Organizational Study of Facilities Maintenance Fall River, MA

July 2017
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Edward J. Collins, Jr. Center for Public Management

McCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES

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TABLE OF CONTENTS

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EXECUTIVE SUMMARY

SCOPE AND METHODOLOGY

The City of Fall River contracted with the Edward J. Collins, Jr. Center for Public Management at the University of Massachusetts Boston to review City and School facilities maintenance operations and make recommendations for improvements. In addition, the Center was asked to gather capital project requests for town and school facilities and work with the City and School District to develop a five-year project plan while taking into account available funding. Both projects were funded at no cost to the City as a result of Community Compact grant funding provided by the Baker-Polito administration in an effort to increase the use of best practices in local government. This report presents the findings and recommendations regarding facility maintenance operations.

Approximately 100 municipally owned facilities can be found in Fall River, divided between the schools, the City, and the water-sewer enterprise. This study focused on those assets that are operated and maintained by the City and School District, setting aside those maintained through water and sewer user fees. As part of the effort to review facilities maintenance, the Center's project team:

- Interviewed key facilities maintenance staff;
- Reviewed School Department and City facilities organizational charts, job descriptions, budgets and expenditures, and work order data;
- Took guided tours of several school and city buildings; and,
- Researched best practices in facilities maintenance.

Considerable change in facilities maintenance has occurred in recent years. In 2016, the School District hired the former City Facilities Director as the Chief Operating Officer for the School District and in FY2017, the City transitioned facilities maintenance from a division within the Community Maintenance Department (CMD) to a standalone "Department of Facilities Maintenance". The City also appointed the Project Manager in the City facilities division as the Interim Director of the new department. It is hoped that this study can help the City and School Department consider and prioritize organizational improvements that will help ensure that facilities are maintained in good condition while public resources are used as effectively and efficiently as possible.

OVERVIEW

Through staff interviews, analysis of available data, and site visits to various facilities, a sense of the general strengths and challenges facing both departments was noted. It is clear that the philosophy of "do more with less" is at work in both departments, but studies have shown that underinvestment in facilities maintenance actually results in increased costs, as opposed to savings.

Strengths:

1. Solid institutional knowledge of city and school buildings;

2. Longstanding partnership between the directors of the two facilities departments given that they have worked together - and for the City/District - for just over 10 years.
3. Commitment to the City and School District as evidenced by low staff turnover; and,
4. Modern electronic work order system and multi-year plan for building repair/renewal in place in the School District.

Challenges/Areas for Improvement:

1. Significant understaffing in the City Facilities Department based upon the amount of square footage to be maintained;
2. A large City building inventory, among which are several unused/vacant buildings and others whose use is not clearly defined;
3. Unclear long term vision for the use of City facilities;
4. Significant differences between the two facilities departments in terms of automation of work orders and tracking of needed capital expenses;
5. Relatively high level of unmet capital need at City facilities and, to a lesser extent, at School facilities;
6. Use of staff resources to most typically respond to emergency needs instead of engaging in preventative maintenance and long term planning ; and,
7. Ad hoc process to identify and fund facility capital needs, leading to unsuccessful competition with other capital needs and resultant underfunding of capital projects at public facilities.

SUMMARY OF RECOMMENDATIONS *Operational Assessment of Fall River Facilities Maintenance and Custodial Services*			
Page	**Recommendation**	**Time Frame**	**Cost Impact**
19	**Finding 1: The City Facilities Maintenance Department is understaffed when taking into account the total square footage for which it is responsible**		
20	Recommendation 1.1 Immediately reinstate funding for the Project Manager position with a goal of filling the position by early Fall 2017.	Sept 2017	TBD
21	Recommendation 1.2 Over two fiscal years (FY2018-FY2019), increase facilities maintenance staffing by 3 FTE including an additional carpenter, electrician, and plumber. When opportunity arises, convert the existing painter position to a carpenter.	Sept 2017- June 2018	TBD
21	Recommendation 1.3 Appoint one of the licensed technicians as a "working foreman" with commiserate pay for added responsibilities for serving as a team leader.	Jan 2018	Nominal
21	Recommendation 1.4 As part of the FY2019 budget, add a new position of Architect/Owners Project Manager (OPM) funded in part by a portion of capital project budgets.	June 2018	TBD
21	Recommendation 1.5 At the beginning of each fiscal year, put in place blanket contracts for key services that cannot be done in house (e.g., elevator repair) or may be required in event of an emergency (e.g., roof repair).	July 2018	None
22	Recommendation 1.6 Monitor expenses per building to determine if funding should be increased and/or if the cost of maintenance exceeds the public benefit received by the use of the building.	June 2018	None
23	**Finding 2: The Facilities Maintenance Department lacks electronic tracking for work orders, inventory, and contracts.**		
23	Recommendation 2.1 Either purchase a work order system for the Facilities Department or leverage the Schools Facility Maintenance Department's existing "School Dude" license for use on the City buildings.	June 2018	TBD
23	Recommendation 2.2 Establish cost centers in the MUNIS financial system for key buildings to allow expenditures to be tracked directly in the system as opposed to in a spreadsheet.	Oct 2017	None
24	Recommendation 2.3 Provide additional training to Facilities Department staff regarding the City's financial and procurement system.	Oct 2017	None
25	**Finding 3: The City Facilities Department operates largely in a response mode, as opposed to a preventative maintenance mode.**		
25	Recommendation 3.1 Hire an outside firm to develop multi-year preventative maintenance plans for all buildings and prepare an annual calendar of activities to be undertaken each month and week.	Jan 2018	TBD
25	Recommendation 3.2 Determine which preventative maintenance work should be done in house and which should be contracted at the start.	June 2018	None
26	Recommendation 3.3 Begin to develop a modest inventory of maintenance supplies, such as nails, screws, wallboard, etc. to be maintained in the Facilities Department warehouse and outfit department vehicles with standard supplies to reduce time spent traveling to and from hardware stores to purchase supplies for specific jobs.	Jan 2018	Potential modest savings
27	**Finding 4: The City's building portfolio includes a large number of vacant buildings and others that are less than optimal for the work being performed**.		

SUMMARY OF RECOMMENDATIONS *Operational Assessment of Fall River Facilities Maintenance and Custodial Services*			
Page	**Recommendation**	**Time Frame**	**Cost Impact**
28	Recommendation 4.1 Hire an outside architect to conduct a City space needs assessment to determine the appropriate square footage needed for each department based upon its mission and staffing.	Jan 2018	TBD
28	Recommendation 4.2 Work with the architect to develop 2-3 alternatives of how existing buildings could be used to meet municipal needs and which could be declared surplus.	Jun 2018	TBD
28	Recommendation 4.3 Hire an outside engineering firm to conduct building-wide assessments of all City facilities to assess the condition of each building, itemize the repair/maintenance needs, identify upgrades needed to comply with present day codes, including the ADA, and prepare a recommended schedule for capital investment.	Apr 2018	TBD
30	**Finding 5: The City presently has leased space at five different locations even though the City has a large inventory of space.**		
30	Recommendation 5.1 Ensure that Action 4.1, City space needs assessment, takes into account existing leased space and makes recommendations regarding whether the space should continue to be leased and for how long.	Jan 2018	None
30	Recommendation 5.2 Develop a 30 year master plan for City buildings to ensure tax dollars are wisely spent.	Fall 2018	None
31	Recommendation 5.3 Consider building a new facility for Community Maintenance operations along with vehicle and equipment storage for other City departments and declaring the existing Lewiston Street facility surplus.	FY2019	$2.5 million CIP est.
32	**Finding 6: Fall River has 6 operational fire stations built between 1905 and 2001 with an average age of 57 years.**		
32	Recommendation 6.1 Commission an assessment of fire operations to determine if the stations and their locations meet current standards. Develop a master plan for building renovation and/or consolidation.	Apr 2018	TBD
33	**Finding 7: The School Facilities Maintenance Department follows a number of best practices.**		
34	Recommendation 7.1 Continue the existing best practices and consider cross-training management staff in the City Facilities Department.	Oct 2017	None
34	Recommendation 7.2 Consider combining the departments to maintain all buildings and create efficiencies for personnel and equipment utilization.	Fall 2018	TBD
35	**Finding 8: The School Facilities Maintenance Department is understaffed when taking into account the total square footage for which it is responsible.**		
37	Recommendation 8.1 Between FY2019 and FY2020, add one plumber, one HVAC technician, and one electrician.	Jun 2018	$171,857
37	Recommendation 8.2 Review contractual spending and determine if the increased staffing could result in savings.	Jun 2018	None
37	Recommendation 8.3 Consider developing incentives to encourage current employees to pursue additional training and licensing.	Jun 2018	Nominal
38	Recommendation 8.4 Ask custodians for their ideas on ways to streamline cleaning efforts. Consider piloting some of the ideas in 1-2 schools to determine their feasibility for application districtwide.	Summer 2017	None
39	**Finding 9: The School Facilities Department operates largely in a response mode, as opposed to a preventative maintenance mode.**		

SUMMARY OF RECOMMENDATIONS *Operational Assessment of Fall River Facilities Maintenance and Custodial Services*			
Page	**Recommendation**	**Time Frame**	**Cost Impact**
39	Recommendation 9.1 Develop multi-year preventative maintenance plans for all buildings and determine which work should be done in house and which should be contracted at the start.	Apr 2018	TBD
39	Recommendation 9.2 Input preventative maintenance schedule into electronic work order system so tasks are automatically scheduled.	July 2018	None
39	Recommendation 9.3. Put in place a few blanket performance contracts for larger building maintenance and repairs and allow District staff to focus on smaller projects, instead of either needing to contract them out unexpectedly or piecemeal, or not getting to them at all.	July 2018	None
40	**Finding 10: The average age of the school buildings are close to 50 years old.**		
40	Recommendation 10.1 Hire an outside engineering firm to conduct building-wide assessments of all District facilities including schools, the administration building, and the Wiley School storage facility to assess the condition of each building, itemize the repair/maintenance needs, and prepare a recommended schedule for capital investment.	July 2018	TBD
41	Recommendation 10.2 Contact the MSBA and ask for a formal meeting to familiarize them with the Fall River school inventory and discuss building needs and the type of assistance the MSBA can provide, along with a potential schedule for renovation and/or new construction.	Oct 2017	None
42	**Finding 11: The schools have replaced boilers in the past without always seeking grant funding.**		
43	Recommendation 11.1 Identify those projects that qualify for MSBA reimbursement and establish a multi-year schedule of applications to be submitted each year.	Jan 2018	None
43	Recommendation 11.2 Consider creating a Project Manager position responsible for preparing SOIs for the MSBA and serving as project manager on MSBA-funded projects.	June 2018	TBD
43	Recommendation 11.3 Given the recent reductions in staffing in the City Facilities Department, City and School leadership should meet to discuss having the District Facilities Department serve as project manager on significant school capital improvements, regardless of whether City has authorized the borrowing. Put in place monitoring and accountability mechanisms prior to making any transfer.	April 2018	None
44	**Finding 12: Identified City and School facility capital needs far exceed the funding anticipated to be available over the next five years.**		
47	Recommendation 12.1 Defer City window projects except where water intrusion is taking place or is suspected, unless the work can be performed by an ESCO under a cost sharing arrangement that is beneficial to the City.	Oct 2017	None
47	Recommendation 12.2 Identify outside funding sources to renovate the Bank Street Armory and uses that will generate revenue sufficient to cover debt service, operating, and maintenance costs with no City subsidy.	FY2019	TBD
47	Recommendation 12.3 Review the use of the Veterans Center and determine if it should continue as is.	Jan 2018	None

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BACKGROUND

CITY AND SCHOOLS FACILITY INVENTORY

City Facilities

The City's facilities inventory identifies 35 separate structures used, or previously used, for city or school purposes totaling 559,000 square feet (sf), and 4 others that were formerly privately owned, but are now owned by the City due to defaulting on tax payments totaling 458,000 sf (also see Appendix A). The public buildings range in size from a series of small comfort stations at City parks (ranging from 600 to 1,800 sf in size) to the former trash incinerator facility, now Public Works Building (120,000 sf) on Lewiston Street. The tax takings range in size from 25,000 to 307,000 sf; all were previously used for industrial purposes

The average age of buildings across the inventory is just under 71 years of age (70.5 years), with the oldest being 167 years of age (Bank Street Armory, built in 1850) and the two youngest including the Fire Department complex at 140 Commerce Drive (16 years old) and a new comfort station at Bicentennial Park (1 year old). Only 14 City buildings (and one tax building) are less than 50 years of age (200,500 sf combined), with One Government Center being 47 years old. A remarkable 15 facilities (619,000 sf) are 97 years of age or older. The City's insurance schedule places a value of $700 million on City and School buildings combined, excluding the land value.

