



HABEEB & ASSOCIATES
ARCHITECTS

FACILITY NEEDS ASSESSMENT

**ESSEX ELEMENTARY SCHOOL
AND MANCHESTER ESSEX
MIDDLE-HIGH SCHOOL**

**Manchester Essex
Regional School District**

36 Lincoln Street,
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DRAFT REPORT: November 9, 2022
H&A JN 2217.01

[Report Excerpts for School Committee](#)



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Introduction

Manchester Essex Regional School District, working to continually improve the facilities and educational services provided for the children of the two towns, began an examination of their three school buildings.

The Middle-High School is a new building of approximately 162,000 square feet and which was occupied 13 years ago. The District recently occupied the completely renovated and expanded Memorial Elementary School which serves the kindergarten through grade five students in Manchester. The Essex Elementary school was constructed in 1957 with an addition/renovation project in 1975 and serves the kindergarten through grade five students of the Town of Essex.

Habeeb & Associates Architects was retained to assist the District in two areas:

1. Prepare a Master Plan for the Essex Elementary School which would include a facility condition assessment, a space needs assessment, and provide master plan options.
2. Conduct a facility condition assessment of the Middle-High School to identify and budget long term large maintenance and/or replacement costs to allow for prudent fiscal budgeting.

Essex Elementary School

Due to the age of the building and the desire to provide a school that will be available for the long term, a renovation project should be completed and include the replacement of not only exposed building systems, but also concealed and buried systems. Systems such as domestic hot and cold water, heating distribution piping and components, electrical wiring and panels, all have useful life expectancies which have now been exceeded. Consequently, the result of the facility condition assessment identified and revealed an approximate inflated cost of \$26 million to complete an upgrade of this school building. The complete, detailed assessment can be found in Chapter 4 of this report.

The Master Plan section of this report includes an assessment of the educational space adequacy of the existing building. That assessment revealed that the current number and size of the existing educational spaces are greater than those required for the current and projected student enrollment of 250 students. Utilizing the MSBA Elementary Space Standards revealed that a square footage of 45,000 is appropriate for an elementary school enrollment of 250. The current square footage of the Essex Elementary School is approximately 55,000 square feet or 10,000 square feet more than that specified by MSBA standards.



Based on the result of the facility condition assessment and the space adequacy assessment we see two Master Plan Options available for the Essex Elementary School.

- Option A – A complete renovation of the existing school building (55,000 sf) at a projected preliminary cost of \$26 million or \$473 per square foot.
- Option B – A new elementary school building of approximately 45,000 square feet at a projected preliminary cost of \$32 million or \$710 per square foot.

Middle-High School

The result of the Middle-High School facility condition assessment identified and revealed an approximate total expenditure to be budgeted over the next 20 years of \$10.5 million. Major areas of spending are primarily related to the mechanical, electrical, and building weatherization systems, which is customary and usual to properly maintain a school building of this age and size.

The complete, detailed assessment can be found in Chapter 4 of this report.

Category	Scope 1	Scope 2	Scope 3	Total
Executive Summary				
1. Essex Elementary School	9,895,724	5,351,738	5,599,750	20,847,212
2. Manchester-Essex Regional Middle-High School	414,115	1,096,550	9,044,100	10,554,765
¹Total:	10,309,839	6,448,288	14,643,850	31,401,977
¹Total Inflated @ 6% for Scope 1, 4% for Scopes 2-3 and Compounded Annually	11,584,135	7,845,328	21,676,475	41,105,939

¹Totals include Soft Costs (30%): Contingency, Administration and A/E Fees.

Introduction

Habeeb and Associates Architects conducted an educational adequacy assessment for Essex Elementary School to evaluate how well the facility supports the educational program that it houses. Educational Adequacy is a key component to functional equity across Manchester Essex Schools. The findings within the Educational Adequacy Assessment can be used as a comparative indicator to identify the relative programmatic needs of Essex Elementary School.

This educational adequacy assessment evaluates how well Essex Elementary School is equipped to deliver the current instructional curriculum. The assessment questions consider the following questions while referencing MSBA (Massachusetts School Building Authority) Standards:

- Is the classroom the correct size?
- Does technology support the classroom activities?
- Are there adequate provisions for administration, guidance, and tutorial areas?
- Does the building include all of the spaces to deliver the desired educational program?
- Are the core spaces including cafeterias, gyms, library/media centers, of sufficient size, and appropriately equipped?
- Are the desired outdoor activities present?
- Is there adequate separation of pedestrian, bus and parent drop off traffic to ensure the safety of the student?

There are several challenges in assessing educational adequacy. First is that programmatic needs change far quicker than the facilities themselves do. Essex Elementary was built in 1957 with an addition in 1975 and today's program needs are much different. For example, special education programs not delivered in the regular classroom are conducted in retrofitted classrooms without the proper specialty spaces required to serve that student population.

The assessment looks at both the inside and the outside of the school. For the outside of the school, the assessment examines parking, traffic safety, play and athletic facilities, and signage. For the inside of the school, there are four areas that are assessed relative to each kind of space: environment, size, adjacency, and storage/fixing equipment. Information within this report is used to determine the actions required to align the existing facilities with the vision and goals of the district.

