MANCHESTER
SCHOOL DISTRICT

Memorial High School

Educational and Facilities Master Plan

smma

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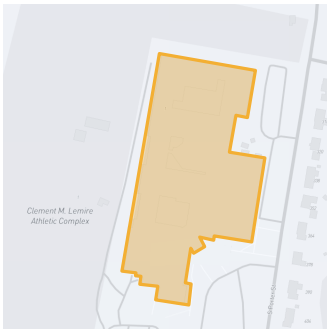
Summary

Included in this report are assets that were collected during the long term facility planning process. Each school's report package contains an At-A-Glance summary report, Facility Evaluation Criteria sheets, and site plan(s). Site plans are included to illustrate the context of the building in relationship to the city, neighborhood, and other adjacent amenities and parcels. The At-A-Glance summary sheets include general information about each school building including school data, such as population and grade structure, etc., site and building data, tax assessor's information, community uses, State of NH Code of Administrative Rules, Operational Data, and Cost model information for repairs and renovations. The Facility Evaluation Criteria sheets are the facility assessment team's findings at each Tier 1 school building including building physical assets, sites, and educational facility effectiveness. On April 24, 2023, the assessment team visited all the Tier 1 school buildings.

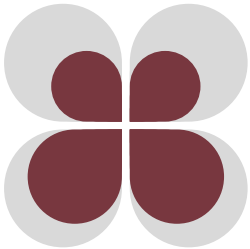
SCHOOL NAME
Memorial High School

SITE VISIT
August 2023

At-a-Glance



FA: Building FA: Site



EFE: Learning EFE: Spaces

Excellent Deficient

Address
1 Crusader Way, Manchester, NH 03103

Gross Square Footage (GSF)
182,528 sf

Grades
9th Grade–12th Grade

Site Acreage
47

Hours of Operation
7:30am–2:55pm

Date of Construction
1960

2022–2023 Enrollment
1343

Date of Addition Construction
1965, 1987, 1989, 1998

SCHOOL NAME

Memorial High School

SITE VISIT

August 2023

Site Plans

SCHOOL NAME

Memorial High School

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Facility Evaluation Criteria

Physical Analysis	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Roof Membrane (Architectural)			●		
	"The original roof was replaced in 2005 when the 300 classroom wing and second gymnasium additions were constructed. It is a black EPDM roof which appeared to be in fair condition; however, roof leaks have been reported. The 2002 library addition is also a black EPDM membrane. There were no visible areas of ponding; however, several roof drains need to be cleaned as there was an excess amount of debris collecting. All roofs are beyond their useful lifespan and typical warranty period, so replacement is recommended."				
Existing Photovoltaics					○
	"N/A"				
Space for Solar on Roof					○
	"Although there is a lot of roof space the HVAC units are spread out not allowing continuous placement of solar. Exact locations and SF size can be evaluated."				
Façade		●			
	"Overall the masonry facade is in good condition. The original 1960 metal panel facade was removed and replaced with a new brick facade reportedly in the 1980s. Steel angles were installed at the foundation level to support the new veneer. There are several areas at the 2005 gymnasium addition where the brick is cracking at corners, most likely due to inadequate brick expansion joints. These areas should be repointed and expansion joints added."				
Windows		●			
	"It appears that the windows in the original building were replaced in the 1980s when the brick veneer was added. They are double pane aluminum systems but are not as efficient as today's systems. The windows and doors at the 2002 and 2005 additions are original double pane aluminum systems that appear to be in fair condition. Only the 2002/2005 portions of the building have roller window shades. The hollow metal doors and frames at the exterior access to the locker rooms/team rooms are in poor condition."				

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Boilers (Mechanical)				●	
"Boilers were being cleaned during the site visit. Cleaver Brooks boilers are older non-condensing type and are past useful life, they seem to be operating currently."					
Boilers (Plumbing)			●		
"Refer to the HVAC report for mechanical boilers. The domestic hot water is generated through a Laars PW0715IN09KIACXX boiler and includes a vertical storage tank (estimated to be 400 gallons). The boiler was manufactured in 1999. The boiler is approximately 23 years old, which exceeds its life expectancy of 10-15 years. Replacement is recommended. An electric water heater (Bradford White Model LE250S3 6000 watt) is installed in the addition in the custodian room (318B). The water heater serves fixtures in the addition and is equipped with a return line, associated circ pump, and expansion tank."					
Heating Distribution Systems			●		
"Piping and insulation appeared to be in good operating condition. Fin Tube and Cabinet unit heaters. Pumps are older and reaching useful life."					
Building Envelope Thermal Performance		●			
"The original 1960 metal panel facade was removed and replaced with a new brick facade reportedly in the 1980s. It is unclear if insulation or an air vapor barrier was added behind this new veneer. The recent 2005 roof replacement installed approximately 4" of insulation at the roof level. This does not meet current energy codes. Air gaps were observed at several exterior door locations due to insufficient gasketing and weatherstripping. Not all building entrances have vestibules."					
Interior Finishes			●		
"There have been some floor and ceiling upgrades to the original 1960 building since 1998. Science classrooms and several other areas of the original building were renovated in 1998 including all new flooring, ceiling, science casework and interior wood doors. The 2002 library addition has carpet flooring which is stained and looks to need replacement. Finishes in the 2002 and 2005 additions are in good condition. Metal lockers are original in the 1960's building and are in disrepair. Gym floors are wood and in good condition. Auditorium seating is original and in disrepair."					
Rooftop HVAC Equipment			●		
"There are a mix of new and end of useful life units located on the roof."					
HVAC Controls			●		
"JCI Metasys (District standard). This building has new thermostats tied to the new units, but also some much older thermostats that are not in good shape."					

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Technology Infrastructure				●	
"Bandwidth of fiber optic and copper network cabling is inadequate for School Communications. Telecom Rooms are not adequately secured allowing staff to use them for storage."					
Technology Systems				●	
"Telephone and WiFi systems are at the end of useful life. Network switches have been recently replaced. Not all Telecom Rooms are air conditioned, leaving equipment vulnerable to overheating."					
Security Systems		●			
"The City is working with a Security Systems Vendor to deploy 500 CCTV cameras throughout the District's Schools. Adequate bandwidth is a concernfor transmitting video. Notification and Lock Down systems are not present. Indoor cellular signal booster system is desired."					
Kitchen Equipment and Systems (Electrical)	●				
"Kitchen panels are in good operational condition. Kitchen receptacles were observed non-GFCI and shall be replaced in compliance with Code."					
Kitchen Equipment and Systems (Plumbing)		●			
"The kitchen plumbing fixtures and equipment appeared in fair condition but appear to be in good working order. The piping below the sinks has chrome painted/coated piping below the pot sink, but is mostly PVC. Some exposed copper piping is present, and chrome coating is recommended. Although PVC is an acceptable material for waste piping per the NH plumbing code, it is not typically installed in commercial kitchens as there are durability and cleanliness concerns. Renovations should consider replacing the PVC piping. A natural gas header is located in the cavity between the kitchen equipment and has flexible connections to the equipment."					
Natural Gas Distribution System	●				
"Natural gas distribution observations was limited to exposed piping within mechanical rooms and in the kitchen. The gas feeds boilers, mechanical equipment and science classroom turrets. The observed piping appears to be in good working order."					
Current Fuel Source		●			
"The building has two natural gas services. Both appear to be intermediate pressure based on the regulator arrangement. One service splits into two lines with regulators installed in parallel. The exterior piping is rusting, but the services seem to be in good working order. Major renovations should consider pipe replacement or recoating."					

