



# Town of Milton

## Milton Public Schools

### ASSET MANAGEMENT PLAN



Drummey Rosane Anderson, Inc.

November 13, 2017



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## **PROJECT TEAM**

### **Architect**

Drummey Rosane Anderson, Inc. (DRA)  
235 Bear Hill Road, 4<sup>th</sup> Floor  
Waltham, MA 02451

### **Engineers—HVAC, Electrical, Plumbing, Fire Protection**

BALA / TMP

## **BUILDINGS LIST**

**The following buildings are included in this study:**

1. Glover Elementary School (renovation completion date 2003)
2. Milton High School (renovation completion date 2004)
3. Pierce Middle School (renovation completion date 2006)
4. Tucker Elementary School (renovation completion date 2004)
5. Collicot/Cunningham School (renovation completion date 2007)

## **EXECUTIVE SUMMARY**

In the spring of 2016, the Town of Milton hired DRA to perform a facilities asset management plan for the Milton Public Schools. The goal of the facilities management assessment plan is to develop a series of 5-year Capital Improvement Plans through 2037. Our approach to this project is to effectively update the facilities assessment information that DRA generated in our 2012 Facilities Assessment Report in order to develop a comprehensive facilities management plan to meet Milton's current and future planning and facility needs.

In the summer of 2016, DRA and BALA/TMP visited each school building to review existing conditions and generated a series of spreadsheets that identified the following information:

- ❖ Identify building component/service and its condition (new, good, or aged)
- ❖ Identify estimated ages for these varying component/service
- ❖ Provide expected life for each component/service
- ❖ Identify any deficiency of the component/service
- ❖ Provide estimated quantities for each component/service

Copies of these spreadsheets are attached in this report. For each school, you will find a spreadsheet for architectural items as well as spreadsheets for each building system (mechanical, electrical, fire protection and plumbing).

After the existing condition assessment was complete, DRA then generated a cost matrix for each school, which provided estimated replacement costs for building systems that would require repairs / replacement within the next twenty years. This information for each school was also inputted into a master cost matrix which identified total costs for system repairs / replacement. These were then broken-up into a series of 5-year Capital Improvement Plans.

It may be helpful to consider these capital expenses in the context of the total asset value of Milton's public school buildings. Based upon their size and current construction costs, the replacement cost of Milton's six school buildings is approximately \$300 Million in present value. The total 20-year capital plan costs summarized in this report is approximately \$57.4 Million; that equates to an average of just under \$3 Million per year. This amount represents an investment of approximately 1% of the assets' value per year. This is an appropriate amount for capital repairs and maintenance to extend the longevity of Milton's Public Schools and to maintain effective teaching and learning environments.

### **Town Consolidated Facilities Department**

DRA has conducted many meetings with the Town Consolidated Facilities Director and Operations Manager to better understand the mission of the Consolidated Facilities Department. The Mission of the department is to provide Professional Facilities Management and Services to all town buildings in the planning, construction, renovation, maintenance and cleaning operations in the most cost-effective manner possible in order to promote a safe, clean and well-maintained environment for all building occupants.

Today, Consolidated Facilities Department is in full operation and has a team of ten staff members ranging from the Consolidated Facilities Director, Operational Manager, Administrative Assistant, Licensed Electrician, Licensed HVAC Technician, Maintenance Craftsmen, Painter and General Maintenance Staff. The department oversees all the building maintenance of twenty-three buildings with over 925,000 square feet of space.

The department has hired a Licensed Craftsmen / Project Manager in October of 2017 and plans to add a Facilities Maintenance Assistant when funding is available.

Over the last five years the department has been instrumental in energy efficiency upgrades, capital projects, maintaining Green Community status and obtaining energy grants, consolidating vendors,



implementing preventative maintenance measures for contracts and equipment, purchasing bulk supplies and making sure that daily repairs are completed on time using the Computerized Maintenance Program. Over nine thousand work orders have been logged and completed since 2013.

Going forward, the Consolidated Facilities Department will be very instrumental in the long-range planning in maintaining all the school facilities. We believe that there are many projects listed in the management report that Consolidated Facilities could perform in-house which will prove to be a enormous cost saving measure. It will be vital that this departments staffing levels are maintained and increased to meet the needs of the future and that certain staff members are proficient in the various skills required in maintaining all of the school assets.