Components within the Assessment

- **Environment** – For example, is the environment conducive to teaching and learning; is there sufficient light, HVAC, and acoustical treatment?
- **Size of spaces** – For example, do the classrooms meet the district's size standard; is the cafeteria large enough to seat an appropriate percent of the student body?
- **Adjacency of spaces** – For example, is the media center adjacent to the classrooms for easy access to information and support; is there a music space and is it near other noisy spaces?
- **Storage and fixed equipment in spaces** – Is there space in the classrooms for teacher and student materials to be stored?

Educational Adequacy Rating Scale

Good: The space provides for and supports a majority of the educational program offered. It may have minor suitability/functionality issues, but generally meets the needs of the educational program.

Fair: The space has some problems meeting the needs of the educational program and needs renovation.

Poor: The space has numerous problems meeting the needs of the educational program.

This educational adequacy assessment determines how well the school will support the teaching curriculum. The assessment can also be used to help determine decisions regarding renovation versus replacement and the cost trade-off using facilities with significant deficiencies for long term use. Information within this report can be used to determine the actions required to align the existing facilities with the vision and goals of the district.

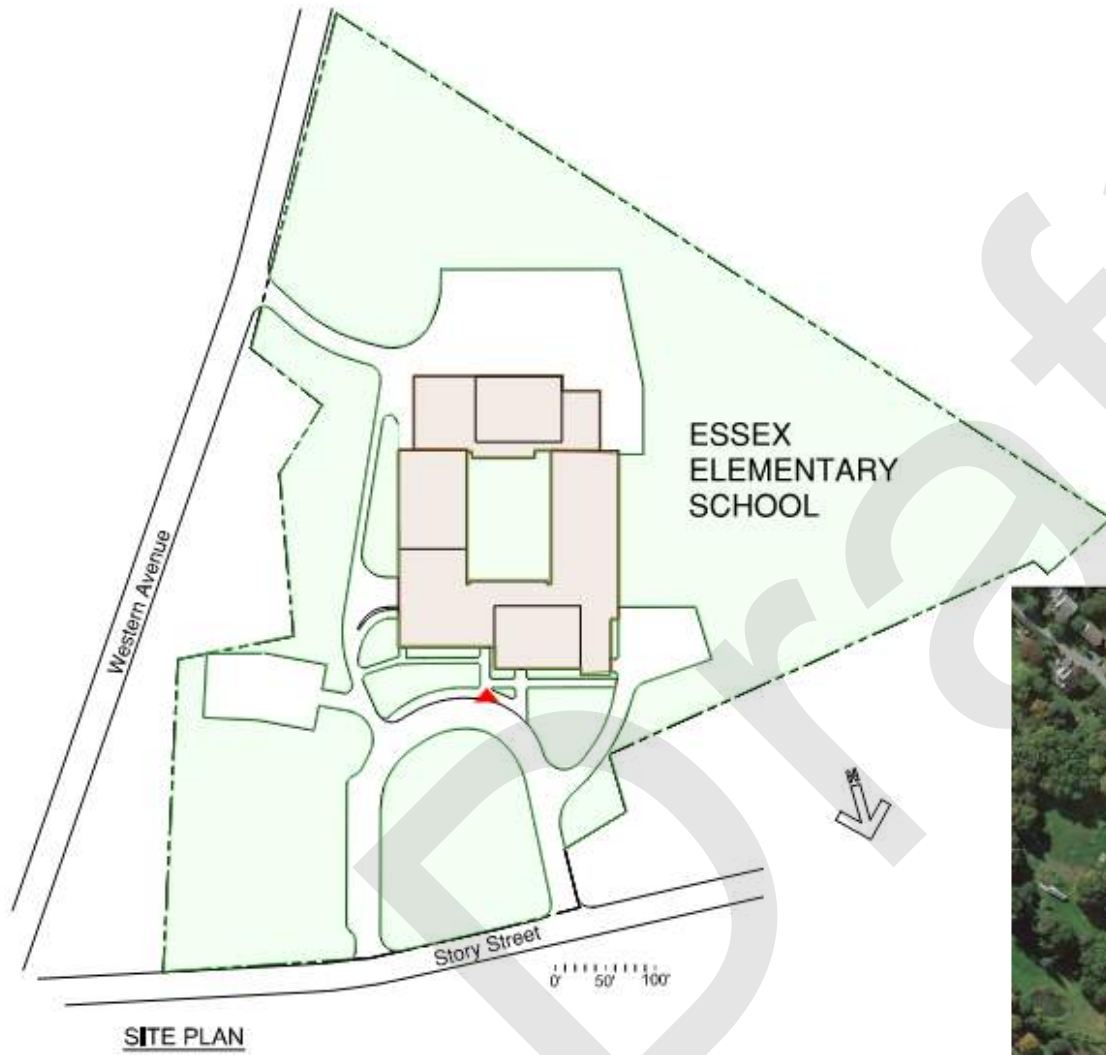
Educational Adequacy Rating

Fair: Overall, Essex Elementary has problems meeting the needs of the educational program based on the age and condition of the building but, the square footage of the building meets or exceeds MSBA standards in most categories. The additional space available may be utilized to meet the programmatic needs of the Essex Elementary School community. Renovating the existing building may be a viable option when compared to the cost of replacing the existing school with a new facility but, implementing a renovation project of this magnitude would create challenges with regards to phasing of the work and/or providing temporary classroom facilities.

