

NRHEG SCHOOL DISTRICT

2017 Facility Assessment





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EXECUTIVE SUMMARY



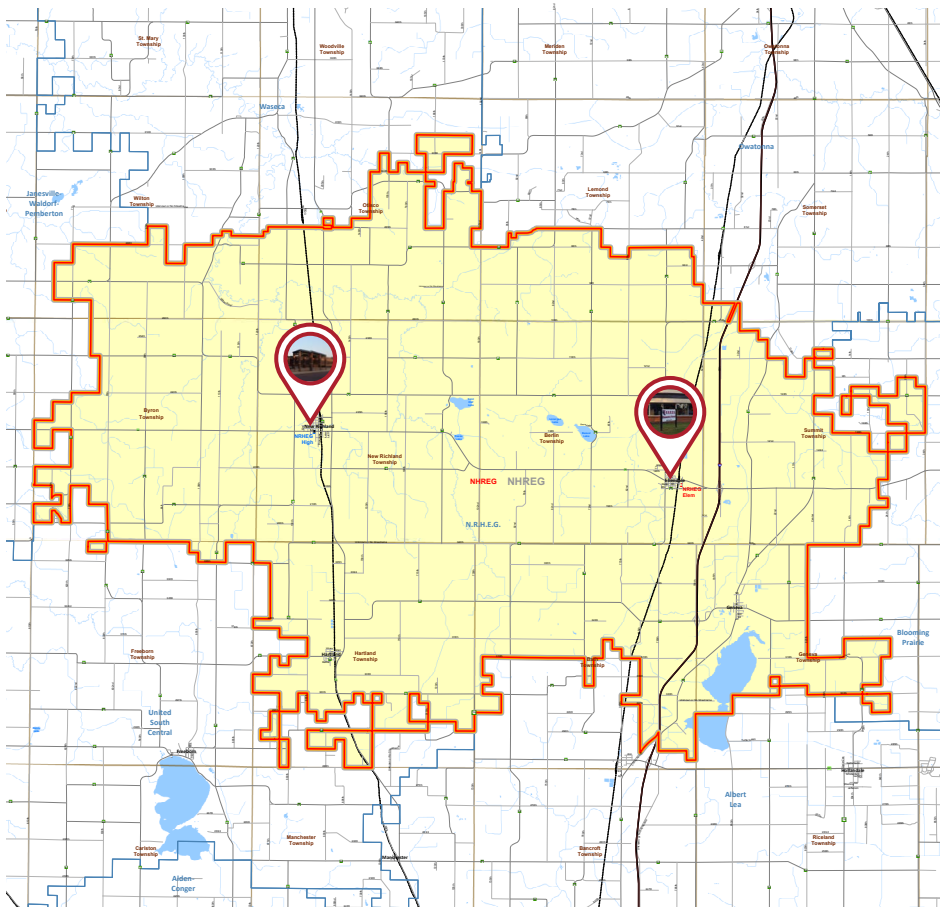
EXECUTIVE SUMMARY

DISTRICT OVERVIEW

The following pages provide a snapshot of the New Richland-Harland and Ellendale-Geneva School District, giving insight into its demographics, goals, and facilities.

COMMUNITIES SERVED + GEOGRAPHIC AREA

In 1992, the New Richland-Hartland and Ellendale-Geneva School Districts formally combined to form NRHEG ISD #2168. NRHEG serves 234.93 square miles including the New Richland, Hartland, Ellendale, and Geneva communities, and surrounding rural areas. The District boundaries map is below.



The average area of all school districts within the State of Minnesota is 254.09 square miles, which places NRHEG Public Schools just below the average of Minnesota's 332 school districts. When sorted by area, NRHEG ISD #2168 is Minnesota's 117th largest School District.

DISTRICT GOALS

STUDENT ACHIEVEMENT

Achieve the goals of the World's Best Workforce (WBWF) for all students in the District.

Expand how NRHEG defines, measures, and reports student achievement with a focus on each student's mastery in areas that extend beyond traditional academic indicators.

STUDENT SUPPORT

Develop and implement a sustainable and well-defined support system that enables all students and staff to achieve at high levels.

FACILITIES

Ensure that facilities and infrastructure of the District are designed to optimize staff performance and student learning in a safe, sustainable, and attractive environment.

WORKFORCE

Recruit and retain quality educators and provide opportunities for development of all staff.

COMMUNICATION + MARKETING

Foster partnerships with parents, communities, businesses, and organizations in support of the District's mission and vision.

Develop a multi-faceted public relations plan that is designed to promote the District.

FINANCE

Preserve the District's strong financial standing while maintaining programs, services, and facilities at maximum efficiency.

EXISTING FACILITIES

ELLEDALE ELEMENTARY SCHOOL

CONSTRUCTED: 1956

GRADES: PreK-5th Grade

LOCATION: 600 School Street in Ellendale

SECONDARY SCHOOL

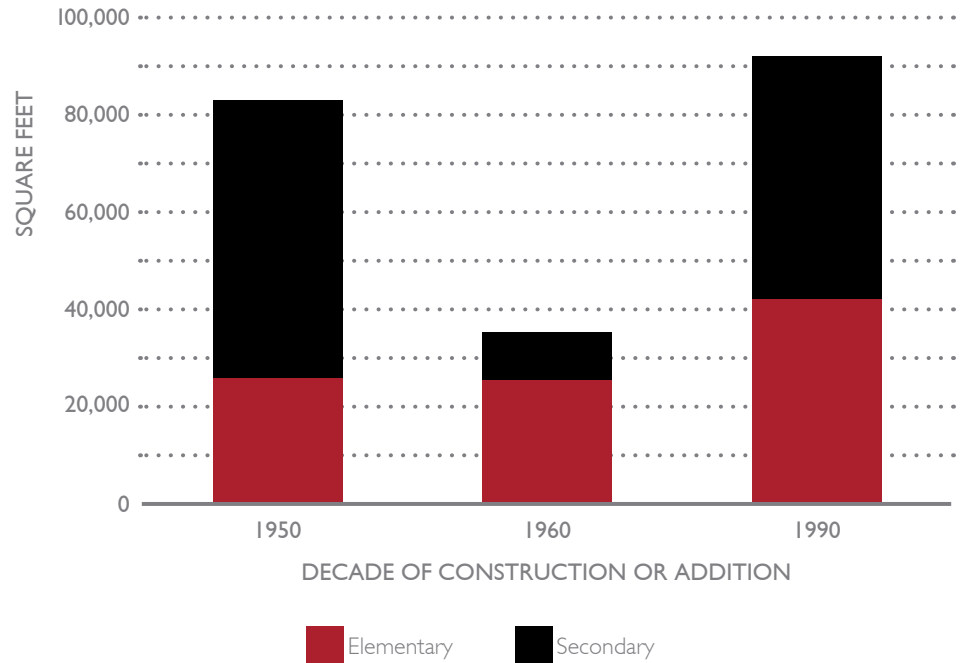
CONSTRUCTED: 1953

GRADES: Preschool, 6th-12th Grade

LOCATION: 306 Ash Avenue South in New Richland

EXISTING FACILITIES

NRHEG Public Schools operates two educational facilities. The Elementary School, serving preschool through 5th grades, is located at 600 School Street in Ellendale. The Secondary School (Middle/High School), serving preschool and grades 6-12, is located at 306 Ash Avenue South in New Richland. Both facilities had the original, early 1900s portions raised and in-filled with newer space. The oldest portion was constructed in the 1950s, with additions in the 1960s and 1990s.

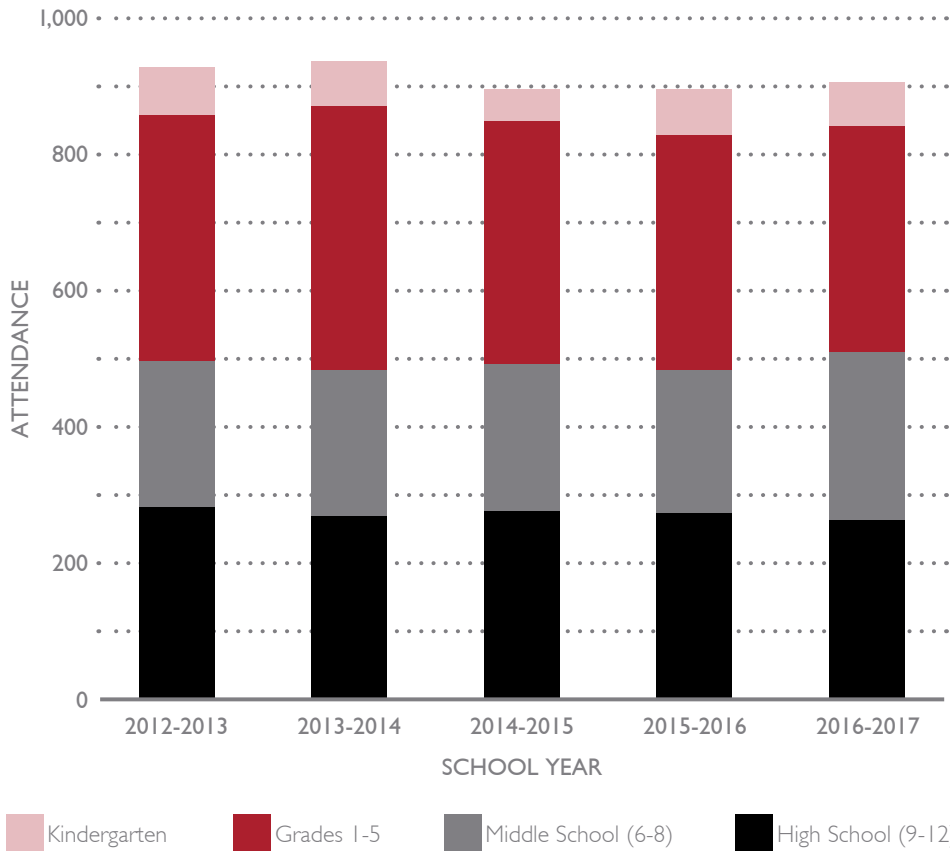


YEAR	ELEMENTARY	SECONDARY	GRAND TOTAL
1953		38,210	38,210
1956	27,150		27,150
1959		17,250	17,250
1962	18,500		18,500
1966	7,920		7,920
1969		9,360	9,360
1991		50,780	50,780
1994	41,000		41,000
TOTAL	94,570	115,600	210,170

Facilities age and square feet data was obtained from the Minnesota Department of Education.

DISTRICT ENROLLMENT

The District provided recent enrollment data for use within this report. The District's historical enrollment data indicated an overall decreasing trend with a small increase for the current year. However, with only five years of data, and year-over-year changes of less than 5%, it is ISG's opinion that enrollment for NRHEG ISD #2168 is stable.



FISCAL YEAR	ENROLLMENT
2012-2013	925
2013-2014	935
2014-2015	895

FISCAL YEAR	ENROLLMENT
2015-2016	892
2016-2017	903

The School District is working on improving their process for future enrollment projections. This information was not available for inclusion in this report.

DISTRICT MISSION + VISION

MISSION

Empower students with the knowledge and skills to succeed.

VISION

To be the District of choice, inspiring excellence in academics, arts, and activities.

EXECUTIVE SUMMARY

SCOPE OF EVALUATION

ISG conducted facility condition assessments of both School buildings in the NRHEG Independent District. The purpose of this report is to enhance District learning environments by providing planning and prioritization input for needed maintenance and improvements to school facilities.

INTRODUCTION

The NRHEG Independent School District serves approximately 900 students. Two facilities house the learning environments and associated support spaces for ISD #2168. Throughout its history, the communities have kept school facilities in good repair through regular maintenance and periodic improvements. Armed with information regarding the overall physical condition of the facilities and the buildings' responsiveness to the educational programs held within, the School Board will develop an appropriate facilities plan.

PURPOSE

In January 2017, NRHEG authorized ISG to conduct a facilities condition assessment of its buildings. The purpose of this assessment is multi-faceted, and when complete, will assist the School Board with:

- Planning for maintenance and improvements to school facilities
- Informing residents of facility needs
- Prioritizing long- and short-term projects
- Identifying opportunities to enhance learning environments
- Developing strategies for financial planning
- Developing and enhancing a 10-year facilities maintenance plan

SCOPE OF ASSESSMENT

ISG visited each NRHEG campus to perform comprehensive site and facility evaluations. The following campuses were included within the scope of the assessment:

- NRHEG Elementary School
- NRHEG Secondary School

During the assessment process, NRHEG Facilities Staff provided access to all areas of each property along with relevant information about each building and associated infrastructure.

The following assessment considers information gathered from field observations, review of existing plans, and information provided by District staff and school personnel. The assessments performed on site were limited to nondestructive, visual reviews of existing systems. Existing information and plans were made available to ISG by NRHEG for review. The following categories were reviewed within the scope of this assessment:

Site Conditions

Review of the existing building site including parking spaces, concrete walks, and other horizontal site elements. Site circulation, grading, paving, parking, stormwater, and playground spaces were also reviewed.

Exterior Building Conditions

Review of the building's exterior shell including an assessment of the structure, foundation, exterior walls, windows and doors, and thermal efficiency as well as conditions of the existing roof, gutters, and downspouts.

Interior Building Conditions

Examination of the finishes, equipment, and other conditions found in classrooms, offices, hallways, gymnasiums, locker rooms, stairwells, kitchen, and cafeteria areas.

Structural System Conditions

Review of structural integrity of existing buildings with analysis of columns, walls, and roof.

Life Safety Conditions

Review of life safety, egress, and potential code deficiencies as discovered during field observation. Also includes conditions of the fire alarm system.

Hazardous Material Conditions

Identification of potential hazardous material noted during visual field observations.

Accessibility Conditions

Review of the existing structure for conformance with the Minnesota Accessibility Code. Site parking, access into the building and entrances, accessibility routes inside of building, and restroom accessibility were also considered.

Plumbing Conditions

Review of the existing building plumbing systems including water service, water fountains, sinks, toilets, and showers.

Mechanical Conditions

Review of existing mechanical systems and their components including verification that HVAC systems, as well as plumbing fixture counts, water piping, and water supply meet current building codes.

Electrical Conditions

Review of existing building electrical systems including electrical service, distribution, and lighting. This section also documents technology systems and components including the security system and others as applicable.

Technology Conditions

Review of building information technology system including network documentation, backup procedures, firewall, software, security, and technical support.

Security Considerations

Assessment of existing security equipment installed throughout the building. Review of existing primary entryways into the facility including door locations and visitor access.

SITE CONDITIONS



Site Conditions



Exterior Building Conditions



Interior Building Conditions



Structural System Conditions



Life Safety Conditions



Hazardous Material Conditions



Accessibility Conditions



Plumbing Conditions



Mechanical Conditions



Electrical Conditions



Technology Conditions



Security Considerations

The issues with the highest priority items, include life safety deficiencies, while less urgent issues including necessary maintenance, replacement, and aesthetic improvements are defined with lower priority levels. While lower priority items still warrant attention, they are not critical to safety, security, or health concerns.

Please note that current costs shown are estimated construction costs only. For total project costs, 20% - 25% should be added to the construction costs of the following items:

- Project administration
- Permitting
- Owner fixtures and finishes
- Design Fees

EXECUTIVE SUMMARY

PRIORITY SUMMARY

Based on the items evaluated in the previous sections, any issues or deficiencies documented have been assigned a level of priority and an estimate for costs.

The following summary outlines the priority levels within this report, as well as the recommended time frame to address any issues.

PRIORITY	ISSUE	DESCRIPTION
1	Life Safety	As typically noted by Fire Marshall/ Life Safety Officials.
	Deterioration	Further deterioration will create higher future repair costs or may cause damage to other areas of the structure.
	Health	Areas that do not meet the state health code requirements. Mechanical systems that do not currently comply with ASHRAE Standards are given a high priority. However, these upgrades are not mandated and would not be required unless other substantial work is being done to the facility and systems in question.
	Accessibility	Items that must be completed to allow access to the building or primary function areas within the building.
	Haz. Materials	Items that pose a significant impact to building occupants.
2	Energy	Item results in payback within 10 years or less.
	Deterioration	Material or system that currently functions but will require replacement or major maintenance within five years.
	Accessibility	Modifications required to meet state guidelines.
	Haz. materials	Removal of items affected by other changes occurring in Priority 2.
3	Health	Inadequate exhaust and ventilation near lab equipment or other areas lacking adequate ventilation.
	Energy	Item results in payback in more than 10 years.
	Health	Items that do not meet state health code requirements.
	Deterioration	Material or system currently functions but will require replacement or major maintenance in 6-10 years.
4	Haz. Materials	Removal of item affected by other changes occurring in Priority 3.
	Aesthetics	Item which impacts the visual environment.
	Haz. Materials	Removal of items affected by other changes occurring in Priority 4.
	Accessibility	Items which do not meet full requirements of federal accessibility guidelines.



ELLENDALE ELEMENTARY





FACILITY CONDITIONS

ELLENDALE ELEMENTARY SCHOOL

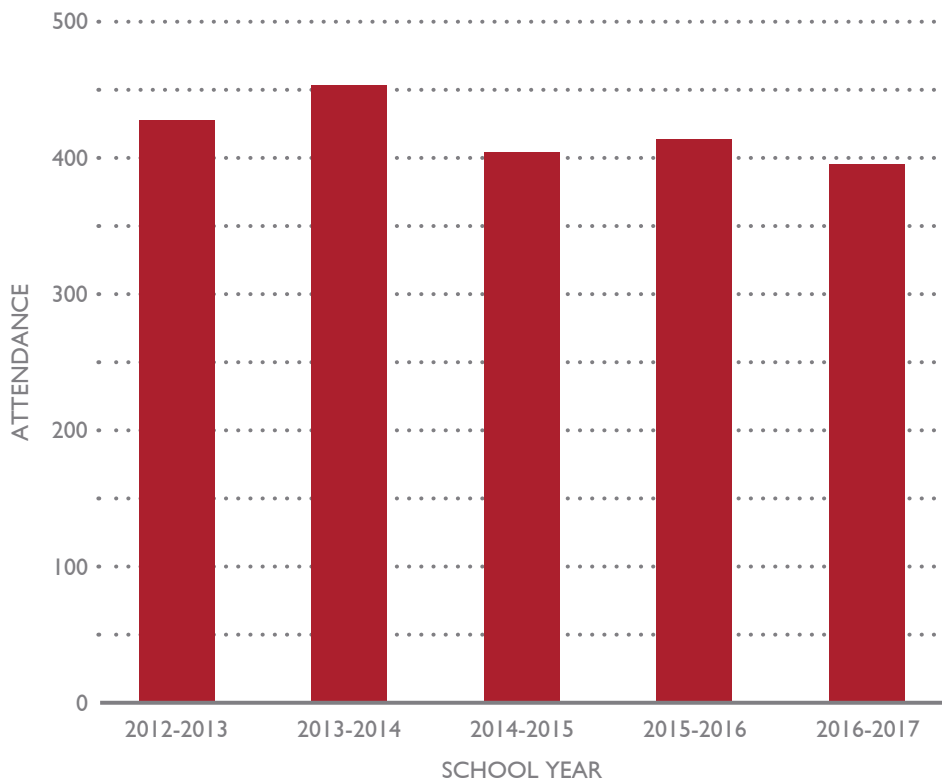
BACKGROUND INFORMATION

CONSTRUCTED: 1956

ADDITIONS: 1962; 1966; 1994

LOCATION: 600 School Street in Ellendale

USES: PreK-5th Grade



FISCAL YEAR	ENROLLMENT
2012-2013	430
2013-2014	451
2014-2015	402

FISCAL YEAR	ENROLLMENT
2015-2016	409
2016-2017	396

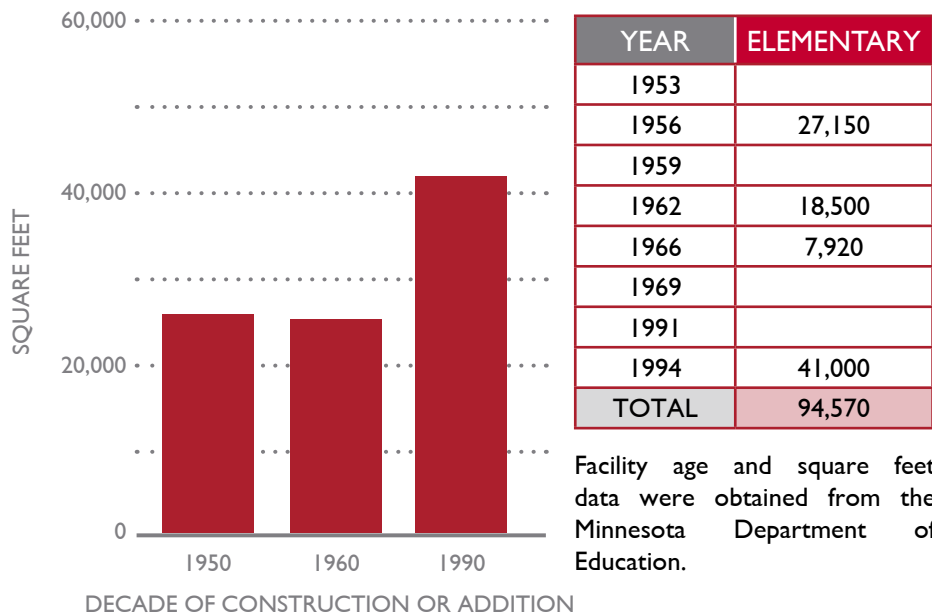


SITE ACREAGE = 13.559 ACRES

The Elementary School is mostly located in the southeastern portion of the City of Ellendale. The property is comprised of 3 contiguous parcels and 2 nearby parcels.

PARCELS OWNED BY ELEMENTARY

15103025	150254307	1510254308	151040511	150251002
2.998 Acres <i>Northern Portion of School</i>	3.503 Acres <i>Southern Portion of School</i>	0.37 Acres <i>Green Space South of School</i>	0.025 Acres <i>Path to Athletic Field</i>	6.663 Acres <i>Athletic Fields</i>



The union Pacific Railroad is in close proximity to the west of the school site. Other adjacent properties are generally residential or agricultural.

PHYSICAL CONDITIONS



PHYSICAL CONDITIONS

SITE CONDITIONS

Review of the existing building site including parking spaces, concrete walks, and other horizontal site elements. Site circulation, grading, paving, parking, stormwater, and playground spaces were also reviewed.

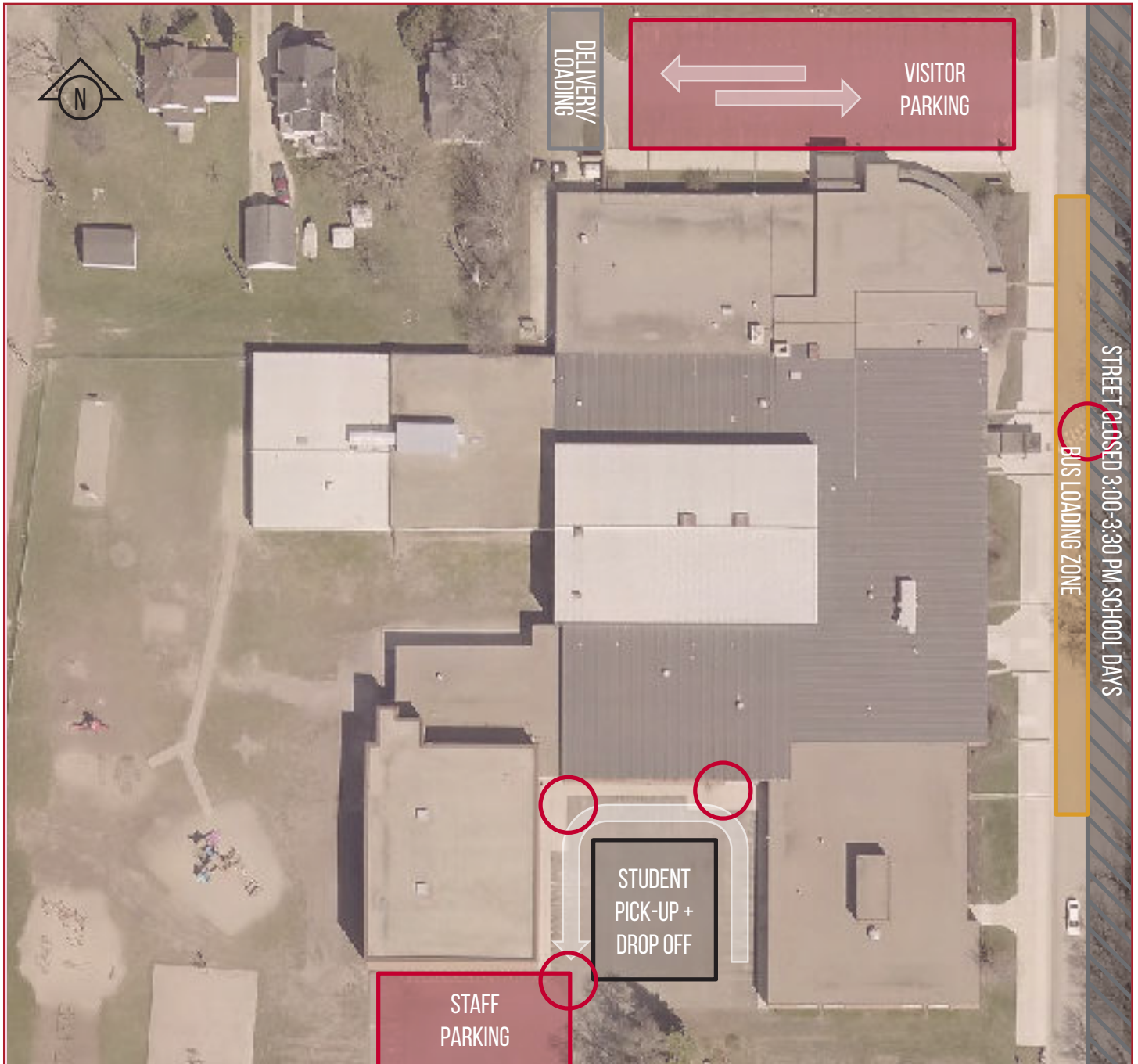




Figure 1 - Cracked sidewalk near loading sign



Figure 2 - Cracked sidewalk near door 1N



Figure 3 - Cracked sidewalk near door 6S

SITE OBSERVATIONS TRAFFIC PATTERNS + CONFLICTS

Bus Loading Zone

The bus loading zone is located on the east side of the school, with bus traffic primarily entering from the north traveling south on School Street. The bus loading area is delineated by both a yellow paint stripe on the east building sidewalk between doors 2E and 4E, and a “Loading Zone” sign indicating no parking during pick-up and drop-off times. School Street is approximately 36-feet wide, which allows for two-way traffic to be maintained while buses are parked.

A sign posted on School Street, between 6th Avenue and 8th Avenue, indicates the street is closed from 3:00 – 3:30 PM on school days.

Drainage from the roof is directed through concrete channels and flows into trench drains through the sidewalk into the street. The trench drains have solid tops and are in fair condition. Indications of rust and warping are causing the grates to not lay flat.

Parent Drop-off/Pick-up Areas

The parent drop-off and pick-up area is a bituminous lot with concrete sidewalks located on the south end of the school. This area provides access to doors 6S, 7S, 8S, and 9S. The pick-up area is only accessible from 8th Avenue through the staff parking lot. The pick-up/drop-off area has recently been seal coated and striped. This sealcoating and striping was completed sometime between ISG’s initial site visit in April 2017, and a follow-up site visit in August 2017. The new striping within the lot has eliminated many traffic conflicts. The lot provides a total of 22 parking stalls, and no handicap accessible stalls are marked.

The adjacent concrete sidewalks provide access to the building. The sidewalks are generally in good condition, however there is minor cracking along the edges and discoloration near the roof drain leaders. Six broken sidewalk panels are located between doors 6S and 7S. The sidewalks are a “turn-down” style and are not wide enough to allow for an accessible 4’ path when accounting for a 2’ vehicle overhang.

Cracking, areas of rutting and surface depressions were found in the bituminous pavement at the drop-off and pick-up area, however a majority of the cracks have been filled to prevent spreading or further damage. As noted previously, the parking lot had recently been seal coated and striped. This maintenance not only enhances the aesthetics of the lot, but also extends the life of the pavement. Based on industry research and our experience with pavement rehabilitation, ISG recommends implementation of a 5 to 7 year seal coat cycle for all parking lots when feasible. Under ideal conditions, this seal coat cycle can extend the life of a roadway up to approximately 70 years.

The lot drainage generally sheet flows from north to south towards the grassed area located south of the parking lot. Significant sediment buildup within the lot was observed and indicates a lack of adequate drainage.

Staff Parking Location and Condition

The staff parking lot is located southwest of the student pick-up and drop-off lot. Staff enter and exit the lot from 8th Avenue West. The parking lot is striped to indicate a one-way orientation, with the east driveway serving as an entrance and west drive serving as an exit. The striping within the lot is very faded which can cause confusion of the designated drive aisles and parking areas.

The bituminous pavement in the lot is generally in good condition. There was some cracking that took place previously, most of which have been filled, however additional cracking has formed since the last maintenance period. Along with the student pick-up and drop-off lot, the eastern drive lane of the staff lot was also seal coated recently.

Due to the severely faded lot striping, the exact parking count in the staff lot is unclear. A general rule for minimum elementary school parking spaces is 1 stall per employee, plus 10 visitor spaces. With approximately 28 staff members, a total of 38 parking stalls are recommended. Together, the school's parking areas exceed these recommendations.

Similar to the student pick-up and drop-off lot, no accessible parking stalls are present or marked.

Drainage from the lot sheet flows northeast to southwest into the grassed playground area. The play area is lower than the parking lot which allows for unrestricted stormwater flow off of the lot.

Visitor Parking Location and Condition

The visitor parking lot is located on the north side of the school with accesses from both 6th Avenue and School Street. The lot is constructed of bituminous pavement and concrete curb and gutter. This lot is comprised of 39 total parking stalls which includes 4 dedicated administration spaces and 2 handicap parking spaces located in front of door 1N.

The trash area is located on the west end of the visitor parking lot. There is adequate access to the dumpsters, and there are no known traffic conflicts between parked cars and trash removal. There is also adequate separation for traffic flow between delivery, staff, students, and parents.

Stormwater from the visitor parking lot surface flows away from the building towards the School Street and 6th Avenue driveway entrances. Drainage appears to be adequate with no major sediment buildup noted.

Accessible Parking Spaces and Access

The only parking lot with dedicated handicap accessible parking is the north lot. There are 2 accessible stalls provided onsite, which does not comply with current Americans with Disabilities Association (ADA) standards. The 2010 ADA Standards for Accessible Design require 3 accessible spaces. This would require a total stall count range of between 51-75, with 4 accessible spaces, for a total range of 76-100 stalls. In both cases, one van accessible space is required. Because the exact stall count is not known for the southern staff parking lot, an approximate total stall count for the entire site is 76. Access to the school from the accessible stalls appears to meet the grade requirements.

SITE OBSERVATIONS PLAYGROUND EQUIPMENT/SURFACING

The playground area is located west of the school, bordered by 8th Avenue on the south and Commercial Drive on the west. The total area for the playground is approximately 2.1 acres and consists of two concrete basketball courts and four separate play equipment areas. A concrete sidewalk provides access from door 13W to the northern play equipment area only. Access to the remaining areas is not defined.

Equipment

The northern basketball court is 15-feet wide by 50-feet long with one hoop at each end. The backboards and hoops are an older style and beginning to lean, however they are still in a generally usable condition. It was noted during the site inspection that new

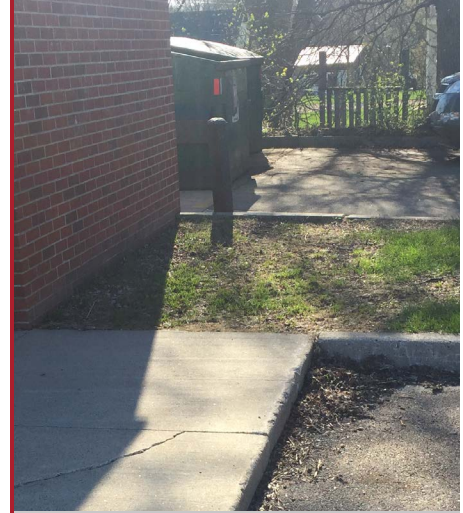


Figure 4 - Location of dumpster



Figure 5 - Faded staff parking



Figure 6 - Playground and mulch



Figure 7 - Erosion



Figure 8 - Playground fence and erosion



Figure 9 - Warped grates

basketball hoop netting was present. The concrete court pavement appeared to be in good condition, with only minor surface pitting observed and no significant cracking.

The southern basketball court is 50-feet wide by 50-feet long and has one hoop on the north and south ends. The hoops are an adjustable-height style with plexi-glass backboards. Similar to the northern court, minor concrete surface pitting was noted, with no significant cracking observed.

The north play area consists of 8 pieces of equipment and a wood chip surface. The equipment showed some signs of weathering, however no areas of rust or deficiencies were observed. The wood chip surfacing was spread outside of the designated area creating sections of thin to no wood chip coverage.

The eastern play area, located north of the southern basketball court, consists of 1 play system. The system appeared to be in good condition, with no deficiencies observed. The wood mulch play surfacing also appeared to be in good condition.

Along the west side of the basketball court is the western play area which is comprised of 2 swing bays, 1 play system and 3 additional pieces of play equipment. No equipment deficiencies were observed in this area, and the wood chip surfacing appeared to be in good condition.

The southern play area consists of 1 play system and a wood chip play surface. No equipment or surfacing deficiencies were observed in this area.

As playground equipment is added or replaced, current ADA requirements will apply including trail routes, and accessible play equipment and surfacing. Items such as topping off wood chip surfacing or repairing/removing broken equipment is considered maintenance and not subject to ADA requirements.

A 4-foot chain link fence surrounds the playground area on the north, west, south and a portion of the east sides. The fence is in good condition, with only a few posts beginning to lean. There is an opening in the fencing at the northeast corner of the playground area near door 13W which leads to an alley out of sight lines. Because this opening is away from the play areas and leads out of sight lines, the opening should either be eliminated or replaced with a gate.

The playground area grades towards the west away from the school. No storm sewer is present, so all of the stormwater surface flows offsite. It was noted that many of the roof drain leaders do not extend to the ground surface and do not have any rip-rap or other energy-dissipation devices, which has led to severe erosion. This erosion, coupled with high foot traffic, has resulted in large sections of no grass cover throughout the playground. Soil loss from the erosion has also washed out areas near sidewalks and building stoops up to 4-inches creating a trip hazard. It was also noted that the stair footings for door 12W were exposed by approximately 8-inches, creating a 14-inch first step.

SITE OBSERVATIONS ATHLETIC FACILITIES

Two separate athletic areas are available for use by the school, one is 1/4 mile north along School Street and the other is one block east of the school. The north athletic area consists of two softball fields which are directed towards each other. The fields have a shared outfield, with no defined outfield fence. It was also noted that no sidewalk access or restroom facilities are available at these fields.

North Athletic Fields

The northwest softball field is in poor condition, however it is generally acceptable as a practice field. At the time of the site visit, the infield was overgrown with weeds and the outfield had significant rutting. All of the chain link fencing appeared to be in good condition, with only minor defects observed. It was noted that the dugouts on the northwest softball field do not have a roof.

The southeast softball field is in fair condition and appears to be in use. The aglime surfacing had grass growth along the infield-outfield edge, and areas which require additional surfacing material. The dugouts are in good condition, with no defects noted. The field's chain link fencing has sections that are without a top rail and areas of warping, likely due to batting practice drills. The bleachers were also in good condition with no rust or defects noted.

East Athletic Fields

Ertel Field is located east of the school and includes a baseball and football field. Vehicles access the field from 8th Avenue, and there is another pedestrian trail access from the school across School Street. The baseball field surfacing appears to be in good condition with adequate drainage. The bleachers are also in good condition with no visible defects, and the dugouts also appear to be in fair condition. The wood is weathered and posts are rusting, but no major defects were noted. The fencing is warped in areas and sections of the chain link mesh is pulling away from the top rail.

The football field is located north of the baseball field. The grass is in good condition and appears to drain properly, however the goal posts have a large amount of rust present. The field also has a lighting system, but did not appear to be in use.

The pedestrian access to the fields from the school is located between two residential homes. The access is fenced on both sides with an aggregate trail and concrete stairs leading from School Street to the football field. The chain link mesh is pulling away from the top rail along a majority of the fencing. The concrete stairs leading to the football field are in fair condition, with no major cracking or edge defects noted.

RECOMMENDATIONS

ISG recommends replacing the sidewalk trench drain covers at the north and east building walkways to address the rust and warping that were observed. Concrete panels near door 1N should also be replaced to prevent additional cracking. When these panels are replaced, additional sawcuts should be incorporated to reduce the potential for excessive cracking.

Due to tripping hazards, several sidewalks panels near doors 6S and 7S in the student drop-off area are in need of replacement. The width of the sidewalks along the student pick-up and drop-off area should also be expanded to allow for vehicle overhang and an accessible route. Two accessible parking stalls along with the associated ADA complaint signage are also required in the student drop-off area to meet current ADA standards.

ISG recommends sealcoating and restriping the staff parking lot to clearly identify designated drive aisles and parking areas. One handicap van accessible parking stall and the associated signage is also required onsite to meet current ADA standards.

To meet current ADA standards, ISG recommends providing an accessible route to the east athletic fields, north softball fields, and play areas. Additional aglime should be placed at the softball and baseball fields. The football goal posts need to be sanded and repainted to stop further rust damage. The gravel access between the two residential homes leading to the east athletic fields should also be resurfaced with all tree stumps removed within the access.

ISG recommends installing a gate at the northeast corner of the playground area, as well as providing landscape edging and additional mulch. ISG also recommends repairing the roof drain leaders and providing rip rap at the drain outlets in the playground area to reduce erosion. The playground area should also be regraded and reseeded. Providing additional fill around the sidewalks and stoops will also eliminate trip hazards that are present in the playground area. ISG also recommends replacing the cracked sidewalk panels near doors 13W and 1N.

PRIORITY	1	2	3	4
Regrade areas adjacent to building to direct water away from building	●			
Regrade area around door 11W	●			
Repair drain by door 10W (appears to be draining into wall)	●			
Repair concrete slope issues outside door 13W	●			
Replace sidewalk panels near doors 6S and 7S	●			
Regrade playground area and provided additional fill around sidewalks and stoops to eliminate trip hazards. Reseed and reestablish grass areas.	●			
Install gate at NE corner of playground area	●			
Repair roof drain leaders in playground area to extend to ground surface	●			
Provide rip rap or other energy dissipation devices at roof drain outlets to reduce erosion issues	●			
Sand and repaint football goal posts	●			
Replace sidewalk panels in front of door 13W to eliminate trip hazard	●			
Sealcoat and restripe staff parking lot		●		
Replace sidewalk storm grates at north and east building walkways			●	
Provide 1 handicap van accessible parking stall on site			●	
Maintain wood chip surfacing in play areas			●	
Refresh aglime at all softball and baseball fields			●	
Replace concrete panels near door 1N			●	
Expand sidewalk to allow for vehicle overhand and accessible route in student drop-off area				●
Provide 2 accessible parking stalls in student drop-off area with associated ADA compliant signage				●
Sealcoat and restripe visitor parking lot				●
Provide accessible route to east athletic fields				●
Add top rail to fencing at north athletic fields and south east softball fields				●
Repair gravel access to athletic fields between houses and remove stumps within access				●
Install ADA accessible walkways to play areas				●

PHYSICAL CONDITIONS

EXTERIOR BUILDING CONDITIONS

Review of the building's exterior shell including an assessment of the structure, foundation, exterior walls, windows and doors, and thermal efficiency as well as conditions of the existing roof, gutters, and downspouts.

