal	-	2-3
Exterior Door Hardware	Lever Style with Unlockable Cylinder. Continuous Hinges. Threshold Types Vary	-	3,3,2
Weatherstripping and Thresholds	Silicone & Brush	-	2-3

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Exterior Access Control	Card Access Provided at Main Entry Vestibule and Gym	-	4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	Steel	Fixed Access Ladder	3
Gutters and Downspouts	Preformed Metal Gutters	Empty at base of pier and freeze at base, expanding and deteriorating joints around the piers and oversaturating masonry.	1-2

2.1.3.4 Interior Envelope Systems

Wall Systems:

Concrete Masonry Units (CMU) compose most interior partitions. Fabric Covered Panels are utilized in some spaces like the main lobby, cafeteria, gymnasium, and music rooms to absorb sound.

Hollow metal openings are located typically above each classroom in the original section of building, containing wired glass. These systems are not rated and classroom spaces are not appropriately compartmentalized.

Sheetrock Walls (GWP) Compose the majority of walls in the addition area and are in fair to good condition.

Locker end walls are enclosed composed of wood and painted. The walls pose a fire hazard with flammable materials exposed to pathways of egressing out of the building.

Artwork and poster boards exceed limits for flammable materials within a means of egress. Entry vestibules leading into classrooms often locate furniture outside of classrooms that encumber movement through corridors within the original sections of the building.

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. All doors are equipped with functioning closers.

Corridor/Egress Entrances: HM Doors and Frames, with wire glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens. Panic bar enclosure end is missing.

Library Egress Doors: The main entrance of the library is composed a pair of wood doors in HM Frames, continuous hinges, operable closures, rim devices, and fixed door pulls with mechanical cylinders. The doors feature surface mounted pins that interfere with the operation of the door for handicap individuals.

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NC – Not to Code

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, classrooms, small group educational spaces, music rooms, and other ancillary spaces, like storage rooms. The condition varies depending on location. Floor system is cracking at the floor slab at each entrance leading into the cafeteria.

Carpet Tile (CPT-T) is also utilized in some classrooms and is in fair condition.

Minor wax staining can be seen between spaces. Shrinking cracking from the slabs haven transferred up into some sections of VCT, in spaces like the main lobby. VCT outside exterior doors shows signs of cracking due to service good moving into and out of the building.

VCT has been stained due to water intrusion at along the building expansion joint.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

Rubber Floor and Rubber Treads (RF/RSN) have been installed over the ramp serve the stage.

Synthetic Rubber Athletic Flooring (SAF) has been installed in the gymnasium and is in fair to good condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout classrooms, administrative spaces, music spaces, cafeteria, kitchen, and ancillary support spaces, like storage rooms. Ceiling tiles are replaced on a semester basis. Ceiling tiles are in extremely poor condition due to heating and ventilation issue throughout the building.

In some original classrooms, an original metal, perforated panel system does not allow for flexibility of repairs and installation of equipment in classrooms and does not provide appropriate acoustical performance.

Throughout the corridors ceiling are installed lower than borrow lite openings that share light into the corridors.

In areas where repeated tile changing has occurred, suspension framing is falling apart.

Gypsum Soffits (GWB) are in spaces that make use of high ceilings to support music, assembly, or other functions, including concealment of equipment or piping. Soffits are also located in the entry vestibules.

Exposed to Structure (ETS) can be seen in the library, gymnasium, and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to block light.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU	2-3	VCT &/or Carpet	2-3 or 2	ACP or Metal Ceiling	1-2 or 2
Small Group Rooms:	CMU &/or GWB	3	VCT	2-3	ACP	1-3
Gymnasium:	CMU	3	SAF	2	ETS, PTD	3
Cafeteria:	CMU & GWB	3	VCT	2-3	ACP, GWB	3, 2-3
Library:	GWB	2-3	CPT-T	2-3	ETS, PTD	3
Music Room	CMU & GWB	3	CPT-T	2-3	ACP/GWB	2,3
Entry Vestibules:	CMU	3	PT, MAT	2-3	GWB	2-3
Corridors:	CMU or GWB	3	VCT	2	ACP	1-3
Public Restrooms:	CMU or GWB, CT	3	CT	3	GWB	2-3
Single Occupant Bathrooms:	CMU	3	PTD Conc.	3	GWB	2-3

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N/A – Not Applicable/Missing
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Offices:	CMU &/or GWB	3	CPT-T	3	ACP	3
Nurse:	GWB	3	VCT	3	ACP	3
Ancillary Admin Space:	GWB	3	CPT-T	3	ACP	3
Kitchen Cooking/Prep Area:	GWB	3	QT	3	ACP	3
Kitchen Storage:	CMU or GWB	3	QT	3	ACP	2-3
Shipping/Receiving:	CMU	3	Conc.	3	GWB	2-3
Mechanical Room:	CMU	3	Conc.	3	ETS	2-3

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Classroom/Admin:	WD	Yes	3’-0”		Yes	3
Door – Service:	HM	-	3’-0”	2 HR	Yes	2
Door – Corridor/Egress:	HM	Yes	6’-0”		Yes	3

Addition - 1995

	Wall Material:	**Condition:**	**Floor Material:**	**Condition:**	**Ceiling Material:**	**Condition:**
Typical Classrooms:	GMB	3	VCT	3	ACP	2-3
Small Group Rooms:	GWB	3	VCT	3	ACP	2-3
Bathrooms	GMB & CT	3	CT	2	ACP	2
Entry Vestibules:	GWB	2	MAT	2	ACP	2
Corridors:	GWB & CMU	2-3	VCT	3	ACP	2-3

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Classroom/Admin	WD	Yes	3’-0”	N	Yes	3
Door - Corridor:	HM	Yes	6’-0”	N	Yes	3
Door – Corridor/Egress:	HM	Yes	6’-0”		Yes	3

Abbreviations:

CMU	*Concrete Masonry Unit*	CT	*Ceramic Tile*
BR	*Facebrick*	PT	*Porcelain Tile*
ALUM	*Aluminum*	CPT-BL	*Carpet – Broadloam*
HM	*Hollow Metal*	CPT-T	*Carpet - Tile*
VCT	*Vinyl Composition Tile*	TZ	*Terrazzo*
ACP	*Acoustic Tile Ceiling*	VT	*Vinyl Treads*
GWB	*Gypsum Sheathing*	PL	*Plaster*
SCFT	*Structural Clay Facing Tile*	WD	*Wood*
*	*Suspected Asbestos Containing Material, See Attached Report*		

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 14, 2022, and review of original construction documents and As-Built drawings dated March 19, 1963 and August 30, 1995. The building was built in 1960 and additions in 1963 and 1996. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which as visible.

Services:

The incoming 6" water service is a combination domestic water service and fire service, entering the building in the mechanical-electric room. Domestic cold water for the facility is fed from a single 3-inch main water service. The existing 3" water meter and main shut-off valves are in good condition. The existing water service does not include a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original to the 1960 and 1963 building, in fair to poor condition, and has outlived/exceeded its useful life and it is not expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition. Some exposed pipes are not insulated. Some PVC jackets are missing. Piping and valves installed in the 1996 addition are assumed to be in fair to good condition and expected to last about 25 more years before it will exhibit widespread problems.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by A.O. Smith. The water heater is located in the boiler room, and it is in good condition. There are two (2) circulation pumps, one is in fair condition and the other one is in poor condition. The mixing valves and pressure reducing valve are in poor condition. There is no expansion tank for hot water system. There is no condensate neutralizing unit. Most domestic hot water

piping is not visible. All piping, valves and risers appear and assumed to be original to the 1960 and 1963 building, in fair to poor condition, and has outlived/exceeded its useful life and it is not

expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition and some exposed pipes are not insulated. Some PVC jackets are missing. Piping and valves installed in the 1996 addition are assumed to be in fair to good condition and expected to last about 25 more years before it will exhibit widespread problems.

Natural Gas

The existing 5" natural gas system enters the building through the outdoor storage room. The existing natural gas system includes a gas meter, valves, and gas regulator. The 4" gas piping is distributed for the gas boilers and the 3" gas piping is distributed for the water heater and kitchen equipment. All piping and valves appear to be original, in fair to poor condition, and it is not expected to last a few more years before it will exhibit problems. Some gas piping show signs of corrosion.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in poor condition due to its age. Sanitary drainage piping is original to the 1960 and 1963 building, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure. Sanitary drainage piping installed in the 1996 addition is assumed to be in fair to good condition and expected to last about 25 more years before it will exhibit widespread problems.

All kitchen equipment is original and in fair to good condition. The kitchen's triple pot sink is provided with grease trap that is installed below slab and therefore could not be observed. The waste piping below the triple pot sink is original and in poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible and it is expected to be in poor condition due to its age. Storm drainage piping is original to the 1960 and 1963 building, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure. Storm drainage piping installed in the 1996 addition is assumed to be in fair to good condition and expected to last about 25 more years before it will exhibit widespread problems. The existing roof drains with cast iron dome strainers are all original, in fair condition. There are missing dome strainers, and some are broken.

Per verbal reports, there are storm piping issues in the kindergarten area.

Per verbal reports, there are plumbing pipes in the closet near the gym that have leak issues.

Fixtures:

All existing plumbing fixtures are original and do not meet current accessibility and water conservation requirements. The plumbing fixtures are in fair to poor condition.

Per field measurements, plumbing fixtures mounting heights are the following:

WC = 10" from the finished floor to the top of the seat.

Sinks = 29-1/2" from the finished floor.

Women's and Men's Rooms near main office:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair condition. The mounting heights are 19" from the finished floor to the top of the seat.

Lavatories are counter-type, vitreous china with hot and cold water faucets that are manually operated, non-ADA compliant, in fair condition. The pipes below the lavatories are not insulated. Offset tailpiece drains are not installed. Mounting heights are 32" from the finished floor. The faucet in the men's Room was leaking at the time of the site walk through.

Girls Toilet Room (near classroom 17):

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair condition. The mounting heights are 17-3/4" and 16" from the finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with self-closing manual push down with hot and cold water faucets, in fair condition. Lavatories are non-ADA compliant. Pipes below the lavatories are not insulated. The mounting heights are 29-3/4" from the finished floor.

Per verbal reports, students have a hard time reaching for the faucets due to the length of the lavatories.

Kindergarten Room 13 Toilet Room:

Water Closet is floor mounted, vitreous china with manual operated flush valves, in fair condition. The mounting height is 11-1/2" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with self-closing manual push down with hot and cold water faucet, in fair condition. Lavatory is non-ADA compliant. Pipes below the lavatory are not insulated. The mounting height is 29-1/2" from the finished floor.

Women's Toilet Room (near teacher's dining) and kitchen staff toilet room:

Water Closets are wall mounted, vitreous china with manual operated flush valves, in fair condition. The mounting heights are 18" and 17-1/2" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with manual hot and cold water faucet, in fair condition. Pipes below the lavatories are not insulated. The mounting heights are 32" and 31-1/4" from the finished floor.

Nurse's Suite Toilet Room:

Water Closet is wall mounted, vitreous china with manual operated flush valves, in fair condition. The mounting height is 17-1/2" from the finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with manual hot and cold water faucet, in fair condition. Pipes below the lavatory are not insulated. The mounting height is 29" from the finished floor.

Sink is present in every classroom.

Kindergarten Rooms 10 and 13: Sinks are stainless steel, non-ADA compliant with hot and cold water handles and gooseneck faucets, and deck mounted bubblers, in fair condition.

Classroom 17 and Music Room 29: Sinks are stainless steel, non-ADA compliant with hot and cold water handles and gooseneck faucets, and deck mounted bubblers, in fair condition.

Art Room 30: There are two (2) sinks in this room. Sinks are stainless steel, non-ADA compliant with hot and cold water handles and gooseneck faucets, in fair condition. Plaster traps were installed below the sinks. One of the faucets is leaking at the time of site walk through.

Sinks in the Nurse's Suite and Teacher's Dining are non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair condition.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

About 70% of the existing bubblers in the classrooms are not operational.

Miscellaneous Fixtures:

The drinking fountains installed within the building are single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition.

There is no eyewash unit installed in the Nurse's Suite.

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

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1 – Poor/Fair – Failure Expected
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N/A – Not Applicable/Missing
NC – Not to Code

Per original construction documents dated March 19, 1963 and August 30, 1995, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

Existing hose bibbs have no atmospheric vacuum breakers. Existing wall hydrants are wall mounted, non-freeze type.

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	3”	3”	No	N/A	Copper	City	62	1 (Due to age)
Gas Service:	5”	Not Accessible	Yes	N/A	Black Steel	Gas company	62	1 (Due to age)

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	1 & 3	Mineral-fiber	1 & 3	1 (Due to age)
Domestic Hot Water:	Copper	1 & 3	Mineral-fiber	1 & 3	1 (Due to age)
Sanitary Waste & Vent:	Cast Iron	1 & 3	N/A	N/A	1 (Due to age)
Storm Drainage:	Cast Iron	1 & 3	Mineral-fiber	1 & 3	1 (Due to age)
Gas:	Black Steel	1 & 3	N/A	N/A	1 (Due to age)
Non-Potable (Lab) CW:	N/A	N/A	N/A	N/A	-
Non-Potable (Lab) HW:	N/A	N/A	N/A	N/A	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	2	N/A	N/A	Due to age
Tempered Water:	N/A	N/A	N/A	N/A	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Tank-type/Gas-fired	2	4	-

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Sanitary Ejector Pump:	N/A	N/A	N/A	-
Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	More than 20 years	2	Due to age

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall and floor mount	See Above	No	2	Due to age
Urinal:	Wall mount	See Above	No	2	Due to age
Lavatory:	Wall and counter	See Above	No	2	Due to age
Drinking Fountain/Water Cooler:	Wall mount	See Above	No	4	Recently installed
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	N/A	-	N/A	N/A	-
Classroom Drinking Fountain: (Bubblers)	Deck mount	See Above	No	3	-
Mop Sink:	Floor	Janitor's Closets	N/A	2	Due to age
Showers:	N/A	-	N/A	N/A	-

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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Miscellaneous Fixtures	**Type**
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted, non-freeze
Floor Drain:	Floor mounted, Type varies by location.
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 14, 2022, and review of As-Built drawings dated February 23, 1996. The building was built in 1960 and additions in 1963 and 1996.

Services:

The incoming 6" water service is a combination fire service and domestic water service, entering the building in the mechanical-electric room. The existing 6" fire service includes a double check valve assembly, supervised O.S. Y gate valves, fire protection risers with wet alarm valves, flow switch, sprinkler main drain, 4 inch main from existing fire department connection, in good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility in 1995. Existing sprinkler head types are sidewall, recessed pendant and upright sprinkler heads. The wet sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 25 more years before it will exhibit widespread problems. Some pipes are exposed but majority is installed above the ceiling.

The fire department connection is a Siamese type located outside of the mechanical-electric room, in good condition.

Corridors, Gym Storage, outside of Classrooms 12 & 13:
Some recessed pendent sprinkler heads are installed close to the surface mounted light fixtures. The sprinklers' spray pattern will be obstructed by the surface mounted light fixtures. Not in compliance with NFPA-13 requirements.

Gym:
There is an HVAC unit that is more than 4 feet wide that is not protected with sprinkler head below it. Not in compliance with NFPA-13 requirements.

Outdoor Storage adjacent to the boiler room:
The installed upright and pendant sprinkler heads is not adequate protection for this room with HVAC ductwork more than 4 feet wide.

There is no sprinkler head in the vestibule adjacent to the water/fire service room.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Electric Room adjacent to the water/fire service room:
There are no sprinkler heads in this room. Existing electrical panels in this room are not emergency panels.

Water/Fire Service Room: There are no sprinkler heads in this room. This room is not a 2-hour rated room. The pipe material between the check valve and the fire department connection is a black steel pipe.
The kitchen hood has ansul fire suppression system.

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	6”	Yes/DCVA	Epoxy Coated Cast Iron	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Yes	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout except in a few areas.	Recessed Pendent, Upright and Sidewall	Chrome Plated and Natural Brass	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

The HVAC systems, distribution and equipment are generally in good shape, requiring only normal maintenance.

Systems:

There are two boilers which provide heating hot water for the building. Two hot water pumps, one and a standby, distribute hot water throughout the building. There is no chemical water treatment in the hot water system. The hot water system does not have glycol, subjecting the hot water coils and piping at the rooftop units to potential freezing.

The building is primarily heated and ventilated only. The *Library* and *Offices* have dedicated rooftop units with DX cooling, original to the building. *The Kitchen, Cafeteria, Gym,* and two corridors and six remedial/support spaces are served by four dedicated H&V units on the roof. All other classrooms are served by unit ventilators.

The *Gym* H&V unit is noisy and typically turned off during class.

The *Kitchen* and *Cafeteria* H&V units are noisy and typically turned off during occupied periods.

The *IDF/Server* room is not air conditioned.

Many classroom windows were open during the walk through even though it was a cold December day, and the heat was on. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

It was reported that all exhaust fans were replaced when the new roof was installed.

The building has a Johnson Controls DDC system but there is no associated operator workstation for remote monitoring and control.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	Gas	Boiler	Weil-McLean	2012	3
Heating Equipment #2:	Gas	Boiler	Burnham	2007	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	Two (2) Base mounted end suction pumps	Taco	1995	3
Cooling Distribution Equipment:	NA			
Air Distribution Equipment:	Two (2) RTU's with DX cooling serving the Offices and Library.	Aaon	1995	3
	Four (4) H&V units serving the Kitchen, Cafeteria, Gym, and two corridors and six remedial/support spaces	McQuay	1995	3

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	Unit ventilators	Refer to Controls	Herman Nelson	1995	3
Science Classrooms:	NA				
Art Classrooms:	Unit ventilators	Refer to Controls	Herman Nelson	1995	3
Music Classroom:	Unit ventilator-horizontal & ducted	Refer to Controls	Herman Nelson	1995	3
Offices:	Constant volume/reheat heating & cooling (AC-1) and finned tube radiation	Refer to Controls	See Distribution	See Distribution	See Distribution
Library:	Constant volume heating & cooling (AC-2) and finned tube radiation	Refer to Controls	See Distribution	See Distribution	See Distribution
Auditorium:	NA				
Cafeteria:	Constant volume heating & ventilation (HV-2), ceiling	Refer to Controls	See Distribution	See Distribution	See Distribution

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

	fans and finned tube radiation				
Teacher Dining:	Ducted CUH with outside air	Refer to Controls	N/A	1995	3
Gymnasium:	Constant volume heating & ventilation (HV-3)	Refer to Controls	See Distribution	See Distribution	See Distribution
Multipurpose Room:	NA				
Kitchen:	Constant volume heating & ventilation (HV-1)	Refer to Controls	See Distribution	See Distribution	See Distribution
Corridor & (4) SPED:	Constant volume heating & ventilation and convector/ finned tube radiation	Refer to Controls	See Distribution	See Distribution	See Distribution
Corridors:	Limited ventilation air	-	-	-	-
Toilets:	Exhaust & convector/CUH	Refer to Controls	N/A	1995	3
Locker Rooms:	NA				

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Upblast exhaust fan serving hoods	N/A	1995	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	DDC	Johnson	1995	2

Notes:

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution system are in good operational condition.

Services:

Electrical – National Grid. Initiates at the existing street utility poles and extend underground towards the school building. Electrical service terminates at the outdoor pad-mounted utility transformer. No issues with services were reported.

Telephone – Verizon. Initiates at the existing street utility poles and extend underground towards the school building.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is pedestal-mounted adjacent to the transformer. Transformer appears in good operational condition. No specific issues were reported.

Generator:

The outdoor 60kW 120/208v 3ph 4w gas-fired emergency generator, by Kohler is reported to be about 10 years old. It appears in good operational condition. The generator supports boilers, refrigeration equipment, security and phone systems, and a few dedicated lights via its ATS, located in the boiler room.

Distribution System:

The utility transformer's secondary feeder is terminated in 800 Amp 120/208v 3 phase 4 wire Main Disconnect switch manufactured by Square D. It feeds the 800 Amp 120/208v 3 phase 4 wire Main Distribution panel. Both are in the Main Electric room, in good operational condition. Power from the Main Distribution panel is distributed throughout the building via four "original" and four "newer" (added during the 1995 building addition) panels. The "original" panels are in fair operational condition, but beyond their useful life expectancy and should be replaced with associated power feeders. The library panel (from "original") was observed

blocked by permanent shelves with no access to it. The "newer" panels were observed in good operational condition.

The quantity of receptacles in various spaces appear to be adequate for the respective space programs. A few non-GFI receptacles near sinks were observed in the kitchen and the original building area classrooms – those shall be replaced with GFI type.

Lighting Systems:

Exterior lighting:

All original HID pole-mounted and most of wall-mounted lights were replaced with LED type. Overall, the existing exterior lights appear in good operational condition and provide adequate illumination. A few "older" lights were observed too, assumed to be operational too. All exterior lights are automatically controlled by a dedicated time clock and photocell.

Interior lighting:

Overall, lighting fixtures installed throughout the building are in fair operational condition. Classrooms in the original building area have "older" 4ft long linear fluorescent strip lights. They appear dated, non-dimmable and not of energy efficient type, but in fair operational condition. Classrooms in the 1995 building addition area have 2'x4' parabolic troffers with T8 fluorescent lamps. They appear in good operational condition, but non-dimmable and not of energy efficient type. Bathrooms have wall-mounted linear fluorescent lights, and the lighting illumination here appears inadequate. Most of the office spaces and corridors have 4' long wraparounds with T8 lamps, in fair operational condition. The kitchen has 2'x4' lensed fluorescent troffers. Gym and Cafeteria lighting systems were recently upgraded with lighting fixtures containing T5 fluorescent lamps. The cafeteria's platform area is equipped with pendant cylinders and illumination here appears inadequate.

In some areas a few dedicated "NL" (Night Lights) stay "on" at all times in, but their illumination is low and an additional "NL" lights would be beneficial.

In general, lighting illumination levels are adequate, except for a few bathrooms as noted above.

Dedicated emergency egress lights and exit signs have integral backup batteries. In addition, a few emergency battery units with built-in light heads were observed too.

Lighting controls:

Occupancy sensors were not observed. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched "on/off". There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures can't be dimmed down during sufficient natural daylight times.