Comparison of Existing Essex Elementary School Educational Space Sizes with MSBA (Massachusetts School Building Authority) Guidelines

CORE ACADEMIC SPACES	EXISTING SPACES	MSBA SPACE STANDARDS
Kindergarten w/ toilet	Kindergarten classrooms do not have toilets. The average classroom size of 1,200 sf. which meets the MSBA minimum standard but may be impacted by the addition of dedicated toilet rooms.	1,100 sf. min. - 1,300 sf. max. 2 sinks min. required
General Classrooms - Grade 1-5	Grade 1- 5 classroom are consistent in size averaging 936 sf. which meets the MSBA minimum standards.	900 sf. min. - 1,100 sf. max. 2 sinks min. required
Small Group Seminar - (20-30 seats)	None provided.	500 sf.
STE Room - Grade 3-6	Tech (Room 10), 936 sf. which meets minimum MSBA standards.	1,080 sf. plus 120 sf. STE storage
SPECIAL EDUCATION	EXISTING SPACES	MSBA SPACE STANDARDS
Self-Contained SPED	SPED and Swing SPED classrooms, 936 sf. which meets minimum MSBA standards.	Gr. 1-5: 900-1300 sf. equal to surrounding classrooms
Self-Contained SPED - Toilet	None provided.	60 sf.
Resource Room	None provided.	500 sf. (1/2 general classroom)
Small Group Room / Reading	936 sf. which exceeds minimum MSBA standards.	500 sf. (1/2 general classroom)
ART & MUSIC	EXISTING SPACES	MSBA SPACE STANDARDS
Art Classroom - 25 seats	Art classroom and associated storage space, 1,980 sf. which exceeds minimum MSBA standards.	Elementary Schools: 1, 000 sf
Music Classroom w/ Music Practice/Ensemble	Music room, 936 sf. which is below recommended standards.	Grades K-5 1,200 sf. w/ 75 sf. practice area
HEALTH & PHYSICAL EDUCATION	EXISTING SPACES	MSBA SPACE STANDARDS
Gymnasium	The gym itself is 5,300 sf. The gym area includes boy's and girl's locker room and storage room. Total 7,250 sf. which exceeds recommended standards.	Elementary: 6,000 sf.
MEDIA CENTER	EXISTING SPACES	MSBA SPACE STANDARDS
Media Center / Reading Room K-5	Media Center, 2,830 sf. exceeds MSBA minimum standards.	2,020 sf. w/ Reading Room

DINING & FOOD SERVICE	EXISTING SPACES	MSBA SPACE STANDARDS
Cafeteria / Dining	Cafetorium, 2,800 sf. Based on current enrollment and assuming two seatings, 1,770 sf.is provided which meets MSBA standards.	Grades K-5: 2 Seatings 15 sf./ student
Kitchen	Kitchen 1,530 sf. which meets minimum MSBA standards.	Schools at all Levels: 1,600 sf. for first 300 + 1 sf./ student additional
Staff Lunchroom	No defined space provided.	20 sf per occupant at all grade levels
MEDICAL	EXISTING SPACES	MSBA SPACE STANDARDS
Medical Suite Toilet	Toilet room does not meet accessibility requirements.	All school levels 60 sf.
Nurses' Office / Waiting Room	Nurses' office and exam room, 560 sf. which exceeds MSBA minimum standards.	Gr. K-5 310 sf
ADMINISTRATION & GUIDANCE	EXISTING SPACES	MSBA SPACE STANDARDS
Includes: General Office / Waiting Room / Toilet, Teachers' Mail and Time Room, Duplicating Room, Records Room, Principal's Office w/ Conference Area, Principal's Secretary / Waiting, Assistant Principal's Office, Supervisory / Spare Office, Conference Room, Guidance Office, Guidance Storeroom, Teachers' Work Room	Main office and principal's office – 525 sf Teacher's room and guidance – 586 sf Copy room – 255 sf Storage – 1,040 sf (Modular addition) Entry foyer functions as waiting area.	Elementary Schools: 1,865 sf. total
CUSTODIAL & MAINTENANCE	EXISTING SPACES	MSBA SPACE STANDARDS
Includes: Custodian's Office, Custodian's Workshop, Custodian's Storage, Recycling Room / Trash, Receiving and General Supply, Storeroom, Network / Telecom Room	First floor, janitor's closets, 84 sf and 54 sf – 138 SF Basement Maintenance – 580 sf Boiler Room – 2,260 sf	Elementary Schools: 1,900 sf. total