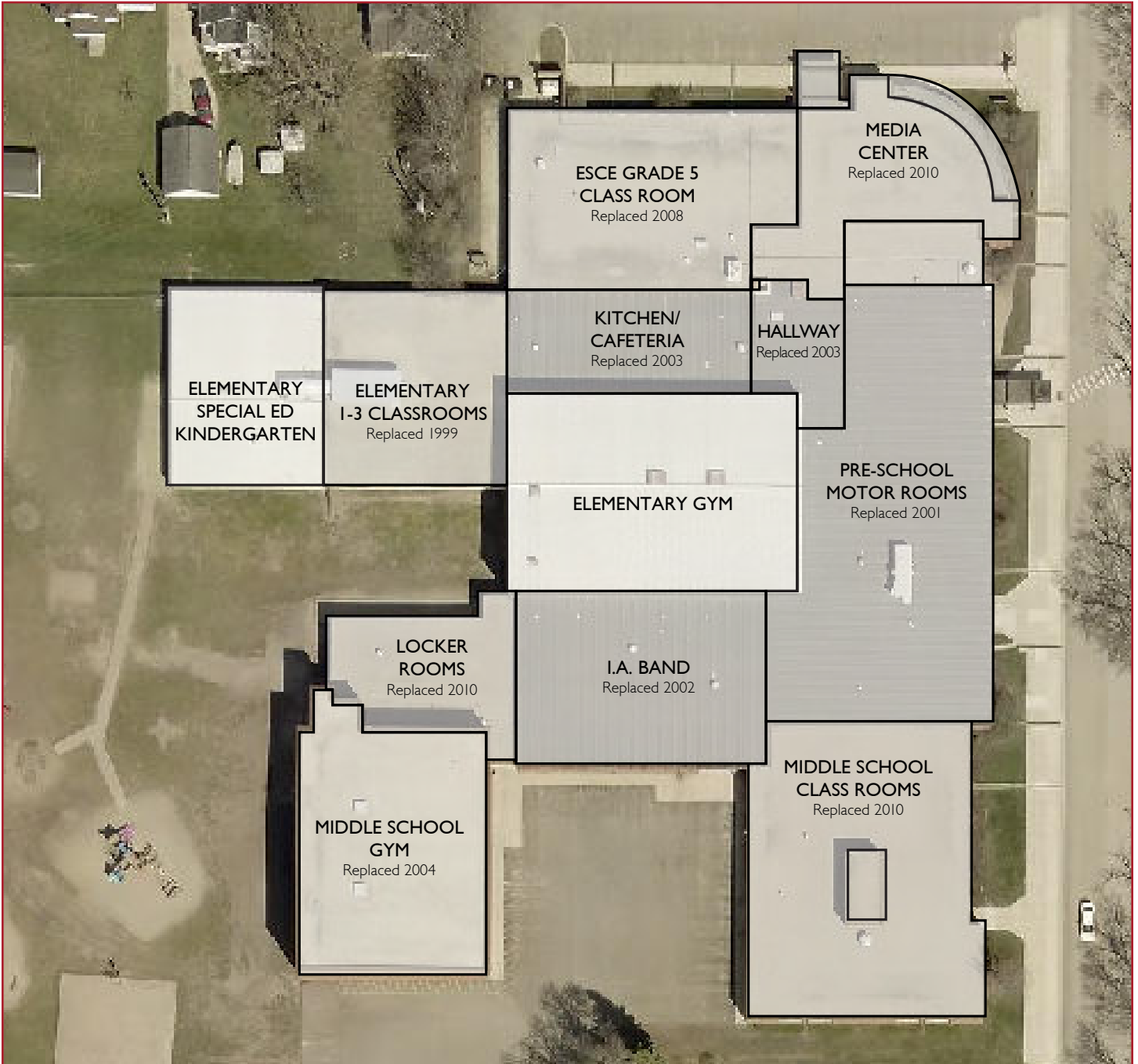




Figure 1 - Damaged/missing bricks at corner



Figure 2 - Grille that could be removed



Figure 3 - Area in need of tuckpointing

OBSERVATIONS

Walls and Siding

The exterior EIFS would benefit from cleaning to remove the algae growth that is present across all sections. After the cleaning is complete, the color/finish should be reviewed in more detail, as rework may be required. The building's control joints should also be re-caulked.

Several locations along the exterior of the facility require tuckpointing, including the windows below Door 3E, area near Door 7S, corner by Door 8S, and approximately 25-50% of the south, west, and north sides of the C wing. The exterior walls of the C wing are constructed of clay block, which has an inherently low insulation value.

Several miscellaneous exterior repairs are needed. The missing bricks will need to be replaced, and the pillars near Door 7S are in poor condition at the base. Additionally, the crack in the exterior wall by the music room/gymnasium west entrance/exit has to be repaired, as do the control joints on the exterior walls of the competition gymnasium. Gym wall brick control joints should be cut wider and recaulked. A metal cap flashing should be added to the top of the wall around the fuel tank to prevent moisture from entering into the wall cavity. The fuel tank is a dual wall tank, and does not need a containment pit.

The louvers previously used for unit ventilators have been abandoned but are still present. These should be removed and the space enclosed with solid insulated panels or another similar material to prevent moisture from entering the building wall cavities or building interior during severe storm events.

Windows

The entire C Wing has new windows and lever locks are present on doors within this area. However, wire glass and non-tempered glass exists in multiple locations throughout the facility. Tempered glass offers more safety.

Door 13W has wire glass at the exterior sidelight and also appears to have non-tempered glass at the interior. Interior Door 4E contains wire glass, the sidelights are non-tempered glass, and exit sidelights are single pane glass. Door 11W and Door 8S both contain single pane glass.

Exterior doors

While many of the doors remain in good condition, there are a number of important updates that should be made. Doors 3E and 4E appear to be in good condition, but their exterior frames are starting to rust, and the same thing has happened to the 44" A112 exit door. Door C106 has worn hinges that are in need of replacement. The doors and hardware at Doors 5E and 14W are in satisfactory condition. The overhead door in this space is in good condition, but has no opener. The frames and doors at Door 11W and Door 8S are in satisfactory condition, but it should be noted that Door 10W is experiencing air leaks.

Roofs

In 2010, the roofing over the Middle School classrooms (12,198 sf), media center (6,537 sf), and locker rooms (4,140 sf) was replaced. With the exception of the elementary gym and kindergarten special education area on the west end of the building, all other areas of the facility have been previously replaced between 1999 and 2008. The gym roof appears to be in satisfactory condition.

Garland Company has previously assisted the District with roof replacement scheduling and construction. The existing roofing installed within the last two decades is standing seam. Gutters are present on the C Wing portion of the facility and internal roof drains serve the other areas.

A long length of pipe was added to the roof drain outside room A114 to redirect water away from the building. The pipe is performing as needed.

The roof flashing at the end of the C Wing should be replaced, as well as the corner flashing outside Door 12W. No chimney cap is present and some masonry cracking was observed, both of which should be repaired/replaced to protect against water intrusion issues. The gutters in the C wing have debris and should be cleaned. The debris is a result of a tree overhanging the roofline, and the tree should be trimmed to avoid unnecessary organic matter collecting into the gutters in the future.

ROOF REPLACEMENT

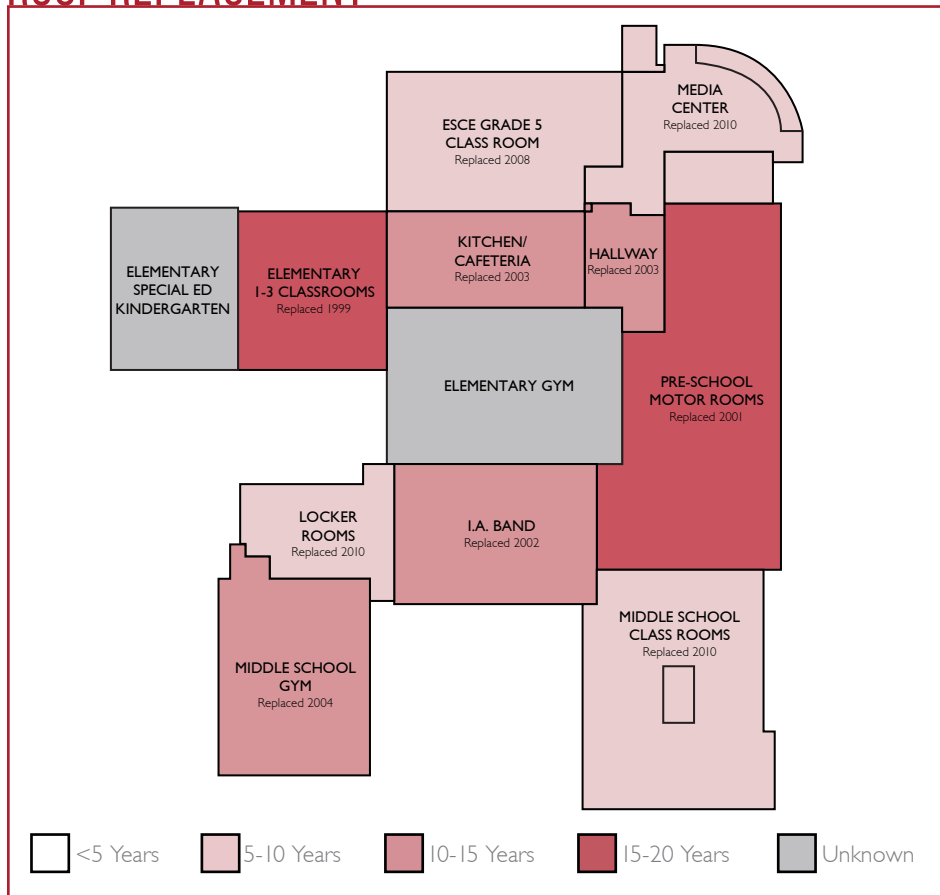


Figure 4 - EFIS surface in need of cleaning



Figure 5 - Close up of EFIS surface



Figure 6 - Poor storm drainage management



Figure 7 - Pipe on roof drain to direct water away from building



Figure 8 - Damaged cap flashing



Figure 9 - Damaged Cap flashing

RECOMMENDATIONS

- ✓ Remove algae from the building's exterior.
- ✓ Re-caulk control joints.
- ✓ Re-caulk all windows that have non-tempered glass or are broken.
- ✓ Replace broken exterior fire cabinet glass outside the competition gym.
- ✓ Replace missing exterior bricks and pillars (base being focus).
- ✓ Remove and replace with proposed recommendation noted in observations.
- ✓ Replace two exterior doors and E112 door.
- ✓ Repair worn, rusted, or leaking hinges and frames for other doors.
- ✓ Replace two roof flashings.
- ✓ Repair cracking masonry needs repairs.
- ✓ Repair various roof drains, including the insulation of roof drain piping and the replacement of select roof piping support locations.
- ✓ Verify roof drains specifically serving the cafeteria and gym do not leak. Site verifications and improvements are also warranted to ensure roof drain water is routed away from the building.
- ✓ Review down drains on building including the roof scupper at library and the drains by doors 10W and 14W.

PRIORITY	1	2	3
Re-caulk building control joints	•		
Tuckpoint area below windows at door 3E	•		
Tuckpoint area near door 75 and in the corner by door 8S	•		
Tuckpoint approximately 25-50% of south, west, and north sides of C-wing	•		
Replace missing bricks on south side of the building	•		
Repair control joints on the exterior walls of the competition gym	•		
Repair roof drains, associated insulation, and supports	•		
Verify roof drains for cafeteria and gym do not leak	•		
Replace missing chimney cap	•		
Repair masonry cracking in area of missing chimney cap	•		
Investigate/repair potential roof leaks in corridor outside locker rooms (D112 + D119)	•		
Investigate/repair potential roof leaks along east cafeteria wall outside room A119	•		
Investigate/Repair potential water infiltration in C108	•		
Clean exterior EFIS to remove algae growth		•	
Repair exterior wall crack by music/gymnasium west entrance		•	
Repair base of columns near door 7S		•	
Replace roof flashing at the end of C-wing		•	
Replace corner flashing outside door 12W		•	
Replace cracked sidewalk sections near door 3E		•	
Repair concrete sidewalk issues at door 6S		•	
Remove unit ventilator louvers in room B115			•

PHYSICAL CONDITIONS

INTERIOR BUILDING CONDITIONS

Examination of the finishes, equipment, and other conditions found in classrooms, offices, hallways, gymnasiums, locker rooms, stairwells, kitchen, and cafeteria areas.



OBSERVATIONS

Ceilings

The old shop space (D105) is currently underutilized and features high open ceilings. Sheffield tile is spalling at the ceiling of the boiler room. The 12-by-12 tile ceilings of the E107 space are in poor condition and should be approached with care due to potential concerns related to asbestos. The 12-by-12 tile ceilings in the music room's practice spaces are also in poor condition. Furthermore, the ceilings at the kitchen's north end of the dry goods area could benefit from replacement.

Interior Walls

Many of the interior walls of the facility are satisfactory. Finishes in the main office appear newer and are functional, and the computer room's walls are also in good condition. The library's windows are insulated glass with aluminum frames, which appear to be functioning appropriately, and the rest of the room's finishes are in good condition. However, the south wall in Classroom B115 is poorly finished, and repairs should be scheduled to improve the durability and overall aesthetic of the space.

Floors

The interior finishes of classrooms throughout the A-E Wings vary in both condition and material. Floor coverings range from older carpet that is in good to satisfactory condition, to new carpet tiles in good condition. The broadloom carpet in E115 is showing some wear in the area at the teacher's desk. Room C112 has 9-by-9 tile at the entrance and coat storage area. Corridors and room E117 have VCT tile, and appearance defect is related to trowel finish of the floor. All offices have VAT tile.

The rest of the facility also has different floor needs. Both the gym (B125) and competition gym in the D Wing have existing wood floors that are in satisfactory condition, but their dull finishes could benefit from refinishing. The competition gym's existing control joints would also benefit from resealing. Existing carpet in both the music room and in the adjoining practice rooms is in poor condition and due for replacement, while the computer room (A135) has new carpet. Concrete floors line the electric service area of the boiler room and old shop, but the former's concrete is crumbled and water is evident on the floor. Tunnels adjacent to the boiler room have dirt floors. Some rooms had 9-by-9 tiles, which is usually indicative of asbestos-containing tile or adhesives. More tile may be present under carpet.

Interior Doors

Interior door 4E contains wire glass, and the sidelights are non-tempered glass. Door 7S within the old shop (D105) needs to be replaced.

Student Lockers

Lockers along the corridors appear to be in satisfactory condition.

Overall, the girls locker room is clean and in good condition. Facilities staff noted that approximately 40 students use the space at one time during junior high sporting events. The boys locker room is in good condition overall, but sink fixtures are loose.



Figure 1 - Classroom casework



Figure 2 - Classroom casework and sink

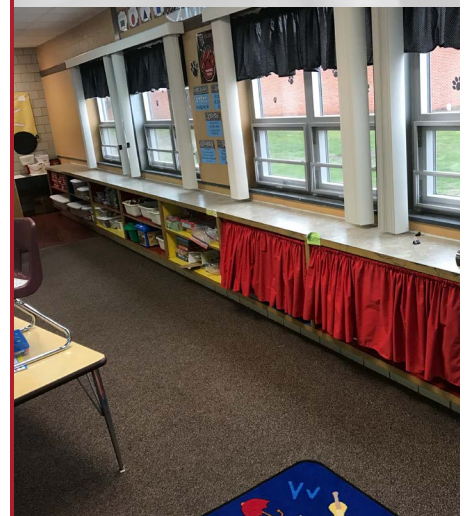


Figure 3 - Base cabinets in classroom



Figure 4 - Damage adjacent to casework



Figure 5 - Typical casework



Figure 6 - Library with residential-style cabinetry

Casework

Cabinetry of many different styles, ages, and conditions is present throughout the facility.

Upper cabinets in the library are of a residential style, and the bottoms are beginning to sag after being subjected to more rigorous conditions than they would typically be designed to accommodate.

Rooms A107 and A108 have cabinetry in good condition, while rooms E104, E105, E111, E112, E114, E124, E123, C110, C109, C108, E120, and E121 have newer cabinets. The cabinets in E115 and C107 are in satisfactory condition. The less durable residential cabinets are present in Rooms B121, B116, and B115, as well as C112's upper cabinets. Rooms C111, C103, C102, and E117 have cabinets that are functional, but are older, more worn, and with issues. There are also problems with rooms C112 and C106's base cabinets and room E107's cabinet. The upper cabinets in A106 are beginning to sag on the bottom.

Windows and Sills

The windows in the library are insulated glass with aluminum frames, which appear to be functioning appropriately. The clerestory glass above the main office is experiencing seal failure on the insulated window glass.

Both the boys and girls locker room office areas have non-tempered glass. In addition, one pane of the boys locker room glass is broken.

The exterior fire cabinet glass outside the competition gym is broken.

Special Spaces

Room D107 serves as the music room with adjoining practice spaces, storage, and an office area. Concrete risers are present within the main music space.

The gym (B125) and competition gym have newer bleachers that appear to be in good condition. This space also has a stage along the west end, and the stage area is served by a sprinkler. Overall, other existing finishes in the competition gym are in good condition.

Microwaves are present in the staff lounge (A109), but their arrangement could be adjusted to make better use of space and improve flow.

The C Wing classrooms are constructed with open bar joist and metal deck. Finishes in C107 (first grade classroom) are in good condition. C108 appears to have water issues at the corner of the room.

The boys and girls A Wing restrooms consist of painted block walls and tile floors. Toilet partition doors in A116 (boys restroom) are metal, but are delaminating on the handicap stall. Several of the metal doors in A120 (girls restroom) are also delaminating.

Room A115 is in good condition, but room E112 has poor lighting.

The boiler room's fuel tank is a dual wall type. A metal cap should be added on the wall by the fuel tank. The room above A104 is a typical mechanical suite that includes some storage. The room is noticeably hot.

Kitchen

The kitchen space and cafeteria (A116 and A117) is also in good condition with no major issues observed. An Ansul system is installed at the kitchen hood.

Storage and Crawl Spaces

Old locker rooms used for facility storage exist below the stage area. This area has not been updated, and finishes appear original to the 1960s. A large crack was observed in the wall at the southwest corner of stairs leading to the unused locker area. The crack should be further reviewed by an engineer to determine the possible cause and required repairs.

A crawl space exists under the elementary wing. Review of this space was gained at the south end of the elementary wing through a floor hatch. The space has a dirt floor and was exhibiting standing water in some locations. The underside of the floor above had signs of mold. While the mold and other undesirable conditions appear to be contained within the space, these conditions can affect the space above. Review of the exterior also indicated that site drainage was poor and could be a cause for water entering the space. It is also assumed that the ground water table could be seasonally affecting the space.

RECOMMENDATIONS

- ✓ Repair room E107, music room, and north end kitchen area ceilings. Special care should be taken to avoid problems with asbestos when repairing them.
- ✓ Refinish south wall in classroom B115
- ✓ Replace floors in the music room and adjoining practice rooms.
- ✓ Adjust arrangement of the staff lounge.
- ✓ Repair toilet partition doors in the boys and girls restrooms.
- ✓ Repair sinks in boys locker room.
- ✓ Replace cabinets throughout the building
- ✓ Replace/address old, unused lockers, as does the large crack in the southwest corner of the stairs leading to the lockers.
- ✓ Replace the base cabinets in C112.
- ✓ Replace the glass windows above the main office.
- ✓ Replace or repair Door 9S..
- ✓ Adjust the exterior grading to reduce surface water effects.
- ✓ Add drain tile system, sump pump, and a layer of poly to seal moisture from the dirt floor to below. As part of the mitigation, foundation insulation would be recommended on the exterior walls to reduce condensation and increase energy efficiency.
- ✓ Add ventilation system to circulate air and extract moisture vapor from the air. Such work performed is highly labor intensive due to the confined working space and number of structural elements that need to be worked around.
- ✓ Install ventilation system and a sealed poly on the floor to help mitigate radon collecting in crawl spaces.



Figure 7 - Typical Classroom



Figure 8 - Staff lounge

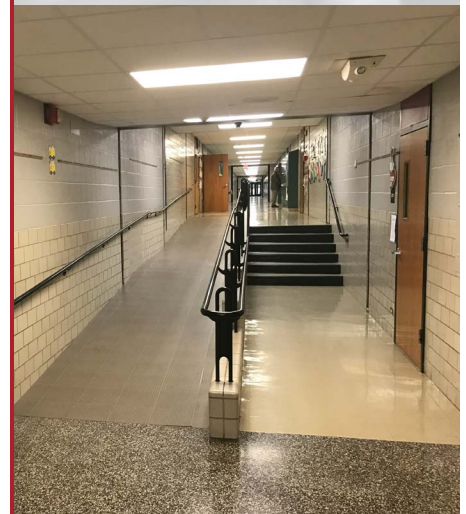


Figure 9 - Ramp for accessibility

PRIORITY	1	2	3
Cracks should be further reviewed by an engineer to determine possible causes and required repairs	•		
Seal leaks at door 8S	•		
Replace broken pane of glass in boys locker room	•		
Replace broken pane of glass in fire cabinet outside competition gym	•		
Replace delaminating toilet partitions in A-wing restrooms		•	
Replace ceiling tiles at the north end of the kitchen dry goods area		•	
Refinish gym floor		•	
Repair finishes in Room B115		•	
Repair loose sink fixtures in locker rooms		•	
Replace door to E112		•	
Replace door 7S		•	
Replace door sweep at door 9S		•	
Replace wire or non-tempered glass with tempered glass - B111 Nurse's office sidelights, Main office entrance, D105, E106 sidelights and 7'x4' window to E10, E116 in door		•	
Replace wire or non-tempered glass with tempered glass - E115 (door), E120 sidelights, E121 (sidelights), E122, E123, E124, E112 (door)		•	
Replace wire or non-tempered glass with tempered glass - Door 4E, Door 11W, and Door 8S		•	
Replace wire or non-tempered glass with tempered glass - Locker Room Offices		•	
Replace seals in clerestory glass above main office		•	
Paint or replace rusted toilet partitions in B118		•	
Replace door hinges in C106		•	
Replace carpet in music room and practice rooms			•
Replace 12-by-12 ceiling tiles in practice rooms			•
Replace 12-by-12 ceiling tiles in room E107			•
Replace casework in C111, C112, C106, C103, C102, E107, and E117			•

PHYSICAL CONDITIONS

STRUCTURAL SYSTEM CONDITIONS

Review of structural integrity of existing buildings with analysis of columns, walls, and the roof.

OBSERVATIONS

Building Construction Type

The building under evaluation is constructed primarily out of concrete, masonry, and steel, which, if properly built and maintained, produce stout structures with long lifespans. Portions of the building are also framed with precast concrete, which is considered a durable framing system.

Overall condition of the building is structurally sound. Building generally consists of masonry walls and bar joist roof systems which are typical of this construction era and current building methods.

Exterior Walls

The majority of exterior walls are load-bearing concrete masonry unit (CMU) walls with a brick veneer. The majority of the CMU exterior walls are in good condition as they appear plumb and free from major cracking issues. However, the brick veneer requires tuckpointing in some locations as outlined in the “Exterior Building Conditions” section. Additionally, one exterior CMU wall currently has a vertical crack, which, due to its size, location, and shape, was likely caused by shrinkage and temperature changes in the wall.

Exterior walls require some tuckpointing and caulking. While this is not an immediate structural concern, if deferred too long, moisture that enters the wall cavities as a result of poor brick conditions or failed sealants and can start to erode the brick along with other structural members and systems. Should moisture penetration occur, damage usually goes unnoticed until some major sign of a problem or event occurs. At that point, repairs are usually costly. ISG always recommends that moisture is controlled to a high degree to protect the integrity of the building.

Interior Walls

A majority of the interior load-bearing CMU walls appear to be in good condition. However, two interior CMU walls have experienced cracking that will need to be repaired. There is a large crack located at the southwest stairs behind the stage.

Some minor wall cracking is evident throughout the building. These are typical in nature due to expansion and contraction, and sometimes to minor settlement.

Roof Structure

The majority of the roof appears to be a ribbed metal deck supported by a combination of steel joists, beams, and columns. Select interior and exterior masonry walls also provide support to the roof structure. No apparent signs of major leaks, excessive deflection (sag), or rusted framing were visible.

On the roof area by the Southwest gym a plumbing roof vent has been extended. This is usually an indication that heavy snow drifting is occurring in that area. During winter conditions these roofs should be monitored after heavy snow falls. Deflection of the

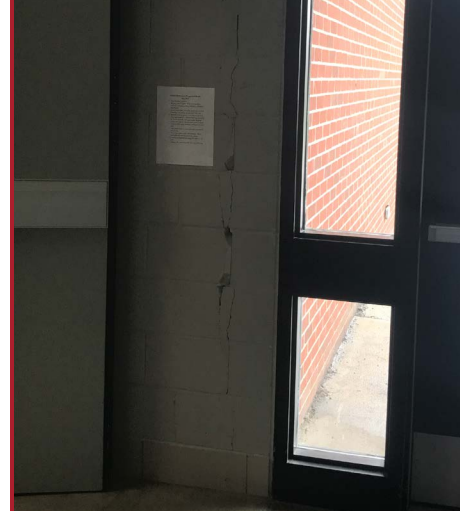


Figure 1 - Crack in exterior wall

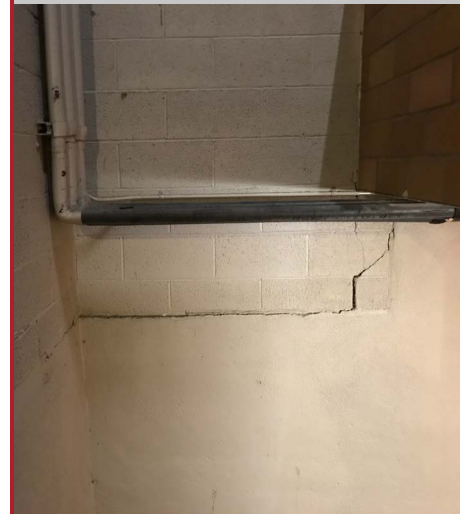


Figure 2 - Crack in interior wall



Figure 3 - White streaks in the brick which indicate previous tuckpointing attempts

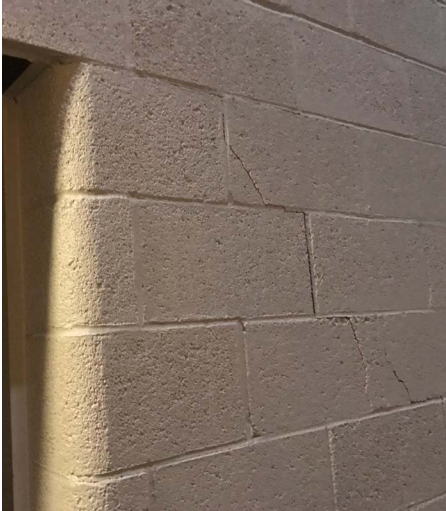


Figure 4 - Crack in interior wall



Figure 5 - Extended plumbing roof vent



Figure 6 - Sidewalk settlement due to inadequately-compacted backfill

roof joists will be normal but excessive deflection is a concern. Signs can sometimes be noticed as changes in the ceiling grid as it too deflects. Sometimes it requires measurements to be taken. Deflection can be identified by taking measurements next to the wall (bearing condition) and then at the center of the bar joist. Deflections exceeding an L/240 (take the length of the span and divide by 240) should be evaluated by an engineer for further recommendations.

Generally roof structures of this era have snow load designs that do not meet current codes. While they generally perform OK, the school should be aware that any roof work such as roofing replacement and equipment changes should also include an evaluation of the roof structure to ensure that it is capable of handling the new loads. This is more critical for new equipment.

Foundation

The building foundation was largely hidden from view, but the building is presumably supported on a shallow foundation system constructed of cast-in-place concrete and CMU. The foundation appears to be functioning properly as no significant differential settlement was apparent at any load-bearing locations. However, it should be noted that the backfill around the building perimeter was likely inadequately compacted during construction, as the sidewalk has since settled in numerous locations, which creates negative drainage of water back towards the building. Water collecting around the foundation and brick veneer could create issues in the future as natural weathering effects could cause damage.

RECOMMENDATIONS

- ✓ Repair vertical crack and install a control joint in this location.
- ✓ Repair cracks by tuckpointing damaged mortar joints and replacing damaged block. An engineer should evaluate the wall crack in the stage area for further recommendations. Other building cracks should be monitored by an engineer on an annual basis.
- ✓ Provide positive drainage away from the building in order to reduce the potential for future damage to the building. Coordinate these repairs with the site recommendations.

PRIORITY

	1	2	3
Repair cracks in select interior/exterior CMU walls	●		
Tuckpointing and sealants	●		
Crack at stage area	●		
Provide positive drainage away from building foundation		●	
Other cracks			●

PHYSICAL CONDITIONS

LIFE SAFETY CONDITIONS

Review of life safety, egress, and potential code deficiencies as discovered during field observation.
Also includes conditions of the fire alarm system.

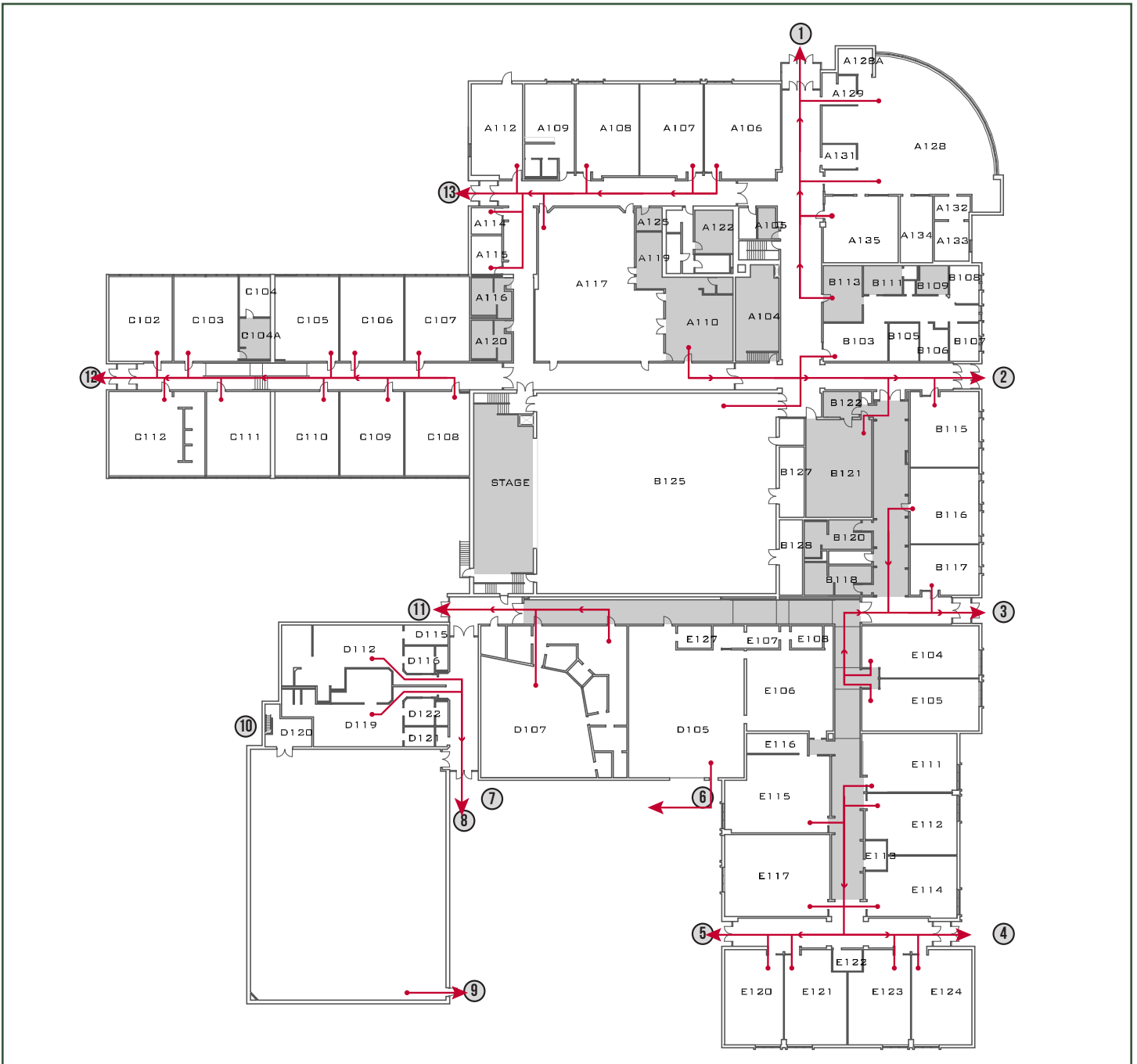




Figure 1 - Handicapped restroom stall



Figure 2 - Glazed block walls and tile floors in restroom



Figure 3 - Cracked sidewalk and 1-inch lip at sidewalk edge, creating accessibility issues



Figure 4 - Cracks in sidewalk

OBSERVATIONS

Accessibility

Ramps are located at the elevation change in the main C and E Wing corridors, as well as the corridor on the south side of B125. The ramps appear to provide proper slope to meet accessibility codes. Room A112 has roof access via a ships ladder. Currently, the air handling unit in the gym (B125) is only accessible via a separate, removable ladder. The District should consider the installation of a permanent stair or ladder access to the air handling unit.

Cracked sidewalks are present near Door 3E, and concrete issues are present at the sidewalk outside of Door 6S, which may present safety and accessibility challenges if not addressed. Steps are located outside Door 6S, but no vestibule is present at this entrance. The sidewalk outside of Door 13W is tipped. There is an approximately 1-inch lip present at the sidewalk edge outside of Door 14W, which could cause a tripping hazard if not addressed.

Emergency Routes, Alerts, and Signage

The existing fire alarm is an addressable system by SimplexGrinnell, and is currently monitored by Flex-Comm Security. With an addressable system, the owner/responder is notified of the exact device that was activated, expediting the ability to locate a fire's starting point. The main equipment is located in the boiler room and consists of a Simplex 4100U control panel and Simplex 4009 IDNet NAC Extender panel. Fire alarm detection devices (heat and smoke detectors) are located throughout the facility including corridors, storage rooms, and mechanical rooms. Manual pull stations are near every exit. Notification devices (horn strobes) are located throughout the facility including corridors and assembly areas. An annunciator panel is located in the main vestibules so that first responders can quickly locate the fire.

The facility is equipped with emergency ballasted lighting and emergency lights throughout the facility to provide egress lighting in the event of a power outage. The fixtures appeared to be in good shape and good working order. The emergency lights should be tested periodically and replaced or repaired as needed.

Fire Suppression and Code Requirements

The only building sprinkler is in the stage area. Fire doors are located at the main corridor entrance into the A Wing from the C Wing and further east along the same corridor between A110 and B125. Another fire door is located at the end of the corridor between A106 and A105. Fire doors are also located just south of Door 11W at the corridor leading to the gym.

RECOMMENDATIONS

- Consider installing permanent stair or ladder to air handling unit.
- Address sidewalks near Door 3E, Door 6S, Door 13W, and Door 14W to avoid safety and accessibility problems in the future.
- Add emergency egress lighting to the exterior of the building near entrances to meet code.
- Test and/or repair, as needed, emergency lights.

PRIORITY

	1	2	3
Fix sidewalk elevation differences	●		
Conduct ongoing maintenance of fire doors and walls due to no fire sprinkler system	●		
Add stairs to AHU (B125)		●	
Install emergency egress lighting to building exterior near entrances		●	

PHYSICAL CONDITIONS

HAZARDOUS MATERIAL CONDITIONS

Identification of potential hazardous material noted during visual field observations.

OBSERVATIONS

Asbestos

Ceilings in E107 and the music practice space are 12-by-12 tiles that are in poor condition and may contain asbestos. Due to their condition, it is recommended that these tiles be tested and abatement activities conducted if the tiles are found to contain asbestos.

In addition, VCT floor tile is present in rooms E106, E116, and E117 as well as in miscellaneous corridors throughout the A, C, and E Wings. Based on the age of the facility, it is likely that these tiles contain asbestos. In each of the indicated areas, the floors are in fair to good condition, meaning there is relatively low risk of harm as long as the tiles are not disturbed. If improvements in these areas are considered, testing and abatement should be implemented prior to demolition and construction.

RECOMMENDATIONS

- Test for asbestos in 12-by-12 ceiling tiles in the music practice space and rooms E107, E106, E116, and E117.
- Conduct abatement activities need to be conducted if any asbestos is found.

PRIORITY

1	2	3
	●	

Testing of potential asbestos-containing materials, and abatement if necessary



Figure 1 - Restroom sinks which do not meet current ADA standards



Figure 2 - Typical classroom sink which is not ADA compliant

PHYSICAL CONDITIONS

ACCESSIBILITY CONDITIONS

Review of the existing structure for conformance with the Minnesota Accessibility Code. Site parking, access into the building and entrances, accessibility routes inside of building, and restroom accessibility were considered.

OBSERVATIONS

Overview

In general, the facility meets ADA compliance, but it is not fully accessible. In addition to a number of sidewalk cracks, which hinders the safety of all students, three restrooms require adjustments.

Parking and Exterior Access

Ramps are located at the elevation change in the main C and E Wing corridors, as well as the corridor on the south side of B125. The ramps appear to provide proper slope to meet accessibility codes.

Cracked sidewalks are present near door 3E, and concrete issues are present at the sidewalk outside of door 6S, which may present safety and accessibility challenges if not addressed. Steps are located outside door 6S, but no vestibule is present at this entrance. The sidewalk outside of door 13W is tipped. There is an approximately 1-inch lip present at the sidewalk edge, which could also cause a tripping hazard if not addressed.

Classrooms and Casework

Some classrooms have sinks. Sinks have certain ADA requirements regarding knee space and protection at the waste lines to prevent scalding. No sinks were observed that had waste line insulation.

Restrooms

There are a number of accessibility challenges in regards to the facility's restrooms. The children's bathroom adjacent to the library space is not fully accessible and should be scheduled for improvements when other work is completed within this area. The restroom group near the nurse's office (B111) are nearly ADA-compliant, and could likely be improved to full accessibility standards with a small investment. The restroom group encompassing the girls and boys restrooms (B120 and B118) have glazed block walls and tile floors. Both are nearly ADA-compliant, except for the side door clearances, which ADA guidelines require be 18 inches. The girls restroom door side clearance is 14 inches, and the boys restroom door clearance is 17 inches. The staff lounge restrooms (A109) and restroom adjacent to the cafeteria (A125) are tight on turning clearances, but otherwise accessibility compliance appears to be achievable. The A-Wing restroom group (A116 boys restroom and A120 girls restroom) generally meets accessibility requirements. More detailed measurements would need to be taken to ensure full compliance. Some minor discrepancies would be expected.

Additional Commentary

Accessibility codes require a 12-inch clearance from the edge of a door to an obstruction on the push side of the door, and 18 inches on the pull side of the door. Clearances vary throughout the building.

RECOMMENDATIONS

- Make small improvements to the restrooms near the nurse's office and library to become ADA compliant.
- Widen rooms BI20 and BI 18 to have the required 18-inch door clearance.
- Modify doors to be ADA-compliant when remodeling occurs.
- Install waste line insulation and proper knee clearance to classroom sinks.

PRIORITY

	1	2	3
Renovate restroom group near nurse's office to full ADA compliance		●	
Renovate restrooms adjacent to library to ADA compliance		●	

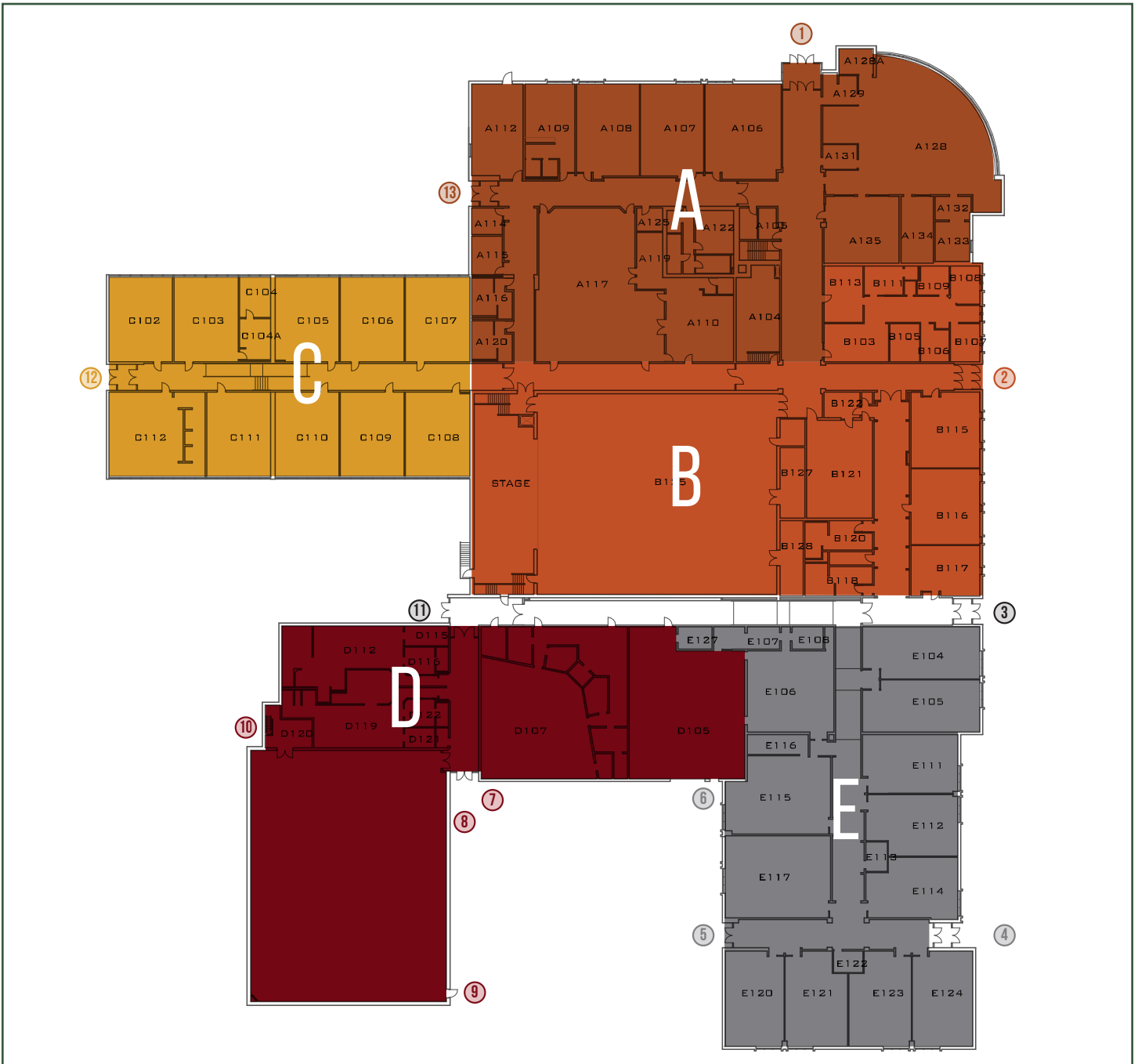
**Priority of ADA compliance can change quickly should a student or staff member require such changes.*

PHYSICAL CONDITIONS

PLUMBING CONDITIONS



Review of the existing building plumbing systems including water service, water fountains, sinks, toilets, and showers.



