

WORCESTER PUBLIC SCHOOLS WORCESTER, MASSACHUSETTS

SCHOOL RENOVATION PROJECTS PREVIOUS ACCOMPLISHMENTS AND FUTURE PLANNING

March 2015

Melinda J. Boone, Ed.D.
Superintendent of Schools
20 Irving Street
Worcester, MA 01609

Worcester School Committee

Mayor Joseph M. Petty
Dianna L. Biancheria
John L. Foley
John Monfredo
Tracy O'Connell Novick
Brian A. O'Connell
Hilda Ramirez



TABLE OF CONTENTS

Facilities Inventory.....	2
Previous Renovation Projects.....	16
Summer 2011-2012 Modernization Projects.....	18
2013-2014 Modernization Projects.....	22
Energy Savings Projects.....	23
Environmental Management Projects.....	25
MSBA Replacement or Major Renovations Plan.....	28
MSBA Accelerated Repair Program Proposed Project List.....	64
MSBA Five-Year Accelerated Repair Program.....	65

FACILITIES INVENTORY

SCHOOLS CONSTRUCTED: 2000-2015



NORTH HIGH SCHOOL

140 Harrington Way

Year Opened: 2011

Grades 9-12

190,000 square feet on 8.0 acres



WORCESTER TECHNICAL HIGH SCHOOL

One Skyline Drive

Year Opened: 2006

Grades 9-12

400,000 square feet on 9.0 acres



FOREST GROVE MIDDLE SCHOOL

495 Grove Street

2001 Renovation of 1960 Construction

Grades 7-8

198,713 square feet on 1.9 acres



ROOSEVELT SCHOOL

1006 Grafton Street

Year Opened: 2001

Grades Pre-K to 6

120,656 square feet on 4.0 acres

SCHOOLS CONSTRUCTED: 1990-1999



NORRBACK AVENUE SCHOOL

44 Malden Street

Year Opened: 1999

Grades Pre-K to 6

113,500 square feet on 2.0 acres



CLAREMONT ACADEMY

15 Claremont Street

Grades 7-12

WOODLAND ACADEMY

93 Woodland Street

Grades Pre-K to 6

Year Opened: 1999

135,989 square feet on 1.5 acres



QUINSIGAMOND SCHOOL

14 Blackstone River Road

Year Opened: 1998

Grades Pre-K to 6

141,847 square feet on 2.0 acres



GATES LANE SCHOOL OF INTERNATIONAL STUDIES

1238 Main Street

Year Opened: 1996

Grades Pre-K to 6

96,000 square feet on 1.4 acres



SULLIVAN MIDDLE SCHOOL

140 Apricot Street

Year Opened: 1992

Grades 7-8

167,000 square feet on 40.0 acres
(Land shared with South High Community School)



CITY VIEW SCHOOL

80 Prospect Street

Year Opened: 1991

Grades Pre-K to 6

70,000 square feet on 4.9 acres



JACOB HIATT MAGNET SCHOOL

772 Main Street

Building Purchased: 1990

Grades Pre-K to 6

52,000 square feet on 1.9 acres

SCHOOLS CONSTRUCTED: 1980-1989



CANTERBURY STREET MAGNET SCHOOL

129 Canterbury Street

Year Opened: 1987

Grades Pre-K to 6

51,638 square feet on 1.0 acre

SCHOOLS CONSTRUCTED: 1970-1979



SOUTH HIGH COMMUNITY SCHOOL

170 Apricot Street

Year Opened: 1978

Grades 9-12

246,000 square feet on 40.0 acres

(Land shared with Sullivan Middle School)



McGRATH ELEMENTARY SCHOOL

493 Grove Street

Year Opened: 1977

Grades Pre-K to 6

35,845 square feet on 6.5 acres



CHANDLER ELEMENTARY COMMUNITY SCHOOL

114 Chandler Street

Year Opened: 1977

Grades K-6

37,671,500 square feet on 1.0 acre



ELM PARK COMMUNITY SCHOOL

23 N. Ashland Street

Year Opened: 1971

Grades Pre-K to 6

66,651 square feet on 4.1 acres



BELMONT STREET COMMUNITY SCHOOL

170 Belmont Street

Year Opened: 1971

Grades Pre-K to 6

92,988 square feet on 6.4 acres

SCHOOLS CONSTRUCTED: 1960-1969



DOHERTY MEMORIAL HIGH SCHOOL

299 Highland Street

Year Opened: 1966

Grades 9-12

168,126 square feet on 20.1 acres



BURNCOAT HIGH SCHOOL

179 Burncoat Street

Year Opened: 1964

Grades 9-12

144,388 square feet on 38.9 acres



WAWECUS ROAD SCHOOL

20 Wawecus Road

Year Opened: 1963

Grades K-6

22,974 square feet on 4.4 acres



DR. JAMES A. CARADONIO NEW CITIZEN CENTER

1407A Main Street

Year Opened: 1963

Grades 3-12

21,685 square feet on 3.5 acres



MILL SWAN SCHOOL

337 Mill Street

Year Opened: 1962

Head Start Pre-School

35,539 square feet on 6.3 acres



WORCESTER ARTS MAGNET SCHOOL

315 St. Nicholas Ave

Year Opened: 1961 (with 1971 addition)

Grades Pre-K to 6

56,657 square feet on 6.0 acres



WEST TATNUCK SCHOOL

300 Mower Street

Year Opened: 1961 (with 1971 addition)

Grades Pre-K to 6

37,544 square feet on 37.0 acres

SCHOOLS CONSTRUCTED: 1950-1959



FLAGG STREET SCHOOL

115 Flagg Street

Year Opened: 1953 (with 1968 addition)

Grades K-6

43,617 square feet on 9.9 acres



CLARK STREET DEVELOPMENTAL LEARNING SCHOOL

280 Clark Street

Year Opened: 1953

Grades Pre-K to 6

38,250 square feet on 20.3 acres



CHANDLER MAGNET SCHOOL

525 Chandler Street

Year Opened: 1953

Grades Pre-K to 6

102,000 square feet on 24.0 acres



BURNCOAT MIDDLE SCHOOL

135 Burncoat Street

Year Opened: 1952

Grades 7-8

147,296 square feet on 15.0 acres

NO SCHOOLS CONSTRUCTED BETWEEN 1940 AND 1949

SCHOOLS CONSTRUCTED: 1930-1939



HEARD STREET SCHOOL

200 Heard Street

Year Opened: 1932

Grades K-6

23,800 square feet on 5.8 acres



VERNON HILL SCHOOL

211 Providence Street

Year Opened: 1931

Grades Pre-K to 6

83,060 square feet on 10.6 acres

SCHOOLS CONSTRUCTED: 1920-1929



LINCOLN STREET SCHOOL

549 Lincoln Street

Year Opened: 1929

Grades Pre-K to 6

25,766 square feet on 6.5 acres



MAY STREET SCHOOL

265 May Street

Year Opened: 1927 with 1952 addition

Grades Pre-K to 6

35,912 square feet on 2.5 acres



THORNDYKE ROAD SCHOOL

20 Thorndyke Road

Year Opened: 1927 with 1955 addition

Grades K-6

43,425 square feet on 5.0 acres



NELSON PLACE SCHOOL

35 Nelson Place

Year Opened: 1927 with 1968 addition

Grades Pre-K to 6

44,963 square feet on 9.5 acres



GERALD CREAMER CENTER

120 Granite Street

Year Opened: 1926

Grades 9-12

26,500 square feet on 2.0 acres



WORCESTER EAST MIDDLE SCHOOL

420 Grafton Street

Year Opened: 1924

Grades 6-8

155,392 square feet on 2.0 acres

(Currently [in 2015], seventy-five [75] students at Worcester East Middle are sixth-grade student members of the Science & Health Tech innovation academy.)



LAKE VIEW SCHOOL

133 Coburn Ave

Year Opened: 1922 with 1928 addition

Grades K-6

27,918 square feet on 1.9 acres



FANNING BUILDING

24 Chatham Street

Year Opened: 1921 with 1936 addition

Various Programs

68,500 square feet on 1.0 acre

SCHOOLS CONSTRUCTED: 1900-1920



BURNCOAT STREET PREPARATORY SCHOOL

526 Burncoat Street

Year Opened: 1916 with 1925 addition

Grades K-6

28,255 square feet on 1.7 acres



RICE SQUARE SCHOOL

76 Massasoit Road

Year Opened: 1914 with 1920 addition

Grades K-6

36,000 square feet on 2.0 acres



COLUMBUS PARK PREPARATORY ACADEMY

75 Lovell Street

Year Opened: 1922 with 1928 addition

Grades Pre-K to 6

27,918 square feet on 1.9 acres



TATNUCK MAGNET SCHOOL

1083 Pleasant Street

Year Opened: 1922 with 1928 addition

Grades K-6

42,384 square feet on 3.6 acres



GODDARD SCHOOL OF SCIENCE & TECHNOLOGY

14 Richard Street

Year Opened: 1900

Grades Pre-K to 6

119,972 square feet on 2.1 acres

SCHOOLS CONSTRUCTED PRIOR TO 1900



GRAFTON STREET SCHOOL (BUILDING #2)

311 Grafton Street

Year Opened: 1899

Grades Pre-K to 6

41,065 square feet on 1.2 acres (two buildings)



