



POTOMAC CAPITAL  
ADVISORS

Property Condition Assessment  
and  
Long Range Planning Analysis

MOHAWK TRAIL MIDDLE AND HIGH SCHOOL

Mohawk Trail Regional School District  
Shelburne Falls, MA



June 6, 2013

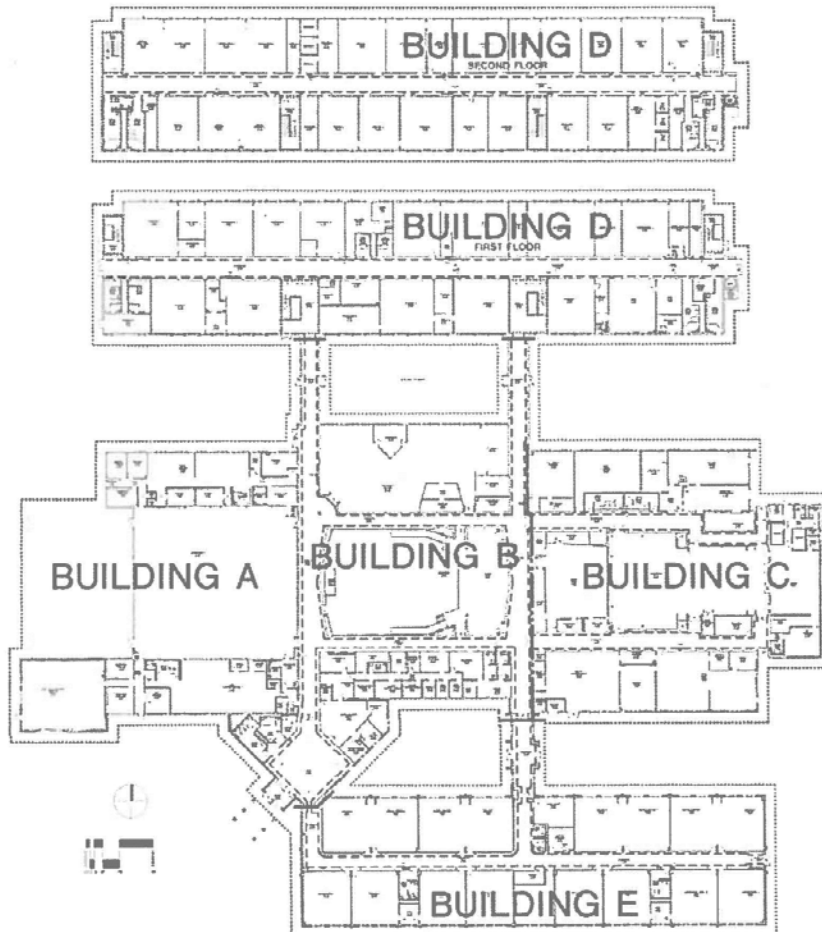
## Table of Contents

1.0	EXECUTIVE SUMMARY.....	3
1.1	Building Description .....	3
1.2	Condition.....	3
1.3	Summary of Costs.....	4
2.0	PROJECT INFORMATION .....	6
3.0	OBJECTIVE .....	7
3.1	Objective .....	7
3.2	Scope of Report .....	7
4.0	METHODOLOGY.....	8
4.1	Guide Specification .....	8
4.2	Documentation Review .....	8
4.3	Interviews.....	8
4.4	Walk-Through Survey .....	8
4.5	Opinion of Probable Costs .....	9
5.0	DESCRIPTIONS & OBSERVATIONS.....	10
5.1	Site & Features at Grade.....	10
5.2	Roofing.....	11
5.3	Exterior Walls.....	13
5.4	Structural Systems .....	14
5.5	Interior Elements.....	15
5.6	Specialties, Equipment and Special Construction .....	17
5.7	Vertical Transportation .....	18
5.8	Heating, Ventilation and Air Conditioning.....	19
5.9	Plumbing Systems .....	21
5.10	Fire Protection (Sprinkler) .....	22
5.11	Electrical System, Telephone & Security.....	22
5.12	Lighting .....	23
5.13	Fire Alarm & Life Safety .....	24
6.0	LIMITING CONDITIONS .....	26
7.0	PHOTOGRAPHS .....	27

## 1.0 EXECUTIVE SUMMARY

### 1.1 Building Description

The Mohawk Trail Middle and High School is approximately 144,000 square feet, one and two story Middle and High School. The original 2 story high school, gym, library was built in 1968. A one story addition of a middle school wing and renovation of the property was completed 1996. The building is divided up into 5 wings that are identified by the following diagram.



Other outbuildings includes:

- Red Shed, approximately 64 Sq. Ft.
- Blue Shed, approximately 80 Sq. Ft.
- Rotary Concession Stand, approximately 225 Sq. Ft.
- Maintenance Garage, approximately 900 Sq. Ft.
- Fire Pump Building, approximately 400 Sq. Ft.
- Storage Shed (brown), approximately 1,000 Sq. Ft.
- Greenhouse, approximately 800 Sq. Ft.

### 1.2 Condition

In general, based on our visual observations, interviews and research, the buildings appear to be in GOOD to FAIR condition, with some evidence of differed maintenance and some concerns with regard to the façade. Visual observation and research conducted indicate that the building is reasonably well constructed and maintained.

Significant observations include:

- The exterior façade of the buildings require significant amount of caulking, evidence of water infiltration and air infiltration were evident;
- The exterior masonry sills of the middle school building are exhibiting significant shifting and movement and are in need of immediate repair;

### 1.3 Summary of Costs

Based upon our review of the subject property we have identified the following capital requirements.

The total capital requirements for the next five (15) years including the items requiring immediate attention and items considered operating cost are \$2,000,127 as outlined in the table below:

<b>Summary of Costs by Operating Cost or Capital Expense</b>				
<b>Building System Summary</b>		<b>Repair &amp; Maintenance (RM)</b>	<b>Capital Expenditure (CE)</b>	<b>TOTALS</b>
5.1	Site & Features at Grade	\$656,625	\$0	\$656,625
5.2	Roofing	\$7,500	\$43,375	\$50,875
5.3	Exterior Walls	\$165,510	\$0	\$165,510
5.4	Structural Systems	\$1,100	\$0	\$1,100
5.5	Interior Elements	\$532,542	\$0	\$532,542
5.6	Specialties, Equipment, etc.	\$152,500	\$0	\$152,500
5.7	Vertical Transportation	\$80,000	\$0	\$80,000
5.8	HVAC	\$101,175	\$8,000	\$109,175
5.9	Plumbing	\$27,500	\$0	\$27,500
5.10	Fire Protection	\$5,750	\$0	\$5,750
5.11	Electrical System, Telephone	\$31,350	\$0	\$31,350
5.12	Lighting	\$116,000	\$0	\$116,000
5.13	Fire Alarm & Life Safety	\$13,700	\$57,500	\$71,200
<b>TOTAL</b>		<b>\$1,891,252</b>	<b>\$108,875</b>	<b>\$2,000,127</b>

The following is an estimate of costs per year for a 15 year period as follows (in thousands of dollars):

Summary of Costs by Building System and Priority  
Mohawk Trail - Middle & High School