CITY FACILITIES INVENTORY

Building	Department	Address	Size (sf)	Year	Age
Government Center	Multiple	One Government Center	83,000	1970	47
Oak Grove Office	Cemeteries	Oak Grove Cemetery	800	1900	117
Public Works Building	DPW	Lewiston Street	120,000	1961	56
Candias Fire Station	Fire	1010 Plymouth Avenue	7,000	1979	38
Central Fire Station	Fire	Bedford & Troy Street	25,600	1933	84
Fire HQ (Admin)	Fire	140 Commerce Drive	20,500	2001	16
Fire Maintenance Building	Fire	140 Commerce Drive	3,500	2001	16
Fire Training Tower	Fire	140 Commerce Drive	2,200	2001	16
North End Fire Station	Fire	140 Commerce Drive	16,000	2001	16
Fire Museum/Animal Control	Fire	1191 N Main Street	3,200	1897	120
Flint Fire Station	Fire	416 Eastern Avenue	7,200	1988	29
Globe Fire Station	Fire	659 Globe Street	7,000	1955	62
Stanley Fire	Fire	229 Stanley Street	10,047	1905	112
Library	Library	94 North Main Street	33,000	1930	87
Comfort Station	Parks	Bicentennial Park	2,000	2016	1

CITY FACILITIES INVENTORY					
Building	**Department**	**Address**	**Size (sf)**	**Year**	**Age**
Comfort Station	Parks	Britland Park	600	1997	20
Comfort Station	Parks	Father Travassos Park	600	1974	43
Comfort Station	Parks	JFK Park (Upper Park)	800	1920	97
Comfort Station	Parks	JFK Park- restrms & office	1,800	1910	107
Comfort Station	Parks	King Phillip Station	600	1975	42
Comfort Station	Parks	Lafayette Park	1,200	1920	97
Comfort Station	Parks	Maplewood Park MIW	800	1900	117
Comfort Station	Parks	North Park	600	1920	97
Comfort Station	Parks	Oak Grove Cemetery	600	1930	87
JFK Memorial Park Maint Garage	Parks	Bradford Avenue	1,500	1977	40
JFK Memorial Park Pavilion	Parks	Bradford Avenue	1,800	Unk	
JFK Memorial Park Pool	Parks	Bradford Avenue	1,200	1977	40
Police Department	Police	Pleasant Street	38,000	1997	20
Veterans Center	Veterans	755 Pine Street	4,400	1953	64
Boyd Center	Wastewtr	Jefferson Street	6,000	Unk	
Amory (vacant)	Vacant	72 Bank Street	53,491	1850	167
Old Police Station	Vacant	158 Bedford Street	38,985	1915	102
Former Diamond Voc School	Vacant	106 Hartwell Street	48,000	1880	137
Former school gym & cafeteria	Vacant	128 Hartwell Street	4,900	1920	97
Former School Admin Office	Vacant	106 Hartwell Street	12,000	1880	137
		Sub-total	**558,923**		**70.5**
VACANT BUILDINGS (TAX TAKINGS)					
Crown Linen Building	Vacant	909 Dwelly Street	25,000	1900s	112
King Phillip 1	Vacant	386 Kilburn Street	307,285	1915	102
King Phillip 2	Vacant	386 Kilburn Street	109,930	1915	102
NuChrome	Vacant	161 Graham Road	16,000	1970s	42
		Sub-total	**458,215**		**89.5**
		GRAND TOTAL	**1,017,138**		**72.6**

In addition to owned space, several City departments also lease approximately 46,500 sf of additional space, most commonly for storage of vehicles and materials, but also including the South End Library. The cost for these leases is approximately $82,200 per year, excluding a Water Department facility funded by the enterprise fund. While the City Facilities Department is not responsible for capital maintenance of these properties, it does provide custodial services at the library via a contract. Collectively, this means that City departments occupy nearly 580,000 sf citywide, of which approximately 7% is leased.

School Facilities

The School District owns and operates just over 2.2 million square feet of educational and administrative space across 19 different buildings (see also Appendix B). School District facilities are slightly younger than City facilities, ranging from 127 years old (School Administration Building, built in 1890) to four years old (Morton Middle School opened in 2013), with an average of just under 50 years across all buildings. The District does have five school buildings that are less than 10 years of age including the AS Letourneau, Carlton Viveiros, and Mary L Fonseca elementary schools and the Kuss and Morton middle schools. Four other schools are between 10 and 17 years of age including the Silvia, Spencer Borden, William S Greene, and John J Doran elementary schools. Collectively, just over 1 million square feet of the District's inventory are under 20 years of age. Conversely, this means that just over 1 million square feet of school facilities (8 schools) and 36,000 square feet of administrative buildings are between 25 and 127 years of age. This includes the District's largest building, the 540,000 sf BMC Durfee High School (39 years old) and the smallest building, the 15,150 sf James Tansey Elementary School (65 years old). The estimated value of School District facilities is in excess of $320 million.

SCHOOL FACILITIES INVENTORY				
Building	**Address**	**Size (sf)**	**Year**	**Age**
Administrative Offices (2 facilities)				
Administration Building	417 Rock Street	13,256	1890	127
Storage at former Wiley School	2587 North Main Street	25,092	1910	107
Elementary Schools (11 facilities)				
AS Letourneau School	323 Anthony St	106,818	2008	9
Carlton Viveiros Elementary	525 Slade St.	121,266	2008	9
G B Stone School	1215 Globe Street	20,253	1896	121
James Tansey School	711 Ray Street	26,689	1952	65
John J Doran School	101 Fountain Street	76,818	2000	17
Mary L Fonseca Elementary	160 Wall St	95,762	2008	9
Samuel Watson School	935 Eastern Avenue	45,332	1904	113
Silvia Elementary School	1899 Meridian Street	116,383	2004	13
Spencer Borden School	1400 President Avenue	110,000	2003	14
Westall School	276 Maple Street	45,630	1907	110
William S Greene School	409 Cambridge Street	138,625	2002	15
Middle Schools (4 facilities)				
Edmond P Talbot Middle School	124 Melrose Street	121,700	1971	46
Henry Lord Middle School	151 Amity Street	122,350	1992	25
Kuss Middle School	52 Globe Mills Ave	177,633	2009	8
Morton Middle School	1134 North Main Street	130,100	2013	4
High Schools (2 facilities)				
BMC Durfee High School	360 Elsbree Street	573,210	1978	39
Resiliency Preparatory Academy	290 Rock Street	190,152	1927	90
	TOTAL	**2,231,977**		

In the upcoming fiscal year, the GB Stone School will be closed as the students are relocated to the renovated Westall School. Future use of the Stone School building has not yet been determined.

CITY AND SCHOOLS ROLES & RESPONSIBILITIES, BUDGET, AND STAFFING

Both facilities departments have an extensive list of responsibilities from performing day-to-day

cleanliness and maintenance to designing and implementing capital projects, up to new construction. When considering the appropriate staffing level and funding, it is important to consider the extent of responsibilities and the amount of square footage to be maintained – this will be discussed in the findings below.

City Department of Facilities Maintenance

Responsibilities and Staffing

The City's Facilities Department is responsible for the cleanliness and upkeep of all City facilities. Responsibilities range day-to-day activities to multi-year projects including, but not limited to the following:

- Capital planning and implementation – Department staff are responsible for identifying capital needs for City buildings. This includes not only the repair and replacement of major building components, such as replacing a roof or a boiler, but also "tenant" improvements and new construction. An improvement to a space could be building out a new office or a new public service counter in a space that is already occupied, while new construction could include new buildings such as a new fire station. In general, Department staff are be responsible for identifying the capital need, developing cost estimates, participating in the capital planning process in order to secure funding, preparing scopes of work and securing professional services such as an architect or engineer, and preparing designs and bid documents and securing outside construction services, when the work is not being done by City staff. The staff also prepare or contribute to grant applications that can assist with the funding of capital projects, such as Community Preservation Act (CPA) funding for historic preservation.

- Facility maintenance – facilities maintenance is typically divided into two broad categories. The first is "preventative maintenance", or pre-scheduled activities designed to extend the life of a building and maintain the comfort and safety of occupants. Preventative maintenance activities include changing the filters on boilers and air conditioning units, replacing lights and ballasts, elevator maintenance and inspections, generator maintenance, inspecting roofs and performing patching, if needed, among other activities. The second category of work is responding to issues that have already been identified, typically through a work order. This could be a fixing a door that will not lock properly, fixing or replacing a broken toilet, or repairing a leaking roof, etc. Building occupants and custodial staff will often be the ones to identify issues and report them to a facilities department, although facilities maintenance staff may also report issues if they are out at a site and identify something that needs fixing and which they cannot address in that visit.

- Grounds maintenance – Staff working in grounds maintenance are responsible for keeping areas around City buildings safe and attractive, including, but not limited to, snow removal on sidewalks and parking lots, trash removal, and mowing, weeding, and pruning, etc. They also replace signs and perform weeding and mulching at surface parking lots, although DPW is responsible for the striping and maintenance of the paved area. Grounds maintenance staff also inspect vacant buildings every few days to make sure that nothing is awry, looking for broken windows, vandalism, or damage after rainstorms. Since they have keys to the vacant facilities, they are often tasked with giving contractors or staff entry to the buildings. The Facilities

Manager reports that it takes a little over one week to cut the grass and perform outside maintenance at all facilities across the city; the grounds at the Fire Department headquarters takes nearly ½ day alone to maintain.

- Custodial services – Custodians are responsible for keeping interior spaces clean. Tasks include removal of garbage and recycling, dusting, sweeping, washing, buffing and waxing floors, washing windows, changing light bulbs, moving furniture, etc. Efforts can include making minor repairs to the building, equipment, or a heating system, and reporting repairs that need to be addressed by building maintenance staff. The City has contracted for custodial services at the Police Station and libraries.

- Park design and construction – the Facilities Department is also responsible for efforts to improve City parks including everything from design to construction management and inspection. Staff will prepare State PARC grants for improvements such as splash pads, work with the designer, prepare bids, and oversee the construction. When a project I s complete, the Parks Department takes responsibility for the continued maintenance.

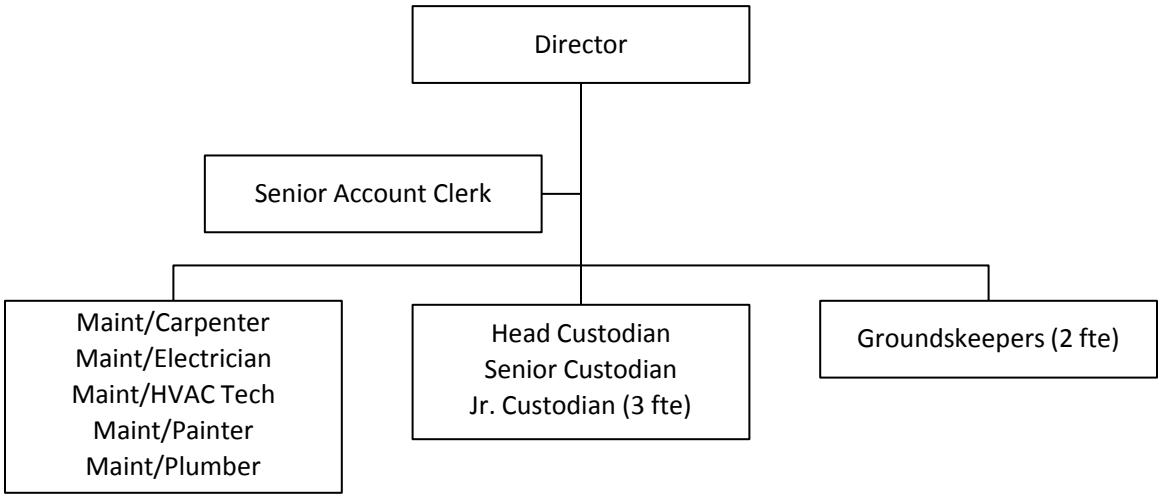
These functions were previously housed within the Community Maintenance Department until FY2017 when they were moved into a standalone department, then called the "Department of Buildings & Grounds" (and since renamed the "Facilities Department"). The City's FY2017 budget provided for 16 positions in the newly created department which described its mission as follows:

> "*To ensure that all City buildings and grounds are managed with the highest standards and best practices of both the public and private sector, supporting a safe, effective and esthetically pleasing experience for the citizens and employees of the City*."[1]

Of these positons, six were newly added. Over the past year, the Department has been able to fill three licensed maintenance positions (e.g., electrician, plumber, and HVAC technician) and two groundskeeper positions.

The recently approved FY2018 budget eliminated the vacant Project Manager position, and did not authorize the requested Carpenter, Architect, and Senior Clerk/Typist positions. This coupled with the reduction of one Junior Custodian position due to new outside custodial services, brings the total authorized staffing down from 17 to 14 positions. The resulting FY2108 organizational chart can be seen below.

[1] City of Fall River, MA, FY2017 Proposed Budget (Revised), p. 65.



The Facilities Director directly supervises all staff. The Head Custodian provides assistance by, taking attendance and scheduling staff for special events and/or overtime, but does not directly supervise staff. The Senior Custodian is long tenured employee.

Assignments are given to maintenance staff each day – often several times a day - by the Facilities Director by phone or text most often in response to work order requests. Work orders are submitted to the Department by phone, fax, or email to the Facilities Director or Senior Account Clerk. The Department has a Work Order Form that is printed in the print shop and made available to departments. Some departments have converted the form into a Word document so it can be filled out electronically. After reviewing each request and determining its priority, the Facilities Director will call the assigned employee with directions on how to respond. If a request was called in and no Work Order Form was submitted, staff are directed to create a work order with the relevant information. At the end of each job, the employee is supposed to indicate what work was completed and return the form to the Senior Account Clerk. A paper folder has been created for each building and the closed work order will be placed in the folder so that a review can be made later to determine how many work orders have been submitted for buildings and what type of work was performed. The Senior Account Clerk maintains an excel spreadsheet that identifies building-specific expenditures so they can be tracked as well.

Emergency issues – such as a leaking toilet or a gas leak – take precedence over all other work orders and can result in a delayed response to other work orders that were previously deemed to be high priority. The Facilities Manager personally manages the coordination of work and must recall from memory, or via email or cell phone records, if there are requests that have not yet been completed, or have not been assigned to staff.