MILLBURY STREET SCHOOL

389 Millbury Street

Year Opened: 1898

Head Start Pre-School Center

23,500 square feet on 1.0 acre



HARLOW STREET SCHOOL

15 Harlow Street

Year Opened: 1897 with 1914 addition

Alternative Program Location and School Nurse Offices

27,813 square feet on 0.7 acres



MIDLAND STREET SCHOOL

18 Midland Street

Year Opened: 1896 with 1915 addition

Grades K-6

22,113 square feet on 0.6 acres



UNION HILL SCHOOL

One Chapin Street

Year Opened: 1922 with 1928 addition

Grades Pre-K to 6

43,216 square feet on 1.4 acres



GREENDALE SCHOOL

130 Leeds Street

Year Opened: 1893 with 1898 & 1922 additions

Head Start Pre-School Center

25,500 square feet on 1.0 acre



DR. JOHN E. DURKIN ADMINISTRATION BUILDING

20 Irving Street

Year Opened: 1891

District Administration Building

75,836 square feet on 0.9 acres



DR. JAMES L. GARVEY PARENT INFORMATION CENTER
768 Main Street

Year Opened: 1885
District's Parent Information Center
5,800 square feet on 0.7 acres



UNIVERSITY PARK CAMPUS SCHOOL
12 Freeland Street

Year Opened: 1885
Grades 7-12
18,984 square feet on 0.7 acres



GRAFTON STREET SCHOOL (BUILDING #1)
311 Grafton Street

Year Opened: 1879
Grades Pre-K to 6
41,065 square feet on 1.2 acres (two buildings)



TAYLOR BUILDING
770 Main Street

Year Opened: 1842
Head Start Administrative Offices
5,400 square feet on 0.3 acres

PREVIOUS RENOVATION PROJECTS

The City's annual Capital Investment Program typically provides \$3 million annually for school renovation projects. During the past eighteen years, the history of projects has concentrated on boiler replacements and other essential building upgrades. During this period many schools have been converted to natural gas except for the following:

- Harlow Street, Foley Stadium, and Alternative School (leased facility)

In addition to boiler replacements, other building renovation projects completed through these city investments included:

- **Roof Replacements** at Heard Street, South High, Nelson Place, Wawecus, Chandler Elementary, West Tatnuck, May Street, Union Hill, Creamer Center, Grafton Street, Fanning, McGrath, and Foley Stadium.
- **Window Replacements** at Vernon Hill, Heard Street, Lake View, Chandler Magnet, May Street, New Citizen's Center, Tatnuck Magnet, Columbus Park, and Worcester Arts Magnet.



Vernon Hill Windows



Heard Street Windows

- **Installed New Science Labs** at South High, Burncoat High, and Worcester East Middle.



- **Conversion** of South High School from Electricity to Natural Gas.



South High Old Rooftop Units



South High New Rooftop Units (2007)

- **HVAC Replacements** at Doherty High, Burncoat High, Goddard, Chandler Magnet, Rice Square, New Citizen's Center, Jacob Hiatt, Columbus Park, and Heard Street.
- **Complete Renovation** of Foley Stadium (stadium, field, track, and parking lot).



Foley Stadium (Before Renovation)



Foley Stadium after Renovation (2007)

- **FOG (Fats, Oil, and Grease) Compliance:** Fifteen schools completed; three schools remain to be completed.
 - **Underground Storage Tank Removals** (17 sites)
 - **Various Chimney Repairs**
-

SUMMER 2011-2012 MODERNIZATION PROJECTS

In 2011, the City provided the WPS with a one-time \$3 million additional allocation for building modernization projects. The WPS utilized this funding, along with the annual allocation for building renovation funds to undertake interior and exterior repairs at the following ten (10) schools:

Doherty Memorial High School: Included new science labs, restroom renovations, new flooring, locker replacement, painting, re-finished gym floor, and some paving.



Restroom Renovation



Flooring Renovation

Burncoat High School: Included restroom renovations, painting, and locker replacement.



Old Lockers



New Lockers

South High Community School: Included restroom renovations, classroom floor restoration (from carpet to polished concrete), and new security system.



Refurbished floor and new carpet



Restroom Renovation

Worcester East Middle School: Included classrooms being refinished, cafeteria floor refinished, painting, parking lot paving, and restroom renovations



Classroom during renovation



Classroom after renovation

Union Hill School: Included classrooms and hallways being refinished, restroom renovations, and painting.



Front entrance flooring renovation



Restroom renovation

Chandler Elementary School: Included classrooms being refinished, new flooring, painting, and restroom renovations.



Classroom renovation



Restroom renovation

Flagg Street School: Included new flooring, painting, and restroom renovations.



Flooring before renovation



Flooring after renovation

Clark Street School: Included new flooring in classrooms and hallways, new cabinetry in classrooms, locker replacement, restroom renovations, and parking lot paving.



New flooring and classroom casework



New lockers and flooring

Goddard School: Included new flooring, painting, and restroom renovations



Restroom renovation



Restroom renovation

Tatnuck Magnet School: New flooring in classrooms and hallways, restroom renovations, and painting.

2013-2014 PROJECTS

In 2013-2014, the following city funded projects were completed:

- **Snow Guard Installations:** Norrback, Worcester Technical High, Lincoln Street, and Foley Stadium
- **Kitchen Cooler Replacement** at Roosevelt
- **Grease Trap Replacements:** Canterbury, Sullivan, and Vernon Hill
- **Entry Way and Ceiling Renovation:** Columbus Park
- **Modular Units Renovation:** Burncoat Prep
- **Basement Room Renovations:** Elm Park



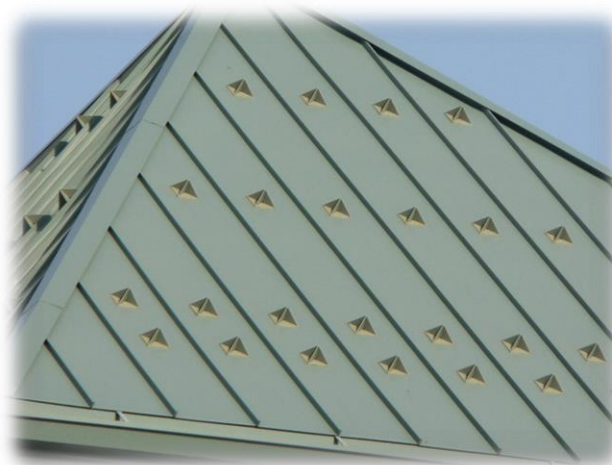
Burncoat Prep Modular Renovations



Foley Stadium Snow Guards



Roosevelt Cooler Replacement



Norrback Ave. Snow Guards

BUILDING RENOVATION AND MODERNIZATION PROJECTS THROUGH ENERGY SAVINGS PROJECTS

In June 2011, the City executed a \$26.6 million agreement with Honeywell International Inc. to implement comprehensive energy conservation and building modernization program across 92 City-owned buildings including the Worcester Public Schools. Over 60 percent, or approximately \$16 million, of these improvements were made to Worcester Public School facilities.

These efforts to install energy efficiency upgrades and renewable energy technology were guaranteed to cut the City's annual utility energy and operating costs by more than \$1.4 million per year for the next 20 years, reduce municipal carbon dioxide emissions by more than 6,000 tons annually and create hundreds of jobs. Funded through a twenty-year performance contract, these savings, which are guaranteed by Honeywell, will be used to pay for the majority of improvements and upgrades to these buildings.

The payback on some of these critically important upgrades was not sufficient enough to cover 100% of associated debt service costs; therefore funding was allocated through the City's Capital Improvement Plan to finance the remaining cost. Energy efficiency related grant funds were used to finance the project, as well.

Honeywell conducted a complete audit of all City and WPS facilities and began the work to design engineer and implement a range of City-approved energy conservation measures. Projects were selected based on their return on investment and the facility's need.

Some of the highlighted projects included:

1. **Replaced Boiler and Chiller Units** at:
Woodland/Claremont Academies
Norrback Avenue School
Quinsigamond Elementary
Roosevelt Elementary
2. **Replaced Boiler Projects** at Union Hill
and Worcester Arts Magnet
3. **Solar Photovoltaic Systems** at WTHS, Sullivan Middle, North High, and Norrback
Small Wind Turbine at WTHS
New Roof at Jacob Hiatt School
4. **Solar Photovoltaic Systems** *are in process* at Burncoat High/Burncoat Middle, South High, Forest Grove Middle, Belmont, Roosevelt, Elm Park, Chandler Magnet, and North High School (additional)



Union Hill Boiler before replacement

Through the ESCo program, most schools have received some or all of the following improvements to reduce energy cost and save money for the district:

- Building Controls and Automation
- Occupancy Sensor
- Building Infiltration
- Water Conservation
- Refrigeration Upgrades
- Boiler Controls
- Steam Trap Replacement
- Attic Insulation

These ESCo projects are in addition to computer power management and lighting upgrades that the WPS has already undertaken resulting in more than \$200,000 in annual electricity savings.

ENVIRONMENTAL MANAGEMENT PROJECTS

In 2010, the Worcester Public Schools began the process of developing an Environmental Management System (EMS) within the district to ensure full compliance with federal, state and local environmental laws and regulations; create and maintain a safe teaching and learning environment for our students, faculty and staff; model safe chemical use and management; prevent pollution and implement toxic use reduction strategies wherever possible; and continuously improve our environmental performance.

As part of this work the through the EMS, the Worcester Public Schools is committed to (1) comprehensively addressing environmental issues to achieve and maintain environmental compliance throughout the school system, and (2) integrating the District’s commitment to environmental compliance and good management practices into daily operations.

Recently, there has been a focus in the school district on Polychlorinated Biphenyls (PCB’s) that were used in many building materials between 1950 and 1978. PCB’s are man-made chemicals that persist in the environment and were widely used in construction materials and electrical products prior to 1978.

Although Congress banned the manufacture and most uses of PCB’s in 1976 and they were phased out in 1978, there is evidence that many buildings across the country constructed or renovated from 1950 to 1978 may have PCB’s at high levels in the caulk around windows and door frames, between masonry columns, and in other masonry building materials.