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, all appear to be in good operational condition. There is no lightning protection/prevention system.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	120/208	3ph 4w	1995	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad-mounted	National Grid	Outdoor	1995	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Outdoor/ 60KW	Natural Gas	3ph 4 wire	Recent, about 10yrs old	4

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Distribution panel	120/208v 3ph 4w	Main Electric room	1995	4
	Panelboards - a few “older” & a few “newer” under 1995 renovation	120/208 3ph 4w	Throughout	1960 & 1995	3 & 4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	4
	Offices:	Standard	1ph/120v	Grounded	4
	Library:	Standard	1ph/120v	Grounded	4
	Gymnasium:	Standard	1ph/120v	Grounded	4
	Cafeteria:	Standard	1ph/120v	Grounded	4
	Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
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N/A – Not Applicable/Missing
NC – Not to Code

Interior Light Fixtures:	*Typical Classroom*	1'x4' wraparound & 2'x4' parabolic/ T8 fluorescent	Surface & Recessed	1960 & 1995	3 & 4
	Offices:	1'x4' wraparound/ T8 fluorescent	Surface	1995	4
	Library:	8ft long linear sections/ T8 fluorescent	Pendant	1995	4
	Gymnasium:	2'x4' LED lensed	Pendant	Recent upgrade	4
	Cafeteria:	2'x4' LED lensed	Pendant	Recent upgrade	4
	Corridor:	1'x4' wraparound/ T8 fluorescent	Surface	1995	3

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Parking lot, access road and perimeter walls	Recent upgraded of LED's and a few "older" wall-mounted	Various	Various	4

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Lights with integral backup batteries and emergency battery units with light heads	Various	Various	1995	4

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	4
	FA signaling	Simplex	Various	1995	4

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
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N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

In general, the existing fire alarm system is in good operational condition.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable Simplex model 4100. The radio box is manufactured by Digitize. Both are in the main entrance vestibule.

Devices:

Outdoor key (knox) box at the main entrance door. Smoke detectors, pull stations, horn/strobes, strobe only units, in adequate acceptable installation concept.

Recently added BDA system is in on-going programming. A remote annunciator is in the main entrance vestibule.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Simplex 4100	Horn/strobes and Strobes	1995	4

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	Strobes	None	1995	4
Offices:	None	Horn/strobes	None	1995	4
Gymnasium:	Smoke	Horn/strobes	Yes	1995	4
Cafeteria:	None	Horn/strobes	Yes	1995	4
Lobby/Corridor	Smoke	Horn/strobes	Yes	1995	4
Kitchen:	None	Horn/strobe	None	1995	4
Toilets:	None	Strobe	None	1995	4
Basements:	N/A	N/A	N/A	N/A	N/A

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2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV systems – Cafeteria local AV systems is passed its useful life expectancy. Portable local AV system in Gymnasium. Large flat panel display in gymnasium.

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

PUBLIC ADDRESS SYSTEMS	**Device Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**

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Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	2
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	2
Console:	Analog PA	Roland	Rack	20+ years	2

DATA SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

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2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. Appropriate signage has been provided at doorways with braille.

The ramp added to the cafeteria meets minimum width requirements, however rail extension or edge protection has not been provided.

The elevator can lift a person in a normal wheelchair. Class of Elevator is unknown.

Classroom Spaces:

Classroom Plumbing Fixtures: The original building incorporate sinks that are not accessible.

Typical kindergarten classroom spaces in the addition wing feature sinks for student use and are mounted at 24" AFF within a counter.

Drinking fountains at classroom sinks are not functional.

Markerboards and Tackboards are mounted 40" to bottom of writing and display surfaces used within the classroom spaces. This may be high for some students. Side reach for individuals in a wheelchair is limited to 48".

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathroom meets the requirements of students in Pre-Kindergarten through Sixth Grade. (According to 521 CMR MAAB). Water Closets installed within Girls and Boys toilet rooms are mounted 15 inches AFF to top of seat. Lavatories are mounted 30 inches AFF to the rim. Toilets in Pre-Kindergarten appropriately mounted 11 ½" AFF, with lavatories at 30 inches AFF.

Water Closets in adult, single occupant bathroom are mounted 18" AFF to top seat. Lavatories are installed 34" AFF to rim. These spaces are appropriately sized for use by adults.

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Toilet compartments and fixtures maintain appropriate maneuvering clearances and clear spaces. Grab bars and toilet accessories are appropriate mounted for support of students or adults.

Water Fountains are located in close proximity of students on each floor and have recently been updated to provide bottle filling capability.

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	7'-8"	-	-	-
Exterior/Egress Doors Width:	6'-0"	ALUM or HM	Level Style or Fixed Pull	3
Signage:	Braille Present	Plastic	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	3
Offices:	3'-0"	WD	Lever Style	3
Library:	6'-0"	WD	Level Style	3
Stage:	3'-0"	WD	Fixed Pull Style	3
Gymnasium:	3'-0"	WD	Fixed Pull Style	3
Cafeteria:	3'-0"	WD	Fixed Pull Style	3
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Stairs:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
N/A				

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
N/A				

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RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
Ramp 1	36”	WD	34/Not Applicable	1

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	Yes	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	Protusion into corridors exceed 4”.
Controls/Switches	Yes	-
Signage	Yes	Braille signage available at all doors.

SMMA

2.1 School Facilities Evaluation Report

2.1.1 GENERAL INFORMATION

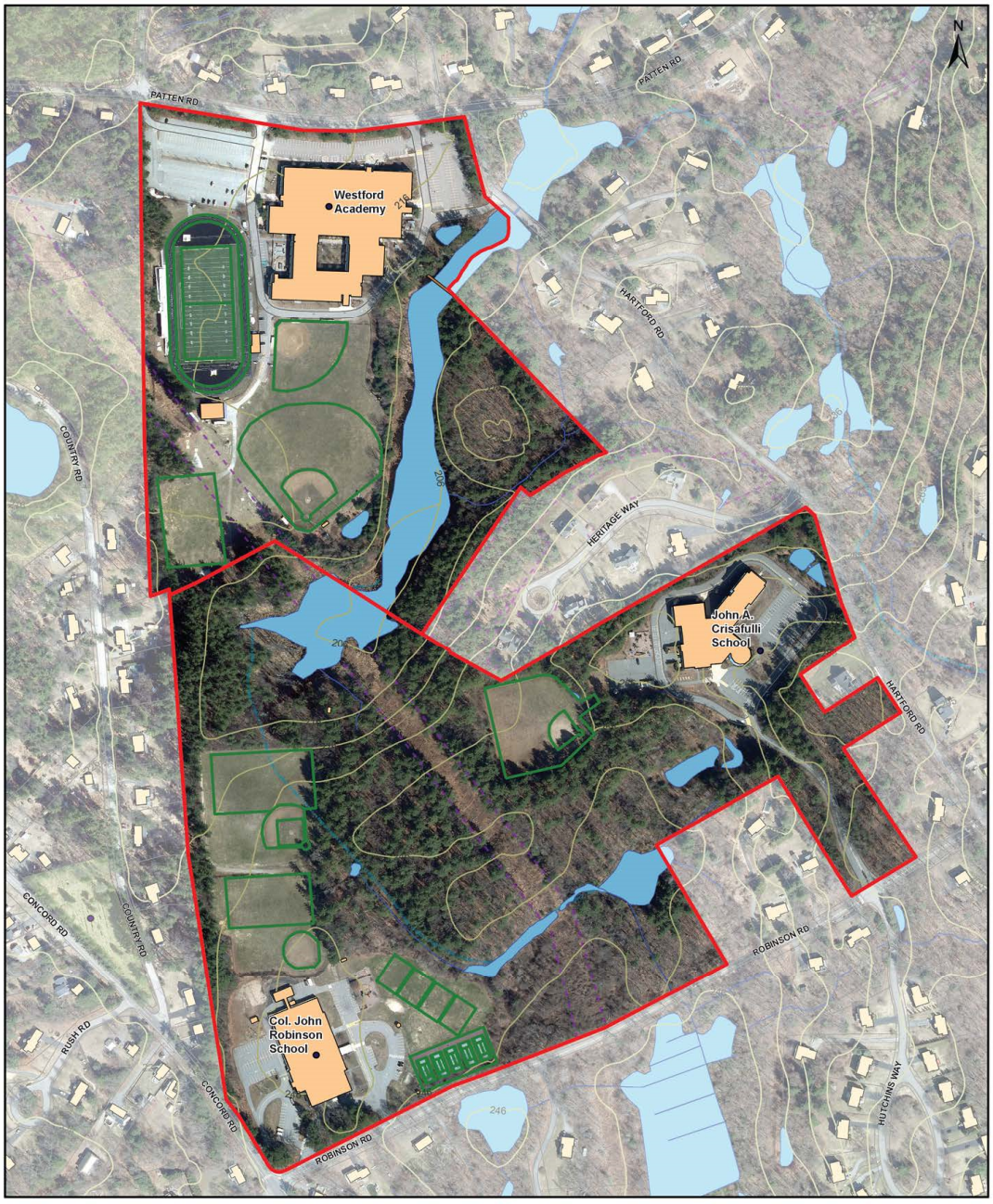
Name of School:	Robinson Elementary School	
Address:	60 Concord Road, Westford MA	
Name of Owner:	Town of Westford	
Grade Levels Served:	PK-2	
Student Population:	340	
Years in Service:	54	
Year Constructed:	1969	*Designer:* Korslund LeNormand & Quann, Inc
Additions:	1989 Gym Enclosure	*Designer:* Unknown
	1999 Portable Classroom	*Designer:* Unknown
Existing Drawings:	1968	

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2.1.2 **CONSTRUCTION CLASSIFICATION DATA:**

Construction Type:	2B Non-Combustible Protected (State Building Code)
Original Building:	2B Non-Combustible Protected
Occupancy Group:	E – Educational (State Building Code)
Total:	55,836

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Westford Academy, John A. Crisafulli School & Col. John Robinson School

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 5, 2022. The day was overcast, and cold. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Colonel John Robinson School is located centrally in the western portion of Westford, north of Interstate 495. The 68.8-acre parcel is shared with Crisafulli School and is adjacent to the Westford Academy parcel; walking paths connect the three schools. The school has multiple play areas and multiple parking lots. Due to active construction on the grounds, arrival at the school was confusing and finding the front door was initially difficult. Though there is a covered walkway at the main entrance, there are additional porticos around the building that may confuse the arrival sequence. The site elements are overall in a fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings

The playground at the front of the school was undergoing complete replacement during the December site visit. This construction was disrupting the normal play areas of the school. However, it appeared to have insignificant effect on the day-to-day operations of student arrival and departure. There were comments made that deliveries, related to day-to-day operation of the school and the construction, can be very disruptive; however, this is not a daily occurrence.

Site Accessibility and Pedestrian Pathways

Site accessibility regarding walkway slopes and accessible parking spaces appeared compliant. Accessible parking spaces are in each parking area. Improvements including ramps and alternative routes have been made over time, and the new playground will most likely add a level of accessibility that is not achieved in the current play area. Most exterior doors appear accessible or have an alternate route in the vicinity. The loading dock does not have a ramp for accessibility.

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School walkways are bituminous concrete with plaza areas made of concrete pavement. The bituminous walkways are in fine/poor condition, especially in areas that meet concrete plazas. There is raveling, linear cracking, and edges into lawn are deteriorating. Most of the bituminous curbing on the site has failed and is raveling.

Vehicular Traffic

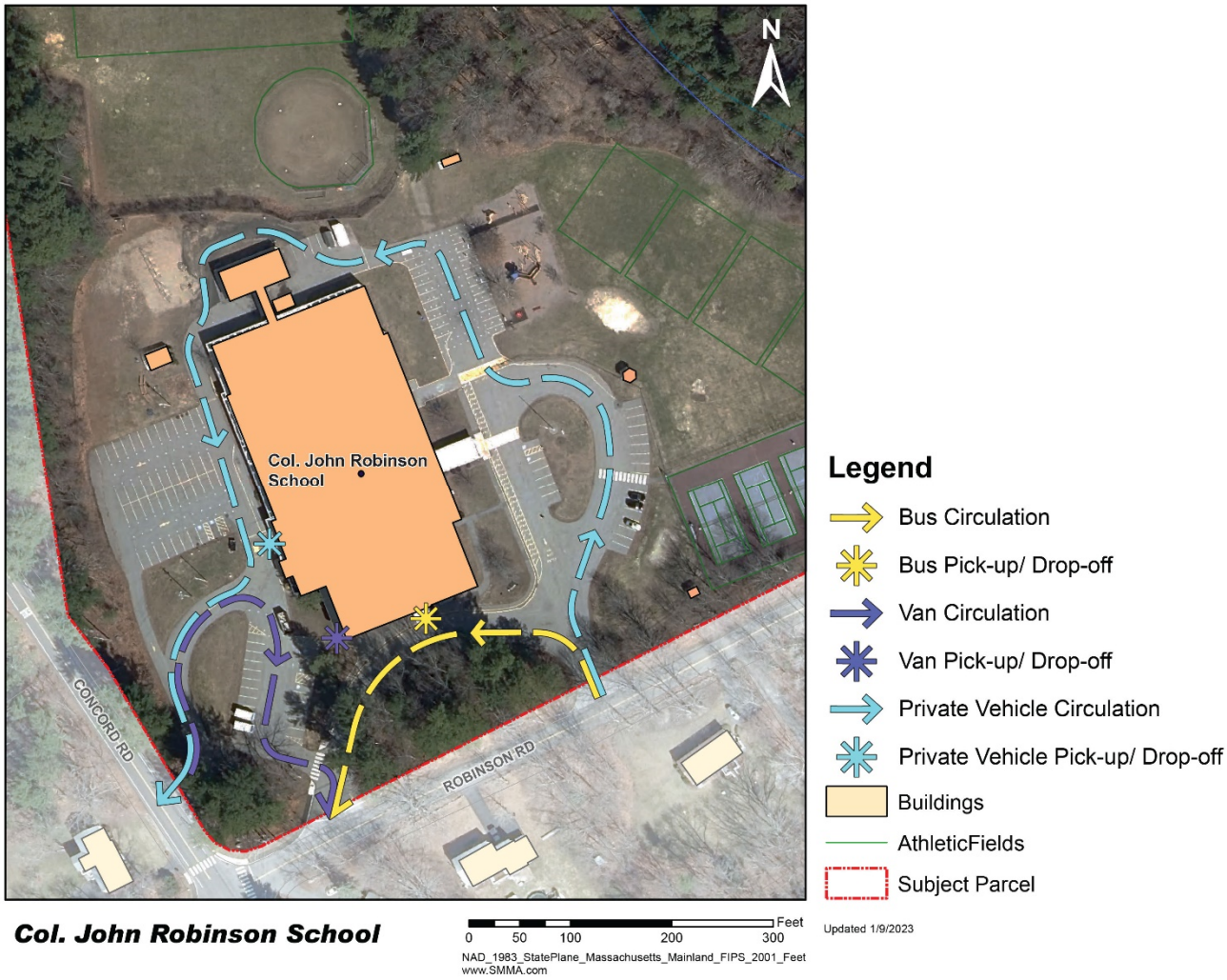
The arrival sequence for buses is to pull into the eastern most entry on Robinson Road and immediately turn left into the southern driveway loop and drop-off or pick-up students from the south building entrance. Buses then leave the site from the western exit on Robinson Road. Private vehicles (cars) delivering students enter through the same eastern curb cut on Robinson Road; however, they stay to the right and wend their way through the parking lots around the back of the building to the west building entrance. Once students have been dropped-off or picked-up, cars continue to stay right and exit out the Concord Road driveway. Vans enter the school from the Concord Road drive, stay to the right and drop-off or pick-up at the accessible parking in the south-western most parking lot, then continue out the western exit on Robinson Road. Teachers use the Concord Road drive to enter and exit the site.

Parking at the school is concentrated on the west side, with visitors and overflow parking on the east side. The northwest parking lot has approximately 40 spaces and the southwest lot has about 20 spaces that are primarily used by faculty staff. The east parking lots are under construction but currently serve as visitor parking, with around 20 spaces. All parking lots are bituminous concrete, with cracks and patching. Some areas of bituminous pavement have deteriorating edges and block cracking. They are suitable for parking cars, but the lots on the east side of the school used for play should be assessed for trip hazard areas once the playground construction is complete. Roadways at the school are made of bituminous concrete and crushed stone and are generally in fair condition except for the stone path that extends around the back of the school. This stone path area has many large potholes.

Landscape Elements

Winter conditions make assessment of trees and other landscape elements on the property difficult. Many areas of fencing at the perimeter of the school are in poor condition. Vine growth, tree falls, and vandalization have resulted in collapsed or angled fencing and openings in the mesh.

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Col. John Robinson School

Site & Landscape Systems Data:

Land Use Type:	Impervious, Palustrine Emergent Wetland, Palustrine Forested Wetland, Grassland, Evergreen Forest, Developed Open Space, Deciduous Forest, Bare Land. (per MassGIS)
Zoning:	Residence A
Lot Area:	68.8 AC (shared with Crisafulli School)
Topography:	Relatively flat immediately around Robinson School, topography falls behind the school down to fields and out to Robinson and Concord Roads; rising to the east toward Crisafulli School. (See map for more information.)
Wetlands:	Present

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INFRASTRUCTURE & UTILITES

	Description	***Source***	***Comments***
Water	Town Water	M.Ricard	
Electricity	Overhead Wires	M.Ricard	
Gas Provider	National Grid	M.Ricard	
Oil Tank	Underground	M.Ricard	Installed +/- 2012. Used as reserve for outages.
Storm Water Management	2 Sub-Surface Detention Basins	M.Ricard	
Sanitary	Wastewater Treatment Plant at High School	M.Ricard	
Irrigation	None	M.Ricard	

**If septic system – verify if aggregate systems applies*

PAVEMENTS

	Surface	**Source**	**Condition**	**Comments**
Roadways	Bituminous pavement and some crushed stone	VI	2/3	Bit. con. is in fair/poor condition, many edges are crumbling, there is significant cracking and patching for access to utilities. Crushed stone areas have pits and potholes.
Walkways	Mostly bituminous concrete	VI	2/3	Bit. con. is cracking along most walkways. Most places where walkways meet concrete plazas are large margins and deep cracks.
Plazas	Concrete pavement	VI	3	Concrete is in fair / good condition in most places.
Curbs	Bituminous curbs	VI	1	Much of the bituminous curbing at the school is failing.

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PARKING

	Spaces	Material	Condition	Comments
Parking Lot – East/North	22	Bituminous	1	Partially under construction, visible cracking and fading paint. Mostly used for play. Should be resurfaced to play ball sports.
Parking Lot – East/South	23 (2 ADA)	Bituminous	2	Partially under construction, cracking.
Parking Lot – West/North	42 (2 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Parking Lot – West/South	21 (3 ADA)	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Accessible Parking	7 total	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Charging Stations	N/A	-	-	-
Service / Loading Dock	2	Bituminous	3	Bit. con. is in fair condition, some cracking and patching but usable for parking.
Bike Racks	N/A	-	-	-

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SITE ACCESSIBILITY

	Material	Code Compliance	Cond	Comments
Curb Cut - Main Entry	Concrete	Yes	4	Curb cut at main entry is in excellent condition with a tactile warning mat.
Curb Cut - other doors	N/A	No	-	South Entry does not have a curb cut but does have an adjacent ramp into the building.
Curb Cut - Street	Bituminous	No	3	Walkway from street entering site does have a curb cut, but the lip may not be compliant.
Walkways	Bituminous	Yes	2	The bit.con. walkways appear to meet compliance of slope
Site Ramp	Concrete	Yes	4	South entry ramp is in good condition , though there is no curb cut to easily access the entry from the entrance drive.
Public Street	Bituminous			Public street only has sidewalk from the west on Robinson Road.
Main Entry	Concrete	Yes	4	Main entry is accessible and in great condition.
Secondary Entries	Bit.Con. or Concrete	Yes	3/4	All at grade doorways appear accessible. There is a separate site ramp adjacent to the covered south entry.
Plazas	N/A	-	-	-
Courtyards	N/A	-	-	-

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FIELDS

	Surface	***Source***	***Cond.***	***Comments***
Ballfield /Flex	Natural Lawn	VI	3	Fair; ground and fence are in fair condition.
Ballfield / Flex	Natural Lawn	VI	3	Fair; ground and fence are in fair condition.
Tennis Courts	Bit. Con.	VI	-	N/A Under Construction
Pickleball Courts	Bit. Con. / Concrete	VI	-	N/A Under Construction
Playground - Front	Under Construction	VI	-	N/A Under Construction
Playground - Rear	Pea Gravel	VI	2	Fair; older swings with two jungle gyms. Climbing equipment needs paint and pea gravel depth should be assessed for code compliance.
Playground - Front	Grass	VI	1	Temporary 'tot lot' for use while new playground is under construction.

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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	N/A
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	Present. Winter conditions make assessment difficult.
Greenhouse	Present. Corrugated panels are cloudy, and the interior appeared to be used for Pre-K play or storage. Overgrown materials around the greenhouse should be removed.
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	**Condition**	**Comments**
Site Lighting	See Electrical Section	2	No pole lighting on east side (main entrance) Floods on telephone poles on west side.
Fire Hydrants	Standard	4	East side at school, west side along Concord Rd.
Waste Management	Varies	3	Recycling: west side at loading dock. Garbage: west side across from loading.
Retaining Walls	N/A	-	-
Fencing	Chain Link	1/2	Most fencing is in poor condition.

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Gates	Steel	3	Both gates are in good condition. They are opened for arrival & dismissal only.
Flagpole	Steel	3	-
Outdoor Classroom	Wood / Steel Benches	3	Small arrangement of benches with concrete footings

BUS OPERATIONS

Number of Buses:	9
Bus Drop/Pick-Up Area:	South Entry
Private Vehicle Drop/Pick-Up Area:	West Entry
Signage:	Adequate

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 2, 2022. The visit did not involve taking measurements or removal of finishes to observe underlying structural elements. Original structural design drawings dated March 14, 1968, were obtained, and reviewed to supplement the study.

Systems:

The original one-story building was constructed in 1969. The foundation consists of continuous concrete foundation walls and footings. The ground floor is concrete slab-on-grade. Typical roof framing consists of steel joists supported by running-bond CMU walls, as indicated by the original design drawings. The steel joists were exposed and therefore observable in the cafeteria/auditorium and auditorium stage area. The gymnasium used a large precast concrete tee beam roof framing system supported by precast columns. These structures were only partially observable due to a dropped ceiling system spanning most of the precast beams. The original building design for this space was to serve as an outdoor canopy area and was later renovated to an indoor gymnasium. The new exterior CMU walls match the original design. Roof framing for other portions of the building were unobservable. The structure observed on site was noted to be in fair and serviceable condition.

A modular addition was recently installed for additional office space at the northern end of the original building. The roofs of these structures are sloped. The structure of this space was unobservable. It is presumed to consists of timber columns and beams supported by shallow concrete sonotube footings. This was not verified on site.

The exterior of the building was inspected. Canopy roof structures were noted to have been added to the building in two locations. These canopies were constructed of metal roof deck supported by rectangular hollow structural steel beams and columns. Both canopies were noted to be in good condition.