Essex Elementary School	Proposed Rooms and Areas for a New 250 student Essex Elementary School			
Room Type	Room NFA ¹	# of Rooms	Area Totals	MSBA Standards & Comments
CORE ACADEMIC SPACES		13	13,100	
Pre-Kindergarten w/ toilet	1,200	0	-	1,100 SF min - 1,300 SF max
Kindergarten w/ toilet	1,200	3	3,600	1,100 SF min - 1,300 SF max
General Classrooms - Grade 1-6	950	10	9,500	900 SF min - 1,000 SF max
SPECIAL EDUCATION			4,520	
<i>(List rooms of different sizes separately)</i>				
Self-Contained SPED	950	2	1,900	900-1,300 SF equal to surrounding classrooms
Self-Contained SPED - toilet	60	2	120	
Resource Room	500	4	2,000	1/2 size Genl. Clrm.
Small Group Room / Reading	500	1	500	1/2 size Genl. Clrm.
ART & MUSIC			2,500	
Art Classroom - 25 seats	1,000	1	1,000	assumed schedule 2 times / week / student
Art Workroom w/ Storage & kiln	150	1	150	
Music Classroom / Large Group - 25-50 seats	1,200	1	1,200	assumed schedule 2 times / week / student
Music Practice / Ensemble	75	2	150	
HEALTH & PHYSICAL EDUCATION			6,300	
Gymnasium	6,000	1	6,000	6000 SF Min. size
Gym Storeroom	150	1	150	
Health Instructor's Office w/ Shower & Toilet	150	1	150	
MEDIA CENTER			2,020	
Media Center / Reading Room	2,020	1	2,020	
DINING & FOOD SERVICE			5,400	
Cafeteria / Dining	2,400	1	2,400	2 seatings - 15SF per seat
Stage	1,000	1	1,000	
Chair / Table / Equipment Storage	200	1	200	
Kitchen	1,600	1	1,600	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	200	1	200	20 SF/Occupant
MEDICAL			410	
Medical Suite Toilet	60	1	60	
Nurses' Office / Waiting Room	250	1	250	
Examination Room / Resting	100	1	100	
ADMINISTRATION & GUIDANCE			2,015	
General Office / Waiting Room / Toilet	300	1	300	
Teachers' Mail and Time Room	100	1	100	
Duplicating Room	150	1	150	
Records Room	110	1	110	
Principal's Office w/ Conference Area	375	1	375	
Principal's Secretary / Waiting	125	1	125	
Assistant Principal's Office	120	0	-	
Supervisory / Spare Office	120	1	120	
Conference Room	250	1	250	
Guidance Office	150	1	150	
Guidance Storeroom	35	1	35	
Teachers' Work Room	300	1	300	
CUSTODIAL & MAINTENANCE			1,900	
Custodian's Office	150	1	150	
Custodian's Workshop	375	1	375	
Custodian's Storage	375	1	375	
Recycling Room / Trash	400	1	400	
Receiving and General Supply	200	1	200	
Storeroom	200	1	200	
Network / Telecom Room	200	1	200	
OTHER			0	
Other (specify)				
Total Building Net Floor Area (NFA)			38,165	
Proposed Student Capacity / Enrollment			250	
Total Building Gross Floor Area (GFA) ²			45,000	
Grossing factor (GFA/NFA)			1.18	

Introduction

The Facility Conditions Assessment (FCA) was developed to address the physical structure and mechanical, electrical, plumbing and fire protection systems of the Essex Elementary School and the Manchester Essex Middle-High School to better understand the maintenance and capital needs of these two buildings. This assessment identifies the deficiencies of each school building, including both maintenance repairs and regulatory compliance, with the associated costs. The deficiencies are prioritized into immediate, short, and long-term needs that will allow the district to prepare a capital plan to address the annual operating costs and to protect the investment in these facilities.

Methodology

The FCA is based upon visual inspection, review of available documents, and interviews conducted on September 13, 2022, at the schools with Facilities Manager, Jason Waldron and Maintenance Supervisor, Steve Hunt. Existing deficiencies and concerns were observed, noted, and photographed by the H&A team.

For the Essex Elementary School, the H&A team was provided with construction documents for the 1975 addition prepared by W.H. Jones & Son, Architects, security floor plans and the Three Year AHERA Asbestos Re-inspection Summary Report dated 02-17-10, the Existing Conditions Assessment dated 02-01-2002, and the Needs Assessment Study & Estimate dated 05-08-2000. The deficiencies observed at Essex Elementary were related to the age of building systems and components, usage, newer code requirements, and improvements recommended to provide a safe environment suitable for current learning practices.

For the Manchester Essex Regional Middle-High School, the H&A team was provided with copies of the construction documents prepared by the Mount Vernon Group dated 03-14-07. The deficiencies observed were related to present and long term maintenance items and the associated recommendations necessary to maintain the current excellent learning environment at the Middle-High School.

The spreadsheets and photographs included in the FCA detail the recommendations and associated costs for addressing the deficiencies. Estimated costs for projects to be completed in future years contain escalation factors to account for inflation.



Summary

The Summary tables categorizes the recommended capital improvements at the Essex Elementary School and future maintenance needs at the Manchester Essex Regional Middle-High School. This includes elements based on interviews, observations, and review of available drawings. These two schools comprise a total of approximately 217,600 square feet.

The assessment details the significant capital investment needed for the Essex Elementary School because of the age of the building systems, inadequacy of mechanical systems, deferred maintenance, inadequacy of building envelope to meet energy performance ratings, and building codes.