The WPS engaged an environmental consultant to conduct inspections of 29 school buildings to examine building materials that likely would contain PCB materials. The buildings were selected based on construction or major renovation between 1950 and 1979. In total, 20 schools were constructed during this timeframe and 9 schools had major renovations.

<u>Schools Constructed During Timeframe</u>		<u>Schools Renovated</u>
1. Belmont Street ⁴	11. Forest Grove ⁷	1. Columbus Park ¹
2. Burncoat High ⁵	12. McGrath Elementary ³	2. Greendale ⁶
3. Burncoat Middle	13. Mill Swan ⁶	3. Harlow Street ⁶
4. Chandler Elementary ⁴	14. New Citizen’s Center ¹	4. May Street ¹
5. Chandler Magnet ¹	15. North High (closed 8/11)	5. Nelson Place ⁷
6. Clark Street ²	16. South High ³	6. Rice Square ⁴
7. Doherty High ⁵	17. Union Hill #2 ²	7. Thorndyke Road ⁴
8. Elm Park ⁴	18. Wawecus Road ⁴	8. Tatnuck Magnet ¹
9. Flegg Street ³	19. West Tatnuck ²	9. Worcester East Middle ⁵
10. Foley Stadium ⁶	20. Worcester Arts ¹	

1. Windows have already been replaced through MSBA Accelerated Repair Program
2. Windows are scheduled to be replaced through MSBA Accelerated Repair Program in 2015

3. Windows have been submitted to MSBA for replacement in 2016. (Approval Pending)
4. Window Replacement will be submitted to MSBA for funding consideration for replacement as part of the 2017-2021 five year capital plan.
5. Schools have been submitted to MSBA for major renovation or replacement. Window replacement would occur as part of this project
6. School is not eligible for MSBA funding. Other funds to be identified for window replacement in long term capital plan
7. No action needed at this time. Windows Replaced or to be Replaced as part of

As part of the building assessment, the environmental consultant conducted an evaluation of readily-observable interior and exterior materials, equipment, and surfaces. Materials observed included caulking, window glazing, paint, ground, dust accumulation, HVAC systems, and light ballasts.

During the initial assessment phase, twenty-four (24) light ballasts that were determined to be unlabeled and leaking were immediately removed. Other conditions observed included degraded, dry, cracked, and missing glazing on window interior and exterior; degraded, dry, flaking and missing exterior caulking; pieces of degraded building materials on the ground adjacent to degraded caulking and glazing; dusty interior surfaces adjacent to degraded glazing; unlabeled florescent light ballasts; and stained florescent light fixtures.

During 2012, the District took interim steps to address all building assessments and engaged an environmental firm to conduct annual re-inspections and exterior inspections at particular locations as needed.

The long-term plan is for complete window replacement and abatement projects at these schools. The District will seek MSBA assistance to provide funds for the cost of the window replacements.

Windows Already Replaced	Windows Already Scheduled for Replacement	Window Projects to be submitted to MSBA 2015-2020 (or through Major Renovation or Repair)
Chandler Magnet	Clark Street	Belmont Street
Forest Grove (previous renovation)	South High (through school renovation / replacement)	Burncoat High (through major renovation / replacement)
New Citizens Center	Union Hill	Chandler Elementary
North High (through school replacement)	West Tatnuck	Doherty High (through major renovation / replacement)

Worcester Arts Magnet	Nelson Place (through school replacement)	Elm Park
Columbus Park		Flagg Street
May Street		McGrath Elementary
Tatnuck Magnet		Wawecus Road
		Rice Square
		Thorndyke Road
		Worcester East Middle (through major renovation)

MSBA REPLACEMENT OR MAJOR RENOVATIONS PLAN

In prior years, the Massachusetts School Building Authority (MSBA) invited the following projects for funding consideration:

2012

- Nelson Place School – Major Renovation or Replacement Project
- Chandler Magnet School – Accelerated Repair Project – Window Replacement
- Jacob Hiatt Magnet – Accelerated Repair Project – Boiler Replacement
- Lake View School – Accelerated Repair Project – Window Replacement
- May Street School – Accelerated Repair Project – Window Replacement
- New Citizens Center – Accelerated Repair Project – Window Replacement
- New Citizens Center – Accelerated Repair Project – Boiler Replacement

2013-

- Columbus Park School – Accelerated Repair Program – Window Replacement
- Columbus Park School – Accelerated Repair Program – Boiler Replacement
- Tatnuck Magnet School – Accelerated Repair Program – Window Replacement
- Worcester East Middle School – Accelerated Repair Program – Boiler Replacement
- Worcester Arts Magnet School - Accelerated Repair Program – Window Replacement

2014 (Projects to begin this summer)-

- Clark Street School – Accelerated Repair Program – Window Replacement
 - Goddard School of Science and Technology – Accelerated Repair Program – Window Replacement
 - Union Hill School – Accelerated Repair Program – Window Replacement
 - West Tatnuck Elementary School - Accelerated Repair Program – Window Replacement
-

2015

The Worcester School Committee and Worcester City Council authorized the Administration of the Worcester Public Schools to submit the following schools to the Massachusetts School Building Authority (MSBA) for Accelerated Repair Program consideration:

1. Flagg Street School (windows replacement project)
2. Francis J. McGrath Elementary School (windows replacement project)
3. Grafton Street Elementary School (windows and boiler replacement projects)
4. Jacob Hiatt Magnet Elementary School (windows replacement project)

The Administration of the Worcester Public Schools requests to submit the following schools to the Massachusetts School Building Authority (MSBA) for major renovation or replacement:

1. Burncoat High School
2. Doherty Memorial High School
3. Worcester East Middle School

These recommendations are based on the present condition of schools using various in-district and independent evaluations including, but not limited to, MSBA Needs Assessment Report (2010), NEASC report(s), and previous facilities assessments. Based on the condition and needs assessments of these schools, the Administration recommended, and the School Committee and City Council approved these eight (8) projects for the 2015 Statement of Interest submittal to the MSBA.

The following pages describe the MSBA process and the proposed projects.

MSBA Statements of Interest Overview:

A separate Statement of Interest must be submitted for each existing school for which the city, town, or regional school district may have an interest in applying to the MSBA for a grant. The SOI requires the city, town, or regional school district to: (1) identify the priority category(s) (set forth below) for which it is expressing interest, (2) provide a brief description of the facility deficiencies that the District believes it has and how those deficiencies align with the eight statutory priorities, and (3) provide any readily-available supporting documentation.

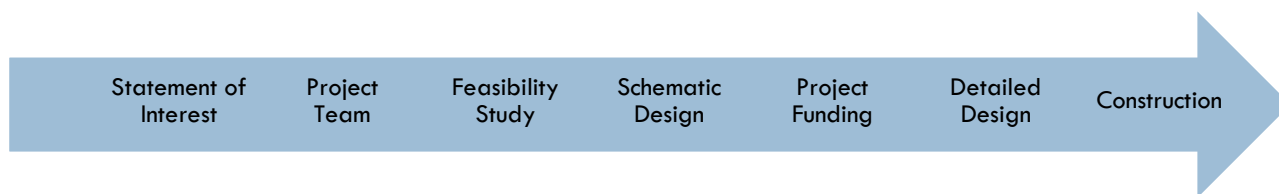
Pursuant to M.G.L. c. 70B, § 8, the MSBA shall consider applications for school construction and renovation projects in accordance with the priorities listed below. A district may designate as many categories as may apply to that particular school facility.

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, where no alternative exists, as determined in the judgment of the Authority;
2. Elimination of existing severe overcrowding, as determined in the judgment of the Authority;
3. Prevention of the loss of accreditation, as determined in the judgment of the Authority;
4. Prevention of severe overcrowding expected to result from increased enrollments, which must be substantiated, as determined in the judgment of the Authority;
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, as determined in the judgment of the Authority;
6. Short term enrollment growth, as determined in the judgment of the Authority;
7. Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements, as determined in the judgment of the Authority; and
8. Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts, as determined in the judgment of the Authority.

MSBA Process Overview:

1. **Identify the Problem:** Local community identifies deficiencies in school facilities through the Statement of Interest process
 2. **Validate the Problem:** MSBA and local community work together to validate deficiencies identified
 3. **Evaluation of potential solutions:** MSBA and local community work in collaboration to identify potential solutions
 4. **Confirm the solution:** MSBA and local community agree on solution and appropriate course of action
 5. **Implement the agreed upon solution:** MSBA and local community continue collaboration through design and construction
-

MSBA Process:



The Statement of Interest phase is the initial step to inform the MSBA of perceived deficiencies within a school facility. Cost identification and financial solutions are not needed at this phase of the MSBA process. The MSBA will evaluate the submission of each community and invite those to advance to project team formation and feasibility study phase.

MSBA Needs Survey:

The MSBA's enabling statute requires that a periodic Needs Survey be conducted to assess the condition of each public school across the Commonwealth. The data collected during the 2010 Needs Survey assists the MSBA in understanding the current general facility conditions at Massachusetts schools and validates, updates, and supplements the information gathered during the initial Needs Survey in 2005.

Facilities information gathered on each school includes gross square footage, age, building systems condition, construction and renovation history, enrollment, numbers and types of classrooms, and availability of core spaces.

The **Building Systems Condition** rating is an overall score for the general conditions of a school facility's major systems, such as roofing, HVAC, windows, and flooring. The **Building Systems Conditions** were rated on a scale of 1 to 4, with a score of 1 indicating the best conditions and a 4 indicating the poorest.

The **General Physical Environment** score is also based on a 1 to 4 scale and reflects the school building's physical elements, such as access to daylight, classroom location and size, support teaching and learning.

Space Utilization at individual schools was rated based on comparisons to statewide norms. Each school building received an Above Average, Average, or Below Average Utilization score.