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Generator	●				
	"The existing 200kW/250kVA 120/208v 3ph diesel-fired emergency generator is manufactured by Olympian. It was installed around the year 2005. The generator is outdoor type with weatherproof enclosure and 500-gallon skid-base fuel tank. Currently, the generator appears to be in good operational condition. There are no known issues. The generator currently supports the Standby loads (heating system boilers and pumps, air handler, kitchen refrigeration equipment, etc.) and Life-safety loads (emergency egress lighting) via (2)-400Amp Automatic Transfer Switches (ATS). However, some critical loads, such as the data closet racks and intercom/phone system, are not connected to the generator power distribution system as of now, and suggested to be connected."				
Elevator		●			
	"The elevator was added in 1980. Due to age of elevator, controls replacement may be required and cab finishes need to be updated"				
Ventilation Distribution Systems		●			
	"Ductwork appeared to be in good condition. Some units on roof have been replaced in the last 2 years and ductwork that was replaced as part of that project is insulated, all other roof ductwork remains uninsulated."				
Electrical Services		●			
	"Exterior pad-mounted utility transformer by PSNH is located adjacent to the Main Electric room. The transformer appears in good condition. The utility transformer's secondary feeder is terminated in the Main Switchboard SWBD located in the Main Electric room 720. It's rated 2,500 Amp 277/480v 3ph 4w. The Main Switchboard SWBD appears in good operational condition. It feeds a Secondary Switchboard, rated 1,600 Amp 120/208v 3ph 4w, via a 500KVA stepdown transformer. The Secondary switchboard and stepdown transformer are located in electric room 713. The secondary switchboard appears "aged" but in fair operational condition. Both switchboards feed various panels throughout the building. The majority of the downstream panels are manufactured by Square D, provided or replaced the older panels during the year 2005 renovation project. The panels were mostly observed to be in good operational condition, and only a few panels were observed appearing "old". The Secondary switchboard and the few "old" downstream panels are recommended for replacement with associated power feeders."				
Life Safety: Means of Egress (Architectural)		●			
	"Stair guardrails in original portions of the building do not meet code required heights. Quantity and locations of egress stairs and doors appear to be adequate although not all exits are accessible."				

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Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Life Safety: Means of Egress (Electrical)	●				
	"Emergency "egress" lighting consists of internally lighted LED exit signs and dedicated lights throughout the building powered by the emergency generator power distribution system. Emergency lighting throughout is observed in adequate operational condition."				
Life Safety: Fire Protection (sprinklers)	●				
	"The building is currently protected by an automatic sprinkler system (2008 Design build project). An 6-inch service enters the building and flows through a 6-inch double check. A tee off the fire service feeds the domestic cold water for the building. The service room has a header with 6 shot gun risers (flow switch, main drain, pressure gauges). These risers serve the different parts of the building. The city water supply can accommodate the sprinkler system demands (Pump not required). The system includes a two way fire department connection, a storz fire department connection, main drain outlet, and electric bell. Fire department valves were not observed on either side of the stage. Current standards/building codes would require stage FDV's. Sprinklers - the testing and maintenance NFPA standard requires replacement or representative testing for sprinklers greater than 50 years. Quick response sprinklers require replacement or representative testing at 20 years."				
Life Safety: Fire Alarms	●				
	"The Fire Alarm (FA) system was designed and installed during the 2005 renovation project and shows some later upgrades. The FA system is addressable, manufactured by Notifier, consisting of addressable smoke and heat detectors, double action pull stations, speaker/strobes and strobe only unit, and connections to fire protection equipment. The Fire Alarm Control Panel (FACP) and radio master box are in the main entrance lobby 221A. The remote fire alarm graphic annunciator (FAA) is in the main entrance vestibule. All classrooms and similar educational spaces, corridors, teacher areas, etc. are equipped with signaling devices. Outdoor knox boxes are provided at the entrance doors. All FA equipment was observed to be in good operational condition."				
Security: Entry Sequence		●			
	"The main entrance has controlled card access and an intercom system. There is limited direct visual access to the exterior from the main office. The entrance to the main office is across the hall from the main entry vestibule."				

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Lighting Quantity / Control	●				

"Many recent lighting system upgrades were observed, however, about a half of the building was noticed still to have outdated lights in fair-to-poor condition. 2'x4' recessed LED "basket reflector" lights with integral occupancy sensors were observed in many classrooms and corridors, in some bathrooms, etc., while other similar spaces had "old" wraparound lights with fluorescent lamps and no occupancy controls, showing signs of wear. Lighting controls were observed as a mix of recent upgrades and "old" switching arrangements. Lighting in both Gyms was upgraded with LED lights observed in good operational condition. Lighting in kitchen appears in need for repairing/re-lamping and/or replacement and upgrading on illumination levels side. Library lights are about 20 years old recessed fluorescent "basket" lights, in good operational condition. Classrooms, corridors, bathrooms, storage areas containing the "old" wraparound lights with fluorescent lamps are suggested for replacement with new energy-efficient LED lights. Additional occupancy and daylight controls should be added in compliance with the Energy Code."

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Toilets and Fixtures			●		

"With the exception of the early 2000's renovation, fixtures are old and assumed to have standard flow rates. The renovation includes ADA fixtures and seem to be in good working order. Replacement of fixtures with new low flow fixtures and ADA compliant fixtures (as required) is recommended. A few drinking fountains have been replaced with the bottle filling type. Some older style fountains are still present in some locations. The men's team room - some showers work and are operational. There was a pipe burst on the system and that section of showers is shut off."

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Plumbing Distribution Systems		●			

"A 3-inch domestic cold water service splits off from the 6-inch combined sprinkler/water service. The 3-inch reduces to two parallel 2-inch lines (2"meter and 2"bypass) before flowing through a 2-inch reduced pressure backflow preventer. The discharge line from the backflow feeds the domestic water needs. The age of the domestic water piping throughout the building varies. Original piping is close to 63 years old while renovation piping is anywhere between 10 to 43 years old. Piping greater than 40 years old (life expectancy 40-50 years) should be evaluated (sample destructive testing, water quality testing) to determine the condition and help estimate the longevity left in the piping. Original valves and pipe solder pre-date current lead free regulations and requirements. Observation of sanitary and vent, storm water piping was limited to exposed areas. Above ceiling observations were not performed. The expected lifespan of cast iron piping is 50 years. Future renovations should consider scoping/testing to confirm the expectancy left in the piping. Vents through roof and roof drains appear adequate with no immediate concerns. (No ponding observed)."

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Accessibility (Architectural)		●			

"Overall the building accessibility is good. Most of the toilet rooms have been updated to meet accessibility regulations. The 1998 science classroom renovations did not incorporate accessible sinks. The one elevator was added in 1980. Auditorium seating is original and does not include accessible seating. The stage is not accessible from inside the Auditorium. The music room is not accessible with tiered platforms and stairs at entrances."

Accessibility (Plumbing)		●			

"Some of the older toilet rooms have fixtures that do not meet ADA requirements. Science classroom emergency fixtures as well."

Structural Systems: Signs of Deterioration Observed?

	YES	NO
Roof		✓

"Roof framing is primarily custom framed steel members with metal deck roofing. Some bar joist with metal deck. Roof at auxilary gym is longspan bar joists with a metal deck roof. Roof framing at main gym is a series of steel beams supported on midspan trusses. Roof deck is comprised of Tectum roof panels. All framing and roof panels are in good condition."

Floor		✓

"Floor in excellent condition with few if any cracking observed."

Walls / Columns		✓

"Masonry walls and steel framing appears to be in good condition."