Operating Budget

The operating budget for the Facilities Department has undergone considerable change in recent years. Nevertheless some expenditure categories remain significant year after year. The greatest cost, after labor, is consistently for utility expenses for City buildings. Parts and supplies is the second greatest category of operating expenditure, and it includes custodial and building supplies, gasoline for the

department vehicle, tools, etc. Funding for professional services –typically architectural and engineering services – has historically been very limited, although the amount was increased for FY2018.

CITY FACILITIES MAINTENANCE OPERATING BUDGET (F2016-FY2018)			
	FY2016	**FY2017**	**FY2018**
Equip Maint	52,000	47,500	
Parts & Supplies	406,185	402,508	371,675
Contractual Svcs	21,199	30,000	50,000
Training & Other	160		3,500
Utilities	786,137	625,856	444,920
Armory	118,459	25,000	
ADA Compliance			100,000
Custodial Services			185,000
Maint Services			207,500
TOTAL	**1,384,140**	**1,130,864**	**1,362,595**

The FY2018 budget has significantly increased transparency in the department's budget by breaking out large line items into smaller sub-categories such as ADA compliance (for work at Government Center to improve accessibility), key maintenance services (such as elevator inspections and repair, fire sprinkler inspections, etc.), and different categories of supplies such as plumbing and electrical supplies. (These categories are collapsed in the table to the right but can be seen in the FY2018 budget document). Also of note is the fact that the amount budgeted for outside custodial services for the Police Department, Library, and Government Center can now be viewed as separate line items in the budget and therefore tracked over time.

A review of the detailed FY2018 budget reveals that approximately $369,000 in operating expenses can be identified as directly impacting building maintenance. This translates into approximately $0.68 in non-labor investment per square foot.

School Facilities Department

Responsibilities and Staffing

The responsibilities of the School District's Facilities Department are similar to those of the City department including capital planning, preventative maintenance and response to work orders, custodial services, and grounds maintenance, but for a total of 19 buildings and 2.2 million sf of space. In addition, the Department is responsible for school security, in partnership with the Fall River Police Department and for school deliveries. All staff efforts are led by the Chief Operating Officer, but are generally divided into two divisions, each led by a director, i.e., the Director of Engineering and the Director of the Environment & Security.

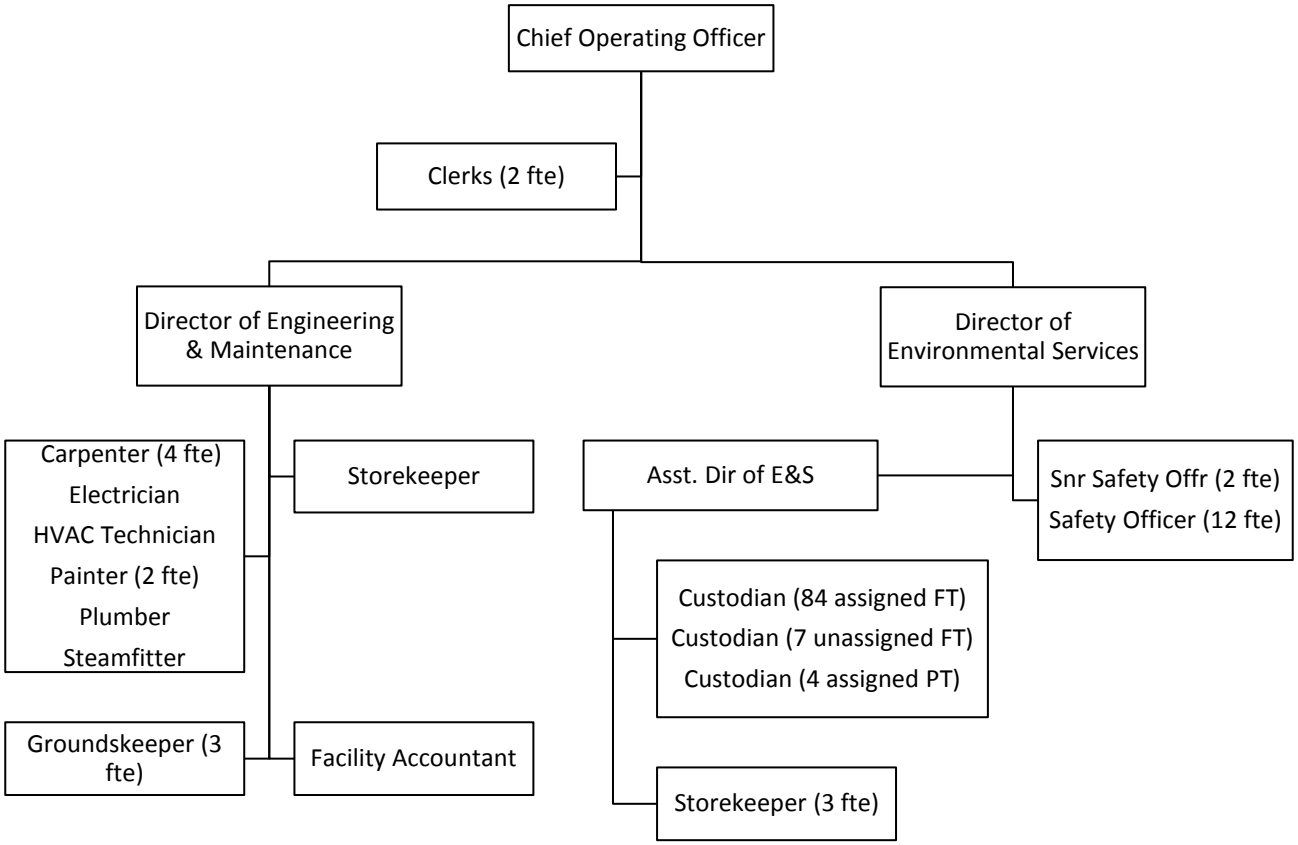
The Director of Engineering is responsible for facilities maintenance and associated procurement activities including preparation of bid specifications. He supervises 10 staff, including licensed technicians, who perform facilities maintenance work. Facilities maintenance tasks include responding to work order requests and preforming some preventative maintenance. The Director of Engineering

reviews all work order requests, prioritizes them, and assigns them to staff. Maintenance staff either report for duty at the central office to receive work assignments or directly to a school site if they are working on a multi-day project. Staff are either given a printed out work order or can log into School Dude to see what work orders are in their cue. Emergency or time sensitive tasks can also be communicated by phone call or text. Highest priority is given to issues that negatively affect student safety or the learning environment (e.g., lack of heat, tripping hazards, etc.). Summer activities undertaken by the group can include large scale painting projects, refreshing bathrooms, installing equipment such as white boards, and other projects that may take up to two weeks to complete (tasks that would last longer than 2 weeks are generally assigned to an outside contractor), while during the school year, they may work on shorter projects that may last 2-3 days so do not disturb the students and daily operation. Procurement activities are related to the division's work efforts. The Director of Engineering also works with the Chief Operating Officer and the City's Director of Facilities on capital improvements (see below).

The Director of the Environment & Security (Director of E&S) is responsible for custodial services, grounds maintenance, school security, associated procurement, District-wide inventory and deliveries, and compliance with State and Federal environmental requirements (e.g., annual and periodic reporting, any work with hygienists or on review of air quality, etc.). The District has 14 School Safety Officers (non-sworn personnel) who work at school sites under the supervision of the Director of E&S. In addition, the District funds 7 School Resource Officers who are hired and supervised by the Police Department. The Director of E&S serves as liaison with the Police Department on security issues. The Director of E&S supervises three employees who manage the inventory of educational, maintenance, and custodial supplies and materials and who make deliveries to school sites and central administrative offices. Two of the employees work part time as District van drivers and then provide courier services in between their morning and afternoon routes. The Director of E&S is also responsible for the ordering of furniture and fixtures, custodial supplies, and maintaining the District's fixed asset inventory. The Director of E&S supervises the Assistant Director of E&S who provides daily oversight of custodial services and grounds maintenance.

The Assistant Director of Environmental Services (Assistant Director ES) supervises 95 full- and part-time custodians. Of these 84 are assigned to specific schools full time, where the most senior of the assigned staff will serve as the lead of the on-site custodial team. An additional 4 custodians are assigned to buildings part time while another 7 work part time but are not assigned to specific buildings. Unassigned staff typically cover for others who are out on leave, whether pre-scheduled or unanticipated, thereby reducing overtime costs. Any staff who are not assigned to cover absences on a given day can be assigned to undertake deep cleaning efforts or other work that gets postponed for lack of time.

The District has adopted "process cleaning" system which means that every classroom and school site cleaned the exact same way and staff can move from site to site without the need for retraining. Custodians complete a checklist each day that lists the tasks for each site and documents the work performed. The Assistant Director ES performs spot checks of the custodians' work and strives to visit each school site unannounced at least once within any two week period. School principals can set custodial priorities for a day to respond to site-specific circumstances, such as a special event, etc. Custodians will record special directions on their daily checklist and indicate if any routine work could not be completed. The Director of E&S and the Assistant Director ES collaborate on annual employee evaluations.



The groundskeepers are responsible for taking care of large grassy areas such as playing fields or large areas of lawn, and will stipe grass playing fields in advance of games. Custodians are responsible for mowing smaller patches of grass that do not require ride-on mowers and weed removal. In the winter, groundkeepers are responsible for the plowing of District parking lots, while school custodians are responsible for sidewalks and entrance ways.

The Facilities Department does not maintain any in house inventory of maintenance materials such as screws, nails, sheetrock, etc. Instead, staff visit local supply establishments to collect the supplies needed for each individual job. While this means that no one is tasked with the added responsibility of managing an inventory, the Facilities Director reports that staff collectively can visit the local hardware store multiple times in a given day.

It is the understanding of the project team that school capital planning responsibilities presently involve the participation of School and City staff where the Chief Operating Officer and the Director of Engineering will conceive of capital projects and prepare Statements of Intent (SOIs) to secure MSBA grant funding, where possible. However, when work is funded with City bonds (all or in part), City facilities staff manage the work, including design efforts and construction management, and all procurement activities needed to secure design professionals and construction firms.

Operating Budget

The single greatest expenditure category in the school facilities budget is salaries and overtime, totaling over $5.2 million in FY2018 or 75% of the budget. Following labor is funding for contractual services

(13.7%) and parts and supplies (5.7%). The FY2018 approved budget is $359,000 lower than actual FY2017 expenses including a $32,000 reduction in equipment maintenance (-19%), a $16,000 reduction in parts and supplies (-4%), and a $93,000 reduction in contractual services (-9%), and $208,000 (-3.8%) reduction in labor costs, predominantly in the overtime budget.

DISTRICT FACILITIES MAINTENANCE BUDGET (FY2016-FY2018)				
	FY2016 Actuals	**FY2017 Actuals**	**FY2018 Budget**	**% of FY2018**
Salaries	4,609,434	4,529,707	4,697,671	67.6%
Overtime	675,842	745,713	375,000	5.4%
Workers Comp	143,798	131,200	126,052	1.8%
Sub-total	**5,429,075**	**5,406,621**	**5,198,723**	**74.8%**
Equip Maintenance	178,245	170,789	138,763	2.0%
Parts & Supplies	454,424	415,311	399,378	5.7%
Contractual Services	1,063,119	1,048,758	955,672	13.7%
Training & Other	3,569	1,936	2,000	0.0%
Utilities	289,431	266,794	256,360	3.7%
Sub-total	**1,988,788**	**1,903,588**	**1,752,173**	**25.2%**
TOTAL	**7,417,862**	**7,310,208**	**6,950,896**	

Technology

The City's Buildings and Grounds Department does not have access to a software system designed to receive and track work orders. Instead, work order requests are emailed, faxed, or called in to the Facilities Director or Senior Account Clerk, as described above. Building-specific expenditures are tracked via spreadsheet, but little else is tracked electronically.

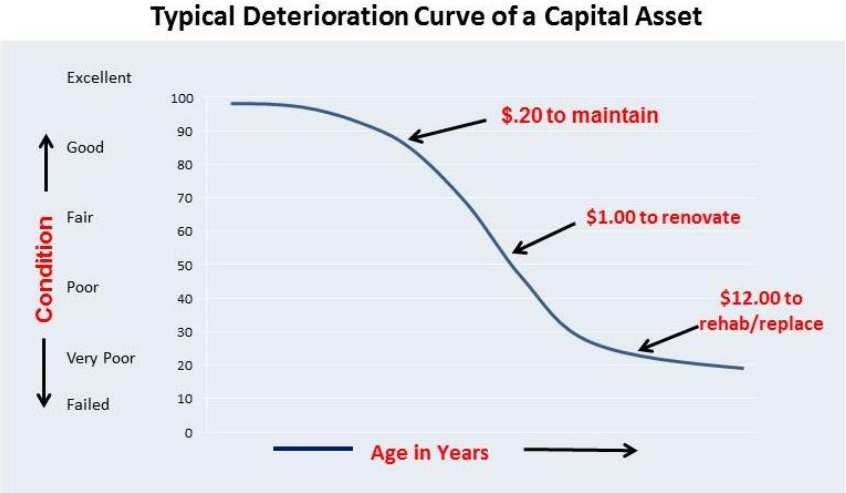
The School District has used the School Dude software since 2007. The vendor was hired to input key data about each building when the software was initially purchased. The system is able to record all work requests and document work performed on each District building, and can pre-schedule preventative maintenance tasks and record completion. The Chief Operating Officer reports that more than half of maintenance staff log into the system to receive work orders, and this can be done directly from their phones. This increases worker efficiency and autonomy. Specifically, If they are able to complete high priority work orders at a given school site and time permits, they can scan for other requests at the same school site so that they can complete more than one work order during a single visit. When tasks are complete, all staff call into the central office to have support staff input the results. An electronic notice is automatically sent to the person who initially submitted the work order and to the Director of Engineering indicating that the work is complete. Over time, the District hopes to transition all maintenance staff to regular use of School Dude.