MSBA Needs Assessment (Worcester Public Schools)

School	Building Systems Condition	Space Utilization	General Environment
Belmont Street Community	3	A	3
Burncoat High	3	A	1
Burncoat Middle	1	A	1
Burncoat Street Preparatory	2	A	2
Canterbury Street Magnet	1	A	1
Chandler Elementary Community	1	AA	3
Chandler Magnet	2	BA	1
City View	1	A	1
Claremont Academy	1	A	1
Clark Street	2	A	1
Columbus Park Preparatory	3	A	2
Doherty Memorial High School	2	A	1
Elm Park Community	2	A	1
Flagg Street	3	A	2
Forest Grove Middle	1	BA	1
Gates Lane	1	A	1
Goddard School	1	A	1
Grafton Street	3	AA	2
Heard Street	1	A	2
Jacob Hiatt Magnet	2	A	1
Lake View	3	AA	2
Lincoln Street	2	A	2
May Street	2	A	1
McGrath Elementary	2	A	2
Midland Street	1	A	1
Nelson Place	3	A	1
New Citizen Center	2	AA	2
Norrback Avenue	1	A	1
North High	School opened September 2011		
Quinsigamond	1	BA	1

School	Building Systems Condition	Space Utilization	General Environment
Rice Square	2	AA	3
Roosevelt	1	A	1
South High Community	1	A	3
Sullivan Middle	1	BA	1
Tatnuck Magnet	2	A	1
Thorndyke Road	2	A	1
Union Hill	3	A	1
University Park Campus	2	A	2
Vernon Hill	3	BA	2
Wawecus Road	2	A	1
West Tatnuck	1	A	1
Woodland Academy	1	A	1
Worcester East Middle	2	A	1
Worcester Arts Magnet	3	A	1
Worcester Technical High School	1	BA	1



Burncoat High School
 179 Burncoat Street

Year Opened: 1964
 Square Footage: 144,388
 Grades Served: 9-12
 Enrollment (10/1/14): 988

2010 MSBA NEEDS SURVEY		
Building Condition	Space Utilization	General Environment
3	Average	1

Justification for Facilities Improvement:

- Accreditation Status: Warning
- Building is not ADA-accessible
- Lack of adequate Performing Arts space for district's fine arts magnet school
- Replace nonfunctional, inadequate classroom space
- Likely environmental issues with windows (PCB's)
- Insufficient science labs space
- Need for larger, functional media center / library
- Outdated mechanical systems
- Outdated life safety systems
- Outdated generator system

Burncoat High School

Burncoat High School was constructed in 1964. The school has a current enrollment of approximately 988 students in grades 9-12. The facility is approximately 144,000 square feet situated on the 39 acres of the Burncoat High-Middle Schools complex parcel.



District Goal for School:

The district goal for Burncoat High School is to ensure that all of our students receive a rigor-based education that endows in them the ability to read, write, think, and problem-solve in a manner that is consistent with 21st century career and college readiness. To meet this goal, the facility at Burncoat High School must be equipped and maintained to a standard that is consistent with 21st century education and provide students with access to opportunities similar to those of their peers with whom they compete for college acceptance and career opportunity throughout the state, nation and world.

Current Programs and Operations:

Burncoat High School offers a traditional comprehensive high school program of studies that include 14 Advanced Placement courses, a small number of elective courses, and one technical area, Automotive Technology. Additionally, Burncoat High School is a magnet school for the fine and performing arts for the city of Worcester. As such, courses in music, (instrument and vocal performance, theory, composition) are offered, as are courses in dance, theater and fine arts. However, the now 51-year old facility does not meet the educational needs of 21st century learners,

significantly limiting components of each of our programs that can be offered to our students and in turn limiting their post-secondary opportunities in these fields

The FY11 capital budget provided an initial investment for the refurbishment of the school to include locker installation in various areas, new Advanced Placement Chemistry lab renovation, restroom renovations in 4 bathrooms, cafeteria painting, gym floor resurfacing, and installation of a gym divider curtain. More extensive renovation to the school is recommended.

Burncoat High School Condition Summary

Accreditation Status:

The school has been placed on warning status by the New England Association of Schools and Colleges (NEASC) for facilities deficiencies. The school does not have space for new or expanded programs, as cited by NEASC. The building is generally overcrowded and is unable to expand existing programs, has outdated systems and classrooms, and there is a significant need for an auditorium and a single larger cafeteria.

NEASC Report Findings (2009):

- Inadequate space and overcrowded halls, cafeteria, and classes
- No space for large group meetings, no auditorium
- Shortage of classrooms
- Facility creates less than conducive learning environment
- Lack of adequate library space
- Need for a building addition
- Inadequate athletic facilities
- Facility is not ADA compliant
- Facility not equipped to address full program needs

In May of 2009, the New England Association of Schools and Colleges (NEASC) conducted their decennial visit to Burncoat High School. As a result of their visit, the accreditation status of Burncoat High School was placed at Warning status, primarily because of issues that related to whether or not 21st century education can take place within our aging facility. The overview section of the final report from the commission stated:

“When it comes to meeting the needs of its staff and student body and accomplishing the school mission, Burncoat High School suffers from chronic resource deprivation. This has been the case for years, both in terms of annual operating needs and in relation to infrastructure inadequacy.

While the city has expanded and renovated parts of the 45-year-old building over the years, the facility remains inadequate and in many respects obsolete in meeting the needs of 21st century learners. Sciences labs are decades out of date. The library media center is simply a double-size classroom. Problems remain around HVAC, handicapped accessibility, building security and access, and safety issues. The building lacks its own

auditorium and must use the adjacent middle school to meet the needs of its city-wide arts magnet school and to provide nursing services for its students.

The aging infrastructure's failure to support the educational program and the mission of Burncoat High School is detailed elsewhere in this report. Suffice it to say here that continued failure by the city of Worcester to provide the necessary infrastructure and adequate annual operating funds for Burncoat High School will jeopardize a 21st century education for its students and raise questions about the continued accreditation of Burncoat High School.”

The full report from the commission extensively details the manner in which the instructional facilities at Burncoat High School impede the efforts of dedicated qualified staff to provide for their students an education that ensures career and college readiness for the 21st century. Specifically the lack of appropriate, up-to-date science laboratories impedes the educational experience of all students who partake in lab based science, particularly considering the fact that space limitations require a small number of these courses to be taught in rooms which are not equipped as needed.

Additionally, the commission's report notes the fact that Burncoat High School lacks its own auditorium for large group meetings and/ or performances to support the schools arts magnet program. Specifically, the lack of a modern updated theater severely limits the ability to teach many technical aspects of theatric, orchestral, choral and choreographic production and of a significant number of the curriculum standards in each of these disciplines.

Core Educational Spaces

The total square footage of Burncoat High School is 144,388. Based on 963 CMR 2.06 – MSBA’s Educational Program Space Standards, a school with enrollment of approximately 1,000 students should be based on a school size of 178,000 square feet. The current building is only 81% of the size of a building that would be constructed for the same number of students under the current standard.

Classrooms: Burncoat High school has 57 classrooms for 86 teachers meaning that many teachers are required to travel from classroom to classroom through the course of the day losing valuable instructional time to transition. Classrooms



within the school are very similar, in both form and function, as they were when the building was constructed nearly 50 years ago. Typical classrooms range in size from 400 sq. ft. to 600 sq. ft. The MSBA square foot standard for a high school classroom is 850 square feet. However there are larger classroom spaces, primarily in areas where Industrial Arts classes were previously taught, and much smaller spaces, not initially intended to serve as classrooms within the building. Most of our classrooms still have the original chalkboards in them, though over the past few years some have been retrofitted with white boards and a very

few have permanent electronic white boards with ceiling-mounted projectors. As previously stated, the classroom infrastructure remains as it was upon construction leading to frequent and fairly significant issues around heating, cooling and communication. The heat in classrooms throughout the building, despite the efforts of the building-based custodial crew and system-based tradesmen, is inconsistent throughout the school. In some areas, rooms are so hot that the floor units must be covered to prevent the room temperature from becoming unbearable. In other places, rooms can become so cold as to be unusable. Communication to classrooms is accomplished through an antiquated intercom system, no classroom has access to an outside telephone line and no teacher has an individual voice mail box. Additionally, though nearly every classroom is equipped with at least one computer, very few classrooms have more than one or the capability of supporting more than one.

Science Labs: At Burncoat High School, there are currently 7 rooms for the 10-member science department. In the summer of 2010, the city of Worcester conducted a significant renovation of one of the chemistry lab/ classrooms bringing it up to a standard appropriate for AP Chemistry. However, the other 6 lab classrooms have over the years become seriously outdated and do not function properly for the courses taught within them. More specifically, we have a chemistry lab where neither the gas nor water function at the lab benches, where there is not a functional fume hood or emergency eyewash or shower station. Similar conditions exist in each of the lab classrooms where biology and physics are taught. The result is that our students in each of these areas are not able to conduct the type of experiments taking place in the modern up-to-date labs in schools across the state and nations putting them at a significant disadvantage in terms of college and career readiness.



Beyond the sciences and traditional classroom spaces we have a significant need to upgrade the facilities and instructional spaces where our fine arts education takes place. Currently, because of a lack of space, we are forced to use areas for fine arts instruction that were never intended for such a purpose. For example, our AP studio art class takes place in a converted cafeteria, all of our choral classes are taught in a space that was previously a print shop, and our strings teacher has no option but to rehearse his ensemble in a cafeteria.

As the fine arts magnet school for the city of Worcester, Burncoat High school attracts students from every part of the city who are interested in pursuing arts education throughout high school and beyond. The program at Burncoat has been in existence for 29 years and has produced artists who have performed on screen and stage and become renowned artists and designers throughout the world. But each year we go without having a facility that properly supports these endeavors, it becomes more difficult for the students we have to be prepared to compete with their peers emanating from appropriately-equipped high schools. Burncoat High School is in grave need of a facility in which the fine and performing arts can be instructed in the most modern, up-to-date studios, theaters, and rehearsal rooms so as to provide our students with the best opportunity to compete in both post-secondary education opportunities and career fields within their chosen discipline.