The original building foundation and façade was observed. One location at the back side of the building was noted to have cracked along the building joint and extended down below a window lintel on one side. The brick is loosened at this corner. Overall, the exterior was noted to be in fair and serviceable condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Concrete walls, continuous shallow spread footings at wall bases, isolated shallow spread footings at precast columns in gymnasium	-	N/A
Vertical Support System:	Running-bond CMU walls, precast concrete columns in gymnasium	-	3
Ground Floor Framing System:	Concrete slab-on-grade	Multiple small (less than 1-ft^2, ½-inch deep) spalls observed in boiler room	3
Upper Floor Framing Systems:	N/A	-	
Roof Framing Systems:	Tectum roof deck supported by structural steel joists, precast concrete tee-beams in gymnasium	-	3
Lateral Force Resisting System	Running-bond CMU walls*	-	3

* The existing building does not appear to have a deliberate Lateral Force Resisting System. The original structure was designed prior to 1970, which is when the Massachusetts building code first required a deliberate structural system design to resist seismic and wind loads. By default, the existing masonry walls appear to provide resistance to these lateral loads. If future building modifications are planned for this building, an evaluation of the existing structure and proposed modifications may be required to determine if lateral upgrades would be required for a future renovation.

Addition 1 (Entrance Canopies)

	Material	Remarks	Condition:
Foundation System	Concrete piers, shallow isolated concrete footings at columns	-	4
Vertical Support System:	Rectangular hollow structural steel columns	-	4
Ground Floor Framing System:	N/A	-	-
Upper Floor Framing Systems:	N/A	-	-
Roof Framing Systems:	Metal roof deck supported by rectangular hollow structural steel beams	-	4
Lateral Force Resisting System	Hollow structural steel moment frames (presumed, not verified)	-	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Addition 2 (Modular Offices)

	Material	Remarks	Condition:
Foundation System	Shallow concrete sonotube footings (presumed, not verified in field)	-	N/A
Vertical Support System:	Timber posts (presumed, not verified in field)	-	N/A
Ground Floor Framing System:	Unknown	-	N/A
Upper Floor Framing Systems:	N/A	-	-
Roof Framing Systems:	Timber beams (presumed, not verified)	-	N/A
Lateral Force Resisting System	Unknown	-	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.3 Exterior Envelope Systems

Main Canopy:

Main exterior canopy was added within the last ten years and is composed of steel tube framing with protective masonry piers. Precast joints and brick are in good conditions with limited degradation of joints. Tube style weeps are present and located above cast concrete bases, which will facilitate better drainage without getting encumbered by snow collection, vegetation or soil. Bird nests have started to invade between beams and metal decking that compose the canopy. Condensation on the underside of the metal deck has begun to degrade the coating system protecting the deck. Single Gutter located near the edge of the canopy directs water to the ground and utilizes a boulder as a drip block.

Shipping and Receiving Canopy framing shows signs of rust and protective coats have worn away. Rust has stained adjacent soffit.

Loose lintels an entry niches around building show deterioration of coatings and rust due to exposure to moisture and weather.

Exterior Wall System:

Brick has been installed over CMU and appears to be in fair to good condition. Walls are grouted solid and appear to be designed as the primary weather barrier with the roof, as opposed to the use of damp proofing or membrane system inside of a cavity. No weeps are present and through wall flashing is present only at precast sills. No expansion or control joints are present in the wall.

Precast Cornice shows signs of anchors that may have rusted from water intrusion at the roof, staining the face below the roof edge metal. Precast columns and panels at window openings are in fair to good condition. At some locations, freezing moisture has begun to cause cracking or erode where the columns sit proud of the façade, near the cornice. A window replacement project has taken place over the last 15 years and appears to be in fair condition. Sealant around openings have begun showing signs of degradation. Asphalt flashing below roof edge metal at precast corner band have melted due to heat exposure over time and left residue on face in some locations. Where precast cornice meets at corners, sections were mitered, and joints have opened or deteriorated over time.

Window systems were replaced in 2014, are composed of aluminum framing, with insulated glass units, operable

windows with insect screens. The windows are in good condition. Organic Based Sealant at jambs has weathered and is in fair condition.

Exterior wall louvers are original and are bent and/or dented to varying degrees.

Wall Systems providing enclosure for enclosed ramp and portable classrooms are composed of exterior wood paneling over wood framing with building paper. Exterior wood paneling extends to grade to provide to protect open space below the floor and sonotube style footings. Walls have taken on significant staining from roof flashing and water saturation at the ground. Residential style casement windows with operable sliding lite are present. Soffits are composed of OSB Board material. In most instances, wood edge trim at portable classrooms has broken off or become significantly worn. Egress access from portable classrooms does not meet accessible requirements or requirements of guards, risers, or treads. Wood posts are supported by earth.

Exterior Entrances:

Main Entrance Vestibule: A new security vestibule and canopy was installed at Robinson School within the last 10 years. Aluminum storefront windows with insulated, tempered glass units compose the enclosure. The original vestibule did not provide enough space for a person in a wheelchair to maneuver and has increased in depth. One single door leaf and one door pair utilize continuous hinges, and panic hardware with closers.

One single leaf incorporates an automatic door operator with a level style hand from the outside and manual cylinder override.

The pair of doors utilizes concealed rods and fixed door pulls on the outside.

Ancillary Entrances: FRP Faced doors have been installed into HM frames at accessory entrances with mortised door pulls and cylinders. Concealed rods with panic devices allow exit from the inside. In some instances, gasketing has been damaged and daylight can be seen at the base of doors. All exterior entrances have been number with 4-inch-tall vinyl numbers for identification by emergency responders. Signage is not visible at a distance and in some cases is tearing off door faces. Coatings at all hollow metal door frames have oxidized.

Openings that received new hollow metal frames in recent years left rough cut masonry at head and jamb conditions.

Roof Systems:

The area of roof over original 1970 building is composed of a EPDM rubber membrane, installed in 1988. The original decking system supporting the roof is composed of poured gypsum over foamboard. Rubber stripping at edge metal is no longer adhered and appears to allow water infiltration. Seams between membrane rolls, have degraded and efforts have been made to apply a roll-on rubber coating. The coating does not prevent infiltration of water past failing seams. Flashings at roof penetrations are no longer fully adhered and may become points of moisture instruction. Vent pipes appear to be rusting. Membranes that extend up curbs have failing seams. Protective coatings on gutters and downspouts on the roof have failed and metal is oxidizing and pitting rapidly. Original copper drip pans provided to direct water to drains are no longer present at each downspout. Copper, thru-wall flashing is degrading an at rubber terminations. Water

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infiltration possible. Precast sills at clerestory openings have deteriorating joints. Cast iron roof drains are clogged with pine needles and puddling occurs. Membrane patches within the roof shows signs of bubbling, which may have contained or currently contained water pockets.

Roof Access:

Roof Ladder between roof levels is no longer properly anchored to the roof structure and has come loose. Metal material of ladder has oxidized and started to rust.

Roof Accessories:

Skylights show signs of failure at glazing and curbing. Efforts to retrofit with membrane present. Smoke Vents are weathered and may or may not be functional. Vent Curb, Door, and Enclosure have oxidized and begun to rust.

Clerestory at renovated gymnasium space includes fiber reinforce polymer sandwich panels translucent light transmission. Framing is in reasonable shape and flashings are in good condition. Installation of units occurred during renovation of the space within the last 20 years.

Roof over mobile classrooms is also EPDM. Curbing at skylights are in functional condition. In once instance, additional membrane has been installed to prevent water intrusion. Bubbles in the membrane indicate water instruction may continue or be trapped.

Guy Wires at Overhead power lines is pulling edge metal or block off building.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Brick on CMU, Copper Flashing at Base of Wall	-	3
Roof Assembly:	EPDM, Insulation	RCS Roof Report Identified Wet Decking. Decking is Original Poured Gypsum Over Foamboard.	1
Roof Drains:	Cast Iron	-	1
Flashing:	Copper and Asphalt Type		1-2

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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Main Canopy:	Steel Tube Framing, Factory Coated, Metal Decking with Field Applied Coatings	Gutter collects all discharge and drains nearby main walk into crushed stone.	3
Canopies/Overhangs:	Steel Tube Framing, Factory Coated, Metal Decking with Field Applied Coatings	-	3
Windows:	1" Insulated Tempered Glass Units Aluminum Framing. Organic Based Sealant at jambs has weathered.	Original Windows Replaced in 2014. Exterior Wall Board or Metal Fascia at Head Needs to be Stripped and Recoated	3, 2
Skylights/Clerestory:	Unitized Skylights, Clerestory	N/A	1,2
Glazed Curtain Wall/Storefront	Aluminum Storefront	-	
Exterior Doors:	HM, AL	-	2,3
Louvers & Vents	Coated Steel Grilles	Dents or Penetrations have degraded over time.	2
Exterior Door Hardware	Fixed Pull Handles (Subordinate Doors) or Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	2-3
Weatherstripping and Thresholds	Silicone & Brush	-	2-3
Exterior Access Control	See Addition	-	3-4
Emergency Responder Signage	4" Vinyl Numbers	Small at Distance. Peeling at some locations.	2
Roof Access	Single Ply TPO or PVC over Cover board and metal decking at Main Canopy. Main Roof – EPDM Rubber Membrane over insulation.	-	2,1
Gutters and Downspouts	Galvanized Metal	Downspouts misalign to below grade collection system.	1

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N/A – Not Applicable/Missing
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2.1.3.4 Interior Envelope Systems

Wall Systems:

Brick Walls (BK) compose the main entry corridor into the school and formerly exterior walls near the multipurpose room.

Wood Paneling (WP) also define the lobby with the main entry corridor. The paneling is in fair condition. Wood paneling exceeds limits in area limits for combustible materials with an egress. Materials are not appropriately rated and pose a risk to occupants.

Decorative wood paneling and stairs within the cafeteria have been worn over the years with use. A foldable wood partition separated the stage/music room from cafeteria. These elements are in fair condition.

Concrete Masonry Units (CMU) compose the majority of interior partitions within corridors and classrooms. Fabric Covered Panels are utilized in some spaces like the classrooms, cafeteria, gymnasium, and music rooms to absorb sound.

Hollow metal openings are located typically above each classroom in the original section of building, containing wired glass. These systems are not rated and classroom spaces are not appropriately compartmentalized.

Sheetrock Walls (GWP) Compose the majority of walls in the addition area and are in fair to good condition.

Ceramic Wall Tile (CWT) is located at wet walls within single occupant bathrooms, locker areas and kitchen spaces. Tile is in fair condition.

Demountable Partitions Systems are used within classroom spaces in combination with furniture to separate spaces into four areas for classes.

Artwork and poster boards exceed limits for flammable materials within a means of egress. Entry vestibules leading into classrooms often locate furniture outside of classrooms that encumber movement through corridors within the original sections of the building.

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1 – Poor/Fair – Failure Expected
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3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Entrance Systems:

Classroom/Administration Entrances: Classrooms, administration spaces, single occupant bathrooms or other spaces are wood, with lever style door handles with varying cylinder functions. Not all doors feature functioning closers.

Corridor/Egress Entrances: HM Doors and Frames, with wire glass lites, steel butt hinges, operable closers, single pin, concealed panic bars, with level style hardware, mechanical cylinder, and electronic hold opens. Panic bar enclosure end is missing.

Library Egress Doors: The main entrance of the library is composed a pair of wood doors in HM Frames, continuous hinges, operable closures, rim devices, and fixed door pulls with mechanical cylinders. .

Exterior Egress Entrances are marked on the interior with vinyl numbers. Numbers are 4 inches and height and difficult to read over 36 feet.

A single door leaf entering on to the stage/music room was removed for the retrofit of a ramp. The slope of the ramp and handrails to not meet accessibility requirements. With the door removed proper separation of an assembly space and stage from a means of egress is no longer maintained.

Service Entrances are rated hollow metal doors and frames varying in single and double leaf configurations. Rating Labels are frequently painted over. At mechanical room, the top pin of the flush bolt no longer engages with the latch and does not allow the door to fully close.

Flooring Systems:

Vinyl Composite Tile (VCT) is in classrooms at sink areas only, kitchen, administration hallways and offices and storage rooms. The condition varies depending on location. Floor system is in fair condition.

In the kitchen storage and receiving corridor, portions of VCT flooring has been removed, exposing black mastic.

Carpet Tile (CPT-BL) is also in all corridors, classroom spaces, library and other ancillary spaces.

Ceramic Tile Floor (CT) is located within bathroom spaces and is in fair condition. Joints have become stained over the years with ongoing, normal use. The tile appears to be in relatively good condition to maintain a hygienic space. Normal maintenance is required. Marble thresholds separate single occupant bathrooms from the corridor spaces.

Quarry Tile (QT) is in the kitchen spaces and is fair to good condition. Floor slab appears to have settled at entrances between kitchen and cafeteria and has settlement cracks have telegraphed to the finish floor.

Rubber Floor and Rubber Treads (RF/RSN) have been installed over the ramp serve the stage.

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NC – Not to Code

Synthetic Rubber Athletic Flooring (SAF) has been installed in the gymnasium and is in fair to good condition.

Ceiling Systems:

Plaster Ceilings (PC) are located throughout corridors, open classrooms, library and administration spaces. System is in fair condition. Mechanical systems, ductwork, piping, conduits and wiring are enclosed above and limited quantity of access doors limits diagnostic opportunities for systems or modification and replacement of old equipment.

In the cafeteria, near the entrance to the kitchen the plaster soffit has deteriorated aggressively due to the adjacency mechanical louver.

Acoustical ceiling clouds have been retrofitted onto the underside of the plastic ceiling in classroom spaces to reduce sound reflection. These systems are in fair to poor condition.

Adhered Ceiling Cladding (ACC) is used in hallways preceding classrooms in some locations and is in fair to poor condition.

Acoustic Ceiling Tile Systems (ACP) are located throughout the gym.

Exposed to Structure (ETS) can be seen in the library, cafeteria, and mechanical room.

Operable Shades: Classroom spaces and offices along exterior walls feature manual roller shades to diffuse light.

Ceiling Mounted Operable Partitions separate small group and conference spaces.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	CMU	2-3	CPT-BL	1-2	PC	1-2 or 2
Small Group Rooms/Conference Rms:	CMU	3	CPT-BL	2-3	PC	1-3
Gymnasium:	CMU	3	SAF	2	ACP, PTD	2-3
Cafeteria:	CMU	3	VCT	2-3	ETS, PTD	2,2
Library:	CMU	3	CPT-BL	2-3	PC	2
Music Room	CMU & GWB	3	WD	2	ETS	2
Entry Vestibules:	BR & CMU	2-3	MAT	2-3	PC	2
Corridors:	CMU	2	CPT-BL	2	PC	2
Public Restrooms:	CMU &/or CT	2	CT	2	PC	2
Single Occupant Bathrooms:	CMU &/or CT	2	CT	2	PC	2
Offices:	CMU	2	CPT-BL	2	PC	2
Nurse:	CMU	2	VCT	2	PC	2
Ancillary Admin Space:	CMU	3	CPT-BL	3	PC	2
Kitchen Cooking/Prep Area:	CMU	3	QT	3	PC	2
Kitchen Storage:	CMU	3	QT	2	PC	3
Shipping/Receiving:	CMU	3	VCT	2-3	PC	2
Mechanical Room:	CMU	3	PTD. Conc.	2	ETS	2

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom/Admin:	WD	Yes	3’-0”		Limited	1
Door – Service:	HM	Yes	5’-0”		Yes	2
Door – Corridor/Egress:	HM	Yes	6’-0”		Yes	2

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

INTERIOR ENVELOPE SYSTEMS, continued:

Addition – Portable Classrooms

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Typical Classrooms:	Plywood	2	CPT-BL	2	PC	2
Corridors:	Plywood	2	CPT-BL	2	PC	2

	Material/Type:	Glazing:	Width:	Rating:	Closer:	Condition:
Door – Classroom	WD	Yes	3’-0”	N	Yes	2

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 02, 2022, and review of original construction documents dated March 14, 1968. The building was built in 1969. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

Domestic cold water for the facility is fed from a single water service; a 4-inch main entering the building in the boiler room. Incoming domestic water piping and elbow fitting (upstream of the water meter) are corroded and in poor condition. The existing 2" water meter and main shut-off valve are in fair condition. The existing water service does not include a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and has outlived/exceeded its useful life. Domestic cold water piping is not expected to last a few more years without exhibiting widespread problems and possible failure. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

Domestic Hot Water

Domestic hot water for the facility is supplied from one (1) gas-fired water heater manufactured by Lochinvar and installed on January 03, 2017, and in good condition. The water heater is located in the boiler room, and it is still in good condition. There are two (2) circulation pumps, and in fair to good condition. The inline expansion tank is still in good condition. The mixing valve installed in 2021 is in good condition. Most domestic hot water piping is not visible. All piping, valves and risers appear and assumed to be original, in fair to poor condition, and has outlived/exceeded its useful life. Domestic hot water piping is not expected to last a few more years without exhibiting widespread problems and possible failure. Some pipes at water heater in the boiler room appear to have been replaced about less than 2 years ago but without pipe insulation. Pipe insulation is original and in poor condition and some exposed pipes are not insulated.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Natural Gas

The existing natural gas system enters the building through the boiler room via a 3-inch gas main. The existing natural gas system includes a gas meter, valves, and gas regulator. Gas is distributed throughout for the water heater, gas boilers and kitchen equipment. All piping and valves appear to be original, in fair condition, and is expected to last a few more years before it will exhibit problems.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. The above slab piping in the building was at times visible and is expected to be in poor condition due to its age. Sanitary drainage piping is original, and has outlived/exceeded its useful life, and it is not expected to last a few more years without exhibiting widespread problems and possible failure.

The kitchen's triple pot sink is provided with grease trap that is installed above slab, below the drain board. The grease trap was installed on October 16, 2017, and in fair to good condition. The waste piping below the triple pot sink and the piping downstream and upstream of the grease trap are original and in fair to poor condition. The piping installation at triple pot sink is not compliant with 248 CMR 10.22. The two-compartment prep sink is original and in fair to good condition.

Storm Drainage

The existing storm drainage system is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) storm drainage should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The storm drainage piping discharges below grade to the site drainage system. The above slab piping in the building was at times visible, and it is expected to be in poor condition due to its age. Storm drainage piping is original, and has outlived/exceeded its useful life and it is not expected to last a few more years without exhibiting widespread problems and possible failure. The existing roof drains with cast iron dome strainers are all original.

Fixtures:

All existing plumbing fixtures are original and do not meet current accessibility and water conservation requirements. The plumbing fixtures are in fair condition.

Per field measurements, plumbing fixtures mounting heights are the following:

WC = 15" from the finished floor to the top of the seat.

Sinks = 27" from the finished floor.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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NC – Not to Code

Water closets in the facility including the Pre-K toilet room are original to the building, wall mounted, vitreous china with manual operated flush valves and non-ADA compliant.

The mounting heights of the existing wall mounted water closets in the PreK Room 1 are 16-1/2" and 16" from the finished floor to the top of the seat.

The mounting height of the existing wall mounted water closet in Gender Neutral Toilet is 18" from the finished floor to the top of the seat.

Urinals are original to the building, wall mounted, vitreous china with manual operated flush valves and non-ADA compliant.

Lavatories are original to the building, wall-hung type, vitreous china with hot and cold water faucets that are manually operated with different types of handles, generally, in fair condition. Majority is non-ADA compliant where pipe insulation and offset tailpiece drains are not installed below the lavatories.

Plumbing fixtures in the staff toilets including the kitchen staff toilets are non-ADA compliant.

There are three (3) stainless steel sinks with gooseneck faucets in every pod. Two (2) sinks have bubblers. All classroom sinks are non-ADA compliant.

Sinks in the Nurse's Suite and Planning 3 Room are non-ADA compliant, stainless steel, self-rimming/drop in single compartment with hot and cold handles and swing spout faucet, in fair to good condition.

The kitchen hand sink is a stainless steel, wall hung unit, non-ADA compliant with manual operated gooseneck spout faucet. The hand sink and faucet are still in good condition.

Miscellaneous Fixtures:

There are two (2) types of drinking fountains installed within the building: Vitreous china, non-recessed, non-electric, single level unit, non-ADA compliant, in fair condition and single level unit, non-ADA compliant, non-recessed with built-in chiller and push button activation, electric water coolers with bottle filling stations, in good condition.

There is no eyewash unit installed in the Nurse's Suite.

There is no emergency shower/eyewash unit present in the boiler room. ES/EW is required for chemical treatment fill stations.

There are no backflow preventers for (Ecolab) detergents at triple pot sink.

Per original construction documents dated March 14, 1968, trap primer piping is not installed on all existing floor drains. Installation of trap primer piping is a code requirement.

Existing hose bibbs have no atmospheric vacuum breakers.

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PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	4”	2”	No	N/A	Copper	City	53	1 (Due to age)
Gas Service:	3”	Not Accessible	Yes	N/A	Black Steel	Gas Utility	53	1 (Due to age)

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	1	Mineral-Fiber	1	Due to age
Domestic Hot Water:	Copper	1	Mineral-Fiber	1	Due to age
Sanitary Waste & Vent:	Cast Iron	1	N/A	N/A	Due to age
Storm Drainage:	Cast Iron	1	Mineral-Fiber	1	Due to age
Gas:	Black Steel	2	N/A	N/A	Due to age
Non-Potable (Lab) CW:	N/A	N/A	N/A	N/A	-
Non-Potable (Lab) HW:	N/A	N/A	N/A	N/A	-
Acid (Lab) Waste & Vent:	N/A	N/A	N/A	N/A	-
Kitchen Waste:	Cast Iron	1	N/A	N/A	Due to age
Tempered Water:	N/A	N/A	N/A	N/A	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Condensing, tank-type/Gas-fired	5	3	-
Sanitary Ejector Pump:	N/A	N/A	N/A	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Storm Ejector Pump:	N/A	N/A	N/A	-
Domestic Water Booster Pump:	N/A	N/A	N/A	-
Interior Kitchen Grease Trap:	Automatic grease removal	5	3	-

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Wall mount	See Above	No	2	Due to age
Urinal:	Wall mount	See Above	No	2	Due to age
Lavatory:	Wall mount	See Above	No	2	Due to age
Drinking Fountain/Water Cooler:	Wall mount	See Above	No	4 & 2	-
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	N/A	-	N/A	N/A	-
Classroom Drinking Fountain: (Bubblers)	Deck mount	See Above	No	3	-
Mop Sink:	Floor	Janitor's Closets	N/A	2	Due to age
Showers:	N/A	See Above	N/A	N/A	-

Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Wall mounted
Floor Drain:	Floor mounted; Type varies by location.
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

There is no fire protection system in the existing facility.

Systems:

Kitchen:

The existing kitchen hood has no ansul fire suppression system.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

Although generally well maintained, the HVAC systems, distribution and equipment are beyond their useful life.