Foundations		✓

"Foundation walls are in good condition. Parging of walls is spalling though in many areas."

Façade		✓

"Exterior wall basically in good condition. There is some cracking in the upper walls where there is a lack of control joint in the masonry."

Is Lateral System Identifiable?	✓	

"Lateral system is comprised of masonry shear walls and some steel braced frames."

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REPORT TYPE

Facility Evaluation

Community

	YES	NO
Emergency Shelter	✓	
	"Main Shelter for South Campus."	
Are there Separate Community / Non-School Spaces on Site?	✓	
	The site is shared with Clem Lemire Athletic Complex, which is operated by Parks and Recreation and can be reserved for community use.	

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Site Evaluation Criteria

Physical Analysis	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Parking Capacity	●				
	"Site contains multiple lots with significant capacity: Main student lot by baseball field: Approx. 186 spaces Staff lot and visitor parking along main access drive: Approx. 176 spaces Eastern lot along S Porter St: Approx. 120 spaces Lots in process of repaving, so final counts may change. Exact parking demand dependent on number of students who drive themselves to school"				
Parking Quality	●				
	"Staff and visitor parking at main entrance. Larger student lots by baseball field (off Weston Rd) and along east side of building (off S Porter St). Both in process of repaving. Separate lot for athletic facilities to the west off of S Jewett St. Paving condition presumed will be good post current repaving projects."				
Ground Cover	●				
	"Grass and some landscaping around building. Small trees in large island along front parking/drop off loop. Additional trees/plantings for screening around fields and slope stabilization. Minimal shading for parking areas and walkways around perimeter of building. Overgrown natural meadow area between high school and middle school. Possible drainage swale or wetland."				
Fields	●				
	"West of building (Clem Lemire Athletic Complex): Official track and football/ soccer field with bleachers and facilities. Baseball field, which may double as multi purpose/practice field. Fields in good condition. Both fields at lower elevation than building. Separate parking/entrance to the west or stairs for pedestrian access to/from school. Northeast of building: 6 tennis courts, slightly higher elevation than building. sloped bituminous walkway up to flush entrance to courts."				
Neighborhood Streets		●			
	"Adjacent residential areas on all sides. Few crosswalks, no sidewalks on opposite side of S Porter Street from site."				

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Drop-off / Pick-up Routes	●				
	"Pick up/drop off route connects to Weston Rd and S Porter St. Fire access lane does not connect all the way around the building. No direct vehicular access from the high school to Southside Middle School or S Jewett St."				
Walkways / Curbs / Sidewalks	●				
	"Pedestrian access around building requires stairs to complete loop. Covered walkway along western edge of building (adjacent to fire lane) in good condition, connects series of doors into building, connects to athletic facility via crosswalk, does not connect to sidewalks at front entrance. Bituminous sidewalk with vertical granite curb along eastern edge of site adjacent to S Porter St. No shading, and exposed to heavier traffic. Crosswalks only at North and South ends/corners of the site. Mix of concrete and bituminous walkways around the site."				
ADA Accessibility		●			
	"Flush walkway from ADA parking spaces, +/-3" reveal from crosswalk/drop off zone to concrete plaza. Many parts of the site not accessible due to topography. Fields only accessible via stairs from school. ADA accessible route from separate parking lot west of the field. Sloped bituminous walkways down to field from school/top of bleachers, and from school up to tennis courts. Exact slope unknown; sloped walk is better than stairs, but may not meet ADA requirements."				
Site Lighting (Civil)	●				
	"LED fixtures in good condition."				
Site Lighting (Electrical)	●				
	"The exterior lighting consists of pole-mounted and building-mounted LED lights. LED wall packs run along the building perimeter walls. All LED lights are in good operational condition."				
Fencing	●				
	"Fencing around fields and along top of slope."				
Drainage	●				
	"Site predominantly drains away from the building. Reasonable number of drainage structures appear to be accurately placed in low points (exact drainage condition of parking lots difficult to evaluate in current paving condition)."				
Play Areas	●				
	"Site includes multiple athletic facilities (track, tennis courts, fields)."				

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Monuments and Memorials	●				
"Memorial tree outside building near main entrance. New Hampshire bicentennial monument in front area. Preservation or relocation of monument and memorial factor in site/building expansion feasibility."					
Walls / Slopes	●				
"Site slopes down significantly between school and athletic facilities. Bleachers built into slope. Multiple stairs around site. No major retaining walls."					

Physical Analysis

	YES	NO
Are there any Wetlands on Site?		✕
"Record drawings indicate wetlands present in wooded area Northwest of school. Wetlands are likely far enough from school to have minimum impact."		
Are there any Easements on Site?	✓	
"No easements per GIS. There may be easements with the electrical provider for utility poles between Southside and Memorial."		
Are Play Structures Age-Appropriate?	✓	
"No play structures on site. Fields, athletic facilities, and outdoor gathering/ recreation spaces are appropriate for high school."		
Is there an Outdoor-Learning Area?	✓	
"Three interior courtyards: 1) picnic tables available for outdoor learning space (used by special education department). minimal shading and broken pavement, in need of restoration. 2) trees and covered walkway adjacent to library and cafeteria used for outdoor seating at lunch. 3) entirely grassed, used for outdoor events/gathering space. could be improved with trees/added shading."		
Should there be a Question on Environmental Justice Populations / Vulnerable Populations?		✕
"NH GIS designates site as "Medium" Social Vulnerability Index. based on census analysis."		
Is the Building Expandable on the Current Site?	✓	
"Very high parking count for the site. Likely feasible to expand on site with parking reduction or more efficient parking layout."		

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REPORT TYPE

Facility Evaluation

Physical Analysis

	YES	NO
Is the Site Expandable?	✓	
"Small possibility to expand into field between Memorial and Southside. Natural resources, topography, and overhead wires present feasibility challenges."		

Community Analysis

	YES	NO
Historical Commission Status: Inventory of Archaeological Assets (Site Review)		✕
"The site is not listed on the National Register of Historic Places (per the National Park Service website)ÿor the New Hampshire State Register of Historic Places (per the New Hampshire Division of Historical Resources website). The site is also not within the Manchester Historic District or listed as a locally-designated historic site, per Manchester GIS."		
Are there School Buses?	✓	
"6 MTA and 16 SPED buses, per bus counts provided by the district."		
Bikeable?		✕
"No bike lanes along adjacent streets."		
Walkable?	✓	
"Sidewalks along site perimeter connect to adjacent streets. Crosswalks along S Porter and Weston Rd widely spaced out, limiting opportunities to cross both busy roads."		

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Bike Facilities		●			
"No bike racks despite demand, bikes were parked elsewhere around school including on a staircase near the main entrance and behind the school."					
Bus Stops **S Porter St at Memorial High School**	●				
"No indication of MTA Bus 10 stop near NE parking lot driveways. No parking and bus only signs present but for school buses."					
Parking **South parking lot**	●				
"Accessible parking indicated by signs but markings are difficult to see. For two-way portions of driveways near S Porter St and Weston Rd, it may be unclear to some drivers that parking circulation is two-way due to lack of double yellow lines."					
Parking **West parking lot**	●				
"3 accessible parking spaces near soccer/baseball field and 3 accessible parking spaces near football field. Curb ramps between the parking spaces and fields have no detectable warning panels."					
Pedestrian Connections **North of school building, to S Porter St**	●				
"Some staircase steps eroding near NW corner of school building."					
Pedestrian Connections **South of school building, to S Jewett St**		●			
"Path from S Jewett St missing link to main entrance around NW corner of south parking lot. Closer to main entrance, steps are eroding."					
Pedestrian Connections **West of school building, to football field**	●				
"Some cracks in staircase."					
Roadway Characteristics **Weston Rd**	●				
"WB speed indicator sign reduces but does not prevent speeding over 30 mph speed limit due to long stretch of straight wide road."					