Finally, beyond the tremendous need in our instructional spaces, it is important to note that the design of Burncoat High School is such that there are upwards of 50 doors that lead to the exterior of the building. It is my understanding that the intent of this design was to allow for the exterior spaces to be available to students and staff throughout the day and to provide for multiple entry and exit points in a free-flowing manner. However, in this post-Columbine era, the reality of this design is that it poses a potential threat to the safety and security of students and staff.

Library Media Center: The Burncoat High School library was built and designed based upon a traditional warehouse-style library of the mid-Twentieth Century; a long, narrow, rectangular room



with a few tables for patrons, no technology, 5 specific sections of books, no meeting or quiet-reading areas, nor a centrally-located circulation desk. This original design was meant to foster individual learning and independent quiet-reading as the educational philosophy of the time dictated. With technological and educational advancements of the 21st century, we know, as research indicates, that social interaction and group learning is essential in fostering productive, worldly citizens of the future. In 2015, the 51-year old library media center of Burncoat High School, with a student

population of 988 students and 90 faculty members, is outdated in terms of square footage for seating capacity, has a shortage of meeting areas, offers no comfortable reading areas, lacks an open-floor design plan, has a minimal heating and ventilation system, and inadequate electrical capacity for 21st century technologies. The library media center must be brought up to the standards set forth by the Massachusetts School Library Association and the New England Association of Schools and Colleges. With financial assistance, our hope is to build a contemporary, positively-charged library that is not meant to simply manage students quietly, but to create a progressive learning environment that fosters the love of reading, the sharing of ideas amongst students and faculty, and harnesses the latest technologies that meet both state and national standards. The media center has completely outgrown its original mission and has reached an inhibited wall which is impeding student growth capabilities.

The *Massachusetts School Library Media Program Standards for 21st Century Learning 2010* set standards that Burncoat Library does not meet. According to their standards, the main problem with the library media center is lack of square footage and lack of meeting and reading areas. Our current square footage is 1,700. The ideal total square footage of the media center for a high school of our size should be 7,710 to adequately accommodate our student population and faculty. Our current seating capacity is only 65, a mere 7% of the student population. Massachusetts and N.E.A.S.C. standards require seating capacity to be 15% of the student population (currently 988 students) totaling 148 seats, 44% more than what the current capacity is. In addition, state standards regarding square footage on an open meeting/instructional area should minimally be 15% of the population x 40 square feet, 5,280 square feet. Added to that, for each additional workstation, of which we need 25, 30 square feet should be allotted for each, totaling another 750 square feet, thus making the ideal square footage 7,710. Burncoat is clearly under-performing in that area. The media center has also been cited for not meeting the Accessibility standards in accordance with the Disabilities Act of 2003 as the tables are closely crammed together, to seat 65 students, and other pieces of equipment do not allow for unencumbered movement from one end of the library to the other for handicapped patrons. Massachusetts State standards specify 60-inches between 2 tables to provide easy movement, where Burncoat's library has no more than 30-inches between each table.

Form should follow function, but in this case it does not. At most, one full class and possibly 20 more students may use the media center at one time. It is, however, noisy, and disruptive to each group in the media center. It is not large enough to house up to 4 classes plus additional individual patrons at one time as standards require. According to the M.S.L.A., “In order for the media center to facilitate inquiry-based learning, technology use, and centralized collection management, the facility should have distinct areas of purpose. Burncoat High School Library is one long room with mixed purposes in the same area. It is not conducive to flexible use. It is difficult to hold class instruction without disturbing individual patrons there for quiet reading or quiet project use.”

Additionally, the condition and dated nature of our classroom and laboratory spaces are such that our students do not have the opportunity to be instructed through the use of modern, up-to-date instructional equipment similar to what they will see in their post-secondary educational careers. This puts them at a significant disadvantage when compared to peers graduating from modern well-equipped schools. This is particularly true for our students choosing to enter into STEM fields, as our facility is woefully underequipped in these areas.

From the NEASC report; “Burncoat High School Media Center must begin to implement a plan to expand the size of the library media center to meet the needs of the number of students served by the school, develop and fund a formal plan to update information, both print and non-print, to modern standards since average copyright date for books in the media center is 1978, replace old worn furniture and re-design space into an open-floor plan to provide flexible learning environments, develop and implement a plan to provide adequate storage space for audio visual equipment, meeting spaces, and quiet areas.”

BUILDING MEP SYSTEMS

Mechanical

The HVAC system is comprised of a retrofitted air system that utilizes air handlers and air flow VFD's to regulate the classroom temperature. This system is very inefficient and is very high maintenance. Units are in the tunnels below the school, making maintenance problematic.



The hot water distribution piping is original to the facility and requires constant maintenance. We experience frequent leaks. A failure in this distribution system would cause major heat loss throughout the facility. The numerous zone-based building pumps are in need of constant repair and maintenance.

The boilers have been experiencing significant reliability issues and several sections within the boiler have been repaired. The exhaust systems throughout the building need to be replaced and many are cause for continuous maintenance.

Electrical

The main electrical system in the building is original and becoming aged. The subpanels are approaching capacity based on the increased need for technology in all areas of the building. There are not enough outlets in the classrooms and common areas to satisfy the needs of the school.



The electrical backup generator is outdated and significantly undersized to handle all of the needs of the building. There is not enough equipment wired to the generator to protect the facility in the event of a power outage.

The fire alarm panel is the original panel that is well beyond its life expectancy. Replacement parts are extremely hard to find and becoming more and more difficult to obtain. If any one of the components in the fire alarm system fails, it would cause a complete system failure.

The clock/bell/phone/intercom system is requiring a lot of maintenance to maintain. The system is outdated and in dire need of replacement.

Plumbing

The distribution piping in the school is original. Minimal areas of piping have been completely replaced and many patch-type repairs have occurred instead. We have major isolation valves that are continuously failing to hold and operate properly requiring the entire facility to be shut down to make repairs. The aged feed and waste lines are becoming high-maintenance due to leaks, blockages, and breakages.

Plumbing fixtures in many of the science labs do not work properly or are shut off completely.

Eye wash stations need to be installed in many areas of the school.

BUILDING ENVELOPE

Window Systems



The window system in the school is original to the school. The single-pane window system is extremely inefficient and is causing significant heat loss and strain on the heating system. It is having difficulty trying to maintain a comfortable temperature throughout the heating season.

Many of the windows do not operate properly and are, in many cases, fixed shut.

Exterior Walls

The exterior brick work of the school is aged and is showing signs of wear and tear. The sills and mortar are deteriorating.

Other Common Areas of School:



The school has narrow hallways throughout the building that make it difficult for students to move between course periods without significant safety concerns. The school's cafeteria is too small for all students to eat in fewer lunch periods which have a significant impact on the school's flexibility for scheduling students for specialized enrichment classes.

Overall Facility Assessment:

- The physical plant impacts accreditation status until addressed.
- Building likely contains PCB's in various building materials.
- Asbestos management continues to be an issue at the school.
- The age of heating and distribution systems presents a high failure factor.
- Other utilities are on the brink of failure, such as generators, water & sewer distribution
- Full accessibility has not been achieved.
- Energy conservation is not a real expectation given building envelope and construction.
- None of the classroom spaces are conducive to current educational requirements.
- The problems that exist in this 1964 building are beyond any comprehensive maintenance program.

Beginning with students who entered the 9th grade in 2013, the current requirements necessary to graduate from Burncoat High School were replaced by the state high school graduation requirements. The adoption of these new requirements mean that significantly more students will need to be enrolled in science, the arts, career and technical courses, and wellness-based courses. The current facility cannot handle this expansion. To be able to meet these new demands, we will need significantly dedicated course instructional spaces for each area. The needs that exist in the arts and sciences have been previously addressed in this document, as have the significant needs of the library media center. Additionally, our physical education space is in no way either sufficiently or appropriately equipped to instruct a meaningful comprehensive wellness program.

The current facility was clearly developed to meet the needs and trends of the time which focused primarily on competitive team sports and not on individual fitness and wellness, as is fast becoming the focus of our program. Spaces within our wellness facility need to be developed to meet this need, along with appropriate, functioning changing & shower facilities for our male and female students.

Burncoat High School has a significant high needs special education population. We are the school site for the Worcester Public Schools' program for students on the Autism spectrum; we have two full classes of students identified as Life Skills and three classes for the Structured Therapeutic Education Program. Each of these programs serves a distinct population of students, and each requires distinct but disparate facility needs. However, none of the spaces within our current facility were ever designed with the unique needs of these students and programs in mind, and as such, the program inhabits spaces that do not represent an optimal learning environment.

Burncoat High School

MSBA Request: Major Renovation or Replacement

MSBA Priority Categories:

2. Prevention of the loss of accreditation, as determined in the judgment of the Authority;
 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, as determined in the judgment of the Authority; and
 7. Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements, as determined in the judgment of the Authority.
-



Doherty High School
299 Highland Street

Year Opened: 1966
Square Footage: 168,126
Grades Served: 9-12
Enrollment (10/1/14): 1,428

2010 MSBA NEEDS SURVEY		
Building Condition	Space Utilization	General Environment
2	Average	1

Justification for Facilities Improvement

- Accreditation Status: Warning
 - Building is not ADA-accessible
 - Lack of adequate Performing Arts space for theater and music programs
 - Replace nonfunctional, inadequate classroom space
 - Likely environmental issues with windows (PCB's)
 - Insufficient science labs space
 - Need for larger, functional media center / library
 - Outdated mechanical systems
 - Outdated life safety systems
 - Outdated generator system
-

Doherty Memorial High School

Doherty Memorial High School was constructed in 1966. The school has an enrollment of approximately 1,428 students in grades 9-12. The facility is approximately 168,000 square feet situated on a 20-acre parcel.