*Letters relate to building areas referenced in the following section

OBSERVATIONS

Fixtures

The women's restroom in area A had one plumbing fixture with a manual flush valve, compared to every other fixture which has an automatic flush valve. One of the women's lavatories doesn't have hot water to the sink. Several updates are needed in area C. Sinks in the classrooms have loose and leaking spouts. The aerator on the faucets were in poor condition if they were present. The classroom sinks that are located in the area A classrooms are in decent shape. The fixtures could use some cleaning to help eliminate the water buildup. Area C's drains and basins were rusted and stained. The drains in area E are stained and rusted. No aerator is present on the faucets. Strainers should be replaced and cleaned to ensure they are working properly. Some of the drinking fountains attached to the classroom sinks were not operating properly or at all.

Restrooms located in area B were in fair condition. The bowl on one of the water closets was cracked. The electric water cooler outside the B bathroom group didn't have a bottle filler.

Classrooms in area E have similar conditions. Drinking fountains attached to classroom sinks don't work. The drains have been stained and rusted. No aerators are present on the faucets.

In the women's locker room, one shower had a handle that wouldn't turn on. The handicap stall in the women's locker room has a leaking fixture. The men's locker room had issues as well. One of the urinal flush valve buttons didn't work. The middle sink of the three didn't have any water going to it. There is no pipe wrap on the p-traps below the sink. There are a few of the shower heads that leak once the water is turned on. The water closet in the men's office also flushes way too long.

The old locker rooms that are located underneath the stage have been abandoned and are unusable. It would be recommended to remove all of the fixtures and lines in the space that aren't being used.

Pipes and Infrastructure

There is no pipe wrap on the P-traps underneath all of the lavatories in area B or below the sinks in the boys locker room. There is a sink in the corner of the music room that has a container below the P-trap.

There is a 3-inch domestic water service that enters the building in the boiler room and serves the entire building. A domestic water softener is located below the stairwell that softens the cold water in the building. The domestic water lines are lacking insulation in the boiler room. The remaining portions throughout the building have insulation that is in good condition. The domestic water lines have fiber glass insulation on the cold water lines, hot water lines, and hot water recirculation lines. Typically closed cell insulation is recommended on the cold water lines. This is because closed cell insulation won't absorb any moisture if there is a rip in the insulation. Fiber glass insulation absorbs water and then sags/rips away from the pipe if there is any rip in the insulation. The domestic water lines throughout the building consist of galvanized and copper pipes. The domestic water service is heated through a heat exchanger from the steam boilers and stored in the hot water storage tank. This is used throughout the school year. When the boilers are not operating, the school uses a gas backup water heater.

A 6-inch sanitary sewer line exits on the north side of the building. This sewer line handles the entire waste line for the building.

There is an interruptible gas service that is located outside of mechanical room A112. A 3-inch gas service enters the building after the meter.



Figure 1 - Leaking faucets

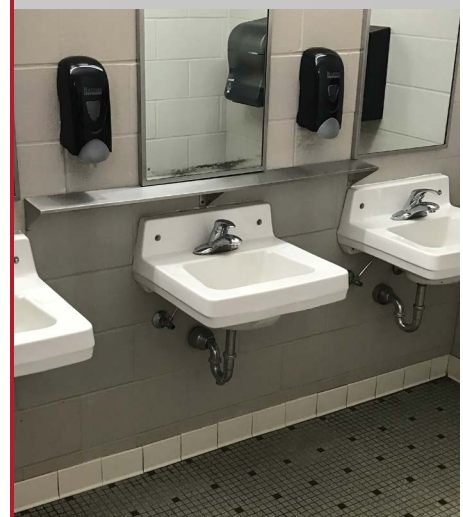


Figure 2 - Missing pipe wrap on lavatories

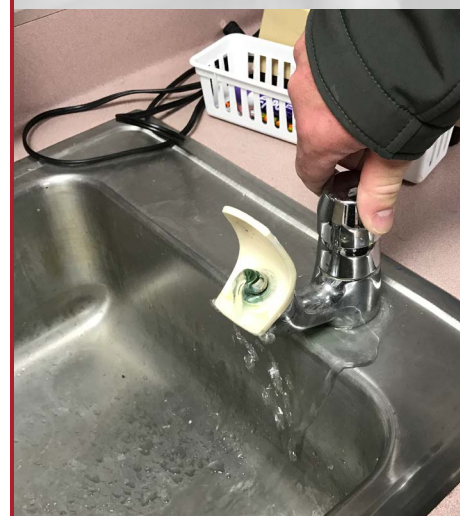


Figure 3 - Blocked flow on drinking fountains



Figure 4 - Broken electric water cooler



Figure 5 - Uninsulated roof drain

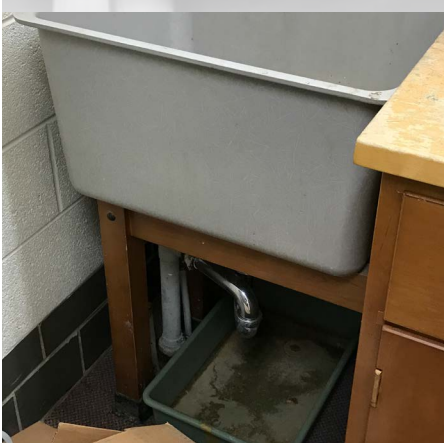


Figure 6 - Leaking sink

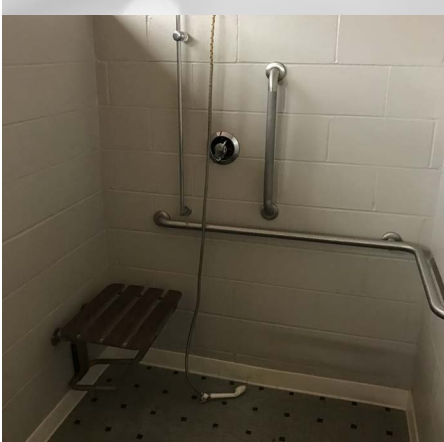


Figure 7 - Broken handicap shower

Drainage

Numerous hose bibs on the building's exterior are broken. Not all roof drains are draining properly on the slab below. Some roof drains pool up next to the building. Others drain under the slab, and one is even draining into the wall cavity.

The building has a primary roof drain system with overflow scuppers. The primary roof drainage is collected internally and then daylighted to spill on grade around the building.

RECOMMENDATIONS

- ✓ Replace or install aerators throughout the facility's restrooms that are no longer present to maintain water and energy efficiency.
- ✓ Repair one of the sinks in the girls area A restrooms so it has hot water.
- ✓ Clean additional fixtures to remove and prevent further water buildup.
- ✓ Repair or replace the cracked bowl in area B's water closet.
- ✓ Add bottle filler to area B's electric water cooler.
- ✓ Update area C's restrooms to address the leaking spouts, rusted drains and basins, aging strainers, and deteriorating drinking fountains. Stained or rusted drains and basins in areas C and E should also be cleaned.
- ✓ Replace the electric water coolers by the locker rooms with a high-low electric water cooler to have the option for a bottle filler.
- ✓ Repair one of the girl's shower handles that would not turn on.
- ✓ Repair or replace the drinking fountains in area E.
- ✓ Replace the circular wash basin in the old shop room.
- ✓ Remove all unused fixtures and lines in the old locker rooms.
- ✓ Replace P-trap pipe wrap that is missing from the restroom within Room A106, the boys locker room sinks, and all of the lavatories in area B.
- ✓ Repair music department's sink needs.
- ✓ Repair the boys locker room urinal flush valve, shower head, and middle sink.
- ✓ Clear debris from roof drains and downspouts to ensure they are not blocked.
- ✓ Repair leaking roof drain located in E115. Proper replacing of the leaking fixture, as well as reinsulation, is required to ensure a proper system.
- ✓ Repair uninsulated roof drain that lies in the space by the old shop to help prevent any condensation that could occur on the pipe.
- ✓ Replace the concrete base where the water should drain.
- ✓ Verify all roof drains outlet to concrete pad so water does not erode the soil below it. Also, make sure each roof drain has the downspout extender on the pipe so no water seeps down into the wall or below the concrete.
- ✓ Review roof drainage in the old gymnasium in area B.

- ✓ Verify that the roof drain doesn't leak, and once confirmed, the roof drainage pipe should be reinsulated to ensure no condensation will occur on the pipe. The same should be done in the cafeteria.
- ✓ Further inspect the old gym and cafeteria to verify that their roof drain don't leak, and also should be reinsulated.
- ✓ Replace room E115's roof drain and the handicap stall in the locker rooms as both are leaking.
- ✓ Replace hose bibs on exterior of building.
- ✓ Add p-trap pipe wrap to all piping.
- ✓ Replace all aerators on the faucets to ensure a steady flow.

PRIORITY	1	2	3
Replace drinking fountains on classroom sinks in area E		●	
Repair loose and leaking faucets at classroom sinks in area C		●	
Replace drinking fountains on classroom sinks in area C		●	
Remove all fixtures and water lines in old locker rooms under stage		●	
Replace broken hose bibs on building exterior		●	
Route roof drain water away from building		●	
Repair hot water to women's lavatory in area A			●
Replace cracked water closet bowl in area B restroom			●
Install pipe wrap on P-traps in area B restrooms			●
Install bottle filler on electric water closet bowl in area B restroom group			●
Repair leaking fitting on roof drain in Room E115 and reinsulate			●
Insulate roof drain in D105			●
Repair and wrap P-trap in D107			●
Replace electric water coolers outside locker rooms with high/low fixture with bottle filler			●
Repair inoperable shower handle in women's locker room			●
Replace damaged and leaking fixture in handicap stall of women's locker room			●
Replace inoperable urinal flush valve in men's locker room			●
Repair water source to center sink in men's locker room			●
Install pipe wrap on P-traps in men's locker room			●
Replace leaking shower head in men's locker room			●
Replace water closet flush valve in men's locker room office restroom			●
Verify roof drain in gym does not leak, and insulate roof drain pipe			●
Verify roof drain in cafeteria does not leak, and insulate roof drain pipe			●
Replace electric water cooler in area E hallway			●



Figure 1 - Two existing steam boilers



Figure 2 - Leaking boiler feed unit



Figure 3 - No vibration isolation on pumps

PHYSICAL CONDITIONS

MECHANICAL CONDITIONS

Review of existing mechanical systems and their components including verification that HVAC systems, as well as plumbing fixture counts, water piping, and water supply meet current building codes.

OBSERVATIONS

Heating Sources and Distribution

Two L.E.S. steam boilers at 3,610 MBH each heat the entire building. These steam boilers run at 75 to 79 percent efficiency. Newer hot water condensing boilers run at 90 to 94 percent efficiency. There are two spots where steam leaves the boiler room. In the first location, the steam leaves the boiler room and travels to the AHU that resides in the mechanical room above the stage. This AHU serves the gym and stage. The other location is to the air handling room above the boiler room. This room has the steam converted over to hot water via heat exchangers. The hot water is then pumped out to various equipment throughout the building. These items in the building include:

- | | |
|-------------------------------|--|
| AHU - Air Handling Units | CUH - Cabinet Unit Heater |
| CUV - Cabinet Unit Ventilator | FCU - Fan Coil Units |
| FTR - Fin Tube Radiation | RTU - Rooftop Units |
| UH - Unit Heater | VAV - Variable Air Volume Units <i>(with Reheat Coils)</i> |

The steam boilers also heat the domestic hot water.

AREA A (Classrooms, Library, Kitchen, Cafeteria, Front Offices)

Area A is served by three AHUs that are all hot water heat, and hot water reheat coils for zoning purposes. AHU-1 is located in A112, and serves the exterior classrooms in area A. AHU-2 is located in A127, and serves the kitchen and cafeteria spaces. AHU-3 is located in A133, and serves the library, front offices, and miscellaneous rooms around the library.

There is a separate boiler to heat the domestic water during the summer months when the boilers are down. The building is on pneumatic controls with a new compressor. Various components of the steam boiler system have been replaced as they have gone bad. Overall the steam boiler system is an old, inefficient system.

AREA B (Old Gymnasium, Stage, Classrooms)

Area B is served by an original unit in the mezzanine above the stage. This steam unit serves the gym and stage, and doesn't have cooling capabilities. The classrooms in area B are being served by a roof-mounted RTU with a hot water coil, and an empty compartment located in the unit for a future chilled water coil. There is a VAV system with reheat coils to control zoning for each classroom. The RTU has an energy recovery wheel to help precondition the outside air.

AREA C (Classrooms)

This area is served by a roof-mounted RTU with a hot water coil and an empty compartment located in the unit for a future chilled water coil. There is a VAV system with reheat coils to control zoning for each classroom. The RTU has an energy recovery wheel to help precondition the outside air.

AREA D (New Gymnasium, Locker Rooms, Music, Shop)

This area has a mix of systems. The gymnasium is being served by AHU-5 located in D126. This unit is a heating only unit that supplies the new gym. Each locker room has a dedicated fan coil that pulls return air from the gym and tempers the air before sending it to the locker rooms. These units are heating only. The music area has a separate system. There are two unit ventilators that are heating only. The shop has a separate system as well, which is a heating only steam unit that is original to the space.

AREA E (Classrooms)

Area E is served from AHU-4, which resides in the mechanical penthouse in this area. This unit has a hot water heating coil. The space below has a VAV system with hot water coils for reheat.

Areas with HVAC systems that are older than 2007 do not appear to have a way to verify or guarantee that adequate ventilation air is provided to the zone in which it serves.

Dehumidification/Cooling Distribution

The music area has two mini-split units hanging on the wall that provide cooling capabilities.

AHU-3, which has cooling capabilities coming from the remote condensers on the roof for the DX coil in the unit, is located in A133 and serves the library, front offices, and miscellaneous rooms around the library.

Ventilation/Air Distribution

The electrical room located in A132 does not have any air movement in the space

The cafeteria (A117) has multiple issues with its HVAC system. There is too much flex duct on the supply lines that serve the space. It is only recommended that 5 feet of flex duct is used on each branch to ensure proper airflows. There are 30-foot runs coming off of the main branch currently. A lot of the ductwork that is currently there is pinched and sagging, thus decreasing the airflow capabilities.

The kitchen equipment was all new and looked to be in good condition. The space was lacking a makeup air unit.

There is an old workshop located in a room off of the boiler room. This room has no airflow and shouldn't be used as a workshop due to the lack of air movement. Note that a lot of the piping in the tunnel space had insulation that was falling off of the pipe.

There is no air movement in the band/choir room, and by code ventilation is required if this space is to be occupied by anyone for a period of time.

The smaller storage room built in classroom E117 doesn't have proper air flow.

Thermal Insulation Values

Much of the existing piping above the ceiling in the cafeteria (A117) is in poor condition. A lot of the piping in the tunnel space near the old workshop had insulation that was falling off of the pipe.



Figure 4 - No vibration isolation on AHU



Figure 5 - Insulation falling off in tunnels

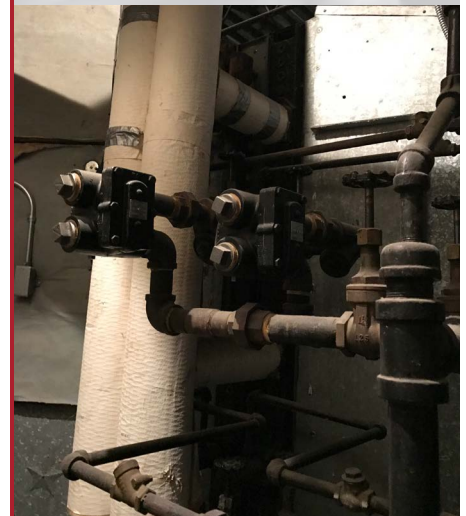


Figure 6 - Missing insulation on steam lines



Figure 7 - Missing insulation on refrigerant lines



Figure 8 - Broken gas pipe supports



Figure 9 - Damaged intake louver



Figure 10 - Leaking abandoned louver

RECOMMENDATIONS

AREA A (Classrooms, Library, Kitchen, Cafeteria, Front Offices)

- ✓ Add sound attenuation with vibration isolation to eliminate the loud noise that the air handling unit located in A133 is making.
- ✓ Balance the diffuser in A128 to eliminate the noise.
- ✓ Add supply or exhaust to the electrical room to help move air in the space to keep the temperature in the room comfortable.
- ✓ Add return diffuser to classroom A108 to the plenum return. A return grille should also be placed in the ceiling grid.
- ✓ Clean the exhaust grill in restrooms located in area A and re-balance the airflow.
- ✓ Relocate compressor for the refrigerator located in the ceiling space to the roof next to the other compressor.
- ✓ Verify the pump/pipe in air handler room (A104) doesn't leak anymore, then re-insulate both. Vibration isolation should be added to the pumps and air handlers to eliminate extra vibration.
- ✓ Add supply or exhaust to the space to help regulate the temperature of the room.
- ✓ Address old, inefficient steam boiler system. Moving to a new water heating plant would be preferred to increase the efficiency from roughly 70 to 93 percent.

AREA B (Old Gymnasium, Stage, Classrooms)

- ✓ Remove or seal louvers on the building exterior.
- ✓ Examine Classroom B116 fans to make sure they are in balance and all bearings are in good condition.
- ✓ Upgrade the exhaust fan system controls in the area B restrooms. It would be recommended to update the controls and tie it in with a building management system.
- ✓ Remove mechanical in old locker room and replace with a system that operates. This could be as simple as an exhaust fan, as any sort of air movement in the space is necessary to make sure the existing air doesn't go stagnant.
- ✓ Upgrade mechanical system for the old gymnasium B125. Adding permanent stairs or ladder is recommended. The system has a large number of uninsulated pipes that should be insulated for safety and heat retention purposes. The leaking thermostat that serves this space should be replaced.
- ✓ Add a return grille to the nurse's office to provide a way for air to leave the space when the door is shut.

AREA C (Classrooms)

- ✓ Re-tape Area C ductwork to the diffusers with the proper tape.
- ✓ Replace the exhaust fan associated to C112 restrooms.
- ✓ Replace the on/off switch that controls the cabinet unit heater near the cafeteria with a thermostat to help control the hallway temperature.

AREA D (New Gymnasium, Locker Rooms, Music, Shop)

- ✓ Remove hood exhaust system, exhaust fans, and air handler in the old shop (D105)
- ✓ Upgrade the band/choir room (D107) HVAC system.

AREA E (Classrooms)

- ✓ Install the cabinet unit heater to help keep the hallway warmer.
- ✓ Add proper transfer or return grille to the smaller storage room built in classroom E117 for proper air movement.

EXTERIOR

- ✓ Replace louvers have been damaged. The louvers no longer in use should be removed or capped on the backside to ensure no water can leak into the building.
- ✓ Review controls sequence should be reviewed. The cooling coil in the rooftop units come after the heating coils. This order should be reversed to allow for extra dehumidification.
- ✓ Re-insulate pipe on roof and ensure proper support.

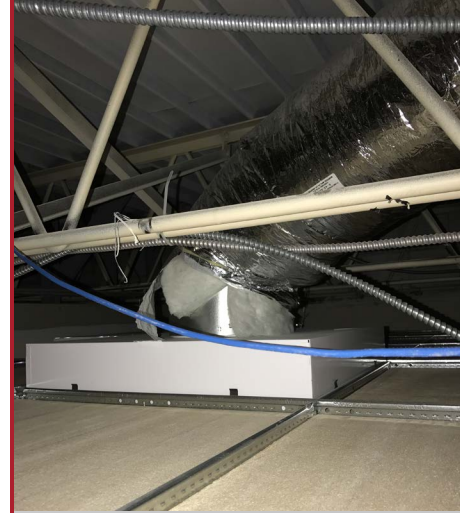


Figure 11 - Leaking supply diffusers

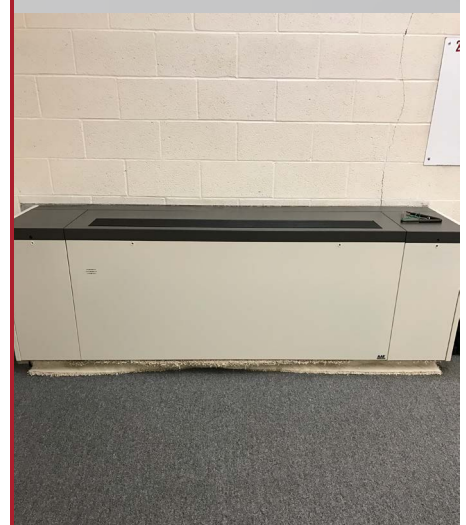


Figure 12 - Leaking backdraft damper



Figure 13 - Space lacking air return

PRIORITY	1	2	3
Add dehumidification to entire building	•		
Remove or seal old unit ventilator louvers for classroom B115 to eliminate water accumulation on the floor	•		
Improve HVAC system in band/choir area (D017) to include DDC	•		
Remove and replace HVAC system in old locker rooms under stage	•		
Update mechanical system for old gymnasium (B125)	•		
Install permanent stair or ladder access to gymnasium air handling unit (B125)	•		
Insulate pipe in gymnasium air handling area (B125)	•		
Replace leaking thermostat for gymnasium with digital controls	•		
Shorten flex duct runs in cafeteria HVAC system to not more than 5'	•		
Repair pipe insulation above cafeteria ceiling	•		
Install makeup air unit for kitchen	•		
Convert all controls to DDC for the facility	•		
Install air supply/exhaust to workshop area adjacent to boiler room	•		
Replace damaged exterior louvers	•		
Remove unused exterior louvers and verify cap on backside to prevent water intrusion	•		
Review control sequencing to ensure energy recovery wheels are operating	•		
Replace VAV system return air flex duct with rigid ductwork in area C		•	
Repair or replace C112 exhaust fan		•	
Replace on/off switch for cabinet unit heater near the cafeteria with a thermostat		•	
Install vibration isolation and sound attenuation on air handling unit in A133		•	
Replace refrigerant piping insulation on roof		•	
Install new high efficiency water heating plant		•	
Reverse order of cooling and heating coils in roof top units and allow for dehumidification		•	
Add a return grille to the nurse's office		•	
Balance noisy diffuser in A128A			•
Install supply or exhaust ventilation to room A132			•
Install return air diffuser within ceiling grid in room A108			•
Clean exhaust grill and rebalance air flow in area A restrooms			•
Replace B116 cabinet unit heater fan bearings and balance			•
Tie area B restrooms exhaust fan controls into building management system			•
Install cabinet unit heater at exterior door 5			•
Remove unused equipment in former shop classroom including hood exhaust system, exhaust fans, air handler in corner of room, uninsulated piping to air handler			•
Replace roof piping supports			•

PHYSICAL CONDITIONS

ELECTRICAL CONDITIONS

Review of the existing building electrical systems including electrical service, distribution, and lighting. This section also documents technology systems and components including the security system and others as applicable.

OBSERVATIONS

Service

The building has a 2000-amp 208-volt, three-phase electrical service that is served from a ground-mounted transformer located on the northwest side of the building. The electrical service size is appropriate for the size of the facility. Should areas require more mechanical cooling or increased ventilation, a detailed analysis would need to be performed to confirm that the existing service has the capacity.

Energy Usage

Utility data for gas and electricity over the last two years was analyzed to see if the facility's energy consumption has been consistent, and also how the school compares to other schools in the State. Looking at the Monthly Per Square Foot Energy Usage chart, the school has remained pretty consistent. Similar to the High School, the Elementary School saw a rise in energy usage from November to January, then saw a large decrease in February. The overall year of 2016-2017 showed a slight increase of 0.64 kBTU/SF, but it is only 1.33% higher than 2015-2016. These changes could likely be attributed to the colder weather in 2016-2017 than the previous year, and a warmer February. A baseline can be established with these numbers to compare future energy usage. If there are large discrepancies with that baseline and future data, it can identify if equipment is failing, as well as if other issues are occurring.

The utility data was also averaged out over an entire year. Again, the 2015-1016 data was used as a baseline to compare the 2016-2017 data. The data can be seen in Table 1. The data can also be compared to other schools in the state's public B3 Benchmarking data. The data is averaged per square foot so that schools can be compared without the total size of the school having a large effect. Only the most recent year's data is compared.

The 48.81 total kBTU per SF per year shown in Table 1 puts the facility at the 43rd spot on the B3 Benchmarking List of Public Schools ranked by EUI. It would fall in the category of <100 kBTU/SF/yr category, which is the top category, but the school could still implement various mechanical and electrical improvements listed in this report to improve the facility's energy efficiency.



Figure 1 - Ground-mounted transformer



Figure 2 - Main electrical gear

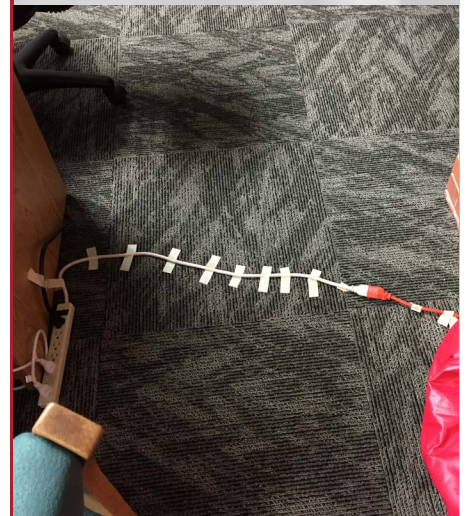


Figure 3 - Extension cord in library



Figure 4 - Non-GFCI receptacle near sink



Figure 5 - Electrical panels without proper clearances maintained

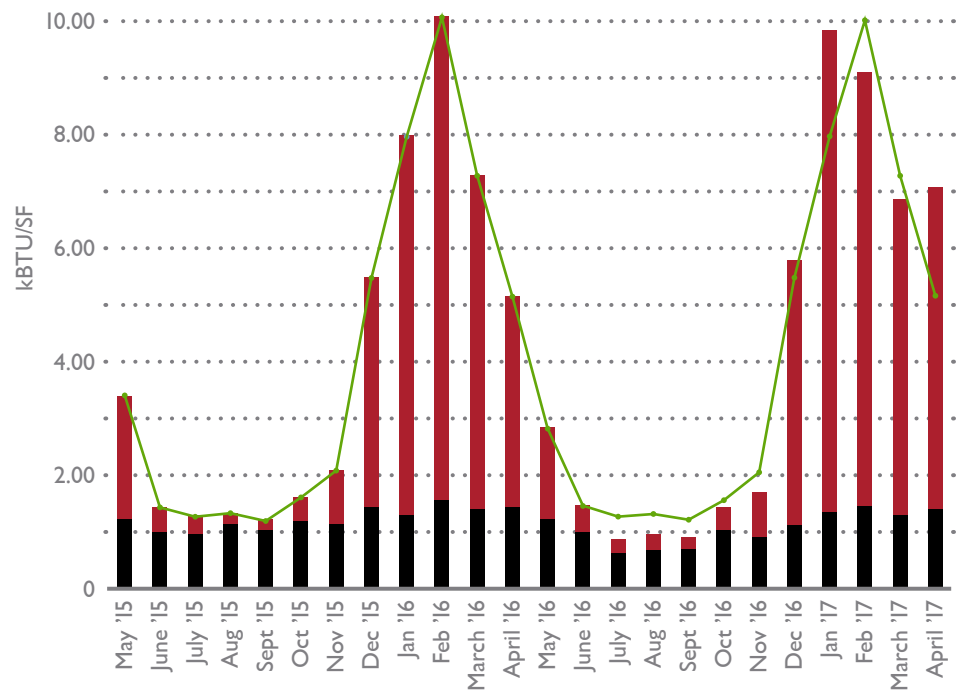


Figure 6 - Older electrical panel

		ELECTRIC	GAS	TOTAL	% Change
kBTU per SF per Year	Actual	12.96	35.85	48.81	—
	Baseline	14.89	33.28	48.17	—
	Change from Baseline	-1.93	2.57	0.64	1.33%

Dollars per SF per Year	Actual	\$0.18	\$0.23	\$0.41	—
	Baseline	\$0.24	\$0.21	\$0.45	—
	Change from Baseline	-\$0.06	\$0.02	-\$0.04	-\$0.04

* Based on building square footage of 94,570



Electrical Gear

The main electrical gear is located in the basement in a room off to the west side of the boiler room. The main switchboard was replaced with the 1993 addition when the service size was increased. The gear is in good condition, but appears to be full. If there are any future additions or any large HVAC units added, additional sections will need to be added.

The main service equipment feeds branch panels throughout the facility. Many of these panels are the newer style and in good condition, but several are original to the building. While these panels are still in working order, it may be difficult to find replacement parts for them. It is recommended that these panels be replaced if circuits in these areas need to be modified.

Light Fixtures

The interior lighting fixtures have been upgraded with linear fluorescent T8 light bulbs. While a majority of the light fixtures are in good to fair condition, a few fixtures do have warped or broken lenses.

Light levels are appropriate in corridors, gymnasiums, and classrooms. Linear fluorescent T8 light bulbs are efficient and still widely used and available. The interior lighting is all manually controlled by local switches.

If significant modifications are made to the lighting, current energy codes require lights to automatically turn off when a space is not being occupied. Also, certain areas would require lights to automatically dim based on the natural sunlight coming into the space. These requirements reduce energy consumption and operating costs when the space is not being used.

The exterior lighting is served by building-mounted HID fixtures. HID fixtures are known for their high lighting outputs, but they are not the most energy efficient. The fixtures appeared to be operational, but many are starting to discolor because of the heat that HID lamps put out. Exterior lighting is controlled by fixture-mounted photocells, which turn the fixtures on during hours of low light levels.

RECOMMENDATIONS

Overall, the facility's electrical systems are in good condition and have been well maintained. Some minor upgrades could be done to these systems to improve the safety and usefulness.

- Add floor cord covers in the library where there are currently extension cords that run across the floor.
- Add GFCI protection to all receptacles that are located within 6 feet of a sink to mitigate violation of the National Electric Code.
- Label existing electrical gear is not currently labeled for arc flash hazards. The National Electric Code (NFPA 70) and Handbook for Electrical Safety in the Workplace (NFPA 70E) require that all panels be labeled. Warning labels increase awareness for potential arc flash hazards and provide notification of the proper protective equipment that should be worn.
- Perform an electrical study to analyze short circuit fault currents, protective device coordination, and arc flash hazards. After the study, the electrical panels can then be labeled with the correct information. The study should be performed prior to purchasing any new equipment to ensure it is properly rated for the available short circuit fault current.
- Replace warped or broken lenses on light fixtures.
- Replace HID fixtures with more energy efficient LED fixtures to reduce energy usage and improve aesthetics.

PRIORITY	1	2	3
Add GFCI protection to outlets near sinks	●		
Improve library circuits to eliminate extension cord use		●	
Add exterior Emergency Egress lighting near each entrance		●	
Replace warped or broken light fixture lenses			●
Replace exterior HID lights with LED			●



Figure 7 - Light with broken lens

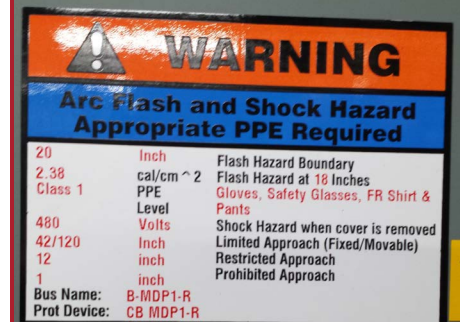


Figure 8 - Example of proper labeling for electrical equipment

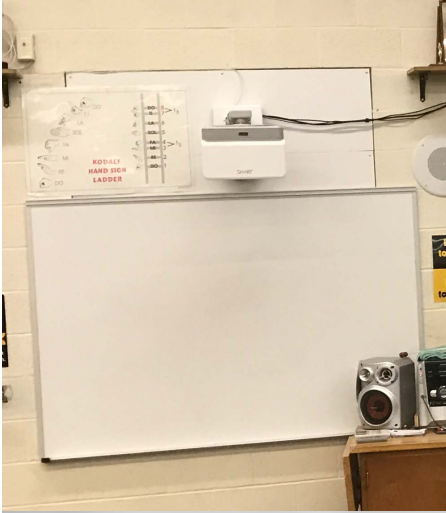


Figure 1 - Projector + whiteboard



Figure 2 - Typical wireless access point

PHYSICAL CONDITIONS

TECHNOLOGY CONSIDERATIONS

Review of the building information technology system including network documentation, backup procedures, firewall, software, security, and technical support.

OBSERVATIONS

Backup Procedures

The District uses local Veeam backups to Synology. Off-site backup locations could be considered.

Server Software

Extended support for Server 2008 ends on Jan. 14, 2020, which means the School District will need to update to a newer Operating System before that date.

Network Documentation

Network documentation was updated in the summer of 2016. This should be updated on an annual basis.

Network Wiring

The school utilizes wireless internet, and each classroom is equipped with a wireless access point. These allow devices such as iPads, tablets, etc. to access the internet without the need for a hard-wired connection.

Classroom Capabilities

Currently there are many school districts deciding whether to utilize smart boards or overhead projectors. Based on the particular districts needs and curriculum, it is an internal decision as to what type of technology is best for students. All of the existing classrooms are outfitted with smart board systems, which is considered good as there are many districts without these capabilities.

The school is using a public address and intercom system. Each classroom is equipped with a call button and two-way speaker. This allows the teachers to communicate with the main office by pressing the call button.

RECOMMENDATIONS

- Upgrade clocks to atomic wireless system. The atomic system will keep all clocks on-time and will automatically account for all time changes without having to manually update every clock. The system is wireless so it can be implemented without having to run any new wiring in the facility.
- Set up synology for backups to be copied over using the built-in Operating System of Veeam. This would help protect data in the event of disaster or a virus outbreak, such as Cryptolocker.
- Update network documentation.

PRIORITY	1	2	3
Upgrade to wireless clock system	•		
Create Synology for backup files	•		
Upgrade to new operating system			•



Figure 3 - Typical intercom call button

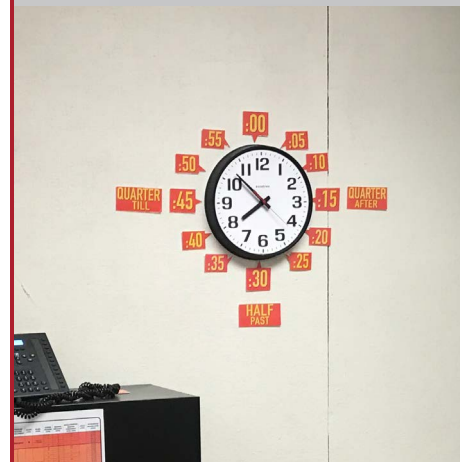
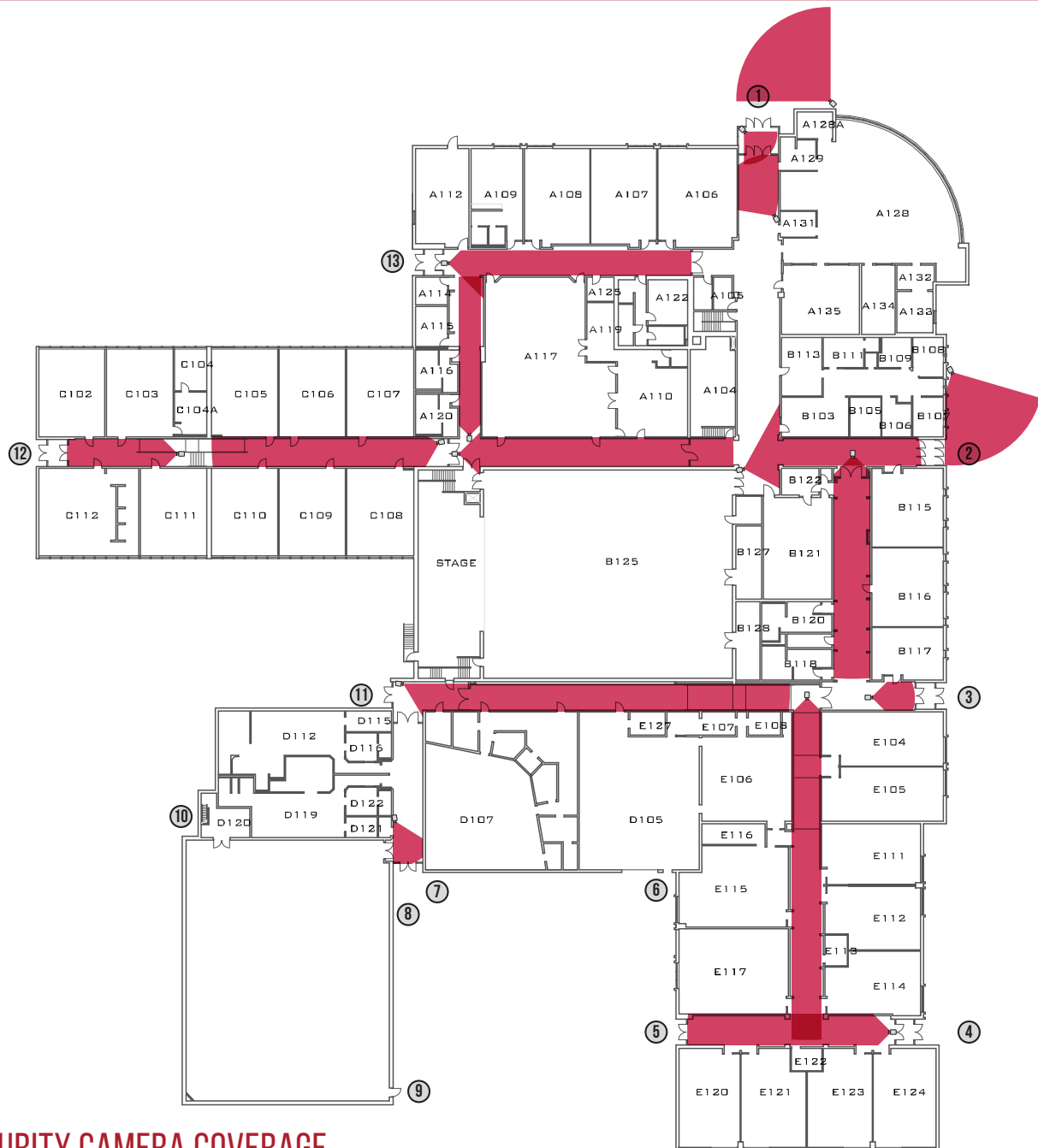


Figure 4 - Typical existing stand-alone clock

PHYSICAL CONDITIONS SECURITY CONSIDERATIONS



Assessment of the existing security equipment installed throughout the building. Review of existing primary entryways into the facility including door locations and visitor access.



SECURITY CAMERA COVERAGE

OBSERVATIONS

Camera Coverage

The building is outfitted with a CCTV camera system in the main corridors and on the exterior near the two main entrances.

Access Control

The existing building has an access control system at its exterior entryways. This means that entrance to the building is secured and monitored. Entry is limited to individuals with access cards or key fobs. The main building entrance was outfitted with an intercom request to entrance system, which gives the School the ability to allow or deny access to individuals that are requesting to enter the building.

Secured and Monitored Entrances

The primary building entrance is located at the northeast corner of the facility near the library (A120). Entrance doors with a power operator and insulated glass and hardware appear to be in good condition. While a call button is present, the administrative offices are located deeper into the building. Once admitted into the building, visitors must walk down the corridor unattended. While the call button and camera aid in assessment of the visitor's credibility, there is no barrier once admitted to assess the visitor's intent.

Ideally, the person should enter through an area where they can be observed by staff and then released into the building after they are properly informed of rules and regulations and badged.

This condition could be achieved by utilizing the entrance door to the east near the office. To properly achieve a secure system would require reconfiguration of some office space and relocation of administrative staff. It would change the normal flow pattern of building occupants' access to administrative staff. Currently, cameras are located just inside most exterior door locations (with the exceptions of 5E and 10W) to monitor building entry as well as at most major hallway junctions. Exterior Door 11W has a camera set to capture a segment of the adjacent hallway but lacks the ability to obtain line of sight to entering traffic.

RECOMMENDATIONS

- ✓ Add additional interior and exterior cameras to improve coverage within the building and near non-monitored entrances.
- ✓ Reconfigure entrance to prevent unabated entry into the school. The school will need to determine where that lies in their risk assessment.



Figure 1 - Typical indoor security camera

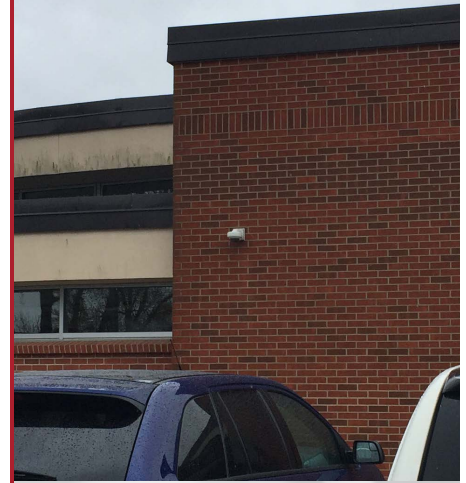


Figure 2 - Typical exterior security camera



Figure 3 - Existing secured entrance

PRIORITY	1	2	3
Create new secure entrance	●		
Add exterior cameras to improve coverage near entrances		●	
Add cameras to improve coverage within building		●	

PROGRAMMING + EDUCATIONAL ADEQUACY



PROGRAMMING + EDUCATIONAL ADEQUACY SPACE UTILIZATION

An evaluation of the school's ability to meet State laws, standards and objectives that define an adequate education, as well as the space allocated to different disciplines.