Systems:

There are two boilers which provide heating hot water for the building. Two pairs of inline hot water pumps distribute zoned hot water throughout the building. Zone 1 serves the Kitchen, Cafeteria, Stage & Music Room, Offices and Kindergarten (Part A). Zone 2 serves classrooms, conference rooms, the Library and Teacher Workrooms (Part B). Hot water piping in the Boiler Room is not insulated. There is no chemical water treatment in the hot water system. Clearances between the boilers and electrical equipment do not meet code.

There is a 10,000-gallon double wall underground fuel oil storage adjacent to the *Boiler Room* installed about twelve years ago. The boilers have not run on fuel oil in a number of years, and it is unclear how much oil remains in the tank.

The building is conditioned by unit ventilators and is primarily heated and ventilated only. It was noted that a number of the exterior unit ventilator louvers are damaged.

The Principal's Office and Nurse's Office are served by dedicated units with DX cooling.

A rooftop unit was added to serve *the Cafeteria,* presumably when the *Gym* was enclosed, but it has been reported that the unit has not run in over twenty years. As such, there appears to be no ventilation in the *Cafeteria.*

No ventilation was noted in the corridors.

In many *classrooms* teaching materials block the finned tube radiation discharge grilles at the rear of the casework. Clearing the grilles of teaching materials would improve heating effectiveness.

The *MDF/Server Room* has a portable Whirlpool air conditioning unit to offset the heat rejection of the equipment. The exhaust was tied into the existing exhaust serving the coat room with flex duct.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Many classroom windows were open during the walk through even though it was a cold December day. It is unclear whether this was due to temperature issues or a previous mandate to keep windows open for COVID concerns.

The emergency generator is in a mezzanine in the Boiler Room and the radiator exhaust vents directly into the Boiler Room. Over time, the air temperature in the Boiler Room could increase to a point that will impact the performance of the generator.

The automatic temperature controls are not connected to a district wide front end, or to any other school building. The controls are pneumatic and are beyond their useful life. It was reported that the pneumatics and the ATC compressor are not functioning properly.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	**Energy Source:**	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Equipment #1:	Dual Fuel	Hot Water Boiler	Buderus	2010	3
Heating Equipment #2:	Dual Fuel	Hot Water Boiler	Buderus	2010	3
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Heating Distribution Equipment:	Four (4) in-line pumps	Bell & Gossett	Unknown	3
Cooling Distribution Equipment:	N/A	-	-	
Air Distribution Equipment:	N/A	-	-	

Terminal Equipment:	**Type:**	**Controls:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Typical Classrooms:	Horizontal unit ventilators & wall cabinet exhaust fans	Refer to Controls	Nesbitt	1969	1
Kindergarten Classroom:	Unit ventilators	Refer to Controls	Nesbitt	1969	1
Art/Interior Classrooms:	Horizontal unit ventilator & low exhaust	Refer to Controls	Nesbitt	1969	1
Portable Classrooms:	Wall mounted split systems	Refer to Controls	Fujitsu	2000	3
Music Classroom:	Horizontal unit ventilator	Refer to Controls	Nesbitt	1969	1

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Main Office:	CUH/electric finned tube	Pneumatic/None	N/A	1969/2002	3
Principal's Office:	Wall mounted split heat pump	Refer to Controls	Mitsubishi	N/A	3
Nurse's Office:	Wall mounted split	Refer to Controls	Fujitsu	N/A	3
Library:	Horizontal unit ventilators	Refer to Controls	Nesbitt	1969	1
Cafeteria:	RTU & Finned tube radiation	Refer to Controls	Trane	Mid 80's	3
Gymnasium:	H&V unit in ceiling	Refer to Controls	Trane	Mid 80's	N/A
Kitchen:	Unit vent	Refer to Controls	Nesbitt	1969	3
Corridors:	CUH/finned tube radiation	Refer to Controls	N/A	1969	3
Toilets:	CUH & roof mounted exhaust fans	Refer to Controls	N/A	1969	3
Wardrobe/Lockers:	Finned tube radiation & roof mounted exhaust fans	Refer to Controls	N/A	1969	3

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	Roof exhaust fan	N/A	1969	3

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	Pneumatic	N/A	1969	1

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior and Exterior Lighting, Normal and Emergency Power distribution systems are in poor but operational condition, dated and beyond their useful life expectancy, except for a few recent upgrades as outlined below. There are also specific concerns and non-compliance with Code as outlined below.

Services:

Electrical – National Grid; Initiates at the existing street utility pole and extend overhead and underground towards the school building. Electrical service terminates at outdoor the pad-mounted utility transformer.

Telephone – Verizon. Initiates at the existing street utility pole and extends overhead and underground towards the school building.

No issues with services were reported.

Transformer:

The outdoor pad-mounted utility transformer is provided and maintained by National Grid. The utility meter is inside of the building, located near the main distribution panel. Transformer's enclosure appears rusted, but in fair operational condition. No specific issues were reported.

Generator:

The indoor 55kW 120/208v 3ph 4w gas-fired emergency generator, by Onan, appears very old, but still in operational condition. It's installed in the Boiler room at the mezzanine level with a very limited access. It currently supports dedicated emergency lights, FACP, refrigeration equipment and a few other building loads. The generator with associated ATS and all incoming and outcoming power feeders are beyond their useful life expectancy and should be replaced.

Distribution System:

The utility transformer's secondary feeder is terminated in 800 Amp 120/208v 3 phase 4 wire Main Distribution panel manufactured by Square D. It's in the Boiler room. The Distribution panel is equipped

with 800 Amp Main Circuit Breaker, Utility CT metering compartment, and downstream circuit breakers feeding the Motor Control Cener in the same room and other panelboards located throughout the building. The current installation of the Distribution panel and Motor Control Center does not comply with code – there is no adequate clearance in front of both now. All power distribution equipment and associated power feeders are beyond their useful life expectancy and should be replaced.

Receptacles throughout the school building appear dated and many are in poor condition. Non-GFCI receptacles were observed near sinks in many locations, including classrooms, office area, kitchen, which shall be replaced with GFCI type. Classrooms are equipped with just 2 receptacles, which is not sufficient for normal operation. Most receptacles and associated branch wiring from respective panels are beyond their useful life expectancy and shall be replaced.

Lighting Systems:

Exterior lighting:

A mixture of older (appear non-operational) and recently added LED type wall-mounted perimeter lights (about 10 years ago) were observed. The newer LED lights are in good operational condition, while the older ones are beyond their useful life expectancy and shall be replaced or removed entirely. Exterior lights are time-controlled.

Interior lighting:

Lighting fixtures throughout appear dated, and most of them are probably original. Majority of lights are surface-mounted type in various sizes and 4ft long wraparounds with T8 fluorescent lamps, non-dimmed and not of energy-efficient type. Some lamps were observed as nonoperational or burnt out. Gym lighting is of a newer type, equipped with T5 lamps, but overall illumination appears dimmed. Lighting illumination levels appear inadequate in a few spaces (bathrooms, modulars). Original and older lighting fixtures and associated branch wiring from respective panels are beyond their useful life expectancy and shall be replaced.

Emergency lighting is provided by means of “normally off” lights which are supposed to turn “on” when the utility power is lost. These lights are supported by the generator. There is also a number of exit signs with internal backup batteries that provide power to the attached remote light heads. Old emergency lights and associated wiring are beyond their useful life expectancy and shall be replaced. Several non-electrical exit signs (printed on paper with word “Exit” were observed, and those should be replaced with electrical LED type.

Lighting controls:

Recent upgrades include a limited amount of added occupancy sensors. There is no programmable TC-controlled lighting control system for interior lighting, and all lights are manually switched “on/off”. There are no photocells (daylight sensors) anywhere in the building, and all lighting fixtures are of non-dimmable type.

Emergency Devices:

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Emergency devices include exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. Exit signs need some upgrading. The Fire Alarm notification devices are observed in inadequate and unacceptable installation condition, and require substantial modifications as outlined below. There is no Lightning protection/prevention system.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH to UG	120/208	3 phase 4 wire	1969	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pad mounted	National Grid	Outdoor	1969	3

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	Indoor/ 50kW	Gas	3 phase 4 wire	1969	1

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Distribution panelboard	120/208v 3ph 4w	Boiler room	1969	1
	Panelboards	120/208v 3ph 4w	Throughout	1969	1

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	Standard	1ph/120v	Grounded	2
	Offices:	Standard	1ph/120v	Grounded	3
	Library:	Standard	1ph/120v	Grounded	2
	Gymnasium:	Standard	1ph/120v	Grounded	3
	Cafeteria:	Standard	1ph/120v	Grounded	3
	Corridor:	Standard	1ph/120v	Grounded	2

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Interior Light Fixtures:	*Typical Classroom*	4ft wraparound/ 2'x2' lensed/ T8 fluorescent	Surface	Unknown	2
	Offices:	Lensed/ T8 fluorescent	Surface	Unknown	2
	Library:	2'x4' lensed/ T8 lamps	Surface	Unknown	3
	Gymnasium:	2'x4' lensed/ T5 fluorescent	Recessed	Recent upgrade	2
	Cafeteria:	4ft wraparound/ T8 fluorescent	Surface	Unknown	3
	Corridor:	4ft wraparound/ T8 fluorescent	Surface	Unknown	2

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Access road and perimeter walls	Street utility lights	Pole-mounted and perimeter wall-mounted	Recent upgrades	3

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Wired to Generator and others are with built-in batteries	Various	Various	Various	2

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	Various	3
	FA signaling	Various	Various	Various	1

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems

Summary:

The school building is not equipped with a Fire protection system (sprinklers) and therefore the fire alarm system shall incorporate a full smoke detection coverage. It was observed that the heat and smoke detectors are provided only in a small number of spaces, which is non-compliant with the current Code requirements. At the same time, many spaces, including classrooms and bathrooms, are not equipped with fire alarm notification devices (horn/strobes), and some other areas are equipped inadequately (library) which shall be upgraded accordingly. The original FACP failed and was replaced about 8 years ago, but most of heat and smoke detectors are still old (original) with associated old wiring. Overall, the fire alarm system requires significant upgrading. Old equipment and wiring are beyond their useful life expectancy and shall be replaced/upgraded to comply with the Code.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is zoned type, manufactured by Mircom. It appears in good operational condition. The radio box is manufactured by Digitize. Both are in the Boiler room.

Devices:

Old (original) remote annunciator is in the main entrance vestibule. Outdoor key (knox) box is at the main entrance door. Hard-wired heat and smoke detectors, pull stations, horn/strobes, strobe only units are mostly dated, in inadequate and unacceptable installation condition.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Zoned	Mircom, FCI, MFA and Simplex, mixed	Horn/strobes and Strobes	Original and a few recent upgrades	2

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	None	None	None	N/A	1
Offices:	Heat	None	None	Original and a few recent upgrades	2
Gymnasium:	Heat	Horn/strobes	Yes	Original and a few recent upgrades	4
Cafeteria:	None	Horn/strobes	Yes	Original and a few recent upgrades	1
Lobby/Corridor	Heat	Horn/strobes	Yes	Original and a few recent upgrades	2
Kitchen:	Heat	Horn/strobes	None	Original and a few recent upgrades	3
Toilets:	None	None	None	N/A	1
Basements:	N/A	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Local AV System - Local AV system in Cafeteria is passed its useful life expectancy. Large flat panel display in gymnasium. No local sound system in gymnasium

Data network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services:

Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Axis cameras & ExacVision server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	10+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	10+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Clock Systems:	Analog	Mixed	Wall	10+ years	2
Master Clock:	Analog	Sapling	Rack	10+ years	2
Bells:	Thru PA	N/A	N/A	10+ years	2

PUBLIC ADDRESS SYSTEMS	**Device Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Classrooms:	2-way push to talk	Roland	Ceiling	10+ years	2
Corridors:	1-way	Roland	Wall/Ceiling	10+ years	2
Console:	Analog PA	Roland	Rack	10+ years	2

DATA SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Library:	Category 5e	Draka Helix	N/A	10+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	10+ years	2
Offices:	Category 5e	Draka Helix	N/A	10+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	10+ years	2

TELEPHONE SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms, and restrooms. No accessible signage can be found for room identification.

Classroom Spaces:

Classroom Plumbing Fixtures: The original building incorporated sinks that are not accessible.

Drinking fountains at classroom sinks are not functional.

Markerboards and Tackboards are mounted 20” to bottom of writing and display surfaces used within the classroom spaces.

Furniture: Rooms locate loose furniture with sufficient circulation space to allow for movement with the room.

Bathroom Spaces:

Fixtures: Current configuration of bathroom meets the requirements of students in Kindergarten through Sixth Grade. (According to 521 CMR MAAB). Water Closets installed within Girls and Boys toilet rooms are mounted 15” AFF to top of seat. Lavatories are mounted 30” AFF to the rim. School Program recently incorporated Pre-School which require water closets at 11 ½ -12 ½” AFF.

Water Closets in adult, single occupant bathroom are mounted 18” AFF to top seat. Lavatories are installed 34” AFF to rim. These spaces are appropriately sized for use by adults.

Toilet rooms do not maintain appropriate clearances for maneuvering. Accessible fixtures or accessories, like grab bars are not available. Offset drains or insulated covers are not included at single occupant bathrooms.

One staff accessible staff bathroom is incorporated in the building and also serves a changing room for special needs students.

Existing drinking fountains are not functional or accessible.

Condition Key Criteria

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	7'-6"	-	-	-
Exterior/Egress Doors Width:	6'-0"	FRP or HM	Level Style or Fixed Pull	2-3
Signage:	Braille Not Present	-	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	2
Offices:	3'-0"	WD	Lever Style	2
Library:	5'-0"	WD	Level Style/Panic HW	2
Stage:	3'-0"	WD	Level Style	2
Gymnasium:	3'-0"	WD	Level Style	2
Cafeteria:	3'-0"	WD	Level Style	2
Kitchen:	3'-0"	WD	Lever Style	2
Cross Corridors:	5'-0"	WD	Lever Style/Panic HW	2
Toilets:	3'-0"	WD	Lever Style	2

VERTICAL ACCESS: (ELEVATORS/LIFTS)	**Size:**	**Load:**	**Cab Finishes:**	**Condition:**
N/A				

STAIRWAYS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**
N/A				

RAMPS:	**Width:**	**Floor Surface:**	**Handrail/ Guardrail**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Ramp 1	38”	WD	Not Compliant	1

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	No	-
Tables & Seating - Cafeteria	No	Foldable bench seating does not provide spaces for handicap students.
Drinking Fountains	Yes, Limited	Protrusion into corridors exceed 4”.
Controls/Switches	Yes	-
Signage	No	-

SMMA

2.1 School Facilities Evaluation Report

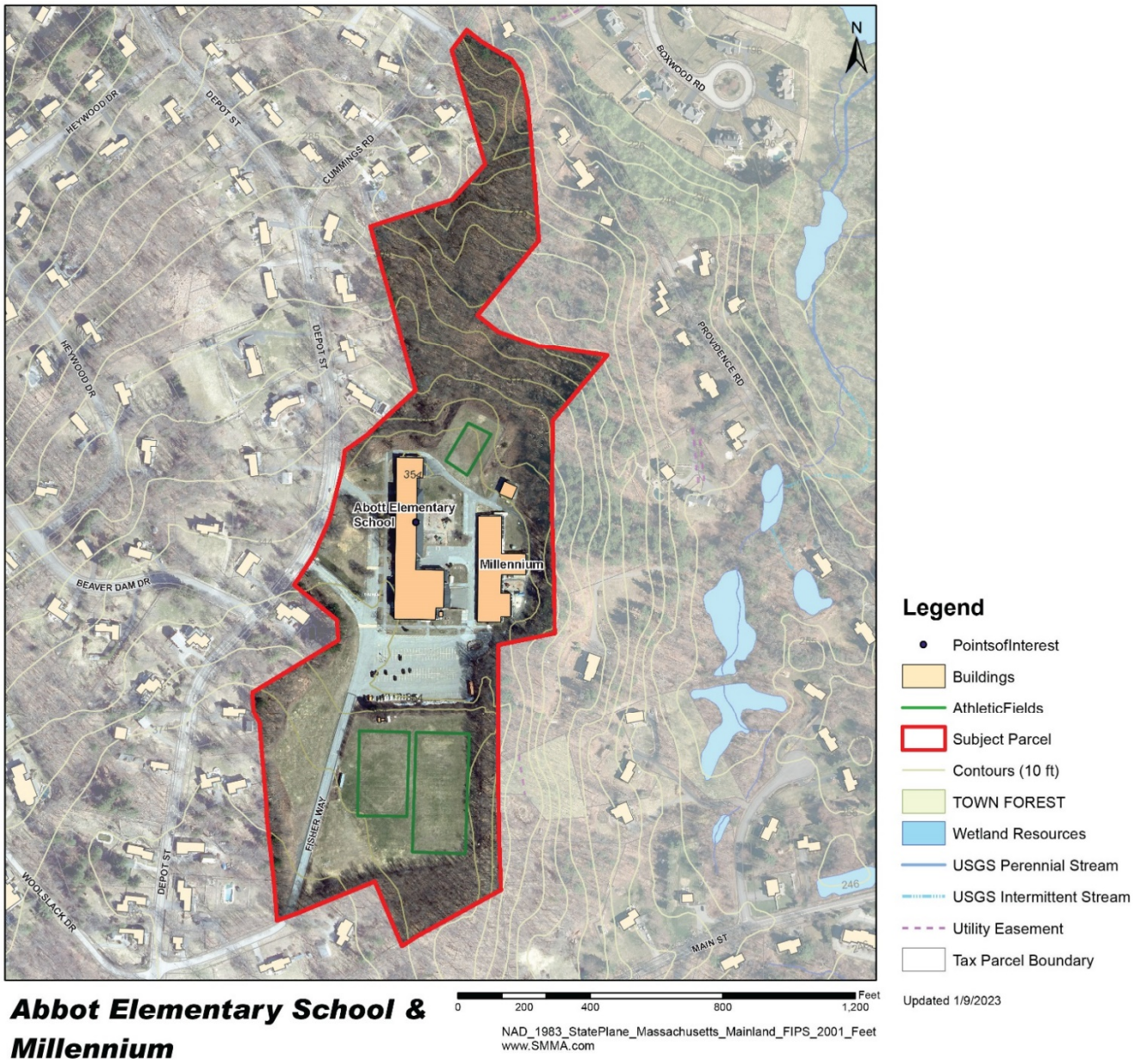
2.1.1	**GENERAL INFORMATION**
Name of Building:	District Offices (Former Millennium School)
Address:	23 Depot Street, Westford MA
Name of Owner:	Town of Westford
Years in Service:	24
Year Constructed:	1999
Existing Drawings:	1999

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3 **CONSTRUCTION CLASSIFICATION DATA:**

Construction Type:	TBD
Original Building:	TBD
Occupancy Group:	B – Business (State Building Code)
Total:	32,000

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code



Abbot Elementary School & Millennium

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.1 Site & Landscape

Summary:

This report is based on visual observations during a site visit on December 14, 2022. The day was overcast, cold, and there was a light coating of snow on the ground in some places. The visit did not involve taking measurements, soil testing, or removal of ground surfaces to observe underlying footings or foundations.

Location:

Centrally located in Westford, just down the street from the town hall and surrounded by single family residential homes, Abbot Elementary School and Millennium School are at 25 and 23 Depot Street. The 32.07-acre parcel has two school buildings, two playgrounds, recreational fields, a water treatment plant with leach field, and a large parking lot. Currently, students are only attending the Abbot Elementary School, the Millennium School building is used as district offices. The site elements are overall in a fair condition.

The site is served by public (town) water and private sewer. Wastewater from the site is piped to a localized treatment plant located here. Gas also serves the site by a private utility. Power and communication are brought to the building via overhead lines/underground services.

Fields and Accessory Buildings

The playground is at the rear of the building, gates are locked, and the playground appears abandoned. Before reinstating for use, the playground equipment and wood chip surface depth must be inspected for safety.

Site Accessibility and Pedestrian Pathways

Site accessibility regarding walkway slopes and parking spaces seemed somewhat compliant. Several ramps and deck walkways have been built for accessibility around the building. Accessible parking spaces between Abbot and Millennium are well marked.

School walkways and plaza areas are bituminous concrete pavement. Both the bituminous plazas and walkways are in fair condition. Many instances of raveling, cracking, rutting and a few small potholes were observed.

Parking for the buildings is concentrated on the south side of the site in a large lot with approximately 150 spots and about 12 spaces

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

on the east side. All paving on the property is bituminous concrete paving without curbing. Some areas of bituminous pavement have deteriorating edges with many types of cracking including block, linear, and fatigue cracking, small potholes, rutting and patching. The roadways at the site are made of bituminous concrete and are generally in fair condition. There is a crushed stone path behind the Millennium building that appeared unused because there was no disturbance to the snow covering the path.

The fencing at the playground and around the leach north of the school is in good condition. Vine growth was observed and could damage the mesh if left untrimmed surrounding the recreational fields to the south.