District Goal for School:

The District goal for Doherty Memorial High School is to ensure that all of our students graduate college and career ready. To this end, it is imperative that the facility support rather than inhibit the delivery of rigorous and relevant curriculum and high-quality instruction. Based upon a review of the findings generated by the 2011 visiting team, the commission of the New England Association of Schools and Colleges voted to place Doherty Memorial High School on Warning Status for the Standards on Accreditation for Curriculum; and Community Resources for Learning due to issues associated with the building.

Current Programs and Operations:

Despite an outdated facility, the school offers a strong academic program and some meaningful, high-interest, and skills-rich electives. For example, the Engineering and Technology program, (ETA), has been most successful in providing students with learning experiences that support the development of the skills necessary for today's college and career opportunities. The number of students who participate in this program has been steadily increasing during the recent past. At approximately 400 students this year, and given the current space allocated to this program, we will have reached the maximum number of students given the vocational requirements of this Chapter 74 program. In order to expand this program, additional space will be needed. Recently, we were able to add a course in Marketing which has provided an additional option for students who have an interest in the Business and Technology areas. However, in order to seek approval for the expansion of this pathway option, not only would we need to offer additional courses, we would need additional space for the students to fully operate and maintain a school store, to learn

in a setting that simulates that of a business environment, and to use technology as successful organizations do in the workplace.

The FY11 capital improvements to the school included locker installation in various areas, science lab renovation in the 300 wing, floor coverings in the 400 section, complete resurfacing of both gym floors, installation of athletic flooring in locker rooms, renovations to 6 bathrooms, painting throughout the facility, paving of front driveway and entrance way, as well as painting of the front canopies. More extensive renovation is recommended.

Doherty Memorial High School Condition Summary

Accreditation Status:

The school has been placed on warning status by the New England Association of Schools and Colleges (NEASC) for Community Resources for learning.

NEASC Report Findings (2012):

- Facility is not ADA-compliant
- Ongoing HVAC issues
- Absence of long-range capital improvement plan, including funding
- Inadequate number of restrooms in the facility

In March of 2012, the New England Association of Schools and Colleges (NEASC) conducted their decennial visit to Doherty Memorial High School. As a result of their visit, the accreditation status of Doherty High School was placed at Warning status, primarily because of issues that related to whether or not 21st century education can take place within the aging facility.

The NEASC noted several deficiencies regarding the physical plant of Doherty Memorial High School in their decennial report following their October 2011 visit. The following statements were among those observations and recommendations made by the NEASC.

- The current facility greatly hinders opportunities for students to learn. It is apparent that the facility has fallen into an extreme state of neglect. Lack of handicapped accessibility prevents students with disabilities or even short term mobility issues from participating in the programs at Doherty Memorial High School. Lack of basic maintenance for extended periods of time have led to numerous sanitary and health issues. The cafeteria cannot accommodate the entire student body so many students do not have a place to sit and, as a result, go without lunch. The current facility prevents many required programs from being implemented and severely hinders teaching and learning at Doherty Memorial High School. If students are going to be prepared for 21st century life, drastic changes must be made to the physical plant.
 - There are limited resources available in the media center which is closed numerous days each year to be used as testing space.
 - Numerous problems still exist with heating and ventilation.
-

- Lavatories have limited ventilation and inoperable stalls and sinks.
- The original single pane windows do not provide adequate protection from the cold air. Many of them are broken throughout the building and have not been replaced.
- There is a need for a plan to address capital improvement needs. The lack of such a plan places Doherty Memorial High School at a disadvantage.
- Doherty Memorial High School site and plant do not support the delivery of high quality school programs and services. Despite the noble attempts by the staff to dress up some of the walls with a coat of paint or artwork, the school is in a state of extreme disrepair. The school was constructed in 1966 and has seen little renovation. The school is built on a slope and has numerous levels, but there is no elevator. Students with permanent or temporary mobility impairments cannot access programs and services within the building. Accessibility to and throughout the building for people with limited mobility is extremely restrictive. There are no elevators, and no internal structures are currently in place to allow movement between the first and second floors and the third and fourth floors. Students and visitors who are not able to use stairs must exit the building, travel through the parking lot, and reenter the building on the third floor. The cafeteria area is small and does not have the physical capacity to serve the student body. Many students have expressed concern with cafeteria overcrowding and their inability to utilize the lunch program consistently. The library has inadequate space to address the needs of 1,300 students. Space in the special education department is inadequate for program needs. Lavatories are insufficient to serve the school population. Lavatories lack ventilation, and some have inoperable stalls and sinks. The current facility prevents the delivery of high quality school programs and services, and as a result, students cannot achieve the school's 21st century learning expectations.

Recommendations:

- Develop and implement a plan to ensure sufficient levels of technology, equipment, supplies, facilities and library/media space and resources to fully implement the curriculum.
 - Immediately address all health and safety issues with the facility
 - Repair all plumbing, lighting, and ventilation in lavatories to provide adequate sanitary and safety conditions
 - Provide adequate space and seating in the cafeteria so that all students may sit down to eat
 - Ensure equal access to programs and services in all parts of the building for all students and staff members
 - Ensure handicapped access to programs and services on all levels
-

- Develop a timeline to address the many capital improvements necessary to implement the curriculum and 21st century instruction and assessment practices
- Provide adequate heating and ventilation throughout the facility
- Develop and implement a technology plan to ensure that computers and other technologies are up to date and available for student and faculty use.

Core Educational Spaces

The total square footage of Doherty High School is 168,126. Based on 963 CMR 2.06 – MSBA’s Educational Program Space Standards, a school with enrollment of approximately 1,430 students should be based on a school size of 254,184 square feet. The current building is only 66% of the size of a building that would be constructed for the same number of students under the current standard.

The core educational spaces at Doherty High School remain largely unchanged since the building was opened in 1966. Doherty has 70 classrooms, one auditorium, one media center, one cafeteria for students and teachers, and one gymnasium.

Classrooms: While the class sizes vary (at times significantly) throughout the two buildings, an average-size classroom at Doherty is approximately 775 sq. ft. with an average of 29 seats. The MSBA supports 850 square foot average allotment for common classrooms.



Examples of some of our smaller classroom sizes include:

- * Room 321- Regular education setting with 500 square feet and 28 seats.
- * Room 212- Life-skills classroom presently serving fifteen students with 418 square feet.
- * Room 300- Engineering Laboratory with 513 square feet.

Examples of our largest classroom spaces include:

- * Room 101- Concert band/Music room includes

1,050 square feet.

- * Room 322- Science classroom/ laboratory including 1,036 square feet.

The music program consists of one classroom and thus has minimal opportunity for growth. The art program is similar. The art department has one classroom with twenty-eight desks set in 1,040 square feet of space.

Science Labs: In August 2011, work was completed to renovate two of the science laboratories. Room 320 has 25 seats and four lab stations that seat between two and four students at each. Room 324 has eighteen seats and six lab stations that also seat between two and four students each.

Library Media Center: is set in 3,000 square feet of space. This space includes nine tables for students to sit and work, twenty-eight computers, all of our books, all storage, and the librarian's station/office.



In order to meet the needs of 21st century learners, the media center needs to be expanded in terms of physical space and must be equipped with more technology. Upon comparison of our current media center space compared with that of newer facilities in our district and in our local area, it is clear that this physical space and the technology in it are inadequate to properly meet the needs of today's learners.

Other Common Areas of School:



The school has narrow hallways throughout the building that make it difficult for students to move between course periods without significant safety concerns. The school's cafeteria is too small for all students to eat in fewer lunch periods which has a significant impact on the school's flexibility for scheduling students for specialized enrichment classes.

BUILDING MEP SYSTEMS



Mechanical

The HVAC control is comprised of two different temperature control packages for different areas of the building. These two systems do not communicate well and it makes for serious discrepancies in temperatures.

The hot water distribution piping is original to the facility and requires constant maintenance. We experience frequent leaks. A failure in this distribution system would cause major heat loss throughout the facility. The numerous zone-based building pumps are in need of constant repair and maintenance

The hot water distribution piping is original to the facility and requires constant maintenance. We experience frequent leaks. A failure in this distribution system would cause major heat loss throughout the facility.



The boilers have been experiencing significant reliability issues and several sections within the boilers have been repaired.

The modulating dampers on the energy recovery units are fixed at 100% and require a modulation upgrade to allow for increased heating capabilities.

continuous maintenance.

The gymnasium and auditorium have antiquated HV units and are in need of complete replacement. These units are well beyond the expected life span and are requiring

The emergency generator is not connected to the boiler and therefore does not provide freeze protection in case of a power failure.

Electrical

The main electrical system in the building is original and becoming aged.



The subpanels are approaching capacity based on the increased need for technology in all areas of the building. There are not enough outlets in the classrooms and common areas to satisfy the needs of the school.

The electrical backup generator is outdated and significantly undersized to handle all of the needs of the building. There is not enough equipment wired to the generator to protect the facility in the case of a power outage.

The fire alarm panel is the original Edwards panel that is well beyond its life expectancy. Replacement parts are extremely hard to find and becoming more and more difficult to obtain. If any one of the components in the fire alarm system fails, it would cause a complete system failure.

The clock/bell/phone/intercom system is requiring a lot of maintenance to maintain. The system is outdated and in dire need of replacement.