OBSERVATIONS

Pre-K

Bridges is the current Pre-K program created to help children acclimate to full-day kindergarten. The program is served out of Room C102. The HVAC in this room is inconsistent and creates a barrier to the children's comfort and ability to learn. Sinks and associated casework is antiquated and does not provide appropriate heights for the students. The casework also does not provide the ideal storage for the teachers.

K-5

The school's goal is for each grade to be a community of learning. Currently the majority of collaborating is between the teachers during their PLCs. Within the classroom, students are primarily with their teacher throughout the day, with specials being the exception.

Kindergarten, first grade, and second grade occupy the oldest portion of the building. The largest challenge as teachers strive for a community in kindergarten is the inequity of amenities in the classrooms. For example, one has room for coats and boots, while the other two do not. Two of the classrooms have more tackable surfaces than others; some have the preferred magnetic white boards; and some of the sinks are inoperable.

Other needs that have been identified are ADA restrooms within each classroom, nearby water fountains, consistent IT connections, and newer technology such as document cameras. The students currently have breakout sessions that would benefit with the creation of an adjacent flexible learning area.

The first grade classrooms are nearby one another. Dehumidification is the major hurdle for teachers. The plumbing in these classrooms is operational and an asset to teaching. Casework provides sufficient storage. Floor time for certain topics is required, and dedicated space and floor covering would benefit students in kindergarten through second grade.

Location of specials for the students create inefficiencies during the day for the younger grades. Also a remote staff restroom and prep room make lesson planning and student supervision a team effort among the first grade teachers.

Upper grades would benefit greatly from flexible learning areas for mid-sized to large sized break out group work. The typical classrooms do not have the space to offer such activities. For students to truly experience a community of learning, collaboration space is needed. Flexible learning areas or student resources centers near each grade level would enable such an experience. Equipped with the right technology, spaces like this could provide the diverse experiences students need today.

BACKGROUND INFORMATION

ENROLLMENT: 396

GRADES: PreK-5

CURRENT STAFF: 35

Physical Education

Two gymnasiums are used for physical education, and are available for open gym sessions at times throughout the day. There is no fitness room, but a small one would be appropriate for the older students. The allocated storage is adequate, but its placement isn't ideal for safety and access.

There are no white boards or projection capabilities available, and an implemented use of such technology would be productive. Sound systems in both gyms are insufficient. The poor acoustical treatments make for a less than ideal teaching environment. The stage suffers from similar acoustic issues.

Developmental adapted education is also taught as part of the physical education curriculum. Currently some exercises are performed in the hallway outside the south gym. Ideally, a dedicated space of 500 square feet should be allocated for this instruction. There is synergy between the DAPE curriculum and the activities in the smart room, and a combined suite could potentially satisfy the needs of both spaces.

Music

The music room is used by the students two days a week for instruction. It is equipped with tiered seating which limits some of the music and movement curriculum truly needed for the younger students. This also limits orientation of instrument stations. Acoustically, the room is in need of enhanced wall treatments.

Art

There is no dedicated room for art. Funded by the PTO, each class has five sessions with a resident artist during the year. The space currently being used by the resident artist is downstairs, with no natural light, and compromised HVAC.

Special Education

A de-escalation room is one of the largest needs identified for special education. As student numbers have increased, the number of interruptions has also increased. Staff increases are expected next year to help facilitate learning. As instructors strive to integrate standard curriculum into each day, some areas in the building hinder these efforts. The stage, which is being utilized for the Battle of the Books program, isn't accessible by those covered under the ADA. A portion of the students have their own restrooms, while another portion does not. There is no Hoyer lift in the building, and having one would make transferring some of the older students easier.

There currently is a room meant to be a place for active students, referred to as the smart room, in which curriculum is mixed with physical activity to enhance learning. The room is not equipped with finishes to maximize its efficiency. Adding dehumidification, rubber flooring, acoustical treatments, and better lighting would create a more inviting learning environment. It would also make the space more conducive to the activities being performed in it. Another enhancement mentioned would be the addition of a swing.

Title I

The Title I program serves students kindergarten through 3rd grade in groups of up to 5 students for 20 minutes at a time. Some paraprofessional educators (paras) offer students one-on-one time as needed. Four of the paras serve students in a single space. Another para enters each classroom, supervised by a licensed teacher. Ideally the supervisor would be in one space overseeing the paras perform their small groups or one-on-ones. Technology in the space can remain minimal, as much of the work is hands on instruction.

Staff Spaces

Administrative office square footage is adequate. However the layout could be renovated and improved to create a secure entrance during school hours.

One hurdle for staff that was repeatedly mentioned was the IT connectivity issues. This hinders staff ability to access internet based tools.

The staff currently doesn't have a dedicated PLC planning area. Creating one could be very beneficial to support the community of learning model set forth for each grade. With the current staff work room and restrooms located on one side of the facility, half of the staff is left in an inconvenient place.

RECOMMENDATIONS

- ✓ Repair or replace HVAC system in the Pre-K and first grade classrooms to enable proper airflow and temperature.
- ✓ Adjust sinks and casework in the Pre-K and kindergarten rooms to accommodate the children's height and need for storage space.
- ✓ Relocate staff restroom, room for specials, and prep room closer to the first grade classrooms.
- ✓ Add flexible learning areas to benefit upper grade levels, who need more opportunities for collaboration.
- ✓ Enhance gym could by adding white boards and improved sound systems to create a better environment for teaching.
- ✓ Reallocate gym storage to improve safety and facilitate access.
- ✓ Update smart room to include better lighting, dehumidification, rubber floors, and acoustical treatments to maximize the efficiency and potential of the space, which could also serve the DAPE curriculum and SPED department.
- ✓ Enhance wall treatments and alter seating arrangement in the music room.
- ✓ Dedicate space to PLC planning and an art room will also help facility operations.
- ✓ Add smaller breakout areas near each grade's classrooms to address the need for a de-escalation room.
- ✓ Make the entire facility ADA accessible to enable all students to have the same experience.
- ✓ Renovate current administrative office and staff facilities and consolidate to establish a more secure entrance, as well as increase efficiency between teachers and students.



Grade Configuration:		Pre-K - 5th Grade									
Current Student Population		396									
Staff		35									
Description	Comments	Notes	Room #	Usage	Shared Space	Subtotal	Recommended				Current Max. Student Capacity
							Low Range	High Range	Avg. Student Capacity	Student Capacity Range	
School Learning Spaces											
Classrooms											
Pre-K/Bridges Program	Undersized		C102	Full time	No	853	1,000	1,400	20	15-25	14
Preschool	Undersized		B116	Full time	No	832	1,000	1,400	20	15-25	13
Kindergarten	Undersized		C103	Full time	No	807	1,200	1,500	18	15-25	11
Kindergarten	Undersized		C111	Full time	No	856	1,200	1,500	18	15-25	12
Kindergarten			C112	Full time	No	1,264	1,200	1,500	18	15-25	18
1st Grade			C106	Full time	No	859	850	950	20	15-25	19
1st Grade			C107	Full time	No	867	850	950	20	15-25	19
1st Grade			C109	Full time	No	859	850	950	20	15-25	19
1st Grade			C110	Full time	No	859	850	950	20	15-25	19
2nd Grade			A107	Full time	No	921	850	950	20	15-25	20
2nd Grade			A108	Full time	No	916	850	950	20	15-25	20
2nd Grade			E111	Full time	No	875	850	950	20	15-25	19
2nd Grade	Undersized		E112	Full time	No	839	850	950	20	15-25	18
3rd Grade	Oversized		E104	Full time	No	971	850	950	20	15-25	21
3rd Grade	Oversized		E105	Full time	No	971	850	950	20	15-25	21
4th Grade			E120	Full time	No	875	850	950	20	15-25	19
4th Grade			E121	Full time	No	875	850	950	20	15-25	19
4th Grade			E123	Full time	No	875	850	950	20	15-25	19
5th Grade	Undersized		E114	Full time	No	831	850	950	20	15-25	18
5th Grade	Oversized		E115	Full time	No	1,206	850	950	20	15-25	26
5th Grade			E124	Full time	No	900	850	950	20	15-25	20
Subtotal (Classrooms)						19,111	19,200	22,500	414	315-525	384
Special Education											
ECSE (3-4 yr old)			A106	Full time	Yes	1,131	800	1,200	6	5-8	7
Nonstimulus - SMART Dark Room	Undersized		E127	Full time	No	122	450	450	3	5-8	1
ECSE/Kindergarten Special Ed			B115	Full time	Yes	818	800	1,200	6	5-8	5
Special Education Classroom		Calc. as Lab	B121	Full time	No	1,029	800	1,200	6	5-8	7
Special Education - Breakout	Undersized	Calc. as Conference	B122	Part time	No	148	150	200	1	5-8	1
Special Education Classroom	Oversized	Calc. as Lab	E106	Full time	Yes	1,206	800	1,200	6	5-8	8
Special Education - Breakout	Undersized	Calc. as Conference	E108	Part time	No	148	150	200	1	5-8	1
EBD/Life Skills Classroom	Oversized	Calc. as Lab	E117	Full time	Yes	1,366	800	1,200	6	5-8	9
Subtotal (Special Ed.)						5,968	4,750	6,850	37	40-64	39
Common Spaces											
Large Group (10-12 SF per stud.)	Facility Deficient						3,960	4,752			
Small Group/Conference/Office - Speech	Undersized		A114	Full time	No	130	150	200			
Small Group/Conference/Office - Speech			A115	Full time	No	187	150	200			
Team Learning Areas - Title	Oversized	4 Stations- Adequate	C108	Full time	Yes	864	150	200			
Team Learning Areas - Breakout	Undersized		C105	Full time	Yes	856	1,200	1,800			
Small Group/Conference/Office - Kinder. Brk. Out			C104A	Full time	No	200	150	200			
Small Group/Conference/Office - Title	Undersized		E107	Full time	No	116	150	200			
Subtotal (Common Spaces)						2,353	5,910	7,552			
Library / Media Center											
Entrance / Circ / Distribution	Undersized	Part of gen. space	A128			496	600	600			
Seating / Stacks Comp / Ref (8-10% stud. x 35SF)	Oversized	Part of gen. space	A128	Full time	Yes	1,691	1,109	1,386			
Librarian Office	Oversized		A134	Full time	No	345	150	150			
Small Group / Conf / Office - Reading Corps.	Undersized		A128A	Full time	No	140	150	150			
Multimedia Production	Facility Deficient						100	100			
Classroom / Story Area	Undersized	Part of gen. space	A128	Full time	Yes	729	800	800			
Workroom / Storage	Undersized		A132	Full time	No	133	400	600			
Professional Library	Facility Deficient						200	200			
Subtotal (Library / Media Center)						3,533	3,509	3,986			
Technology											
Computer Lab	Undersized		A135	Full time	No	786	1,000	1,200			
Control and Headrooms	Facility Deficient						390	440			
Copy Center	Facility Deficient						500	500			
Subtotal (Technology)						786	1,890	2,140			
Art/Science											
Multipurpose	Facility Deficient						1,000	1,500			
Kiln/Glazing/Clay/Damp Rm.	Facility Deficient						250	250			
Science Lab Prep	Facility Deficient						250	250			
Subtotal (Art)						0	1,500	2,000			
Music											
General Music	Oversized	Overall Music sq.ft.	D107	Full time	No	3,391	1,000	1,500			
Choral	Facility Deficient						1,200	1,700			
Instrumental	Undersized	Part of suite sq.ft.	Part of Music				1,500	2,000			
Instrumental Stor. & Circ.	Undersized	Part of suite sq.ft.	Part of Music				600	800			
Ensemble/Keyboard/Library	Undersized	Part of suite sq.ft.	Part of Music				400	500			
Subtotal (Music)						3,391	4,700	6,500			
Physical Education/Athletics											
Gymnasium - Elementary			A125	Full time	Yes	7,640	6,000	8,000			
Gymnasium - Intermediate			D120	Full time	Yes	7,781	6,000	8,000			
Multipurpose	Facility Deficient						1,700	1,700			

Description	Comments	Notes	Room #	Usage	Shared Space	Subtotal	Recommended			Current Max. Student Capacity
							Low Range	High Range	Avg. Student Capacity	
Adaptive Physical Educator - SMART Room	Oversized	Calc. as Lab	D105	Full time	No	2,537	800	1,200		
Adaptive Physical Educator - OT/PT Classroom	Undersized		B117	Full time	No	536	800	1,200		
General Storage (300 SF per station)	Undersized	Average	B127,B128,D120			268	300	300		
Subtotal (Physical Education / Athletics)						18,762	15,600	20,400		
Subtotal - School Learning Spaces (NSF)						53,904	57,059	71,928	451	355-589
Current Max. Student										423
Optimal Student Capacity (90% of Max. Capacity)										380
Current Student Enrollment										396
Facility Efficiency										104%
School Support Spaces										
Administration / Health Services										
Reception / Waiting	Oversized		B103	Full time	No	298	200	250		
Principal			B105	Full time	No	182	150	200		
Assistant Principal	Facility Deficient						150	200		
Secretarial Work Station		Part of gen. space	B103	Full time	No	100	80	100		
Work Room and Mail Area	Oversized		B113		No	351	300	300		
Small Conference Room			B107		No	182	150	200		
Large Conference Room	Facility Deficient						250	400		
Other Offices	Oversized	Cir.Dir/Sup.Int./PE/IT/ Fam.Ser./SPED Case/Fern. Ther.	A129,A131,B106,B108,B109,D116,D122,E113	Full time	No	2,534	100	150		
Restroom	Undersized	Unisex (Not ADA)	?	Full time	No	27	120	180		
Scheduling / Computer Services			B106	Full time	No	158	150	250		
School Nurse / Health Services	Undersized	Including rest room (N)	B111	Full time	No	212	400	600		
Records / Supplies / Storage	Oversized		A133	Full time	Yes	219	200	200		
Subtotal (Administration / Health Services)						4,263	2,250	3,030		
Guidance / Student Services										
Guidance Office	Facility Deficient						150	150		
Conference Room	Facility Deficient						150	200		
Psychologist, Social Worker Office	Undersized		A105	Full time	No	96	100	150		
Testing	Facility Deficient						100	100		
Records / Supplies / Storage	Facility Deficient						200	250		
Subtotal (Guidance / Student Services)						96	700	850		
Teachers / Staff										
Planning Work Stations (50 SF per staff)	Facility Deficient						1,750	1,750		
Offices	Facility Deficient						100	150		
Conference/Kitchenette/Print (10-20 SF per staff)	Undersized		A109	Full time	No	266	350	700		
Toilets	Oversized	RR not ADA (Nursing i	A109,E122	Full time	No	190	120	180		
Subtotal (Teachers / Staff)						456	2,320	2,780		
Food Service										
Cafeteria Dining Space (12-13 SF / student)	Undersized		A117	Full time	No	2,704	4,752	5,148		
Staff Dining Space (20 SF / staff dining)	Facility Deficient						480	480		
Kitchen			A110	Partial	No	851	500	1,000		
Serving Line	Facility Deficient						800	800		
Dry Food Storage	Facility Deficient			Partial	No	243	300	300		
Cooler	Facility Deficient						250	250		
Freezer	Facility Deficient						350	350		
Dishwasher	Facility Deficient						300	300		
Office	Facility Deficient						150	150		
Locker Rooms / Restroom	Facility Deficient						120	120		
Receiving and Holding	Facility Deficient						300	300		
Table Storage	Facility Deficient						800	1,000		
Subtotal (Food Service)						3,798	9,102	10,198		
Auditorium										
Seating - 250 seats	Facility Deficient						2,500	2,500		
Stage	Facility Deficient						2,200	3,000		
Dressing Rooms	Facility Deficient						400	500		
Make-Up Room	Facility Deficient						200	250		
Restrooms with Showers	Facility Deficient						128	128		
Costume Storage	Facility Deficient						150	225		
Scene Shop	Facility Deficient						800	1,000		
Lobby	Facility Deficient						492	1,000		
Restrooms in Lobby Area	Facility Deficient						600	600		
Control Room	Facility Deficient						200	240		
Dimmer Room	Facility Deficient						120	150		
Catwalks	Facility Deficient						600	1,000		
Loading Bridge	Facility Deficient						150	150		
Piano Storage	Facility Deficient						80	80		
Other Options	Facility Deficient									
Subtotal (Auditorium)						0	8,620	10,823		
Subtotal - Net School Support Spaces						8,613	22,992	27,681		

N/A

Description	Comments	Notes	Room #	Usage	Shared Space	Subtotal	Recommended		Avg. Student Capacity	Student Capacity Range	Current Max. Student Capacity
							Low Range	High Range			
Combined Subtotal - Net	Net School Learning Spaces + Net School Support Spaces					62,517	80,051	99,609			
Building Support Spaces											
Building Systems and Maintenance			A104	Full time	No	620					N/A
Custodial			A112	Full time	No	762	400	600			
Custodial Closets							40	40			
Restrooms	2.5% x NSF		RR Areas A,B,D	Full time	No	2,857	1,563	1,563			
General Storage	3% x NSF		C104,D115,D121.E116	Full time	No	627	1,876	1,876			
Mech/Elec Interior Systems	7.5-8.5% x NSF			Full time	No	4,357	4,689	5,314			
Circulation and Structure	35-45% x NSF			Full time	No	20,818	21,881	28,133			
Subtotal - School Support Spaces						29,421	30,448	37,525			
TOTAL BUILDING (GSF)						91,938	110,499	137,134			





NRHEG SECONDARY





FACILITY CONDITIONS

NRHEG SECONDARY SCHOOL

BACKGROUND INFORMATION

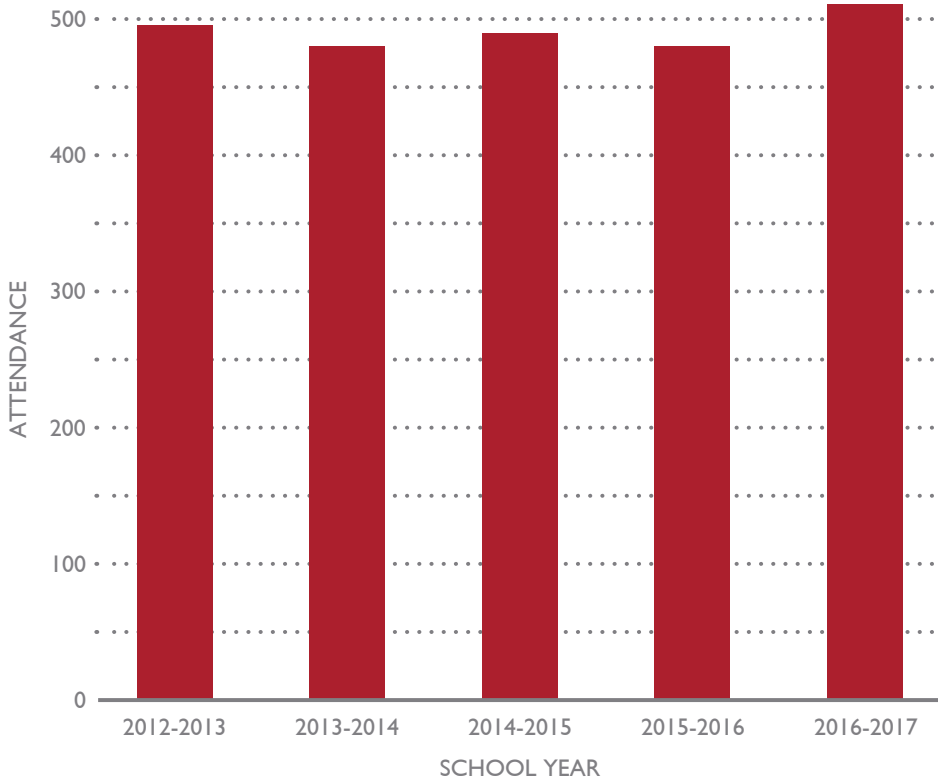
CONSTRUCTED: 1953

ADDITIONS: 1959; 1969; 1991

LOCATION: 306 Ash Avenue South in New Richland

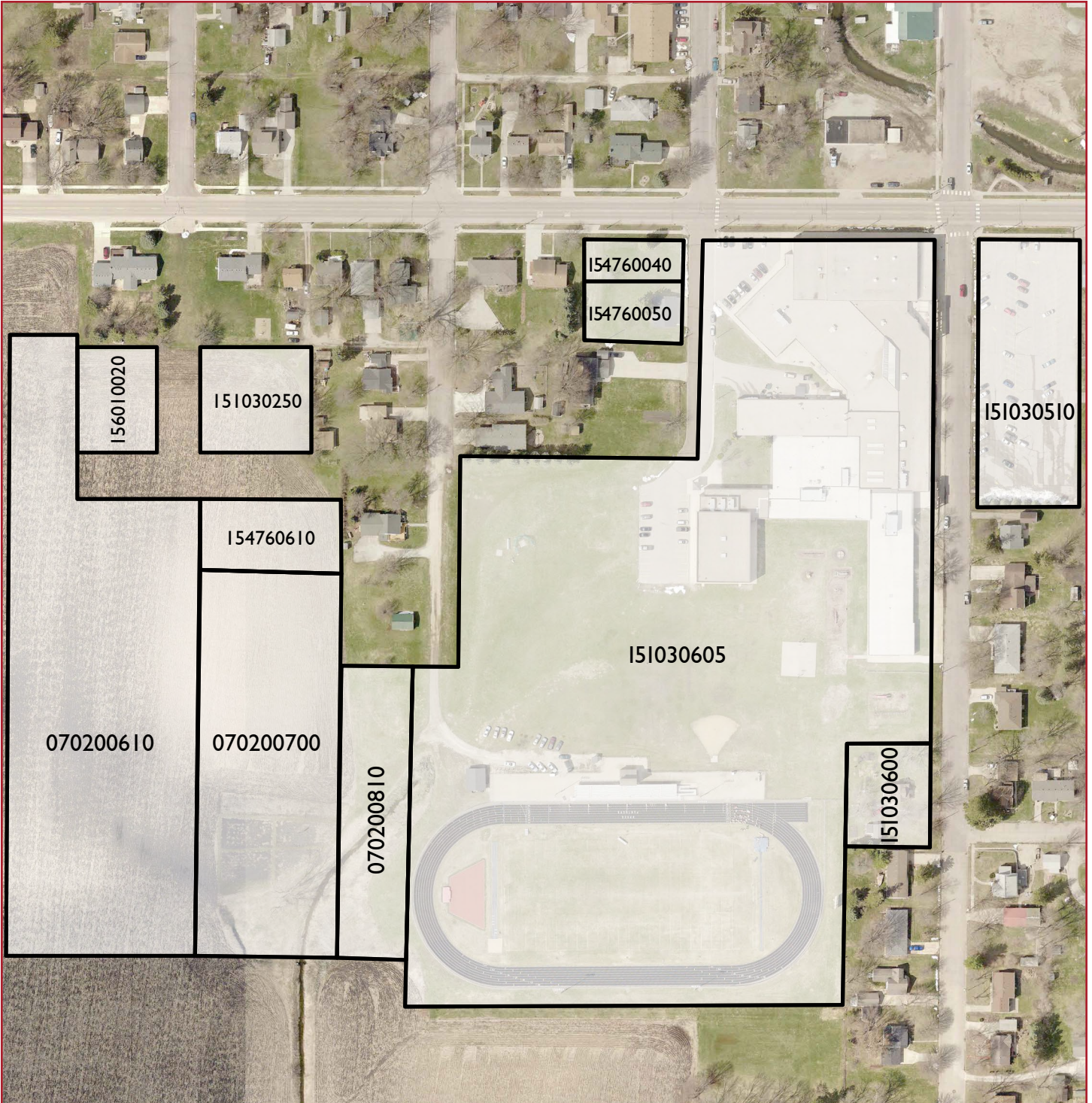
USES: 6th-12th Grade

The Secondary School has a total enrollment of 507 students serving 6th-12th grades. Enrollment over the past 5 years appears to be relatively stable.



FISCAL YEAR	ENROLLMENT
2012-2013	495
2013-2014	484
2014-2015	493

FISCAL YEAR	ENROLLMENT
2015-2016	483
2016-2017	507

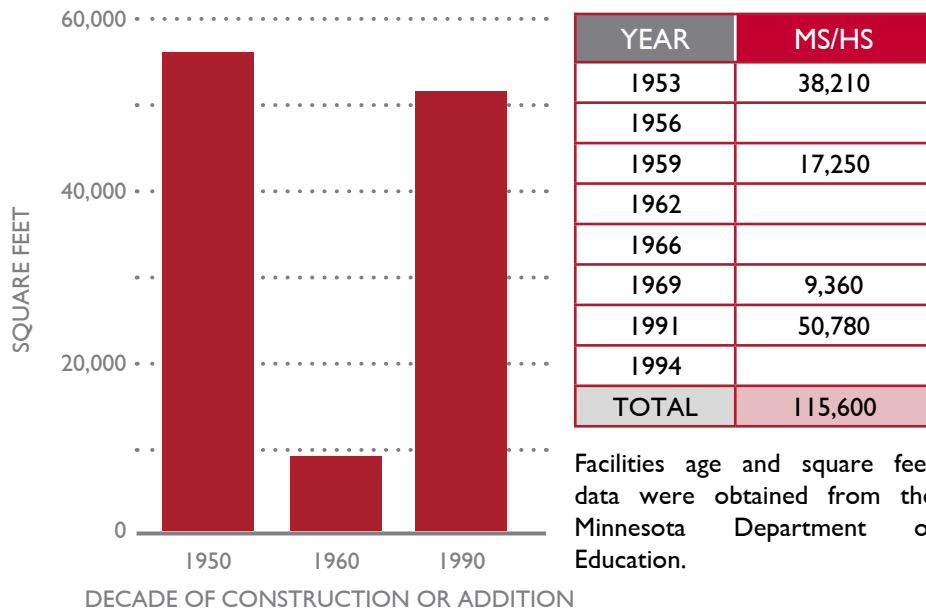


SITE ACREAGE = 26.78 ACRES

The Secondary School is located in the southwestern portion of the City of New Richland. The property is comprised of 11 parcels of land adjacent to the south side of MN State Highway 30.

PARCELS OWNED BY MS/HS

151030605	151030600	152760050	154760040	151030510	070200700
14.69 Acres <i>High school + athletic fields</i>	0.42 Acres <i>Green space east of track</i>	0.32 Acres <i>Garage + green space</i>	0.17 Acres <i>Green space west of garage</i>	1.32 Acres <i>Parking area east of Ash Avenue</i>	2.63 Acres <i>Agricultural land</i>
070200610	151030610	070200810	154760250	156010020	
4.78 Acres <i>Agricultural land</i>	0.56 Acres <i>Agricultural land</i>	1.01 Acres <i>Agricultural land</i>	0.54 Acres <i>Agricultural land</i>	0.34 Acres <i>Agricultural land</i>	



Adjacent property to the north and east of the school is primarily residential, whereas land to the west and south is agricultural.

PHYSICAL CONDITIONS



PHYSICAL CONDITIONS

SITE CONDITIONS

Review of the existing building site including parking spaces, concrete walks, and other horizontal site elements. Site circulation, grading, paving, parking, stormwater, and playground spaces were also reviewed.





Figure 1 - Bus loading area



Figure 2 - Catchbasin in north staff lot



Figure 3 - Cracking bit in south staff lot

SITE OBSERVATIONS TRAFFIC PATTERNS AND CONFLICTS

Bus Drop-off/Pick-up Areas

The bus loading zone is located along the south side of Ash Avenue South, with bus traffic primarily entering from the north. The bus loading area is delineated by both a yellow stripe on the east building sidewalk at door 1E and a “Loading Zone” sign indicating no parking during pick-up and drop-off times. Ash Avenue South is approximately 36 feet wide, which allows for two-way traffic to be maintained while buses are parked. Because the student parking lot is located on the east side of Ash Avenue South, traffic flow is disrupted when students cross the street.

Student Drop-off/Pick-up Areas

The student drop-off and pick-up area is along Ash Avenue South at door 17E. The drop-off and pick-up area has two accessible curb ramps along Ash Avenue South. The pick-up area is not striped, but signage indicating “Student Pick-Up and Drop-Off Area” is provided. Approximately 12 vehicles can be stacked in the drop-off and pick-up area. There are areas of traffic conflict with students crossing Ash Avenue South to get to the student parking lot.

The concrete sidewalk along the east side of the building is in good condition, and no tripping hazards are present. Two concrete panels by door 17E have thin cracking around one of the building overhang pillars. There are three catch basins located on the north end of Ash Avenue South, which appear to be providing adequate drainage. All stormwater runoff conveys from the south end of Ash Avenue South and flows north to the intersection of Highway 30 and Ash Avenue South to four catch basins that provide stormwater management.

Staff Parking

The north lot has 18 stalls, which includes 1 handicap stall. This is an adequate number of handicap stalls according to ADA standards, but the stall is lacking the required 5-foot loading zone striping, and the ADA signage needs to be updated to meet current height requirements.

Stormwater from the north parking lot sheet flows in two directions. Approximately half of the stormwater sheet flows to the west toward the gutter line in Birch Avenue South, and the other half sheet flows to the east toward a catch basin. The bituminous pavement surrounding this catch basin is cracked, and a low spot has formed in the pavement next to the grate. The water that pools in this low spot after a rainfall event is damaging the pavement. This low spot indicates soil migration into the drainage structure, which can lead to accelerated deterioration of the bituminous surrounding the structure, and also allows for larger quantities of soil and sediment to enter into the storm structure.

The bituminous pavement has recently been seal coated and restriped. Wheel stops are provided for the stalls along the building, but they need to be realigned and relocated, as some of the wheel stops are not in alignment with the stalls, which does not provide an adequate barrier between the parking stalls and the school building. Wheel stops and/or curb are not provided for the parking stalls on the north side along Highway 30, which does not provide an adequate barrier between the stalls, the sidewalk, and Highway 30.

The configuration of the parking lot, which is triangular in shape, leads to some conflicts on the east side when cars are backing out to exit the parking lot onto Birch Avenue South.

The south parking lot has 29 stalls, which includes one handicap stall. This is an adequate number of handicap stalls, but the stall is lacking the required 5-foot loading zone striping, and the ADA signage needs to be updated to meet current height requirements.

Stormwater from the south lot sheet flows primarily to the west. Because there is no curb and gutter, the stormwater sheet flows west and south off the parking lot. The lot has recently been seal coated and restriped, and the bituminous pavement on the east side and center of the lot has virtually no cracking. However, there is significant cracking along the south and northwest edges of the lot. The lack of curb and gutter has likely led to the cracking and deterioration observed along this portion of the lot. Wheel stops are provided as a barrier between the stalls and the building/grass areas, which appear to serve this area well.

Student Parking

There are approximately 147 stalls within the student parking area, which includes one handicap stall. According to ADA standards, 5 handicap stalls are required to meet current requirements. The handicap stall that is provided on the north end of the lot lacks the required 5-foot loading zone. Handicap signage is worn, outdated, and does not meet the height requirements for the current ADA guidelines.

Some small lips were observed along the ADA routes, especially the southwest entrance, which are likely due to settlement. There is no accessible route from the student parking lot to the front of the school. The ADA parking area is nearly beyond the maximum allowable variation in slope per ADA guidelines. Milling of the pavement in these areas could potentially resolve the variation in slope.

There is currently one painted crosswalk on the north end of Ash Avenue South for access from the parking lot to the school.

There are some traffic conflicts when exiting north out of the student parking lot onto Highway 30, since traffic entering the lot has to cross traffic exiting the lot. This not only leads to congestion, but can also lead to accidents between vehicles. Although there is directional painting in the parking lot, there is no directional signage or markings for drivers at the northernmost exit onto Highway 30.

The two west exits off of Ash Avenue South seem to provide adequate maneuverability, but this leads to additional congestion as bus loading, parent drop-off and pick-up, and student traffic are all funneled onto Ash Avenue South.

The southernmost entrance into the student parking lot is rough, as the entrance is not a flush driveway apron, but rather a shallow curb used to enter and exit the lot.

All snow is stored on the south end of the student parking lot. When the snow melts, it flows north across the parking lot, which can create icy conditions posing a safety risk for both vehicles and pedestrians.

Sidewalks and Walkways

Sidewalks and walkways provide adequate access to the doors and points of entry throughout the site. Lights were installed on the Highway 30 pedestrian traffic/school crossing to alert drivers.

A lip was observed at the entrance to door 13W, likely due to settling. This area is not flush, which is affecting the handicap access into the building. There were also cracks observed in the sidewalk near door 12W.

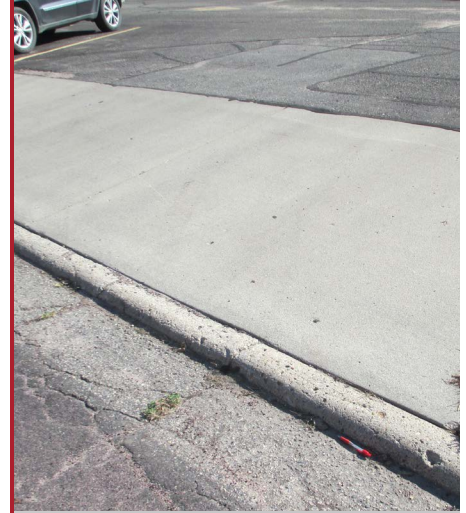


Figure 4 - Driveway approach student parking



Figure 5 - Catchbasin in shop area



Figure 6 - Faded playground

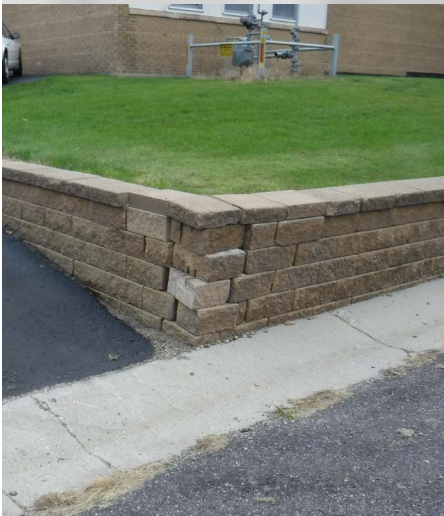


Figure 7 - Retaining wall at Birch Ave.



Figure 8 - Sagging fence near track

Shop Area

The shop area has a steep access drive, but overall serves the school well. The dumpsters are located near door 9W, and all deliveries take place at door 10W.

There are currently only two inlets to serve the area north of the shop, which can pose some drainage concerns. If one or both of these inlets were to get clogged with debris, the water would potentially enter the building due to the lack of a clear overflow path. Cracks in the concrete within this area were also observed, along with shifted panels near the west catch basin. This indicates soil migration into the structure, which can lead to accelerated deterioration of the concrete surrounding the structure, and also allows for larger quantities of soil and sediment to enter into the structure.

There is a modular block retaining wall located west of the shop along Birch Avenue South, which will require repair in the near future. The north corner of the wall has blocks that are protruding, and several blocks are loose and/or shifting away from the wall. Drain tiles are also exposed further to the south.

SITE OBSERVATIONS PLAYGROUND EQUIPMENT/SURFACING

Equipment

There are two playground areas on the site, which includes playground equipment and a basketball court. The playground equipment is faded, and the basketball hoops are worn and beginning to lean. The playground areas are mulched, although the mulch has deteriorated, likely due to water sitting in the playground areas. Installing edging around the playground areas would help prolong the longevity of the mulch and reduce how often mulch is replaced.

There is not an ADA accessible route to the playground. Any future additions or updates to the playground areas or equipment would require approximately 50 percent of the equipment to be ADA accessible and compliant.

Pavement

The only pavement surfacing within the playground areas is the basketball court concrete pad. The pad is in good condition, and does not require any immediate repairs.

Paths/Trails

There are no paths currently within the playground area. Paths would provide ADA accessibility to the playground area and an additional feature to the playground.

SITE OBSERVATIONS FENCING

Fencing, which is all chain link, is primarily located around the athletic facilities, east side of the playground, and school garden. A majority of the fencing appears to be in good condition, and no significant leaning of the posts was observed. However, some rusting and deterioration of the plastic fence caps was observed on the playground fence. The fence surrounding the school garden appears to have been installed recently, and is in good condition.

The condition of the fencing around the athletic facilities varies. The outer fencing on the north side is showing some wear, including stretched out fabric and an exposed fence footing. No noticeable defects were observed on the fencing along the east and west sides of the athletic facilities or between the stands and track. Significant sagging was observed on some of the horizontal top fence bars along the south side of the track.

The fencing located along the ramps to the building doors appear to have been recently repainted and is in good condition.

SITE OBSERVATIONS ATHLETIC FACILITIES

Track

Overall the track appears to be in good condition. Although the base mat surface is not new, it has worn appropriately for its age. The first lane has evidence of pitting, and some loose surfacing was observed on the corners of the mat at high traffic areas. In addition, the striping is faded in the inner lanes when compared to the outer lanes. The mat is structurally sound, with no visible cracking. Drainage around the track appears to be adequate, and there are no noticeable areas of water collection on the track surface. Some slow drainage was observed at the southeast corner of the track, which can likely be remedied with additional grading.

Field Events

The long jump and pole vault runway surfacing is in similar condition to the track surfacing. Wear was observed in the high traffic areas, such as starting and stopping locations, and the runway striping has faded significantly.

The pole vault mat pad is in poor condition. Multiple cracks with grass growing through them were observed, and exposed aggregate was evident on the pad.

The high jump appears to be in great condition, with a concrete pad and newer red surfacing. There were no visible indications of defects or uncharacteristic wear of the surfacing. It would be beneficial to field events to review equipment with school staff to ensure the pads, hurdles, and additional equipment is safe and non-destructive to the track.

Upon review of the discus and shot put areas north of the track, both throwing pads were free of cracking and defects. The discus throw area intersects through the middle of the playing area, which could pose a safety risk, and also prohibits effective use of this area for another activity. It would be ideal to relocate both the shot put and discus areas to another location where these events would not cross with other athletes or spectators traveling to the sports area.

The shot put throw area's aggregate is overgrown around the edges and could use fresh surfacing. Both areas appear to drain adequately, as there are not any indications of low spots. It would also be beneficial to review cage equipment with school staff to ensure athlete and spectator safety.

Football/Soccer

The playing field located in the center of the track is natural grass. The grass growth is well established, except for the worn high traffic area in the middle of the field. Additional maintenance, seeding, and potentially irrigation or some other method of soil correction could help remedy the worn areas and prevent wearing in the future. The slope and grade appear to provide adequate drainage to the nine catch basins along the outer edge of the field.

Access/Seating/Spectators

The main access to the sports area is via Cedar Avenue by a gravel extension from the paved portion. The gravel drive is in decent condition but it is narrow. There are no hard surface for parking in this area. The grass to the east is used for games and there is no ADA accessible route to the stands.

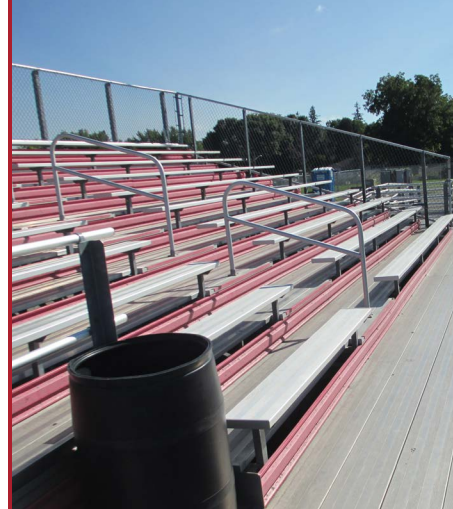


Figure 9 - Faded sports bleachers



Figure 10 - Faded track runway stripe



Figure 11 - Pole vaulting mat pad

The pressbox is starting to show wear and needs exterior maintenance. Bleachers in front are faded in the color portions under the seats, but there is no other damage. The stands have ADA compliant access.

The lighting and scoreboard are in good condition and serve the school well, although it can be difficult to see the scoreboard during sunny evenings due to the location.

SITE OBSERVATIONS EXPANSION + AVAILABLE LAND

There are several pieces of land around the school that are currently being farmed or are available. This includes around 10 acres from the south end of the track west beyond Dogwood Avenue. Most of this is flat farmland with access to the drainage channel that runs south on the west side of the track. This land is relatively flat, has multiple access points to Highway 30, and has a variety of uses.