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REPORT TYPE
Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Standalone Crosswalks **South parking lot in front of main entrance**	●				
"No curb ramp on school building side and no detectable warning panel on parking lot side. Pedestrian crossing should be evaluated for ADA compliancy."					
Unsignalized Intersections **S Jewett St at Jobin Dr/West parking lot north driveway**	●				
"Curb ramps on NW and SW corners appear to be ADA compliant but there are no crosswalks from them. Crosswalk on east side but NE and SE corners do not have detectable warning panels. Pedestrian crossings should be evaluated for ADA compliancy."					
Unsignalized Intersections **S Jewett St at Jobin Dr/West parking lot north driveway**		●			
"Poor sight distance looking left from Jobin Dr due to height of yard and retaining wall of 381 S Jewett St in northwest corner of intersection."					
Unsignalized Intersections **S Jewett St at West parking lot south driveway**	●				
"Crosswalk but no detectable warning panels across driveway. Pedestrian crossing should be evaluated for ADA compliancy."					
Unsignalized Intersections **S Porter St at NE parking lot north driveway**	●				
"No crosswalks or detectable warning panels across driveway. Pedestrian crossing should be evaluated for ADA compliancy. No STOP sign or STOP line for driveway approach."					
Unsignalized Intersections **S Porter St at NE parking lot south driveway**	●				
"No crosswalk or detectable warning panels across driveway. Pedestrian crossing should be evaluated for ADA compliancy. No STOP sign or STOP line for driveway approach."					
Unsignalized Intersections **S Porter St at Roysan St**	●				
"Crosswalk striping and school crossing signs across north leg but no detectable warning panels. Pedestrian crossing should be evaluated for ADA compliancy. STOP sign but no STOP line."					

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Unsignalized Intersections **S Porter St at South parking lot driveway**	●				
	"Crosswalk but no detectable warning panels across driveway. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Weston Rd at S Porter St**	●				
	"No detectable warning panels for the crosswalks across the north and east legs. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Weston Rd at South parking lot driveway**	●				
	"No crosswalk or detectable warning panels across driveway. Curb ramp on NE corner not flush with pavement. Pedestrian crossing should be evaluated for ADA compliancy."				

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Educational Facility Effectiveness: Learning Environments (EFE: LE)

Grade Levels

Building Originally Designed as:	9th Grade–12th Grade
Which Educational Program are you Assessing?	9th Grade–12th Grade
The Grade Configuration this School is Best Suited to:	9th Grade–12th Grade

Educational Building Analysis

	GOOD	FAIR	POOR	DEFICIENT	FAILING
Acoustical		●			
Adjacencies of Learning Environments		●			
	"Media center adjacent to cafeteria is not good adjacency."				
Environment (Inviting / Stimulating / Comfortable)		●			
	"Double loaded corridors not served by daylight. Harsh lighting and uninspiring aesthetic."				
Finishes			●		
	"Finishes are old and dated."				
Furniture			●		
	"Furniture does not support peer to peer learning."				
Lighting Quality			●		
	"Fluorescent lights"				

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REPORT TYPE
Educational Adequacy Evaluation

Educational Building Analysis

	GOOD	FAIR	POOR	DEFICIENT	FAILING
Natural Daylighting		●			
	"No daylight into corridors."				
Outdoor Classrooms					●
	"None observed, but school wants to create some in the courtyards."				
Technology: Power		●			
Technology: Wireless			●		
Ventilation		●			
	"Most rooms stay cool during hot days now."				

This Site Includes:

	YES	NO
Accessible		✕
Play Fields	✓	
Playgrounds / Areas		✕

Building Assessment

	YES	NO
Can the Building Change Typology Easily?	✓	
Can the Building be Transformed Educationally to Serve 21st Century Needs?		✕
Can the Building Serve as Swing Space?	✓	
Is the Building between 85%—115% Utilization Rate?	✓	

Educational Facility Effectiveness: Spaces (EFE)

Space Assessment	QUANTITY	ACTUAL AREA (SF)	MORE INFO
Administration and Guidance (Quantity Varies)	Varies	5090	N/A
	"Assistant principals - 1 dedicated to student services, master scheduling, facilities."		
Art Classroom (Min Area 900 sf or 36 sf / Student)	3	Varies: 1140 - 1330	N/A
Auditorium	1	5180	N/A
	"Stage is not accessible from seats."		
Band (Area 1200 sf)	1	1880	N/A
Cafeteria (Min Area 12-15 sf / Student for Max Number of Diners per Lunch Period)	1	9050	LUNCH PERIODS: 3
Chorus (Area 1200 sf)	1	1285	N/A
	"Chorus/Orchestra"		
Classroom: General Education (Min Area 900 sf or 36 sf / Student)	62	Varies: 800 - 980	N/A
FACS	1	1280	N/A
Faculty Lounge	1	725	N/A
Gymnasium (Min Area 6000 sf)	1	9955	STAGE: No
Media Center (Min Area 1800 sf or 4 sf / Student x Design Capacity)	1	8280	N/A

SCHOOL NAME
Memorial High School

SITE VISIT
August 2023

REPORT TYPE
Educational Adequacy Evaluation

Space Assessment

	QUANTITY	ACTUAL AREA (SF)	MORE INFO
Music Classroom (Area 1200 sf)	2	2020	N/A
	"Band and Chorus rooms, two practice rooms."		
Orchestra	See Chorus	See Chorus	N/A
	"Shared with Chorus."		
Photography	1	1115	N/A
Science Classroom / Lab (Area 1200 sf or 60 sf / Student)	14	650, 770, 850, 950, 1000, 1050, 1100, 1150	N/A
Special Education: Resource of Small Group (Area 500 sf)	4	Varies: 300 - 420	N/A
Special Education: Self Contained (Area 950 sf)	2	Varies: 830 - 840	TOILET ROOM: Yes
Stage (Area 1000 sf)	1	2635	N/A
	"Auditorium"		
Teacher Planning	4	920	N/A
Technology Lab	1	1405	N/A
	"Robotics/STEM"		
Woodshop	1	2000	N/A

Adequacy of Rooms

	GOOD	FAIR	POOR	DEFICIENT	FAILING
Administration and Guidance		●			
Art Classroom		●			
Auditorium		●			
Band		●			
Cafeteria		●			
	"No variation of seating."				