Plumbing

The distribution piping in the school is original. Minimal areas of piping have been completely replaced and many patch-type repairs have occurred instead. Isolation valves are continuously failing to hold and operate properly, requiring the entire facility to be shut down to make repairs. The aged feed and waste lines are becoming high maintenance due to leaks, blockages, and breakages.



Plumbing fixtures in many of the science labs do not work properly or are shut off completely.

Eye wash stations need to be installed in many areas of the school.

Building Envelope

Window Systems



The window system in the school is original to the school. The single-pane window system is extremely inefficient and is causing significant heat loss and strain on the heating system. It is having difficulty trying to maintain a comfortable temperature throughout the heating season.

Many of the windows do not operate properly and in many cases fixed shut.

Exterior Walls

The exterior brick work of the school is aged and is showing signs of wear and tear. The sills and mortar are deteriorating. The steel entrance way overhangs are showing signs of age and deterioration.

Roof

The roof was installed in 1995 and will soon be becoming a maintenance problem as the membrane system becomes more aged.

Overall Facilities Assessment:

- The physical plant impact accreditation status until addressed.
- Building likely contains PCB's in various building materials.
- Asbestos management continues to be an issue at the school.
- The age of heating and distribution systems presents a high failure factor.
- Other utilities are on the brink of failure, such as generators, water & sewer distribution
- Full accessibility has not been achieved.
- Energy conservation is not a real expectation given building envelope and construction.
- None of the classroom spaces are conducive to current educational requirements.
- The problems that exist in this 1966 building are beyond any comprehensive maintenance program.

In January of 2015, a comprehensive facilities needs study was done at the Doherty Memorial High School and identified a total need just under \$18 million dollars, which included deferred maintenance, capital renewal & modernization, and grandfathered Code issues.

The District is unable to provide the educational program at Doherty Memorial High School that it would need in order for all students to graduate college and career-ready due to the facility. Despite the efforts of the faculty and administration to creatively maintain and add courses & programs to enhance the educational experiences of our students, the facility continues to prohibit the delivery of curriculum in a manner that supports the development of 21st century skills.

Throughout the building, there is a lack of technology and the existing technology is outdated. All classrooms should be equipped with several computers to be used by students during class time without having to leave the room. LCD projectors, interactive whiteboards, computer tablets, document cameras, etc. should be in each classroom for teachers and students to use in order to support the delivery of high-quality instruction focused upon current curricular standards. Additionally, wireless connections and computer labs should be readily available for teacher and student use.

The level of collaboration among teachers that is needed to meet the needs of our learners is also adversely-impacted by the facility. The lack of workspace for teachers to meet with one another both within and across academic disciplines does not support the integration of subject matter and limits the extent to which teachers can implement learning experiences for students that are interdisciplinary and demonstrate clear connections among the topics that students are learning in various courses. By increasing and modernizing the workspace for teachers, the opportunities for

sharing successful strategies and practices would become greater and as would the horizontal and vertical alignment of our courses. As a result of our teachers having increased opportunities to meet and discuss issues of curriculum, instruction, assessment, data, and professional growth in the newly-added workspace, our students would be provided with enhanced learning opportunities and would be better prepared for their future endeavors. Additional workspace is also needed to allow for meetings and to ensure that confidentiality issues are addressed properly.

The Massachusetts High School program of Studies is a recommended, rigorous course of study based upon the standards of the Massachusetts Frameworks that align high school coursework with college and workforce expectations. A review of the suggested course of study provides additional evidence that our current facility does not support the learning requirements of today. The recommendations include one unit of study in the arts for all high school graduates. Currently, our facility allows for only one art classroom and no practice space for our theater students. Our music students, including vocals and band, have only one room equipped with mildly acceptable acoustics for their rehearsals and practices. To expand our offerings in the arts to meet the minimum requirement of State graduation requirements, we will need to increase our offerings and the space dedicated to these courses significantly. Currently, only 23% of our students are able to participate in art, music and theater courses. In order to fulfill state graduation requirements, we need to provide opportunities for all students to participate in at least one arts course. Given our current population of 1,428, this will require a 77% increase in the number of students enrolled in the arts.

Similarly in the sciences, State graduation requirements require three courses and the WPS recently increased the number of science courses required to graduate to three. This will require additional classrooms equipped for laboratory activities.

In accordance with the Worcester Public Schools High Quality Teaching and Learning document, the learning environment must continually adjust to match learning objectives and student needs to ensure engagement. Learning materials and physical space must be organized to provide adequate and equitable engagement in productive tasks. In order to accomplish this and to fulfill the State's graduation requirements to meet the needs of our current and future 21st-century learners, we will need to expand our course offerings and dedicated course space, especially in the areas of wellness, the arts, and career/technical education. Increased space devoted to trends in wellness education (i.e. yoga, conditioning, etc.) is needed to better prepare our students to lead healthy lives. As a result of increased physical education and health/wellness space, there needs to be adequate shower and locker room facilities to support hygiene and healthy living.

The Health Center needs to expand to be able to service the number of students in the school and to provide adequate, secure and confidential meeting, exam and storage space. The theater department needs classroom/rehearsal space committed to theater courses. Appropriate space is needed to showcase student work and talents and to provide a variety of multicultural performance opportunities. Improved work/technical space in the theater will allow students to master the Massachusetts Theater Curriculum, including all aspects of technical theater. Increased space to offer expanded career/technical course offerings is needed to prepare our students for entering an ever-changing and competitive, technically-driven workforce. Increased space needs to be provided to better service students with academic & social/emotional needs and to facilitate

appropriate behavior & learning for students with diverse learning characteristics. As noted in the New England Association of Schools and Colleges report, the current building is not fully handicapped accessible.

Doherty Memorial High School

MSBA Request: Major Renovation or Replacement

MSBA Priority Categories:

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, as determined in the judgment of the Authority; and
 7. Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements, as determined in the judgment of the Authority.
-



Worcester East Middle School
 420 Grafton Street

Year Opened: 1924
 Square Footage: 155,392
 Grades Served: 6-8*
 Enrollment (10/1/14): 787

2010 MSBA NEEDS SURVEY		
Building Condition	Space Utilization	General Environment
2	Average	1

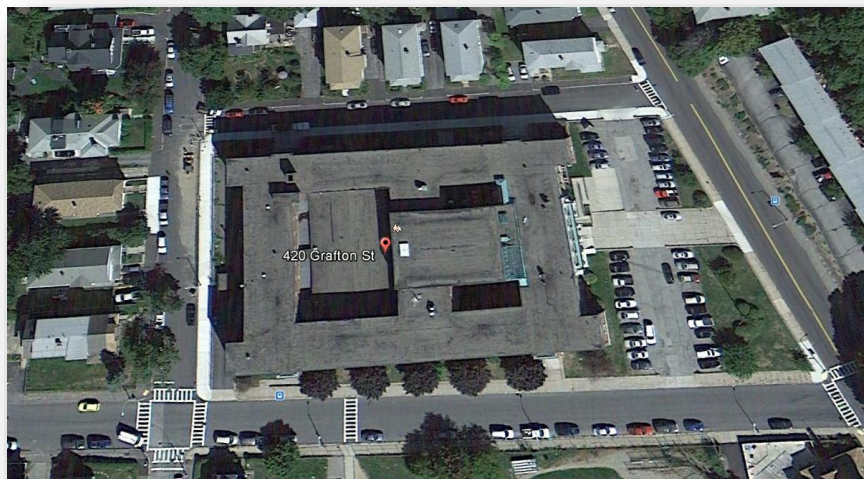
Justification for Facilities Improvement

- Building is not ADA-accessible
- Lack of adequate Performing Arts space for theater and music programs
- Replace nonfunctional, inadequate classroom space
- Likely environmental issues with windows (PCB's)
- Outdated mechanical systems
- Outdated life safety systems
- Outdated generator system

*Seventy-five (75) students at Worcester East Middle are sixth-grade student members of the Science & Health Tech innovation academy.

Worcester East Middle School

Worcester East Middle School is a three-story brick building with a full basement constructed in 1924. The school has an enrollment of approximately 787 students in grades 6-8 (seventy-five students are grade-six members of the Science & Health Tech innovation academy). The facility is approximately 155,000 square feet situated on a 2-acre parcel.



District Goal for School:

The District goal for Worcester East Middle School is to ensure that all of our students move on to high school. To this end, it is imperative that the facility support rather than inhibit the delivery of rigorous and relevant curriculum and high quality instruction.

Current Programs and Operations:

Despite an outdated facility, the school offers a grade 6-8 Science & Health Tech innovation academy with a Health Science pipeline to the North High School. Seventy-five (75) of the students are sixth-graders and enrolled full-time at Worcester East Middle. This program has a strong partnership with the UMass Hospital.

Recent improvements throughout the facility include replacement of the entire unsafe cafeteria floor, bathroom renovations (with new fixtures, partitions, lighting, and painting), lighting upgrades, and classroom renovations (including the major renovation of a science classroom, refinished floors, painting, and conversion of chalkboards to whiteboards). The District was invited to participate in the MSBA's Accelerated Repair Program to replace the building's boiler in the summer of 2014.

Worcester East Middle School Condition Summary

Core Educational Spaces

The core educational spaces at Worcester East Middle School remain largely unchanged since the building was opened in 1924. Worcester East has 63 classrooms, one auditorium, one media center, one student cafeteria, one teachers' dining room, and one gymnasium. This school has regular education classrooms, plus additional space for Special Education, and maintains adequate space for teaching and learning, as well as library services. The District has used local funds to improve common areas of the school, including ceiling replacements, kitchen renovation, replacement of various floor covering, and minor painting.

Classrooms: While the class sizes vary (at times significantly) throughout the building, an average-size classroom at Worcester East Middle is approximately 715 sq. ft. with an average of 29 seats.



To improve the energy efficiency of the school, the District has installed more efficient lighting, providing for more consistent lighting within the classrooms.