SITE & LANDSCAPE SYSTEMS DATA

Land Use Type:	Bare Land, Deciduous Forest, Developed Open Space, Evergreen Forest, Impervious, Palustrine Forested Wetland (per MassGIS)
Zoning:	Residence A
Lot Area:	32.07 AC
Topography:	Sloping downward from south to north the whole parcel (See map for more information.)
Wetlands:	N/A

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4 – Good – Fully Functional, New
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INFRASTRUCTURE & UTILITES

	Description	***Source***	***Comments***
Water	Town Water	J.Fox	-
Electricity	Buried & Overhead Wires	VI	-
Gas Provider	National Grid	J.Fox	-
Oil Tank	Above ground	J.Fox	Used for generator only.
Storm Water Management	Surface swales	VI	-
Sanitary	Wastewater Treatment Plant on site	J.Fox	-
Irrigation	None	J.Fox	-

PAVEMENTS

	Surface	***Source***	***Cond.***	***Comments***
Roadways	Bituminous pavement	VI	2/3	Bit. con. is in fair/poor condition, many edges are crumbling, there is significant cracking and rutting.
Walkways	Bituminous concrete, playground, and granite paving	VI	2/3	Bit. con. is cracking along most walkways. Most doorways have one granite step into the building. Small paver walkway to playground is in fair/good condition.
Plazas	Bituminous concrete	VI	3	Bit. con. is in fair condition in most places. Many instances of potholes, raveling, cracking, and rutting.
Pathway	Crushed stone	VI	3	The path was snow covered on the day of inspection, but the surface appeared smooth without significant potholes.
Curbs	none	VI		N/A

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PARKING

	Spaces	*Material*	*Condition*	*Comments*
Parking Lot	150 (8 EV)	Bituminous	2	Bituminous in this area has significant cracking of va types including fatigue, linear, and block cracks, rutt raveling in many places. The pavement is suitable fc but there are many areas where pavement become that should be assessed for repair.
Parking – Entry Drive	12 (2 ADA)	Bituminous	2	ADA Parking was unsigned. Pavement is cracking an Striping is faded.
Accessible Parking	5 total	Bituminous	2	Bit. con. is in fair condition. Spaces at front of Abbot signed, spaces between Abbot and Millennium are v marked.
Charging Stations	4 (8 spaces)	Bituminous	2	-
Service / Loading Dock	+/- 12	Bituminous	2	Bit. con. is in fair condition, a lot of block, linear and cracking.
Bike Racks	N/A	-	-	-

SITE ACCESSIBILITY

	Material	**Code Compliance**	**Condition**	**Comments**
Curb Cut - Main Entry	N/A			There are no curbs on site.
Curb Cut - other doors	N/A			
Curb Cut - Street	Bituminous	Unknown	3	Walkway from street entering site does have a cur
Walkways	Bituminous	Yes	2	The bit.con. walkways appear to meet compliance
Site Ramp	Wood	Yes	4	
Public Street	Bituminous			Public street only has sidewalk from Depot Street.
Main Entry	Wood	Yes	4	Main entry is accessible, ramp is in great condition

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Secondary Entries	Wood or steps	No / Yes	3/4	Most doorways have granite steps that are not acc There is a separate site ramp at the front or back e
Plazas	Bituminous	No	2/3	Slope of rear plaza most likely exceeds 5% slope in and appears to exceed 2% in others.
Courtyards	-	-	-	N/A

FIELDS

	Surface	**Source**	**Installed**	**Comments**
Open Field - Flex	Natural Lawn	VI	N/A	Fair; ground and fence are in fair condition. This fie to be a leach field for water treatment plant.
Playground – Abbot (Rear)	Wood chip, Bit.con.	VI	N/A	Bituminous is in poor condition, lots of cracking. Pl in fair/good condition. However, the wood chips n refilled immediately. The footings of many of the p structures are exposed causing a hazard.
Basketball Courts	Bituminous	VI	N/A	The pavement is cracked in the area, backboards w chipped, there was no padding on the posts, and n lines for courts. There were nets on the hoops.
Playground - Millennium	Wood chip, Bit.Con, Grass	VI	N/A	Fair; appears to be abandoned. Playground should inspected for safety before use by an school progra
Ballfield / Flex	Natural Lawn	VI	N/A	Adjacent School – on same parcel but maintained l recreation. Dept. Fair; ground and fence are in fair condition.

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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
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LANDSCAPE

	Comments
Lawn	Present. Winter conditions make assessment difficult.
Perennials	Winter conditions make assessment difficult.
Shrubs	Present. Winter conditions make assessment difficult.
Trees	Present. Winter conditions make assessment difficult.
Riparian Areas	Present. Winter conditions make assessment difficult.
Woodland /Forest	Present. Winter conditions make assessment difficult.
Swales	Present. Winter conditions make assessment difficult.
Meadows	N/A
Greenhouse	N/A
Raised Beds	Present. Winter conditions make assessment difficult.

ADDITIONAL SITE FEATURES

	Material	Cond	Comments
Site Lighting	See Electrical Section	2	No pole lighting observed, most exterior lighting a be building mounted.
Fire Hydrants	Standard	4	Front of Abbot school and in the playground betw School and the Millennium building.
Waste Management	Steel Dumpsters	3	Recycling & Garbage dumpsters are located outsid cafeteria. This is also a play area, there appears to conflict of use in this area.
Retaining Walls	Concrete	2	Loading area appears to be in fair/serviceable con
Fencing	Chain Link	3	Most fencing is good/fair. Though there is significa on fencing around the recreation fields.

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Gates	Chain link / steel	3	Good condition. They are opened for service acces
Flagpole	Steel	3	
Outdoor Classroom	Wood / composite Bench	3	Small arrangement of benches with concrete footi white board.

BUS OPERATIONS

None, no students at this building

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NC – Not to Code

2.1.3.2 Structural Systems

Summary:

This report is based on visual observations during a site visit on December 16, 2022. The visit did not involve taking measurements or widespread removal of finishes to observe underlying structural elements. Original structural design drawings were not obtained and reviewed to supplement the study.

Systems:

The building is a single-story modular structure originally constructed in 1999. Intended to be a temporary structure, it has remained in service and currently serves as administrative offices. The foundation consists of isolated, shallow sonotube footings. The ground floor is presumed to consist of a modular timber floor deck system. Typical roof framing consists of timber girders and secondary timber joist systems supported by timber posts. At fire walls, timber plywood wall systems were surfaced with steel fire-rated sheets. Ceiling tiles were removed for visual inspection in various locations to verify the nature of the underlying roof structure. The overall structure was noted to be in fair condition with no signs of water damage being observed in areas that were accessed. A deliberate lateral force resisting system was not verified on site.

The original building foundation and façade was not able to be performed due to skirt walls covering the underbelly of the structure.

Condition Key Criteria

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STRUCTURAL SYSTEMS DATA:

Original Building

	Material	Remarks	Condition:
Foundation System	Isolated shallow concrete sonotube footings (presumed, not verified)	-	N/A
Vertical Support System:	Timber post columns	No observed degradation in spot-checked locations	3
Ground Floor Framing System:	Modular timber floor deck (presumed, not verified)	-	N/A
Upper Floor Framing Systems:	N/A	-	-
Roof Framing Systems:	Timber girders, secondary timber joists, timber roof deck sheathing	No observed degradation in spot-checked locations	3
Lateral Force Resisting System	Unknown	No deliberate lateral force resisting system was verified on site	N/A

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2.1.3.3 Exterior Envelope Systems

Exterior Wall System:

The primary wall system is presumed to be painted, exterior rated plywood siding panel over building paper, ½" plywood sheathing and wood stud. Stud cavity is assumed to contain fiberglass batt insulation of similar with gypsum sheathing on the interior.

Moisture has penetrated all areas of the siding and paneling has started to degrade. The plywood is in direct contact with the ground or asphalt walks and wicks up drainage from rain and snow events over time. The skirting has deformed with extended exposure to moisture.

Trim molding that cover protects seems takes on moisture has directed into seams around the building. This can be seen at window joints, where fixed vinyl flanges, formerly cover by plywood sheeting and building paper now allow leaks into the interior.

Attempts have been made to repair the sheathing over the years as dissimilar fastens can be seen through the surface of the sheathing and trim. Boards push out after drying out from storms.

As the plywood side has become more brittle, pest control has been reported as a problem. Pests have damaged the outside wall.

Windows:

Residential Sliding Window composed of white vinyl material, single-glazed glass, with fiberglass mesh screen. Window assembly is wrapped in a prefinished, exterior grade wood trim.

Trim at perimeter window systems has broken down with extended exposure to moisture. The mesh screens work to collect water at the bottom of windows and have directed through weeps leak into horizontal joint under the window. Trim is splitting after freeze and thaw.

Entry Canopies:

Canopies at former Pre-K Entrance and Playground Access: Plywood soffit has been badly stained with water and roof residue and are in poor condition.

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Exterior Entrances:

Main Entrance to the District Offices: The main entrance to the district offices is uncovered by a canopy. It is composed of a pair of hollow metal doors in a hollow metal frame. Doors are hung on continuous hinges and operate via level style handle and panic hardware on the inside. Card access and handicap operators are located on the outside of the door. The door, frame and hardware assembly are in good condition.

At the heat of each window, water and moisture have wicked into the siding, and into the building. Degradation can be seen as the face of the siding as cracked and peeled away with unable to drain water.

Sealant joints installed between exterior opening joints have completely failed, no longer preventing water from penetrating into the joints.

Former Main Entrance of Preschool:

The former entrance of the preschool is composed of a pair of hollow metal doors within a hollow metal frame. Glass lites look to the outside. Surface mounted rods, with lower and upper latches are active by panic hardware for egressing to the outside. Bottom rods do not meet requirements of accessibility codes to keep the bottom 10 inches of door surfaces free of impediments to egress and the clear width of the opening. One drop down door stop is provided per door. Each leaf is provided with a closer. Use of the door stops may damage the closers. Exterior gasketing appears to be in good condition. Electronic card access is provided.

Typical Exterior Egress Doors are composed of a pair of hollow metal doors within a hollow metal frame. Glass lites look to the outside. Surface mounted rods, with lower and upper latches are active by panic hardware for egressing to the outside. Bottom rods do not meet requirements of accessibility codes. Lever style handles are used from outside with mechanical locks. One drop down door stop is provided per door. Each leaf is provided with a closer. Exterior gasketing appears to be in good condition.

Coating Systems of all Exterior Doors is in fair to good. Some doors show signs of surface degradation and scratching.

Gutter and Downspouts

Gutters are made of preformed aluminum material and residential style. They are in poor to fair condition. Drainage is directed to downspouts that discharge water to an underground system.

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The system is in poor to fair condition. Downspout transits to the underground PVC collection system has failed, likely due to freeze and thaw. Transitions are broken or completely removed.

Sealant around louvers in the addition appear cracked and chalky, which indicate they are in poor to fair condition.

Areas closer to paved shipping and receiving areas show grout joints that have been cracked and worn due to exposure to moisture, snow, and ice. A coating to reseal bottom course of soldier brick has failed.

Near the main entrance where a school size was removed, anchor penetrations remain open and some brick spalling has occurred.

Window Openings were replaced within the last 10 years, with insulated glass units in aluminum frames. Sealant at each opening is in fair condition, however in some areas sealant appears to have not properly adhered prior to curing. Face of sealant has begun degrading with exposure to the weight, showing a cracking on the outside face.

Fiberglass reinforce transparent panel system is used at gymnasium and appears to be in fair to good condition.

At window opening, outside custodial storeroom, a void exists at the parapet wall.

Existing Louvers are in fair condition. Protective coats and sealant at opening are failing.

EXTERIOR ENVELOPE SYSTEMS DATA:

Original Building

	Material	**Remarks**	**Condition:**
Exterior Wall Assembly	Plywood Siding over Wood Stud	-	1
Roof Assembly:	Fully Adhered EPDM	-	1-2
Roof Drains:	N/A	-	-
Flashing:	N/A	-	-
Canopies/Overhangs:	Wood	-	1
Windows:	Vinyl	-	1-2

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Skylights/Clerestory:	N/A	-	-
Exterior Doors:	HM	-	2-3
Louvers & Vents	N/A	-	-
Exterior Door Hardware	Levers with Exterior Cylinders at Primary Entries, Continuous Hinges, Thresholds Vary	-	2-3
Weatherstripping and Thresholds	Silicone & Brush		2-3
Exterior Access Control	See Addition		3-4
Emergency Responder Signage	4” Vinyl Numbers	Small at Distance. Peeling at some locations.	2-3
Roof Access	N/A	-	-
Gutters and Downspouts	Aluminum	-	2

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2.1.3.4 Interior Envelope Systems

Wall Systems:

Plywood Paneling and Wood Trim (PP): This system composes the majority of interior offices spaces throughout the building and in fair to poor condition depending on location. Paneling along the perimeter tends to be in worse condition due to the degrading exterior envelope.

Where partitions are added in spaces, the partitions frequently terminate at the bottom of suspended ceiling systems.

Rated Plywood Paneling (RPP): Corridors and partitions that previous separate the educational use from the business use required partitions that achieved a 1 or 2 hour rating. These wall assemblies are used at all corridor walls and partitions aligning with centralized cross corridor egress door.

Bathroom Compartments are in fair to poor condition and do not provide proper privacy. Latching hardware has been disassembled and operated from both sides.

Entrance Systems:

Main Egress Vestibule at District Office Entrance: A pair of wood door leaves egress out through the secure weather vestibule. Door is hung in a hollow metal frame using butt hinge. Panic hardware and level style handles with closers operate the doors. Interior set of doors are capable of being held open on magnetic door holders or accessed with a separate mechanical door cylinder.

Former Classroom/Current Office Entrances: Entrance of the corridor are rated wood veneer doors with wired glass lites, hung in rated hollow metal frames. Hardware is composed of level style handles and butt hinges. Veneer faces are scratched and worn in most cases and are in fair condition.

Corridor Egress Doors on Pre-Kindergarten Wing: Two-hour rated hollow metals door is installed in a hollow metal frame. Prior to Pre-Kindergarten moving back to neighborhood elementary schools, access to the wing was restricted from the office side, with access being requested from a local intercom. Both door leafs are equipped with surface mounted, two-pin, top and bottom latching

panic hardware, which would be granted operation once magnetic hardware at the head of the doors released the doors for use.

This hardware assembly is in fair to good condition but is no longer in use. Doors stay open on magnetic hold opens, for ease of access between the town offices that now operate within the former classroom spaces.

Panic hardware with bottom rod configuration are no longer acceptable under current codes. The bottom surface of the door must remain clear to avoid become an obstruction to a person in a wheelchair or using cane to egress through an opening.

Exit sign incorrectly notes direct of egress, with doors swing against the direction of occupants exiting the building.

Service Entrances are wood doors and frames varying in single and double leaf configurations. Doors are in fair to good condition with level style hardware, butts style hinges, closers and mechanical cylinders. Hardware is in fair condition.

Flooring Systems:

Vinyl Composite Tile (VCT) is located in corridors, offices and community gathering spaces. Floor has been seen patches and replacement over years of use, some tiles show signs of cracking. The floor is well maintained but is in fair condition.

Broadloom Carpet (CPT-BL) can be found in lieu of VCT in special education classroom and are in fair to good condition.

Ceiling Systems:

Acoustic Ceiling Tile Systems (ACP) are located throughout all the spaces in the building. Leaks from the failing roof system can be seen in all spaces. The tiles are replaced frequently. The system ranges in condition from poor to good.

Suspension framing and tile panels are in poor to fair condition in service areas.

INTERIOR ENVELOPE SYSTEMS:

Original Building

	Wall Material:	Condition:	Floor Material:	Condition:	Ceiling Material:	Condition:
Former Classrooms:	RPP	2	VCT	2	ACP	1-2
Offices:	PP	2	CPT-BL	2	ACP	1-2
Conference Space:	RPP	2	CPT-BL	2	ACP	1-2

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Corridors:	RPP	2	VCT	2	ACP	1-2
Entry Vestibules:	PP	2	VCT, MAT	2	ACP	1-2
Public Restrooms:	PP	2	VCT	2	ACP	2
Kitchen:	PP	2	VCT	2	ETS, PTD	1
Mechanical Room:	PP	2	VCT	2	ETS	2

	Material/Type:	**Glazing:**	**Width:**	**Rating:**	**Closer:**	**Condition:**
Door – Classroom/Admin:	HM	Yes	3’-0”	1 HR	No	-
Door – Service:	HM	-	3’-0”	2 HR	Yes	2
Door – Corridor/Egress:	HM	Yes	6’-0”	2 HR	Yes	3

Abbreviations:

CMU	*Concrete Masonry Unit*	CT	*Ceramic Tile*
BR	*Facebrick*	PT	*Porcelain Tile*
ALUM	*Aluminum*	CPT-BL	*Carpet – Broadloam*
HM	*Hollow Metal*	CPT-T	*Carpet - Tile*
VCT	*Vinyl Composition Tile*	TZ	*Terrazzo*
ACP	*Acoustic Tile Ceiling*	VT	*Vinyl Treads*
GWB	*Gypsum Sheathing*	PL	*Plaster*
SCFT	*Structural Clay Facing Tile*	WD	*Wood*
*	*Suspected Asbestos Containing Material, See Attached Report*		

2.1.3.5 Plumbing Systems

Summary:

The following information is based on visual observations during site walk through performed on December 16, 2022. The building was built in 1999. Most piping is not visible, and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

Services:

The incoming 6" water service is a combination domestic water service and fire service, entering the building in the Custodial/Sprinkler room. Domestic cold water for the facility is fed from a single 3-inch main water service. The existing 3" water meter, pressure reducing valve and main shut-off valves are in fair to good condition. The existing water service includes a reduced pressure backflow preventer.

Systems:

Domestic Cold Water

Most domestic cold water piping is not visible. All piping, valves and risers appear and assumed to be original to the building, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread problems. Pipe insulation is original and assumed to be in fair condition. Exposed pipes in the Custodial/Sprinkler room are not insulated.

Domestic Hot Water

Domestic hot water for the facility is supplied from two (2) electric water heaters. One of the electric water heaters was installed on February 15, 2013, in the Custodial/Sprinkler Room. It is almost at the end of its useful life expectancy and warranty. It is in fair condition. There is no expansion tank, circulation pump and mixing valve installed for this water heater. The other electric water heater was installed on April 18, 2019, in the Electrical 2 Room. It is in good condition. There is no expansion tank, circulation pump and mixing valve installed for this water heater. Most domestic hot water piping is not visible. All piping, valves and risers appear and are assumed to be original to the building, in fair to good condition, and expected to last about 30 more years before it will exhibit widespread

problems. Pipe insulation is original and assumed to be in fair condition. Exposed pipes in the Custodial/Sprinkler room and Electrical 2 room are not insulated.

Sanitary Waste and Vent

The existing building sanitary waste and vent system, which drains by gravity, is collected below the slab and is therefore not visible and could not be observed. The entire underslab (buried) sanitary sewer should be tested for any leakage, back up and pipe aging condition by performing static pressure tests and video camera inspections. The sanitary effluent discharges below grade to the site sewer drain distribution system. Sanitary drainage piping is original to the building, and it is expected to last about 30 more years before it will exhibit widespread problems.

Storm Drainage

Gutter and downspouts were installed.

Fixtures:

All plumbing fixtures are original, and in fair condition.

Girls Toilet Room:

Water Closets are floor mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 18-1/4” from finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with single lever faucets, generally in fair to good condition. Pipes below the lavatories are insulated. The mounting height is 34” from finished floor.

Women’s Toilet Room:

Water Closets are floor mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 18-1/4” (ADA and non-ADA) from finished floor to the top of the seat.

Lavatories are wall-hung type, vitreous china with single lever faucets, generally in fair to good condition. Pipes below the lavatories are insulated. The mounting height is 34” from finished floor.

Boys Toilet Room:

Water Closets are floor mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting heights are 18-1/2” (ADA) and 15-1/2” (non-ADA) from finished floor to the top of the seat.

Urinals are wall mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 16-1/2” from finished floor to the rim.

Lavatories are wall-hung type, vitreous china with hot and cold water handles and single lever faucets, generally in fair to good condition. Pipes below one of the lavatories are not insulated. The mounting height is 33-1/2" from finished floor.

Adult Toilet Room:

Water Closet is floor mounted, vitreous china with manual operated flush valves, in fair to good condition. The mounting height is 18-1/4" from finished floor to the top of the seat.

Lavatory is wall-hung type, vitreous china with single lever faucet, generally in fair to good condition. Pipes below the lavatory are insulated. The mounting height is 34" from finished floor.

Teacher's Room:

Sink is stainless steel, non-ADA, self-rimming/drop in single compartment, with hot and cold handles and gooseneck faucet, in fair to good condition.

Medical Reserve Room 18: Sink is stainless steel, non-ADA, self-rimming/drop in single compartment, with single lever faucet and hose spray, in fair to good condition.

Room 16 (Conference Room): Sink is stainless steel, non-ADA, self-rimming/drop in single compartment, with single lever faucet and hose spray, in fair to good condition.

Miscellaneous Fixtures:

The custodian's mop sink is original, floor mounted, and in fair condition.

Drinking fountains installed within the building: Bi-level unit, ADA compliant, non-recessed with built-in chiller and push button activation, electric water cooler, in fair to good condition.

A bottled emergency eyewash unit was installed above the electric water cooler near the entrance.

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1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
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4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

PLUMBING SYSTEMS:

	Pipe Size:	Meter Size:	Pressure Regulator:	Oper. Pressure:	Pipe Material:	Source:	Age:	Condition:
Water Service:	3”	3”	Yes	N/A	Copper	City	23	3
Gas Service:	N/A	-	-	-	-	-	-	-

System	Pipe Material	Condition	Insulation Type	Condition	Miscellaneous
Domestic Cold Water:	Copper	3	Mineral-fiber	3	-
Domestic Hot Water:	Copper	3	Mineral-fiber	3	-
Sanitary Waste & Vent:	Cast Iron	3	N/A	N/A	-
Storm Drainage:	N/A	-	-	-	-
Gas:	N/A	-	-	-	-
Non-Potable (Lab) CW:	N/A	-	-	-	-
Non-Potable (Lab) HW:	N/A	-	-	-	-
Acid (Lab) Waste & Vent:	N/A	-	-	-	-
Kitchen Waste:	N/A	-	-	-	-
Tempered Water:	N/A	-	-	-	-

Equipment	Type/Fuel	Age	Condition	Miscellaneous
Domestic Hot Water Heater:	Tank-type/Electric	3 & 9	4 & 3	-
Sanitary Ejector Pump:	N/A	-	-	-
Storm Ejector Pump:	N/A	-	-	-
Domestic Water Booster Pump:	N/A	-	-	-
Interior Kitchen Grease Trap:	N/A	-	-	-

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N/A – Not Applicable/Missing
NC – Not to Code

Fixtures	Type	Location	Accessible	Condition	Miscellaneous
Water Closet:	Floor mount	See Above	Yes & No	3	-
Urinal:	Wall mount	See Above	Yes & No	3	-
Lavatory:	Wall mount	See Above	Yes & No	3	-
Drinking Fountain/Water Cooler:	Wall mount	See Above	Yes	3	-
Classroom Sink:	Counter	See Above	No	3	-
Classroom STEM Sink:	N/A	-	-	-	-
Classroom Drinking Fountain:	N/A	-	-	-	-
Mop Sink:	Floor	Janitor's Closet	N/A	2	-
Showers:	N/A	-	-	-	-

:

Miscellaneous Fixtures	Type
Hose Bibb:	Wall mounted
Wall Hydrant:	Not present
Floor Drain:	Floor Mounted, type varies by location.
Emergency Shower/Eyewash	N/A
Emergency Location	N/A
Lab Faucets	N/A
Lab Gas Cocks:	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.6 Fire Protection Systems

Summary:

The following information is based on visual observations during site walk through performed on December 16, 2022. The building was built in 1999.

Services:

The incoming 6” water service is a combination fire service and domestic water service, entering the building in the Custodial/Sprinkler room. The existing 4” fire service includes a 4” double check valve assembly, wet alarm valve with tamper switch and main flow switch, in good condition.

There is no fire pump and jockey pump in the facility.

Systems:

Wet-pipe sprinkler system was installed throughout the facility. Wet alarm valve and riser are located in the Custodial/Sprinkler room. Existing sprinkler head types are recessed pendant and upright sprinkler heads. The wet sprinkler piping and sprinkler heads are still in good condition, and it is expected to last about 30 more years before it will exhibit widespread problems.

Upright sprinkler heads were installed above the ceiling to protect the wood joist construction.