### **Construction Cost Escalation**

Although the overall state of the US economy is regarded as “tepid”, construction costs have been escalating faster than that of various other market sectors in the past year. The reasons for this escalation are somewhat unclear. DRA’s cost estimator recommended a 5% escalation of the costs listed in this report for each of the next twenty years.

## **INDIVIDUAL BUILDING SUMMARIES**

### **Glover Elementary School**

Glover Elementary School was originally built in 1950 and most recently renovated in 2003. The existing building is mostly made up of brick, painted white while the addition is ground face CMU. While the existing brick is generally in good condition, there are areas where re-pointing would be recommended. The flat roofs are membrane roofing, while the sloped roof are asphalt shingles. The flat roof over the existing building was not replaced in the 2003 renovation and has exceeded the life expectancy. We would recommend replacing this roof as a high priority. The other roofs were replaced in the 2003 renovation project and are approximately 14 years old. All exterior windows were also replaced as part of the 2007 renovation project. Exterior caulk joints show signs of being replaced recently and we would recommend that this gets done every 5 years.

Interior finishes are holding up well and have been well maintained over the years. Interior walls are made up mostly of gypsum wallboard on metal studs, except the gymnasium interior wall are CMU (concrete masonry unit). Most of the finish flooring is VCT (vinyl composition tile) which is starting to exhibit some minor gaps in the flooring. Specialty flooring includes synthetic sports flooring in the gymnasium, quarry tile in the kitchen, terrazzo flooring in the lobby areas, ceramic tile in the toilet rooms, and carpet in the offices and media center. Miscellaneous spaces, such as electrical rooms,

janitor's closet and boiler rooms are finished with sealed concrete. The ceilings are mostly ACT (acoustical ceiling tile) with some gypsum wallboard soffits. There is some minor staining on the ACT in select areas. There are several interior finishes that will reach their life expectancy in the next twenty years and are be indicated for replacement.

The fire protection system was added in the 2003 renovation project and is generally in good shape with no major system replacement identified in the next twenty years. From a plumbing standpoint, there are a few code issues that should be addressed and some building system components, such as mixing valves and circulators that will reach their life expectancy soon and should be replaced. Mechanical equipment is well maintained and is functioning properly. There are several HVAC building components that will need replacing over the next twenty years. Rooftop AC units, make-up air units and the controls system are reaching the end of the useful life and should be a priority for replacement. The entire electrical system was upgraded in the 2003 renovation project and is functioning properly. There are no major electrical system components slated for replacement over the next twenty years.

#### **Collicot / Cunningham Elementary School**

(For the purposes of this report, the Collicot / Cunningham Elementary School was analyzed as a single building. However, it is broken up in the Facilities Assessment Cost Spreadsheet)

Collicot / Cunningham Elementary School was originally built in 1935 and most recently renovated in 2007. The existing building is mostly made up of brick while the addition is ground face CMU. While the existing brick is generally in good condition, there are areas where re-pointing would be recommended. In the back of the building addition, there is some EIFS (exterior insulated finishing system) panels up high. These may mostly likely need replacement over the next twenty years. Both the existing flat and sloped roofs were not replaced in the 2007 renovation. We would recommend replacing these roofs as a high priority. All exterior windows were also replaced in the 2007 renovation project. Exterior caulk joints show signs of being replaced recently and we would recommend that this gets done every 5 years.

Interior finishes are holding up well and have been well maintained over the years. Interior walls are made up mostly of gypsum wallboard on metal studs, except the gymnasium, toilets and stair interior walls are CMU. Most of the finish flooring is VCT which is starting to exhibit some minor gaps in the flooring. Specialty flooring includes synthetic sports flooring in the gymnasium, epoxy flooring in the kitchen, terrazzo flooring in the lobby areas, ceramic tile in the toilet rooms, rubber tile in the stairs, and carpet in the offices and media center. Miscellaneous spaces, such as electrical rooms, janitor's closet and boiler rooms are finished with sealed concrete. The ceilings are mostly ACT with some gypsum wallboard soffits. There is some minor staining on the ACT in select areas. There are several interior finishes that will reach their life expectancy in the next twenty years and are be indicated for replacement.