District staff presently use School Dude to manage work order requests and have input some preventative maintenance tasks. However, not all preventative maintenance tasks have been identified in writing and scheduled and when they do occur, they are not always recorded in the system. For example, District staff use a separate spreadsheet to track key tasks such as the replacement of filters. The Director of Operations suggests that the District is using less than half of the capacity of the School Dude system.

FACILITY ASSET MAINTENANCE CYCLE

General

The life-cycle of a building usually can generally be described in phases: new construction, maintenance and repair, renewal, and decommissioning. Over the course of their life, all capital assets deteriorate and require investment to maintain functionality. Especially in the case of buildings, deterioration may be subtle in the first few years of neglect, but grow rapidly if left unmitigated. The graph to the right illustrates how a generic asset deteriorates in a non-linear fashion, with maintenance and repair costs designed to bring the asset back to full functionality, growing exponentially if no investments are made.



This means that for every year that maintenance and repair investments on a facility do not fully address needs (or do not address them at all), the added financial burden will grow exponentially for every year the work is deferred. As an example, if the cost to maintain an asset when relatively new (e.g., year 10) was $0.20 per square foot, if nothing is done, the cost will grow over $1.00 per square foot a few years later (e.g,. year 15) and then to $12.00 per square foot a few years after that (e.g. year 20).

Building components identified for maintenance and capital needs generally fall into five categories:

1. Mechanical - HVAC systems, pumps, generators
2. Electrical- power supply, panels, and distribution
3. Plumbing- water/sewer distribution
4. Envelope- roof, windows, walls, entrance
5. Interior- hallways, offices, stairs, elevators

In addition, the grounds associated with the building is another category included for purposes of capital projects. Grounds surrounding municipal buildings typically include items such as parking lots, sidewalks, and playgrounds, etc. which directly support the occupying organization.

Expectations for Public Facilities

Unlike the private sector, taxpayers expect that a municipality strike a balance with the appearance and function of its facilities such that it not be extravagant in its construction and furnishings, but instead provide adequate functionality and safety for all users including employees and visitors. A community's culture can be seen in what is considered to be tolerable and what warrants improvement, even if it

entails raising repair costs from the tax levy to do so. Buildings with too much fine materials and craftsmanship can draw ire from taxpayers as they might feel their taxes are being overspent. Alternatively, too little quality erodes the confidence and pride in a municipal government as an institution. Determining the right balance between "excessive" and "good enough" is the responsibility of local decision makers.

Generally, once a building is constructed, it can be expected that costs for maintenance will increase as the components age, but estimates for the amount of spending on maintenance vary. Some sources suggest that, a building owner can expect to pay about 1-2% of the replacement value of the building per year for maintenance[2], while others suggest 2-4%[3]. Another metric suggests between $0.40-$0.80 per square foot is needed to properly maintain even a new building. A survey prepared by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) showed median maintenance costs of HVAC systems alone in Massachusetts office buildings were $0.53 per square foot[4] and a detailed analysis of the database, "suggests that age affects maintenance cost by about 10% over the course of 25 years"[5], meaning that the cost of maintaining the systems in a 25 year old building was 10% greater than a new building (analysis of the cost of maintaining buildings of greater age was not included).

Often, as funding is constrained, deferring preventative maintenance is often contemplated as one way to reduce costs. However, reducing funding for preventative maintenance typically has the opposite effect as annual costs will actually increase. In fact, studies have shown that time and financial resources spent on preventive maintenance returns $2 in savings for every $1 invested.[6] Other benefits of preventative maintenance include:

- Increased life expectancy of assets, thereby eliminating premature replacement of machinery, such as boilers, and building components, such as roofs;
- Reduced need for large-scale and/or emergency repairs;
- Reduced cost of repairs by reducing secondary failures given that when parts fail in service, they usually damage other parts;
- Reduced overtime costs and more economical use of maintenance workers, due to working on a scheduled basis instead of a crisis basis to repair damage;
- Ability to identify equipment with excessive maintenance costs, indicating the need for corrective maintenance, operator training, or replacement of equipment; and,
- Improved safety and comfort for building occupants.

[2] Levitt, Joel, "Evaluating Real Costs for Building Maintenance Management", Springfield Resources, retrieved from http://www.maintenancetraining.com/articlessearch.html, July 7, 2017.
[3] Retrieved from http://churchadminpro.com/ July 7, 2017 *(Note to reader: while this source is specifically for churches, the volume of activity and public use of those facilities is not unlike municipal facilities.)*
[4] ASHRAE, "ASHRAE Owning and Operating Cost Database", retrieved from http://xp20.ashrae.org/publicdatabase/all_maintenance.asp?sfx=1&state=MA&c_size=1, July 7, 2017
[5] Sellers, David, Facility Dynamics Engineering, "Projecting Building Maintenance Costs – an update", retrieved from https://av8rdas.wordpress.com/2015/11/07/projecting-building-maintenance-costsan-update/, July 7, 2017
[6] "From Preventive to Proactive", Public Works Magazine, November, 2007.

FINDINGS/RECOMMENDATIONS

CITY FACILITIES MAINTENANCE DEPARTMENT

Finding 1: The City Facilities Maintenance Department is seriously understaffed when taking into account the total square footage for which it is responsible.

The types of responsibilities and skillsets found in Fall River's Department of Facility Maintenance are typical in any department that does this type of work. However, in order to determine if staffing is adequate it is important to compare the staffing level with the extent of facilities to be maintained. The results of a survey performed International Facilities Maintenance Association (IFMA) has established a benchmark of 45,000 to 50,000 square feet of rentable facility space to be maintained per full time equivalent maintenance worker (e.g., carpenter, electrician, HVAC tech, painter, and plumber).[7] Operating under such a ratio allows sufficient time for staff to respond to work order requests while also engaging in a regular cycle of preventative maintenance.

Calculation is made below to determine the staffing needed to maintain City-owned facilities. It begins with the amount of occupied space (401,547 sf) and deducts space that cannot be occupied, such as hallways, storage areas, etc. (estimated at 25% of total square footage). It then takes vacant space into account by adding a factor[8] (20%) to account for time spent on the maintenance of vacant buildings. As is recognized, vacant buildings must be kept in a safe and secure condition to prevent them from becoming neighborhood nuisances, from having building components - like copper wiring – looted, and from having it become occupied by squatters.

City Maintenance Staffing Needs Based Upon Inventory	
Gross occupied square feet	401,547
Occupiable square feet (75%)	**301,160**
Gross vacant square feet	615,591
Factor for vacant space (20%)	**123,118**
NET SQUARE FOOTAGE	**424,278**
SF per maintenance worker	47,500
Workers based on sf	8.9 fte
Minus custodial contribution	-0.5 fte
Maintenance Technicians needed	8.4 fte
Staffing (FY2017)	-5.0 fte
STAFFING GAP	**3.4 fte**

By this measure, Fall River's 1 million square feet of gross building space suggests the need for 8.9 fte maintenance workers –a figure that is 3.9 fte above current day staffing. However, it should be acknowledged that custodial staff do perform some light maintenance work such as toilet repair, light bulb changes, structural repairs (cabinetry, doors, etc.), and other activities that would normally be performed by trades maintenance staff if custodians

[7] IFMA, "Operations and Maintenance Benchmark Survey", 2005. This survey of over 650 members indicated that the average rentable area per trades maintenance worker was approximately 47,000 square feet.

[8] This factor was created by the project team in recognition that considerable, often unacknowledged, work is necessary at vacant buildings. In addition to inspecting them regularly, and making sure they are secured and any trash or debris is removed, staff provide access to potential purchasers should the space be available for sale, and/or to outside tradespersons making repairs. At times, emergency repairs are needed to maintain the integrity of the building(s).

were not available. It is the understanding of the project team that these duties account for about 10% of a typical custodial employee's time. Including all five custodial positions, this would reduce the maintenance staffing shortfall by 0.5 fte from 3.9 to3.4 fte.

An additional note is that although the IFMA does not offer any special considerations for the age of the building(s) to be maintained, Fall River's portfolio of properties is atypical in ways that suggest the need for a staff at least at the level identified above. Factors include:

- the age of Fall River's building inventory (average age of nearly 75 years);
- the level of deferred maintenance that has occurred over an extended period of time (see Appendix C for photos);
- the number of facilities (38) and their distribution across the city resulting in significant travel time; and,
- worker safety which requires the presence of more than one worker for certain tasks such as a roof inspection or getting on a ladder. (While some monitoring could theoretically be done by custodians with proper safety training, there are only 5 of them across 38 buildings. Instead, it is likely that some jobs should require the presence of two maintenance workers.)

Overall, this means that instead of just over eight maintenance technicians, the City presently has five – in other words, the Department has 37.5% fewer workers than warranted.

Another significant impediment to addressing unmet City facility needs is the recent elimination of the Project Manager from the department budget. It is the understanding of the project team that this position was responsible for preparing specifications for bid documents and professional services contracts, managing capital projects including inspecting work being performed, applying for grant funding, authorizing payments for work performed, assisting in reporting on grant deliverables, and an array of other tasks in collaboration with the Director. It is the position of the project team that it is not feasible for the Facilities Director to oversee day-to-day operations of the department, including supervising the maintenance workers. In the absence of the Project Manager position, short term emergency needs will clearly take precedence over longer term activities. Given the City's limited funding for capital improvements, it is critical that all reasonable grant opportunities be pursued and investing in a staff position that can assist in this process while also ensuring that the work performed meets City standards is seen by the project team as a positive use of the City's general fund.

An additional challenge is the fact that the Department has a single support person who is responsible for a large number of tasks from receiving work order requests over the phone and via email and transmitting them to the Facilities Director, weekly payroll, accounts payable, monitoring budgetary expenditures, etc. Not only is this a significant amount of work for a single positon, when the incumbent is out on scheduled or unexpected leave, there is no one to take over her duties – instead they await her return.

Recommendation 1.1. Immediately reinstate funding for the Project Manager position with a goal of filling the position by early Fall 2017.

This position is essential for the Department to perform any level of work beyond response to work orders and "putting out fires". The interim Facilities Director reports that he would often work 60+ hour weeks when he was serving as Project Manager to keep projects moving forward. It is not feasible for him to do the work he did as Project Manager and do the work required of Facilities Director at the

same time.

Recommendation 1.2. Over two fiscal years (FY2018-FY2019), increase facilities maintenance staffing by 3 FTE including an additional carpenter, electrician, and plumber. When opportunity arises, convert the existing painter position to a carpenter.

As explained above, the additional positions are warranted given the size, age, and condition of the City's facility inventory. When the painter position becomes vacant, it should be upgraded to a carpenter position at a modest cost. If painting is needed, any of the licensed positions can be assigned to do that work, but a painter does not have the ability to perform the other types of maintenance activities.

Recommendation 1.3 Appoint one of the licensed technicians as a "working foreman" with commiserate pay for added responsibilities for serving as a team leader.

Since Facilities staff report to the Rodman Street warehouse site each day to pick up their vehicles and tools, and not to Government Center where the Facilities Department office is located, someone needs to take attendance and meet with staff to discuss daily assignments. In addition, as the Department increases its inventory (see Recommendation 2.3) someone will need to maintain the inventory and provide materials to the technicians. A working foreman could do this work in a few short hours each week, allowing them to spend the majority of their time on facilities work.

Recommendation 1.4 As part of the FY2019 budget, add a new position of Architect/Owners Project Manager (OPM) funded in part by a portion of capital project budgets.

As the City increases its capital investment in facilities, personnel will be needed to manage the additional design and construction. The Facilities Director does report some delays in project work while entering into contract with an outside architect and receiving the work product. If another professional position was added to the department to focus on larger capital efforts, other than the Project Manager, and the individual hired was a licensed architect, he/she could likely do some of the renderings needed for smaller capital projects in house. In addition, this position could be responsible for managing construction contracts and serving as an Owners Project Manager for projects when an outside OPM is not automatically required. As a result, a portion of the position could reasonably funded by capital project budgets. In addition to design-related tasks, the position description for this project should also include many of the duties of the Project Manager including preparing bids specifications, scopes of work, and writing/contributing to grant proposals, among other duties, so that they would have flexibility to cover some of the workload of the Project Manager as need permits.

Recommendation 1.5 At the beginning of each fiscal year, put in place blanket contracts for key services that cannot be done in house (e.g., elevator repair) or may be required in event of an emergency (e.g., roof repair).

Each year, the Facilities Director should review prior year expenditures for key technical services and determine the amount anticipated for the upcoming year. In July, or August at the latest, blanket purchase orders should be put in place with maximum amounts that relate to prior year spending so that needed outside services are in place early in the year. Examples would include elevator inspection and repair, boiler inspection, etc. In addition, purchase orders for key services needed in the event of emergency, such as roof repair or building board up, should be in place so they can be accessed quickly

in the event of an emergency.

Recommendation 1.6 Monitor expenses per building to determine if funding should be increased and/or if the cost of maintenance exceeds the public benefit received by the use of the building.

In FY2017, the Department began a process to track expenditures per building on an excel spreadsheet. This information is needed to allow the Department and City policy makers to consider the level of ongoing investment needed in different buildings, and whether the maintenance budget should be increased. Depending upon the maintenance costs, a large scale renovation could be warranted or the City may wish to consider relocating department(s) out of high cost buildings. See also Recommendation 2.2.

Finding 2: The City Facilities Department lacks electronic tracking for work orders, inventory, and contracts.