Sprinkler head is not installed in Electrical Room 1.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

FIRE PROTECTION SYSTEMS:

	Size:	Backflow Preventer/ Type	Pipe Material	Oper. Pressure:	Pipe Material:	Condition:	Miscellaneous:
Water Service:	4”	Yes/DCVA	Epoxy coated ductile iron	N/A	Black Steel	3	-
Fire Pump:	N/A	-	-	-	-	-	-

	Location	Type	Zone:	Condition:	Miscellaneous:
Suppression System:	Throughout	Wet-pipe sprinkler system	Not Determined	3	-

	Location	Type	Pipe Material	Remarks:
Sprinklers:	Throughout	Recessed pendent and upright	Chrome Plated and Natural Brass	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.7 Heating & Ventilating Systems

Summary:

The building is heated and cooled with packaged equipment on the roof. The HVAC systems, distribution and equipment are at or beyond their life expectancy.

Systems:

The building is served by twenty-eight (28) individual packaged rooftop units with unitary controls. One unit recently failed and was replaced; all others are original to the building. There is one (1) unit per 'classroom' and four (4) units in the multi-purpose room. The units are gas fired with electric cooling. It has been reported that the control boards are failing on these units.

The IDF/Server room is not air conditioned. It was noted that there is also an electric panel and a water heater in this room.

HEATING & VENTILATING SYSTEMS DATA:

Centralized Systems:	Energy Source:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Equipment #1:	N/A	-	-	-	-
Cooling Equipment #1:	N/A	-	-	-	-
Exhaust Equipment#1:	N/A	-	-	-	-

Distribution Systems:	Type:	Manufacturer:	Date of Installation:	Condition:
Heating Distribution Equipment:	N/A	-	-	-
Cooling Distribution Equipment:	N/A	-	-	-
Air Distribution Equipment:	Packaged rooftop units	Carrier	(27) 2000 (1) 2019	3 4

Terminal Equipment:	Type:	Controls:	Manufacturer:	Date of Installation:	Condition:
Typical Classrooms:	NA	-	-	-	-
Science Classrooms:	NA	-	-	-	-
Art Classrooms:	NA	-	-	-	-
Music Classroom:	NA	-	-	-	-

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Offices:	Constant volume heating & cooling	Refer to Controls	-	-	-
Library:	NA	-	-	-	-
Auditorium:	NA	-	-	-	-
Cafeteria:	NA	-	-	-	-
Gymnasium:	NA	-	-	-	-
Multipurpose Room:	Constant volume heating & cooling	Refer to Controls	-	-	-
Kitchen:	Constant volume heating & cooling	Refer to Controls	-	-	-
Corridors:	No ventilation	Refer to Controls	-	-	-
Toilets:	Constant volume heating & cooling	Refer to Controls	-	-	-
Locker Rooms:	N/A	-	-	-	-

Kitchen Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

Energy Recovery Equipment:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
Equipment 1:	N/A	-	-	-

HVAC Controls:	**Type:**	**Manufacturer:**	**Date of Installation:**	**Condition:**
	Unitary controls	N/A	2000	3

Notes:

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.8 Electrical Systems

Summary:

Overall, the existing electrical systems including Interior/Exterior Lighting and Normal power distribution system are in good operational condition.

Services:

Electrical – National Grid. Initiates at the existing street utility poles and extend overhead towards the building. Electrical service terminates pole-mounted transformers. No issues with services were reported.

Telephone – Verizon. Initiates at the existing street utility poles and extend overhead towards the building. No issues with services were reported.

Transformer:

A set of three pole-mounted transformers supply electrical service to the building via outdoor wall-mounted utility CT cabinet and meter. No specific issues were reported.

Generator:

There is no generator.

Distribution System:

The utility transformer's secondary feeder is terminated in a 1,200 Amp 120/208v 3 phase 4 wire Main Distribution panel manufactured by Siemens. It's equipped with a 1,200 Amp Main Circuit breaker and a few downstream breakers feeding panelboards located throughout the building. The quantity of receptacles in various spaces appear to be adequate for the respective space programs.

Lighting Systems:

Exterior lights:

Appear dated.

Interior lighting:

Consists of 2'x4' lensed troffers with T8 fluorescent lamps and LED exit signs.

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Emergency lighting is implemented by emergency battery units with light heads. It was also reported that a few lights in corridor and office spaces are powered from the Abbot school's emergency power distribution system. In general, lights are in fair operational condition, but not of energy-efficient type.

Lighting controls:

There are no occupancy sensors, no photocells and no programmable time-controlled lighting control system. All interior and exterior lights are manually switched.

Emergency Devices:

Emergency devices include LED exit signs and Fire Alarm notification (signaling) devices, horn/strobes and strobe only units. In general, all appear to be in good operational condition.

ELECTRICAL SYSTEMS DATA:

ELECTRICAL SERVICE	**Type:**	**Voltage:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Service:	OH	120/208	3 phase 4 wire	2000	4

TRANSFORMER	**Type:**	**Utility:**	**Location:**	**Date of Installation:**	**Condition:**
Transformer 1:	Pole-mounted	National Grid	Outdoor	2000	4

EMERGENCY GENERATOR	**Type/ Size:**	**Energy Source:**	**Phase/ Wiring:**	**Date of Installation:**	**Condition:**
Generator:	N/A	N/A	N/A	N/A	N/A

DISTRIBUTION SYSTEM	**Type:**	**Voltage:**	**Location:**	**Date of Installation:**	**Condition:**
System:	Main Distribution panel	120/208 3ph 4w	Elec room	2000	4
	Panels	120208 3ph 4w	Throughout	2000	4

	Location:	**Type:**	**Phase/ Wiring:**	**Grounded/ Non-Grounded**	**Condition:**
Power Receptacles:	*Typical Classroom*	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Offices:	Standard	1ph/120v	Grounded	4
Library:	N/A	N/A	N/A	N/A
Gymnasium:	N/A	N/A	N/A	N/A
Cafeteria:	Standard	1ph/120v	Grounded	4
Corridor:	Standard	1ph/120v	Grounded	4

INTERIOR LIGHTING	**Location:**	**Fixture/Lamp Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Interior Light Fixtures:	*Typical Classroom*	N/A	N/A	N/A	N/A
	Offices:	2'x4' lensed/ T8 fluorescent	Recessed	2000	4
	Library:	N/A	N/A	N/A	N/A
	Gymnasium:	N/A	N/A	N/A	N/A
	Cafeteria:	2'x4' lensed/ T8 fluorescent	Recessed	2000	4
	Corridor:	2'x4' lensed/ T8 fluorescent	Recessed	2000	4

SITE LIGHTING	**Location:**	**Fixture Type:**	**Mounting:**	**Date of Installation:**	**Condition:**
Site Light Fixtures:	Canopy	Downlights	Recessed	2000	3

EMERGENCY LIGHTING	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Fixture 1:	Battery units	Sure-Lites	Wall-mounted	2000	4

EMERGENCY DEVICES	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Device 1:	Exit signs	Various	Various	2000	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.9 Fire Alarm Systems Narrative

Summary:

In general, the existing fire alarm system is in good operational condition.

Services:

Existing FACP transmits the alarm and trouble signals to Fire Department via a dedicated radio box and antenna set up. The FACP is addressable by Honeywell Fire-Lite. The radio box is manufactured by AES IntelliNet. Both are installed in vestibule.

Devices:

Smoke detectors in corridors and Cafeteria (Multi-purpose room), horn/strobes and strobe only units throughout. All in good operational condition.

FIRE ALARM SYSTEMS DATA:

FIRE ALARM SYSTEM	Type:	Manufacturer:	Notifications:	Date of Installation:	Condition:
System:	Addressable	Honeywell	Horn/strobes and Strobes	Original	4

FIRE ALARM DEVICES:	Detector Type:	Alarm Signal Type:	Pull Station:	Date of Installation:	Condition:
Classrooms:	N/A	N/A	N/A	N/A	N/A
Offices & Conf rooms	None	Horn/strobes	None	2000	4
Gymnasium:	N/A	N/A	N/A	N/A	N/A
Cafeteria:	Smoke	Horn/strobes	Yes	2000	4
Lobby/Corridor	Smoke	Hor/strobes	Yes	2000	4
Kitchen:	N/A	N/A	N/A	N/A	N/A
Toilets:	None	Horn/strobes	None	2000	4
Basements:	N/A	N/A	N/A	N/A	N/A

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.10 Communications & Security Systems

Security system – System is in good and working order. Installed new within the last 5 years.

Clock System – System is passed its useful life expectancy

PA system - System is passed its useful life expectancy

Data Network – Network is a star configuration, category 5e cabling. Network switches installed within 10 years and functioning.

Telephone system – New unified Cisco VoIP system, installed within last 5 years. VoIP system is interfaced with PA system

Services -Town owns dark fiber network that connects schools and municipal buildings.

SECURITY AND COMMUNICATIONS SYSTEMS:

SECURITY SYSTEMS	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
CCTV:	IP Based	Asix Cameras & ExacVision Server	Ceiling/Wall	Last 5 years	4
Door Access Controls:	Card Reader	DSX	Wall	Last 5 years	4
Security System:	Access Control	Unknown	Wall	20+ years	2
Motion Detectors:	Intrusion Detection	Unknown	Ceiling/Wall	20+ years	2

CLOCK SYSTEM	**Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**
Clock Systems:	Analog	Mixed	Wall	20+ years	2
Master Clock:	Analog	Sapling	Rack	20+ years	2
Bells:	Thru PA	N/A	N/A	20+ years	2

PUBLIC ADDRESS SYSTEMS	**Device Type:**	**Manufacturer:**	**Mounting:**	**Date of Installation:**	**Condition:**

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

Classrooms:	2-way w/ push to talk	Roland	Ceiling/Wall	20+ years	0
Corridors:	1-way	Roland	Ceiling/Wall	20+ years	0
Console:	Analog PA	Roland	Rack	20+ years	0

DATA SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Library:	Category 5e	Draka Helix	N/A	20+ years	2
Classrooms:	Category 5e	Draka Helix	N/A	20+ years	2
Offices:	Category 5e	Draka Helix	N/A	20+ years	2
Gymnasium:	Category 5e	Draka Helix	N/A	20+ years	2

TELEPHONE SYSTEMS	**Quantity/ Type:**	**Manufacturer:**	**CATV:**	**Date of Installation:**	**Condition:**
Classrooms:	VoIP	Cisco	N/A	Last 5 years	4
Offices:	VoIP	Cisco	N/A	Last 5 years	4

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

2.1.3.11 Accessibility Systems

General Egress: Corridors and hallways meet maneuvering clearances at doorways in main entry vestibules, classrooms/offices, and restrooms.

Braille room signage is not provided. The mounting of room numbers does not meet reach requirements.

Drinking fountains in the building do not meet accessibility requirements due to insufficient clear area around the fountains.

Stairs, ramps, and associated hand and guard rails do not meet accessible requirements.

ACCESSIBILITY SYSTEMS:

EXTERIOR ACCESSIBLE ROUTE	**Dimension:**	**Material:**	**Hardware:**	**Condition:**
Primary Entrance Depth:	8'-0"	-	-	-
Exterior/Egress Doors Width:	6'-0"	HM	Level Style Handle	3
Signage:	Not Present at Offices	-	-	-

INTERIOR ACCESSIBLE ROUTE	**Width:**	**Material:**	**Hardware:**	**Condition:**
Interior Doorways				
Classrooms:	3'-0"	WD	Lever Style	2
Offices:	3'-0"	WD	Lever Style	2
Kitchen:	3'-0"	WD	Lever Style	3
Cross Corridors:	6'-0"	WD	Lever Style/Panic HW	3
Toilets:	3'-0"	WD	Lever Style	3

0 – Poor –Failed
1 – Poor/Fair – Failure Expected
2 – Fair – Serviceable/Maintenance Required
3 – Fair/Good – Functioning, Maintained
4 – Good – Fully Functional, New
N/A – Not Applicable/Missing
NC – Not to Code

CLEAR FLOOR SPACE:	**Meets ADA Guidelines**	**Description:**
Toilet Rooms	No	-
Tables & Seating - Cafeteria	Yes	-
Drinking Fountains	No	-
Controls/Switches	Yes	-
Signage	No	Braille signage not present.

Appendix 4 - Summary of Spaces

Abbot Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA[1] (avg)	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**17,414**
(List classrooms of different sizes separately)			
Gen. Classroom (600-699 sf)	658	7	4,605
Gen. Classsroom (700 -799 sf)	797	2	1,953
Gen. Classroom (800-899 sf)	807	7	5,651
Gen. Classroom (900-999 sf)	950	2	1,900
Gen. Classroom (1000-1099 sf)	1,009	2	2,018
Gen. Classroom (1200-1299 sf)	1,287	1	1,287
SPECIAL EDUCATION			**3,118**
(List rooms of different sizes separately)			
Self-Contained SPED	1,008	1	1,008
Math Intervention	210	1	210
Math Intervention	405	1	405
Reading Intervention / Book Storage	1,011	1	1,011
OT/PT	345	1	345
Office	102	1	102
Office	37	1	37
ART & MUSIC			**2,675**
Art Classroom - 25 seats			0
Art Workroom w/ Storage & kiln			0
Music Classroom / Large Group - 25-50 seats	1,920	1	1,920
Music Classroom	527	1	527
Practice Room	70	1	70
Practice Room	78	1	78
Practice Room	80	1	80
HEALTH & PHYSICAL EDUCATION			**7,585**
Gymnasium	7,585	1	7,585
MEDIA CENTER			**1,263**
Media Center / Reading Room	1,263	1	1,263
DINING & FOOD SERVICE			**5,175**
Cafeteria / Dining	2,845	1	2,845
Stage	1,085	1	1,085
Dietician	140	1	140
Kitchen	840	1	840
Kitchen Storage	265	1	265
MEDICAL			**300**
Medical Suite Toilet	40	1	40
Nurse's Office	260	1	260
ADMINISTRATION & GUIDANCE			**1,377**
General Office / Waiting Room / Secretary	180	1	180
Copy Room	107	1	107
Principal's Office	258	1	258
Office	182	1	182
Adj. Counselor	140	1	140
Adj. Counselor	163	1	163

Abbot Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA[1] (avg)	# OF RMS	area totals (actual)
Teachers' Work Room	200	1	200
Work Room	147	1	147
CUSTODIAL & MAINTENANCE			0
Custodian's Workshop	322	1	
Custodian's Storage			
OTHER			0
De-escalation Room	65	1	

Blanchard Middle School	Existing Conditions		
ROOM TYPE	ROOM NFA (avg)	# OF RMS	area totals
CORE ACADEMIC SPACES			**23,197**
(List classrooms of different sizes separately)			
Gen. Classsroom (700 -799 sf)	752	16	12,032
Gen. Classroom (800-899 sf)	814	8	6,512
Science Classroom / Lab- (800-899 sf)	821	3	2,463
Science Classroom / Lab (900-999 sf)	965	2	1,930
Prep Room	130	2	260
SPECIAL EDUCATION			**8,252**
(List classrooms of different sizes separately)			
Self-Contained SPED (700-799 sf)	756	4	3,024
Self-Contained SPED (800-899 sf)	836	4	3,344
Speech	168	1	168
ELL	262	1	262
Intervention Room	881	1	881
6-8 Grade Reading	215	1	215
Small Group Room	168	1	168
Small Group Room	190	1	190
ART & MUSIC			**4,091**
Art Classroom	866	1	866
Art Storage	169	1	169
Band	1,348	1	1,348
Chorus	905	1	905
Ensemble	196	1	196
Practice Room	70	3	210
Music Storage	265	1	265
Chorus Storage	132	1	132
VOCATIONS & TECHNOLOGY			**2,137**
Shop	1,424	1	1,424
Computer Lab	713	1	713
HEALTH & PHYSICAL EDUCATION			**12,040**
Gymnasium	7,399	1	7,399
Gym Storage	465	1	465
Fitness Center	436	1	436
Fitness Center	979	1	979
Dance Room	214	1	214
Health Instructor's Office (Boys)	194	1	194
Health Instructor's Office (Girls)	202	1	202
Locker Rooms - Boys	1,101	1	1,101
Locker Rooms - Girls	1,050	1	1,050

Blanchard Middle School	Existing Conditions		
ROOM TYPE	ROOM NFA (avg)	# OF RMS	area totals
MEDIA CENTER			**5,995**
Learning Commons	4,716	1	4,716
Periodic	88	1	88
Office	137	1	137
Workroom	254	1	254
A.V. Storage	162	1	162
Photo and Dark Room	110	1	110
Computer Room	202	1	202
Student Activity	160	1	160
Student Activity	166	1	166
AUDITORIUM / DRAMA			**6,470**
Auditorium	4,711	1	4,711
Stage	1,397	1	1,397
Auditorium Storage	146	2	292
Controls / Lighting / Projection	70	1	70
DINING & FOOD SERVICE			**7,758**
Cafeteria	4,715	1	4,715
Chair Storage	123	1	123
Cafeteria Storage	147	1	147
Kitchen	1,570	1	1,570
Teachers' Dining	613	1	613
Kitchen Storage	400	1	400
Office	50	1	50
Locker	48	1	48
Toilet (46 sf avg)	46	2	92
MEDICAL			**694**
Medical Suite Toilet	41	1	41
Nurses' Waiting Room	294	1	294
Nurses' Office	122	1	122
Examination Room	157	1	157
Resting	40	2	80
ADMINISTRATION & GUIDANCE			**2,920**
General Office / Waiting Room / Toilet	531	1	531
Office	59	2	118
Office (100-110 sf)	105	2	210
Psychologist Office	110	1	110
Conference Room	187	1	187
Guidance Waiting Room	474	1	474
Guidance Office (100-110 sf)	107	4	428
Guidance Storeroom	97	1	97
Teachers' Work Room/ Storage	257	1	257
Teachers' Work Room	330	1	330
Conference Room	178	1	178

Blanchard Middle School	Existing Conditions		
ROOM TYPE	ROOM NFA (avg)	# OF RMS	area totals
CUSTODIAL & MAINTENANCE			**1,257**
Custodian's Office	129	1	129
Receiving and General Supply	458	1	458
Outside Storage	340	1	340
Outside Equipment	330	1	330
OTHER			**3,188**
Maker Space	810	1	810
3D Printing	150	1	150
Student Center	285	1	285
Multipurpose Room	750	1	750
Guidance Classroom	979	1	979
Guidance Classroom	214	1	214

Crisafulli Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA (avg)	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**16,147**
(List classrooms of different sizes separately)			
Gen. Classroom (900-999 sf)	950	21	16,147
SPECIAL EDUCATION			**11,753**
(List rooms of different sizes separately)			
Self-Contained SPED (900-999 sf)	950	6	5,287
Self-Contained SPED - toilet	56	1	
Self-Contained SPED - Medically Fragile	586	1	586
Resource Room - (900-999 sf)	950	3	2,850
Resource Room - Math	944	1	944
Speech	368	1	368
OT/PT	951	1	951
OT	206	1	206
ELL	277	1	277
BCBA	284	1	284
ART & MUSIC			**3,985**
Art Classroom - 25 seats	896	1	896
Art Storage	153	1	153
Kiln Room	154	1	154
Music Classroom / Large Group - 25-50 seats	1,044	1	1,044
Practice Room	137	1	137
Music Storage	135	1	135
Band - Small	536	1	536
Band - Large	930	1	930
HEALTH & PHYSICAL EDUCATION			**6,359**
Gymnasium	6,135	1	6,135
Gym Storeroom	224	1	224
MEDIA CENTER			**3,075**
Media Center / Reading Room	2,885	1	2,885
Work Room	190	1	190
DINING & FOOD SERVICE			**5,483**
Cafetorium	3,050	1	3,050
Stage / Platform	863	1	863
Chair / Table / Equipment Storage	210	1	210
Kitchen	1,100	1	1,100
Office	70	1	70
Kitchen Storage	80	1	80
Kitchen Storage	110	1	110
MEDICAL			**0**
Medical Suite Toilet		1	
Nurses' Office / Waiting Room		1	
Examination Room / Resting		1	

Crisafulli Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA (avg)	# OF RMS	area totals (actual)
ADMINISTRATION & GUIDANCE			**5,250**
Reception	355	1	355
Exam Room	160	1	160
Teachers' Mail and Time Room	304	3	912
Copy Room	446	1	446
Principal's Office	200	1	200
Principal's Secretary / Waiting / Reception	746	1	746
Assistant Principal's Office	158	1	158
Conference Room	398	1	398
Guidance Office	160	1	160
Guidance Office	207	1	207
Teacher Planning	277	2	554
Teacher Planning	318	2	636
Psychologist	318	1	318
CUSTODIAL & MAINTENANCE			**1,386**
Custodian's Office	238	1	238
Exterior Storage	257	1	257
Janitor's Closet	64	1	64
Janitor's Closet	37	2	74
Receiving and General Supply	133	1	133
Storeroom	310	2	620
OTHER			**1,003**
Innovation Lab	1,003	1	1,003

Day Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES		27	**24,313**
(List classrooms of different sizes separately)			
Classroom	567	1	567
Classroom (800-899 sf)	varies	21	17,760
Classroom (900-999 sf)	varies	3	2,795
Classroom	1,121	1	1,121
Classroom	1,260	1	1,260
STEM Classroom	810	1	810
SPECIAL EDUCATION			**8,917**
(List rooms of different sizes separately)			
Self-Contained SPED (800-899 sf)	varies	4	3,432
Self-Contained SPED (900-999 sf)	907	1	907
Literacy Classroom	630	1	630
Reading Intervention	960	1	960
Math Intervention	1,290	1	1,290
Speech/ OT	835	1	835
Adjustment Counselor	863	1	863
ART & MUSIC			**2,445**
Art Classroom - 25 seats	1,180	1	1,180
Art Storage	118	1	118
Music Classroom	567	1	567
Music Classroom	580	1	580
HEALTH & PHYSICAL EDUCATION			**4,300**
Gymnasium	4,000	1	4,000
Gym Storage	86	1	86
Gym Storage	93	1	93
Health Instructor's Office	56	1	56
Health Instructor's Office	65	1	65
Health Classroom	370	1	370
MEDIA CENTER			**2,129**
Library	1,077	1	1,077
Work Room	108	1	108
Library Office	97	1	97
Library Research	847	1	847
DINING & FOOD SERVICE			**4,756**
Cafetorium	2,228	1	2,228
Stage	1,100	1	1,100
Chair / Table / Equipment Storage	35	1	35
Kitchen	1,130	1	1,130
Dishwasher	120	1	120
Storage	40	2	80
Storage	63	1	63