The fire protection system was added in the 2007 renovation project and is generally in good shape with no major system replacement identified in the next twenty years. From a plumbing standpoint, there are a few code issues that should be addressed and some building system components, such as mixing valves and circulators that will reach their life expectancy soon and should be replaced. Mechanical equipment is well maintained and is functioning properly. There are several HVAC building components that will need replacing over the next twenty years. In particular, hot water boilers and rooftop units are major pieces of equipment that will need to be replaced over the next twenty years. The entire electrical system was upgraded in the 2007 renovation project and is functioning properly. There are no major electrical system components slated for replacement over the next twenty years.

#### **Tucker Elementary**

Tucker Elementary School was originally built in 1923 and was most recently renovated in 2004. Both the existing building and addition are made up of brick. While the existing brick is generally in good condition, there are areas where re-pointing would be recommended at the existing building. The flat roof over the existing building was not replaced in the 2004 renovation project and it has reached its life expectancy. This roof replacement project should be a priority for the Town. The roof over the new addition will also need replacement over the next twenty years. All exterior windows were also replaced as part of the 2004 renovation project. Exterior caulk joints show signs of being replaced recently and we would recommend that this gets done every 5 years.

Interior finishes are holding up well and have been well maintained over the years. Interior walls are made up mostly of gypsum wallboard on metal studs, except the gymnasium, toilets and stair interior walls are CMU. Most of the finish flooring is VCT which is starting to exhibit some minor gaps in the flooring. Specialty flooring includes synthetic sports flooring in the gymnasium, epoxy flooring in the kitchen, terrazzo flooring in the lobby areas, ceramic tile in the toilet rooms, rubber tile in the stairs, and carpet in the offices and media center. Miscellaneous spaces, such as electrical rooms, janitor's closet and boiler rooms are finished with sealed concrete. The ceilings are mostly ACT with some gypsum wallboard soffits. There is some minor staining on the ACT in select areas. There are several interior finishes that will reach their life expectancy in the next twenty years and are be indicated for replacement.

The fire protection system was added in the 2004 renovation project and is generally in good shape with no major system replacement identified in the next twenty years. From a plumbing standpoint, there are a few code issues that should be addressed and some building system components, such as mixing valves and circulators that will reach their life expectancy soon and should be replaced. Mechanical equipment is well maintained and is functioning properly. There are several HVAC building components that will need replacing over the next twenty years. In particular, hot water boilers air handling units and rooftop units are major pieces of equipment that will need to be replaced over the next twenty

years. The entire electrical system was upgraded in the 2004 renovation project and is functioning properly. There are no major electrical system components slated for replacement over the next twenty years.

#### **Pierce Middle School**

Pierce Middle School was originally built in the 1950's and was most recently renovated in 2008. The existing building is made up of brick mix of and addition are made up of brick and ground faced CMU. While the existing brick is generally in good condition, there are areas where re-pointing would be recommended at the existing building. The entire roof was replaced in the 2006 renovation project, but will require replacing within the next twenty years. All exterior windows were also replaced as part of the 2008 renovation project. Exterior caulk joints show signs of being replaced recently and we would recommend that this gets done every 5 years.

Interior finishes are holding up well and have been well maintained over the years. Interior walls are made up mostly of gypsum wallboard on metal studs, except the gymnasium, corridor and stair interior walls are CMU. Most of the finish flooring is VCT which is starting to exhibit some minor gaps in the flooring. Specialty flooring includes synthetic sports flooring in the gymnasium, epoxy flooring in the kitchen and some of the science labs, terrazzo flooring in the lobby areas, ceramic tile in the toilet rooms and locker rooms, rubber tile in the stairs, wood flooring at the stage and carpet in the offices, media center and auditorium. Miscellaneous spaces, such as electrical rooms, janitor's closet and boiler rooms are finished with sealed concrete. The ceilings are mostly ACT with some gypsum wallboard soffits. There is some minor staining on the ACT in select areas. There are several interior finishes that will reach their life expectancy in the next twenty years and are be indicated for replacement.