The absence of an electronic system to track work performed on City buildings adversely affects departmental performance and impedes City management's ability to monitor the productivity of the Facilities Department. At present, requests for work are submitted by email, telephone, or on written forms. When available, the Facilities Director will give maintenance staff the hard copy of the work order, but many times instead calls or texts them about an assignment. If a work order form has not been prepared, staff are supposed to prepare their own, but the number of tasks for which no work order was prepared remains unknown. Tracking consists of placing completed work orders into a paper file so that a review of the work performed over a given time period can be done at a later date. At times, especially if an emergency task supersedes one that had a lower priority level, the Facilities Director will need to recall the request from memory – or look in his email/phone – in order to prompt staff and find out if the other work order was completed. In other words, since a single hard copy paper form is the sole record that exists of a work order request, it is very easy for a request to be forgotten until the customer calls again asking about when the work will be done.

The existing process not only is inefficient for management staff who have to regularly call employees to provide them with new tasks and to find out if old ones have been completed, it is not customer-friendly as departments that submitted requests cannot find out where their request stands without personally contacting facilities staff to ask.

Further it is not possible to easily quantify the amount of work performed on any individual building, determine the amount of time to undertake different tasks once they get started, or how great a backlog exists in work orders – all of which are standard in departments that have an electronic work order system. Departmental and City leadership should have the ability to readily get summary data to determine if the department and individual employees are performing up to expectations. Once data is available, conversation can be held regarding whether additional resources are needed or if different processes or other improvements could be helpful.

Recommendation 2.1. Either purchase a work order system for the Facilities Department or leverage the Schools Facility Maintenance Department's existing "School Dude" license for use on the City buildings.

The School Department presently uses "School Dude" software and has indicated that the functionality meets the needs of the school department. The same firm and others offer software that is designed for general facility maintenance including preventative maintenance and work orders, called "Facility Dude". Other systems also exist on the market for this same purpose. Municipalities contacted by the project team that have electronic systems report positive results including an increased ability to track departmental activities and present information regarding work load and accomplishments.

Recommendation 2.2 Establish cost centers in the MUNIS financial system for key buildings to allow expenditures to be tracked directly in the system as opposed to in a spreadsheet.

Department staff should work with the City financial team to establish cost centers in MUNIS that will allow expenses to be tracked by buildings. The annual budget should be posted into a high level account, but when invoices are paid, staff should have the ability to identify the building where the work

was performed. This will reduce the need for maintaining a separate spreadsheet to monitor expenses.

Recommendation 2.3 Provide additional training to Facilities Department staff regarding the City's financial and procurement system.

The Senior Account Clerk and Facilities Director are relatively new to their duties. Training in MUNIS may provide them with ideas of additional financial data they would like to track and how they would like to further increase transparency in the budget.

Finding 3: The City Facilities Department operates largely in a response mode, as opposed to a preventative maintenance mode.

Any organization with insufficient staff and a lack of robust management systems, will inherently operate in a response mode. Depending upon the level of staffing deficiency, they may only be able to address emergencies, and not even routine requests for service. Although work order data is not available for the project team to efficiently review and see the level of backlog that exists in Fall River and what type of work is getting done, anecdotal evidence gathered during the process of preparing this report suggests that the Facilities Department is struggling and responding to emergencies is taking up the lion's share of staff time. Evidence of this includes the fact that no single reliable list of City-owned facilities exists, much less one with key information such as square footage and building systems, capital projects for FY2018-FY2022 were identified largely by the Facilities Director verbally and from memory instead of from a multi-year plan, and when the Facilities Director was answering key questions regarding this report on the phone with a member of the project team, he was dealing with an emergency gas leak in a vacant City building at the same time.

Recommendation 3.1 Hire an outside firm to develop multi-year preventative maintenance plans for all buildings and prepare an annual calendar of activities to be undertaken each month and week.

As noted earlier in this report, studies have shown that every $1 spent in preventative maintenance results in $2 in savings. Typically, when issues addressed early the extent of the problem tends to grow until it becomes an emergency. Then, the cost of procuring services to respond to the emergency and/or the amount of staff time needed to respond can increase exponentially. A ready example of this is a roof. If the roof is inspected and patched regularly before a leak occurs, the work can be done at a relatively low cost. However, if the inspection or repair is delayed until a leak occurs, and the leak continues for a while, not only does increased damage occur to the roof, structural members can be compromised and work spaces can be damaged. A compromised roof can result in damage not ust immediately below the leak, but across the building since water inside a building can travel unseen for significant distances doing damage along the way.

Given the staffing constraints in the Facilities Department at present, it is recommended that an outside firm be hired to develop a maintenance plan for each building and provide it to the City. Staff can then input the calendar dates into the electronic work order system. (see also Recommendation 2.1)

Recommendation 3.2 Determine which preventative maintenance work should be done in house and which should be contracted at the start.

Some work should be done by an outside contractor since skills do not exist in house, such as elevator inspection and maintenance. However, even when skills exist internally, the Department will need to find a reasonable balance between preventative maintenance work, response to work orders, and small capital projects that could be done in house. If the Department takes on too much too soon, either the preventative maintenance work or the capital work will be set aside to continue to respond to emergencies and work order requests. One option would be to hire an outside vendor to do preventative maintenance work on some of the larger buildings such as Government Center and Police and Fire headquarters for 1-2 years to put in place the preventative maintenance schedule and processes. Then, this work could be transitioned to Department staff who would have been doing preventative maintenance on the smaller buildings during this same time period.

Recommendation 3.3 Begin to develop a modest inventory of maintenance supplies, such as nails, screws, wallboard, etc. to be maintained in the Facilities Department warehouse and outfit department vehicles with standard supplies to reduce time spent traveling to and from hardware stores to purchase supplies for specific jobs.

The first step would be to meet with staff to discuss what parts and supplies they would find useful to have in house and then review invoices from hardware stores to identify trends in the items purchased. Any inventory should be maintained in a secure location with only 2-3 keys in circulation. In addition, the inventory should be tracked with the date each item was purchased, when it was used, and what it was used for. An electronic work order system would have an inventory tracking module.

Staff should be trained on how to scope out a job based upon a work order description and to identify the supplies and parts most likely necessary for completion so that they rarely need to stop a job to go to a hardware store or back to the Department's storage facility.

<u>Finding 4</u>: The City's building portfolio includes a large number of vacant buildings and others that are less than optimal for the work being performed.

The responsibility of any owner of multiple buildings is to aggressively manage the portfolio and retain only those facilities that directly support the core mission. The resources needed to maintain and repair buildings are significant so any portfolio requires continued vigilance as to purpose and usage. Where possible, it is often prudent to reduce the footprint and retain a streamlined inventory of buildings that are used fully in support of the core function.

The City owns and is responsible for over 1 million sf, but only 400,000 sf of this is occupied with some public use. The balance consists of approximately 616,000 sf of vacant space, some of which is used for storage (the gym on Hartwell Street has also been used for youth floor hockey as needed). As noted above, the Facilities Department must use some of its limited resources to ensure the buildings are kept secured and do not become a neighborhood nuisance.

Capital projects have been identified for a number of the vacant buildings and careful consideration will be needed to determine whether such an investment is warranted. For example, is the investment needed so that the asset does not deteriorate to a condition that would preclude it from being sold? Or will the investment potentially bring the building back into life to stimulate economic development or meet municipal needs?

CAPITAL PROJECT REQUESTS FOR VACANT BUILDINGS

Location	Date	Amount	Description
Armory, Bank Street	1850	$16.5 million	To renovate building and bring it back to use TBD
Veterans Center, 755 Pine Street	1953	$395,000	Roof, boiler, radiator, brick pointing, purchasing a new generator, and construction of out building.
Comfort Stations, parks across Fall River	1900-97	$1.5 million	Renovation of all
	Total	**$18.4 million**	

When considering the buildings that are in use for City services, it is important to consider whether they are designed and equipped in ways that aligned with contemporary governmental operations. In many cities and towns, the most significant government buildings were built before the advent of the computer, and, as a result, wiring had to be added long after the building was built. In some cases, the buildings were built for one purpose but have been redeployed for another and are not as efficient as if they had been designed with that purpose in mind. An example would be a city or town hall located inside of a former school where space is chopped up (e.g., former classrooms) and large hallways take up a lot of space.

In the case of Fall River, of note is the Community Maintenance building, located at 10 Lewiston Street, which is a former incinerator. On paper, the facility is listed at 120,000 sf in size, or 30% of City's overall occupied space. However, it is the understanding of the project team that a significant portion of that square footage is not available for use. First, the former incinerator itself remains on the site and reduces the space available for public works and sanitation activities. Second, review of an aerial photo of the facility shows a severely damaged roof section, indicating that some portions of the building may not be available for use. Also in the building reuse category is the – highly unique – fire museum and animal control facility.

In some ways, although at first glance the amount of space in Fall River's inventory appears large, a closer analysis of how appropriate that space for current day municipal operations may reveal a different story. That level of analysis is beyond the capacity of the present study and would need to be done in the future.

Recommendation 4.1 Hire an outside architect to conduct a City space needs assessment to determine the appropriate square footage needed for each department based upon its mission and staffing.

The architect would survey all departments to determine the work performed, the number of employees, the type of work duty station each employee should have (or whether they work in the field), whether the department works directly with the public and should have a public service counter, among other factors. From this, they would develop a spreadsheet to identify the amount of space needed for each department and what type of space or spaces are needed. This will be an important tool to determine the amount of space needed for City operations.

Recommendation 4.2 Work with the architect to develop 2-3 alternatives of how existing buildings could be used to meet municipal needs, which could be declared surplus, and if new purpose-built space would be more efficient and cost effective.

After the architect has quantified the space needs, and verified those needs with City administration, the firm can develop a few alternatives of how existing buildings could best be used and whether new buildings would be more cost effective and efficient. At the same time, City administration should consider whether processes could be modified to reduce space needs. For example, if multiple departments accept cash payment for building permits, marriage licenses, parking tickets, etc. should a single customer service window – with proper security – be set up for this purpose? Or, should the City anticipate that an increasing share of payments will be made via credit card so less space should be taken up by windows where payments could be received.

The fact is that the City's inventory is aging at the same time that municipal work is becoming increasingly electronic. At the same time, the general public has high expectations for the responsiveness of municipal personnel and a desire for great community spaces in which to gather.

Recommendation 4.3 Hire an outside engineering firm to conduct building-wide assessments of all City facilities to assess the condition of each building, itemize the repair/maintenance needs, identify upgrades needed to comply with present day codes, including the ADA, and prepare a recommended schedule for capital investment.

The City's facilities inventory includes a number of buildings that are either vacant or severely

dilapidated, and others that are relatively new and in good condition. However, even the newer buildings are getting older and approaching the time when they may need a roof replacement or a new boiler (the lack of preventative maintenance will only expedite the need for this work) and having a comprehensive assessment at one time will provide City officials with information needed to prioritize capital expenses and quantify the amount of work needed in the near term (1-5 years) and the medium term (5-15 years). They should review building structural components to identify life safety issues as in the past few years more than one city or town hall in Massachusetts has had to be vacated on an emergency basis due to safety concerns resulting from deferred maintenance. In this, Fall River is not alone.

Finding 5: The City presently has leased space at five different locations even though the City has a large inventory of space.

Although Fall River has a large inventory of city- and school-owned space, the project team has identified five leases entered into by City departments totaling approximately 46,500 square feet at a cost of more than $82,200 to the general fund each year (one facility is funded by enterprise funds and the cost is not included). Leased spaces include:

1. South End Library, 58 Archer Street – This approximately 7,500 sf space is used for a branch library after two other branches were closed.
2. Facilities Maintenance garage/storage, Rodman Street – This approximately 3,200 sf space is used to store department trucks and equipment, and contains a small workshop area. Employees report to Rodman Street every morning to pick up their vehicles and equipment. This would be the location of any parts and supplies inventory, if the department was to create one.
3. Community Maintenance garage/storage, 1 Seaberry Street – This approximately 30,000 sf space is used by DCM to store tools, equipment, trash and recycle totes, and any surplus materials that are waiting be auctioned. The other buildings at Lewiston Street are being used for the City's pilot recycling center, where trash placed into recycle bins is being separated from actual recycling to reduce the cost of disposal and for a new central mechanics facility so that City vehicles can increasingly be maintained in house.
4. DCM Traffic storage, Moutaup Street – This approximately 4,500 sf space is being used by DCM traffic to store for signage, parking meters, paint machines, paint, etc.
5. Water Division, Brayton Ave –This approximately 1,200 sf space is being used for the indoor storage of key vehicles including two Vactor trucks. The lease is paid by the enterprise fund.

It is evident from a review of the uses of these spaces and conversations with City staff that inadequate space exists for vehicle and material storage and departments have sought other options. Having secure space for parts and supplies is important to ensure that they are not stolen or damaged, and storing vehicles where they can be protected from the elements is needed to prolong vehicle life.

Storing vehicle in the open – as opposed to in heated, dry environment - can dramatically increase the costs anticipated to maintain the vehicle and reduce its life. The repetitive "cold starting" of a vehicle in freezing temperatures over the course of several years can prematurely wear the power train (such as engine pistons and rings) due to poor lubrication, and can further result in greater metal fatigue as the moving parts go through temperature extremes on a repeated basis. Moisture condensation will accelerate chemical reactions in areas such as the exhaust system, and corrosion can occur more quickly if a vehicle is not washed after use and stored under cover. Given that municipal vehicles can cost between $45,000 (e.g., large size pickup truck) to $200,000+ (e.g., large dump truck or street sweeper), maintaining them for as long as possible is essential.