RECOMMENDATIONS

- ✓ Consider relocating or rerouting the bus loading area for improved maneuverability and reduced congestion for any future developments.
- ✓ Provide wheel stops and/or curb, or realign wheel stops, at all parking spaces as necessary to ensure an adequate barrier is provided.
- ✓ Provide handicap loading zone striping and updated signage for both the south and north staff parking areas, and additional handicap parking stalls, loading zone striping, and updated signage to meet ADA standards in the student parking lot. The handicap parking stalls in the student parking lot should be milled and overlaid to achieve ADA-compliant sloping.
- ✓ Repair deteriorated and cracked bituminous pavement at the south and northwest side of the south staff parking lot to prevent further deterioration and improve aesthetics.
- ✓ Repair cracked pavement around storm structures in the north staff parking lot and shop area is also recommended to limit pooling of rain water and prevent excessive amounts of dirt and sediment from entering the storm structure.
- ✓ Consider installing directional signage or markings at the north entrance/exit from the student parking lot into Highway 30 to improve maneuverability and reduce congestion.
- ✓ Repair cracked and shifted sidewalk panels near doors 17E, 12W, 11W, and 12W in addition to the lip at the sidewalk in front of door 13W.
- ✓ Repair the modular block retaining wall along Birch Avenue South.
- ✓ Install edging around the mulched area of the playground along with replacement of the deteriorated mulch.
- ✓ Add paths or trails to and within the parking area that meet ADA standards.

- ✓ Replace basketball hoops.
- ✓ Repair or restoration of the playground fence where rust is evident as well as repair or replace the stretched out fence fabric on the northern portion of the fencing around the track and stand. The horizontal bars that are sagging on the southern portion of the fence should also be repaired or replaced.
- ✓ Perform basic track maintenance including surface cleaning and restriping when needed.
- ✓ Replace pole vault asphalt mat.
- ✓ Consider relocating the discus and shot put events to minimize interaction with pedestrians or other athletes, as well as cleaning up the overgrown areas around the edge of the aglime on the shot put and adding new aglime.
- ✓ Add additional irrigation or another method of soil correction for the playing field to provide adequate drainage and proper maintenance of areas where natural grass is wearing.
- ✓ An ADA accessible route to the stands should be provided, as well as ADA-compliant parking near the sports area. The existing path to the ADA access to the bleachers should be paved.
- ✓ The school should perform maintenance on the exterior of the press box and color portion of the front bleacher stands. Relocation the scoreboard would offer an improved view.

PRIORITY	1	2	3	4
Provide infiltration barrier and replace bituminous around catch basin in north staff parking lot	•			
Provide additional wheel stops along north sidewalk and building in north staff parking lot	•			
Patch cracked bituminous and place ribbon curb along south and northwest edges of south staff parking lot	•			
Provide sidewalk along west side of student parking lot (Ash Avenue South)	•			
Add striped crosswalk mid-block across Ash Avenue South from student parking lot to school with associated signage and flashing lights	•			
Restripe arrows in student parking lot	•			
Replace corner of modular block retaining wall and anchor top blocks along Birch Avenue South	•			
Pave gravel area northwest of stands to provide handicap accessible parking near stands	•			

PRIORITY (CONTINUED)

	1	2	3	4
Provide striping in “no parking” area of north staff parking lot near I3W		●		
Provide striped handicap loading zone and ADA compliant signage in south staff parking lot		●		
Replace driveway and sidewalk approach to Ash Avenue South from student parking lot		●		
Replace sidewalk panels in front of door I3W		●		
Replace sidewalk panels in front of door I2W		●		
Replace sidewalk panels near the catch basin between doors I1W and I2W		●		
Perform additional grading at southeast corner of inner field		●		
Provide paved parking surface northwest of track		●		
Create ADA compliant parking and access to athletic fields		●		
Extend west sidewalk of Ash Avenue South to the north for additional bus stacking			●	
Provide one van accessible parking stall with associated ADA-compliant signage			●	
Provide additional handicap stalls with loading zone striping in student parking lot and associated ADA-compliant signage			●	
Mill and overlay handicap stalls to achieve 2% ADA slopes in student parking lot			●	
Replace rusted fence around northeast playground			●	
Replace stretched chain-link fabric on fencing around track and stands			●	
Replace stretched chain-link fabric and sagging vertical top bars on fencing around track			●	
Provide additional aglime on shot put throw area			●	
Provide additional field irrigation to assist with maintaining turf in high traffic areas			●	
Paint faded portions of spectator stands			●	
Provide new mulch in playground area			●	
Provide new landscape edging around playground area			●	
Replace or reset leaning basketball hoops			●	
Add accessible paths or trails to and within the playground areas			●	
Create ADA compliant parking and access to athletic fields			●	
Monitor cracking near door I5N				●

PHYSICAL CONDITIONS

EXTERIOR BUILDING CONDITIONS



Review of the building's exterior shell including an assessment of the structure, foundation, exterior walls, windows and doors, and thermal efficiency as well as conditions of the existing roof, gutters, and downspouts.

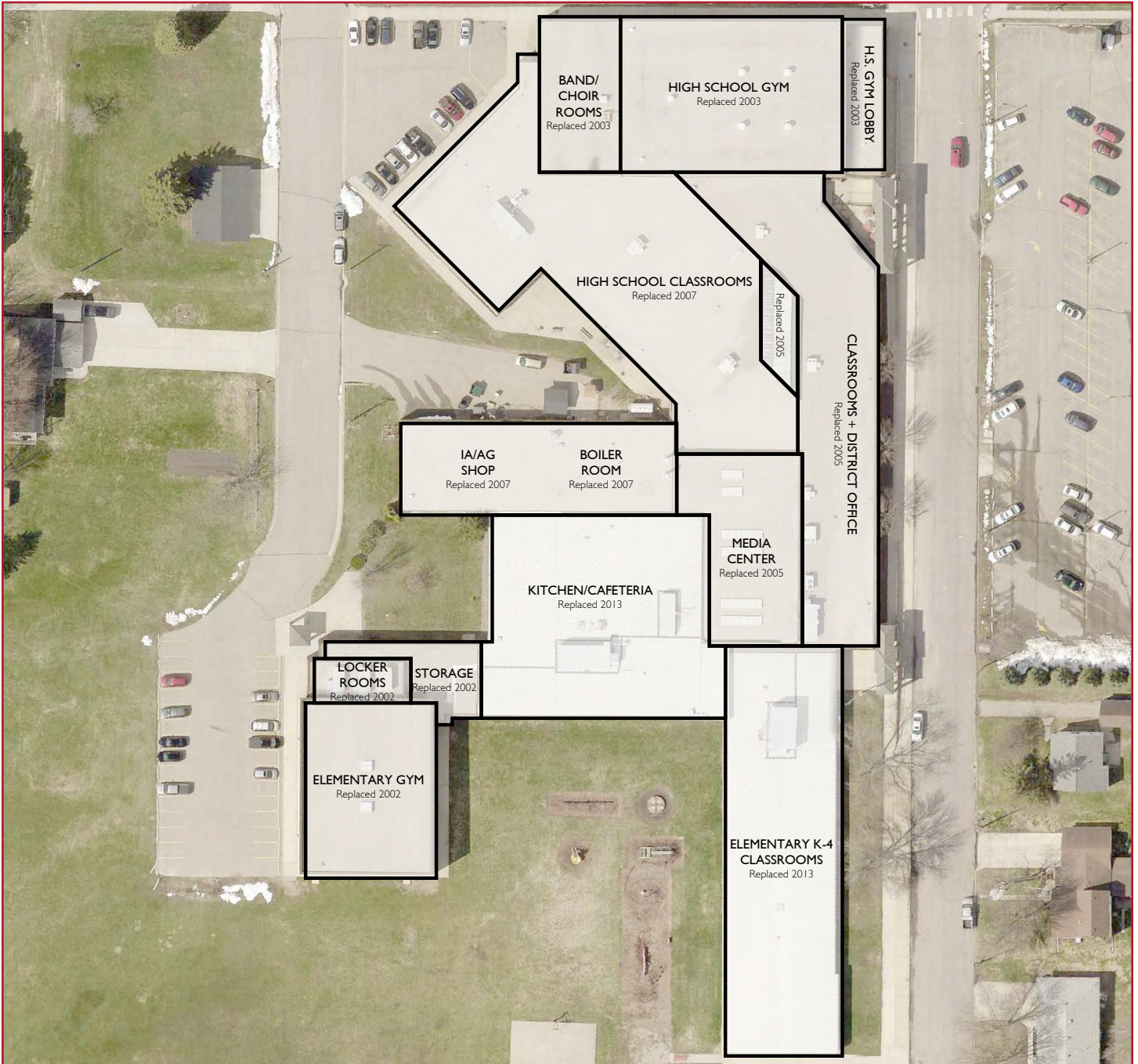




Figure 1 - Area that requires tuckpointing



Figure 2 - Area that requires tuckpointing



Figure 3 - Area that requires tuckpointing, sealants, or new walls



Figure 4 - Area that requires tuckpointing, sealants, or new walls

OBSERVATIONS

Walls and Siding

The wood and metal shop had the existing windows filled in and smaller vinyl windows were utilized. The exterior cladding utilized was Panel 15, which has an aluminum skin attached to a plywood panel. The aluminum skins are starting to delaminate from the plywood panels. Window trim boards are not installed correctly, and are beginning to see signs of moisture-related issues. The wall will likely need to be rebuilt in five years. At that time, shop windows should be evaluated as well. This wall and southern adjoining walls are probably in the worst condition, and need either tuckpointing, sealants, or new walls. These repairs should be incorporated into a single project. While the shop wall may have a slightly longer life expectancy, other aspects of the wall related to tuckpointing and sealants should be performed sooner than in five years.

Windows

Windows are made of aluminum with insulated glass. Operation of the windows is either a fixed unit or an operating casement sash in the same opening. Windows appear to function well when selected operating windows were tried. Window shop drawings were not available, but given the age and construction of the windows, it is assumed these are not thermal broken frames. One teacher that was in the room during the evaluation indicated some air infiltration through the windows. There are several possible reasons for this. It could be because of weatherstrip on the operation portion of the units, the exterior, where sealants around the windows are compromised, or convection. While the windows may not be the most energy efficient, replacing them with ones that are is unlikely to achieve a reasonable payback period.

Windows in the shop space were vinyl. Installation details are not ideal, leaving them susceptible to moisture penetration. The original windows were larger, and the openings were filled in, with smaller windows installed. While vinyl windows are rot-free, they are not the most desirable to use in the building for durability and security reasons.

The boiler room window system is a single pane glass that is in poor shape and has become rusted. The room has such a great heat buildup up that installing more energy efficient units will not produce any benefits.

Glazing at the green house is in poor condition. Program analysis is necessary to determine the necessary course of action to replace glazing or remove the greenhouse entirely.

Windows at Door 16E are made of single pane glass in the upper panels, and have a large square footage. Glass in the lower panels has been replaced with insulated glass units, but seal failure is occurring and the metal window frame is rusting.

Skylights located above the locker commons have reached the end of their life cycle. The fiberglass panels have experienced UV light deterioration and some leakage as well. While the leakage could be temporary repaired, overall the condition of the skylight is poor and will ultimately require replacement. It was noted during the roof inspection that portable guard rails were installed around the perimeter of the skylights to prevent anyone from walking on the skylights.

Exterior doors

Doors 2S at the south end of Code Area 3 were rusted and are due for replacement. Insulated metal filler panels at entrance door 6W also exhibited corrosion damage. The boiler room door is in poor shape and rusted. The room has too great of a heat buildup up to effectively install more energy efficient units.

Roofs

Leaks in the roof were identified in rooms C106, C407, and board room D138B. In regards to D138B, there was evidence of small amounts of mold growth on one bar joist, but this could not be confirmed. It is unusual for mold to occur on a bar joist, and the area should be reviewed and possibly cleaned to reduce the chances of that occurring.

Original skylights were still present from within the kitchen. Skylights were covered up when re-roofed. This is not a critical issue, but we always advocate correcting such issues when the building is re-roofed. A roof curb leak was identified on the area above the kitchen dishwasher.

Roof access is acceptable from below, but once on the roof, additional access ladders should be added to allow a passageway from the different roof levels.

Additional splash blocks should be added where upper roof scuppers discharge water to lower roof levels to prevent wear on the lower roof. Some scupper overflow drains were noted as being set too high and should be adjusted as necessary. Typically, secondary roof drains should only be set 2 inches higher than the roof drains. Having more distance between them creates additional water depth, should the primary drain clog. This adds weight to the roof structure and can have severe consequences, leading to a roof collapse in extreme situations. Roof structure calculations could be performed in defense of the present location of the roof scuppers, but usually it is good practice to follow the code requirements.

There are two primary roofing types that are present: a standing seam metal roof and a built-up roof by Garland.

STANDING SEAM METAL ROOF

The standing seam metal roofs generally have around a 25-30 year warranty depending on manufacturer, and their life expectancy can far exceed that level. Failure of these roofs can occur in one of several ways.

The first is due to poor installation details. If sealants were used extensively, they will allow moisture to enter. Sealants should be inspected regularly and redone accordingly. Many times a simple fix appears to be adding more sealant, but this should be refrained from. Instead, the sealants should be removed, the surface cleaned, and new sealants applied. In instances where details are poorly constructed, the details should be redone to be longer lasting and provide more dependable moisture control. The second reason is because the metal panels themselves fail, though this is rarely the cause. If the tensile strength of the steel was too high, the folding of the metal by the mechanical roof seamer can result in the metal splitting at the rolled edge. If this is the reason for failure, it does not always occur right away. This can be prevented by inspecting the roofs annually, and seam details should be reviewed at multiple locations as a system check. The third possibility is seam failure. This is also rare due to the folds in the metal, but can occur if the installation was poorly done and a seam not properly completed. Areas to look at are along a ridge or vertical wall, where the mechanical seamer can't seam the entire length of the panel and hand seaming needs to occur. The final reason for a seam metal roof to fail is if roof punctures occur due to falling debris or carelessness.



Figure 5 - Poor sealants around window frames



Figure 6 - Vinyl windows in shop space



Figure 7 - Windows with seal failure and rusted frames



Figure 8 - Deteriorating sidewalk

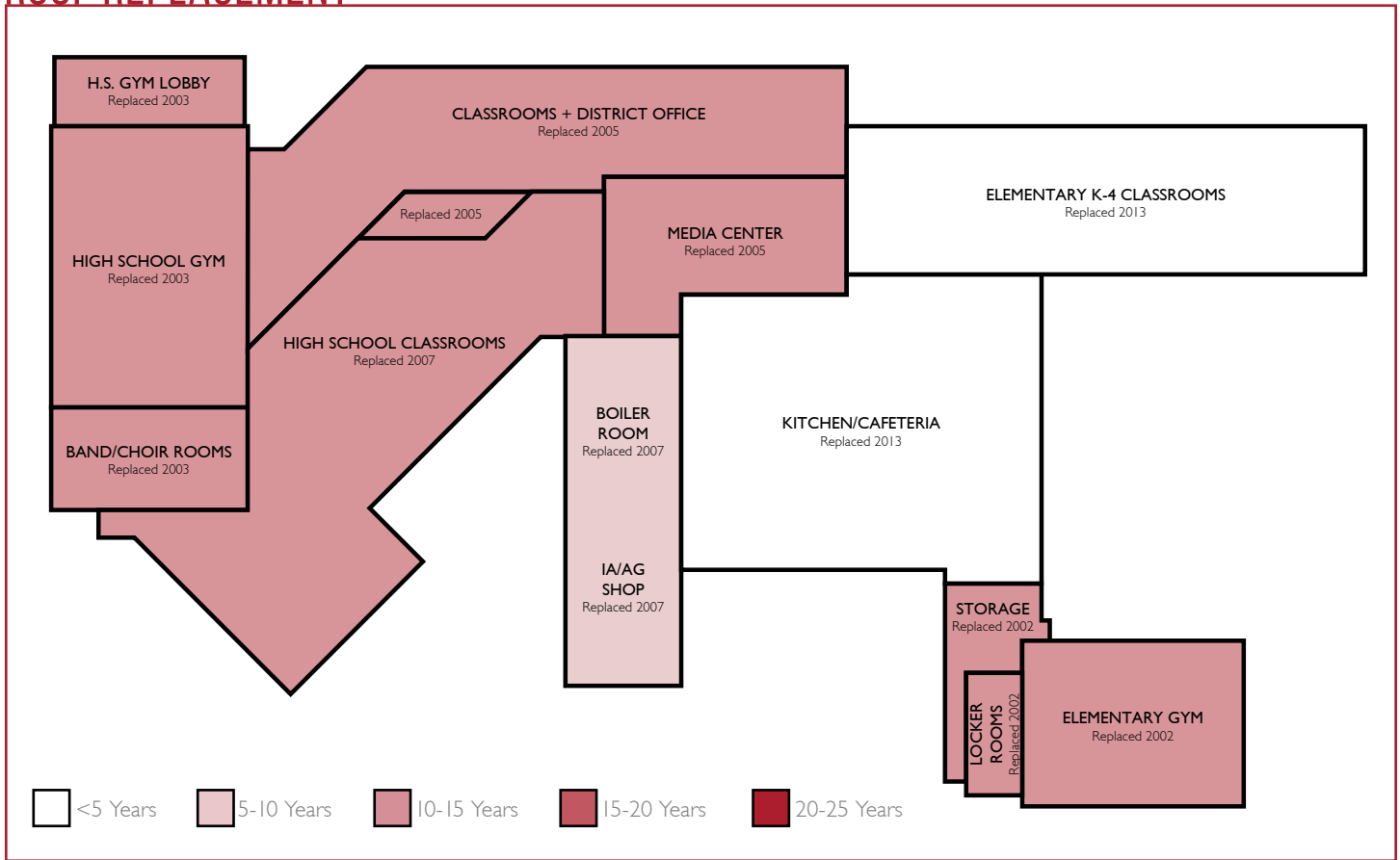


BUILT-UP ROOFING (GARLAND)

The Garland roofs consist of built-up roofing. One of the attractive features of a Garland roof is inclusiveness of repairs in its warranty.

A few curb heights appeared to be under the 8-inch recommendation difference between the roof surface and top of the curb. Measurements taken were in the range of 6 inches, making water circumvention more probable. When a new roof is installed, current codes have mandated that the insulation value be increased to an R30. While each building is different, most seem to require 1.5 to 2 inches of additional foam to increase the R value. If that is needed here, the roof curbs will need to be raised to be closer to the 8-inch minimum difference in height. One RTU unit also had gasketing sticking out from the top of the curb and the unit itself. This may or may not allow water to enter in this space.

ROOF REPLACEMENT



RECOMMENDATIONS

- ✓ Address current exterior wall cracks with tuckpointing in one of the locations, and possibly a flexible sealant. Depending on how the location responds to this treatment, the remaining cracks should be repaired accordingly. Tuckpointing also needs to be conducted on areas of the school that are aging, such as the 1953 and 1969 constructions, with special attention given to the type of mortar used.
- ✓ Evaluate, structurally, wall crack in room B120.
- ✓ Reposition or replace splash blocks to avoid lawn damage.
- ✓ Provide tuckpointing sealants to walls, or new walls within five years, by the wood and metal shop, as well as its southern walls.
- ✓ Replace boiler room and main gym lobby (Door 16E) windows due to future operational issues. The windows should be replaced with an aluminum storefront system or curtain wall system, depending on wind loads imposed on this wall.
- ✓ Replace skylights above the locker commons is the most cost-effective form of repair.
- ✓ Conduct program analysis to determine the best way to repair the greenhouse's glazing, which should either be replaced or removed.
- ✓ Replace boiler room and doors 2S due to rusting, and the insulated metal filler panels at door 6W needs to be replaced.
- ✓ Provide further evaluation and cleaning on the roof of board room D138B to address the possible mold growth that was found.
- ✓ Add additional access ladders to the roof to improve passage from the different roof levels, as well as additional splash blocks to prevent wear to the lower roof.
- ✓ Provide annual maintenance and care to the metal roof, such as regular cleanings, to prevent damage and extend the life of the roof.
- ✓ Reposition or replace splash blocks at roof scuppers and other water discharge locations to direct water away from the building.
- ✓ Repair and/or replace masonry. The stone below door frame 2S is deteriorating and should be replaced, as well as the stone window sills by the wood and metal shop. Replacement for the latter will be determined based on the specifications and work scope of rebuilding the wall. The base flashing and foam insulation termination along the east side of the school should be also reworked to function correctly and be more visually appealing. Masonry sealers can be utilized, but must be carefully selected, as the wrong sealer can cause further damage or discoloration to the brick.
- ✓ Replace boiler room windows.

- ✓ Keep standing seam roof foot traffic to a minimum. No one should ever walk on the eave or rake flashings, gutters, hip, or ridge flashings, or on any skylight or fiberglass type panels. When someone does walk on the roof, they should wear soft soled shoes and always walk in the flat area of the metal panel and near the roof panel supports. Annual maintenance should also be taken to keep the roof in excellent condition. Such maintenance includes cleaning the gutters, downspouts, and drain boxes. Leaves and debris can back up an entire gutter system, and the overflowing gutters can create leaks and damage. Any items touching the roof, such as tree branches, should also be removed. The valleys, waterways, roof drains on flat roofs, and pooling areas should also be cleaned out regularly, especially following heavy wind events, the fall season when leaves are blown off the trees, and if there are trees that overhang the roof. Leaves and other debris can block the flow of water in these crucial areas. Dirt piles or rotted debris literally eats through the roof and allows plant growth, ruining the roof.
- ✓ Check roof penetrations for possible leaks, which most often come from heat or air vents and skylights. Some leaks are caused by the shrinking or hardening of applied silicones as they dry out. If there is a crack or suspected crack, repair it using a metal roofing sealant, which is permanently flexible and will not crack. Areas around the chimneys, heat vents, oil condensers above cooking areas, and air conditioners are additional areas for inspection. Damage to these areas can expose the metal roofing to chemicals that will break down the paint system and corrode the metal. Large scratches, loose flashings, roof sheets, fasteners, or punctures from falling objects are additional points of concern. These can be touched up according to the manufacturer's recommendations.
- ✓ Inspect exposed fasteners on the roof or flashings (if used). These inspections should check if the fasteners are installed correctly. Sometimes fasteners are tightened down too much, causing them to cut or split the neoprene washers. Other fasteners may not be tightened properly, which will not create a seal between the fastener and the metal panel or flashing. Neoprene washers also may break down over time due to expansion and contracting of the metal panels or from exposure to ultraviolet rays. Rubbing a fingernail over the washer will reveal if it is still flexible or has hardened and is breaking apart. Finally, examine the closures or venting materials under the ridge caps, transitions, end walls, and valleys. At times, this material can come loose or break down because of sun exposure and cause leaks.
- ✓ Repair built-up roofing, including addressing blistering felts, missing gravel surfacing, metal debris, and sealant failure. All of these issues, as well as the curb height differences, need to be appropriately repaired. The roof's water ponding and singular RTU unit should be monitored to see if they create further issues.
- ✓ Conduct annual maintenance and cleaning to the built-up roofing to keep it in proper working condition. School staff should complete the review with a Garland representative to ask any questions or observe any issues first-hand.

- Clean all roof surface debris including debris that has gathered behind HVAC units, pipes and pitch pans, and any other roof penetrations. Debris has a tendency to hold water and clog roof drains. The resulting standing water can expedite roof deterioration. All roof drains, overflow scuppers, and gutters should stay free of debris and evaluated to ensure they are fully functional. To evaluate this, any sump drains can be water tested. The downspouts should also be checked to make sure they are draining properly. All wall flashings, edge flashings, copings, and pitch pockets should also be checked for integrity. Examine the seams for gaps and ensure no holes are present. Any caulking and sealants that are weather damaged, separated, cracked and/or shrinking should be repaired. Gravel surfacing on the roof should cover the felts below if bare spots are present. Damages to this area should be re-coated. Check for blisters in the roof. If found, contact Garland to have them patched. Any overhanging tree branches should be trimmed to decrease the amount of debris. Finally, the mortar on chimneys and parapet walls should be tested both in between the brick and on top. If damaged or deteriorated, have it tuckpointed.

- Review wall termination flashing along the north gym wall as it appeared to be experiencing some sealant failure. Some re-caulking has been performed and not properly prepared. This re-caulking can be expected to fail in the next few years, and should be removed and redone. A couple of small areas had ponding water. While these are not of great concern, they should be monitored for accelerated deterioration.

ROOF PRIORITIES

PRIORITY	1	2	3
Replace roofing on press box/concession building	●		
Repair roof leaks identified in rooms C106 + C107	●		
Investigate potential roof leak/mold grow in Room D138B (board room)	●		
Repair roof curb leak above kitchen dishwasher	●		
Remove and replace wall termination flashing caulk along the north gym wall	●		
Add splash blocks where upper roofs discharge water to lower roofs	●		
Repair areas blistering on Garland roofs	●		
Recoat areas of missing gravel on Garland roofs		●	
Reset secondary roof scuppers to proper level		●	
Install exterior roof access ladders			●

PRIORITY (CONTINUED)	1	2	3
Replace sidewalk by entrance door 12W	•		
Replace sealants around all doors and windows	•		
Replace sealants between precast concrete panels on the west gym	•		
Replace exterior building control joint sealant	•		
Caulk sky facing masonry joints	•		
Reposition splash blocks at roof drain location	•		
Rework sidewalks outside doors 11W, 14N, and 15N to reduce threshold lip	•		
Regrade areas adjacent to building to direct water away from building	•		
Stabilize grade and above ground fuel tank support	•		
Paint press box/concession and storage garage buildings	•		
Replace stone sills by wood and metal shop windows		•	
Mitigate moisture intrusion into code area 3 crawlspace		•	
Mitigate moisture intrusion into AHU room by door 15N		•	
Prevent moisture penetration through exterior wall - Rooms B135, 139, D106		•	
Replace windows in the main gym lobby by door 16E		•	
Replace skylights above the locker commons		•	
Replace doors at entrance 2S		•	
Replace sealants between green house and main building		•	
Replace boiler room door		•	
Replace sealants in west locker room shower areas		•	
Tuckpoint lower half of 1953 addition		•	
Tuckpoint various locations of facility (approximately 10%)		•	
Replace stone below door frame 2S		•	
Rework base flashing and foam insulation termination along east side of building		•	
Replace windows and panels in wood and metal shop		•	
Replace concession area doors		•	
Seal railing posts on retaining wall at the east side of the building		•	
Evaluate footing soil coverage to determine if under or over 42 inches			•
Replace windows in boiler room			•
Replace glazing in the greenhouse			•
Caulk all areas where sidewalks adjoin the building			•
Replace metal filler panels at entrance 6W			•

PHYSICAL CONDITIONS

INTERIOR BUILDING CONDITIONS

Examination of the finishes, equipment, and other conditions found in classrooms, offices, hallways, gymnasiums, locker rooms, stairwells, kitchen, and cafeteria areas.

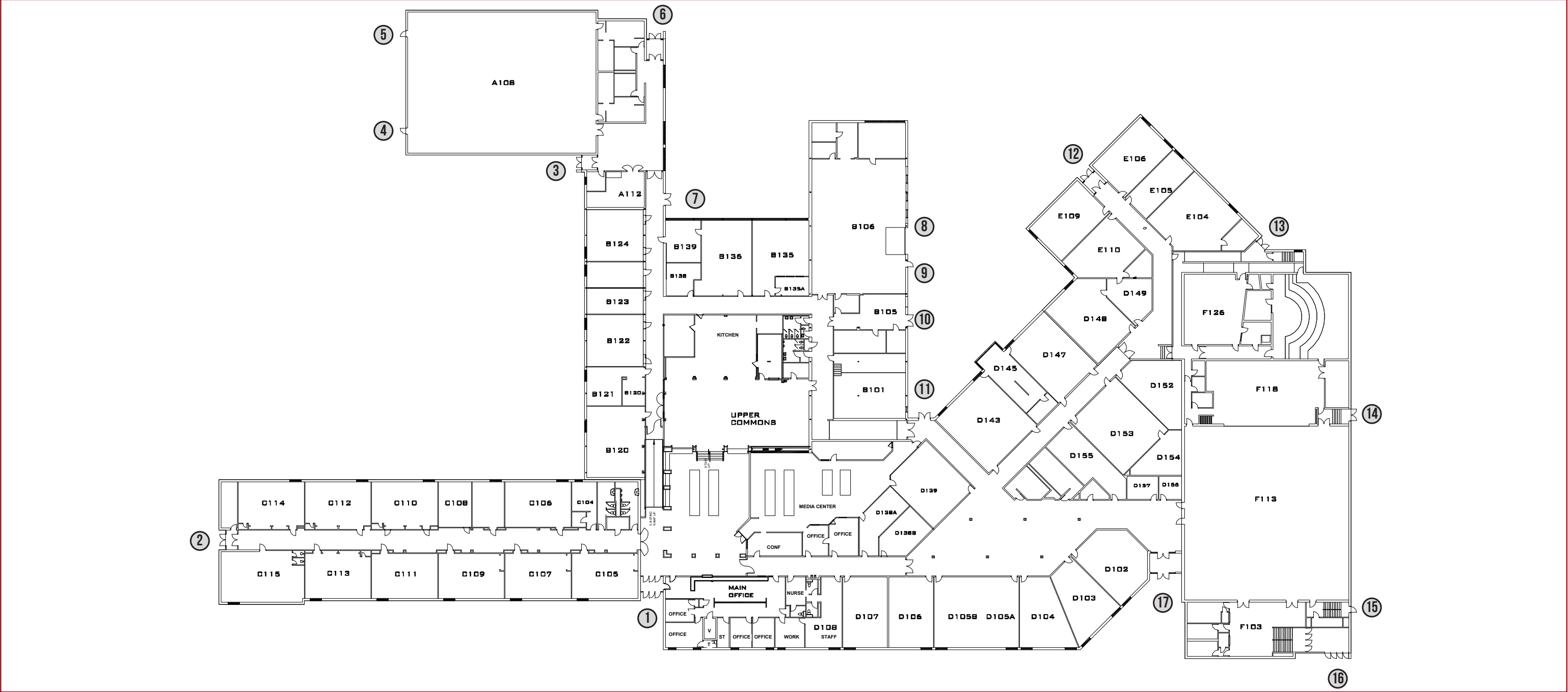




Figure 1 - Discolored ceiling tiles



Figure 2 - Damaged ceiling in need of replacement

OBSERVATIONS

Ceilings

The ceilings of corridors and classrooms consist of mainly ACT grid and tile. The condition of most of the tile was good to fair. Fair condition tile exhibits some isolated damage, minimal sagging, or discoloration.

In Code Area 3, the original 12-by-12 ceiling tiles were present above the ACT grid ceilings. The school indicated that the adhesive used to install these tile contained asbestos.

Ceilings in fair to poor condition which exhibited a greater percentage of physical damage and or sagging were identified in numerous locations. The first are in the locker rooms, located by the A108 gym. The boys locker room was found to be in poor condition due to vandalism. Some of the grid work was even damaged.

Rooms B122 (fire-rated tile), D143, D147, D155, D152, D148, E110, E109, F126, F121, D102, D104, D105A, D137, and D135 were judged to be in fair condition, but these rooms exhibit a greater degree of ceiling damage. Tile in board room D138B were not uniform in pattern and were visibly different. Some rusted grid work was also present. Areas similar to this are a judgment call on what is deemed acceptable condition.

Ceilings in code Area 2 were noted to be a fire-rated tile and grid work. Drywall was installed over the light fixtures. A notable omission was that the ducts did not have fire dampers installed at the grid line like expected. Maintenance of this tile is essential to maintain the integrity of the fire resistive system. It should only be replaced with tile of similar fire resistive qualities unless a sprinkler system is installed in the building.

Interior Walls

The wall finishes in the building vary throughout based on use. The most used areas have more durable wall finishes. No areas were noted where wall finish durability was grossly inadequate. For more information, refer to the interiors discussion.

Wall cracks were noted in rooms C105, C107, C113, B120, B122, and B124. Refer to structural comments for further information.

In room C114, a range and washer/dryer were present. The range did not have a direct vented range hood and the dryer vent pipe was installed with a flex pipe that is too long. The dryer flex pipe could become a fire hazard if it is not maintained and cleaned. The walls in rooms B120 and B121 were deemed to be in need of paint. Additional concerns are noted in the casework section. Room B135 and B139 exhibited evidence of moisture penetration through the exterior wall. Further comments are made in the moisture intrusion section.

Wall tile in the girls showers also exhibited some damage. Sealants in the locker room showers near the west gym should also be redone to prevent damage. The choir and band rooms (F126 and F121) have sound panels that are in poor shape. They could use an update for performance enhancement and appearance. The new walls installed in board room D138B are below the grid work. This can negatively affect sound transfer control. The walls of the nurses office (D111) should be repainted. The balance of the district office area is in good condition.

Floors

The terrazzo floors appeared to be in good condition and well maintained, except in a couple of restrooms. In the restroom group in code areas 2 and 3, the terrazzo floors at urinals and under the sinks in the girls restroom are heavily stained. It is common for areas around the urinals to see this condition. These tiles can benefit from either sealing and re-polishing the floor, or a major remodel. The wall contains newer 4-by-4 tile and is in good condition, but the VCT floors in D143 are old and due for replacement. The terrazzo floors in the restrooms off the gym lobby F103 are also stained at the urinals, and could be sealed and re-polished or remodeled. Carpet in Room B120 is considered to be at about half life.

The west gym floor is hardwood, and considered in good condition. Proper maintenance and use of the space can extend the life of the floor, while a lack of either can require a floor to be refinished sooner.

Water was noted on the floor of the boys locker next to the west gym. A leaking water pipe in the adjoining wall was suspected to be the cause. If left unrepaired, additional damage will come to the block wall or floor. Wet floors also create slip hazards.

The VCT flooring in rooms B136 and B135 exhibited signs of moisture penetration from below. These are difficult to control in existing spaces because vapor barriers below the concrete slab are not present. If sealed off too tightly from above, the finishes tend to be lifted and the moisture migrates to the interior space. Careful selection of replacement flooring can reduce the visual impact.

Flooring in the upper commons was abated and never replaced with a new product. While cleaning is probably acceptable visually, the space could use a facelift.

Carpet in room D155 is in poor condition and exhibits wrinkles.

In the weight room (D152), the floor is bare concrete. Rubber floor pads should be considered because should the floor become wet due to a spill, this could be a safety concern.

Riser construction in band room F121 is constructed of what feels like wood, making it likely to exhibit some additional deflection when musicians and instruments are present. Wood construction is generally not permitted in schools.

At the stairs and corridors that serve doors 14N and 15N, the epoxy is delaminating. These are older stairways that have been exhibiting wear. The edges of the exposed epoxy can be sharp and could cause cuts or tripping hazards. The adhesion of the balance of the existing epoxy would factor into recommendations. Some repair should be attempted to mitigate immediate hazards. Previous recessed floor mats at the doors were not filled prior to the installation of the epoxy, and trip hazards are present. This same finish extends into the locker rooms, where the girls single use shower has delamination as well.

Lower commons floors are sealed concrete and could be considered for an update similar to the upper commons.

Interior Doors

Access to the AHU off the stage is available via a movable ladder and through a narrow door. This is not a safe condition and results in limited maintenance of the mechanical units due to the difficult access.

The folding wall door in Room D105A and B does not operate and has sound transfer issues. The door has gaps that contribute to the sound transfer. If the folding wall is not

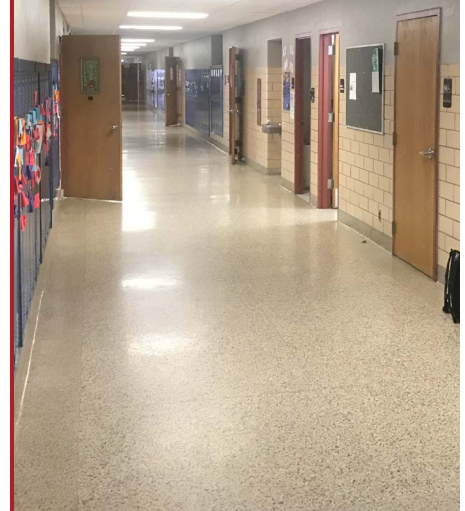


Figure 3 -Terrazzo flooring in hallway

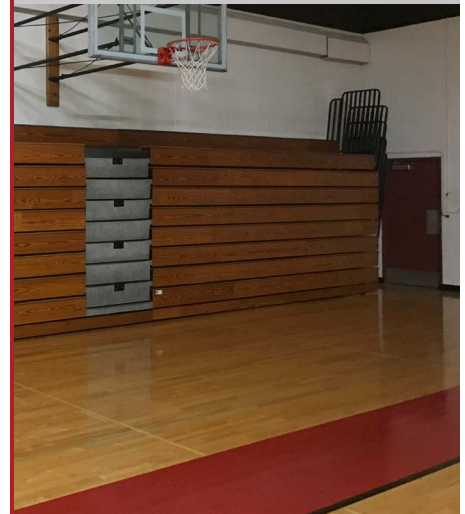


Figure 4 - Gym floor in good condition

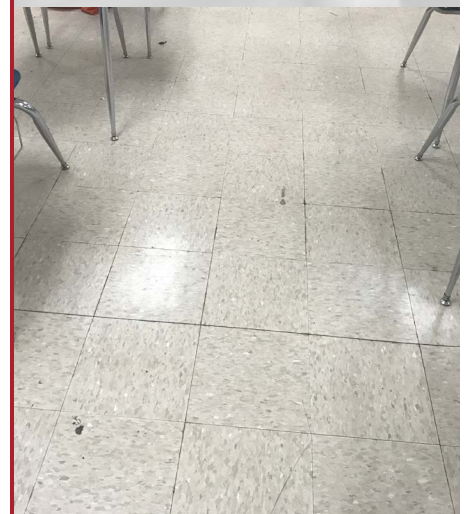


Figure 5 - VCT flooring showing signs of moisture penetration



Figure 6 - Damaged air grill in door



Figure 7 - Original classroom casework



Figure 8 - Movable wall unit



Figure 9 - Damaged floor in science area

deemed important, it would be more cost effective to remove the door and install a permanent wall in its place. Electrical and data outlets could be added as well.

The door frame into room D137 and its adjoining room is a wood frame door, which is less secure and may or may not be an issue. This appears to be a quick remodel project.

Student Lockers

Building lockers in general appear to be in good condition. No concerns were identified in the educational areas or locker room areas.

Casework

Casework in the code area 3 wing and in room B 121 was original and in poor condition. Finish on the cabinet in code area 3 was worn, and countertops exhibited chipped plastic laminate surfaces. Casework in room C115 was a lower height than normal to accommodate preschool students.

The casework in room B120 is underutilized and is still present from when it was the library. Book shelving could be removed if more floor space is required, but would likely require wall repairs behind it. Casework of regular base cabinets in this room had wood tops that were in very poor condition.

Numerous caseworks need further evaluations before the decision of replacement or repair can be made. Chemical lab casework in room D143 is in fair shape with some drawer operation issues, and the cabinets are not fully utilized for storage. The lab grade casework is expensive and program analysis would be an important element in the decision to consider replacement. Casework in D147 also needs to be evaluated based on program use. The work room off the media center D135 has older casework that is in fair condition. Replacement considerations should be based on use and storage needs. Additional casework could be considered for the D108 teachers' lounge to accommodate microwaves and counter space needs. The district office area could also use a coffee station. Currently, a store room has a file cabinet being utilized as the surface area. The previous area was converted into an office.

Casework in home economics (room E104) is functional, but could use a facelift and update of colors, cabinets, and countertops. However, these changes are at the school's discretion, as there is no functional or use issues that necessitate replacement at this time.

Kitchen

The cooler door in the kitchen is constructed with wood. This could have been a potential update requested by the health department, because that is less likely to harbor harmful bacteria. The cooler walls are due for an update for the same reasons. The freezer is located in the receiving/janitor room. This is an older unit, and life expectancy of these units is difficult to predict. They are usually better to schedule for replacement, as major failure will result in the loss of a lot of freezer contents.

The original skylights were still present from within the kitchen space. Skylights were covered up when re-roofed. This is not a critical issue, but we always advocate correcting such issues when the building is re-roofed.

The restroom off the kitchen for staff use was not ADA-compliant. The restroom's toilet partition was rusted.

Currently, the kitchen office is not in an ideal location, as it is next to and somewhat under an AHU in the room, but no other space is identified to place that space. Overall the kitchen was in good condition. It was spacious and had a good workflow arrangement.

RECOMMENDATIONS

- ✓ Replace damaged ceiling tiles in the corridors and classrooms with good ones that are salvaged from areas that are in poorer condition. The areas the tiles are salvaged from will receive all new tile.
- ✓ Replace ceilings in code area 2, unless a sprinkler system is installed. Will need to be replaced with fire-resistant tile.
- ✓ Address interior wall cracks, the dryer flex pipe, and moisture penetration in the classrooms. Several areas, such as the choir and band rooms, gym, and nurse's office, are in need of minor repairs to maintain their current condition.
- ✓ Seal or re-polish stained terrazzo floor tiles in the girls and boys restrooms in code areas 2 and 3; could also be completely remodeled. The terrazzo floors in the restrooms off of the gym lobby (F103) are also stained and could use the same treatment
- ✓ Provide new VCT tiles in Room D143.
- ✓ Address leaking water pipe near the boys locker next to the west gym.
- ✓ Replace carpet and VCT tiles in several of the rooms, and rubber floor pads should consider being placed in the weight room.
- ✓ Update lower commons floors.
- ✓ Replace interior stage door at the top of the stair landing, though not immediately, and the narrow door that leads to the AHU should be addressed. Depending on the importance of the folding wall door in Room D105A and B, it could be replaced with a wall to prevent further sound transfer issues.
- ✓ Evaluate casework. Casework throughout the facility generally remains in working condition. However, before casework is repaired or replaced, the needs and space usage of the casework needs to be evaluated to determine the best course of action. Areas where casework needs to be evaluated include the library, chemical labs, and work room off of the media center.
- ✓ Update kitchen cooler walls to match the previous update to the cooler door. Though it is difficult to say, given the kitchen freezer's age, it should also be scheduled to be replaced to prevent it from breaking down.
- ✓ Replace the rusted toilet partition in restroom off of the kitchen and redesign to become fully accessible.
- ✓ While not an immediate hazard in the current condition, tiles that used asbestos-containing adhesive will eventually need to be abated. Updates to the building that involve removal of the ACT grid systems below are the opportune time to complete abatement work and should be budgeted in that particular project.