Day Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
ADMINISTRATION & GUIDANCE			**2,502**
General Office / Waiting Room / Toilet	383	1	383
Secretary	130	1	130
Copy Room	255	1	255
Principal's Office	170	1	170
Assistant Principal's Office	118	1	118
Spare Office	95	1	95
Conference Room	283	1	283
Guidance Office	72	1	72
Teachers' Work Room	292	1	292
Teachers' Work Room	704	1	704
CUSTODIAL & MAINTENANCE			**1,620**
Custodian's Storage	783	1	783
Receiving	440	1	440
Storeroom	307	1	307
Janitor's Closet	90	1	90

Miller Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals
CORE ACADEMIC SPACES			**17,416**
(List classrooms of different sizes separately)			
Pre-Kindergarten w/ toilet (1130-1145)	varies	2	2,276
Kindergarten w/ toilet	1,135	4	4,540
Classrooms - Grade 1-6 (900-999 sf)	varies	9	8,523
Classroom	1,135	1	1,135
Innovation Classroom	942	1	942
SPECIAL EDUCATION			**13,334**
(List rooms of different sizes separately)			
Self-Contained SPED (900-999 sf)	varies	3	2,833
Self-Contained SPED (1000-1099)	varies	4	4,160
Self-Contained SPED - toilet	43	4	172
Reading Intervention	935	1	935
Math Intervention	940	1	940
Reading Specialist	947	1	947
ELL	167	1	167
ELL	293	1	293
OT / PT	1,147	1	1,147
Speech Therapist	293	1	293
Speech Therapy	300	1	300
SLP	490	1	490
BCBA	167	1	167
Adjustment Counselor	490	1	490
ART & MUSIC			**2,278**
Art Classroom	888	1	888
Art Storage	263	1	263
Music Classroom	962	1	962
Music Storage	165	1	165
HEALTH & PHYSICAL EDUCATION			**6,375**
Gymnasium	6,125	1	6,125
Gym Storeroom	250	1	250
			0
MEDIA CENTER			**3,020**
Media Center / Reading Room	2,850	1	2,850
Work Room	170	1	170
DINING & FOOD SERVICE			**6,599**
Cafeteria / Dining	3,075	1	3,075
Platform / Stage	860	1	860
Chair Storage	242	1	242
Kitchen	1,327	1	1,327
Kitchen Storage	210	1	210
Office	70	1	70
Teacher Dining	595	1	595
Lunch Bunch	220	1	220
MEDICAL			**703**
Medical Suite Toilet	70	1	70
Nurses' Office / Waiting Room	363	1	363
Examination Room / Resting	135	2	270

Miller Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals
ADMINISTRATION & GUIDANCE			**1,830**
General Office / Waiting Room	435	1	435
Admin	417	1	417
Copy Room	125	1	125
Principal's Office	243	1	243
Assistant Principal's Office	150	1	150
School Psychologist	233	1	233
Office (Second Floor)	227	1	227
CUSTODIAL & MAINTENANCE			**510**
Receiving	140	1	140
Exterior Storage	370	1	370

Nabnassett Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**19,138**
(List classrooms of different sizes separately)			
Pre-Kindergarten w/ toilet	1,125	2	2,250
Kindergarten w/ toilet	845	1	845
Kindergarten w/ toilet (1100-1200 sf)	varies	4	5,720
Classrooms - Grade 1-6 (800-899 sf)	varies	11	9,380
Classrooms - Grade 1-6	943	1	943
SPECIAL EDUCATION			**4,057**
(List rooms of different sizes separately)			
Self-Contained SPED	1,145	1	1,145
Self-Contained SPED - toilet	45	1	45
Remedial	122	1	122
Reading Intervention	860	1	860
Math Intervention	280	1	280
OT / PT	910	1	910
Speech	280	1	280
ELL	180	1	180
Testing	235	1	235
ART & MUSIC			**2,159**
Art Classroom	1,012	1	1,012
Music Classroom	1,010	1	1,010
Music Storage	137	1	137
HEALTH & PHYSICAL EDUCATION			**3,580**
Gymnasium	2,883	1	2,883
Gym Storeroom	470	1	470
Health Instructor's Office	227	1	227
MEDIA CENTER			**2,305**
Library	2,305	1	2,305
DINING & FOOD SERVICE			**5,566**
Cafeteria	2,643	1	2,643
Platform / Stage	580	1	580
Storage	55	1	55
Storage	75	1	75
Storage	232	1	232
Office	53	1	53
Dishwashing	138	1	138
Kitchen	932	1	932
Kitchen Storage	45	2	90
Kitchen Storage	60	1	60
Kitchen Storage	73	1	73
Kitchen Storage	100	1	100
Teacher Dining	535	1	535
MEDICAL			**517**
Health Office	187	1	187
Nurses' Office	285	1	285
Medical Suite Toilet	45	1	45

Nabnassett Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
ADMINISTRATION & GUIDANCE			**2,044**
General Office / Waiting Room	735	1	735
Principal's Office	202	1	202
Conference Room	360	1	360
Guidance Office	173	1	173
Guidance Office	186	1	186
Storage	53	2	106
Teachers' Work Room	282	1	282
CUSTODIAL & MAINTENANCE			**765**
Custodian's Office	85	1	85
Receiving	585	1	585
Exterior Storage	95	1	95

Robinson Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**15,809**
(List classrooms of different sizes separately)			
Pre-Kindergarten w/ toilet	1,223	1	1,223
Pre-Kindergarten w/ toilet	1,290	1	1,290
Kindergarten (600-699 sf)	varies	4	2,486
Kindergarten (1300-1399 sf)	1,345	1	1,345
Classrooms - Grade 1-6 (600-699 sf)	varies	4	2,655
Classrooms - Grade 1-6 (800-899 sf)	varies	2	1,688
Classrooms - Grade 1-6 (900-999 sf)	918	1	918
Classrooms - Grade 1-6 (1000-1099 sf)	1,002	2	2,004
Classrooms - Grade 1-6 (1100-1199 sf)	1,100	2	2,200
SPECIAL EDUCATION			**3,665**
(List rooms of different sizes separately)			
Self-Contained SPED	338	2	676
Small Group Room	80	2	160
Remedial	122	1	122
Reading Intervention	345	1	345
Math Intervention	415	1	415
OT / PT	825	1	825
Literary Specialist	237	1	237
Adjustment Counselor	430	1	430
Adjustment Counselor	455	1	455
ART & MUSIC			**2,057**
Art Classroom	700	1	700
Stage and Music Classroom	1,145	1	1,145
Music Office	65	1	65
Music Storage	47	1	47
Music Storage	100	1	100
HEALTH & PHYSICAL EDUCATION			**3,580**
Gymnasium	2,883	1	2,883
Gym Storeroom	470	1	470
Health Instructor's Office	227	1	227
MEDIA CENTER			**2,847**
Library	2,610	1	2,610
Storage	53	1	53
Office	92	2	184
DINING & FOOD SERVICE			**5,662**
Cafetorium	2,643	1	2,643
Stage (see Art & Music)	580	1	580
Chair Storage	90	1	90
Dietician's Office	80	1	80
Dishwashing	183	1	183
Kitchen	1,470	1	1,470
Kitchen Storage	308	2	616
MEDICAL			**342**
Nurses' Office	322	1	322
Medical Suite Toilet	20	1	20

Robinson Elementary School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
ADMINISTRATION & GUIDANCE			**1,553**
Secretary	205	1	205
Principal's Office	170	1	170
Conference Room	155	1	155
Counseling	123	1	123
Storage	20	1	20
Storage	85	2	170
Teachers' Work Room	330	1	330
Teachers' Work Room	380	1	380
CUSTODIAL & MAINTENANCE			**398**
Custodian's Office	85	1	85
Receiving	218	1	218
Exterior Storage	95	1	95
OTHER			**1,721**
Shared Space	625	1	625
Shared Space	668	1	668
Open Space	428	1	428

Stony Brook Middle School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**38,294**
(List classrooms of different sizes separately)			
Gen. Classroom (600-699 sf)	612	1	612
Gen. Classroom (800-899 sf)	varies	30	24,985
Gen. Classroom (900-999 sf)	900	1	900
Gen. Classroom (1100-1199 sf)	1,162	1	1,162
Science Classroom / Lab (900-999 sf)	varies	6	5,757
Prep Room	183	3	549
Prep Room	203	3	609
Large Group	1240	3	3720
SPECIAL EDUCATION			**6,260**
(List classrooms of different sizes separately)			
Self-Contained SPED (500-599 sf)	590	1	590
Self-Contained SPED (600-699 sf)	varies	4	2,415
Self-Contained SPED (800-899 sf)	812	1	812
SPED SEL	457	1	457
ELL	315	1	315
Reading Classroom	460	1	460
Small Group Room	305	1	305
Small Group Room	448	1	448
Small Group Room	458	1	458
ART & MUSIC			**4,613**
Art Classroom	1,180	1	1,180
Art Storage	112	1	112
Integrated Arts Office	335	1	335
Music	870	1	870
Instrument	220	1	220
Instrument	367	1	367
Choral	1,077	1	1,077
Music Storage	452	1	452
VOCATIONS & TECHNOLOGY			**2,355**
Technology Ed. Lab	1,385	1	1,385
Technology Ed. Computer	970	1	970
HEALTH & PHYSICAL EDUCATION			**10,561**
Gymnasium	7,360	1	7,360
Gym Storage	385	1	385
Exercise	1,145	1	1,145
Health Instructor's Office (Boys)	170	1	170
Health Instructor's Office (Girls)	170	1	170
Locker Rooms - Boys	255	1	255
Locker Rooms - Girls	255	1	255
Health Classroom	821	1	821

Stony Brook Middle School	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
MEDIA CENTER			**4,735**
Learning Commons	3,603	1	3,603
Office / Workroom	390	1	390
A.V. Storage	162	1	162
Storage	265	1	265
Computer Tech. Office	315	1	315
AUDITORIUM / DRAMA			**6,961**
Auditorium	4,935	1	4,935
Stage	1,643	1	1,643
Stage Storage	383	1	383
DINING & FOOD SERVICE			**6,266**
Cafeteria	3,615	1	3,615
Kitchen	1,435	1	1,435
Teachers' Dining	495	1	495
Kitchen Storage	100	1	100
Kitchen Storage	150	1	150
Kitchen Storage	190	1	190
Office	73	1	73
Kitchen Utility	208	1	208
MEDICAL			**706**
Medical Suite Toilet	55	1	55
Nurses' Office	430	1	430
Examination Room	125	1	125
Resting	48	2	96
ADMINISTRATION & GUIDANCE			**5,957**
General Office	995	1	995
Waiting	125	1	125
Secretary	393	1	393
Specialist	115	1	115
Specialist	120	1	120
Specialist	135	1	135
Principal's Office	165	1	165
Assistant Principal's Office	115	1	115
Suspension	67	1	67
Suspension	88	1	88
Conference Room	182	1	182
Conference Room	285	1	285
Guidance Office	118	1	118
Guidance Office	132	3	396
Work Room	260	1	260
Teachers' Work Room	305	1	305
Teachers' Work Room	450	1	450
Teachers' Work Room	823	1	823
Office (outside 1st Floor Large Group)	820	1	820
CUSTODIAL & MAINTENANCE			**515**
Janitor's Closet	95	1	95
Receiving	420	1	420
OTHER			**0**

Westford Academy	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CORE ACADEMIC SPACES			**65,869**
(List classrooms of different sizes separately)			
Gen. Classsroom (700 -799 sf)	varies	11	8,610
Gen. Classroom (800-899 sf)	varies	14	11,870
Gen. Classroom (900-999 sf)	varies	19	17,420
Science Classroom / Lab- (900-999 sf)	varies	5	4,653
Science Classroom / Lab (1200-1299 sf)	varies	8	10,100
Prep Room (100-199 sf)	varies	3	695
Prep Room (200-299 sf)	varies	4	875
Lecture Hall	1,403	1	1,403
Directed Learning	802	1	802
Math Office	795	1	795
Science Office	817	1	817
Language Office	812	1	812
English Office	890	1	890
Social Studies Office	302	1	302
Language Lab	900	2	1,800
Computer Lab	967	1	967
Computer Lab	978	1	978
Computer Lab	1,040	2	2,080
SPECIAL EDUCATION			**10,214**
(List classrooms of different sizes separately)			
Self-Contained SPED (800-899 sf)	varies	2	1,725
Self-Contained SPED (900-999 sf)	975	1	975
Self-Contained SPED (1400-1499 sf)	varies	2	2,945
Self-Contained SPED (1500-1599 sf)	1,508	1	1,508
Self-Contained SPED Toilet	60	1	60
SPED Office	365	1	365
Small Group	392	1	392
Small Group	420	2	840
Small Group	427	1	427
Small Group	442	1	442
Small Group	535	1	535
ART & MUSIC			**8,982**
Art Classroom (900-999 sf)	varies	2	1,817
Art Classroom (1200-1299 sf)	varies	3	3,797
Art Storage	212	3	636
Dark Room	482	1	482
Arts Office	300	1	300
Choral Room	1,460	1	1,460
MIDI Lab	490	1	490

Westford Academy	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
VOCATIONS & TECHNOLOGY			**1,233**
TV Studio	975	1	975
Media Maintenance Office	258	1	258
HEALTH & PHYSICAL EDUCATION			**15,882**
Gymnasium	14,770	1	14,770
Gym Storage	375	1	375
PE Office	537	1	537
Athletic Director	200	1	200
MEDIA CENTER			**10,784**
Library	9,640	1	9,640
Library Office	155	1	155
Tech Office	130	1	130
Listen / View Room	142	1	142
Work Room	405	1	405
Study Room	156	2	312
AUDITORIUM / DRAMA			**12,012**
Auditorium	7,520	1	7,520
Stage	2,662	1	2,662
Auditorium Storage	575	1	575
Tickets	155	1	155
Control Room	185	1	185
Black Box Classroom	915	1	915
DINING & FOOD SERVICE			**14,107**
Cafeteria	9,832	1	9,832
Kitchen	2,335	1	2,335
Office	100	1	100
Dishwashing	145	1	145
Kitchen Storage	685	1	685
Teacher's Dining	1,010	1	1,010
MEDICAL			**1,140**
Nurses' Office / Waiting Room	1,040	1	1,040
Medical Suite Toilet	50	2	100
ADMINISTRATION & GUIDANCE			**4,556**
Admin / General Office	1,270	1	1,270
Principal's Office	285	1	285
SRO	210	1	210
Dean's Office	145	1	145
Dean's Office	150	1	150
Dean's Office	240	1	240
Social Worker	148	1	148
Conference Room	238	1	238
Conference Room	245	1	245
Conference Room	345	1	345
Counselor's Office	140	2	280
Counselor's Office	145	1	145
Counselor's Office	150	3	450
Teachers' Work Room	405	1	405

Westford Academy	Existing Conditions		
ROOM TYPE	ROOM NFA	# OF RMS	area totals (actual)
CUSTODIAL & MAINTENANCE			**245**
Receiving	100	1	100
Storage	90	1	90
Janitor's Closet	55	1	55
OTHER			**1,157**
Academic Development Center	1,157	1	1,157

Appendix 5 – Glossary of Terms for School Planning and Design

Glossary of Terms for School Planning & Design v2.0

This glossary is intended for individuals associated with, or interested in, the planning and design of school facilities (school committees, politicians, the interested public) who may not be familiar with terms currently used by educators, educational planners, and architects. Definitions are kept short. For some terms, you may choose to obtain deeper definitions or examples.

A

active learning (vs. passive learning): any situation in which students are participatory and involved, often by making, doing, role-playing, discussing, debating, etc., rather than just listening to the teacher.

academic high school: high school with a curriculum primarily focused on college prep; typically lacks school-to- work, CTE, or vocational programs.

advanced placement (AP): college-level courses offered in high schools, the content of which is determined by standardized AP tests offered by the college board. While completion of such courses in high school has been shown to increase the likelihood of success in college, some AP programs have recently been criticized for being based in rote learning. https://ap.collegeboard.org/

advisory: a period of a day (often a short period), typically in middle schools and high schools, during which all students meet in small

groups with an adult (teachers, *paraprofessionals*, administrators, etc.) to discuss almost anything that students have concerns about. Advisory periods are often seen as a good way to make adult-student connections and improve communications.

alternative school: most often a program within a school that is substantially separate from the general population. It typically serves students with social-emotional issues who have difficulty fitting in to traditional school environments. Depending on the needs of the school community, alternative school programs can serve other populations such as gifted and talented, at-risk students, dropouts, etc.

at-risk students: most often students who are not engaged or interested in school and are at risk of dropping out. This can range from high-achievers who are bored to low-achievers uninterested in school because it does not teach in a way they can learn, or is disconnected from their lives.

B

blended learning: a program in which content delivery is a combination of online and face-to-face school-based learning, with students having some control of time, place, and pace of learning.



Templeton Elementary School

block schedule: a high school schedule with class periods of 90 to 120 minutes long, rather than conventional 60-minute periods. These longer class period allow for "more time on learning," while also allowing for a variety of activities such as "hands-on" or *project-based learning*. Students will most often take the courses every day, but only for a semester rather than the full year; this varies from school to school.

BYOD (bring your own device): a school policy in which students are expected to provide their own laptop or tablet for in-school (and home) use. The policy typically includes a supplemental program providing devices to students whose families lack the financial resources to provide their own. Some schools regard BYOD as inequitable, since students of means with higher-end devices may have an advantage over other students. It can also present network security issues, although many schools have overcome them. School-supplied IT and network support is essential, as is teacher professional development in device usage and instruction.

C

choice: a program that allows students to enroll in a school district in which they do not live. It is intended to give students in low-performing schools or districts opportunities to access better schools, and is sometimes initiated to increase diversity within the host community.

Chromebook: most often a laptop device that relies on an internet connection and cloud storage. Some devices have limited internal storage. Chromebooks have been widely adopted for student use by many school districts.

classroom: the basic instructional space within schools.

class size: most often a target number for the maximum number of students in a given class type or subject area. The target is sometimes set by the school committee or district administration, and sometimes by union contracts. It often varies by grade level, and sometimes by ability levels. For example, high-achieving students may be placed in larger class sizes because it might have little effect on their performance, whereas a lower-achieving students may benefit greatly from a smaller class size.

cluster plan: classrooms organized with close adjacencies, often around a large-group instruction space, project room, or other focal space, in contrast to a *double-loaded corridor*. In middle schools, a cluster often houses a "team" (teachers who share the same group of students). In high schools, they can house an academic department, a house, or a school within a school. A cluster plan often defines a small learning community.

comprehensive high school: a school that includes both an academic curriculum and vocational curriculum or technical training *(CTE)*.

constructivist learning: a philosophy based on hands-on activities, inquiry, exploration, and discussion, in which direct instruction by teachers is minimized; originally developed by philosopher and educator, John Dewey.

core academics: English, Social Studies, Math, Science, foreign language curricula, and sometimes the arts.

critical thinking: the trained ability to think clearly and dispassionately. Critical thinking is logical thinking based on sound evidence, involving the ability to gather and analyze information and solve problems. (Diane Ravitch, education researcher and historian)

CTE (career and technical education): refers to schools or programs within a school that provide students with opportunities to explore career options through a course of study including both academic and technical or vocational courses, career planning, and work-based learning. https://search.doe.mass.edu/?q=CTE

D

DESE (Massachusetts Department of Elementary and Secondary Education): current name for the Department of Education. http://www.doe.mass.edu/

differentiated instruction: the use of alternate instruction delivery models intended to better match the needs of some students'' different ways of learning.

double-loaded corridor: a traditional classroom plan in which rows of classrooms flank both sides of a corridor; also referred to as an *egg-crate design*.

E

early childhood: grade grouping that starts with Pre-K and kindergarten; often includes grade one and sometimes additional early grades.

EDI (equity, diversity, and inclusion): a term used to describe a mindset that equally supports people of all genders, races, religions, sexual orientations, abilities, ages, backgrounds, appearances, and cultures

egg-crate plan: see *double-loaded corridor.*

ESL: English as a Second Language: programs for students who do not have fluency in English.

ELL: English language learner: a student in an ESL program whose native language is not English and is unable to communicate fluently or learn effectively in English, and typically requires specialized or modified instruction in both English and their academic courses.

English language arts: English curriculum.

ergonomic furniture: lightweight, easy-to-move furniture that is more comfortable than traditional hard plastic or wood furniture. It recognizes that individuals learn better when they are comfortable.

F

flipped classroom: a delivery process in which the curriculum content such as lecture, video, or reading is provided to the student to experience outside the classroom as homework. Class time is then used for discussion with and among the students, group projects, and other application of content knowledge. Flipped classroom is a component of *active learning.*

FTE (full-time equivalent): A 1.0 FTE is a full-time teacher or student, while a 0.5 FTE is a half-time teacher or student. Two half-time teachers equal 1.0 FTE.

G

grade configuration: the arrangement of grades that make up a school; most often set around *pedagogy* but occasionally set around available facilities. It can vary significantly among communities.

growth mindset (vs. fixed mindset): a belief that one can develop intelligence, talent, and abilities through hard work, good strategies, and input from others.

guide on the side: a teacher as a facilitator rather than providing direct instruction; in contrast to a *sage on the stage*.

H

house (plan): a grouping of spaces—classroom, administrative, support, etc.—developed around an identity or theme; can be a *school within a school*.

I

immersion (full): an instructional approach combining written, musical, and visual arts and culture to a subject; often referred to in foreign language instruction.



North Middlesex Regional High School

inclusion: Special Education students integrated into typical general education classrooms; also used for *ELL* students integrated into typical general education classrooms.

interdisciplinary learning: an approach of multiple core subjects being taught in an integrated way, often on a subject or theme and often around a project.

intervention: most often a specialist who joins a general education classroom to support student(s) in need of assistance, rather than "pulling them out" for that assistance.

J

JEDI: the addition of justice to equity, diversity, and inclusion.

L

large group instruction (space): a larger, unassigned space used for a variety of activities such as multiple classes that meet together, for guest lectures, project work, gallery space, large student or community meetings, etc.

learning commons: an educational space often adjacent to *classrooms* used for a variety of activities such as *PBL*, small or large group work, tutoring, collaboration, meetings, and other activities that are difficult to conduct in a classroom.

learning stair: an often-large stair that incorporates seating for both formal and informal gatherings, teaching, or socializing, often in an amphitheater-type configuration.

learning style: modes of learning that reflect individuals' natural and sometimes trained traits such as visual, verbal, tactile, kinesthetic, or auditory.

lifelong learning: a belief that, with the correct approach in school, people will remain engaged and excited about learning throughout their lives.

Life Skills program: for students with severely restricted cognitive development. These programs vary from school to school, but in high schools the spaces needed often include a training kitchen, an apartment-like area with a bed, an assisted-use toilet room with shower and changing table, and a variety of small group teaching environments including technology.

While often present at all grade levels, high schools typically offer the most developed Life Skills programs. Space requirements are in the range of 1,200–1,500 sf for a class size of 8–12 students.

looping: students remain with a teacher for multiple years, rather than changing teachers every year.