Building System Summary	Year															TOTALS	
	Immediate	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		2028
5.1 Site & Features at Grade	\$0.2	\$9.9	\$12.9	\$302.8	\$19.0	\$7.4	\$144.4	\$17.4	\$0.8	\$7.4	\$22.4	\$17.4	\$7.9	\$56.3	\$15.2	\$22.4	\$656.6
5.2 Roofing	\$30.0	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$3.4	\$0.5	\$3.6	\$5.0	\$3.4	\$3.4	\$30.9
5.3 Exterior Walls	\$13.0	\$42.9	\$71.2	\$23.4	\$0.0	\$15.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$165.5
5.4 Structural Systems	\$1.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.1
5.5 Interior Elements	\$0.0	\$23.6	\$86.1	\$5.5	\$135.8	\$23.3	\$43.3	\$6.2	\$20.0	\$110.4	\$7.9	\$7.2	\$7.2	\$41.4	\$7.7	\$7.9	\$532.5
5.6 Specialties, Equipment, etc.	\$0.0	\$2.5	\$0.0	\$0.0	\$0.0	\$0.0	\$51.0	\$84.0	\$0.0	\$0.0	\$0.0	\$15.0	\$0.0	\$0.0	\$0.0	\$0.0	\$152.5
5.7 Vertical Transportation	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
5.8 HVAC	\$6.5	\$13.4	\$10.1	\$7.0	\$21.9	\$26.0	\$11.8	\$1.0	\$4.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$109.2
5.9 Plumbing	\$2.5	\$1.5	\$0.0	\$0.0	\$3.0	\$0.0	\$3.0	\$0.0	\$3.0	\$0.0	\$8.5	\$0.0	\$3.0	\$0.0	\$3.0	\$0.0	\$77.5
5.10 Fire Protection	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$5.0	\$0.0	\$0.0	\$0.0	\$5.8
5.11 Electrical System, Telephone	\$7.4	\$7.5	\$0.0	\$0.0	\$0.0	\$5.5	\$0.0	\$0.0	\$0.0	\$3.0	\$2.5	\$0.0	\$0.0	\$3.0	\$0.0	\$2.5	\$31.4
5.12 Lighting	\$0.0	\$11.0	\$7.5	\$7.5	\$7.5	\$7.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$7.5	\$7.5	\$7.5	\$7.5	\$7.5	\$116.0
5.13 Fire Alarm & Life Safety	\$0.0	\$14.6	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$36.5	\$1.5	\$2.1	\$1.5	\$1.5	\$1.5	\$36.5	\$2.1	\$71.2
<b>TOTAL</b>	<b>\$61.4</b>	<b>\$127.4</b>	<b>\$189.8</b>	<b>\$348.2</b>	<b>\$189.2</b>	<b>\$86.8</b>	<b>\$255.5</b>	<b>\$190.6</b>	<b>\$64.8</b>	<b>\$122.8</b>	<b>\$46.8</b>	<b>\$49.1</b>	<b>\$35.8</b>	<b>\$114.7</b>	<b>\$73.2</b>	<b>\$45.8</b>	<b>\$2,000.1</b>

## 2.0 PROJECT INFORMATION

Building Name: Mohawk Trail Middle and High School

Building Location: 24 Ashfield Road, Shelburne Falls, MA

Building Type: School Building and associated outbuildings

Building Area:

School	144,000 Sq. Ft.
Red Shed, approximately	65 Sq. Ft.
Blue Shed, approximately	80 Sq. Ft.
Rotary Concession Stand, approximately	225 Sq. Ft.
Maintenance Garage, approximately	900 Sq. Ft.
Fire Pump Building, approximately	400 Sq. Ft.
Storage Shed (brown), approximately	1,000 Sq. Ft.
Greenhouse, approximately	800 Sq. Ft.

Building Height: 2 Stories

Site Area: Approximately 100 acres

Year Built: 1968 and addition renovation in 1996

Present Owner: Mohawk Trail Regional School District

This APCA Carried Out for: Mohawk Trail Regional School District

Date of Site Visit: December 27 and December 28, 2012

Weather During Site Visit: Snowing 32 degrees F and Sunny and clear 32 degrees F

Report Date: March 20, 2013 (first draft issued to District)

Site Visit Conducted By: Brian P. Laroche, AIA  
Gregory J. Walsh

## 3.0 OBJECTIVE

### 3.1 *Objective*

The objective of this Abbreviated Property Condition Assessment (APCA) is to assess the general condition of the property and document obvious problems or visible defects based on visual observations, review of available documentation and discussions with property management. The building components and systems assessed include pavement and site improvements, building envelope, mechanical and electrical plumbing, fire protection and alarm systems..

The following is an abbreviated form of the standard Property Condition Assessment ("PCA") report which would contain significantly more detailed information on all of the building systems resulting from a more complete assessment as performed by licensed engineers and consultants specializing in each of the specific disciplines. This report is a summary of observations by a Potomac Capital Advisors, Inc. representative and does not strictly conform to the requirements of ASTM – E2018-99 (Standard Guide for Property Condition Assessment Procedures).

Regardless of its scope, an APCA cannot completely eliminate the potential for physical deficiencies or predict the performance of the Property's systems. This survey was conducted as a visual walk through of the property and did not include any testing or destructive testing of the building or any systems. As such it is not the intent of this survey to uncover every defect in the property, and this report will serve to reduce, but not eliminate uncertainty with regard to potential deficiencies.

THIS REPORT IS THE PROPERTY OF POTOMAC CAPITAL ADVISORS, INC. AND THE MOHAWK TRAIL REGIONAL SCHOOL DISTRICT AND WAS PREPARED FOR A SPECIFIC USE AND PURPOSE. THIS REPORT MAY NOT BE USED OR RELIED UPON BY ANY OTHER PARTY WITHOUT THE EXPRESSED WRITTEN PERMISSION OF POTOMAC CAPITAL ADVISORS, INC. AND THERE SHALL BE NO THIRD PARTY BENEFICIARIES, INTENDED OR IMPLIED, UNLESS SPECIFICALLY IDENTIFIED HEREIN.

### 3.2 *Scope of Report*

To accomplish the APCA objectives, the Scope of Work includes the following tasks:

1. Review of available documentation such as construction documents, test reports, and previous PCA reports;
2. Interviews with property management or maintenance personnel knowledgeable of the physical characteristics, maintenance and repair of the property;
3. A Walk-Through Survey of the property to visually observe the property so as to obtain information on material systems and components for the purpose of providing a brief description, identifying physical deficiencies to the extent that they are observable, and for obtaining information needed to develop the Property Condition Report;
4. Preparation of Opinions of Probable Costs to remedy observed physical deficiencies; and,
5. Preparation of the Property Condition Report documenting the findings and results of the preceding tasks.
6. No measurements or counts of systems, components, floor areas, rooms etc. or calculations were prepared.
7. A survey for the presence of mold or fungus, or to opine on indoor air quality is explicitly excluded.

## 4.0 METHODOLOGY

### 4.1 *Guide Specification*

In general, this is an abbreviated form of Property Condition Assessment report. This is the standard form Potomac Capital Advisors uses for a report of this type, while this form generally follows the ASTM guidelines it does not conform to ASTM E 2018-99 standards for PCA reporting.