Science Labs: The District was also able to use local funds to construct one science classroom in 2013.

Library Media Center: The library media center was upgraded in 2014 and has 2,100 sq. ft. of space. This space includes moveable tables for students to sit and work, new computers, all of our books, all storage, a soft reading area, and the librarian's station/office.

Other Common Areas of School:



The school has narrow hallways throughout the building that make it difficult for students to move between course periods without significant safety concerns. The school's cafeteria is too small for all students to eat in fewer lunch periods which have a significant impact on the school's flexibility for scheduling students for specialized enrichment classes.

The proposed scope of work for this school includes the complete modernization of the school's auditorium facilities in order to provide state-of-the-art fine arts (music and theater), and opportunities to students while also preserving the historical elements of the facility. The project would include replacement/refurbishment of seating areas, refurbished flooring, improved lighting and sound acoustics, refurbished stage and storage area, installation of state-of-the-art technology and theatrical equipment, and improved egress and accessibility. The improvements would enhance the school's ability to effectively use this space as well as provide expanded community use of the facility.

BUILDING MEP SYSTEMS

Mechanical

The HVAC control is comprised of two different temperature control packages for different areas of the building. These two systems do not communicate well and it makes for serious discrepancies in temperatures.



The hot water distribution piping is original to the facility and requires constant maintenance. We experience frequent leaks. A failure in this distribution system would cause major heat loss throughout the facility. The numerous zone-based building pumps are in need of constant repair and maintenance.

The boilers at the site were replaced this past summer (in 2014).

The modulating dampers on the energy recovery units are fixed at 100% and require a modulation upgrade to allow for increased heating capabilities.



The gymnasium and auditorium have antiquated HV units and are in need of complete replacement. These units are well beyond the expected life span and are requiring continuous maintenance.

The emergency generator is not connected to the boiler and therefore does not provide freeze protection in case of a power failure.

Electrical

The main electrical system in the building is extremely aged and approaching capacity. The subpanels are ineffective in supporting the increased technological needs in all areas of the building.

There are not enough outlets in the classrooms and common areas to satisfy the needs of the school. The lack of an updated electrical system within the building hampers the educational process by limiting the amount of technology that can be used within certain classroom spaces. The District has upgraded electrical and data wiring over a period of time in order to accommodate new technology initiatives that have been implemented at the school. Although these enhancements have not been robust to integrate state-of-the-art technology throughout the entire school, efforts have been made to introduce new technology for student learning in certain areas. An updated system would allow for a significant increase in our ability to infuse instructional technology into our classrooms providing our students with the 21st century educational experience they need and deserve.



The fire alarm panel is outdated and well beyond its life expectancy. Replacement parts are becoming more and more difficult to obtain.

The clock/bell/phone/intercom system is requiring constant maintenance to maintain operation. The entire system is outdated and in dire need of replacement.

Plumbing

The impact of identified plumbing issues on the school's ability to deliver instruction primarily manifests itself in the fact that frequent leaks and plumbing maintenance has caused significant disruption to the educational environment. Frequent bathroom shutdowns are cause for students to travel greater distances to find working facilities. The domestic water distribution piping is extremely aged and requires constant maintenance. Minimal areas of piping have been completely replaced and many patch-type repairs have occurred instead. We have major isolation valves that are continuously failing to hold, requiring the entire facility to be shutdown to make repairs. We are experiencing frequent leaks that require extensive maintenance. A failure in this distribution system would cause major disruptions in this facility up to and including complete shutdown.

Building Envelope

Window Systems



The windows and doors at Worcester East Middle have exceeded their life expectancy. The windows in many cases are inoperable and are in extremely poor condition. Significant heat loss and inconsistent room temperatures throughout the facility are causing major disruptions to the teaching and learning environment. Due to the inefficiency of these windows and doors and the consistent heat loss, the District is experiencing excessive energy consumption during the heating season, the single-pane window system, which is original to the school, is highly inefficient and contributes significantly to the temperature regulation issues we have within many of our instructional spaces. Additionally, because of concerns relating to the composition of the window caulking broken windows are frequently left covered by plywood for months on end giving the school the look of an abandoned building. The single-pane window system is completely inadequate to keep the heat consistent in the facility.

The District continues to make repairs to the window system to ensure the safety and well-being of the occupants. These repairs, however, do not improve efficiency and are strictly safety-related in their scope.

Exterior Walls

The exterior brick work of the school is aged and is showing signs of wear and tear. The sills and mortar are deteriorating.

Roof

The roof is beyond its life expectancy and is in need of complete replacement. Frequent leaks and ongoing repairs are extremely disruptive to the educational environment. Relocation of students during patch-type repairs are routine. The District continues to patch and repair the roof to mitigate leaks utilizing a contracted vendor.

Overall Facilities Assessment:

- Asbestos management continues to be an issue at the school.
- The age of heating and distribution systems presents a high failure factor.
- Other utilities are on the brink of failure, such as generators, water & sewer distribution
- Full accessibility has not been achieved.
- Energy conservation is not a real expectation given building envelope and construction.
- Few of the classroom spaces are conducive to current educational requirements.
- The problems that exist in this building are beyond any comprehensive maintenance program.

The level of collaboration among teachers that is needed to meet the needs of our learners is also adversely impacted by the facility. The lack of workspace for teacher to meet with one another both within and across academic disciplines does not support the integration of subject matter and limits the extent to which teachers can implement learning experiences for students that are interdisciplinary and that demonstrate clear connections among the topics that students are learning in various courses. By increasing and modernizing the workspace for teachers, the opportunities for sharing successful strategies and practices would become greater and as would the horizontal and vertical alignment of our courses. As a result of our teachers having increased opportunities to meet and discuss issues of curriculum, instruction, assessment, data, and professional growth in the newly added workspace, our students would be provided with enhanced learning opportunities and better prepared for their future endeavors. Additional workspace is also needed to allow for meetings and to ensure confidentiality issues are addressed properly.



Worcester East Middle School



MSBA Request: Major Renovation or Replacement

MSBA Priority Categories:

5. Replacement, renovation or modernization of school facility systems, such as roofs, windows, heating and ventilation distribution systems, to increase energy conservation and decrease energy related costs in a school facility, as determined in the judgment of the Authority; and
 7. Replacement of or addition to obsolete buildings in order to provide a full range of programs consistent with state and approved local requirements, as determined in the judgment of the Authority.
-

2015 Submitted Accelerated Repair Projects

Flagg Street Elementary School	Window Replacement
 	<p>The Flagg Street School was originally built in 1953, with an addition in 1968.</p> <p>The window systems are original to the buildings.</p> <p>Many windows are single-pane, fixed units and do not open.</p> <p>Of the windows that do open, primarily small upper and lower windows, they have metal frames around them and the entire outer frame is all wood.</p>

Francis J. McGrath Elementary School	Window Replacement
 	<p>The McGrath Elementary School was constructed in 1977 and has its original window systems, primarily single-pane units of various sizes.</p> <p>The majority of deficiencies reported are the sliding mechanisms.</p>

Grafton Street Elementary School #1 & #2

Boiler and Window Replacements



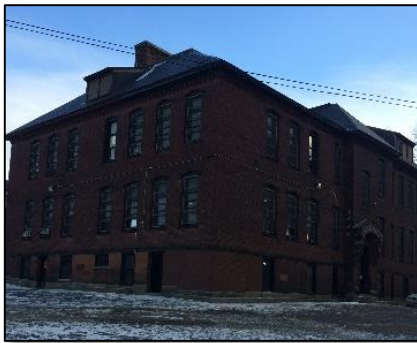
The Grafton School site is comprised of two separate buildings.

The original double-hung wooden windows have been replaced with a metal frame double-hung window with single-pane glass. Energy-efficiency properties are very poor. Although the vast majority of windows can be opened and closed for ventilation purposes, they present a physical challenge to accomplish this. It is estimated that the present windows are approximately forty years old.



Grafton # 1 was constructed in 1879. This building has six different window sizes throughout the building and the ground-level windows are blank panels.

Grafton # 2 was constructed in 1899. These windows are aluminum sash and there are seven different sizes in this building. Some do not have any glazing around them, caulking is around the entire window frame. All windows throughout this building open to the outside.



The boilers were replaced in 1979 (Boiler #1) and 2001(Boiler #2) with steam boilers.



Jacob Hiatt Magnet Elementary School

Window Replacement



The Jacob Hiatt Magnet Elementary School was built in two sections.

The original section was built in 1963 with a major addition and renovation in 1988.

The present window system is the same age as the facility addition and renovation of 1988.

These windows, shown in the pictures, are located on the right side of the building.

They are double-paned, fixed units and do not open.



MSBA ACCELERATED REPAIR PROGRAM
FIVE YEAR SUBMISSION PLAN

School	Submittal Year	Boiler Replacement	Window Replacement	Roof Replacement
Chandler Elementary	2016		✓	
Wawecus Road	2016		✓	
Belmont Street	2016		✓	
Gerald Creamer Center	2016	✓	✓	✓
Midland Street	2017			✓
Vernon Hill	2017	✓		✓
Thorndyke Road (rear)	2017		✓	
Lake View	2017			✓
Rice Square	2017		✓	✓
Elm Park	2018	✓	✓	
Sullivan Middle	2018	✓		
Lincoln Street	2018	✓		
Tatnuck Magnet	2019			✓
New Citizen's Center	2019			✓
University Park Campus	2019			✓
McGrath Elementary	2019			✓
Worcester Arts Magnet	2019			✓
Gates Lane	2020	✓		✓
Burncoat Middle	2020	✓		
Clark Street	2020	✓		✓
City View	2020	✓		
Union Hill	2020			✓

Plan is subject to change based on the actual number of projects accepted into MSBA Accelerated Repair Program each year.