SCHOOL NAME
Memorial High School

SITE VISIT
August 2023

REPORT TYPE
Educational Adequacy Evaluation

Adequacy of Rooms	GOOD	FAIR	POOR	DEFICIENT	FAILING
Chorus		●			
Classroom: General Education		●			
FACS		●			
Faculty Lounge			●		
Gymnasium	●				
Media Center			●		
Medical		●			
Music Classroom		●			
Orchestra					●
	"No Orchestra Room."				
Photography		●			
Science			●		
	"Science Rooms do not have mobile lab benches."				
Special Education: Resource of Small Group		●			
Special Education: Self Contained		●			
Stage			●		
	"Stage not accessible from audience seating, floor needs replacement."				
Teacher Planning			●		
	"Insufficient number of Teacher Planning rooms."				
Technology Lab		●			
	"Robotics/STEM"				
Woodshop		●			

SCHOOL NAME
Memorial High School

SITE VISIT
August 2023

REPORT TYPE
Educational Adequacy Evaluation

Special Education Assessment	YES	NO	
18+		✕	
Autism Spectrum		✕	
Cognitively Impaired		✕	
Deaf and Hard of Hearing	✓		
Emotional Disturbance		✕	
English Learners	✓		
	"Push-In. Resource rooms 200 students, 170 with 504"		
Intellectual Disability	✓		
	"Self-Contained"		
Life Skills	✓		
	"Self-Contained. Not a dedicated facility but go to FACS for kitchen skills, go to adaptive classes."		
Medically Fragile		✕	
PT/OT/Speech	✓		
Reset Program		✕	
Social Emotional		✕	
Title 1		✕	

Assessment Team Scoring Rubric

Educational and Facilities Assessment Approach

Assessment Criteria

Educational and Facilities Assessment (E+FA) Approach - Led by architects, engineers, and educational planners from SMMA and its consultants, and in partnership with each school principal, the team conducted both a facility assessment (to take inventory of the building layout and condition) and an educational assessment (to determine the adequacy of spaces for the educational programs offered) in each building. The following report outlines the team organization, methodology and approach taken to assess the Manchester Public School portfolio over the Spring and Summer of 2023.

Overall Assessment

Categories and criteria were strategically selected for assessment based on stated objectives, past experience, and nature of the Manchester School District portfolio of buildings. Ultimately, the E+FA team created a customized "Manchester School District methodology" which encompassed approximately 75 areas of criteria, organized either facility or site categories that examined physical components, as well as community components.

Facility Assessment Criteria

Facility Assessment: Building Evaluation

Facilities varying in terms of age, design, construction methods, and materials were reviewed to determine the condition of the district's portfolio. Building assessments were performed to determine existing components and/or systems' conditions at a specific point in time. The resulting information was then used to guide recommendations regarding maintenance, renovation, and/or replacement. The assessment team conducted visual inspections to observe signs of deterioration. No exploratory demolition, removing finishes, or viewing above ceilings was conducted. Areas that were hard to reach, off limits, or obscured by other systems that prohibited view of the some building components were not assessed. Systems and categories that were assessed included:

- Building Envelope
  - Roof Membrane
  - Facade
  - Windows
  - Thermal Performance
- Boilers
- Heating Distribution
- Interior Finishes
- Rooftop HVAC Equipment
- HVAC Controls
- Kitchen Equipment and Systems
- Natural Gas Distribution
- Generator
- Elevator
- Ventilation Distribution Systems
- Electrical Service
- Life Safety:
  - Means of Egress
  - Fire Alarm
  - Fire Protection: Sprinklers
- Security: Entry Sequence
- Lighting Quantity/ Control
- Toilets and Fixtures
- Plumbing Distribution Systems
- ADA/Accessibility
- Structural Systems (consisting of the following components):
  - Roof framing: This is the horizontal framing consisting of decking, slabs, joists, beams, trusses, etc.
  - Floor framing: This is the horizontal framing consisting of decking, slabs, joists, beams, trusses, etc.
  - Walls and columns: These are the vertical elements that hold up the floors and roof structures.
  - Foundations: Foundations occur at the base of the building and transfer the weight of the building onto the underlying soils.
  - Facades: These are the outside walls of the building including many non-structural elements (doors, windows, insulation, vapor barriers, etc.) that are part of the weather enclosure for the building.
- Lateral System: The lateral system in a building is the structural system that keeps the building from falling over when it is subjected to horizontal loads such as wind and earthquake forces.

Building Evaluation: Criteria Rating Hierarchy

The facility assessment building evaluations used a quintile classification hierarchy as defined below:

- None / Minor: System or element functioning reliably; routine maintenance and repair is needed.
- Moderate: System or element functioning minimally. Repair or replacement of some components is needed.
- Major: System or element is barely functioning. Repair or replacement of most components is needed.
- Replace: System or element is non-functioning, not functioning as designed, or is unreliable. Total replacement all components is needed.
- Not Present: System or element is non-existent, non-functioning, not functioning as designed, or is unreliable. Replacement is needed.

Building Evaluation: Physical Analysis Definitions

Roof
Roof Membrane: Apparent condition status noted for the roofing material and flashings. Note any obvious deterioration.

Existing Photovoltaics
Yes / No: Criteria noted. However, presence or absence of photovoltaic did not impact overall building condition.

Space for Solar
Yes / No: Comments, if applicable. Evaluation of whether roof space exists for solar (if there are relatively flat areas for possible future solar panels). Note that the roof structure was not evaluated for structural capacity of future PV panels. Criteria noted; however, presence or absence of photovoltaic panels did not impact overall building condition.

Façade
Description of apparent condition and materials of the exterior walls. Observations of any spalling or disintegration of brick or concrete masonry unit (CMU) walls and the condition of the mortar. Notes if there is any obvious movement or structural cracking, and if there is failure, the percentage of failure. With prefabricated panel system facades, notes the types and apparent conditions of attachment systems, panel material, and whether there is deterioration of the surface or caulking or movement in the panels.

Windows
Description of types and apparent conditions of exterior windows. Considers whether most windows appear to be in good working condition, if windows are transparent or translucent, and if they are single or double-paned.

Boilers (Mechanical)
Review of fuel sources and apparent conditions of boilers.

Boilers (Plumbing)
Observation of heating media (e.g. water or steam) of boilers.

Heating Distribution Systems
Evaluation of type and apparent conditions of piping, type, and apparent corrosion.

Building Envelope Thermal Performance
Review of the existing drawings of envelope elements (exterior walls, roof, foundations and slabs). Notes presence of vestibules at building entrances for temperature control.

Interior Finishes
Evaluation of types and conditions of interior wall, flooring, and ceiling finishes.

Rooftop HVAC Equipment
Review of type and apparent condition of roof top units (RTUs), exhaust fans, and air conditioning equipment, if present.

HVAC Controls
Review of types of thermostats and type and apparent condition of Building Management System (BMS) if present.

Kitchen Equipment and Systems (Architectural)
Evaluation of adequacy and apparent condition of kitchen equipment.

Kitchen Equipment and Systems (Electrical)
Observation of electrical kitchen appliances.

Kitchen Equipment and Systems (Plumbing)
Observation of gas kitchen appliances. Observation of apparent condition of kitchen plumbing fixtures, and whether there are separate sinks for handwashing and dishwashing, per health and plumbing codes. Notes if proper fire suppression system exists where required.

Natural Gas Distribution System
Review of apparent condition of the natural gas system, how it enters the building and is distributed, and of shut-off valves.

Generator
Review of type of generator, type of fuel source, and apparent condition if one is present.

Elevator
Evaluation of apparent condition of elevator if present.

Ventilation Distribution Systems
Review of locations and apparent condition of fans, ductwork, duct grilles, and other ventilation components.

Electrical Services
Apparent condition status noted. Review of available capacity, location and appearance of electrical service and meter age.

Life Safety

- Means of Egress:
  - (Architectural): Evaluation of apparent existence of proper smoke and/or fire doors, and if mechanical hold-open devices appear in good working condition. Notes if egress paths are direct and unencumbered, and whether there are enough exits relative to the facility population.
  - (Electrical): Review of illuminated exit signs and whether they are in the proper locations and appear to be in good condition.
- Fire Protection (Sprinklers): Observation of type and age of system and components. Review of maintenance records and certifications, if available.
- Fire Alarms: Observation of type, age, and appearance of systems. Review of available testing records.