Figure 10 - Evidence of water damage to casework



Figure 11 - Cooler door



Figure 12 - Kitchen



Figure 13 - Crawlspace with moisture concerns



Figure 14 - Moisture concerns in unexcavated area



Figure 15 - Floor delamination

- ✓ Replace ceilings in the girls locker room with boys locker room requiring a complete ceiling and grid replacement. Alternative ceilings less prone to damage would be beneficial, but because ceiling access is needed, these alternatives are not a viable option. Instead, the new ceiling should try to be kept in a presentable condition. Sometimes leaving damage invites additional damage, but it seems that the school will likely need to replace these on a regular basis.
- ✓ Schedule tiles in noted rooms for potential replacement; rooms B122 (fire-rated tile), D143, D147, D155, D152, D148, E110, E109, F126, F121, D102, D104, D105A, D137, and D135. These do not need to be done at the same time, and better condition tile could be salvaged and reused in other rooms, provided they are the same pattern.
- ✓ Repair wall tile in the girls showers.
- ✓ Refinish west gym floor in about 10 years.
- ✓ Consider updating the floor in the upper commons with VCT tile, ceramic tile, or fluid applied epoxy floors.
- ✓ Schedule replacement of carpet in rooms D148, D149, D156, D157, D102, D104, and D105B. A hard surface should be used for the replacing floor surface in D149. The VCT tile in the art (D153) and home economics (E104) rooms are also beginning to show wear, and could be scheduled for replacement soon, along with the VCT floor in room D147 and corridor near door 13W, which are in poor condition.

PRIORITY

	1	2	3
Investigate/repair leaking pipe in west mens locker room	●		
Install fire dampers in HVAC ducts at ceiling grid line in code area 2		●	
Reduce length of flex duct on dryer in room E104 (Home Economics)		●	
Replace VCT flooring in D143		●	
Replace VCT flooring in D147		●	
Replace VCT flooring in 13 W		●	
Repair delaminating epoxy in single shower of womens locker room		●	
Replace walk-in coat column base plates in boiler room		●	
Repair or replace folding wall in D105A + B			●
Repair wall tile in west womens locker room shower area			●
Replace poor condition casework in code area 3			●
Replace very poor condition casework tops in room B120			●
Replace poor condition casework in room B121			●
Polish and seal stained terrazzo floor areas in restroom group of code area 2			●
Polish and seal stained terrazzo floor areas in restroom group of code area 3			●
Polish and seal stained terrazzo floor areas in restroom group off F103 (gym lobby)			●

PRIORITY (CONTINUED)

	1	2	3
Replace ceiling in womens locker room by west gym (A108)			●
Replace ceiling and grid in mens locker room by west gym (A108)			●
Replace flooring in B136 and B135 (moisture penetration from below)			●
Replace carpet in D155			●
Replace VCT in D153 (Art) and E104 (Home Economics)			●
Replace carpet in D149 with hard surface flooring			●
Replace carpet in D148, D156, D157, D102, D104, D105B			●
Replace ceilings - B122 (fire rated), D143, D147, D155, D152, D148, E110, E109, F126, F121, D102, D104, D105A, D137, and D135			●
Replace door to stage at top of stair landing			●
Freshen main gym lobby (F103) to be more inviting			●
Paint rooms B120 and B121			●
Replace rusted toilet partitions in staff restroom in kitchen area			
Replace rusted toilet partitions in main gym lobby (F103)			●
Improve signage to lower level locker rooms			●
Update sound panels in choir and band rooms			●
Repaint walls of nurse's office			●
Install flooring in upper commons			●
Repair casework drawer operation issues in D143			●
Improve casework in E104 (Home Economics)			●
Additional casework in D108 to accommodate needs			●
Replace casework in D135 workroom			●
Add coffee station to district office area			●
Replace ceiling tile and grid in D138B (Board Room)			●
Install flooring in lower commons			●
Install rubber flooring in D152 (Weight Room)			●
Replace risers in F121 with non-wood material risers in F121 with non-wood material risers			●



Figure 1 - Beam in boiler room

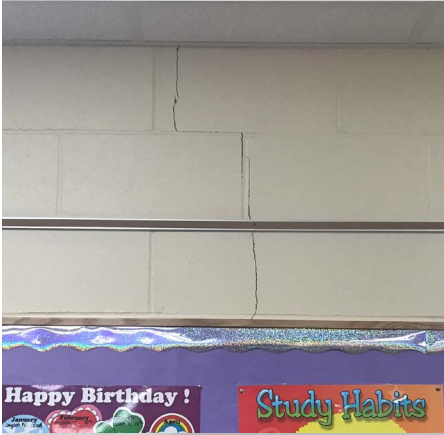


Figure 2 - Wall cracks



Figure 3 - Wall crack on masonry column



Figure 4 - Typical roof truss

PHYSICAL CONDITIONS

STRUCTURAL SYSTEM CONDITIONS



Review of structural integrity of existing buildings with analysis of columns, walls, and the roof.

OBSERVATIONS

Building Construction Type

Overall condition of the building is structurally sound. The building generally consists of masonry walls and bar joist roof systems which are typical of this construction era and current building methods. Precast concrete walls are present at the south gym.

Exterior Walls

Wall cracks were noted in rooms C105, C107, C113, B122, B124, and D106. These cracks appear related to expansion and contraction of the building walls. The addition of building control joints could help alleviate uncontrolled cracking, but is an exceptionally difficult and expensive option when the building has brick on the exterior.

Recognized Conditions

A beam was added to the ceiling of the boiler room. There is not an obvious reason, but one could assume that some sort of deficiency was occurring. Any work done in the space that involves the roof, including reroofing and placement of any equipment either on the roof or supported from the underside regardless of size, should involve a structural evaluation beforehand.

Foundation Walls

The building foundation was largely hidden from view. A crawl space in the elementary wing being the exception. The building is presumably supported on a shallow foundation system constructed of cast-in-place concrete and CMU. The foundation appears to be functioning properly, as no significant differential settlement was apparent. However, it should be noted that grading around the building is poor, and is creating negative drainage of water back toward the building. Water collecting around the foundation and brick veneer could create issues in the future as natural weathering effects could cause damage.

Columns

Column base plates in the boiler room are rusted and degraded. Interior wall cracks in a masonry column in room B120 were concerning as they appear to be related to loads imposed on them, and the masonry column being inadequate to support the roof loads. This loading may be increased during winter when snow loads are imposed on the column.

Snow Loading Concerns

During winter conditions, roofs should be monitored after heavy snow falls. Deflection of the roof joists will be normal, but excessive deflection is a concern. Signs can sometimes be noticed as changes in the ceiling grid, as it too deflects. Sometimes it requires measurements to be taken. Deflection can be identified by taking measurements next to the wall (bearing condition), and then at the center of the bar joist.

Generally roof structures of this era have snow load designs that do not meet current codes. While they generally perform OK, the school should be aware that any roof work, such as roofing replacement and equipment changes, should also include an evaluation of the roof structure to ensure that it is capable of handling the new loads. [Tuckpointing](#)

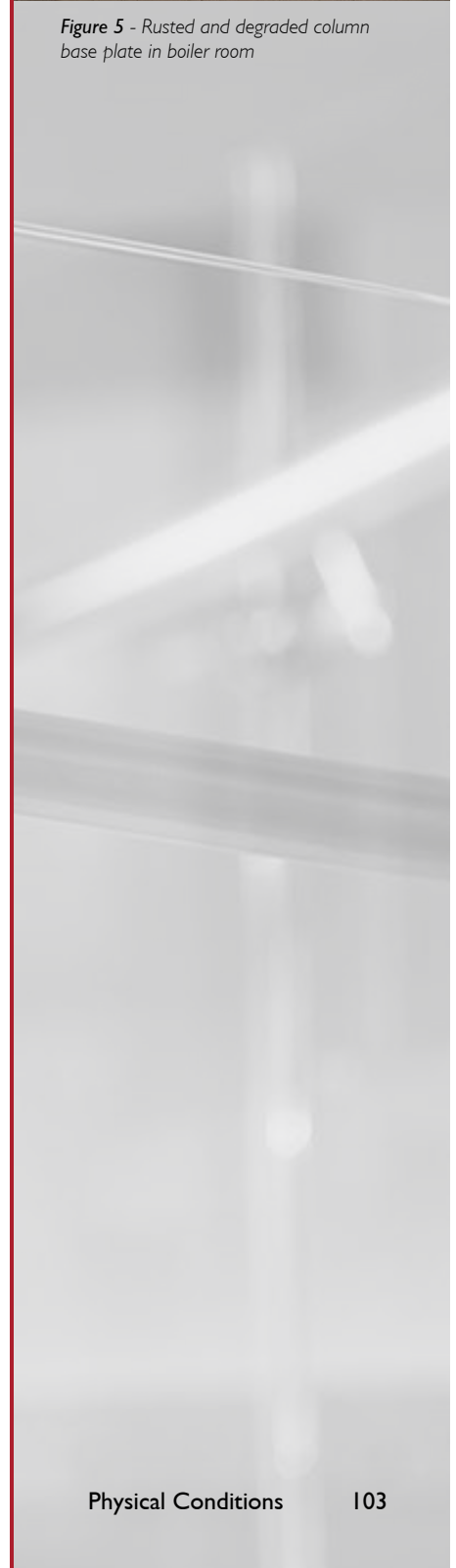
Wall cracks were noted in rooms C105, C107, C113, B120, B122, B124, and D106. Some of these were occurring at mid-point of the room, which suggests that they may be related to building expansion. None were severe enough to warrant immediate repair. Conducting a lasting, corrective measure using proper details is expensive due to the brick exteriors, as the brick will have to be removed to do so.

RECOMMENDATIONS

- Note structural evaluation requirement prior to any improvements that are conducted in the space that involves the roof, including reroofing and placement of any equipment either on the roof or supported from the underside regardless of size. Roof joist deflections exceeding an $L/240$ (take the length of the span and divide by 240) should be evaluated by an engineer for further recommendations.
- Tuckpoint noted wall cracks; could also use flexible sealant. Depending on how the location responds, the remaining cracks should be repaired accordingly. Wall cracks should be monitored semi-annually, with extreme seasonal changes being the most beneficial time to review. Movement, such as differential changes in the plane of the wall or wider gaps in the crack, would be an indication something more severe is occurring and a structural engineer should evaluate the condition further. A structural engineer should be engaged to further review the column cracks in room B120.
- Reroute any drainage away from the building.
- Repair column base plates in the boiler room and coat to prevent further damage.



Figure 5 - Rusted and degraded column base plate in boiler room



PRIORITY

	1	2	3
Repair and coat column base plates in boiler room	●		
Investigate/repair cracks along vertical columns and beam support in Room B120	●		

PHYSICAL CONDITIONS

LIFE SAFETY CONDITIONS

Review of life safety, egress, and potential code deficiencies as discovered during field observation.
Also includes conditions of the fire alarm system.

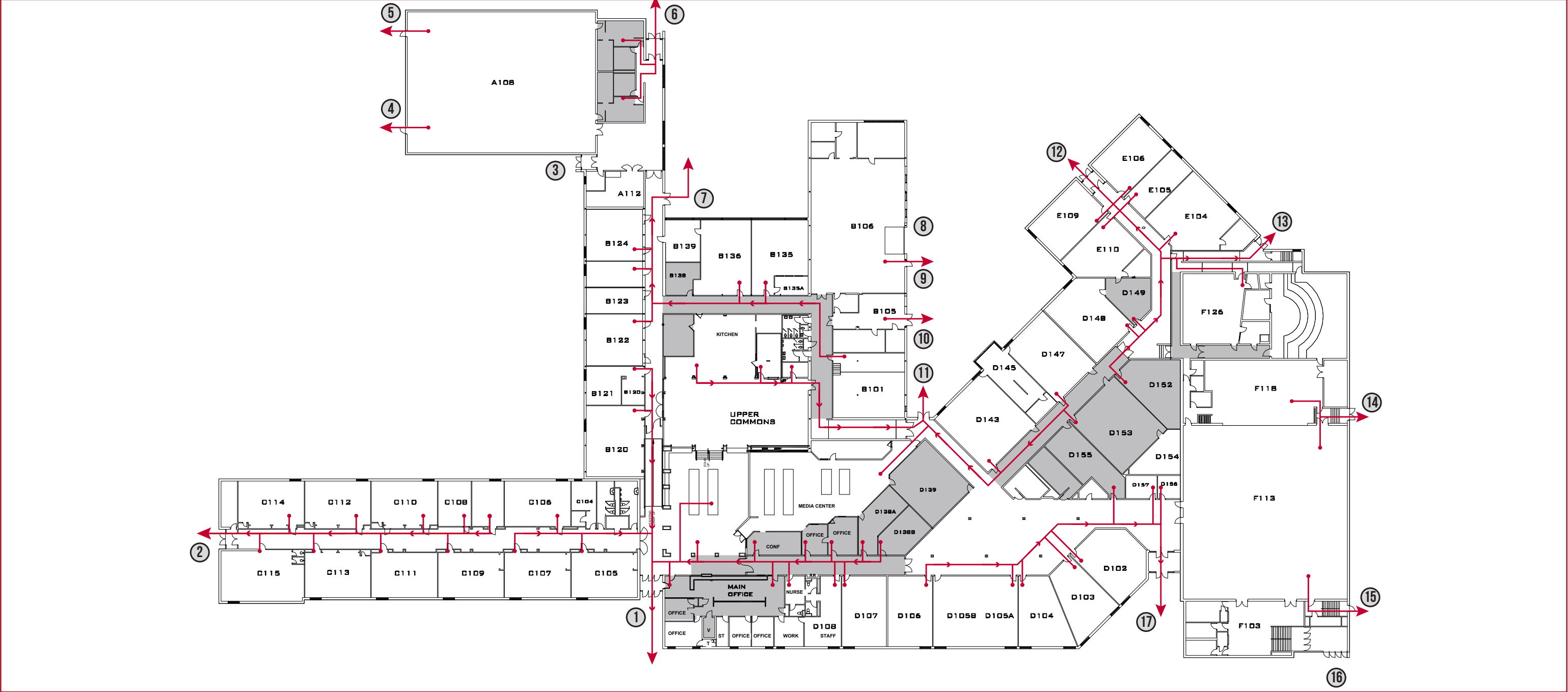




Figure 1 - Wood shop finish room



Figure 2 - Shop area congestion



Figure 3 - Receiving room/janitor space, which lacks a dock



Figure 4 - Boiler room piping, creating a trip hazard

OBSERVATIONS

Access

The receiving room/janitor space lacks a loading dock. There have been discussions with other schools that claim the receiving area is a source of workmen's comp claims, and they have elected to upgrade the loading dock with proper elevation differences and loading dock equipment. The staff indicated that they hire a local business to bring a forklift to the school to assist with pallets of delivered materials.

The threshold elevation at the doors between the outside sidewalk and interior floor should not vary more than half an inch, as these can vary seasonably. These should be addressed because when discovered, as they can also be a claim source against the school. Notable was the 1.5 inch difference at the receiving area.

Trip hazards also exist in the boiler room due to piping placed at floor level. This is not a public space and only authorized staff is allowed inside. Mitigation of those conditions may be possible as repairs or replacements are made.

Bleacher conditions are up to date, and no work is required to meet safety standards other than scheduled inspections.

The locker rooms by the main north gym only have one exit. The girls locker room only has one way out, and the boys locker room requires exiting through the wrestling room. The second exit through the wrestling room is not likely to be considered a compliant exit. The wrestling room has only one exit through the boys locker room. This is concerning, as the boys locker room could be locked off. Occupancy counts are high enough where a second exit would be required. It is entirely possible that the fire marshal could impose restrictions on the room use because this is a life safety issue.

Throughout the building, handrails need to be installed or adjusted. Stairs with more than three risers require handrails. Handrails are missing from the stairs to the lower level of the boiler room, and at the exterior stairs near door 16E. The handrails in the main lobby of the gym (room F103) are not compliant, as they do not extend 12 inches past the last riser. The handrails and steps that lead into the AHU room at the lower level by door 15N and the girls locker room are also not compliant. Steps are constructed of wood and are deteriorating and loose. A landing on the room side of the door is not present, and there is no handrail.

At the stairs and corridors that serve doors 14N and 15N, the epoxy is delaminating. These are older stairways that are exhibiting wear. The edges of the exposed epoxy edges can be sharp and could cause cuts or tripping hazards. Previous recessed floor mats at the doors were not filled prior to the installation of the epoxy, and trip hazards are present.

Multiple floor elevations in the buildings contain the required ramps. These were updated in the most recent remodel and appear to be in conformance to the codes.

Moisture Intrusion

Access to the crawl space located under the code area 3 wing was available at the south end in the janitor room. The area below was wet and exhibited mold in some areas, but there was no evidence noted that these conditions were migrating into the space above. Varying components consisting of drain tile, sump pumps, and mechanical ventilation can be incorporated to control the environment and prevent further mold from growing. Crawl spaces in colder climates are very difficult to control. Bringing in outside air reduces the temperature in the space. Plumbing and ductwork that are in

those spaces then become prone to the effects of lower temperature and floors become cold, all of which increase energy consumption. To control the space, ideally the dirt floors are sealed off using polyethylene sheeting, all joints in the poly are sealed, and a fire retardant foam board insulation is added at the exterior foundation walls. Proper ventilation is the next key component. Costs for this work is expensive due to the restricted work space and the difficult working conditions.

Water seepage was identified in the AHU room at the lower level by door 15N and in the girls locker room. This appears to be an ongoing occurrence. Mitigation would be difficult, as the room is an interior room. Cutting the floor and adding a drain tile system and sump would be an option. However, water discharge may be an issue, and routing for that discharge pipe would need to be further investigated.

Room B135, B139, and D106 exhibited evidence of moisture penetration through the exterior wall. This can be caused by several sources. Roof leaks at the wall line can fill a cavity with moisture and work its way to the interior. Exterior wall claddings, including brick and EFIS, can fail or allow moisture to penetrate to the inside. Sometimes the wall components, such as the addition of an EFIS cladding over brick, don't allow a wall to dry at the exterior and it has no way to dry except at the interior. Brick can appear to be in good shape, but still allow moisture penetration through both the brick and mortar joints. Tuckpointing, caulking, and proper selection of brick sealers can help, though the selection of the wrong sealer will cause more issues than it solves. Condensation due to a lack of proper insulation can also be a source.

Emergency Routes, Alerts, and Signage

The existing fire alarm is an addressable system by Simplex-Grinnell and is currently monitored by Flex-Comm Security. With an addressable system, the owner/responder is notified of the exact device that was activated, expediting the ability to locate a fire. The main equipment is located in the boiler room and consists of a Simplex 4100U control panel and Simplex 4009 IDNet NAC Extender panel. Fire alarm detection devices (heat and smoke detectors) are located throughout the facility including corridors, storage rooms, and mechanical rooms, as well as manual pull stations near every exit. Notification devices (horn strobes) are located throughout the facility including corridors and assembly areas.

The facility is equipped with emergency ballasted lighting to provide egress lighting in the event of a power outage. The fixtures appeared in good shape and proper working order. The emergency lights should be tested periodically and replaced or repaired as needed.

Fire Suppression and Code Requirements

The building does not contain a fire sprinkler system and uses a series of fire walls and doors to break the building into smaller quadrants that comply with fire code requirements. While this a code compliant arrangement, experience indicates that fire marshals are working toward getting fire sprinkler systems installed in schools whenever possible. While current code has other options that do not make it mandatory for a sprinkler, those codes are becoming more stringent without a sprinkler and more relaxed if a sprinkler is installed. The school could expect this to potentially become more of a topic in future years.

Without a fire sprinkler system, fire doors need to self-close and positively latch; wall penetrations need to be sealed; and ductwork penetrations need fire dampers at fire wall locations, along with other miscellaneous requirements. Any remodeling usually triggers a review of those components, and some weak areas were identified.

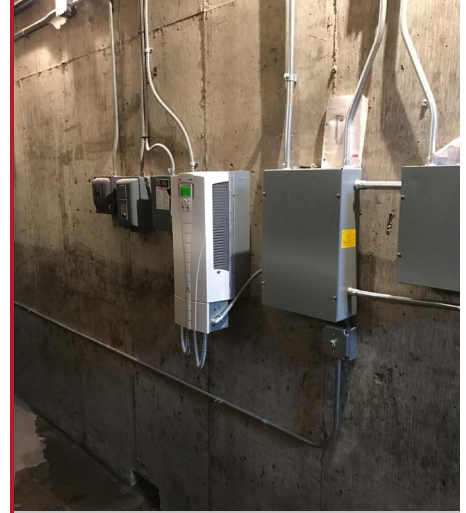
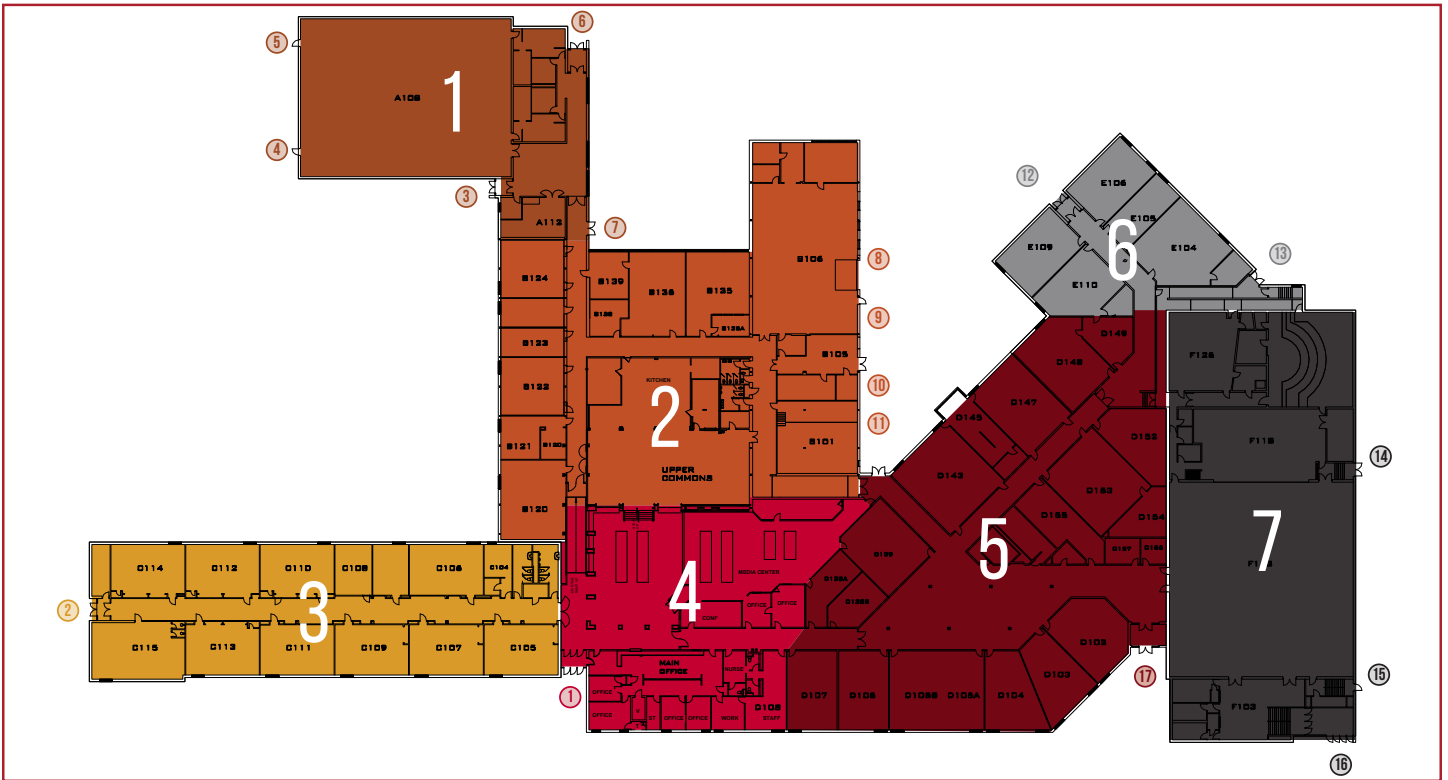


Figure 5 - Water seepage in AHU room



In Code Area 3 there are several areas where penetrations were not sealed properly along the corridor wall, as well as in other locations of the building. Not all areas were reviewed in detail, but additional work should be performed to ensure full code compliance and safety of students and faculty.

Some corridor doors have glass in the door or in a sidelight. Room C115 had the largest glass size out of all doors because of its large sidelight. Glass size is limited to 100 square inches in a one hour rated wall, unless special-rated glass is used. Doors are not labeled, and do not have door closers installed on them. This, along with non ADA compliant locksets and the chipped faces of the doors, suggests that they should be reviewed in detail. Correct doors and hardware should be installed as a unit rather than in intermittent pieces. Areas of the original 1953 construction in code areas 2 and 3 were most likely to exhibit these concerns. Some doors and sidelights utilized wire glass. This should be replaced with tempered glass. When wire glass breaks, it creates sharp, jagged edges that does not meet current safety glazing requirements. Coiling doors at the upper commons are fire doors and have been recently tested for proper operation. This will be an ongoing requirement if the building remains without a sprinkler system. In the upper commons, doors in the corridor on the north wall are fire doors. While the hardware is older, the doors are in fair shape. No critical replacement is needed, but if the space is updated, the doors should be considered for potential replacement.

Wood and metal shop share the same space. They are not separated, and welding takes place in this space. These spaces should have a physical separation to avoid fires. Additionally the wood shop equipment should have additional work space around the equipment. A safety concern is present given the proximity to surrounding equipment. Circulation space around the equipment is limited adding further concern when students are present and working on projects. Much relies on the instructors control to avoid accidents, and having additional space would reduce that dependence.

A time-out room has been installed in room C113. This room is constructed of wood, and is in likely violation of codes since these rooms are to be constructed of non-combustible materials. The door has a passage lock on it, therefore it does not restrain the student in the room. As a result of the non-locking door, this may not be fully defined as a seclusion room, but some of the room requirements would still apply. Door swing direction, fire alarm devices, fire sprinkler requirements, and combustible material used in construction are possible issues associated with this space. The Minnesota State Fire Marshal has issued a checklist for time-out and seclusion rooms. The State Department of Education has a memorandum as well.

RECOMMENDATIONS

- ✓ Explore options to reorganize the wood and metals shops so that each has its own space and proper equipment. Additional space might be needed in order to achieve separate areas.
- ✓ Update loading dock and decrease threshold elevation between the sidewalk and floors.
- ✓ Move piping as repairs in the boiler room are conducted.
- ✓ Address exposed epoxy edges at the stairs and corridors by doors 14N and 15N.
- ✓ Add a second, compliant exit needs to the boys and girls locker room and wrestling room.
- ✓ Examine and control moisture and mold in code area 3's crawl space.
- ✓ Review Door 15N and the girls locker room before adding a drain tile and sump to eliminate water seepage, and in the meantime, fans and dehumidifiers will prevent moisture damage and mold development. The three rooms that exhibited moisture penetration should be tuckpointed, caulked, and sealed to prevent further damage.
- ✓ Conduct additional review of Room C113 to determine its use and occupancy. It should also be reconstructed to eliminate its current wood sheathing and replace it with non-combustible materials.
- ✓ Adjust and/or add handrails in various areas throughout the facility as needed. Additionally, several of the classroom doors should replace their handles or change their open/close depth.
- ✓ While no immediate changes are necessary, it should be noted that installing a sprinkler system may become a greater discussion point in the near future. Further inspections should be conducted to make sure that the entire building meets the required fire codes, as several problematic areas were noted.
- ✓ Replace all wire glass with tempered glass.
- ✓ Replace older door in the upper commons in the north corridor during next renovation.
- ✓ Identify pipes in the boiler room with marking paints and better lighting.
- ✓ It is recommended that emergency egress lighting be added on the exterior of the building near each entrance, as is required by code.
- ✓ We recommend that Minnesota State Fire Marshal and Department of Education reports on time-out rooms be obtained, and room modifications be made accordingly.

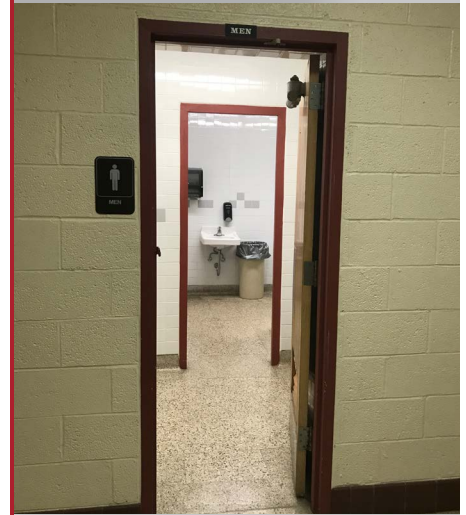


Figure 6 - Doors not ADA compliant

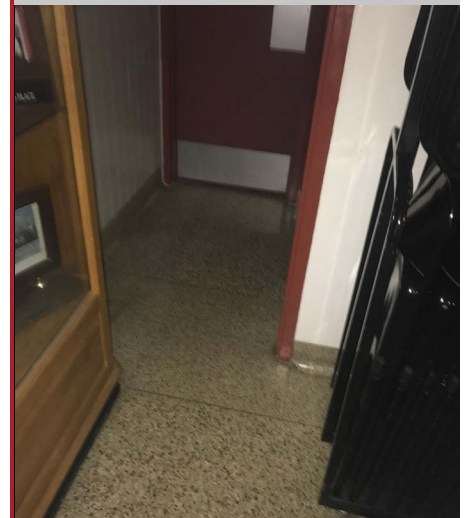


Figure 7 - Gym/lobby restroom

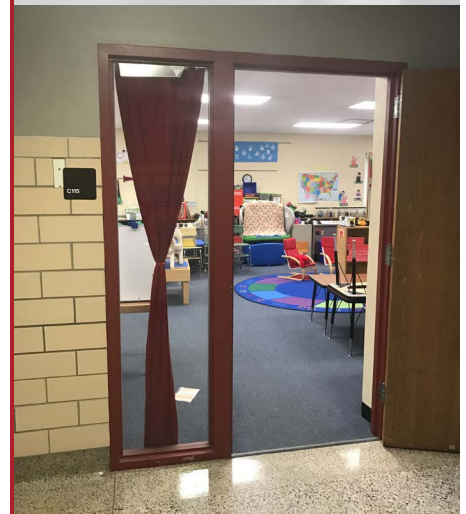


Figure 8 - Large glass sidelight in room C115 door

PRIORITY	1	2	3
Add elevator to lower level of locker room (Requires extensive structural modifications or addition)	•		
Fill fire wall penetrations with Fire Stop - Code Area 3	•		
Separate wood and metal Shops	•		
Install proper exhaust ventilation in wood shop finishing room	•		
Improve lighting in wood shop finishing room to explosion proof	•		
Create adequate clearance around wood and metal shop equipment	•		
Install stair handrail to lower level of boiler room	•		
Extend stair handrail in main gym lobby (F103) 12 inches past last riser	•		
Install compliant stair and handrail to AHU room by door I5N	•		
Install handrail on exterior stair near door I6E	•		
Repair delaminating epoxy floor on stair and corridor serving doors I4N and I5N	•		
Renovate locker rooms to provide two means of egress and ADA compliance	•		
Renovate wrestling room to provide two means of egress	•		

PHYSICAL CONDITIONS

HAZARDOUS MATERIAL CONDITIONS

Identification of potential hazardous material noted during visual field observations.

OBSERVATIONS

Asbestos

Ceiling tile located above the ACT ceilings in the 1953 portions of the building were indicated to have asbestos-containing material in the glue.

As with all older buildings, the potential for other asbestos-containing products is present. While mitigation may have occurred on visible piping, piping located in original wall construction may still have asbestos and should be approached with caution if a pipe is exposed for repair, replacement, or demolition for any reason.

RECOMMENDATIONS

- Maintain an updated list of hazardous materials.
- Consider removal of asbestos-containing tile when major work is occurring in these spaces and ceilings have been removed. Current conditions do not pose much hazard when left undisturbed.

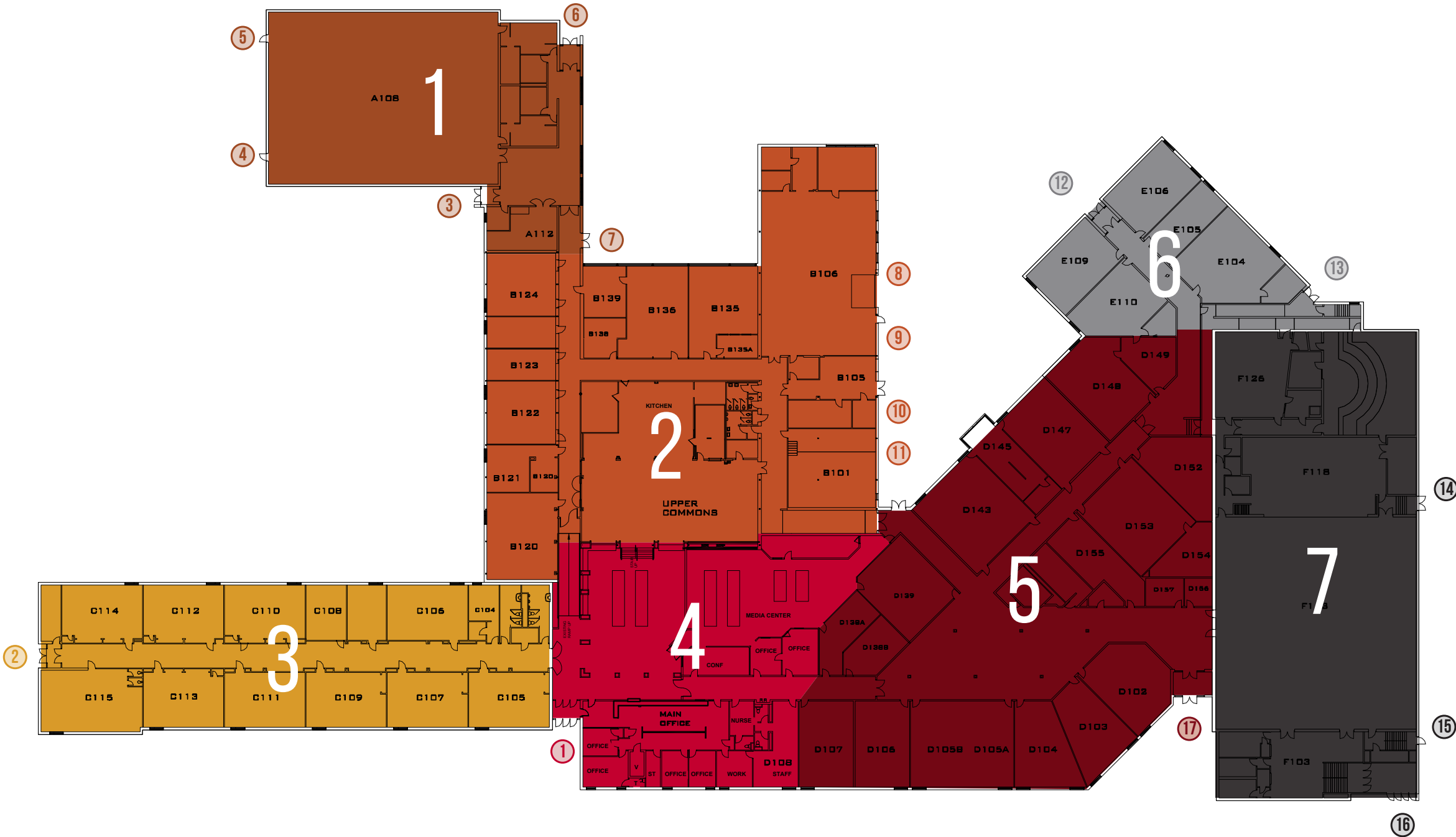
PRIORITY

	1	2	3	4
Ceiling tile abatement				●

PHYSICAL CONDITIONS

ACCESSIBILITY CONDITIONS

Review of the existing structure for conformance with the Minnesota Accessibility Code. Site parking, access into the building and entrances, accessibility routes inside of building, and restroom accessibility were considered.



*Numbers relate to code areas referenced in the following section



Figure 1 - Lip in concrete



Figure 2 - Tipping sidewalk - suggests movement due to moisture intrusion



Figure 3 - Large wall depth, which is not ADA-compliant

OBSERVATIONS

Overview

ADA compliance is a major component of building design and maintenance. Codes even go so far to state that 20 percent of remodel costs needs to be directed to ADA compliance updates. Depending on the work scope, some remodels are very easy to meet the 20 percent cost requirement, and others are more difficult. It is important to integrate ADA compliance into construction and renovation projects to ensure everyone has the same opportunities, especially in a classroom setting.

Interior Walkways and Access

Throughout the building, handrails need to be installed or adjusted. Stairs with over three risers require handrails. Handrails are missing from the stairs to the lower level of the boiler room and at the exterior stairs near door 16E. The handrails in the main lobby of the gym room F103 are not compliant, as they do not extend 12 inches past the last riser. The handrails and steps that lead into the AHU room at the lower level by door 15N and the girls locker room are also not compliant. Steps are constructed of wood and are deteriorating and loose. A landing on the room side of the door is not present, and there is no handrail.

Exterior

Changes will also need to be made to the exterior of the facility in order for it to meet ADA compliance. Some small lips were noticed on the ADA routes, especially at the southwest entrance, which were pushing the maximum allowable variation. If needed, milling could resolve this. Additionally, having only one ADA stall for the main lot of approximately 140 stalls is not enough. There needs to be at least five, all with an 8-foot unloading zone. ADA signage is also old, outdated, and would not meet the height requirements. Each of the ADA stalls for the smaller lots are required, but are not currently striped appropriately. They all need a sign and 8-foot unloading zone. While the slope and grade of the ADA routes was not verified at this time, additional survey work could be conducted if requested to ensure the route meets compliance.

Classrooms and Casework

Some doors in code area 3 have a thick wall leading into the corridor. Any wall depth exceeding 8 inches from the wall face to the door can create ADA issues. If there is less than 18 inches (on the pull side of the door) or 12 inches (on the push side of the door) to the nearest obstruction when measured at the door face plane, a door is not considered ADA compliant. Because wall thickness is sometimes a factor of structural requirements or things like mechanical pipe and duct chases, making changes can be difficult. Classroom doors, primary doors original to the 1953 and 1969 construction, have round door knobs. These need to be changed out to lever handles for facilitated accessibility.

The locker rooms by the main north gym are also not ADA accessible. There is no elevator access to this level, only stairs. The only solution is the installation of an elevator, which is a major project. The countertops in the locker rooms are set at 35 inches, and technically they should be set at 34 inches. Floor drains in the locker rooms near the west gym are not fully compliant. The water from one shower should not flow across the floor to the adjoining shower. This is likely not an item that the school will be asked to repair, but should any remodeling be done, this may need to be fixed.

Restrooms

Most changes to meet ADA requirements involve the building's restrooms. While the doors in the boys and girls restrooms of code area 3 are 32 inches wide and in fair condition, neither of them has a handicap stall. The restroom and changing room for special need students is present between the boys and girls restrooms. The toilets are not positioned correctly from the wall at 18 inches, and do not have grab bars present. To remedy this, the toilet could be repositioned, or a self-supporting grab bar could be added if clearances allow. Turning clearances and sink clearances need further investigation to determine full compliance, but a more major remodel may be needed. The restroom off the kitchen for staff use was not ADA-compliant in regards to its clearances and door hardware. The girls restroom near the west gym does not have a full ADA-compliant toilet; one stall could be considered ambulatory compliant.

The restroom group across the hall from the receiving area and boiler room in code area 2 needs improvement. There are no ADA-compliant toilets. The restroom's sink traps are not wrapped. Access covers also present some security and access concerns. Additionally, the faculty restroom in this group is also non ADA-compliant. Given that the adjoining restrooms are not compliant, these updates would best be completed as one project, rather than multiple, due to plumbing requirements and wall reconfiguration.

The restrooms by the gym and lobby (room F103) are not compliant, and the sink drain traps are not wrapped. These doors are only 32 inches, and the nearby trophy case restricts entrance into the girls room. More concerning is that the doors are locked using a deadbolt and are key/thumb turn. This is a problem because it allows someone to lock themselves into the restroom, creating the opportunity for students to lock each other inside.

There is no ADA stall in girls or boys restrooms (rooms 160 and 161) near the locker commons. While an ambulatory stall is present, it does not meet the initial requirements of the larger wheelchair accessible stall. The latch side of the girls' door does not have the 12-inch minimum clearance on the push side. The urinals located in corners are not the most desirable layout, and the sinks were loose.

Restrooms at the teachers' lounge (D108) and nurses office (D111) meet clearance requirements, but there are no grab bars present.