### 4.2 *Documentation Review*

Any documentation provided by property management or on-site personnel which was available was reviewed if it would augment the walk-through survey and assist the assessor in understanding the subject project and identifying physical deficiencies. Such documentation is generally limited to construction drawings, specifications, test reports and previous PCA reports. Other documents thought to be helpful, if available, may have been reviewed. Documents reviewed are listed in Section 2.0 of this report.

### 4.3 *Interviews*

On site interviews of property management or maintenance personnel familiar with the building were conducted to develop an understanding of the maintenance and service information and history of the building. Any documentation provided by those individuals was reviewed and the information included in this report. The names of those interviewed and documents reviewed are listed in Section 2.0 of this report.

### 4.4 *Walk-Through Survey*

A visit to the property was conducted to visually observe the property to obtain information on material systems and components for the purposes of providing a brief description, identifying physical deficiencies to the extent that they are observable, and obtaining information needed to address such issues in the abbreviated Property Condition Report. This investigation was strictly a visual inspection of the property and building systems and specifically did not entail any operation, testing or destructive testing of the building or any systems.

A Property Condition Assessment of this type cannot completely eliminate the potential for physical deficiencies or predict the continued performance of the Property's systems. As such it is not the intent of this survey to uncover every defect in the property, and this report will serve to reduce, but not eliminate uncertainty with regard to potential deficiencies.

A Registered Architect has observed the pavement, exterior walls, roofing, mechanical, electrical systems and has reviewed generally the building for requirements of the Americans with Disabilities Act. In addition, components and systems have been evaluated for their expected useful life and effective age, with replacement recommendations noted for those systems or components that will reach the end of their remaining useful life during the analysis term.

Physical deficiencies identified as significant are deemed to be present if they represent either of the following:

1. The physical deficiency represents a cited or apparent code violation, an immediate life safety or health hazard to the occupants or users of the property, or a fire safety hazard to the property itself, or;
2. The physical deficiency, if left uncorrected, could result in accelerating deterioration of the system in question and significantly increase the cost to correct.

Other physical deficiencies of a lesser nature and/or items of deferred maintenance have also been observed and noted for inclusion in an aggregated cost estimate.



Observations consist of one or a combination of the following activities:

1. Walk-through observations on a complete or sample basis to determine the overall condition of the property;
2. Observation of a representative sample of improvements, building, equipment and fixtures and systems to determine serviceability and operating characteristics;
3. Non-invasive and detailed observations to determine representative conditions;
4. Recording of physical deficiencies; and
5. Photos taken of building exteriors, roofs, site features and common areas, sufficient to give a general idea of the character and condition of the building. Where it would help illustrate various points to the reader, specific deficiencies have also been photographed.

#### **4.5 Opinion of Probable Costs**

Based upon our observations during our site visit, as well as information gathered from the Documentation Review and Interviews, we have prepared a list of recommended repairs to address present observed physical deficiencies, along with general scope and preliminary budget cost estimates for these repairs. These estimates are for components or systems exhibiting patent or significant deferred maintenance requiring major repairs or replacement. Repairs or replacements that could be classified as cosmetic, decorative, part or parcel of a building renovation program, normal preventative maintenance, or that are the responsibility of tenants, were not included.

These preliminary budget cost estimates were prepared only for expenditures that require immediate action as a result of existing or potentially unsafe conditions, building code violations, poor or deteriorated condition of critical element or system, or a condition that if left "as is" with an extensive delay in correction, would result in or contribute to critical element or system failure within one year or would lead to significantly escalated repair costs.

The budget items were categorized as follows:

Repair & Maintenance	RM
Capital Expenditures	CE

Cost information used is generally obtained from consultants and our recent experience with projects that are similar, where applicable industry recognized databases, such as R.S. Means, F.W. Dodge or similar are consulted. Where appropriate, Potomac Capital Advisors, Inc. consults its own database of construction cost information or obtains cost information from contractors.

Estimated costs are preliminary and require refinement. They are not to be construed as final nor are the work scopes provided necessarily all-inclusive. Such costs and work scopes are "order of magnitude", and are to be used to assist the reader in the overall assessment of the property.

These costs are also net of construction management fees, design fees and contingency budget. Final and actual costs may vary depending on such matters as material, equipment or system selected, field conditions and unknowns. Materials or procedures recommended in this report are suggestions only and need to be researched further and refined. In order to obtain best prices, we recommend that competitive bids be secured. Budgeting for contingencies is advised.

## 5.0 DESCRIPTIONS & OBSERVATIONS

### 5.1 *Site & Features at Grade*

#### Description

The middle and high school is situated on an approximate 120 acre rural site and is surrounded by athletic fields to the West, North and South. The primary bituminous roadway and parking lot at the front (South) of the property contains parking for 186 cars, 9 of which are designated accessible and is the main access drive to the property from Ashfield Road (State Road Route 112). To the East of the school building is the faculty parking lot containing 64 parking spaces without any designated handicapped parking spaces. The site contains a mixture of concrete and bituminous sidewalks and paths. Primarily the main entrance and drop off areas have cast in place concrete sidewalks and all other sidewalks being bituminous. A 12,000 square foot fire pond is located to the northeast of the school building. The site is generally flat with little contour and is bordered by wooded areas except towards Ashfield Road which is mainly open fields.

The site is relatively dry and appears to drain well towards the East. Parking lot catch basins and roof drains are collected through underground piping that drains to a brook to the East of the property beside the fire pond. Building A and E have roof areas that are slopped and the water drips to the ground into a bed of washed river rock. Under the river rock is a silt fabric and a perforated drain that is tied to the underground storm drain system. Building D has a sloped roof that drains to gutters and rain leaders which are directly connected to the underground storm drain system.

The property contains its own drinking water supply well that is located to the West of building A. The property has a sewage connection to Town Sewer. The sewage station is a two pump ejector system which is located adjacent to Building C to the North. The property is responsible for the maintenance of the force main along Ashfield Road to North Street. The ejector pump controller station is outside of the janitor / receiving area.

Site lighting is a combination of pole mounted lights and building mounted lighting throughout. Generally all exterior lighting is high pressure sodium HID style.

#### Observations/Comments

The front main parking lot is showing signs of accelerated deterioration. Wide open cracks are letting water under the surface and causing some heaving and crumbling of the pavement. With good maintenance bituminous paving has an expected useful life (EUL) of 25 years and more. A preventative maintenance plan of regular crack sealing and seal coating every four years is recommended to ensure the bituminous pavement will last a full 25 years and quite possibly more. The existing paving is 17 years old and has not been well maintained and will need to be replaced by year 3 of the evaluation period.

The faculty parking lot is showing signs of deterioration that has not quite reached the same level as the main parking lot. Wide open cracks were observed and have the potential to let water under the surface and could cause deterioration. The faculty lot should be replaced in year 6 of the evaluation period.

Concrete sidewalks and bituminous walkways have an expected useful life (EUL) of 30 years. The existing walks are 17 years old with an expected remaining useful life (RUL) of 13 years and it should be anticipated that the concrete paving should be replaced and asphalt resurfaced at year 13 of this evaluation period.

The property has an extensive underground storm water collection system that discharges the water into a nearby brook. It is unknown whether the Building D gutters and rain leaders are tied into this system or are used to feed and maintain the water levels of the fire pond. It is recommended that the drainage system catch basin sumps be cleaned out and maintained on an annual basis. With good maintenance the system should last 75 years or more, currently the system is 45 years old.