Security

Entry Sequence: Observes if schools have only a camera/buzzer system at their main entrance or whether the main building entrance is adjacent or near the main office. (Adjacency/proximity of main office to main entrance allows for direct observation of the entire person, as well as control of their movements)

Lighting Quality/Control

Observed (not measured) light levels at the working surface, type of light fixtures and whether they provide an even dispersion and control of light for general academic tasks as well as for use of technology. Apparent condition, locations, and lighting uniformity are noted.

Toilets and Fixtures

Review of locations and apparent conditions of fixtures. Notes the maintenance and cleanliness of fixtures and flow of fixtures.

Plumbing Distribution Systems

Review of piping type, apparent corrosion, and equipment, including presence or absence of water heater & back-flow preventer.

ADA / Accessibility

- (Architecture): Observes whether the facility is compliant with the Americans with Disabilities Act (ADA) of 1990 standards. Evaluates adequacy and conditions of ramps, lifts, and elevators and whether every occupiable space in the facility can be accessed by anyone with a disability. Other considerations include compliancy of building elements such as clearances and door hardware.
- (Plumbing): Evaluation of whether toilet facilities and plumbing fixtures are ADA-compliant.

Structural Systems

The assessment team conducted visual inspections to observe signs of deterioration. No exploratory demolition, removing finishes, or viewing above ceilings was conducted. Areas that were hard to reach, off limits, or obscured by other systems that prohibited view of the structure were not assessed. Each of the criteria listed below is considered as it relates to the structural elements of the building.

A “Yes” comment in the assessment indicates that we observed signs of deterioration. A “Not Observed” comment in the assessment indicates that we either did not observe any distress in the structural element or were not able to observe the element due to the aforementioned limitations, and this does preclude an unobserved area from distress.

- Roof structural framing: As the framing is covered by roofing, observations are usually made from below. Water leaks are a common cause of damage to roof framing and part of the visual assessment is to look for signs of water damage. In wood framed structures, visual signs include mold or rotting wood. In structures with metal deck, visual signs include rusting of the deck and in concrete structures it can be cracks with rust stains or spalled concrete, indicated where a section of concrete has broken off (typically caused by water penetrating concrete through small cracks causing the steel reinforcing to rust and expand putting outward pressure on the concrete and causing it to break off).
- Floor structural framing: Common signs of deterioration in floors can be cracks in floors finishes (such as terrazzo), cracks in the bottom of concrete slabs or beams, water damage like that in roofs and longitudinal cracks (or checks) in wood framing. Cracks in floor finishes while cosmetically objectionable is not necessarily an indication of a structural failure. There are several causes for cracks in wood framing members (joists or beams) which does not necessarily mean the member is structurally inadequate.
- Walls/columns: Walls are typically framed with masonry, concrete, or wood or light gage metal studs with varying finishes. Columns typically consist of steel, concrete, or wood posts and can also be masonry piers. Common signs of deterioration in concrete and masonry walls are cracks in the walls. Cracks typically run vertically (bottom to top), although in masonry walls the cracks often follow the mortar joints. Cracks in walls can be caused by many factors: shrinkage in the wall due to changes moisture or temperature, movement of the supporting structure, or stresses in the wall caused by other loads. Concrete columns can have spalled concrete, wood posts can have longitudinal cracks (similar to floor members), and masonry piers can have cracks similar to walls.
- Foundations: Notes the type of foundation. Some types include shallow spread footings (concrete pads) and deep foundations such as caissons and piles that extend deep into the ground. Foundations generally include concrete components and are located below ground – making the system difficult to observe without performing some excavation. Some common signs of deterioration are cracks in foundation walls and areas where there has been vertical movement, indicating some settlement of the structure over time, which can be common. The causes of the cracks are like those described for walls.
- Facades: The structural components of the façade are typically the wall structure (see “Walls” above) but can also include the structural framing for overhangs or other horizontal elements that are part of the walls. Like in roof framing, moisture is a common cause for distress in facades. Common signs of distress are spalled concrete, cracks in concrete or masonry walls, and rusting steel members such as angle lintels over window and door openings in masonry walls. Note that some of these signs of deterioration do not necessarily indicate a structural deficiency and may only require maintenance.
- Identifiable Lateral System: Notes the presence and type of lateral load-resisting system, such as steel braced frames or shear walls consisting of concrete or masonry walls. Often, steel braced frames are imbedded within walls, making them difficult to identify. With masonry walls, it can be difficult to determine if a wall is a shear wall or just a partition wall. It is not possible to determine the structural adequacy of shear walls or braced frames without an in-depth investigation and it should be noted that many masonry walls in older buildings have little or no reinforcing. Common signs of distress in concrete and masonry shear walls are like those described for walls above.

Community Assessment: Building Evaluation

The Community – Building assessment included several categories including historical value, emergency shelter status, and use of community and school within/without the buildings. Historical value reviewed the historic inventory and register status of the building. Because schools are often the largest structure in a neighborhood, the City has designated certain facilities as emergency shelters. Additionally, several schools are directly connected to community centers or utilize adjacent neighborhood facilities for athletics and enrichment. Whether the community utilized the building after hours or on weekends was also considered.

New Hampshire Division of Historical Resources (DHR) Status
Yes/No; Comment, if applicable. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Inventory of Historic Assets
Yes/No; Comment, if applicable. Notes whether the building is listed on any inventory of historic assets. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

State Register of Historic Places
Yes/No; Comment, if applicable. Notes whether the building is listed on a state Register of Historic Places. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Locally Designated Historic District
Yes/No; Comment, if applicable. Notes whether the building is within a local historic district. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Emergency Shelter
Yes/No; Comment, if applicable. Criteria noted and considered as part of the overall community building score. A designation by the city does not certify compliance for all state and federal requirements for the designation.

Community-Use Spaces
Yes/No; Comment, if applicable. These were determined after speaking with school administration during site visits. Community spaces attached to schools were also considered. Criteria noted and considered as part of the overall community building score.

Building Suitability for School Use
Yes/No; Comment, if applicable. Considered any major life-safety concerns for suitability. Criteria will inform opportunities and constraints for modifying the existing building.

Overall Community Building Rating
This is a judgment on the part of the reviewer(s) that considers all aforementioned factors, as well as amenities located in proximity to school sites and access to public transportation.

Facility Assessment: Site Evaluation

The site assessment team performed evaluations at each school facility in the district's portfolio. These evaluations considered the quality, condition, and capacity of the various exterior spaces of the facility. These spaces included: landscaped, educational, recreational, vehicular and pedestrian areas. This field effort was complimented by a study and research of the sites from web-based resources. The resulting information was then used to guide recommendations regarding maintenance, renovation, and/or replacement.

The diverse scope of site elements for schools varies in their relative impact to education and school operations. Priorities include elements that have large impacts to education and/or incur substantial impact to improve or repair.

- ADA Accessibility
- Walkways/Curbs/Sidewalks
- Play Areas
- Drainage
- Parking Quality
- Drop-Off/Pick-Up Routes
- Walls & Slopes
- Site Lighting
- Fencing
- Neighborhood Streets
- Evaluation Criteria

Site Evaluation: Criteria Rating Hierarchy

The site evaluations were judged on a scale as defined below:

- None / Minor: Element is functioning reliably and requires a little repair and routine maintenance.
- Moderate: Element is functioning minimally and requires some repair by a specialist.
- Major: Element is barely functioning and requires substantial repair by a specialist.
- Replace: Element is not functioning correctly and requires total replacement.
- Not Present: Element does not exist or completely failed. This element should be replaced and/or provided. In some instances (parking, walls/slopes and fencing) this element is not required.