RECOMMENDATIONS

- Continue to provide updates and incorporate ADA compliance into future remodels.
- Add or adjust handrails in various areas throughout the facility as needed.
- Address exposed epoxy edges at the stairs and corridors by doors 14N and 15N.
- Replace interior handles or change open/close depth in several classroom doors. All doors should be further examined, specifically sections with original 1953 construction in code areas 2 and 3, to determine if they are ADA compliant, have door closers, and proper glass usage.
- Adjust various restrooms throughout the school from repositioning toilets and realigning doors to creating ADA-compliant stalls and adding grab bars. Any unwrapped sink drain traps should also be wrapped.
- Update exterior signage and ADA stalls in parking lot.

PRIORITY	1	2	3	4
Renovate restroom group in code area 3 to be ADA-compliant		●		
Fix exterior sidewalk elevation issues			●	
Fix interior handrails			●	
Renovate restroom group in code area 5 to be ADA-compliant			●	
Renovate kitchen restroom to be ADA-compliant			●	
Update door hardware in 1953 and 1969 wings to ADA-compliant lever style			●	
Renovate women's restroom near west gym to full ADA compliance			●	
Renovate restroom group in code area 2 to be ADA-compliant			●	
Renovate restroom group in gym lobby (F103) to be ADA compliant			●	
Modify classroom doors in code area 3 to be ADA-compliant				●
Relocate restroom grab bars in D108 and D111 to be code compliant				●

PHYSICAL CONDITIONS

PLUMBING CONDITIONS

Review of the existing building plumbing systems including water service, water fountains, sinks, toilets, and showers.



*Letters relate to building areas referenced in the following section



Figure 1 - Water coming through wall



Figure 2 - Broken ADA shower



Figure 3 - Leaking shower faucet

OBSERVATIONS

Domestic Water

There is a 4-inch domestic water service that enters the building in the boiler room and serves the entire building. Two newer domestic water softeners located in the boiler room soften the hot and cold water for the building. The domestic water lines have insulation that is in fair condition. Fiber glass insulation was used on the hot and cold water lines, as well as the hot water recirculation lines throughout the entire facility. Typically, closed cell insulation is recommended on the cold water lines because closed cell insulation won't absorb any moisture if there is a rip in the insulation. Fiber glass insulation absorbs water and then sags/rips away from the pipe if there is any rip in the insulation. The domestic water lines throughout the building consist of galvanized and copper pipes. The domestic water service is heated through a heat exchanger from the steam boilers and stored in the hot water storage tank. This is used throughout the school year when the boilers are operating. There is a gas backup hot water heater used when the boilers are down for maintenance. The boiler room consists of two large iron filters that have been abandoned.

Sanitary Sewer

Two 6-inch sanitary sewer lines exist in the building. One line exits out the east side of the building, and the second exits on the north side. The sanitary sewer that exits out the east side takes care of areas A, B, and C. The sanitary sewer that exits out the north side takes care of areas D, E, and F, as well as the boiler room in area B.

Storm Sewer

The building has a primary roof drain system that is hard piped from the roof drains and down into the building. Collecting from other areas, it moves out of the building to tie directly into the storm drain. The secondary roof drainage is overflow scuppers and overflow roof drains that spill out on grade. Some of the roof drains were plugged. The concrete base where the water is to drain is missing or not centered on the overflow drain.

General Findings

The men's and women's showers in area A off of the gymnasium had floor drains at the wrong location. Instead of having the drains on the shower's exterior, two floor drains were placed in the middle and all showers drained to them. This allows water to travel across the floor from shower to shower. Issues that were found in the men's restroom include a broken ADA shower, leaking faucets in the shower, as well as a leaking pipe in the wall. Water appeared to be coming out of the grout between the wall and the floor near the sinks. The floor was wet, and it looked like the issue was recurring. There was no pipe wrap on the sinks in this area, and there were also different faucet types on the lavatories. Some faucets are new, but most are older looking, and the finish has been removed due to an improper cleaning substance that was used. Some of the issues in the women's locker room include a broken ADA shower in addition to some shower faucets that were stuck shut and inoperable. There were also lavatories that leaked when they were turned on.

It was noted that the bathroom group in area B had some plumbing issues that were previously "fixed." There is a piece of steel on the wall where tile was, and the exposed pipe runs down the wall and then penetrates the floor. The cleanout that was used on the floor is not the proper cleanout. A proper floor cleanout should be used to eliminate any possibility of a trip hazard.

Office B120a has a sink that is located in the space. No water comes out of the sink and the reason for this is unknown. It looks to be vacated, but fixture and trim have been left in place.

The plumbing fixtures in the C wing are in fair condition. The trim and drain have some discoloration on the fixture, most likely because it was cleaned with aortic acid. This will damage the plumbing fixture trim and should not be used. The pipe behind the fixtures in the chase is galvanized pipe, and should be replaced with a copper or plastic one. In the women's restroom in this area, there is a flush valve on a water closet that is leaking. The lavatories in the women's restroom have p-traps that hang extremely low and do not have pipe wrap on the pipe. Faucets do not match throughout the two restrooms. The handicap restroom is also lacking pipe wrap on the p-trap of the sink.

The sinks in C wing classrooms were in poor condition. The bowl and fixtures were all stained and in tough shape. The domestic water pipe to each of the sinks is galvanized pipe, which should be switched out to plastic or copper pipe. It was noted that there was no hot water to the sink in classroom C105.

The large sink located in the art room (D153) does not have any clay traps installed below the sink. Due to the large amounts of clay and solids that can be introduced to the system, it is highly recommended to install a clay interceptor to prevent any clogging of sanitary sewer lines.

Science classroom D143 and D147 do not have a gas solenoid valve or an emergency shut-off button. The current design is a ball valve that is attached to the pipe that comes down from the ceiling to the valve, then goes back up into the ceiling. This does not meet code requirements. It was also noted that the eyewash station was not working properly. Only one eye was flowing any water. There is a thermostatic mixing valve that supplies two eye wash stations. There is a large amount of stagnant water that sits between the mixing valves and the fixtures. When testing the system, it should run long enough to flush out the pipe from the mixing valve to the fixture. If this water sits for too long, it can grow Legionella bacteria.

Restroom D161 has a loose lavatory hanging on the wall. The fixture has pulled away from the wall and begun to sag. The nurse's room (D111) has a faucet that is leaking.

The home economics room (E104) has the same gas issue of not having a gas solenoid valve or emergency shut off button. Office space (E124) has a sink located in the space that leaks constantly.

In area F, there is a drinking fountain in the stairwell leading down to the men's locker rooms that is not working. No water flow comes out of it. Several bottle fillers throughout the building have dirty filters that need replacing. The drinking fountain located in the women's locker room has a broken bottle filler. The sensor doesn't work to allow the bottle filler to function.

The fixtures located in the men's and women's locker/restroom below the gymnasium in area F were in bad condition. There were a couple water closets that had loose seats in addition to some leaking and loose flush valves. It was noticed that these lavatories, along with a large majority in the building, were lacking aerators on the lavatory sinks. Most were likely plugged, and then removed instead of cleaned. There is also a floor cleanout that is broken and leaving the pipe exposed to the space right below the urinal. Some of the showers didn't have proper flow. Some exterior hose bibs were in rough shape and unusable.

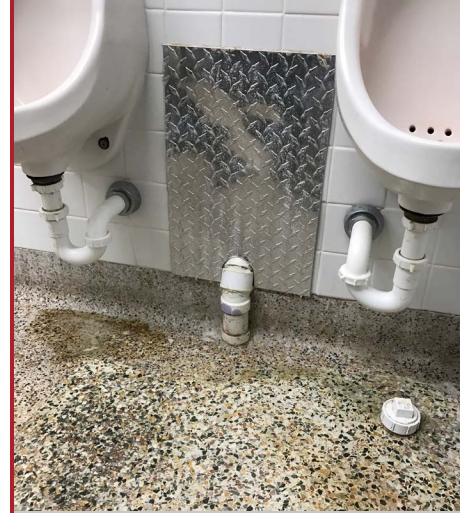


Figure 4 - Improper cleanout, creating trip hazard



Figure 5 - Missing clay trap in art room



Figure 6 - Missing emergency gas shut-off button



Figure 7 - Broken drinking fountain



Figure 8 - Broken toilet seat



Figure 9 - Broken floor cleanout cover

RECOMMENDATIONS

- ✓ Replace current fiber glass insulation on the cold water lines with closed cell insulation, and all galvanized piping with copper or plastic pipes.
- ✓ Add pipe wrap throughout facility where it is missing, and the proper cleaning supplies should be utilized to ensure fixtures are not damaged.
- ✓ Clean and/or replace aerators that are missing or plugged.
- ✓ Clean roof drains and their downspouts, and concrete bases should be centered, replaced, and verified to properly receive drained water. Exterior hose bibs that are unusable should be exchanged with new ones.
- ✓ Repair broken and leaking pipes and faucets in the men's and women's showers in area A. The older faucets could be replaced.
- ✓ Provide care to ensure that the proper floor cleanout is employed in the restrooms in area B.
- ✓ Further examine sink in office B120a.
- ✓ Install clay interceptor in the art room sink.
- ✓ Modify sinks in the women's restroom in C wing to become ADA-compliant, and long hanging p-traps should be addressed.
- ✓ Replace sinks in the nurse's room and office space need their faucets replaced. The lavatory sign in restroom D161 also needs to be rehung.
- ✓ Numerous repairs are necessary in the men's and women's locker rooms in area F to stop leaking flush valves and other broken fixtures. In the men's locker room off of the gym in area A, the ductwork requires fixing. The exhaust grille in the men's and women's restrooms in C wing also should be rebalanced.
- ✓ Update eyewash station and ball valve in the science classrooms to meet code requirements. The home economics room also requires updates, including replacing the gas ranges with electric ones, the addition of a hot water recirculation line, and new washing machine hose.
- ✓ Apply duct sealant to HVAC systems that serve classrooms in area C. The vestibule at the south end of the hallway in area C also needs to have a working unit heater to remove chemicals and odors from the space.
- ✓ Replace transfer grille in room D154 with a larger one. The chemical storage off of this room, along with janitor room D159, should also be given its own exhaust system.
- ✓ Rebalance system in workout room (D152) to decrease the amount of noise.

- ✓ Remove poster in front of the transfer grill in room D137 and two separate HVAC zones should be created for rooms D139A and B. The staff breakroom should have a ducted return or exhaust system added. T
- ✓ Rebalance exhaust in home economics room (E104)
- ✓ Add Air movement should be added to the concession stand.
- ✓ Roof drains should be cleaned out to ensure that all standing water on the roof can drain properly and eliminate excess water. The downspouts for the roof drains also need to be cleared of any debris to ensure that they aren't blocked. Verify that all roof drains empty onto the concrete pad, so water does not erode the soil below it.
- ✓ Eliminate the gas ranges in the home economics room, and provide electric ones instead. Remove the extra gas piping. It was also noted that it took a long time to obtain hot water to the room. Hot water recirculation line would be recommended to ensure hot water on demand is possible. The washing machine hose in this space should be replaced as well as the life expectancy of a washing machine hose is only five years.



Figure 10 - Missing aerator on faucets

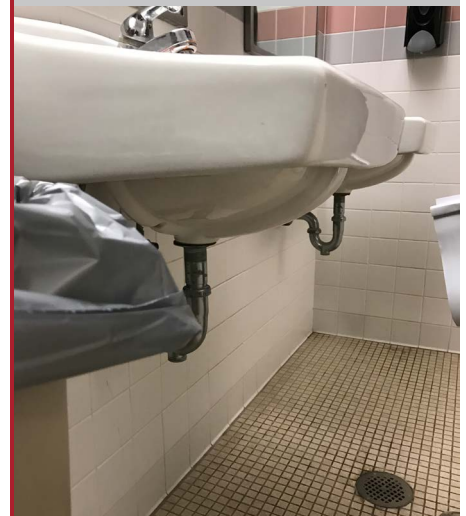


Figure 11 - Missing pipe wrap

PRIORITY	1	2	3	4
Install clay interceptor in art room (D153) sink drain	•			
Install code compliant natural gas shut-off valve or emergency shut-off button in science area (D143 + D147)	•			
Install code compliant natural gas shut-off valve or emergency shut-off button in home economics area (E104)	•			
Replace galvanized pipe in C-wing restroom chase		•		
Repair broken ADA showers in west gym locker room		•		
Install proper floor cleanout in area B restroom group		•		
Replace galvanized pipe in C-wing classroom plumbing		•		
Install pipe wrap on p-traps in C-wing restrooms			•	
Replace leaking flush valve in women's C-wing restroom			•	
Replace poor condition sinks in C-wing classrooms			•	
Replace leaking water faucet in E124			•	
Replace filters for bottle filling water fountains			•	
Repair broken water filler in women's locker room			•	
Repair loose lavatory fixture in room D161			•	
Replace leaking water faucet in D111			•	
Clear plugged room drain intakes on roof			•	
Replace broken or unusable hose bibs			•	
Replace washing machine water supply hoses				•



Figure 1 - Gym relief dampers stuck open



Figure 2 - Broken diffusers in gymnasium



Figure 3 - Exterior ductwork not sloped properly

PHYSICAL CONDITIONS

MECHANICAL CONDITIONS

Review of existing mechanical systems and their components including verification that HVAC systems, as well as plumbing fixture counts, water piping, and water supply meet current building codes.

OBSERVATIONS

Mechanical Systems

Two L.E.S brand steam boilers heat the building. These steam boilers run at 75 to 79 percent efficiency. Newer hot water condensing boilers run at 90 to 94 percent efficiency. The only steam that leaves the boiler room is for area F, which is the gymnasium. The remainder of the steam is converted to hot water at the boiler room and the hot water is then pumped out to various equipment that uses hot water. Those items in the building include:

- | | |
|-------------------------------|--|
| AHU - Air Handling Units | CUH - Cabinet Unit Heater |
| CUV - Cabinet Unit Ventilator | FCU - Fan Coil Units |
| FTR - Fin Tube Radiation | RTU - Rooftop Units |
| UH - Unit Heater | VAV - Variable Air Volume Units <i>(with Reheat Coils)</i> |

AREA A (Gym and Locker Room)

This area is served by three RTUs that are all gas-fired, heating only units. There are two units that serve the gymnasium, while the remaining unit serves the locker room. These units are 26 years old.

AREA B (Classrooms South and East of Kitchen/Café)

This area is served by two rooftop-mounted RTUs. These units have a hot water coil and an empty compartment located in the unit for a future chilled water coil. Both units have an energy recovery wheel to help precondition the outside air. The unit for the classrooms has VAVs with reheat coils, while the unit for the cafeteria is a constant volume unit.

AREA C (South Classrooms)

This area is served by a rooftop-mounted RTU with a hot water coil and an empty compartment located in the unit for a future chilled water coil. There is a VAV system with reheat coils to control zoning for each classroom. The RTU has an energy recovery wheel to help precondition the outside air.

AREA D (Center Classrooms)

The front office area in area D is served by a roof top mounted RTU with a hot water coil and a DX cooling coil in the unit. The remote condensers are located next to this unit on the roof. The system below is a VAV system for each of the office spaces with reheat coils to facilitate zoning. Classrooms are all served by various cooling only RTUs and connected to a VAV system with heating coils that supplies zoning. The RTUs for the classrooms are 26 years old.

AREA E (North West Classrooms)

This area is served by a rooftop-mounted RTU with a hot water coil and an empty compartment located in the unit for a future chilled water coil. There is a VAV system with reheat coils to control zoning for each classroom. The RTU has an energy recovery wheel to help precondition the outside air.

AREA F (Band, Choir, Stage, Gym, Locker Rooms, Wrestling)

This area is served by four indoor AHUs with steam coils and no cooling. There is only one AHU in this area that has the capability to have cooling, but the condensing unit is not operating. The age of the equipment is original to the building.

Areas with HVAC systems that have been installed earlier than 2007 do not appear to have a way to verify or guarantee that adequate ventilation air is provided to the zones that it serves.

General Findings

Area A's gymnasium had some issues with the HVAC system. First, the relief hoods on top of the roof were stuck open. These should open and close with the pressure in the space instead of being stuck open all the time. The diffusers in the gym were damaged. The airflow nozzles that direct airflow were missing in the majority of the diffusers. The mains were painted white originally, and the paint has begun to fall off. The duct should have had paint grip to help keep the paint sticking to the ductwork. It was also noted that the RTUs for the gymnasium were in poor condition. The natural gas units had issues firing the burners to heat the air. The exterior ductwork from the rooftop units did not have any slope on top of them, which allows ice/water to build up on top of the ductwork. Slope on top of the ductwork is needed to help remove all standing water on it. The RTUs had loose screws sitting on top of the units.

The ductwork requires fixing in the men's restroom/locker room off of the gymnasium. There was too much flex duct on the lines, as well as duct tape being used to hold the flex duct in place. The return ductwork was extremely dirty, and there was flex duct on the return line.

In the hallway outside of the gymnasium in area A, the fin tube radiation was in rough shape. The cover that hid the coil is falling off, and leaves the heating element exposed to people walking by. The exposed heating element can be a possible burn risk.

Room B120 has two mini-split units that are located on the south wall. The original design had the condensing unit for the indoor units located on the ground just outside. Due to the condensing unit obtaining damage from kids at recess, it was moved up onto the roof. The extra pipe was never cut to accommodate this change, thus leaving a tangled mess of refrigerant piping.

The AHU that is located in the kitchen office space was producing a lot of noise. It was noted that there was no spring isolation on the AHU to prevent any vibration traveling through the space. The dishwasher hood air flow is too low as well. There is an issue of steam building up in the space and discoloring the walls and ceiling around the dishwasher. An increase of the CFM would help prevent the excess steam.

The VAV in B135 was making some noise. There was a rattling noise coming from the VAV that we were able to hear from below the ceiling grid.

In the shop, the paint room had no exhaust or ventilation. The exhaust fan was not operating. After investigating on the roof, a broken belt inside the fan was found to be the issue. There is a brand new dust collection system that seemed to be working and in good condition.

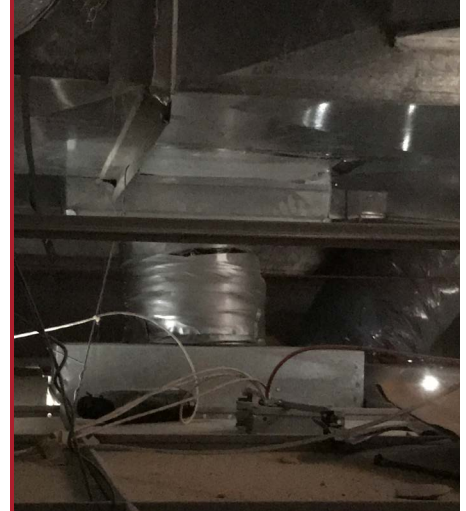


Figure 4 - Duct tape to hold flex in place

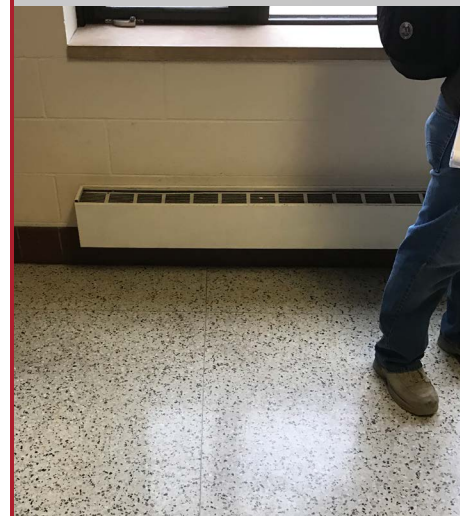


Figure 5 - Fin tube radiation broken cover

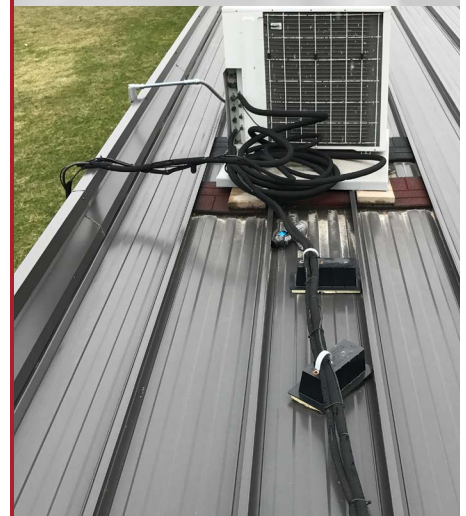


Figure 6 - Tangled refrigerant piping



Figure 7 - Improper exhaust flow in paint room



Figure 8 - No spring vibration isolation present on AHU



Figure 9 - Improper crickets around the RTU



Figure 10 - Standing water in area C crawl space

There was no ventilation in the back storage room where the building management system is operated. If the space is to be used as an office, there needs to be some supply or exhaust air to meet ventilation requirements.

The boiler room consisted of two LES steam boilers that served the building. The steam routing serves the area F gymnasium and the rest of the steam is converted to hot water by means of heat exchangers in the boiler room. It was noted that there are some issues in regards to the condensate pumps functioning properly. There is a 3hp compressor that is used for pneumatic controls in the building. Looking down the tunnels from the boiler room, it was noted that there were large amounts of pipes that are not insulated.

The janitorial room located outside the boiler room has large amounts of rusted pipes overhead, as well as a rusted exhaust grille. This is due to the harsh chemicals that are present in the room. Replacing the grille would be recommended to ensure proper airflow to eliminate the toxic air from the room. Right next to this room, the men's restroom has a transfer grille in the door that is broken.

The crickets around the RTU units in area B are not working properly. There is standing water at the high point of the units. The smaller RTU in area B also had some damage to the louvers located on the outside of the unit. This should be fixed to ensure no water can enter inside. The control sequences are not working properly on all of the RTUs either. No alarms went off from the units, and the energy recovery wheel was not rotating in all units. They should be rotating to help decrease the amount of heating needed for the outside air. The seals on the RTUs should be replaced as well. They have such a negative pressure on some cabinets, that it is sucking rainwater into the unit when the doors are closed. If a door is opened the water then is able to drain out of the unit.

The exhaust grille in the men's and women's restroom in C wing has very low air flow, and was not pulling much air out of the space. Rebalancing and increasing the exhaust's CFM is recommended. It was noted that the CUHs in the bathroom should be replaced due to rust.

Each of the classrooms in area C has the same type of systems and characteristics. The original design was unit ventilators that were eventually replaced by an overhead VAV system with hot water reheat coils. The insulated ductwork above in the ceiling space is beginning to fall off in certain locations, and duct tape was used to tighten the flex duct around the diffuser. Duct tape is not to be used on HVAC systems because it will dry out and give way. There is also a fair amount of duct leakage up in the plenum space from improper installation and lack of duct sealant.

The vestibule at the south end of the hallway in area C was cold inside. The unit heater didn't seem to be working. The storage room attached to the vestibule did not have any air movement either. Due to chemicals being stored in this space, there should be some exhaust taking the chemicals and odor out of the space.

One large issue was the crawl space below C wing. There was a lot of standing water around the exterior of the space. One possible cause for this large amount of water is that the exterior ground slopes towards the building. The extra moisture could be caused by not properly closing the old fresh air intakes from the unit ventilators. There is so much moisture that without any airflow, there were water droplets hanging from the structure above. With this much standing water and no airflow to dry it out, it can result in damage to and mold growth in the structure and space.

There is an issue with the kiln exhaust system located in room DI54. When looking at the room, there is a kiln located in the corner and a transfer grille on the wall. The

ceiling above the grill is extremely dirty. Once you turn on the kiln exhaust fan, the whole space turns to have a negative pressure and air is sucked through the grille. This grille is way undersized thus is creating the dirt on the ceiling as well as the large negative pressure in the room.

The chemical storage room off of D145 does not have any air circulation in the space.

The workout room (D152) was noted as having very loud noise, due to the airflow coming out of the diffusers. Janitor room D159 is lacking any sort of airflow.

Room D137 had a transfer grille that was blocked with a poster. To ensure that the mechanical system is working properly, all grilles and registers need to be visible to allow air to transfer through them. It was noted that the new board room (D139B) does not have a separate HVAC zone. There is one VAV that serves both D139A and D139B. The thermostat that controls the area is located in D139A. Thus when the conference room is full, no extra cooling will be added because there is not zone control in the space. It would be recommended to break the space down into two zones to ensure the space is at set point.

The staff prep lounge (D108) does not have any dedicated return or exhaust system to the space. The way air returns to the unit is via a path that goes from the breakroom, through the office, and into the main office. If someone burns some popcorn in the breakroom, the whole office space will smell it instead of just the breakroom.

In general, the electric condensing coils were in poor shape. The fins have been damaged, and thus capacity and efficiency of the condensing unit has decreased. Refrigerant piping to the condensing units should be fully insulated. There were large runs on the roof that lack piping insulation. There is an original condensing unit located in area F. This unit should be replaced as it is extremely old, rusty, and inefficient.

Vestibule E101 is a large space that is used as an entry point for the school. There is no secondary heating other than the overhead VAV system. Depending upon how many people use the door, it can get extremely cold or hot in the space. It would be recommended to install a cabinet unit heater near the door to ensure that the space won't get too cold during the winter months.

In area F, the air handlers that are located in the rooms off of the stage were old and could be updated. The access to these units was extremely difficult, and a more permanent access should be installed. The controls for these air handlers need refiguring to ensure a proper working system. The relief hoods in the gym are set to be open, but they should only be set open when OA requirements for the space have increased. Otherwise they should remain closed.

It was noted that there is no exhaust and no ventilation air in the concession stand. Adding some air movement to the space is required by code. This area of the building is on pneumatic controls.

The large vestibule (F100) was cold even with the CUHs on. Increasing the coil size or installing a better window would help keep this space warmer in the cold months.

The locker room unit ventilators in both the men's and women's locker rooms do not work well. The one that partially works has a bad belt and is extremely loud. Without these running, there is no way to bring fresh air into the space. While the unit ventilators do not work, the radiation heat is on, which overheats the space. Both of the locker rooms were extremely warm. The controls for the system at the locker rooms, which are on pneumatic controls, require updates and do not work properly. The exhaust located in the shower and bathroom was working properly. With the exhaust working



Figure 11 - Damaged condenser fins on RTU



Figure 12 - Exhaust air missing in concession stand



Figure 13 - Exhaust air missing in concession stand



Figure 14 - Missing ductwork in wrestling room



Figure 15 - Louvers low to ground



Figure 16 - Loose supply duct insulation



Figure 17 - CUH in vestibule in area C not working



Figure 18 - Paint coming off ductwork

and no fresh air being introduced due to the unit ventilators not working, the space had a large negative pressure. This made the doors difficult to open. When the door is closed, howling occurs from the air trying to pass around the door opening. It was also noted that the janitor's closet down in the locker room had a loose exhaust grille that was barely holding onto the ceiling. The office located off of the men's locker room didn't have any airflow in the space either. It is required to have fresh air to the space if it is used as an office space.

There was a large amount of vibration and noise in the stairwell leading down to the air handling room near the women's locker room. Once inside, it was noted that there is no vibration isolation for the unit. Any movement from the fan went directly up to the hanger and structure. Adding vibration isolators would help eliminate any vibration transferred to the structure. The air handling room was found to be wet too. It is not known where the water was coming from, but having water sitting in the room with mechanical equipment is not good. It was also noted that there is an old cabinet unit heater in that stairwell leading toward the air handling room. This cabinet unit heater should be replaced.

There is missing ductwork in the wrestling room. One branch that serves one end of the wrestling room has been removed, and the supply ductwork is left open.

The exterior louvers need new caulking to ensure no leakage gets into the walls. It should also be checked that there is a blank off panel installed inside the louver to make sure any extra water that enters will drain back out, rather than sit and drip into the wall cavity.

A majority of louvers on the exterior were low to the ground. If there is any amount of snow on the ground, the louvers will be covered. If the louver is needed, it will be blocked by the snow. Also the paint on the louvers has begun to chip and come off.

RECOMMENDATIONS

- ✓ Update HVAC system that serves the gym in area A and it is recommended that a natural gas unit be installed to service the space with a hot water coil.
- ✓ Address exposed heating coil outside of the gym.
- ✓ Remove excess piping on room B120's mini-split units.
- ✓ Increase CFM in the kitchen.
- ✓ Repair broken belt inside the exhaust fan in the paint room shop.
- ✓ Add ventilation to the back storage room.
- ✓ Provide insulation to all of the pipes in the boiler room.
- ✓ Exchange rusted exhaust grille with a new one in the janitorial room, along with the transfer grille in the men's restroom next door.
- ✓ Repair RTUs in area B including seal replacement and resloping, to eliminate excess water and repair control sequences. A point of particular concern was the crawl space below C wing, which should be explored to find the reason for the excess standing water. Air circulation in this area should also be improved.
- ✓ Insulate electric condensing coils and the original condensing unit in area F must be replaced. Also in area F, permanent access to the air handlers must be added.

- ✓ Update pneumatic controls to digital ones.
- ✓ Ensure relief hoods in the gym remain closed unless OA requirements for the space increase.
- ✓ Install a CUH in vestibule E101. To increase heating, F100's CUHs should have large coils.
- ✓ Update and/or replace controls for locker room unit ventilators to address the negative air pressure and overheating problems. Air floor also needs to be provided in the office space off of the men's locker room, and the exhaust grille in the janitor's closet should be tightened to the ceiling.
- ✓ Install vibration isolators in AHU located near the women's locker room and further evaluation is required to determine the reason for the water in the area.
- ✓ Replace old CUH leading toward the air handling room.
- ✓ Install more ductwork installed in wrestling room and have return grille cleaned. Exterior louvers require new caulking, and the existence of a blank off panel inside of them must be verified. Louvers should be raised up higher to prevent them from getting blocked by the snow. They also could be repainted.
- ✓ Replace diffusers in the gym. It would be recommended to install one unit to serve the gymnasium with a hot water coil.
- ✓ Clean and shorten tangled refrigerant piping on the roof that serves room B120 cleaned up and shortened to ensure proper flow.
- ✓ The roof should be resloped to ensure proper water flow to eliminate any chance of water seeping down into the ceiling space.
- ✓ Proper exhaust should be added into any room that houses chemicals. Rebalancing the system in D152 to verify that the diffusers are not overloaded would be recommended. Exhaust or a ducted return should be added to the breakroom.
- ✓ The home economics needs to have the exhaust rebalanced. The exhaust flow rate from the kitchen hoods was extremely low. It is recommended to rebalance the system to verify that proper flow is being exhausted.
- ✓ Ductwork should be installed in the wrestling room to ensure proper airflow and distribution for the space. It was also noted that the return grille for that space was extremely dirty.



Figure 19 - Missing vibration isolation



Figure 20 - Transfer grill for kitchen



Figure 21 - Stovetop hood with no airflow



Figure 22 - Exhaust grille falling off

PRIORITY	1	2	3
Seal former unit ventilator wall penetrations	•		
Release stuck relief dampers for Area A gym	•		
Replace damaged diffusers in Area A gym	•		
Replace Area A gym rooftop HVAC units in poor condition	•		
Increase dishwasher hood air flow	•		
Provide ventilation to back storage room where building management system is operated	•		



Figure 23 - Dirty energy recovery wheel



Figure 24 - Blocked roof drain



Figure 25 - Bad louver seals

PRIORITY (CONTINUED)

	1	2	3
Repair exhaust fan in shop finishing room	●		
Migrate from pneumatic controls to DDC	●		
Reinsulate bare pipes in tunnel system	●		
Balance kiln exhaust system in room D154	●		
Install exhaust ventilation in chemical storage room (off D145)	●		
Provide ventilation to concession stand space	●		
Repair or replace locker room unit ventilators and controls (F-wing)	●		
Add vibration isolators to AHU near F-wing women's locker room	●		
Update air handlers and associate controls off the stage	●		
Reslope roof in area surrounding AHUs for Area B	●		
Correct control sequences for RTUs	●		
Reinsulate large runs of refrigerant piping on roof	●		
Replace condensing unit in Area F	●		
Replace Area D RTUs	●		
Dehumidification of existing RTU's that have the capability		●	
Install exhaust ventilator in C-wing south storage room		●	
Shorten refrigerant piping for mini-splits in room B120		●	
Replace RTU ductwork to incorporate slope		●	
Rebalance exhaust fans for C-wing restroom group		●	
Repair issue with condensate pumps		●	
Add spring isolation to AHU in kitchen		●	
Rebalance exhaust ventilation for E104 (Home Economics)		●	
Install cabinet heater in E-wing vestibule		●	
Replace cabinet heater in stairwell to air handling room near women's locker room		●	
Re-install missing ductwork in wrestling room		●	
Install ducted return or exhaust ventilation in room D108		●	
Rebalance airflow for room D152		●	
Install exhaust ventilation in custodial room D159		●	
Repair or replace unit heater in C-wing south vestibule			●
Replace rusted unit heaters in C-wing restroom group			●
Repair ductwork in men's locker room (Area A)			●
Replace fin tube radiation in hall outside Area A gym			●
Repair VAV rattle in B135			●
Replace door to men's restroom near kitchen			●
Replace rusted exhaust grill in janitors room outside boiler room			●
Clean return grille in wrestling room			●
Create new HVAC zone for D138			●
Remove poster from transfer grille in room D137			●

PHYSICAL CONDITIONS

ELECTRICAL CONDITIONS

Review of the existing building electrical systems including electrical service, distribution, and lighting. This section also documents technology systems and components including the security system and others as applicable.

OBSERVATIONS

Service

The building has a 1600 amp 208 volt, three-phase electrical service that is served from a ground-mounted transformer located on the east side of the school. The main electrical gear is located in the boiler room and terminates in a main disconnect rated for 1600 amps. The main electrical equipment was replaced during the 1990 addition when the service size was increased. The main service gear appears to be in good condition.

The main service equipment feeds distribution and branch panels throughout the facility. Several of these panels are original to the building and utilize fusible switches. While these panels are still working, many of them are no longer being manufactured, and finding replacement parts can be difficult. If circuits in areas that are served by these panels need to be modified, it is recommended that the panels be replaced.

The electrical service size is appropriate for the size of the facility. Should areas require more mechanical cooling or increased ventilation, a detailed analysis would need to be performed to confirm that the existing service has the capacity for the equipment.

Energy Usage

Utility data for gas and electricity over the last two years was analyzed to see if the facility's energy consumption has been consistent, and also how the school compares to other schools in the state. Looking at the Monthly Per Square Foot Energy Usage chart, the school has been pretty consistent over the last two years. Using the 2015-2016 year data as a baseline, the school saw some electricity usage rise in November to January, but then saw a large decrease in February. The overall year of 2016-2017 showed a slight increase of 4.23 kBTU/SF, which is about 6 percent higher than 2015-2016. These changes could likely be attributed to colder weather in 2016-2017 than the previous year and a warmer February. A baseline can be established with these numbers to compare future energy usage. If there are large discrepancies with that baseline and future data, it can reveal if equipment is failing or if other issues are occurring.

The utility data was also averaged out over an entire year. Again, 2015-1016 was used as a baseline to compare the 2016-2017 data. The data can be seen in Table I. The data can also be compared to other schools in the state's public B3 Benchmarking data. The data is averaged per square foot so schools can be compared without the total size of the school having a large effect. Only the most recent year's data is compared.

The 75.08 total kBTU per square feet per year shown in Table I puts the facility at the 152nd spot on the B3 Benchmarking List of Public Schools ranked by EUI. It would fall in the category of <100 kBTU/SF/yr category, which is the top category, but the school could still implement various mechanical and electrical improvements listed in this report to improve the facility's energy efficiency.



Figure 1 - Ground-mounted transformer



Figure 2 - Main electrical gear

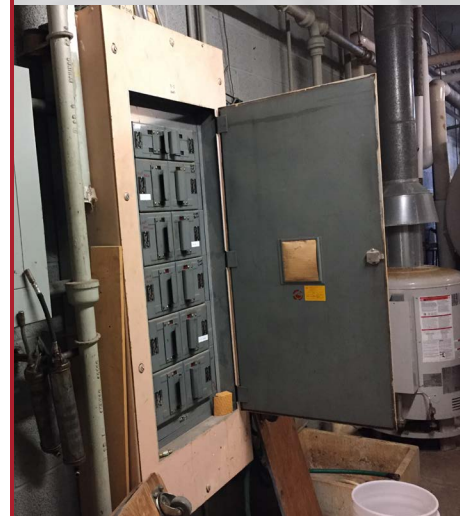


Figure 3 - Older branch panel



Figure 4 - Football field electrical backboard



Figure 5 - Receptacle with nylon plate broken off

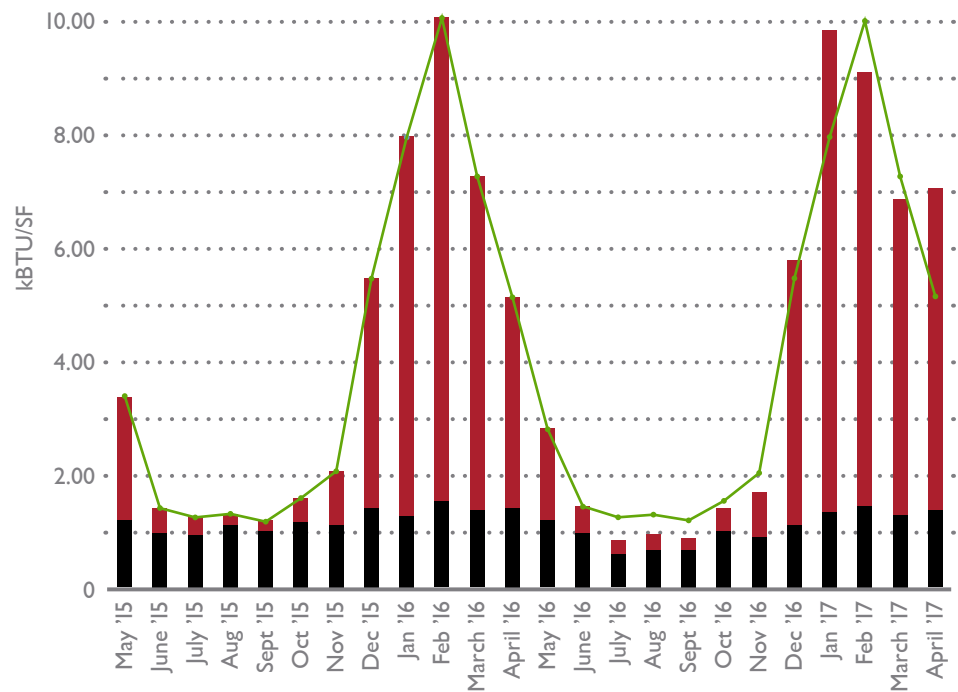


Figure 6 - Damaged receptacle in gymnasium

		ELECTRIC	GAS	TOTAL	% Change
kBTU per SF per Year	Actual	23.63	51.45	75.08	—
	Baseline	22.88	47.97	70.85	—
	Change from Baseline	0.75	3.48	4.23	5.97%

Dollars per SF per Year	Actual	\$0.68	\$0.30	\$0.98	—
	Baseline	\$0.30	\$0.33	-\$0.03	—
	Change from Baseline	\$0.98	\$0.96	\$0.02	0.02%

* Based on building square footage of 115,600 SF



Light Fixtures

The interior lighting fixtures have been upgraded with linear fluorescent T8 light bulbs. Generally, the light fixtures are in good to fair condition. Light levels are appropriate in corridors, gymnasiums, and classrooms. Linear fluorescent T8 light bulbs are efficient, and still widely used and available. The interior lighting is all manually controlled by local switches. Lights in the gymnasium are currently controlled by flipping breakers on and off in the electrical panel.

If significant modifications are made to the lighting, current energy codes require lights to automatically turn off when a space is not being occupied. Also, certain areas would require lights to automatically dim based on the natural sunlight coming into the space. These requirements reduce energy consumption and operating costs when the space is not being used.

The exterior lighting is served by building-mounted HID fixtures located around the facility. HID fixtures are known for their high lighting outputs, but they are not the most energy efficient. The lights could be replaced with more energy efficient LED fixtures to reduce energy usage. Most of the fixtures appear to be in good working condition. Exterior lighting is controlled by fixture mounted photocells, which turn the fixtures on during hours of low light levels.

The shop class utilizes a small room for painting and staining projects. The room should be outfitted with explosion proof lighting and electrical devices, as these are considered classified areas by the electrical code. The chemical storage room should also be updated to allow for safe storage of potentially hazardous materials.

RECOMMENDATIONS

Overall the facility's electrical systems are in good condition. The school has been replacing older equipment as needed, which will help to prevent major breakdowns in the future.

A lot of the existing nylon wall plates are chipped, cracked, or completely gone. This creates an electrical hazard because the live parts of the receptacle can be exposed. A few wall plates have already been upgraded to stainless steel, but there were still a lot of broken nylon plates in the facility which should be replaced with stainless steel wall plates. The surface-mounted receptacles in the gymnasium have also seen a lot of abuse.

- ☑ Recommend that above items be replaced and an impact-resistant cover be added to prevent future damage.

The existing electrical gear is not currently labeled for arc flash hazards. The National Electric Code (NFPA 70) and Handbook for Electrical Safety in the Workplace (NFPA 70E) require that all panels be labeled. Warning labels increase awareness for potential arc flash hazards and provide notification of the proper protective equipment that should be worn.