While the brick façade is in reasonably good condition, there appears to be no insulation in the walls or under slab. The original 1957 windows are single glazed in deteriorating wood frames, the 1975 windows are dual pane, though without thermal breaks and many have failed seals.

The toilet facilities are very outdated and inefficient. Some changes have been made to address the Massachusetts Architectural Access Board requirements, though many non-compliant conditions are still present. Additionally, the kindergarten classrooms do not have their own toilets.

The assessment also details the capital investment for the Manchester Essex Regional Middle-High School which was built 13 years ago. Certain building systems such as roofs will need to be replaced in the next 7-12 years. The town water supply has a very high mineral content, which has caused corrosion of plumbing systems and created the need for frequent replacement of plumbing components. A point of contact water filter and softener would help solve this problem. HVAC system equipment such as boilers have a life expectancy of 15 to 25 years and plans need to be put in place for future replacement. There are certain areas such as the cafeteria and classrooms that are not airconditioned. The school is used for summer programs and weather extremes have created much higher and sustained temperatures. Adding air conditioning in limited areas may be relatively easy to achieve.

Work items identified by this Assessment are assigned a Scope category based on urgency, ongoing maintenance, life-cycle costs, and other concerns that compromise the teaching environment. In summary, scopes are categorized by the following descriptions:

Scope 1 – Immediately Necessary / Critical (0-2 years)

Scope 2 – Recommended (3-5 years)



Scope 3 – Does Not Meet Current Codes for new construction but “Grandfathered” OR Recommended (6-10 years)

Refer to Section 4, How to Read This Assessment for detailed Scope descriptions and calculation methodology.

Scope 1 has been assigned to Work Items that address safety concerns such as uneven floor surfaces at door thresholds. Also included are items that present ongoing maintenance, operation, and repair issues such as outdated membrane roofing, windows that have reached or exceeded their life expectancy and missing sealants at concrete. Additionally included are important mechanical building systems that are outdated and could present serious disruption to the schools’ operation should they fail. Scope 1 projects should be addressed as soon as possible.

Scope 2 addresses other less critical Work Items that are not immediately necessary, but will continue to deteriorate without maintenance, repair, or replacement. These include building envelope repairs to address aging sealants, providing weather stripping to exterior doors, and washing off efflorescence from brick facades. Other priority items are recommended for the interiors, including replacement of damaged flooring, stained and missing ceiling tiles, and replacing worn carpet. It has been assumed that Scope 2 projects should be completed within 3-5 years.

Scope 3 addresses Current Energy and Accessibility Code issues. Since Essex Elementary School was built in 1957, with an addition in 1975, there are many instances where current codes are not met. This includes inadequate building envelope insulation and inaccessible toilet facilities. The Manchester Regional Middle-High School, on the other hand, opened in 2009 and was built to code, so therefore, has no Scope 3 code issues listed.

Category	Scope 1	Scope 2	Scope 3	Total
Building Summary		Essex Elementary School		
1. SITE	644	617,890	36,075	654,609
2. BUILDING ENVELOPE	4,269,200	195,735	1,234,090	5,699,025
3. BUILDING INTERIORS	0	2,984,873	292,175	3,277,048
4. MECHANICAL	2,662,400	1,553,240	4,037,410	8,253,050
5. ELECTRICAL	2,963,480	0	0	2,963,480
¹Total:	9,895,724	5,351,738	5,599,750	20,847,212
¹Total Inflated @ 6% for Scope 1, 4% for Scopes 2-3 and Compounded Annually	11,118,835	6,511,208	8,288,998	25,919,041

¹Totals include Soft Costs (30%): Contingency, Administration and A/E Fees.

The Essex Elementary Assessment indicates in current dollars, that a total of over \$20 million is needed to address the school's deficiencies. Of this total, close to \$9 million is considered Scope 1 needs, approximately \$5 million is considered Scope 2 needs, and approximately \$5.6 million for Scope 3 needs. When reviewing the phased cost of the scope items deferred to six and ten years out, a total of close to \$26 million is needed to address the school's deficiencies.

The Manchester Essex Middle-High School Assessment indicates in current dollars, that total over \$10.5 million in future maintenance needs simply due to the limited life span of materials and equipment. Of this total over \$400,000 is considered Scope 1 and approximately \$1.9 million is considered Scope 2.

Category	Scope 1	Scope 2	Scope 3	Total
Building Summary		Manchester Essex Regional Middle-High School		
1. SITE	179,075	20,800	0	199,875
2. BUILDING ENVELOPE	0	46,670	5,463,900	5,510,570
3. BUILDING INTERIORS	58,240	862,680	0	920,920
4. MECHANICAL	176,800	0	3,580,200	3,757,000
5. ELECTRICAL	0	166,400	0	166,400
¹Total:	414,115	1,096,550	9,044,100	10,554,765
¹Total Inflated @ 6% for Scope 1, 4% for Scopes 2-3 and Compounded Annually	465,300	1,334,121	13,387,477	15,186,898

¹Totals include Soft Costs (30%): Contingency, Administration and A/E Fees.