Site Evalutation: Physical Analysis Definitions

Parking & Vehicular Circulation
Quality of vehicular area paving and quantity of parking spaces considered. This element may not be required if "Not Present".

Ground Cover
Presence and condition of landscaping, lawn areas, and any other non-hardscape areas. Ground cover evaluated for aesthetic value, shading, and functionality for outdoor gathering

Fields
Presence and apparent condition of athletic or play fields on the property.

Neighborhood Streets
Connectivity to residential areas surrounding the site. Condition of adjacent/ off-site roadways, sidewalks, and accessible elements considered.

Drop-Off/Pick-Up Routes
Segregation of buses, private vehicles, parking, and neighborhood traffic considered. Both on-site and off-site routes considered. This element may not be required if “Not Present”.

On-Site Walkways/Curbs/Sidewalks
Quality of all pedestrian spaces considered.

ADA Accessibility
Availability, location, and condition of accessible routes considered. The accessible routes connect building entrances, handicap parking, public streets, and site facilities. Accessibility is considered “Not Present” if there is no accessible building entrance.

Site Lighting
Condition, location, and quantity of lighting considered.

Fencing
Condition of fencing and gates of various types considered. This element may not be required if “Not Present”.

Drainage
Surface ponding, water quality structures, and condition of visible infrastructure considered.

Play Structures
Evaluation of apparent condition of play structures and if they are appropriate for range of ages of students at a school, if present.

Walls and slopes
Condition of retaining walls and stabilized slopes considered. This element may not be required if “Not Present”.

Wetlands on site
Yes/no; proximity of wetlands or natural resources to the site, which – if present – may add restrictions or regulatory challenges to site renovations or expansion.

Play Areas
Presence, suitability, and physical condition of casual recreation and play for students. Play structures, surfacing, and courts considered. This element may not be required if “Not Present”.

Outdoor Classrooms
Evaluation of apparent condition of outdoor classrooms or learning areas if present.

Environmental Justice Populations
Review of designation of site and adjacent neighborhoods on the Social Vulnerability Index, per state GIS.

Feasibility of Building Expansion on the Current Site
Evaluation of whether building is capable of appropriately expanding on its current site. Expansion can be horizontal, vertical, or infill, depending on the building's configuration. Feasibility of expansion based on size of property, existing coverage, regulatory restrictions, and physical constraints such as topography and proximity to natural resources.

Feasibility of Site Expansion
Evaluation of whether site expansion is possible, based on adjacent properties, and physical constraints, such as roads, proximity to protected lands, and easements.

Community Assessment: Site Evaluation

The Community – Site assessment included the broad categories of transportation access and neighborhood elements. Transportation access considered the condition of the adjacent streets, the ability of students and adults to bicycle and walk to the school, and the accessibility of public transportation. Neighborhood elements considered the school's proximity to community, civic, educational, commercial, and athletic facilities.

New Hampshire Division of Historical Resources (DHR) Status
Inventory of Archeological Assets (Site Review)
Comment, if applicable. Criteria will inform opportunities and constraints for modifying the existing building. In some cases, data may not be available.

School Buses
Review of types and numbers of school buses and bus queuing.

Accessible to Transit
Building is located within 2 blocks (1000 feet) of at least 2 stops on bus lines of regular frequency (at least every 10 minutes, during rush hour and mid-afternoon). Criteria noted and considered as part of the overall community building score.

Bikeable
Facility is considered bikeable if within 2 miles of multiple residential neighborhoods, without riding on busy streets that lack dedicated bike areas. Criteria noted and considered as part of the overall community building score.

- Wide sidewalks and/or low-traffic streets
- Adjacent to or within a residential neighborhood, without crossing busy & wide (4+ lanes) streets
- Not located on a steep street
- Bike racks are present at the school and are safely accessed from site entry points

Walkable
Facility is considered walkable if within 1.4 miles of residential neighborhoods, with consistent sidewalks, and walking route does not require students to cross busy or dangerous streets (per district eligibility criteria).

- Consistent, accessible sidewalks with crosswalks
- Adjacent to or within a residential neighborhood, without crossing wide (4+ lanes) streets

Site suitability for school use?
Yes/No, Comment if applicable. Considers overall site conditions, overall community rating, and size of site.

Overall Building – Community Condition:
This is the professional judgment on the part of the reviewer(s), considering all aforementioned factors and with consideration of nearby neighborhood, community, educational, and athletic facilities. Criteria noted and considered as part of the overall community building score.

Educational Assessment Criteria

Educational Facility Effectiveness Evaluation

Educational Facility Effectiveness of Learning Environments (EFE-LE)

The quality of physical environments has direct impacts on educational outcomes. The EFE analysis considers both inherent building characteristics of physical appearance and condition, and introduced equipment (e.g., furniture and technology). These qualitative factors have a large impact on overall student performance, as they influence students' comfort and ability to concentrate on tasks; teacher and student health and wellness; as well as absenteeism and retention.

Building environments also affect the overall educational effectiveness rating. Fixed elements, such as walls and windows, are components that are not easily remedied and may require extensive or invasive renovation. Other elements, such as furniture or finishes, can be more easily updated, replaced, or supplemented.

Fixed Building Elements include:

- Ventilation
- Natural Daylighting
- Lighting Quality
- Acoustical
- Environment (Inviting/Stimulating/Comfortable)
- Power and Technology Infrastructure
- Access to water for student projects
- Access to toilet facilities

Repairing these fixed elements may require buildings to be unencumbered of students (i.e., vacant) for the duration of the work, depending on the upgrades required.

- Adaptable elements
- Technology: ubiquitous wireless access for teachers and students and classroom technology
- Furniture: light weight, ergonomic and supportive of collaboration
- Finishes
- Adjacencies of Learning Environments
- Access to outdoor learning (classrooms or other)

These considerations often consist of singular systems and can be repaired or replaced independent of other systems. They may change frequently with the evolving landscape of educational pedagogy and should support a building that can adapt flexibly at relatively low costs. These upgrades can be executed internally, by facilities personnel or with arranged contracts.

Educational Facility Effectiveness Evaluation: Criteria Rating Hierarchy

The EFE-LE uses the following classification system:

- Excellent: Elements meet needs for 21st century (Next Generation) teaching and learning
- Good: Elements contribute to teaching and learning
- Fair: Elements somewhat interfere with teaching and learning
- Poor: Elements detract from or interfere with teaching and learning
- Deficient: Non-existent or inoperable systems or elements

Educational Facility Effectiveness Evaluation: Analysis Definitions

Evaluation Criteria

Building Originally Designed As: Over time, a school building may have modified the range of grades served. Knowing their original use quickly provides some insight into space types and building appointments.

Best Grade Configuration for this School Building

A school building may be best suited for a different range of grades or use depending on the types, quantities, and sizes of spaces, as well as the existing site attributes, including:

- Heights of casework, markerboards and other elements the students use
- Configuration and heights of toilet room fixtures

Ventilation

Fresh air is a critical component for health, wellness, and overall student performance. An even distribution of ventilated air is also important. Different ventilation systems (unit ventilators, central air ventilation, no mechanical ventilation) provide varying levels of outdoor air percentages and filtration. Observe whether mechanical ventilation is provided and what the apparent quality of the ventilation system is. Qualitative measurements are not taken, however visual, olfactory, and thermal observations are made.

Natural Daylighting

Considered to be a better quality of light than artificial lighting. Evaluates the general quantity/quality of the natural light and note if most spaces have access to daylight.

Artificial Lighting Quality

Observed (not measured) light level at the working surface. Type of light fixture and whether it provides an even dispersion of light for general academic tasks, and whether the fixture is dimmable, to accommodate use of technology.