It was observed that the ground level collection of roof water at Building A was silted up and was no longer functioning as designed. It is causing standing water to pond beside the building and is leaching in and up

the masonry of the buildings wetting the interior. It is recommended that it be dug out and reconstructed with free draining material per the original design. Building E system has a similar design and will require maintenance to ensure that it remains clear and in good working order.

The building sewer ejector and force main system requires regular maintenance to ensure reliable operation. It is recommended that the sewer mains be cleaned and inspected every 10 years. The sewer ejector pumps were replaced in 2007 and are averaging about 700 hours of operation per year. An ejector pump is expected to last about 10,000 hours or 15 years, pump 1 is 13 years old and pump 2 is 6 years old. The cutters on the system need to be replaced every two years as part of a regular bi-annual maintenance program.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.1 Site and Features at Grade</b>						
Observation/Issue/Recommended Correction		Estimated Cost, Category and Year				
		Qty	Unit	Unit Cost	Total Cost	Cat Year
1.	Caulk concrete sidewalk expansion joints and joint to building	45	LNFT	5	\$225	RM 0
2.	Re-surface front parking lot	100,000	SQFT	\$3	\$300,000	RM 3
3.	Preventative maintenance new pavement at front lot	3	LS	15,000	\$45,000	RM 7,11,15
4.	Re-surface rear parking lot	48,000	SQFT	3	\$144,000	RM 6
5.	Preventative maintenance new pavement at faculty lot	2	LS	14,800	\$29,600	RM 10,14
6.	Resurface asphalt walkways	9,300	SQFT	\$3	\$27,900	RM 13
7.	Replace concrete walkways	3,200	SQFT	\$8	\$25,600	RM 13
8.	Dig out and replace surface drainage below eaves w/ filter fabric and river washed stone, jet perimeter drainage	620	LNFT	\$30	\$18,600	RM 4
9.	Clean out storm drain catch basin sumps annually	15	/YR	\$400	\$6,000	RM 1-10
10.	Clear storm water headwall	3	/5 YR	\$400	\$1,200	RM 3,8,13
11.	Maintenance of storm water mains	2	/10 YR	\$5,000	\$10,000	RM 5, 15
12.	Maintenance of sewer mains	2	/10 YR	\$7,500	\$15,000	RM 2,12
13.	Replace sewer ejector pump	2	EA	\$5,000	\$10,000	RM 2, 9
14.	Bi-annual maintenance & replacement of sewer ejector cutters	8	/2 yrs	\$2,000	\$16,000	RM 2,4,6,8,10,
15.	Replace damaged light poles, add lighting to faculty lot	1	LS	\$7,500	\$7,500	RM 1
<b>Total</b>					<b>\$656,625</b>	

## 5.2 Roofing

### Description

The roofing at the property was recently been replaced as part of a capital campaign during the summer of 2012. Buildings A, B, C and E sloped roof areas are covered by an aluminum standing seam roofing system manufactured by Merchant and Evans, Inc. There is a 20 year roof warranty on the metal roofing which begins on January 1, 2013. At building D (2 story High School) there is green painted galvanized steel standing seam roof that was installed in 1996 and is not under warranty. The gutters and rain leaders of this roof were replaced in 2012. The expected useful life of a standing seam metal roof is (50) years.

The flat roofing areas of building B and C are a white 60 Mill PVC roof system manufactured by Johns Mansville. The PVC roof areas were all replaced in 2012 and have a 20 year warranty. The flat roof areas are all insulated to meet the current "stretch code" requirement of R-25 minimum.

The fire pump building, the maintenance garage, the rotary building, the storage shed roof all have a 25 year asphalt roof shingle. It appears that the roofing was installed approximately 15 years ago.

Observations/Comments

It is recommended that no snow clearing operations take place on the slopped metal standing seam roof areas, shoveling snow could void the warranty. At the large valley of building A (to the right of the front door) contains many roof exhaust hoods and fans. This rooftop equipment is causing snow to prematurely melt on the roof and is freezing at the lower portion of the valley. This condition could potentially cause damage to the metal roof and cause leaks due to the ice damming. It is recommended to install a commercial grade snow melt cable along the valley and down the fascia to give the melt water an unobstructed path to the ground to prevent damage to the newly installed roof. It is also recommended to install more snow guards in this area to keep snow from piling up in the valley and sliding down perpendicular to the ribs causing damage to the roof.

Standing seam metal roof at the high school has an expected useful life of (EUL) 50 years, at 17 years, it can be expected to have a remaining useful life (RUL) of 33 years with continued maintenance.

It is recommended that an annual inspection of the flat membrane roof areas be conducted by the installing contractor to ensure that the roofing system is in good repair. It is recommended that if snow clearing operation is performed on the roof areas that a minimum of 3" of snow is kept on the roof to ensure that the warranty of the roof is not voided. Several times a year the roof drains need to be inspected to ensure that they remain clear of air borne debris.

The fire pump building, the maintenance garage, the rotary building, the storage shed roof all have a 25 year asphalt roof shingle. It appears that the roofing was installed approximately 15 years ago and is in fair condition. The roof areas will need to be replaced within the period of this evaluation.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.2 Roofing</b>							
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year						
	Qty	Unit	Unit Cost	Total Cost	Cat	Year	
1. Building A - heated valley & additional snow guards	1	LS	\$30,000	\$30,000	CE	0	
2. Replace Pump House Roof	625	SF	\$5	\$3,125	CE	12	
3. Replace Maintenance Garage Roof	900	SF	\$5	\$4,500	CE	13	
4. Replace Rotary Building Roof	575	SF	\$5	\$2,875	CE	14	
5. Replace Storage Shed Roof	575	SF	\$5	\$2,875	CE	15	
6. Annual maintenance for roof areas	15	/YR	\$500	\$7,500	RM	1-15	
<b>Total</b>				<b>\$50,875</b>			

### 5.3 Exterior Walls

#### Description

The exterior of Building A, B, C is brick with a CMU (concrete masonry unit) block back up, it is original 1968 construction. The exterior fenestration is made up of vertical ribbons of aluminum framed windows and blue insulated panels with narrow brick piers book-ending the brick exterior. The fenestration ribbon extends from the ground to the roof soffit. The fenestration is a site built aluminum frame with a pre-fabricated operable window unit set into the frame. Above and below the operable window are colored insulated metal panels set into the aluminum frame.

The exterior of Building D is brick with a CMU block back up, it is original 1968 construction. The exterior fenestration is made up of vertical ribbons of aluminum framed windows and aluminum louvers with narrow brick piers book-ending the brick exterior. The fenestration ribbon is two stories tall and extends from the ground to the roof soffit. The fenestration is a site built aluminum frame system with (4) square window openings at each floor each containing (2) awning(low) and (2) hopper (high) windows.

The windows at Buildings A, B, C and D were all replaced in 2012 as part of a capital improvement project. The replacement windows were set into the existing frame and are a double low E insulated glass and is a thermally broken frame.

The high portions of the exterior of the auditorium at Building B and high portions of building C cafeteria were clad over with a STO EFIS system in 2012. The system is made up of a water proof coating over the original brick wall, 2" of polystyrene insulation and a three part synthetic stucco finish.