EXECUTIVE SUMMARY

The *Executive Summary* recaps the *Total Inflated* row from the bottom of the Building Summary sheets. These costs are then totaled at the bottom to indicate a combined proposed capital expenditure per scope. This is intended to make it easier for the reader to review and compare the overall costs for each of the scopes.

SUMMARY

The *Summary* recaps the *Total* row from the bottom of each category for the subject building, separated into scopes. This is intended to make it easier for the reader to review and compare the overall costs for each of the categories together with the scopes for the subject building.

FACILITY CONDITION ASSESSMENT

The following is a list and brief description of the column and row headings of the Facility Condition Assessment sheets.

Description

The *Descriptions* are the work items identified during our inspection. They usually consist of the building component and its deficiencies; and a recommendation for correcting the deficiency.

Quantity

The number of items: (For example, if the work item is for "unit ventilators replacement" the building in question may have a *Quantity* of 60 unit ventilators to be replaced).

Unit

The *Units* are identified by a two-letter code. The unit codes are as follows:

- SF – Square Foot
- SY – Square Yard
- LF – Linear Foot
- LS – Lump Sum
- EA – Each.

Unit Cost

The *Unit Cost* is the cost of one *Quantity* of a work item. Unit costs are preliminary construction cost estimates only and are generally based on the following references: *Means Square Foot Cost Data*; *Means Construction Costs Data*; in house cost data; professional experience; and information provided by various contractors and suppliers.

Total

The *Total* column is determined by the following equation: QUANTITY x UNIT = TOTAL.

Total with Soft Costs

This assessment provides preliminary construction costs associated with *Soft Costs*. *Soft Costs* generally include a contingency, (typically 10% to 15%) for unforeseen conditions; indirect administrative expenses such as legal costs, printing and advertising (typically 5% to 10%); and architectural and engineering costs (typically 10% to 15%) for a total soft cost estimate. We used a *Soft Cost* of 30% of the *total* cost in this assessment. The *Total with Soft Costs* is determined by the following equation: TOTAL x 1.30 = TOTAL W/ SOFT COST.

Some projects may require higher or lower *Soft Costs* depending on the type and extent of project selected. Work items listed are provided as a guide to develop repair and renovation projects with preliminary construction cost estimates. The actual scope of a project could include a combination of work items, i.e. new ceilings and new lighting. Some other projects may require finishes, e.g. painting, which may not necessarily be broken out for that project.

Scope 1 – Necessary / Critical (0-2 years)

- Predictable deterioration
- Potential downtime
- Associated damage or higher costs if deferred further

Scope 2 – Recommended (3-5 years)

- Sensible improvements to existing conditions that are not required for the basic function of the facility
- Overall usability improvement
- Long term maintenance cost reduction

Scope 3 – Does Not Meet Current Codes for new construction but “Grandfathered” OR Recommended (6-10 years)

- No action required at this time. However, if a substantial renovation or a substantial building addition is performed in the future, building codes may require this corrective work in addition to the work planned.
- The component will exceed its expected life within the next 10-15 years.

Totals Column (work items)

The *Totals* column is the sum of the *Scopes* columns 1, 2, and 3, for each work item. The *Totals* column also shares the sum of the *Total* row and *Total Inflated* rows at the lower right corner.

Total Row (scopes)

The *Total* row is the sum of the *Scopes* columns 1, 2, 3, and *Totals* column, for each category. The *Total* row and *Total Inflated* rows are totaled at the lower right corner.

Total Inflated Row

The *Total Inflated* row is the sum of the *Scopes* columns 1, 2, 3, and *Totals* column for each category multiplied by a coefficient to determine the inflated cost and then compounded annually.

Scope 1 is shown with an inflation factor of 6% for work to be performed within a 2 yr period.

Scope 2 is shown with an inflation factor of 4% for work to be performed within a 5 yr period.

Scope 3 is shown with an inflation factor of 4% for work to be performed within a 10 yr period.

The *Total* row and *Total Inflated* rows are totaled at the lower right corner.

The Assessment is broken into five categories with specific evaluation concerns in each:

<p>1. Site</p> <ul style="list-style-type: none"> Storm Drainage Drives and Walks Landscaping Site Improvements Play Areas Sanitary System Accessible Parking and Entrance Approach 	<p>2. Building Envelope</p> <ul style="list-style-type: none"> Roofs Exterior Walls Windows Exterior Entrances and Doors Thermal Insulation Accessible Egress and Ingress Building Structural System 	<p>3. Building Interiors</p> <ul style="list-style-type: none"> Floor Finishes Wall Finishes Ceiling Finishes Interior Doors and Exitways Code Compliance Issues Accessibility for the Disabled Hazardous Material Remediation
<p>4. Mechanical</p> <ul style="list-style-type: none"> Domestic Hot Water Generation Cold Water Services Gas Services Piping for Plumbing Systems Plumbing Fixtures Heat Generation Cooling System Piping for Heating Systems Temperature Controls Ventilation Accessible Plumbing Fixtures 	<p>5. Electrical</p> <ul style="list-style-type: none"> Main Services and Distribution Convenience Power Fire Alarm Systems Lighting Systems Emergency Lighting Systems Communications Systems Computer Network & Technology Systems Site Lighting Electrical Features for the Disabled Security System 	