The fire protection system was added in the 2006 renovation project and is generally in good shape with no major system replacement identified in the next twenty years. From a plumbing standpoint, there are a few code issues that should be addressed and some building system components, such as mixing valves and circulators that will reach their life expectancy soon and should be replaced. Mechanical equipment is well maintained and is functioning properly. There are several HVAC building components that will need replacing over the next twenty years. In particular, hot water boilers air handling units and rooftop units are major pieces of equipment that will need to be replaced over the next twenty years. The entire electrical system was upgraded in the 2006 renovation project and is functioning properly. There are no major electrical system components slated for replacement over the next twenty years.



**Milton High School**

Milton High School was originally built in the 1950's and was most recently renovated in 2004. The existing building is made up of brick and the addition is made up of brick and ground faced CMU. While the existing brick is generally in good condition, there are areas where re-pointing would be recommended at the existing building. The entire roof was replaced in the 2008 renovation project, but will require replacing within the next twenty years. All exterior windows were also replaced as part of the 2008 renovation project. Exterior caulk joints show signs of being replaced recently and we would recommend that this gets done every 5 years.

Interior finishes are holding up well and have been well maintained over the years. Interior walls are made up mostly of gypsum wallboard on metal studs, except the gymnasium, corridor and stair interior walls are CMU. Most of the finish flooring is VCT which is starting to exhibit some minor gaps in the flooring. Specialty flooring includes both synthetic sports flooring and wood sports flooring in the gymnasium, quarry tile in the kitchen, terrazzo flooring in the lobby areas, ceramic tile in the toilet rooms and locker rooms, rubber tile in the stairs, wood flooring at the stage sheet vinyl in the science labs, and carpet in the offices, media center and auditorium. Miscellaneous spaces, such as electrical rooms, janitor's closet and boiler rooms are finished with sealed concrete. The ceilings are mostly ACT with some gypsum wallboard soffits. There is some minor staining on the ACT in select areas. There are several interior finishes that will reach their life expectancy in the next twenty years and are be indicated for replacement.

The fire protection system was added in the 2004 renovation project and is generally in good shape. The main backflow preventer and the sprinkler control valves will need to be replaced within the next twenty years. From a plumbing standpoint, there are a few code issues that should be addressed and some building system components, such as mixing valves and circulators that will reach their life expectancy soon and should be replaced. Mechanical equipment is well maintained and is functioning properly. There are several HVAC building components that will need replacing over the next twenty years. In particular, hot water boilers air handling units and rooftop units are major pieces of equipment that will need to be replaced over the next twenty years. The entire electrical system was upgraded in the 2004 renovation project and is functioning properly. There are no major electrical system components slated for replacement over the next twenty years.

**Comprehensive Asset Management Plan**

After having studied the buildings, a comprehensive asset management plan was developed to highlight all the work needed to maintain the school buildings properly over the next twenty years. The excel

chart breaks the work up into 4 separate five year plans (fiscal years 2019-2023, 2024-2028, 2029-2033, and 2034-2038).

The buildings were analyzed in the following categories:

- Life Safety
- Site
- Exterior
- Interior
- Fire Protection
- Plumbing
- Electrical
- Mechanical

Costs for the scopes of work under these categories were added to the chart based on when they were targeted for either replacement or upgrades. Total yearly costs are then tallied at the bottom of the chart. There is also a master chart which tallies the scope into the 5 year plans as well as providing a total for each school under each category of work.

In order to help prioritize the work, we have taken the comprehensive asset management plan and have broken it down into three smaller sub-sets for categories of work:

- High Priority Scopes of Work
- Low Priority Scopes of Work
- Maintenance Scopes of Work

The high priority scopes of work would be for items such as major building systems equipment replacement, roofing work or other life safety items. Low priority scopes of work are mostly in building finishes and upkeep. These are scopes of work that should be completed if money is available, but they do not directly impact the educational needs of the students and staff. The last sub-set would be for maintenance items. These are scopes of work that help keep the buildings running efficiency.