The exterior of building E is brick with a plywood and metal stud back-up, the exterior of the plywood is covered with a grace water proofing membrane sheet. There is a 1" cavity behind the brick for drainage. This building was constructed in 1996. The window openings are approximately 9'-0"W x 6'-0" tall and are an Effco style window frame system with hopper windows. The windows are insulated glass and given the age of the construction are likely a thermally broken frame system. Below each window is a metal grate for fresh air intake to the unit ventilator inside the classroom. The window sills are made of pre-cast concrete.

The exterior of the pump house is a CMU wall, with texture 111 siding at the gable ends of the roof.

The exterior of the maintenance garage is a painted wood exterior.

The exterior of the storage shed is a wide pine plank board and batten weathered exterior.

The exterior of the rotary building is a combination of split faced block and a vertical board and batten exterior.

#### Observations/Comments

The exterior brick of Building A, B, C and D requires spot repointing (see photos for examples of repairs required). At the vertical slots between the brick where the window and insulated panels are the aluminum needs to be caulked between the brick to metal and the metal to metal joints throughout the property. The existing joints at the brick to metal are original to the 1968 construction and have failed. Due to the age of the caulking it is recommended to abandon in place the caulking and bridge over the existing caulk with a new cant joint that spans over between the brick and aluminum. At all vertical brick expansion / control joints, abandon in place the caulking and re-caulk using a bridge joint. All vertical and horizontal seams of the aluminum framing needs a narrow bead of caulk to eliminate the water and air infiltration into the building.

The exterior steel window frame of the stairwell windows need to be abraded and painted.

The precast concrete window sills of building E need to be reset, many have shifted out of place. Destructive testing needs to take place to better understand what is causing the movement of the sills.

The exterior of the maintenance garage is a painted wood exterior, the siding and eave / soffit trim all need to be scraped and painted.

The exterior of the storage shed is a wide pine plank weathered exterior that has rotted fascia boards and siding that is beginning to rot at the base. Replace fascia boards and dig dirt away from siding so that there is separation to the ground.

The exterior vertical board and batten exterior of the Rotary building is in very bad shape and needs to be replaced due to significant damage from rot. The siding is in direct contact with the ground and needs to have a minimum of 8" separation when replaced.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.3 Exterior Walls</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	Qty	Unit	Unit Cost	Total Cost	Cat	Year
1. Caulk vertical expansion joints in brick with bridge caulk joint	120	LNFT	\$8	\$960	RM	3
2. Caulk metal to brick joints at buildings A-D (windows and doors)	2800	LS	\$8	\$22,400	RM	3
3. Caulk metal to metal joints at window system	8900	LNFT	\$8	\$71,200	RM	2
4. Allowance for brick spall repair and spot pointing	750	SQFT	\$15	\$11,250	RM	1
5. Repair conduit penetrations into electrical room	1	LS	\$500	\$500	RM	0
6. Repairs and painting of stairwell window/door frames.	1	LS	\$7,000	\$7,000	RM	1
7. Repaint of exterior doors and frames	1	LS	\$3,000	\$3,000	RM	1
8. Re-set precast concrete sills at building E	10	EA	\$1,250	\$12,500	RM	0
9. Caulk brick to metal joints at Building E	264	LNFT	\$8	\$2,112	RM	5
10. Repairs / repaint of rotary building	1	LS	\$7,500	\$7,500	RM	5
11. Repairs / repaint exterior of maintenance garage	1580	SQFT	\$2	\$3,160	RM	5
12. Repaint exterior of pump house	1160	SQFT	\$2	\$2,320	RM	5
13. Repairs to storage shed	1	LS	\$2,000	\$2,000	RM	1
14. Repairs to insulated panels	1	LS	\$1,250	\$1,250	RM	1
15. Repoint Boiler Room Chimney	144	SQFT	\$32	\$4,608	RM	1
16. Repoint and repair electrical vault masonry	250	SQFT	\$55	\$13,750	RM	1
<b>Total</b>				<b>\$165,510</b>		

#### 5.4 Structural Systems

##### Description

All school buildings foundations are slab on grade, no basements at any of the school buildings. The structure of the 1968 building is a steel frame building with open web bar joists and metal deck. The roof structure for all 1968 buildings was originally a flat roof, in 1996 during the addition / renovation of the school many of the flat roof areas were converted to pitched roofs with wooden truss systems that were added to making them pitched with metal standing seam.

Building E was built in 1996 and is a light gauge metal framed building with a wooden truss roof.

The pump house is a CMU wall construction with wooden roof truss system.

The Maintenance Garage is a light wood frame wall construction with a wooden roof truss system.

The Brown (Wooden) Shed is a light wood frame wall construction with a wooden roof truss system.

Observations/Comments

No evidence of structural distress was observed at the school buildings.

Brown (wooden) storage shed needs roof trusses tied to the walls with hurricane clips.

Red Shed is in bad disrepair, it is recommended to demolish.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.4 Structural</b>							
<b>Observation/Issue/Recommended Correction</b>		<b>Estimated Cost, Category and Year</b>					
		<b>Qty</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Cost</b>	<b>Cat</b>	<b>Year</b>
1.	Install hurricane clips at brown storage shed	1	LS	\$350	\$350	RM	0
2	Demolish Red Shed	1	LS	\$750	\$750	RM	0
<b>Total</b>					<b>\$1,100</b>		

**5.5 Interior Elements**

Description

The interior finishes at hallways are VCT(Vinyl Composition Tile) flooring, painted CMU walls and 2x2 and 2x4 ACT (Acoustic Ceiling Tile) ceilings with a 7/8" wide painted grid.

Interior finishes at classrooms and cafeteria are VCT flooring, painted walls and ACT ceilings.

Interior finishes at toilet rooms at the 1968 construction are glazed block, full height; ceramic tile floors and GWB ceilings.

Interior finishes at gymnasium are wood maple flooring, painted CMU walls and painted exposed roof truss with exposed metal roof deck.

Interior finishes at administrative offices are VCT flooring, painted GWB walls and ACT ceilings.

Interior finishes at the library are broadloom carpet flooring, painted GWB walls and 2x2 ACT ceilings.

Observations/Comments

Vinyl tile has an expected useful life of 30 years with good maintenance. For the long range planning we have shown the hallway tile flooring being replaced in phases for each of the buildings.

Carpet has an expected useful life of 7 years. For the long range planning we have shown the library carpet flooring being replaced twice in the evaluation period.

Gym flooring in the evaluation period is scheduled for a scrub and 2 coats of poly each year with escalation in pricing. Wood flooring in a gym has an EUL of 50 years. The replacement of the wood flooring falls outside of the evaluation period.

Water damage was observed at the gym walls and ceiling that has caused blistering and peeling of paint. The damage was likely caused by the prior roof failing which has recently been replaced. The evaluation calls for the repainting of the gymnasium walls and ceiling.

Tile and glazed block finishes in the restrooms has an expected useful life of 50+ years. The high school bathrooms will need to be replaced a five years beyond the evaluation period.