Acoustical
The proper balance between voice reinforcement and sound absorption impacts “speech intelligibility.” This includes both sound performance within the space, as well as sound coming from outside the space. Observe whether the space appears to have appropriate acoustical properties for teaching and learning.

Technology (Power):
There are enough electrical outlets to support a future technology-rich classroom/school and they are properly distributed throughout the space.

Technology (Wireless):
There are sufficient access points throughout the school to support a 1:1 technology environment and fiber optic wiring exists within the building The main distribution room (server room) is air-conditioned, to ensure system reliability.

Technology (Interactive):
Classrooms and other teaching spaces have working interactive technology, such as interactive marker boards and document cameras.

Furniture
Different educational-delivery models can be reinforced by furniture type and flexibility. Ideal furniture is light and mobile enough to be easily re-arranged in multiple configurations. Furniture is ergonomic, comfortable, in good condition and promotes student collaboration.

Finishes
Materials and conditions of the walls, floors and ceilings. Both physical and aesthetic conditions are considered.

Environment (Inviting/Stimulating/Comfortable)
Evaluates whether building is aesthetically pleasing and if it is a place where students and teachers feel comfortable and want to spend time in each day.

Adjacencies of Learning Environments
Classrooms and other learning environments have a relationship to each other which promotes collaboration, communication, and other aspects of 21st century teaching and learning. Spaces promote interdisciplinary learning.

Outdoor Classrooms
Students have access to outdoor classrooms or other outdoor learning opportunities to learn in different ways, sometimes involving nature and hands-on activities.

Site Components

Playgrounds/Play Areas
Description of play surface materials (hard or soft). Evaluates condition of on-site play structures and whether structures are age-appropriate to the school's student population.

Accessibility
Evaluates conditions of play areas, including the ground surface/material, and whether areas are accessible to children of various disabilities.

Play Fields
Describes conditions of play fields, if present, and whether fields natural grass or synthetic turf.

Flexibility in Building Typology
Evaluates whether the building can serve alternative grade levels or support a special needs-focused curriculum.

Educational Transformation to Support 21st Century Needs
Evaluates if the building's construction easily allows for renovations that may change room sizes, replace or upgrade mechanical and electrical systems, and accommodate alternative educational-delivery methods (e.g., project-based learning [PBL]). This can often be the largest difference between a modern steel-frame building and interior masonry-bearing wall construction.

Building as Swing Space
Assuming the building is otherwise unoccupied, the ability to use the building for educational purposes for the temporary relocation of a school population during a period of renovation or construction.

Utilization Rate
Description of the utilizations rate and if it is 85% or higher. For high schools, classroom utilization of 85% are considered at capacity. Rates higher than 85% show levels of overcapacity and overcrowding. Middle schools generally work to a utilization of 90% and elementary schools at near 100%.

Educational Facility Spaces Effectiveness Evaluation

The Educational Facility Effectiveness – Spaces (EFE-S) metric compares the sizes of educational spaces to the New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines for 21st century teaching and learning in new capital projects. This quantitative analysis is important for establishing the level of adequacy of the existing spaces for educational delivery. It also indicates whether a facility is deficient/missing dedicated educational spaces normally found in buildings of its grade level and typology.

Primary considerations often affect core curriculum and include:

- Classrooms (Depending on typology, these may include Pre-K and Kindergarten)
- Teacher Planning
- Small Group
- Science
- Art
- Music
- Vocations and Technology
- Media Center
- Cafeteria

Secondary considerations may allow for district flexibility in programming and community resources outside the traditional building environment, and include:

- Gymnasium (This program space is sometimes served by local community spaces)
- Gymnasium Options
- Auditorium
- Stage
- Medical
- Administration & Guidance
- Air Conditioned Technology Network Room
- Other considerations
- Special Education: Self-Contained
- Special Education: Resource or Small Group

Note: If a school has a special education program, its quantity of spaces will vary. Also, some substantially separate programs do not require full-size classrooms to be effective. For this reason, special education was considered differently than typical classroom spaces.

Educational Facility Spaces Effectiveness Evaluation: Criteria Rating Hierarchy

The educational facility effectiveness assessment for spaces used a quintile classification hierarchy as defined below:

- Excellent: Exceeds New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines (+10% or greater)
- Good: School facilities are appropriate to house current enrollment and educational program. NSF meets New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines (-10% to +10%)
- Fair: School facilities appear to be adequately sized for current enrollment and educational program. NSF somewhat less than New Hampshire Code of Administrative Rules, Section Ed. 321 (-10% to -20%)
- Poor: School facilities may not be adequately sized for current enrollment and educational program. Net square footage (NSF) at least 20% less than New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines
- Deficient: Dedicated space does not exist.

Educational Facility Spaces Effectiveness Evaluation: Analysis Definitions

Narratives

The team considered the long-term goals relative to each building's capability of supporting Manchester School District's educational vision for 21st century (next generation) learning and teaching.

Engaged Learning

Engaging with the curriculum, applying it to an authentic context. Making connections between content areas and values/curiosity and interest. Finding connections to the community and making a difference. Public and tangible products. There is selective and intentional engagement, and agency in how one keeps focused and takes breaks.

- The following were criteria used for evaluating the levels of Engaged Learning at each school:
- The building (is/is not) comfortable to learn in.
- The building (has/lacks) appropriate temperature control and ventilation.
- The building (has/lacks) a space that can be used as a flexible learning commons for collaborative learning and presentations.
- The building (makes use/does not make use) of public space for teaching and learning.
- The building (provides/lacks) display space for student work to reinforce student accomplishments.
- The building (provides/lacks) space for teacher collaboration and planning.

Differentiated Learning

Acknowledging different learning styles. Encouraging how to understand one's self (self-knowledge). Flexibility that occurs within instruction, which also promotes flexibility in how students demonstrate learning. The following were criteria used for evaluating the levels of Differentiated Learning at each school:

- Classrooms (are/are not) large enough to support Universal Design for Learning (UDL), including the ability to create learning zones.
- The building (has/lacks) breakout spaces for differentiated/personalized learning and special education.
- The furniture in the building (can be/has difficulty being) flexibly arranged.

Cognitively Demanding Tasks/Programs

- The classroom environment (is/is not) sufficiently flexible to allow for different teaching and learning styles.
- Building (supports/lacks) learning environments that support music.
- Building (supports/lacks) learning environments that support art.
- Building (supports/lacks) learning environments that support physical activity/education.
- The building environment (supports/does not support) STEM adequately.
- The building (provides/lacks) space to experiment, create and collaborate.
- The building (has/lacks) performance/presentation space.
- Based on location and proximity to community resources and public transportation, teachers and students (can/have difficulty) access(ing) the City as a learning tool.

Overall EFE Rating

NH Code of Administrative Rules, Section Ed. 321 areas are based on current enrollment within school. Actual areas were determined by measuring CADD plans provided by Manchester School District. SMMA did not field-measure the buildings but verified general conformity with existing conditions by measuring spot values to determine the rough accuracy of CADD drawings. The design team reviewed the 2018 CMK Long-Range Facilities Plan, which informed some of the educational effectiveness ratings.

The following outlines the rating system used for evaluating the Overall Educational Facility Effectiveness:

- Excellent: Elements meet needs for current AND future teaching and learning.
- Good: Elements contribute to teaching and learning.
- Fair: Elements somewhat interfere with teaching and learning.
- Poor: Elements detract from or interfere with teaching and learning.
- Deficient: Non-existent or inoperable systems or elements.