BUILDING DATA**ESSEX ELEMENTARY SCHOOL**

GENERAL INFORMATION:		ARCHITECTURAL COMPONENTS:	
Building:	Essex Elementary School	Foundation:	Reinforced concrete
Address:	12 Story Street, Essex, MA 01929	Super Structure:	1957 building – structural CMU w/ concrete roof deck. 1975 addition – Structural CMU/Steel frame, concrete plank roof deck, Gym-bar joists and metal deck roof.
Main Contact:	Avi Urbas, Director of Finance & Operations	Floor Structure:	Concrete slab on grade and structural concrete slab above basement boiler room and crawl space.
Facilities Contact:	Jason Waldron, Facilities Manager	Roof Structure:	1957 building - structural concrete deck. 1975 addition - structural plank, with long span trusses at Gym.
CODE CLASSIFICATION:		Exterior Walls:	8" CMU with 4" brick veneer (no cavity or insulation) with areas of T1-11 below windows.
Occupancy:	E- Educational, A-3 Assembly @ Gym, Cafetorium & Media Center	Roofing:	Low sloped EPDM membrane .
Construction Type:	II-B – Unprotected Non-Combustible	Window Systems:	1957 building - wood frame, with single pane operable steel sash 1975 addition - double pane metal windows.
BUILDING HISTORY:		Exterior Doors:	Front entry doors are aluminum storefront, others are hollow metal, while some newer ones are half glass, insulated composite doors.
Original Building:	1957 42,200 SF	Interior Doors:	Wood with hollow metal frames.
Addition:	1975 13,400 SF	Stairs:	Steel spiral stairs lead to basement boiler room.
SITE / BUILDING AREA:		Interior Walls:	CMU, exposed brick, and glazed block.
Site Area:	9.9 acres	Wall Finishes:	Paint on CMU.
Total Building Area:	55,600 SF	Floor Finishes:	Primarily VCT in corridors and classrooms, ceramic tile in toilet rooms, wood "cafetorium" and gym floor, carpet in library.
Lower-Level Area:	7,900 SF	Ceiling Finishes:	Classrooms have acoustic ceiling tiles attached to concrete plank roof structure, corridors have dropped 2'x4' acoustic ceiling tiles and Gym has metal panel ceilings.
First Floor Area:	47,700 SF	Conveying Systems:	None.
SITE COMPONENTS:		MECHANICAL / ELECTRICAL COMPONENTS:	
Parking/Driveways:	Bituminous paving.	Water Service:	Approximately 4" pipe.
Walkways:	Bituminous paving.	Domestic Hot Water:	Stand-alone natural gas fired boiler rated at 215 MBH.
Lighting:	Wall mounted or ceiling mounted lights at building entrances.	Fire Suppression:	None.
Storm Drainage:	Storm drainage system runs to retention pond and adjacent stream.	Heating Systems:	Natural gas fired, low pressure, steam boiler, rated at 4260 MBH unit ventilators.
Sanitary System:	Town sewer via ejector pump system in Boiler Room.	Cooling Systems:	There are several unit air conditioners in miscellaneous areas.
Play Areas:	Wood and metal playground equipment, paved playground areas, 2 basketball backstops, and soccer field.	Electric Service:	800 amp main service with on-site generator.

Category	Scope 1	Scope 2	Scope 3	Total
Building Summary		Essex Elementary School		
1. SITE	644	617,890	36,075	654,609
2. BUILDING ENVELOPE	4,269,200	195,735	1,234,090	5,699,025
3. BUILDING INTERIORS	0	2,984,873	292,175	3,277,048
4. MECHANICAL	2,662,400	1,553,240	4,037,410	8,253,050
5. ELECTRICAL	2,963,480	0	0	2,963,480
¹Total:	9,895,724	5,351,738	5,599,750	20,847,212
¹Total Inflated @ 6% for Scope 1, 4% for Scopes 2-3 and Compounded Annually	11,118,835	6,511,208	8,288,998	25,919,041

¹Totals include Soft Costs (30%): Contingency, Administration and A/E Fees.