Paint has expected useful life of 10 years. In the evaluation period most areas of the school are scheduled to be painted.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

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<b>5.5 Interior Finishes</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	<b>Qty</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Cost</b>	<b>Cat</b>	<b>Year</b>
1. Building A repairs to toilet room ceramic tile finishes	1	LS	\$1,200	\$1,200	RM	2
2. Building A - Gymnasium floor scrub and re-coat poly	\$6,479	AVG/YR)	.50/SQFT	\$97,179	RM	1-15
3. Building A - Gymnasium locker room, repairs to gwb ceilings & repaint locker rooms	8000	SQFT	\$2.00	\$16,000	RM	1
4. Building A - Repaint Gymnasium walls and ceiling	1	LS	\$70,000	\$151	RM	2
5. Building B - Re-paint auditorium	1	LS	\$15,000	\$152	RM	11
6. Building B flooring replacement at corridors	3840	SQFT	\$8	\$30,720	RM	2
7. Building B flooring replacement at library	5400	SQFT	\$9	\$97,200	RM	2,9
8. Building B ceiling tile replacement at library and corridors (select tiles)	50	EA	\$10	\$500	RM	1
9. Building B paint corridor walls	8120	SQFT	\$2	\$16,240	RM	5
11. Building C flooring replacement at corridors	2900	SQFT	\$8	\$23,200	RM	6
12. Building C flooring replacement at cafeteria	3500	SQFT	\$8	\$28,000	RM	9
13. Building C paint corridor walls	7000	SQFT	\$2	\$14,000	RM	6
14. Building C ceiling tile replacement (stained tiles)	40	EA	\$10	\$400	RM	1
15. Building D repairs to toilet room ceilings	1	LS	\$1,200	\$1,200	RM	1
16. Building D flooring replacement at corridors	4800	SQFT	\$8	\$38,400	RM	4
17. Building D paint corridor walls	9600	SQFT	\$2	\$19,200	RM	4
18. Building D ceiling tile replacement (stained tiles)	50	EA	\$10	\$500	RM	4
18. Building D paint classrooms	36	EA	\$2,000	\$72,000	RM	4
19. Building E repairs to toilet room ceramic tile finishes	1	LS	\$1,200	\$1,200	RM	5
20. Building E flooring replacement at corridors	3400	SQFT	\$8	\$27,200	RM	9
21. Building E paint corridor walls	6800	SQFT	\$2	\$13,600	RM	8
18. Building E paint classrooms	17	EA	\$2,000	\$34,000	RM	13
22. Building E ceiling tile replacement (stained tiles)	30	EA	\$10	\$300	RM	1
<b>Total</b>				<b>\$532,542</b>		

### 5.6 Specialties, Equipment and Special Construction

#### Description

The toilet rooms for the students have a laminate toilet partition system which is floor mounted.

Window blinds at the school are a spring loaded roller shade.

**Kitchen Equipment:**

All kitchen equipment is propane. Six (6) burner stove, skillet, four (4) convection ovens and an electric convection/steam soup kettle unit. There is a walk in freezer, a walk in refrigerator and (2) reach in refrigerators.

A 1500 gallon AST double wall gasoline storage tank manufactured by Fireguard. The tank is used to fuel District vehicles.

In the gym locker room there is a washing machine and dryer.

Observations/Comments

Toilet Partitions in schools are subject to unusually high wear and require replacement every 10 years.

Window blinds in schools are subject to unusually high wear and require replacement every 10 years.

Kitchen equipment expected useful life varies on the piece of equipment and the number of hours it is used. In the first ten years of a schools operation, most equipment will be expected to remain in service. For long range planning purposes an allowance has been carried for upgrades and replacement of kitchen equipment on an annual basis.

No fire suppression equipment was observed at the gasoline storage tank as is typically seen at filling stations. The tank had an inspection port but no audible alarms to indicate leaks. Tank outer shell and fittings are showing signs of rust and early stages of pitting. It is expected that the tank as approximately 10 years of remaining useful life. No money was carried to replace the tank as it is not related to the building infrastructure.

The dryer vent in the gym locker room needs to be piped with a hard metallic pipe continuous to the roof. It is recommended that the dryer venting be inspected, cleaned and upgraded by a certified dryer vent company.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.6 Specialties</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	Qty	Unit	Unit Cost	Total Cost	Cat	Year
1. Replacement of toilet partitions	32	/STALL	\$750	\$24,000	RM	7
2. Commercial Kitchen Equipment - replacement allowance (partial equipment replacement at 5 year increments)	2	5/YR	\$15,000	\$30,000	RM	6,11
3. Replacement of classroom shading devices	400	EA	\$90	\$36,000	RM	14
4. Replacement of Gym Lockers	1200	LNFT	\$50	\$60,000	RM	7
5. Repairs to Toilet Room Partitions	1	LS	\$2,500	\$2,500	RM	1
<b>Total</b>				<b>\$152,500</b>		

**5.7 Vertical Transportation**

Description

Building D, the High School wing has a two stop hydraulic elevator. The elevator appears to have been added in the 1996 renovation.

Observations/Comments

Elevator operation was not very smooth and was slow to initiate sequence of operations. Although the elevator is operating, it does appear that it has been heavily used and is in need of an overhaul. It is recommended that the operating equipment, roller guides and door operators need to be replaced. There was no evidence of any leaking of the hydraulic pump in the machine room. The elevator pit was not able to be accessed.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.7 Vertical Transportation</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	Qty	Unit	Unit Cost	Total Cost	Cat	Year
1. Modernization of elevator	1	EA	\$80,000	\$80,000	RM	7
<b>Total</b>				<b>\$80,000</b>		

**5.8 Heating, Ventilation and Air Conditioning**

Description

Mohawk Middle and High School has two packaged air conditioning systems, one for the main office and one for the TV studios. The South facing ground floor classrooms at Building D and at Building E are air conditioned by split systems manufactured by Mitsubishi. A roof top air handling unit provides heating and fresh air for the cafeteria.

Heating at the classrooms is provided by unit ventilators which have a blower fan, hot water coil and a fresh air damper. Each unit has a louvered connection through the exterior wall which allows for fresh air to be mixed with the return air. The units are operated by pneumatic controls from a local thermostat.

Two air handling unit provides hot air by hot water for the auditorium. The AHU's serving the auditorium are located above the trophy cases in the mezzanine space (old flat roof that is now covered by the metal roof).

Two air handling units provides hot air by hot water for the large gym. The AHU's serving the large gym are located in a mezzanine above the ice room and boys locker.

Two air handling units provides hot air by hot water for the small gym. The AHU's serving the small gym are exposed and suspended in trusses above the gym.

Hot water for heating is manufactured by four Burnham 1,545MBH propane fired boilers located in the boiler room. The boilers were installed in 1998 and are 17 years old. The boilers are run in a lead/lag configuration to balance run time when the outside air temperature is 25 degrees or greater. At 25 degrees or below both boilers operated simultaneously. Boilers are maintained annually by Clark HVAC.

A 10,000 gallon AST propane storage tank is located behind and to the East of the brown storage shed, the vaporizer station is located to the North of the shed. The propane supplier is George Propane Co. and the tank / vaporizer station is owned and maintained by George Propane Co.

Hot water for heating is circulated by four (4) Bell & Gosset ten horsepower pumps which circulate water at 85 GPM. Three (3) pumps are used for circulating, (1) one is a standby / swing pump. Pump #1 & 3 was rebuilt in August of 2011.

No water treatment system on the heating hot water.

Kitchen exhaust is provided by a Greenheck stainless steel kitchen hood with an ANSUL fire suppression system. The hood was inspected by Advanced Air Quality in June of 2012.