Recommendation 5.1 Ensure that the City space needs assessment (Recommendation 4.1) takes into account existing leased space and makes recommendations regarding whether the space should continue to be leased and for how long.

Recommendation 5.2 Develop a 30 year master plan for City buildings to ensure tax dollars are wisely spent.

By planning ahead, the City can potentially purchase land at a lower price for construction of a new building or could surplus unneeded properties, get them onto the tax rolls, and use them to stimulate economic development. Of key consideration would be to identify departments that will always need a large physical presence – such as a public works operation – due to equipment needs and those that may become increasingly electronic – such as a city clerk.

Recommendation 5.3 Consider building a new facility to house Community Maintenance operations along with vehicle and equipment storage for other City departments and declaring the existing Lewiston Street facility surplus.

Funding presently paid into leases could be used instead to fund the debt service on a building, and once the City has all of its large vehicles stored under cover, it will likely find that they are able to be retained longer and thus have a larger return on the initial investment in their purchase. In addition, when vehicles are parked outside, often times they must be emptied of any tools or supplies at the end of each work day and filled again the next morning. If they can be safely parked with equipment inside, this will reduce unnecessary staff time and allow staff to get out to work sites earlier in the morning.

<u>Finding 6</u>: Fall River has 6 operational fire stations built between 1905 and 2001, with an average age of 57 years.

Fire equipment has evolved significantly over the last 112 years and, across the country, older fire stations very often have become obsolete. At the same time, fire operations have changed in recent years with fewer fire related calls and larger numbers of medical calls. In this changing environment, many communities have reconsidered the use of their historic fire stations, and some have been converted to new uses such as housing, theaters, or community centers.

An extensive amount of work, totaling $4.9 million, has been preliminary identified at the Fall River fire stations. Projects include, but are not limited to, upgrading electrical systems, installing air-conditioning and heating systems, modernizing bathrooms, repairing roofs, and reinforcing a sagging floor.

Recommendation 6.1. Commission an assessment of fire operations to determine if the station facilities and their locations meet current standards. Develop a master plan for building renovation and/or consolidation.

SCHOOL FACILITIES MAINTENANCE DEPARTMENT

Finding 7: The School Facilities Maintenance Department follows a number of best practices.

The School Facilities Maintenance Department exhibits a number of best practices including:

a) Engaging in long term planning regarding building use(s) and maintenance needs;
b) Procuring the services of licensed tradesmen for critical systems;
c) Utilizing an automated inventory and work order system (i.e., School Dude);
d) Systematic "process cleaning" way of organizing custodial work to ensure consistency across school sites and increase flexibility in reassigning staff from one site to another; and,
e) Having a working knowledge of key facility deficiencies that can be used to prioritize and schedule projects.

Work order data reveals that the School Facilities Department received nearly 2,600 work order requests during FY2017 and completed 2,200 (85%) of them. For work orders that were completed within the fiscal year, the median length of time from request to completion was 10 work days, or weeks. That said, 168 work orders were completed the day they were requested – in most cases the requestor was a member of the facilities staff who was reporting work that had undertaken, but not always. A total of 735 (33%) work orders were completed within one week of receipt. The work orders that took the longest to complete were not significantly different from others that were completed in a far shorter time period which suggests this may be a monitoring issue as opposed to the receipt of complex tasks beyond the capacities of staff.

SCHOOL FACILITIES WORK ORDERS
TASKS WITH EXTENDED COMPLETION DATES

Descriptions	Action Taken	Request Date	Complete Date	Days to complete	Descriptions
need more plugs 103	School moving into new bldg	7/6/2016	6/28/2017	256	Stone
glass shelf for display case broke,needs to be replaced.		7/18/2016	5/16/2017	217	Spencer Borden
six tables need to be repaired.		7/18/2016	5/30/2017	227	Spencer Borden
Grass deck for tractor is broken.		8/16/2016	4/24/2017	180	Tansey
install white board		8/31/2016	5/16/2017	185	Spencer Borden
3rd floor bathroom faucet handle broken needs to be replaced thank you	repaired broken handles	11/29/2016	12/31/2017	284	Greene

Of the 400 work orders that were not complete on June 30th, 106 were under a month old. Of the remaining 294, the most unfulfilled requests per person were in the plumbing and HVAC disciplines (93 work orders between two staff). A large number (91) were assigned to carpenters, but since there are 4 staff this translates into just over 22 incomplete per fte. Only 4 electrical and 9 heating-related work orders were not complete. A number of requests had not yet been assigned and a few were assigned to custodial staff.

Recommendation 7.1 Continue the existing best practices and consider cross-training management staff in the City Facilities Department.

Both directors already have a positive working relationship, but it may be productive for them to have formal sit down meetings where they discuss shared projects and also lessons learned.

Recommendation 7.2 Consider combining the City and School departments to maintain all buildings and create efficiencies with personnel and equipment utilization.

Combining the departments is a significant change that will require extensive analysis before implementation. However, having a single organization maintaining all facilities has the potential to benefit the City and the School Department in a number of ways. By combining resources, the two organizations could fund a multi-disciplinary team that can address most building infrastructure issues – a team that is larger than each organization would be able to fund on its own. In addition, cost efficiencies would result from having a single organization purchase parts and supplies to address the needs of all City and School buildings. That said, detailed analysis would need to be done to determine if the combined department had sufficient staff to cover the complete portfolio. If not, combining two under resourced departments into one will just result in one larger, yet still under resourced department. Performance expectations with specific measures would need to be established so that the City Council and School Committee feel comfortable that their respective agencies needs would be met by the arrangement. Tracking of data and regular reporting would need to be put in place so decision-makers would be kept informed about progress being made and challenges faced.

<u>Finding 8</u>: The School Facilities Maintenance Department is understaffed when taking into account the total square footage for which it is responsible.

Maintenance Staff

The School District's Department of Facility Maintenance has a mission and staffing disciplines common to other school districts. However, to determine if staffing is adequate it is important to compare the staffing level with the extent of facilities to be maintained –just as was done for City facilities (see Finding 1). The IFMA benchmark of 45,000 to 50,000 square feet of rentable facility space to be maintained per full time equivalent maintenance worker (e.g., carpenter, electrician, HVAC tech, painter, and plumber) can also be applied to the schools.[9] As mentioned above, operating under such a ratio allows sufficient time for staff to respond to work order requests while also engaging in a regular cycle of preventative maintenance.

The calculation made below to determine the staffing needed for School facilities deducts space that cannot be occupied, such as hallways, storage areas, etc. (estimated at 25% of total square footage for all buildings except for the high school which was given a ratio of 40%). It further acknowledges the contribution made to maintenance by custodial staff. If the soon to be vacant BG Stone School building is subtracted from the total school portfolio and unoccupiable space is deducted, this results in a net occupiable space of approximately 1.57 million square feet. Total staffing for this amount of space at the IFMA ratio would equal 33.1 maintenance staff. However, when the contribution of the 93 fte custodial staff is taken into account, this translates into 23.8 fte required to maintain the school buildings. When compared to the 10 maintenance workers on staff today, this results in a staffing shortfall of 13.8 workers.

District Maintenance Staffing Needs Based Upon Inventory	
Gross square feet	2,231,977
Minus GB Stone School	-20,253
Minus unoccupiable space[10]	-638,913
Net square feet	1,572,812
SF per maintenance worker	47,500
Workers based on sf	33.1
Minus custodial contribution	-9.3
Workers needed	23.8
Staffing (FY2017)	-10.0
Outside contractual services	-10.0
Staffing Gap	**3.8**

However, the Facilities Department's budget for contractual services totaled approximately $956,000 for

[9] IFMA, "Operations and Maintenance Benchmark Survey", 2005. This survey of over 650 members indicated that the average rentable area per trades maintenance worker was approximately 47,000 square feet.

[10] A ratio of unoccupiable used was 25% for all schools and facilities except for the high school. For the high school a ratio of 40% was used which is MSBA's maximum for large enrollment high schools.

FY2017. A portion of this work was performed by tradespersons, i.e., electricians, plumbers, etc. who did somewhat similar work to in house staff. If 50% of this amount is considered to be in support of general facilities maintenance, than this would be equivalent to approximately 10 additional fte, thereby reducing the staffing gap to 3.8 fte.

Custodial Staffing

Metrics also exist that can be used to provide insight into the appropriate level of custodian staffing based upon the amount of square footage to be maintained per full time employee. The National Center for Education Statistics (NCES) suggests a custodian ratio between 28,000 and 31,000 sf per custodian to provide for acceptable levels of school cleanliness.[11] (NCES defines a higher level of cleanliness for restrooms, special education areas, kindergarten areas, and food service areas at 18,000 to 20,000 sf per 8 hour shift). Local research found one school district in the metro-Boston area, identified by the MSBA as having very high standards for school cleanliness, reported a ratio of 21,000-23,000 sf per fte. (It should be noted that another agency, the National Education Association (NEA) strongly states its position that there is no national standard for the ration of custodian-to-square footage. It is their position that the number of custodians is dependent upon the conditions and duties in the school.) [12]

As can be seen in the table below, the FY2018 budget provides for an overall ratio of 27,555 sf per custodian for those custodians assigned to a specific building, a ratio that is nearly at the NCES standard (see next page for details). It should be noted that an additional 7 custodians work full time, but are not assigned to a particular building and instead cover for vacancies. This is a cost-saving practice that saves on overtime, but those positions cannot be added to the overall ratio since they predominantly backfill for other positions.

A closer look at the data by building reveals that although five schools operate within the NCES ratio, another 9 have greater than 20,000 sf per custodian, but often significantly less than the 28,000 figure. Having a full time position at the 13,256 sf Administration Building is unusually low, unless this individual has considerable duties other than custodial work. The Tansey School also has significantly more custodial support than its size suggests. At approximately 26,678 sf in size, with one custodian this school would meet the NCES ratio yet the school has two custodians assigned to it. It is understood that some daytime custodial support is likely needed as students make messes that need to be cleaned, but perhaps a closer look should be paid to the work tasks performed afterhours to determine if any could be done while school is in session, thereby potentially reducing staffing by 0.5 fte. That said, there may be site-specific reasons that warrant the staffing levels found that are not known to the project team. On the opposite end of the spectrum, the amount of building space per custodian at the Resiliency Preparatory Academy (grades 7-12) is far above the NCES ratio (63,384 sf per fte). This clearly warrants attention by District management.

District staff has communicated strong concerns with the NCES ratios and their application to Fall River schools given the process cleaning system that is in place. As a result of this communication, no firm

[11] School Facilities Maintenance Taskforce, National Center for Education Statistics (NCES) and the Association of School Business Officials International (ASBO), Planning Guide for Maintaining School Facilities, February 2003, p. 82, retrieved from https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003347, November 13, 2016.
[12] Retrieved from http://www.nea.org/home/18498.htm, November 13, 2016.

recommendations are being made by the project team relative to custodial staffing. It is recommended, however, that this be an area of future study.

CUSTODIAL STAFFING PER SF *NCES Standard = 28,000 and 31,000 sf*			
Building	**Size (sf)**	**FTE**	**SF/FTE**
Administrative Offices (2 facilities)			
Administration Building	13,256	1.0	13,256
Storage at former Wiley School	25,092		
Elementary Schools (11 facilities)			
AS Letourneau School	106,818	5.0	21,364
Carlton Viveiros Elementary	121,266	5.0	24,253
G B Stone School	20,253	N/A	
James Tansey School (6 portable classrooms)	26,689	2.0	13,345
John J Doran School	76,818	3.0	25,606
Mary L Fonseca Elementary	95,762	4.0	23,941
Samuel Watson School	45,332	2.0	22,666
Silvia Elementary School	116,383	4.0	29,096
Spencer Borden School	110,000	4.0	27,500
Westall School	45,630	2.0	22,815
William S Greene School	138,625	5.0	27,725
Middle Schools (4 facilities)			
Edmond P Talbot Middle School	121,700	5.0	24,340
Henry Lord Middle School	122,350	5.0	24,470
Kuss Middle School	177,633	6.0	29,606
Morton Middle School	130,100	6.0	21,683
High Schools (2 facilities)			
BMC Durfee High School	573,210	19.0	30,169
Resiliency Preparatory Academy 7-12	190,152	3.0	63,384

Recommendation 8.1 Between FY2019 and FY2020, add one plumber, one HVAC technician, and one electrician.

Work order data suggest some backlog of plumbing and heating/cooling tasks, so these positions should likely be prioritized. As the newer school buildings age and technology changes, it is likely that electrical work will only increase. Although the District's existing electrician has been able to keep up (the project team has been informed of her outstanding work), that may not be feasible going forward. In addition, as the District increases its preventative maintenance efforts (see Finding 2), this will also increase the staff workload, at least in the short term, as new tasks are added.

Recommendation 8.2 Review contractual spending and determine if reductions are possible with the increased staffing.

Near the close of each fiscal year, facilities management should review the tasks performed by outside contractors to determine what can be performed in house in the future. In some cases, work may be able to be done with local staff at a lower cost than calling in an outside vendor, although not always.

Recommendation 8.3. Consider developing incentives to encourage current employees to pursue

additional training and licensing.

It behooves any organization to consider the career path for its employees, especially organizations with 100+ staff members such as the District Facilities Department. Consideration should be given to whether some custodians may wish to receive training and opportunities to promote into higher level positions, whether they be supervisory within the custodial group or moving into facilities maintenance.

Recommendation 8.4 Ask custodians for their ideas on ways to streamline cleaning efforts. Consider piloting some of the ideas in 1-2 schools to determine their feasibility for application districtwide.