M

mainstreaming: Special Education students placed in general education classrooms; may be done for some or all classes based on students' disabilities; also referred to as *inclusion*.

maker spaces: a relatively new term for a hands-on space, often with age-appropriate tools to create, prototype, and test ideas and projects.

mastery learning: an instructional strategy where students must achieve a level of mastery in prerequisite knowledge before moving on. Students advance their studies based on knowledge of the subject, rather than seat time or age.

METCO: The METCO Program, originally begun in 1966, is a grant program funded by the Commonwealth of Massachusetts. It is a voluntary program intended to expand educational opportunities, increase diversity, and reduce racial isolation by permitting students in certain cities to attend public schools in other communities that have agreed to participate. http://www.doe.mass.edu/metco/

modality: a means by which learning occurs; for example, through visual or kinesthetic experience. See also *learning style*. (D. Ravitch)

MSBA (Massachusetts School Building Authority): a quasi-independent government authority created to reform the process of funding capital improvement projects in the Commonwealth's public schools; it replaced in 2004 the former school building assistance program administered by the Department of Education. The MSBA strives to work with local communities to create affordable, sustainable, and energy-efficient schools across Massachusetts. http://massschoolbuildings.org/

multiple intelligences (MI): a theory that people demonstrate their capabilities and learning proficiencies through a single or combination of intelligences; introduced in 1983 by developmental psychologist Howard Gardner. Current intelligences include verbal/linguistic, logical/mathematical, bodily/kinesthetic, musical/rhythmic, visual/spatial, interpersonal, intrapersonal, and naturalist.

N

next generation learning: an alternate name for 21st century learning, considering we are more than one-fifth through the 21st century.

P

paraprofessional: a trained aide who assists the classroom teacher, often in Special Education classrooms or regular-ed classrooms that *mainstream* Special Education students. The "para" often does not have the same credentials and training as regular classroom teachers. (D. Ravitch)

pedagogy: the study of education and education practice and delivery; also a philosophy about the best way to teach. (D. Ravitch)

peer-to-peer learning: students learning from each other.

personalized instruction: differentiated instruction brought down to the individual level.

pod plan: see *cluster plan*.



Grafton High School

portable classrooms: prefabricated building components that comprise classrooms and often wings used to accommodate overcrowding; also used as swing space to temporarily house classes during renovation projects.

porous boundaries: a concept that incorporates the larger community and resources for teaching and learning, such as museums, libraries, community offices, etc.

portfolio evaluation: a technique by which student achievement of course objectives can be measured by a student-prepared portfolio, rather than standardized or other testing.

project-based learning (PBL): a learning modality that meets curriculum content goals by asking students to address deep, open-ended situations such as solving problems or inventing things. It is naturally inclined to interdisciplinary learning and student collaboration, both highly valued *next generation learning* skills. Similar modalities include problem-based and inquiry-based learning.

pull out (pull over): removal of a Special Education student from the classroom to a separate room or space for remedial or targeted instruction; suggests the space is very nearby the classroom.

push in: in-classroom delivery of appropriate services to students with special needs.

R

climate resilience: the ability within a community to reduce risk, prepare, and recover from gradual climate change or extreme climate events for the purpose of retaining or improving the integrity of infrastructure. Climate resilience is an integral part of sustainable design.

resource room: a Special Education space intended for small group instruction and/or tutoring or remedial work; also referred to as a learning lab.

S

sage on the stage: teacher at the front of the classroom in lecture-mode; in contrast to a *guide on the side*. Also referred to as teacher-focused instruction.

school-to-work program: programs designed to prepare students to move directly into the workforce after high school, rather than going straight to college; often associated with CTE or vocational training programs.

school within a school: most often incorporated in very large high schools to break down the size of the school into multiple schools within the same building or campus, often with separate administrations and facilities. It can be designed around academic specialties, social houses, or other ways to create smaller learning communities.

scramble servery: a food service delivery configuration that includes multiple stations with different offerings, such as hot lunch, grab-and-go, salads, pizza, sandwiches, etc.

sections: the number of classes needed to fulfill a curriculum offering.

service learning: programs in which students engage in real-world and socially relevant community activities in ways structured to enable them to attain specified academic learning objectives.

SIFE (students with interrupted formal education): typically foreign refugees who have gaps of two or more years of formal education in their native country.

small group instruction (space): small teaching space (often anywhere between 80–200 sf) intended for individual or small group learning or activities. The space is meant for a variety of uses such as individual or *peer-to-peer learning*, accommodation of individualized learning styles, special education, and general education.

social-emotional learning (SEL): the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions, and achieve personal and collective goals; feel and show empathy for others; establish and maintain supportive relationships; and make responsible and caring decisions. SEL can also play an important role in Special Education programs for students with disabilities related to cooperating with others or establishing relationships within a classroom or school community.
https://casel.org/fundamentals-of-sel/

SPED: programs of Special Education.

stand-up desks / sit-to-stand desks: a student desk used by standing or sitting on a high stool to facilitate a student's kinesthetic or physiological needs to move and, in doing so, helping the student to focus on tasks at hand.

STEM: the integration of Science, Technology, Engineering, and Math in an applied and interconnected way.

STEAM: the integration of the arts (design and visual and performing arts) into a STEM curriculum.

student-centric learning (vs. teacher-centric): a teaching and learning methodology that includes students in the planning, implementation, and assessments of classroom activities. With a properly planned and well-guided model of training, and motivation to do hard work, students can follow a well-disciplined study plan and become exceptionally successful in their mastery.).

sustainable design: the design, construction and operation of a school that employs strategies to create low-carbon and healthy environments in which to work and learn. It strikes a balance between sustainability's three 3 major pillars—the environment, economy, and equity—and strives to reduce the depletion of Earth's resources while providing resilient educational spaces for generations to come. Its simplest strategies are, in order, to reduce, reuse, and recycle.

substantially separate programs / classrooms: Special Education programs where a student's learning needs prevent or inhibit them from participating in a general education class, requiring a special setting. These classrooms often serve students who require a highly modified curriculum, smaller class size, and a lower student/teacher ratio. Program examples include Life Skills, cognitive delay, language-based learning, social-emotional, autism, and other special needs.

T

The Third Teacher: an educational philosophy that includes the building and environment components used to engage students' imagination, curiosity, and interests to promote creativity, critical thinking and problem solving. The philosophy dates back to post-war pedagogy in Reggio Emilia, Italy.

Title I: a federally funded program begun in 1965 that provides funds for programs intended to improve academic improvement of low-income children.

Title IX: federal legislation passed in 1972 that prohibits discrimination based on gender; most often associated with equal sports facilities for girls and boys pertaining to quantity of space, programs, and spending.

U

universal design for learning (UDL): a framework that guides the design of learning experiences to proactively meet the needs of all learners; it recognizes that all people learn differently. With choice, students learn in modalities that work best for them.
https://www.cast.org/


North Middlesex Regional High School

V

visioning: an often community-based effort of assembling stakeholders (including educators, teachers and administrators, students, parents, and community members) in a workshop format for the purpose of exploring how the school or school district might develop long-term direction for educational delivery and the facilities needed to support this delivery.

#

1:1: a smart device for each student in the school, such as a tablet, laptop, or one of many devices in-between such as a Chromebook. Smart phones are not typically included in this category, as it is almost impossible to use them for serious research and writing. For 1:1 programs to be effective, students must be able to use the devices at home and elsewhere, not just at school. 1:1 can be implemented through either school-provided devices or *BYOD (bring your own device)*.

3:1: the digital infrastructure needed for 1:1 programs. Many people, mostly adults in the school, use multiple devices: a smart phone, tablet, and laptop. When in wireless mode, they are all trying to connect to the network at the same time, putting an even greater strain on often inadequate wireless systems. When discussing developing 1:1 programs for schools, the wireless infrastructure needs to be far more robust (larger bandwidth) to accommodate even more devices in the future.

21st century skills: four skills (as defined by "The Partnership for 21st Century Skills") made up of the four Cs: Communication, Collaboration, Creativity, and Critical Thinking/Problem Solving.
http://www.p21.org/

For those seeking to understand educational terms well beyond those related to school planning and design, please consult the following:

Ed Speak: A Glossary of Educational Terms, Phrases,Buzzwords, and Jargon, Diane Ravitch, ASCD, 2007

(In some cases, this book was referred to when developing definitions as relating to planning and design.)

Philip J. Poinelli, FAIA, LE Fellow, ALEP
617.721.0609 ppoinelli@smma.com
SMMA
1000 Massachusetts Avenue
Cambridge, MA 02138

Appendix 6 – Complete Guide to Teacher-Centered vs. Student-Centered Learning, Joseph Lathan, PhD

SMMA Discussion Notes

Our discussion notes

Our presentation and planning doc:

1. https://www.canva.com/design/DAFb40V8LlI/gGE82tzgpC9_jrcHwMknVw/view?utm_content=DAFb40V8LlI&utm_campaign=designshare&utm_medium=link&utm_source=homepage_design_menu
2. SMMA Prep Call

ERIC (Stony Brook)

1. Of the 6 students, only 2 had experienced all levels of WPS
    a. The rest did elementary in other districts (all of which had K-4 or K-5)
2. One of the students from WPS went to Day, and she talked a lot about how difficult it was to leave half of your friends behind
3. General consensus was that having less kids in your own grade would form a tighter community while also allowing for more friends in different grades
4. Lunch would provide these opportunities to mingle with other grades
    a. Coming from the 4 students with experience going to K-5 elementary schools, they said that lunch was never stressful, and that many older students take on a nurturing, supportive role
5. One particularly eloquent student said that 'although there may be some bumps along the road when mixing grades, these difficulties will ultimately make our students more resilient'... Yes, that is a real quote from an 8th grader.
6. The transitions weren't really a concern for many students because the only thing that changes from lower to upper elementary is the school.
    a. You're still with the same group of students, so taking away this transition wouldn't really have a negative impact
7. The splitting of Day School was a major concern
8. Some concerns with mixing all the grade levels on buses
    a. Especially with crowding, having a kindergartener and a 5th grader on the same bus could be difficult

SAANVI (Stony Brook)

1. Concerned about how clubs with huge age differences would work
2. Thought that the current transition from elementary school to middle school was smooth because of all the admin helping them through it
3. Concerned about how IA's (gym, music, art, etc) would work

4. With new systems, older kids could have a bigger role in mentoring younger kids
5. Had two other ideas:
    a. Renovating Millenium
    b. K-6 and one floor of a middle school is dedicated for central office
6. Concerned about substitute teachers, and how they would travel around town and the shortage we already have
7. Didn't like the idea of going on the bus with their younger siblings & fear of older kids
8. They really liked transitions and said that they prepare you for later in life and understanding how to deal with change is really important
9. Concerned about lunch times
10. Concerned about how renovations for school might take longer than the summer
11. Liked the idea of having more opportunities to make connections with the new systems

MADDIE (Stony Brook)

1. The kids liked the transitions
2. Heavily system 1 or 2
3. They did not like system 3
4. Not huge fans of having to work with kids drastically younger than themselves
5. However they liked a couple years age difference in sports
6. Did not like a variety of ages on buses
7. Did not like that teachers would be moved around
8. Did not like a variety of ages in lunchrooms/classrooms

AANYA (Stony Brook)

1. The kids thought that the transitions were very helpful for their social skills
2. They HATED the day split
3. They thought that system 2 wouldn't be good for social skills/life
4. They wouldn't be comfortable in a school with younger kids
5. They thought it would depend on how the older grades acted during system 2
    a. If they behaved properly = good role model for younger kids
    b. If they behaved poorly = bad role model for younger kids
6. If younger kids were in an environment with older kids they might be more mature
7. Didn't like the idea of potentially changing start times
8. They did like the idea that bigger families would have all the kids in the same school (system 2)
9. Strongly disliked system 3; thought it was impractical/unnecessary

MYSHA (Blanchard)

1. Didn't care as much about the number of transitions.
2. Heavily disliked the Day split

3. Concerned about bus crowding → but likely wouldn't be an issue
4. One kid liked the third system → easier for little kids to get into pre-k
5. Liked the idea of lunches being split by grades
6. Curious how special needs programs would be affected
7. Some kids like the transitions → easier to make friends
8. Concerns about bullying

KIERSTEN (Blanchard)

1. Kids either had no opinion on or enjoyed transitions
    a. new teachers, playground, lockers
2. Most of the kids in my group (%) were at other either 1-5 or K-12 schools.
    a. They had good systems to separate by age in hallways, lunch, and bus
    b. Recesses we're not separate.
    c. Some had lunch broken up halfway through 3rd grade. Half the grade ate with older grades and half with younger grades. - weird
3. Liked staying with same group of kids from year to year, but also being in a big group to meet many people in case friends don't work out
    a. Giving the town more divisions (system 2) would separate people within neighborhoods
4. HATED system 3
    a. Transitions are good, but not for that age
    b. Meeting so many people then splitting up would be sad. Forming friendships for no reason
    c. One kid has a sister in kindergarten and she does not want to see her make friends and then have to leave them
5. Lots of elementary schools might lead to inter school competition like Stony Brook and Blanchard. See how freshman come into WA making friends with people that went to the same middle school
6. Brought up sports, but I wasn't aember not sure how that would be affected
7. Possibility: put Stony and Blanchard together
    a. Or just have more activities for "partner schools"
        i. For example transition to WA had SB and B students go together
8. Bus should be sectioned off

SARRA (Blanchard)

1. Kids enjoyed transitions but not split
    a. Would have to leave friends
    b. Separation anxiety → friends get split up
2. In favor of current system
    a. Not too overwhelming
3. Wanted to add a 3rd middle school or take away an elementary school

4. Harder on parents to have lots of schools (ex. Having kids of different age- would have to go around town)
5. K-5 system was seen as chaotic
    a. Would need different start/end times

Overall:

1. SB and B opinions the same
2. biggest difference in opinion came from whether or not they spent their k-5 years

    a. Maddie - S
    b. Aanya - S
    c. Sai - S
    d. Saanvi - S
    e. Eric - S
    f. Kiersten - B
    g. Meghna - B
    h. Sarra - B
    i. Mysha - B

Presentation:

1. What/why we did it
2. Comments
3. Final tally

Aim for 10 minutes presentation

15 max minutes for questions

    j.

Who's presenting what:

Put questions shorter in presentation

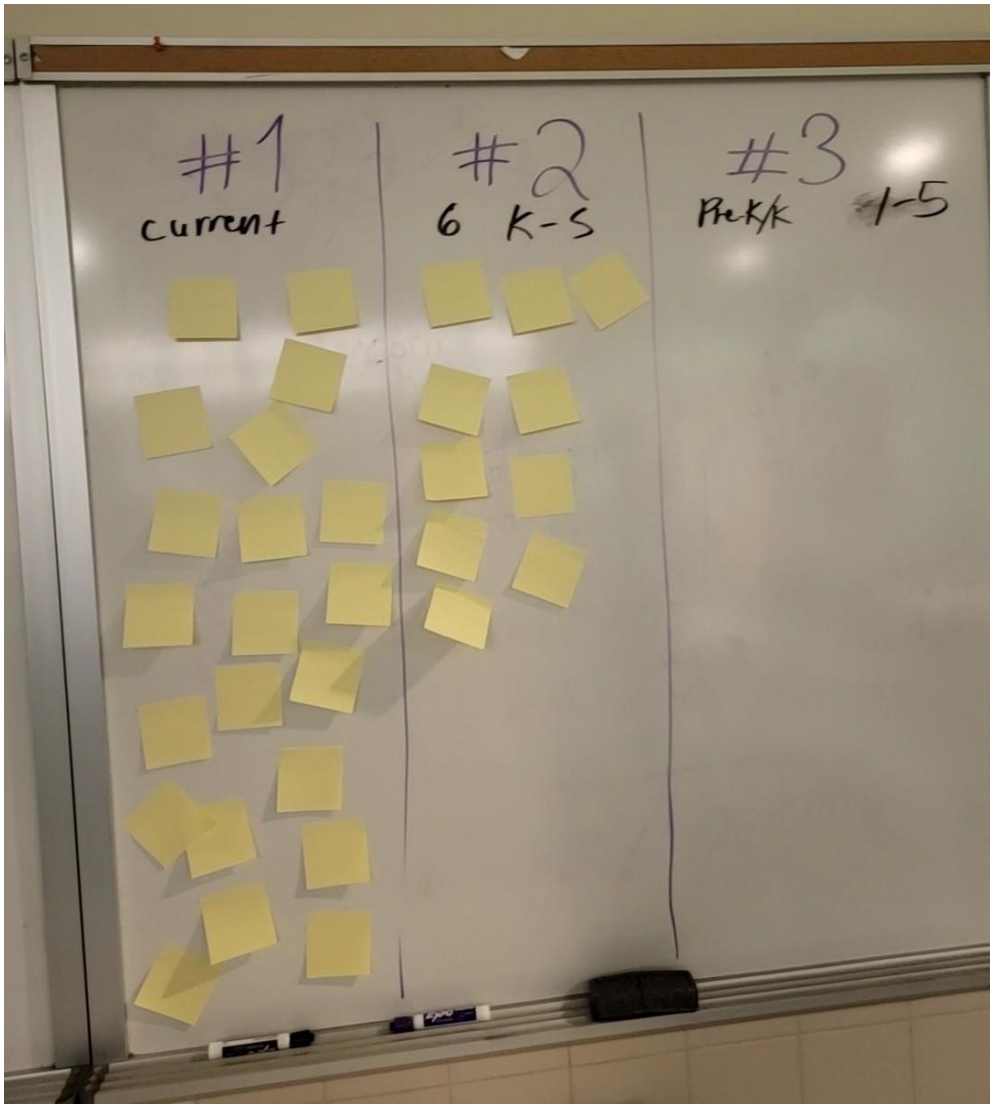
Then talk generally about what the students said

Day school emotion

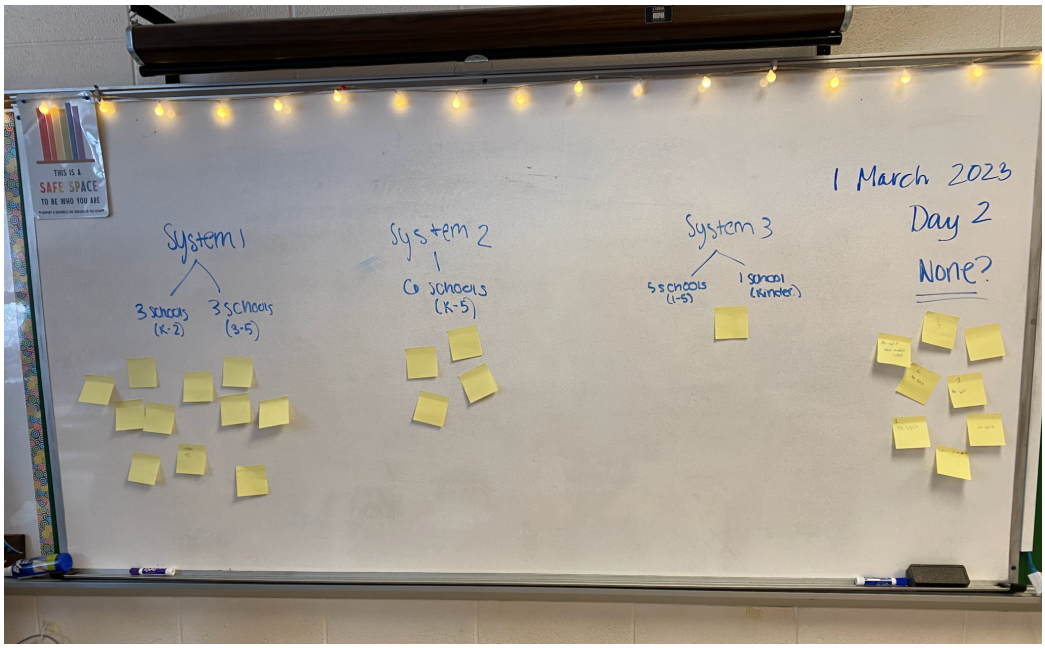
Mysha: talk about kid picking and choosing his friends

Maddie:

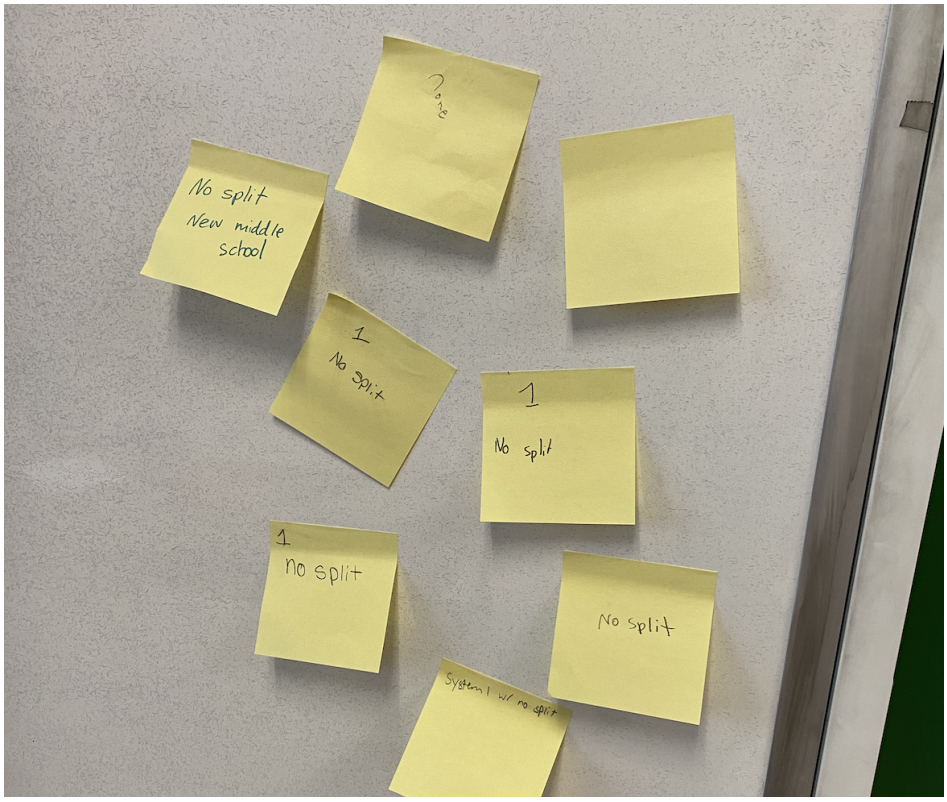
Stony Brook Voting:



Current model - 21
System 2 - 10
System 3 - 0
(Stony)



System 1 - 11
System 2 - 4
System 3 - 1
None of the above systems - 8
→ these students are mainly concerned with the split.
(Blanchard)



Sticky notes under the none of the above systems.