Observations/Comments

Generally the boilers appeared to be in good condition and were reported to have been replaced in 1996. The EUL for Boilers is 25 years. With continued good maintenance the boilers should last much longer. The propane burners on the boilers have a 20 year EUL and are schedule to be replaced in year 6. The heating controls and valves should be replaced at year 6. With an overhaul of the boilers at year 6, the boilers are expected to have additional service life that will take them beyond the evaluation period.

Pumps have EUL of 15 years. Pump #1 & 3 rebuilt after 15 years. Pump #2 scheduled for rebuild in year 1. Pump #4 scheduled for rebuild in year 2 (standby and is not used as frequent).

Hot water distribution system has EUL of 50 years, no work is anticipated within the evaluation period.

It was reported that the 1968 unit ventilators are being overhauled under a current plan and will be completed during the 2013 summer break. Since this work is already underway and budgeted it was not included in this evaluation.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.8 Heating, Ventilation and Air Conditioning</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	Qty	Unit	Unit Cost	Total Cost	Cat	Year
1. Replace Building E condenser units	3	EA	\$2,500	\$7,500	RM	10
2. Replace Building D condenser units	5	EA	\$2,500	\$12,500	RM	5
3. Replace Building B condenser units	5	EA	\$2,500	\$12,500	RM	5
4. Heating Hot Water Pump Re-build	2	EA	\$1,500	\$3,000	RM	1,2
5. Allowance to replace roof top exhaust fans	16	2/YR	\$500.00	\$8,000	CE	1-8
6. Replace kitchen exhaust hoods	2	EA	\$3,200	\$6,400	RM	4
7. Replace gymnasium exhaust hoods	4	EA	\$750	\$3,000	RM	8
8. Re-build Bldg C RTU (heat only)	1	EA	\$2,500	\$2,500	RM	4
9. Re-build Library RTU (a/c)	1	EA	\$2,500	\$2,500	RM	3
10. Re-build Office RTU (a/c and heat))	1	EA	\$3,500	\$3,500	RM	3
11. Re-build of Gym AHU's	4	EA	\$3,000	\$12,000	RM	4
11. Re-build of Auditorium AHU's	2	EA	\$3,000	\$6,000	RM	1
12. Replace boiler burners	4	EA	\$950	\$3,800	RM	6
14. Replace boiler controls	1	LS	\$5,000	\$5,000	RM	6
15. Replace hot water heating valves	8	EA	\$250	\$2,000	RM	6
16. Replace gymnasium dryer exhaust	1	LS	\$500	\$500	RM	0
17. Insulate Exhaust Ductwork in cold attic (toilet rooms)	325	LNFT	\$15	\$4,875	RM	1
18. Add split cooling unit to electric room next to auditorium.	1	EA	\$6,000	\$6,000	RM	0
19. Re-build auditorium air handling units	2	EA	\$3,800	\$7,600	RM	2
<b>Total</b>				<b>\$109,175</b>		

## 5.9 Plumbing Systems

### Description

Domestic water fed from a well located on-site. Well pump room is located in the first floor of the adjacent high school. A cistern located under the well pump room provides reservoir of water to draw from so that well pumps only run on a limited basis. Two (2) domestic water pumps that are lead / lag are connected to four (4) Well-x-trol pre-charged pressure tanks which store and maintain the domestic water pressurize for the buildings. .

Domestic hot water is made at 7 locations and is distributed to localized areas. Building A domestic hot water is provided by (2) two PVI 120 gallon propane fired hot water heater located in a closet within each locker room. Domestic hot water at this location is made at 135 degrees and feeds two (2) Symons mixing valves which blend the hot water with cold domestic water to provide 110 degree water for general use.

Building B & C domestic hot water is provided by an AO Smith 69 gallon propane fired hot water heater located in the boiler room connected to one (1) 400 gallon AO Smith hot water storage tank. Storage tank is reported to have been replaced in 1991. Domestic hot water at this location is made at 135 degrees and feeds two (2) Symons mixing valves which blend the hot water with cold domestic water to provide 110 degree water for general use and 125 degree water for the commercial kitchen.

Domestic hot water at Building D is provided by two AO Smith 69 gallon propane fired hot water heaters, one located first floor well pump room, one located at the 1<sup>st</sup> floor janitor closet (East end of building). Both feed a mixing valve which blends the hot water with cold domestic water to provide 110 degree water for general use. Both are circulated with a taco circulating pump.

Domestic hot water at Building E is provided by one State Select 75 gallon propane fired hot water heater, located first floor janitor room. This heater is reported to have been replaced in 2008.

Hobart commercial dishwasher in kitchen with electric hot water booster heater and commercial grade disposal.

Kitchen is equipped with two in line grease traps which are serviced by on site personnel.

Sewage goes to ejector pump station (see site features at grade for a description)

### Observations/Comments

Generally plumbing systems appeared to be in good condition and well maintained.

Well pump was not able to be observed, it is located within the well. Pumps have a (15) fifteen year expected useful life. The well pump was reported to be 5 years old, at year 10 the pump will need to be replaced. The domestic water pumps are no operating as lead / lag since they have been set to manual mode. One of the pumps is not working and needs to be re-built, there is no stand by pump.

Massachusetts Drinking Water Regulations, 310 CMR 22.00 requires all public water systems to have an approved and fully implemented Cross-connection Control Program (CCCP). A recent addition of a back flow preventer was required by the DEP upon inspection for compliance with the CCCP. In addition to the back flow preventer, it is our recommendation to install a double check valve on the incoming water service from the well. This will protect the well from potential contamination and is good practice.

Direct fired hot water heaters have a 15 year expected useful life (EUL). Most heaters are going to require replacement in the evaluation period. The budget plan calls for a heater to be replaced once every two years.

Domestic hot water circulator pumps and mixing valves o-ring and gaskets have a 15 year expected useful life (EUL) and are included in the replacement cost of the hot water heaters.

Section of insulation well pump room damaged/missing. Replace.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.9 Plumbing</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	<u>Qty</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>	<u>Cat</u>	<u>Year</u>
1. Allowance for replacement of Hot Water Heaters	6	EA	\$3,000	\$18,000	RM	4-14
2. Well head pump replacement	1	LS	\$3,000	\$3,000	RM	10
3. Domestic water pump Re-build	2	EA	\$2,500	\$5,000	RM	0, 10
4. Install double check valve on well water supply line.	1	LS	\$1,500	\$1,500	RM	1
<b>Total</b>				<b>\$27,500</b>		

### 5.10 Fire Protection (Sprinkler)

#### Description

Mohawk Trail Middle and High School does not have a sprinkler system for fire protection. The only fire protection located in the school is the ANSUL system which is incorporated into the Kitchen exhaust hood.

The property has a fire pump which is located in the pump building that is adjacent to the school. The fire pump is used only to provide pressure to the fire hydrants located on the property and at the Siamese connection on the side of the pump house. The water that the pump draws from comes from a fire pond directly adjacent to the pump house. The fire pump and fire pump controller is manufactured by Clarke. A jockey pump manufactured by Gundifos provides standby pressure in the system. The fire pump system is flow tested twice a year and the fire pump is run once per week.