Custodial staff who do the work day in and day out may have ideas on how to streamline tasks and increase efficiency without losing quality. They should be asked for their ideas and have an opportunity to see if they can work in a few sites before applying them to the entire workforce. They could participate in an all-hands meeting that has time set aside for brainstorming or asked to submit ideas to their supervisor in person or in writing. Non-financial recognition should be given to employees whose ideas are selected. This could include having a photo posted in the administrative offices and having a PA announcement made at their school site recognizing their efforts, or other types of recognition.

<u>Finding 9</u>: The School Facilities Department operates largely in a response mode, as opposed to a preventative maintenance mode.

Although review ofFY2017 work order data suggests that the Department is generally successful in keeping up with work order requests, District staff report that preventative maintenance efforts are not fully catalogued and emergency response and work order tasks consume most of any given work week. Over time, this situation becomes self-promoting, e.g., the inability to engage in methodical preventative maintenance activities results in increased emergencies and work order requests which then absorb all staff time and preclude efforts to undertake preventative maintenance activities. As the cycle progresses, emergency response becomes the norm , costs increase, and critical building systems fail before their expected lifetime.

Recommendation 9.1 Develop multi-year preventative maintenance plans for all buildings and determine which work should be done in house and which should be contracted at the start.

For some of the newer school facilities, preventative maintenance schedules may have been prepared by the contractor or designer. If this is the case, they should be reviewed by staff and determined if still valid. For older buildings, it is recommended that an outside contractor be hired to review all systems and develop site-specific preventative maintenance task lists and schedules.

Recommendation 9.2 Input the preventative maintenance schedule into the electronic work order system so tasks are automatically scheduled.

Preventative maintenance tasks should be coded differently from work orders in the electronic system so that their completion can be tracked – in terms of whether they were completed on schedule, how long it took staff to perform each task, and if a backlog exists. The Director of Engineering will need to be rigorous in requiring that staff complete the PM tasks even if it means that some non-emergency work orders may need to wait a little longer. They key with the preventative maintenance efforts is to reduce the number of emergencies, in the longer term this will increase staff capacity and a balance can be found between PM and work order response.

Recommendation 9.3 Put in place a few blanket performance contracts for larger building maintenance and repairs to allow District staff to focus on smaller projects, instead of either needing to contract them out unexpectedly or piecemeal or not getting to them at all.

The District already contracts out work that will take more than 2 weeks to complete, which allows staff to undertake smaller projects at hopefully a reduced cost. Purchase orders for emergency repair work, such as roof repair and clean up/board up, should be entered into at the beginning of each fiscal year so that when an emergency occurs it is just a matter of calling the pre-approved vendor to respond.

However, consideration should be taken into how much routine maintenance work is performed by contractors, outside of specialties such as elevator repair which will never be done in house. Regular outsourcing actually diminishes the knowledge base of the municipal tradesmen creating even further dependence on the private sector response, while also taking longer to make the needed repairs.

Finding 10: The average age of the school buildings are close to 50 years old.

Most buildings have a life expectancy of about 50 years before a full renewal is needed. At present, the District has 366,404 sf in seven buildings that are over 50 years of age and another 694,910 sf in space in two buildings that are approaching 50 years, including the 39 year old Durfee High School. Five other schools are less than 10 years of age, and four are between 10 and 17 years of age - evidence that the District has had success in recent years in building/renovating schools. However, even the relatively new schools are aging and attention must be paid to preventative maintenance requirements to maximize building lifetime.

SCHOOL FACILITIES INVENTORY
(Facilities 50+ Years of Age, or Approaching 50 Years)

Building	Address	Size (sf)	Year	Age
Administrative Offices				
Administration Building	417 Rock Street	13,256	1890	127
Storage at former Wiley School	2587 North Main Street	25,092	1910	107
Elementary Schools				
G B Stone School	1215 Globe Street	20,253	1896	121
James Tansey School	711 Ray Street	26,689	1952	65
Samuel Watson School	935 Eastern Avenue	45,332	1904	113
Westall School	276 Maple Street	45,630	1907	110
Middle Schools				
Edmond P Talbot Middle School	124 Melrose Street	121,700	1971	46
High Schools				
BMC Durfee High School	360 Elsbree Street	573,210	1978	39
Resiliency Preparatory Academy	290 Rock Street	190,152	1927	90
	TOTAL	**1,061,314**		

The GS Stone School will not be occupied going forward as the students are moving to the renovated Westall School in September which will reduce the older inventory by one building. In addition, $1 million in funding has been provided by the MSBA to undertake the process of evaluating alternatives for Durfee HS. (The Westall School has had a $4.9 million makeover funded through insurance proceeds and some City funding. In 2013, when the school served as an alternative middle and high school, a storm removed 3/4 of the roof. When reopened, it will serve as a therapeutic day school.)

However, with a building inventory with such a wide age span and limited financial resources, it will be critically important for the District to have a multi-year plan in place to anticipate and plan for significant building repairs/improvements. In some cases, facilities departments have internal plans that may reach out 20+ years into the future.

Recommendation 10.1- Hire an outside engineering firm to conduct building-wide assessments of all District facilities including schools, the administration building, and the Wiley School storage facility to assess the condition of each building, itemize the repair/maintenance needs, and prepare a recommended schedule for capital investment.

All buildings and all systems should be reviewed, except those that are still under warrantee by the contractor or vendor.

Recommendation 10.2 Contact the MSBA and ask for a formal meeting to familiarize them with the Fall River school inventory and discuss building needs and the type of assistance the MSBA can provide, along with a potential schedule for renovation and/or new construction.

The results of the MSBA's 2017 statewide school needs assessment should be available within the next year and together with the information gathered by the District's own facility needs assessment will provide extensive information to strategically plan for capital needs going forward. A meeting with the MSBA should be held to orient them to the challenges faced by Fall River and to gather insights into the various funding programs managed by the MSBA, how to make compelling arguments for grant funds, and to collaborate on how to address school facility needs.

<u>Finding 11</u>: The schools have replaced boilers and roofs in the past without always seeking grant funding.

A review of the MSBA's project listing for Fall River identifies only four projects since 2001, as shown below. As is known, the MSBA establishes its reimbursement to districts based upon a series of factors including economic factors and a community's ability to pay for the needed improvements. Clearly, Fall River has meets most of the MSBA funding criteria and has had a very high 80% reimbursement rate. All efforts should be made to pursue funding whenever possible. Unfortunately in recent years, a statement of interest (SOI) for a roof at the Tansey School was not submitted to MSBA and given the severity of the roof problem, time was not available to wait a year and submit the project for consideration. As a result, the School District had to vote to fund the entire $425,000 investment without outside funds. District staff does appear to have taken this experience to heart and the District has submitted SOIs for projects at the Tansey School (boiler, windows, and doors) and the Watson School (boiler, windows, doors, and roof), and those projects have been accepted into the feasibility phase of the MSBA process.

MSBA PROJECT LISTING[13]

School name	Year	Project Type	Project Phase	Total Project Budget	Reimburs-ement Rate	MSBA Amt Paid(to Date)	Estimated MSBA Payment Amt Remaining	Anticipated MSBA Investment Amt
B M C Durfee High	2014	Core Program	Feasibility Study	$1,000,000	79.58 %	$87,041	$708,759	$795,800
Mary Fonseca Elem School	2001	Waitlist	Final Audit Approved		90.00 %			$18,834,864
James Madison Morton MS	2008	Core Program	OPM Selection					$0
James Madison Morton MS	2009	Core Program	Final Audit Approved	$51,997,530	80.00 %	$34,754,621		$35,160,264

Millions of dollars of needed capital investment have been identified by District staff as part of their effort working with the project team (see Finding 12) – a large percentage of the school projects are eligible for MSBA funding, but the District needs to be very well organized and make compelling arguments in order to successfully compete for the funds.

Aside from its new construction funding, the MSBA also offers funding through two repair programs. This includes the Major Repairs Program and the Accelerated Program. The Accelerated Program is typically for roofs, boilers, and windows and districts can submit more than one project proposal at a time. The Major Repairs Program includes roofs, boilers, and windows and other capital needs at a

[13] MSBA, "Your School" retrieved from http://info.massschoolbuildings.org/Project_List/ShowProject.aspx?LEA_Code=0095, July 11, 2017.

school, but only one project can be submitted at a time.

Recommendation 11.1 Identify those projects that qualify for MSBA reimbursement and establish a multi-year schedule of applications to be submitted each year.

Attention should be paid to determine whether capital needs for a given school should be bundled and submitted under the Major Repairs Program, in which the District can only submit one application per year, or whether roofs, boilers, and windows should be moved forward through the Accelerated Program. After review of the capital needs requests gathered by the project team, the School Committee should work with the Chief Operating Officer to establish annual targets for the number of applications to be submitted per year and an aspiration for the amount of funding to be authorized by the MSBA.

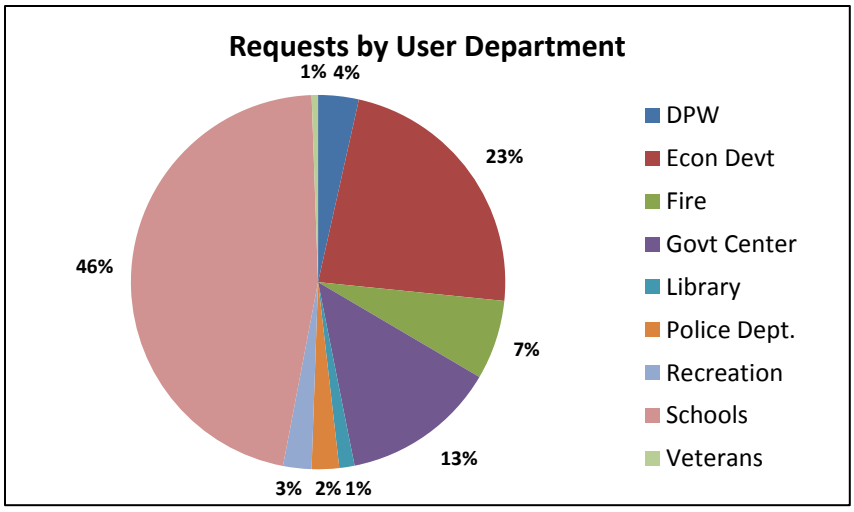
Recommendation 11.3 Given the recent reductions in staffing in the City Facilities Department, City and School leadership should meet to discuss having the District Facilities Department serve as project manager on significant school capital improvements, regardless of whether City has authorized the borrowing. Put in place monitoring and accountability mechanisms prior to making any transfer.

Historically, the City Facilities Department has managed large scale capital projects at the schools. However, in the FY2018 budget, the City Council eliminated the Project Manager position that performed much of this work. In the opinion of the project team, this now leaves the City Facilities Department without the capacity to manage significant City capital projects, much less ones needed for the schools. This is coupled with the strategic effort now underway to comprehensively identify capital needs and expeditiously pursue grant funding. Consideration should be given to transferring day to day oversight of school capital projects to the School Facilities Department, with the City Facilities Department performing financial review of invoices to be paid and making inspections of work performed at specific points in the process to ensure the District is getting a quality product from its contractors. Additional monitoring and accountability mechanisms should also be discussed, to ensure that all involved feel comfortable making such a significant transition.

CITY AND SCHOOL FACILITIES

Finding 12: Identified City and School facility capital needs far exceed the funding anticipated to be available over the next five years.

City and School officials submitted a combined 120 projects with a total investment value of $71.4 million over the next five years to the project team. By dollar amount, the greatest share of capital investment was in the schools ($33.17 million or 46% of total), with projects at Resiliency Preparatory Academy having a combined total of $9.45 million, across all funding sources, and the Wiley School at $5.8 million, $4.3 million at Talbot Middle School, and $3.4 million at Lord Middle School. Following after the School District was the Armory economic development project ($16.5 million estimate or 23% of total), and projects at Government Center ($9.6 million of 13%).



Project requests range in size from $10,000 to upgrade lighting at the GB Stone School to an estimated $16.5 million to renovate the Bank Street Armory. Projects with values in excess of $2 million include:

- Complete renovation of Bank Street Armory: $16,500,000;
- Replace glass windows at Government Center: $6,000,000;
- Repairs and renovations to reactivate Wiley School: $5,800,000;
- Upgrade electrical system at Resiliency Preparatory Academy: $2,564,940;
- Design and construct new central garage facility: $2,500,000; and,
- Upgrade plumbing system at Resiliency Preparatory Academy: $2,393,944.

An additional 8 projects were submitted with a value in excess of $ 1million.

Projects were categorized by the type of building system that was involved, with wholesale renovation of a building listed as “renovation” and new construction as “new”. The single greatest category for the City and District was renovation as this included the Bank Street Armory, the Wiley School, renovation of warming houses/bathrooms in parks across the city ($1.5 million), and renovation of the Fire Museum ($500,000), among others. Window replacement ($14.3 million), mechanical (e.g., heating and cooling systems) ($7.6 million), roofs ($4.4 million), and electrical upgrades ($4.4 million) followed.