**EXECUTIVE SUMMARY**
**Comprehensive Asset  
Management Plan  
Town of Milton School Buildings**

Summary	1st 5-Year Plan FY2019- FY2023	2nd 5-Year Plan FY2024- FY2028	3rd 5-Year Plan FY2029- FY2033	4th 5-Year Plan FY2034- FY2038
Glover Elementary School	\$1,822,000	\$1,971,600	\$505,000	\$606,500
Collicot Elementary School	\$521,375	\$1,819,920	\$837,275	\$452,250
Cunningham Elementary School	\$1,075,475	\$1,381,213	\$679,588	\$407,650
Tucker Elementary School	\$987,751	\$1,081,413	\$876,488	\$428,225
Pierce Middle School	\$3,793,350	\$2,320,469	\$1,009,281	\$810,250
Milton High School	\$4,768,000	\$3,588,235	\$2,710,140	\$1,320,260

Sub-Total	\$12,967,951	12,162,849	6,617,771	4,025,135
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Total Costs with Escalation	\$16,296,456	18,388,974	12,815,070	9,910,706
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**Total 20 Year Asset  
Management Plan**
**\$57,411,205**

High Priority Items	1st 5-Year Plan FY2019- FY2023	2nd 5-Year Plan FY2024- FY2028	3rd 5-Year Plan FY2029- FY2033	4th 5-Year Plan FY2034- FY2038
Glover Elementary School	\$1,364,000	\$1,589,100	\$141,750	\$170,000
Collicot Elementary School	\$222,125	\$1,346,670	\$418,625	\$22,500
Cunningham Elementary School	\$764,975	\$954,063	\$308,538	\$22,500
Tucker Elementary School	\$704,500	\$760,063	\$462,788	\$85,875
Pierce Middle School	\$2,964,975	\$1,521,719	\$185,156	\$0
Milton High School	\$3,494,000	\$2,403,475	\$1,410,000	\$33,500

Sub-Total	\$9,514,575	\$8,575,089	\$2,926,856	\$334,375
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Total Costs with Escalation	\$12,091,159	\$12,823,102	\$5,583,442	\$781,299
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**Total High Priority Items**
**\$31,279,001**



Low Priority Items	1st 5-Year Plan FY2019- FY2023	2nd 5-Year Plan FY2024- FY2028	3rd 5-Year Plan FY2029- FY2033	4th 5-Year Plan FY2034- FY2038
Glover Elementary School	\$368,000	\$292,500	\$273,250	\$346,500
Collicot Elementary School	\$209,250	\$383,250	\$328,650	\$339,750
Cunningham Elementary School	\$220,500	\$337,150	\$281,050	\$295,150
Tucker Elementary School	\$183,250	\$221,350	\$313,700	\$242,350
Pierce Middle School	\$603,375	\$593,750	\$619,125	\$605,250
Milton High School	\$1,014,000	\$924,760	\$1,040,140	\$1,026,760
Sub-Total	\$2,598,375	\$2,752,760	\$2,855,915	\$2,855,760
Total Costs with Escalation	\$3,161,130	\$4,267,430	\$5,571,483	\$7,036,513
<b>Total High Low Items</b>				<b>\$20,036,557</b>

Maintenance Items	1st 5-Year Plan FY2019- FY2023	2nd 5-Year Plan FY2024- FY2028	3rd 5-Year Plan FY2029- FY2033	4th 5-Year Plan FY2034- FY2038
Glover Elementary School	\$90,000	\$90,000	\$90,000	\$90,000
Collicot Elementary School	\$90,000	\$90,000	\$90,000	\$90,000
Cunningham Elementary School	\$90,000	\$90,000	\$90,000	\$90,000
Tucker Elementary School	\$100,000	\$100,000	\$100,000	\$100,000
Pierce Middle School	\$205,000	\$205,000	\$205,000	\$205,000
Milton High School	\$260,000	\$260,000	\$260,000	\$260,000
Sub-Total	\$835,000	\$835,000	\$835,000	\$835,000
Total Costs with Escalation	\$1,017,364	\$1,298,442	\$1,657,174	\$2,092,894
<b>Total Maintenance Items</b>				<b>\$6,065,874</b>

For additional information on the costs above, refer to the individual spreadsheets.