#### Observations/Comments

The fire pump and pump house is well maintained with all of the equipment housed in a well-conditioned and clean space. With continued good maintenance the fire pump and associated equipment is expected to have a remaining useful life of 12 years.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.10 Fire Protection (Sprinkler)</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	<u>Qty</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>	<u>Cat</u>	<u>Year</u>
1. Re-build fire pump	1	SF	\$5,000	\$5,000	RM	12
2. Replace diesel tank low level sensor	1	SF	\$750	\$750	RM	0
<b>Total</b>				<b>\$5,750</b>		

### 5.11 Electrical System, Telephone & Security

#### Description

Main electrical service located in building C adjacent to the maintenance office. The main service is 5000amps at 277/408v, 3 phase provided by Western Massachusetts Electric Company. The main switchgear is manufactured by General Electric and is original to the 1969 construction.

The property has a 125kw Katolight propane fired emergency generator that is maintained by FM Generator. The emergency generator is reported to operate most of the lighting, ejector pumps, all exit signs, well house, elevator, fire alarm and fire pump house, and various outlets.

Observations/Comments

The main electrical switchgear room service size is large enough that the code requires a second means of egress from the room. The doors from the room should open outward and have panic hardware. Exit signs must be provided above the doors.

The switchgear and distribution panel interiors were observed to be very dusty and is considered a safety hazard since the dust could cause an arc flash. A full shut down of the electrical system, cleaning and torqueing of the electrical connections is recommended. Under power the system should be infrared tested to identify faulty breakers, fuses and loose connections that are identified by hot spots.

The emergency power closet within the electrical room has fire stopping / rating deficiencies. Code requires a minimum 2 hour separation. Power connections from the emergency panel should also be protected by 2 hour rating in the event that there is a failure at the main switchgear that results in an arc flash / fire.

Electrical at the brown shed building is exposed to the weather, open electrical box was observed and romex wiring which is not rated for exterior exposure. Electrical needs to be updated to protect from potential electrical shock.

Main electrical service is by overhead wires through a heavily wooded section of the property. The maintenance of the tree trimming is the responsibility of the school. The work was completed within a year of the site visit. It is recommended that every 5 years the tree line is trimmed.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.11 Electrical, Telephone &amp; Security</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	Qty	Unit	Unit Cost	Total Cost	Cat	Year
1. Infrared testing and cleaning for main switchgear and distribution	1	LS	\$12,000	\$16,500	RM	1,5,9,13
2. Main electrical switchgear room requires two means of egress	1	LS	\$5,000	\$5,000	RM	0
3. Inspect and repair fire safing at electrical and tel/data closets	3	EA	\$750	\$750	RM	0
4. Inspect and repair open boxes and other housekeeping items at electrical and tel/data closets	3	EA	\$500	\$500	RM	0
5. Firestop penetrations into emergency power closet	1	LS	\$750	\$150	RM	0
6. Repairs to Brown Shed wiring and outlets to weather protect	1	LS	\$950	\$950	RM	0
7. Tree trimming along power lines	1	LS	\$2,500	\$7,500	RM	5,10,15
<b>Total</b>				<b>\$31,350</b>		

**5.12 Lighting**

Description

Lighting throughout the school buildings are fluorescent light fixtures. 1968 classrooms have 1x4 surface mounted box style fixtures that are located in three long rows. Hallways, 1998 classrooms, cafeteria and library are either 2x4 or 2x2 parabolic light fixtures. Toilet rooms are 1x4 surface mounted box style fixtures. Gym lighting is a metal halide HID pendant fixture.

See site/features at grade for a description of site lighting.

Observations/Comments

Some back of house areas and storage closets should have occupancy sensors installed to prevent lighting from remaining on for long periods of time which areas are not occupied.

Fluorescent lighting ballasts typically last 20 years, all of the lighting will require a ballast change in the evaluation period. An allowance has been provided to replace the ballasts over many years rather than all at once.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:

<b>5.12 Lighting</b>							
Observation/Issue/Recommended Correction		Estimated Cost, Category and Year					
		Qty	Unit	Unit Cost	Total Cost	Cat	Year
1	Allowance for back of house lighting upgrades and motion sensors	1	LS	\$3,500	\$3,500	RM	1
2.	Allowance for replacement of fluorescent ballasts	100	/YR	\$7,500	\$112,500	RM	1-15
<b>Total</b>					<b>\$116,000</b>		

**5.13 Fire Alarm & Life Safety**

Description

Fire Alarm system is a Simplex Notifier AM2020 addressable fire alarm system. Head end located in the facility managers office. The Simplex system replaced the original system and was installed during the 1996 renovation.

Observations/Comments

The expected useful life of a fire alarm system head-end is 15 years, which the devices such as smoke detectors, heat detectors and pull stations are expected to have a useful life of 30 years.

Observed issues, recommended corrections, estimated costs to correct and priority are as follows:



<b>5.13 Fire Alarm, Life Safety &amp; Building Code</b>						
Observation/Issue/Recommended Correction	Estimated Cost, Category and Year					
	<u>Qty</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>	<u>Cat</u>	<u>Year</u>
1. Install missing F/A devices, heat & smoke detectors	10	EA	\$1,250	\$12,500	RM	1
2. Allowance to replace faulty f/a devices	3	/yr	\$1,500	\$22,500	CE	1-15
3. Replace Fire Alarm system head end	1	LS	\$1	\$35,000	CE	8
4. Replace fire alarm batteries	1	LS	\$1,200	\$1,200	RM	1,15
<b>Total</b>				<b>\$71,200</b>		

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## 6.0 LIMITING CONDITIONS

Potomac Capital Advisors, Inc. conducted this Property Condition Assessment to opine on the subject's general physical condition and develop a Long Range Plan for capital expenditure in accordance with our agreement for this work.

The scope of this evaluation was limited to a walk-through visual observation only of those areas that were readily observable and easily accessible. Tests, exploratory or destructive probing, exhaustive studies, removal or disassembly of any system or construction, or dismantling or operating of electrical, mechanical, or conveyance equipment were not performed. It does not include an in-depth system/component problem analysis or evaluation, preparing engineering calculations of the structural, mechanical, electrical or other systems to determine compliance with any drawings that may have been submitted or with commonly accepted design or construction practice. Not all typical areas such as corridors or toilet rooms were surveyed; only a sampling of such areas.

Excluded from the scope of this survey was any seismic evaluation of the building.

No responsibility is assumed for matters of a legal nature such as building encroachments, easements, zoning issues, or compliance with the requirements of governmental agencies having jurisdiction.

Potomac Capital Advisors, Inc. assumes no responsibility for the accuracy or completeness of information provided by others, nor is Potomac Capital Advisors, Inc. responsible for any patent or latent defects which an owner or his agent may have withheld from Potomac Capital Advisors, Inc., whether by non-disclosure, passive concealment or fraud.

Potomac Capital Advisors, Inc.'s observations, opinions and this report are not intended, nor should they be construed, as guarantee or warranty, express or implied, regarding the property's condition or building code compliance. Potomac Capital Advisors, Inc.'s opinions are based solely upon those areas that we observed on the day of our site visit and information resulting from our interviews and research. Actual performance of individual components may vary from a reasonable expected standard and will be affected by circumstances which occur after the date of our site visit.

Services associated with the identification and elimination of hazards associated with hazardous and toxic materials, including asbestos, lead paint and PCBs, are not included within the scope of this evaluation.