CAPITAL PROJECT REQUESTS BY TYPE (ALL YEARS)				
Project Type	**City Amount**	**District Amount**	**Total**	**% of total**
ADA	15,000	85,000	100,000	0.1%
Asbestos		1,481,250	1,481,250	2.1%
Bathroom	140,000		140,000	0.2%
Ceiling	30,000		30,000	0.0%
Doors	1,000,000		1,000,000	1.4%
Electrical	1,070,000	3,284,940	4,354,940	6.1%
Envelope	600,000	1,283,000	1,883,000	2.6%
Floor	350,000	330,000	680,000	1.0%
Interior	500,000		500,000	0.7%
Mechanical	2,685,000	4,866,600	7,551,600	10.6%
New	2,550,000		2,550,000	3.6%
Outdoor		355,000	355,000	0.5%
Parking	200,000	1,891,450	2,091,450	2.9%
Playground		441,000	441,000	0.6%
Plumbing		2,393,944	2,393,944	3.4%
Renovation	18,800,000	5,800,000	24,600,000	34.4%
Roof	2,080,000	2,357,000	4,437,000	6.2%
Safety	775,000	1,788,964	2,563,964	3.6%
Window	7,455,000	6,810,000	14,265,000	20.0%
	38,250,000	**33,168,148**	**71,418,148**	

It should be noted that the City facilities team focused on building envelope needs first – an appropriate prioritization in the opinion of the project team. However, this means that some interior improvements may not have been identified, as can be seen by the fact that no City plumbing requests were submitted. It is unlikely with the age of the City's building inventory that no plumbing upgrades are warranted, although other needs reasonably take precedence.

The project team closely reviewed each request to determine potential funding sources including general fund debt, general fund pay as you go, and MSBA eligible. Pay as you go projects are paid for in the year the project takes place and so do not require the issuance of debt and associated interest payments. The project team generally used a threshold of $100,000 before placing a project in the debt-funded category, although the City could certainly use a lower or higher threshold going forward. Projects were considered to be MSBA-eligible if they were consistent with the Accelerated Program (i.e., boilers, roofs, and windows). They were conservatively given a 70% reimbursement rate which is lower than Fall River's historic 80% rate but not all projects would necessarily be funded by the MSBA. It should be noted that if a school had multiple projects they could potentially be bundled into the Major Repairs Program. However, given the limitation of the Major Repairs Program – one project per year per district and significant competition – no projects were identified under this program. Some projects may be eligible for Community Preservation Act (CPA) funding, but this is a local decision by the CPA committee and the project team did not make any expectations in this area. As can be seen in the table below, the vast majority of projects fell into the general fund debt-funded category, although a sizeable

amount are eligible for outside MSBA grant funds.

ALL PROJECTS BY FUND AND YEAR (FY2018-FY2022)							
	FY2018	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**TOTAL**	**% of total**
GF (Debt)	7,408,150	7,347,600	29,358,184	7,853,144	5,096,150	**57,063,228**	80%
GF (Pay as You Go)	697,250	815,250	820,250	327,000	194,450	**2,854,200**	4%
MSBA (eligible)	28,000	1,807,400	7,383,320	994,000	1,288,000	**11,500,720**	16%
	8,133,400	**9,970,250**	**37,561,754**	**9,174,144**	**6,578,600**	**71,418,148**	

The project team has calculated the five year cost of funding the entire project portfolio as shown below. This includes receiving all MSBA-eligible funding and maximizing the length of time for repayment on all debt funded projects. Debt service calculations also assumed level declining payments over time (e.g., level principle with declines in debt service) as this minimizes the amount of interest paid. Another option would be for level payments that would be slightly lower in the short term, but pay more interest in the long term. As can be seen, the annual expenditure for debt service and pay as you go would range from $1.36 million in FY2018 to nearly $5.3 million in FY2022, for a five year total of $18.7 million.

ESTIMATED GENERAL FUND CAPITAL INVESTMENT FOR ALL PROJECT REQUESTS (FY2018-FY2022)			
Fiscal Year	**GF PayGo**	**GF Debt Service**	**Total**
2018	697,250	660,093	1,357,343
2019	815,250	1,395,496	2,210,746
2020	820,250	4,018,962	4,839,212
2021	327,000	4,717,032	5,044,032
2022	194,450	5,101,526	5,295,976
Total	**2,854,200**	**15,893,110**	**18,747,310**

However, the City has had a practice in recent years of capping capital expenditures citywide, including schools, at $10 million. This cap has included limited number of facility-related projects as other infrastructure systems, vehicle replacement needs, and other capital projects have used the resources available. If for example, $500,000 in debt service funding was available each year for facilities, this would translate in approximately $6 million of project work between FY2018 and FY2022, as compared to $71.4 million in identified need.

The project team has scored all of the project requests through a system that that takes into account the severity of need (from physical discomfort to property or life safety issues), whether the facility is used year round or has limited use, whether the facility can be accessed by the general public, and whether outside grant funds are available to cover part of the cost, among other considerations. The single highest score given was 120 points for electrical upgrade to Government Center that will address the over-taxed electrical system which is also tied to the fire detection system and at the Resiliency Preparatory Academy for largely the same reasons. The lowest score give was 22 points for projects to: a) refinish the floor at GB Stone School, a facility that will no longer be occupied; b) repoint the masonry at the Stone School; and, c) purchase a generator for the Veteran's Building – a building that does not appear to have any municipal or school activities within it.

COST BY PROJECT SCORE (All Years, All Funds)		
Score	**Amount**	**% of total**
110 points or greater	9,844,040	14%
100+ points	13,910,540	19%
90+ points	25,928,448	36%
80+ points	28,557,448	40%

Projects that received a score of 80 points or higher constitute 40% of the total value of projects submitted. This may be a reasonable cut off point at which to consider the merits of individual projects and make the hard choices that are needed. It should be noted that the $28.6 million cost estimate includes all funds and a portion of this will be MSBA eligible.

Recommendation 12.1 Defer City window projects except where water intrusion is taking place or is suspected, unless the work can be performed by an ESCO under a cost sharing arrangement that is beneficial to the City.

Although school window projects should be pursued aggressively, given the large reimbursement from the MSBA, no such funding source exists for City windows. Although City energy efficiency is an important goal that will result in long term savings, the extent of needs in City buildings demands that windows wait if the only issue is comfort and utility costs. That said, an ESCO (i.e., an energy savings company) may be able to perform the work in exchange for recapturing a portion of the utility savings. The City should review agreements in other communities and ask colleagues for lessons learned when considering an ESCO arrangement. Cleaning and sealing the existing windows in Government Center may be able to prolong the time when the estimated $6 million in window replacements is needed.

Recommendation 12.2 Identify outside funding sources to renovate the Bank Street Armory and uses that will generate revenue sufficient to cover debt service, operating, and maintenance costs with no City subsidy.

The Armory Building is an important historic resource for the City of Fall River, but it will clearly require a significant amount of funds to renovate. The estimate provided by the City Facilities Director appears reasonable, but until a full assessment of the building and architectural design is complete, the $16.5 million figure will just be a placeholder. Outside resources may be available to renovate the building including the CPA, given its historic value, and should be pursued by the City. In addition, the pro forma for the building should take into account any debt service payments, utilities, and maintenance costs when determining appropriate rent for future users.

Recommendation 12.3 Review the use of the Veterans Center and determine if it should continue as is.

A site visit to the Veterans Center did not reveal any municipal uses and the project team is not aware of the financial or lease arrangements between the current occupants and the City. However, nearly $400,000 in capital project requests were submitted for the building and consideration should be given to the future use of the building prior to making any investment.

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APPENDICES

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APPENDIX A: CITY FACILITIES INVENTORY

CITY FACILITIES INVENTORY					
Building	**Department**	**Address**	**Size (sf)**	**Year**	**Age**
Government Center	Multiple	One Government Center	83,000	1970	47
Oak Grove Office	Cemeteries	Oak Grove Cemetery	800	1900	117
Public Works Building	DPW	Lewiston Street	120,000	1961	56
Candias Fire Station	Fire	1010 Plymouth Avenue	7,000	1979	38
Central Fire Station	Fire	Bedford & Troy Street	25,600	1933	84
Fire HQ (Admin)	Fire	140 Commerce Drive	20,500	2001	16
Fire Maintenance Building	Fire	140 Commerce Drive	3,500	2001	16
Fire Training Tower	Fire	140 Commerce Drive	2,200	2001	16
North End Fire Station	Fire	140 Commerce Drive	16,000	2001	16
Fire Museum/Animal Control	Fire	1191 N Main Street	3,200	1897	120
Flint Fire Station	Fire	416 Eastern Avenue	7,200	1988	29
Globe Fire Station	Fire	659 Globe Street	7,000	1955	62
Stanley Fire	Fire	229 Stanley Street	10,047	1905	112
Library	Library	94 North Main Street	33,000	1930	87
Comfort Station	Parks	Bicentennial Park	2,000	2016	1
Comfort Station	Parks	Britland Park	600	1997	20
Comfort Station	Parks	Father Travassos Park	600	1974	43
Comfort Station	Parks	JFK Park (Upper Park)	800	1920	97
Comfort Station	Parks	JFK Park- restrms & office	1,800	1910	107
Comfort Station	Parks	King Phillip Station	600	1975	42
Comfort Station	Parks	Lafayette Park	1,200	1920	97
Comfort Station	Parks	Maplewood Park MIW	800	1900	117
Comfort Station	Parks	North Park	600	1920	97
Comfort Station	Parks	Oak Grove Cemetery	600	1930	87
JFK Memorial Park Maint Garage	Parks	Bradford Avenue	1,500	1977	40
JFK Memorial Park Pavilion	Parks	Bradford Avenue	1,800	unk	
JFK Memorial Park Pool	Parks	Bradford Avenue	1,200	1977	40
Police Department	Police	Pleasant Street	38,000	1997	20
Veterans Center	Veterans	755 Pine Street	4,400	1953	64
Boyd Center	Wastewtr	Jefferson Street	6,000	unk	
Amory (vacant)	Vacant	72 Bank Street	53,491	1850	167
Old Police Station	Vacant	158 Bedford Street	38,985	1915	102
Former Diamond Voc School	Vacant	106 Hartwell Street	48,000	1880	137
FormerSchool gym & cafeteria	Vacant	128 Hartwell Street	4,900	1920	97
Former School Admin Office	Vacant	106 Hartwell Street	12,000	1880	137

CITY FACILITIES INVENTORY					
Building	**Department**	**Address**	**Size (sf)**	**Year**	**Age**
		Sub-total	**556,923**		**70.5**
VACANT BUILDINGS (TAX TAKINGS)					
Crown Linen Building	Vacant	909 Dwelley Street	25,000	1900s	112
King Phillip 1	Vacant	386 Kilburn Street	307,285	1915	102
King Phillip 2	Vacant	386 Kilburn Street	109,930	1915	102
NuChrome	Vacant	116 Graham Road	16,000	1970s	42
		Sub-total	**458,215**		**89.5**
		GRAND TOTAL	**1,017,138**		**72.6**

SUMMARY
39 buildings
1,017,138 square feet
Average age: 72.6 years

APPENDIX B: SCHOOL DISTRICT FACILITIES INVENTORY

SCHOOL FACILITIES INVENTORY				
Building	**Address**	**Size (sf)**	**Year**	**Age**
Administrative Offices (2 facilities)				
Administration Building	417 Rock Street	13,256	1890	127
Storage at former Wiley School	2587 North Main Street	25,092	1910	107
Elementary Schools (11 facilities)				
AS Letourneau School	323 Anthony St	106,818	2008	9
Carlton Viveiros Elementary	525 Slade St.	121,266	2008	9
G B Stone School	1215 Globe Street	20,253	1896	121
James Tansey School	711 Ray Street	26,689	1952	65
John J Doran School	101 Fountain Street	76,818	2000	17
Mary L Fonseca Elementary	160 Wall St	95,762	2008	9
Samuel Watson School	935 Eastern Avenue	45,332	1904	113
Silvia Elementary School	1899 Meridian Street	116,383	2004	13
Spencer Borden School	1400 President Avenue	110,000	2003	14
Westall School	276 Maple Street	45,630	1907	110
William S Greene School	409 Cambridge Street	138,625	2002	15
Middle Schools (4 facilities)				
Edmond P Talbot Middle School	124 Melrose Street	121,700	1970	47
Henry Lord Middle School	151 Amity Street	122,350	1992	25
Kuss Middle School	52 Globe Mills Ave	177,633	2009	8
Morton Middle School	1134 North Main Street	130,100	2013	4
High Schools (2 facilities)				
BMC Durfee High School	360 Elsbree Street	573,210	1978	39
Resiliency Preparatory Academy	290 Rock Street	190,152	1927	90
	TOTAL	**2,231,977**		

SUMMARY

- 19 buildings
- 2.2 million square feet
- Average age: 49.6 years

APPENDIX C: PHOTOS OF DEFERRED MAINTENANCE

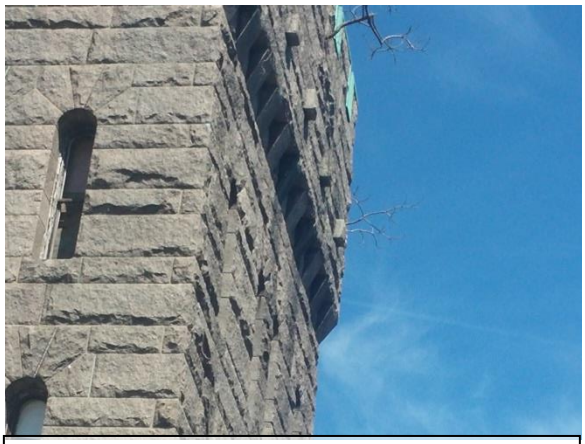
Side of 106 Hartwell Street

128 Hartwell Street (youth hockey)

JFK Park Maintenance Facility

Parks Office Building, JFK Park

Rear of Veterans Building



Trees growing out of Armory facade

ABOUT THE CENTER

The Edward J. Collins, Jr. Center for Public Management in the McCormack Graduate School of Policy and Global Studies at the University of Massachusetts Boston was established in 2008 to improve the efficiency and effectiveness of all levels of government. The Center is funded by the Commonwealth and through fees charged for its services.

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