ESSEX ELEMENTARY SCHOOL



1. Bituminous driveway shows signs of cracking and freeze/thaw damage.



2. Original windows and trim have deteriorated.



3. Operable steel hopper window has no weather strip.



4. Thermal pane window has seal failure.



5. The wood siding is rotted and damaged.



6. The concrete fascias and soffits have spalled.



7. Original roof soffits have corroded.



8. Modular addition has deteriorated and leaks at connection to main building.



9. Confirm that generator has been maintained per manufacturer's recommendations.



10. Bituminous pavement is damaged, original hollow metal doors require repair/replacement.



11. Rubber membrane roof has many areas of standing water and is extensively patched.



12. There are areas where the roof has bubbled and the membrane is no longer adhered.



13. The fascia is rotted at the Cafetorium.



14. Vinyl floor tiles in Modular addition show signs which may indicate issues with subfloor.



15. The brick/CMU wall of Gym shows signs of extensive water damage and is not insulated.



16. Classrooms have outdated spline ceiling and insufficient ventilation.



17. Existing 2x4 ceiling tiles have sagged and are cupped.



18. The skylights in the corridors are damaged.



19. Existing 2x4 ceilings are discolored and tiles are mis-matched.



20. Classrooms have outdated and inefficient unit ventilators.



21. Classrooms have outdated sinks that do not meet AAB accessibility requirements.



22. Multi-user toilet rooms have original, outdated fixtures and several have no AAB updates.



23. Grab bars/accessories are non-compliant and original tile floor is patched.



24. Single-user toilet rooms do not meet AAB requirements.



25. All drinking fountains are original and are not AAB compliant.



26. Kitchen equipment is very old and inefficient.



27. This 1975 era boiler is no longer being used.



28. This boiler was installed in 2008 and still functions.



29. This Air Handling Unit in the crawl space is obsolete.



30. Boiler room shows signs of chronic flooding, equipment is obsolete and inefficient.

BUILDING DATA**MANCHESTER ESSEX REGIONAL MIDDLE-HIGH SCHOOL**

GENERAL INFORMATION:		ARCHITECTURAL COMPONENTS:	
Building:	Manchester Essex Regional Middle-High School	Foundation:	Reinforced concrete.
Address:	36 Lincoln Street Manchester-by-the-Sea, MA 01944	Super Structure:	Structural steel.
Main Contact:	Avi Urbas, Director of Finance & Operations	Floor Structure:	Reinforced concrete slab on grade and concrete in metal pan over steel.
Facilities Contact:	Jason Waldron, Facilities Manager	Roof Structure:	Steel deck, joists, and trusses.
CODE CLASSIFICATION:		Exterior Walls:	Insulated brick wall system.
Occupancy:	E-Educational, A-3 Assembly @ Auditorium, Gym, Cafeteria & Media Center	Roofing:	Thermoplastic Polyolefin (TPO) roofing at low sloped area, asphalt shingles on moderately sloped roofs.
Construction Type:	II-A Protected Non-Combustible	Window Systems:	Aluminum frames and insulated glass.
BUILDING HISTORY:		Exterior Doors	Insulated aluminum and glass.
Original Building:	2009	Interior Doors	Wood doors with hollow metal frames.
Addition:	NA	Stairs:	Steel pan.
SITE / BUILDING AREA:		Interior Walls:	Approximately 95% metal stud walls with gypsum wallboard and 5% CMU walls in utility areas.
Site Area:	19.3 Acres (this includes two parcels at 36 & 40 Lincoln Street)	Wall Finishes:	Paint over GWB and CMU, with composite panels at corridors.
Total Building Area:	162,000 SF	Ceiling Finishes:	2'x2' and 2'x4' acoustic ceiling tiles and some GWB in most areas with metal panel at Gymnasium, and Auditorium. Additionally, the Auditorium has suspended acoustic treatment.
First Floor:	31,000 SF	Conveying Systems:	Elevator.
Second Floor:	63,000 SF	MECHANICAL / ELECTRICAL COMPONENTS:	
Third Floor:	41,000 SF	Water Service:	4" domestic water service.
Fourth Floor:	27,000 SF	Domestic Hot Water:	Gas fired water heater.
Mezzanine:	1,000 SF	Fire Suppression:	100% sprinklered.
SITE COMPONENTS:		Heating Systems:	Gas fired boilers.
Parking/Driveways:	Bituminous paving.	Cooling Systems:	A/C in limited areas., rooftop chiller.
Walkways:	Concrete.	Electric Service:	amp main service and solar.
Lighting:	Light sconces on façades, site lighting on poles, and athletic lighting on poles.		
Storm Drainage	Catch basins.		
Sanitary System:	Town sewer.		
Play Areas:	Artificial turf athletic field.		

Category	Scope 1	Scope 2	Scope 3	Total
Building Summary MANCHESTER ESSEX REGIONAL MIDDLE-HIGH SCHOOL				
1. SITE	179,075	20,800	0	199,875
2. BUILDING ENVELOPE	0	46,670	5,463,900	5,510,570
3. BUILDING INTERIORS	58,240	862,680	0	920,920
4. MECHANICAL	176,800	0	3,580,200	3,757,000
5. ELECTRICAL	0	166,400	0	166,400
¹Total:	414,115	1,096,550	9,044,100	10,554,765
¹Total Inflated @ 6% for Scope 1, 4% for Scopes 2-3 and Compounded Annually	465,300	1,334,121	13,387,477	15,186,898

¹Totals include Soft Costs (30%): Contingency, Administration and A/E Fees.

MANCHESTER ESSEX REGIONAL MIDDLE-HIGH SCHOOL



1. Concrete has spalled at some rail posts.



2. Rail posts do not have sealants and some sealants are failing.



3. Some gutters are clogged with vegetation.



4. Some sealant shows early signs of deterioration.



5. Sealant at metal panel is showing signs of deterioration.



6. Discoloration is evident at wood accents, brick and precast.



7. Threshold at entry is damaged. Walk off matt is worn.



8. Some floor joints at natural linoleum are damaged.



9. Several windows show signs of water damage.



10. Original carpet at Auditorium is showing signs of wear.



11. Some duct work has damaged or missing insulation.



12. Plumbing valves require frequent replacement due to high mineral content in water supply.