- ☑ Perform an electrical study to analyze short circuit fault currents, protective device coordination, and arc flash hazards. After the study, the electrical panels can then be labeled with the correct information. The study should be performed prior to purchasing any new equipment to ensure it is properly rated for the available short circuit fault current.
- ☑ Replace football field backboard and add adequate footings. The bus garage panelboard should also be replaced, as it has missing pieces and broken breakers, and finding replacement parts will be difficult.
- ☑ Add new lighting in the bus garage.
- ☑ Replace light fixtures that have warped or broken lenses, especially in the junior high locker rooms.



Figure 7 - Existing exterior HID light



Figure 8 - Light fixture with warped lens

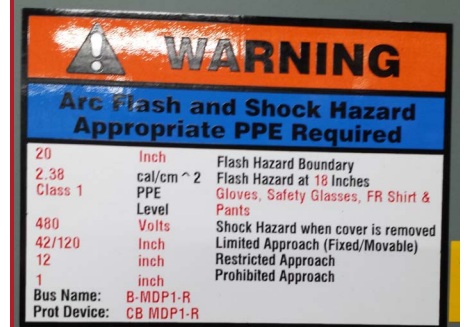


Figure 9 - Example of proper labeling for electrical equipment



PRIORITY	1	2	3
Add switches to gymnasium light circuits to prevent students from accessing the electrical panel	•		
Install explosion proof lighting and electrical devices in chemical storage room	•		
Install explosion proof lighting and electrical devices in finishing room	•		
Add exterior emergency egress lighting near each entrance		•	
Replace football field electrical panel backboard, and provide adequate footings		•	
Replace light fixtures in a junior high locker rooms with vandal resistant fixtures		•	
Replace warped or broken light fixture lenses			•
Replace exterior HID lights with LED			•
Replace nylon wall plates with stainless steel wall plates			•
Replace surface-mounted receptacles in the gymnasium with impact resistant receptacles with covers			•

PHYSICAL CONDITIONS

TECHNOLOGY CONSIDERATIONS

Review of the building information technology system including network documentation, backup procedures, firewall, software, security, and technical support.

OBSERVATIONS

Backup Procedures

District uses local Veeam backups to Synology. Off-site backup locations could be considered.

Server Software

Extended support for Server 2008 ends on Jan. 14, 2020, which means the School District will need to update to a newer Operating System before that date.

Network Documentation

Network documentation was updated in the summer of 2016. This should be updated on an annual basis.

Network Wiring

The school utilizes wireless internet and each classroom is equipped with a wireless access point. These allow devices such as iPads, tablets, etc. to access the internet without the need for a hard wired connection.

Currently there are many school districts utilizing smart boards, and many districts utilizing overhead projectors. Based on the particular Districts needs and curriculum, it is an internal decision as to what type of technology is best. All of the existing classrooms are outfitted with smart board systems. This is considered good, as there are many districts still without these types of systems.

The school is using a public address and intercom system. Each classroom is equipped with a call button and two-way speaker. It allows the teachers to communicate with the main office by pressing the call button.

RECOMMENDATIONS

- Synology could be set up at the Elementary School for backups to be copied over using the built-in Operating System of Veeam. This would help protect data in the event of disaster or a virus outbreak, such as Cryptolocker.
- Update network documentation.

PRIORITY	1	2	3
Create Synology for back-up files	●		
Upgrade to new Operating System			●

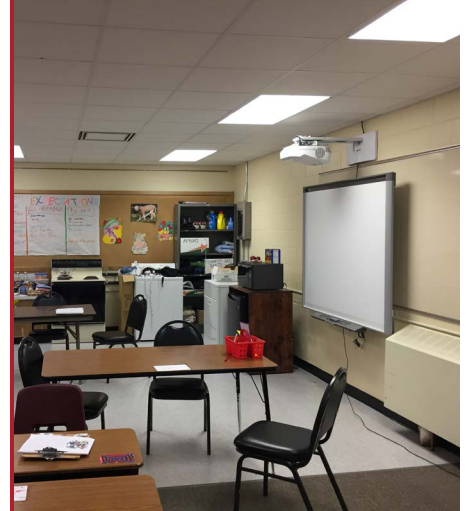


Figure 1 - Typical projector and smartboard

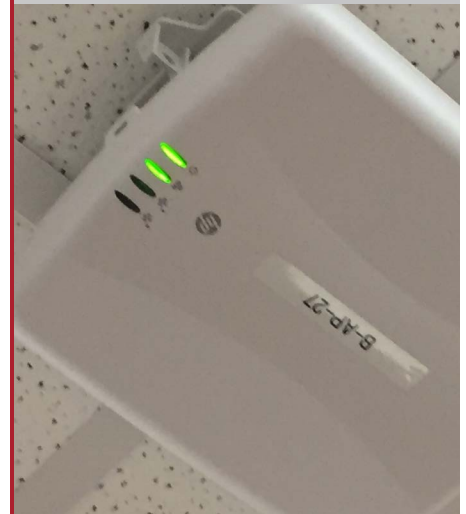


Figure 2 - Typical wireless access point



Figure 3 - Intercom speaker in classroom

PHYSICAL CONDITIONS

SECURITY CONSIDERATIONS

Assessment of the existing security equipment installed throughout the building. Review of existing primary entryways into the facility including door locations and visitor access.



SECURITY CAMERA COVERAGE



Figure 1 - Typical indoor security camera



Figure 2 - Typical access control card reader



Figure 3 - Current custodial staff key ring

OBSERVATIONS

Camera Coverage

The building is outfitted with a CCTV camera system in the main corridors. The school originally utilized analog cameras, but has been upgrading to IP cameras because the analog cameras fail. Ten cameras have been upgraded to IP, which offer better video quality, more advanced video analytics such as motion detection, and more flexibility by allowing cameras to be connected to a local switch and not to the main DVR. A viewing station is located in the main office. The school has a number of security cameras in place, and is generally satisfied with the coverage afforded by the cameras. Flex-Comm Security is the contractor currently used for camera and security maintenance.

Access Control

School personnel indicated there is no master key system for the Middle/High School. Instead, the custodial staff carries several keys. Benefits of a master key system include building control and metered access to certain areas or rooms. In master rekeying, locksmiths can reconfigure locks so that a single key can open all the locks, but the individual locks are still operable with a personnel or change key, which can only open that lock. This means that only the person who controls the master key can open all the locks, yet it allows an allocated member of staff the ability to access certain areas.

Another advantage of master rekeying is that additional locks can be added to the building or campus without requiring new keys to be made except for possibly a change key. Master rekeying generally does not require new hardware, but it could require hardware to be changed out because not all locks allow for interchangeable cores.

Card readers are the next level of security. Card readers allow each individual to be granted access to specific rooms or areas. Cards can be rendered useless with a simple program change. This deletes the card from the system, and no keys need to be retrieved, nor can they be duplicated. However, for it to be 100 percent useful, a card reader is needed on each door, which is a large investment. Thus card readers are usually installed in the entrances and other areas that are determined to be crucial access points. Physical keys are still issued for less critical access points where a lost or duplicated key is not of major consequence.

The school has emergency exit plans posted, and these appear to be adequate. Plans should be updated with any building changes and reviewed to see that they have remained posted and are not defaced in any way.

Secured and Monitored Entrances

Of positive note, the existing building has an access control system at its exterior entryways. This means that entrance to the building is secured and monitored. Entry is limited to individuals with access cards or key fobs. The main building entrance was outfitted with an intercom request to entrance system, which gives the school the ability to allow or deny access to individuals that are requesting to enter the building. All individuals must then enter through the main office before accessing the rest of the school. Each classroom is also equipped with a device for securing the classroom door in the event of a school wide lockdown. As part of the security system, motion detectors are located in the main corridors.

The school currently employs cross bar door restraint systems in the sixth and seventh grade wing. These restraint bars are kept in the room, and in the event of an emergency, the bars can be placed across the door and restrain the doors from being opened from the corridor side. These can be helpful if ample notice can be provided. The weak link is that some doors have sidelights in them, which can be broken to gain entry. The school indicated that a tempered glass was installed at the time. While able to take more impact, this type of glass is by no means unbreakable.

RECOMMENDATIONS

Overall, the School's security considerations maintain safety and work well.

- Add more cameras to improve coverage in the building, as well as adding exterior cameras near all entrances.
- Change over to a master key or card readers system.

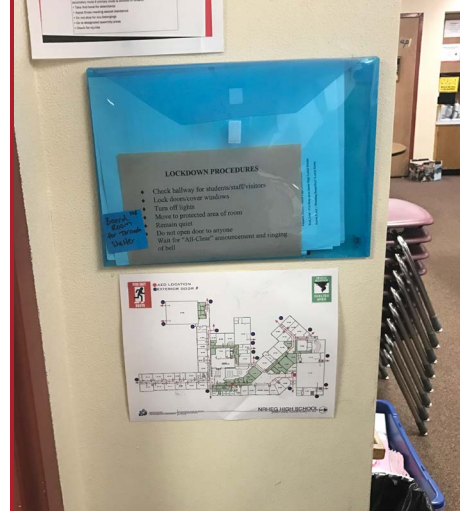


Figure 4 - Lockdown and emergency exit plans

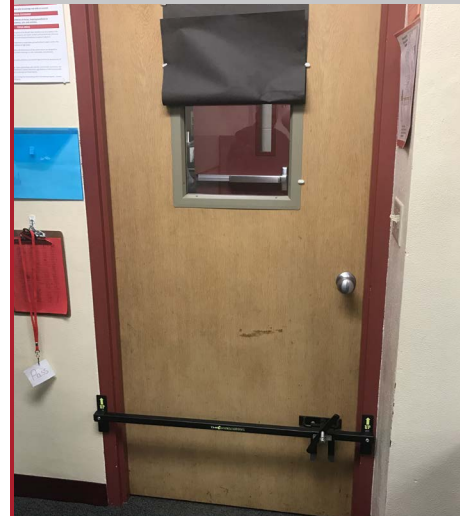


Figure 5 - Cross bar restraint system

PRIORITY	1	2	3
Migrate to electronic access control		●	
Add exterior cameras to improve coverage near entrances			●
Add cameras to improve coverage within building			●

PROGRAMMING + EDUCATIONAL ADEQUACY



PROGRAMMING + EDUCATIONAL ADEQUACY SPACE UTILIZATION

An evaluation of the school's ability to meet State laws, standards and objectives that define an adequate education, as well as the space allocated to different disciplines.

OBSERVATIONS

The NRHEG Secondary School currently houses over 500 students. Grades 6-8 account for 243 middle school students and grades 9-12 make up the balance at 264. The total gross square footage of the building is 115,600 square feet.

Educational Spaces

For the current student enrollment, the overall square footage of the facility is within Minnesota Department of Educational guidelines. As with any educational facility, certain spaces fluctuate in efficiency over time due to varying student loads and changes in curriculum. Below is a review of NRHEG spaces and points of improvement due to those changes and current objectives.

Humanities

For the most part, the humanities classrooms suit the needs of the faculty and students. Technology in those spaces is adequate for instruction, available space is adequate, and general storage is noted as sufficient. Classroom C110 is the only space that had concerns. The HVAC system creates distractions when it turns on because of its loud sound. This room is also larger than necessary and has a disproportionate length to width.

Business

The business education department mentioned the need for collaboration space. Flexible furniture would aid in the attempts to deliver the curriculum that requires small group project settings. Currently there is a movable partition between classrooms 105A and 105B. Unfortunately this partition allows sound to freely travel between the spaces, resulting in a less than ideal teaching environment. Technology needs were also identified as a hurdle. The limited number of desktop computers available and the type of printers limit the scope of projects the students can complete. This curriculum requires technology, and this space is not equipped with the tools to adequately teach it. More electrical outlets are needed for students' devices to be utilized and charged.

Science


Currently in the middle school, science classrooms are not separated from the lab area. Classrooms are equipped with adequate technology from an instruction standpoint, but there are some infrastructure shortcomings. The tables presently outfitting the room lack the necessary electrical outlets to power microscopes, hot plates, and other equipment needed during experiments. One of the existing eye wash station is draining slowly. There is also a need for a prep room, additional storage, sinks at each table, and a lab safe instructional table in the front of the classroom equipped with water and gas connections.

BACKGROUND INFORMATION

Enrollment: 507

GRADES: 6-12

CURRENT STAFF: 35



The high school chemistry and physics classrooms were also discussed. Currently there is only one chemical fume hood, which causes challenges during class exercises. The natural gas and other valves also do not work, and it is assumed that there are no services feeding the hood. From a safety standpoint, the instructor's desk is placed in an area that prohibits easy circulation to the eye wash and shower. In the biology room (DI47), there is only one sink serving a class of students. A flexible instructional table would be a great benefit to the students. Currently the student tables are only equipped with electrical service. Adding water their station would add great value.

Technical Education and Agricultural Science

The technical education and agricultural science courses share the same teaching environment. With current student enrollments, there are typically one to two hours of the day when the classroom is used simultaneously by both classes. Serving both curricula in one space creates some challenges. One is the safety concern with having the welders in the same space as the wood used for carpentry tasks. Currently there are eight arc welding stations and four oxyacetylene welding stations. These activities are separated as much as possible, and ventilation of the welders is sufficiently exhausting the air.

Due to grants received, the equipment within the shop area is sufficient to deliver the lessons being taught. Tools for cabinetry making could be added if the school decides to offer it. The ventilation, including the dust collector, is working well. The one exception is in the paint room, where the exhaust fan needs upgrading. There are many tools and equipment within this space. There is space outside of the shop area being used as a greenhouse. Unfortunately it is too small to accommodate 20 students that would be in a class setting. It also lacks amenities to succeed in being a full greenhouse. The small engines room is also being used for the wiring instruction. This requires equipment to be changed between classes. The electrical service feeding the wiring room could be improved.

The need in the technical education and agricultural science area is space. If there was a possibility to separate the wood working areas from the metals area, the students would experience less congestion during class and would learn in a safer environment.

Family and Consumer Science

Family and consumer science currently serves a residential based curriculum. While the space is undersized for a typical lab setting, the instructor has sufficiently served the students' needs. There is a movable partition that enables the classroom to be separated into two learning stations. However, due to the lessons being taught, this wall is never operated. Recommendations by staff were to remove it all together. Infrastructure is showing some age and the electrical circuits in the classrooms often trip. Heating in the adjacent storage room is also insufficient.

Physical Education and Athletics

Currently there are two gymnasiums being utilized for physical education at the Middle and High Schools. Classes range from 20 to 22 students and there have been no scheduling issues to date.

The weight room is used as a teaching station for the strength training unit. This space is undersized and many units utilize the corridor for extra space during instruction. A power lift station is desired, but there is currently not enough space. The school does not have a fitness center. Cardio equipment is desired, and unfortunately there is no dedicated space for it at this time. Storage in the main gym is slightly insufficient

and shared between physical education and athletics. The auxiliary gym's storage is undersized for the amount of equipment allocated to that space.

While locker room size has not been an issue, they are shared by physical education and athletics. The girls locker room is slightly smaller than the boys locker room and there is no dedicated varsity locker room. Ventilation and water pressure in the boys locker room was noted as an issue.

Exterior fields serve the outdoor activities adequately.

Special Education

Special education currently has one full-time teacher and one part-time instructor. Recent and projected student load demands are creating a necessity for two full-time teachers. Currently there is a shared workroom between Middle School and High School SPED staff.

The teaching day is divided between core learning and home learning exercises. One room has a smart board; the second is in need of a teaching wall and display. These rooms were renovated from kindergarten classrooms. Unfortunately some items, such as the casework, were not updated to sufficiently serve the students. Students utilize existing casework for personal storage, and it is too small and distracting. Space for small group exercises are limited, and finding space for small group testing is a challenge. The student commons is often used, but in general, spaces that used to be available are no longer available.

The classrooms only have a single small bowl, and a larger double sink is desired. Restroom were not changed from the kindergarten size, which does not allow proper assistance and supervision required for the environment. Ventilation should be provided above the cooking surfaces as well. Electrical outlets are a premium, and unfortunately often trip the circuit breakers.

Art

Art classes are provided all year for 6th graders. Seventh and eighth graders have it for one quarter each year, as classes rotate through. It is offered as an elective to high school students.

Current curriculum includes photography, graphic arts, ceramics, drawing, and painting. Due to the cleanup time and storage required, ceramics is limited to one semester. There are currently three wheels and one kiln serving the instruction. Photography utilizes digital cameras because the original dark room has been vacated. Currently, there are 13 computers available for editing and graphic design instruction with space to add seven more.

The four sinks in the classroom serve the space well. Electrical outlets, once again, were noted as a premium. As noise between classrooms can be heard, there are some acoustic issues. Unfortunately, there is no natural light in the art rooms. Old cafeteria table are being used for instruction. Appropriate flexible furniture and newer computers were noted as a priority.

Music

The band room is utilized seven periods a day. Middle school students alternate use each day of the week. Concert band, which consists of 9th through 12th grade students, is in the space every day during fifth hour. Jazz band then fills in the schedule on Tuesdays and Thursdays.

The space currently is equipped with risers that work well for the instructor and curriculum. There is a ramp to the outside which offers good circulation, and the top riser opens out to the gymnasium. Instrument storage is around the room on the outside wall. While it is sufficient in size, it is not specific to instrument sizes, and organization is compromised. There is also an auxiliary room that serves as instrument storage. The room is furnished with appropriate technology, though a ceiling-mounted projector would be preferred over the currently used cart. Headsets and general audio are in working order.

The room lacks dehumidification. This creates an uncomfortable learning and practice environment in late spring as the temperature rises. Secondly, the current acoustical treatments are not sufficient. The floor finish is also old carpet that does not offer the same cleaning advantages as newer types. Generally the room is sized adequately. But when the full concert band is in the room, it feels a bit cramped.

One item that was noted by more than one staff member was the need for a venue for students to perform. Currently the gymnasium is utilized for student performances, which lacks the acoustics that are conducive to a performance space. Seating and spectator orientation also creates distractions that detract from the students' performance. The end result is a space that does not support the efforts that the students pour into each concert.

Drama

NRHEG offers theatre and drama as an extension to its English and speech departments. Performance setting was noted as the primary obstacle for the program. The current stage, which serves the gymnasium, is large enough, but is not equipped with any valuable acoustical treatment. Lighting is designed for general use only, and does not have controllable spotlights, which are crucial for theatrical performances. Access to the stage is narrow and limited. The audience experience is compromised as well. Spectators are forced to sit in the gymnasium bleachers and folding chairs on the floor. The HVAC system is loud and only compounds the inadequacy of the overall acoustics. The fear is that due to the less than adequate venue of the performances, the students' hard work is not validated and reduces their enthusiasm to participate.

RECOMMENDATIONS

- Add electrical outlets throughout all of the departments.
- Reorganize humanities classroom (CI 10) to improve space efficiency and improve HVAC system.
- Set aside a collaboration space for the business department. This could be provided by a movable partition between classrooms 105A and B, but this solution has the drawbacks of poor sound insulation and limited resources, including desks, electrical outlets, and printers, that are necessary for teaching.
- Set aside additional space to provide separation between the Middle School's science labs and classrooms. Other important resources, such as more storage, sinks, and an instructional table, are also needed.
- Add chemical fume hood to High School science classrooms in addition to more water stations, and an instructional table.

- ✓ Move current placement of the teacher's desk in the chemistry classroom to a different location to facilitate access to the eye wash and shower in case of an emergency.
- ✓ Add space to technical education and agricultural science courses where classes should be taught in separate classrooms, especially if student enrollment increases. The shared space creates safety concerns.
- ✓ Upgrade exhaust fan in the paint room and install cameras in the shop space to limit theft and increase safety during instruction.
- ✓ Expand and upgrade green house to allow a class of students to utilize it.
- ✓ Improve electrical service in the wiring room.
- ✓ Expand family and consumer science department's storage space and remove partition.
- ✓ Add space to the physical education and athletics department. There is not enough room for desired cardio equipment and a power lift station, storage, and strength training unit.
- ✓ Relocate special education storage areas to remove distractions and free up valuable teaching space. Additional space is another concern for this department. A larger, double sink should be added and restrooms need to be updated from their original kindergarten size. Consolidating the Middle and High School SPED programs would assist in collaboration and para sharing.
- ✓ Provide art department with newer computers, flexible furniture, and an adjusted layout to improve natural light and acoustic issues.
- ✓ Improve acoustic treatments in the band room and replace the floor with a newer finish. HVAC in the room also should be addressed. Changing the current chairs to stackable chairs would increase the flexibility of the band room, and options for an improved concert venue should be explored.
- ✓ Add a new performance venue to benefit the drama department. Technology such as controllable spotlights, a quiet HVAC system, and better spectator seating would improve the students' experience.



Grade Configuration:		6th Grade - 12th Grade									
Current Student Population		507									
Staff		35									
Description	Notes	Comments	Room #	Usage	Shared Space	Subtotal	Recommended				Current Max. Student Capacity
							Low Range	High Range	Avg. Student Capacity	Student Capacity Range	
School Learning Spaces											
Classrooms											
PRE- K		Including restrooms	C115	Full time	No	1,194	1,000	1,400	20	15-25	19
6th - 8th Grade Social Studies	Oversized		B120	Full time	No	1,166	850	950	24	20-28	30
6th - 8th Grade Math	Undersized		B124	Full time	No	826	850	950	24	20-28	21
Health Classroom	Oversized		B136	Full time	No	1,095	850	950	24	20-28	28
6th Grade Classroom	Undersized		C109	Full time	No	845	850	950	24	20-28	22
6th - 8th Grade Language Arts	Oversized		C110	Full time	No	1,287	850	950	24	20-28	33
6th Grade Classroom	Undersized		C111	Full time	No	845	850	950	24	20-28	22
6th Grade Classroom			C112	Full time	No	856	850	950	24	20-28	22
HS Language Arts Classroom	Oversized		D102	Full time	No	1,026	850	950	24	20-28	27
HS Language Arts Classroom			D103	Full time	No	862	850	950	24	20-28	22
HS Social Studies Classroom			D104	Full time	No	885	850	950	24	20-28	23
HS Social Studies Classroom	Undersized		D105A	Full time	No	834	850	950	24	20-28	21
HS Math Classroom			D106	Full time	No	892	850	950	24	20-28	23
HS Math Classroom			D107	Full time	No	892	850	950	24	20-28	23
HS Spanish Classroom			E106	Full time	No	879	850	950	24	20-28	23
HS Language Arts Classroom			E110	Full time	No	862	850	950	24	20-28	22
6th - 8th Grade Science Classroom/Lab	Undersized		B122	Full time	No	826	1,200	1,500	24	20-28	14
HS Science Classroom/Lab	Undersized		D147	Full time	No	1,152	1,200	1,500	24	24	20
HS Science Classroom/Lab			D143	Full time	No	1,445	1,200	1,500	24	24	25
Science Lab Prep/Storage	Oversized		D145	Full time	No	575	350	350	n/a		
Subtotal (Classrooms)						18,050	17,700	20,500	447		421
Special Education											
Special Education Classroom	Oversized		C105	Full time	No	851	450	450	6	5-8	8
Special Education Classroom/Lab	Oversized	Future Life Skills	C106	Full time	No	1,248	800	1,200	6	5-8	8
Special Education Classroom	Oversized		C107	Full time	No	845	450	450	6	5-8	8
Special Educatoin Classroom - Pullout	Oversized		C113	Full time	No	866	450	450	6	5-8	8
Special Educatoin Classroom/Lab-Current Life Skill			C114	Full time	No	855	800	1,200	6	5-8	6
Special Educatoin Classroom - Pullout	Oversized		E105	Full time	No	564	450	450	6	5-8	8
Special Education Classroom	Oversized		E109	Full time	No	879	450	450	6	5-8	8
Special Educatoin Office	Oversized		Adj., S. of D157	Full time	No	210	100	150	n/a		
Subtotal (Special Ed.)						6,318	3,950	4,800	43		53
Technical Educaton											
Tech Lab	Undersized	Small Engines	West of B106	Full time	No	478	1,800	2,400	22	25	4
General Shop	Oversized		B106	Full time	No	3,564	2,000	3,000	22	25	30
CADD / Graphics	Facility Deficient			Full time	No		1,400	2,000	22	25	
Principals of Technology - Ag Classroom	Undersized		B135	Full time	No	1,009	1,200	1,400	22	25	16
Ag Office	Oversized		B135A	Full time	No	178	100	150	n/a		
Lab Prep		Paint Room	west of tool stor	Full time	No	131	100	150	n/a		
Storage	Undersized		West of B106	Full time	No	110	350	350	n/a		
Subtotal (Technical Education)						5,470	6,950	9,450	87		50
Common Spaces											
Small Group/Conference/Office - Community Ed	Oversized		B121 & B120A	Full time	No	624	150	200	n/a		
Small Group/Conference/Office - Speech	Oversized		C104	Full time	No	258	150	200	n/a		
Large Group - Team Learning Areas	Facility Deficient			Full time	No		1,500	2,000	150	150	0
Subtotal (Common Spaces)						882	1,800	2,400	150		0
Library / Media Center											
Entrance / Circ / Distribution			Media Center	Full time	Yes	700	700	900	n/a		
Seating / Stacks Comp / Ref (8-10% stud. x 35SF)	Oversized		Media Center	Full time	Yes	2,015	1,420	1,775	n/a		
Librarian Office	Oversized		Adj South Office	Full time	No	212	150	150	n/a		
Small Group / Conf / Office	Oversized		D138A	Full time	No	490	150	200	n/a		
Multimedia Production	Facility Deficient			Full time	No		300	400	n/a		
Classroom	Oversized		D139	Full time	No	1,083	800	800	n/a		
Workroom / Storage	Facility Deficient			Full time	No		400	600	n/a		
Professional Library	Facility Deficient			Full time	No		200	200	n/a		
Subtotal (Library / Media Center)						4,500	4,120	5,025	0		0
Business / Marketing											
Classroom	Undersized		D105B	Full time	No	834	1,000	1,200	24	25-35	18
Classroom / Lab	Undersized	Serves as HS CPU La	D148	Full time	Yes	1,164	1,200	2,400	24	25-35	15
Subtotal (Business / Marketing)						1,998	2,200	3,600	48		33
Family and Consumer Sciences											
Classroom	Facility Deficient			Full time	Yes		900	1,000	22	20-24	0
Classroom/Lab			E104	Full time	Yes	1,229	1,200	1,500	22	20-24	19
Storage			North of FACS			206	200	300	n/a		
Subtotal (Family and Consumer Sciences)						1,435	2,300	2,800	43		19
Technology											
Computer Lab		Shared with Business	D148	Full time	Yes	1,148	1,000	1,400	n/a		
Control and Headrooms	Undersized		D149	Full time	No	442	640	740	n/a		
Copy Center	Facility Deficient			Full time	No		500	800	n/a		
ITV/Distance Learning	Facility Deficient			Full time	No		900	900	n/a		
TV/Video Studio	Facility Deficient			Full time	No		1,250	1,250	25	25	0
Subtotal (Technology)						1,590	4,290	5,090	25		0

Description	Notes	Comments	Room #	Usage	Shared Space	Subtotal	Recommended			Student Capacity Range	Current Max. Student Capacity
							Low Range	High Range	Avg. Student Capacity		
Art/Science											
Multipurpose			D153	Full time	No	1,336	1,200	1,500	24	20-28	23
Drawing and Painting	Facility Deficient	Share D153		Full time	No		1,200	1,500	24	20-28	0
Ceramics	Facility Deficient	Share D153		Full time	No		1,500	1,500	24	20-28	0
Kiln/Glazing/Clay/Damp Rm.	Undersized	Shared with Storage	D154	Full time	No	222	400	600	n/a		
Storage	Undersized	Shared with Kiln	D154	Full time	No	221	350	350	n/a		
Photography	Facility Deficient			Full time	No		1,000	1,200	24	20-28	0
Darkroom	Facility Deficient			Full time	No		400	800	n/a		
Office	Facility Deficient			Full time	No		120	120	n/a		
Subtotal (Art)						1,779	6,170	7,570	97		23
Music											
Instrumental	Undersized		F127	Full time	No	1,800	2,000	3,000	75	60-90	32
Choral	Undersized		F126	Full time	No	1,157	1,500	2,200	55	60-90	20
General Music	Facility Deficient			Full time	No		1,000	1,000	30	25-35	0
Instrumental Stor. & Circ.	Facility Deficient			Full time	No		600	800	n/a		
Uniform Storage	Facility Deficient			Full time	No		300	400	n/a		
Choral Robe Storage	Facility Deficient			Full time	No		60	80	n/a		
Small Practice	Undersized		F126A, F127A	Full time	No	93	100	150	n/a		
Group Practice	Facility Deficient			Full time	No		350	450	n/a		
Ensemble Keyboarding Lab	Facility Deficient			Full time	No		750	750	n/a		
Recording Control Room	Facility Deficient			Full time	No		100	150	n/a		
Music Library	Facility Deficient			Full time	No		150	200	n/a		
Office / Lesson Studio	Oversized		F126B, F127B	Full time	No	401	100	200	n/a		
Instrument Repair	Facility Deficient			Full time	No		75	75	n/a		
Performance Equipment Storage	Oversized		Off of Stage F11	Full time	No	306	200	300	n/a		
Subtotal (Music)						3,757	7,285	9,755	160		52
Physical Education/Athletics											
Gymnasium (Two Stations)	Undersized	High School Gymnasium	F113	Full time	No	8,044	12,000	14,000	58	52-60	35
Multipurpose / Auxilliary Gymnasium		Middle School Gymnasium	A108	Full time	No	7,500	3,200	7,500	28	26-30	39
Wrestling Room		Lower Level		Full time	No	1,681	n/a	n/a	n/a		
Weights / Fitness	Undersized		D152	Full time	No	856	2,000	4,000	28	26-30	7
Pool	Facility Deficient			Full time	No		10,000	12,000	28	26-30	
Diving Well	Facility Deficient			Full time	No		1,500	2,500	n/a		
Physical Education Locker Rms (1 SF / Stud Cap.)	Undersized		Off of A108	Full time	No	1,148	1,241	1,241	n/a		
Athletic Locker Rooms		Lower Level		Full time	No	2,968	1,500	3,000	n/a		
General Storage (300 Per Station)	Oversized		Off of Stage F11	Full time	No	306	300	300	n/a		
Athletic Storage	Undersized		A112	Full time	No	469	1,000	1,200	n/a		
Spectator Seating (10 SF / Person - Bleachers)	Facility Deficient			Full time	No		0	0	n/a		
Training Room	Facility Deficient			Full time	No		200	400	n/a		
Laundry	Facility Deficient			Full time	No		200	200	n/a		
Middle School PE Office	Undersized		South of A112	Full time	No	101	200	200	n/a		
High School PE Office	Undersized		D156	Full time	No	149	200	200	n/a		
Athletic Director's Office	Oversized		D157	Full time	No	202	200	200	n/a		
Subtotal (Physical Education / Athletics)						23,424	33,741	46,941	141		81
Subtotal - School Learning Spaces (NSF)						69,203	90,506	117,931	1,241	1138-1453	732
											732
											659
											507
											77%
School Support Spaces											
Administration / Health Services											
Reception / Waiting	Oversized	Shared with Area 1	1*	Full time	Yes	775	250	400			
Principal	Oversized		7*	Full time	No	246	150	200			
Assistant Principal			6*	Full time	No	183	150	200			
Secretarial Work Station		Shared with Area 1	1*	Full time	Yes	100	80	100			
Work Room and Mail Area		Shared with Area 1	1*	Full time	No	300	300	300			
Small Conference Room	Oversized		10*	Full time	No	305	150	200			
Large Conference Room	Oversized		9*, D138B	Full time	No	440	250	400			
Other Offices	Oversized		2,3,5*	Full time	No	635	100	150			
Restroom	Facility Deficient	Area C Rest Rooms		Full time	Yes		120	180			
Scheduling / Computer Services	Facility Deficient			Full time	No		150	250			
School Nurse / Health Services	Undersized	Including Rest Room	8, 8A*	Full time	No	202	600	800			
Subtotal (Administration / Health Services)						3,186	2,300	3,180			
Guidance / Student Services											
Guidance Office	Facility Deficient			Full time	No		150	150			N/A
Secretarial Work Station	Facility Deficient			Full time	No		80	100			
Conference Room	Facility Deficient			Full time	No		150	200			
Psychologist, Social Worker Office	Oversized	Mental Health & Social Work of MC & B139		Full time	No	611	100	150			
Career Center	Facility Deficient			Full time	No		400	1,000			
Testing	Facility Deficient			Full time	No		100	100			
Records / Supplies / Storage	Undersized		NW of common	Full time	No	108	200	250			
Student Store / Activities	Facility Deficient			Full time	No		400	700			
Subtotal (Guidance / Student Services)						719	1,580	2,650			

Description	Notes	Comments	Room #	Usage	Shared Space	Subtotal	Recommended		Avg. Student Capacity	Student Capacity Range	Current Max. Student Capacity
							Low Range	High Range			
Teachers / Staff											
Planning Work Stations (50 SF per staff)	Facility Deficient			Full time	No		1,750	1,750			
Offices	Facility Deficient			Full time	No		100	150			
Conference/Kitchenette/Print (10-20 SF per staff)			D108	Full time	No	574	350	700			
Toilets	Undersized		D108A, D108B	Full time	No	87	120	180			
Subtotal (Teachers / Staff)						661	2,320	2,780			
Food Service											
Cafeteria Dining Space (14-16 SF per stud.)	Undersized		Commons	Full time	No	5,263	7,098	8,112			
Staff Dining Space (20 SF / staff dining)	Facility Deficient			Full time	No		480	480			
Kitchen	Oversized		Kitchen	Full time	No	1,414	500	1,000			
Serving Line	Undersized		In Upper Commo	Full time	No		800	800			
Dry Food Storage	Undersized		B138	Full time	No	283	300	300			
Cooler	Facility Deficient			Full time	No		250	250			
Freezer	Undersized		East of B105	Full time	No	130	350	350			
Dishwasher	Oversized		Norht of Kitcher	Full time	No	317	300	300			
Office	Oversized		South of Kitcher	Full time	No	352	150	150			
Locker Rooms / Restroom	Facility Deficient			Full time	No		120	120			
Receiving and Holding	Oversized		B105	Full time	No	575	300	300			N/A
Table Storage	Facility Deficient			Full time	No		800	1,000			
Subtotal (Food Service)						8,334	11,448	13,162			
Auditorium											
Seating - 250 seats	Facility Deficient						2,500	2,500			
Stage	Facility Deficient						2,200	3,000			
Dressing Rooms	Facility Deficient						400	500			
Make-Up Room	Facility Deficient						200	250			
Restrooms with Showers	Facility Deficient						128	128			
Costume Storage	Facility Deficient						150	225			
Scene Shop	Facility Deficient						800	1,000			
Lobby	Facility Deficient						492	1,000			
Restrooms in Lobby Area	Facility Deficient						600	600			
Control Room	Facility Deficient						200	240			
Dimmer Room	Facility Deficient						120	150			
Catwalks	Facility Deficient						600	1,000			
Loading Bridge	Facility Deficient						150	150			
Piano Storage	Facility Deficient						80	80			
Other Options	Facility Deficient										
Subtotal (Auditorium)						0	8,620	10,823			
Subtotal - Net School Support Spaces						12,900	26,268	32,595			
Combined Subtotal - Net	Net School Learning Spaces + Net School Support Spaces						82,103	116,774	150,526		
Building Support Spaces											
Building Systems and Maintenance											
Custodial	Undersized		East of B105	Full time	No	332	400	600			
Custodial Closets	Oversized		21,22,23,24*			353	40	40			
Restrooms	Undersized	2.5% x NSF	BRR,CRR,DRR	Full time	No	1,479	2,053	2,053			
General Storage	Undersized	3% x NSF	West of MC	Full time	No	2,170	2,463	2,463			N/A
Mech/Elec Interior Systems	Undersized	7.5-8.5% x NSF	B101, LL	Full time	No	6,149	6,158	6,979			
Circulation and Structure		35-45% x NSF	Throughout	Full time	No	30,601	28,736	36,946			
Subtotal - School Support Spaces						41,084	39,849	49,081			
TOTAL BUILDING (GSF)						123,187	156,623	199,606			



ADDITIONAL PROPERTY CONDITIONS



ADDITIONAL PROPERTY CONDITIONS

ELLENDALE BUS GARAGE

OBSERVATIONS

Plumbing

3/4" water service that supplies water the restroom, water heater, and hose bibs. No roof drainage sheet roofing. 4" sanitary sewer. Standard gas service.

Mechanical System

Infloor heat with boiler to heat the building. There is not any unit heater or exhaust fans with louvers for code complaint ventilation for a bus storage space, thus no CO or NO2 detection.

Additional Notes

1. Trip edge at overhead doors
2. Damaged metal around building along base of exterior
3. Damaged overhead door (3)
4. Damaged soffit
5. Damaged metal at overhead door
6. No rubber door seal at overhead doors
7. Missing overhead door metal jam
8. Many trench drain grates rotten and damaged thus bad tripping hazard
9. Trench drain extremely full of sand. Will fill separator if not cleaned soon
10. Trench drain grate missing about a 18"
11. Damaged rubber seal on bottom of overhead doors (4)
12. Pressure washer piping not secured to wall
13. No backflow prevent device at water connection
14. Missing leg to mop sink/lavatory sink



Figure 1

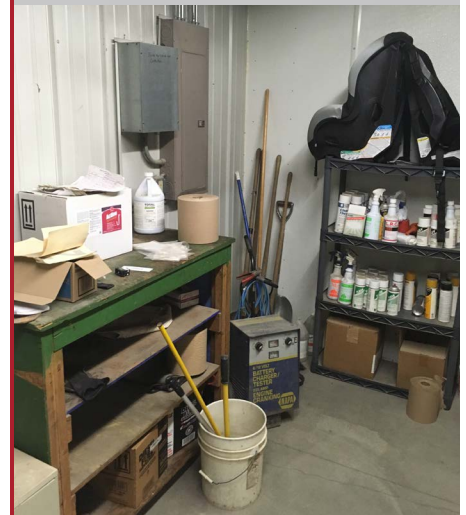


Figure 2

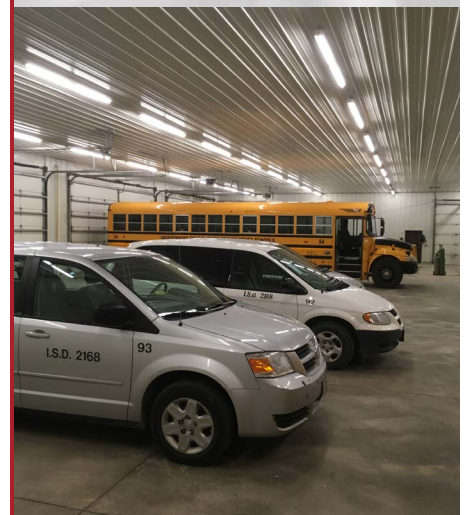


Figure 3



Figure 1



Figure 2



Figure 3

ADDITIONAL PROPERTY CONDITIONS

ELLENDALE SOFTBALL FIELDS

OBSERVATIONS

1. North most field has lots of weeds in the gravel play area
2. Fencing post top not properly installed, missing top rail in one section

ADDITIONAL PROPERTY CONDITIONS

NEW RICHLAND BUS GARAGE

OBSERVATIONS

The District operates and maintains a bus garage approximately 0.5 miles north of the school on the corner of 5th Street Northwest and Broadway Avenue North. The lot contains a bus garage and shop area. An aggregate surface surrounds the building, and there is a concrete walk in front of the building. The roof is metal, and there are only gutters on the north portion of the building. Rain sheet flows off the metal roof to the east and west where no gutters are present. The entrance to the bus garage site is shared with the County and City. A sanitary manhole is located within the aggregate surfacing to the east of the driveway. The site needs some additional aggregate surfacing and improvements at the pedestrian door on the west side of the building. There is trip hazard upon entrance into the building at the pedestrian door. This hazard can be eliminated with additional surfacing and repairing the concrete sidewalk.

The building consists of the original masonry block building with a newer post frame constructed bus garage attached to it. The majority of the buses are parked in the pole structure, as bus length has increased over the years. The number of buses has also necessitated the larger building.

The original building has block walls and an assumed metal joist roof with a wood truss roof added over the top of that. Block condition is fair. The exterior of the block has been painted and is peeling in various locations. The walls are assumed to have no insulation value based on the construction type and era constructed.

Windows in the original building are metal frame single pane glass in poor condition.

A restroom is present in the original building. It is mostly original to the construction of the building and could use some updating. While not a high usage restroom, paint and updated accessories would be in order.

Various fluids needed for bus operation are stored inside the building. Quantities of oils were not available, but may necessitate containment type storage if they exceed volume requirements. The fuel tank located outside the building is a dual wall unit that appears to be compliant.

Floor elevation between the original and the pole structure changes about 6 inches at the doorway between the two buildings. Any ADA type access for the building is not present, nor is the restroom considered accessible. While the operation and personnel operating the buses generally do not require ADA features, the school should be aware accommodations may become necessary in the future.

The pole structure is of typical construction. Metal panels are utilized at walls, roofs, and at the interior. Some metal damage has occurred over time, but has no major impact other than appearance. Aside from normal maintenance, the building is providing adequate use.

Walk-in doors for the facility are metal, but with wood frames. These are a very low security door. Life expectancy is also low on them due to the wood jambs. When doors are replaced, metal frame doors are suggested. The building may benefit from some gutters being installed, but these can also be a maintenance item as they fill with tree debris.



Figure 1 - Bus garage restroom

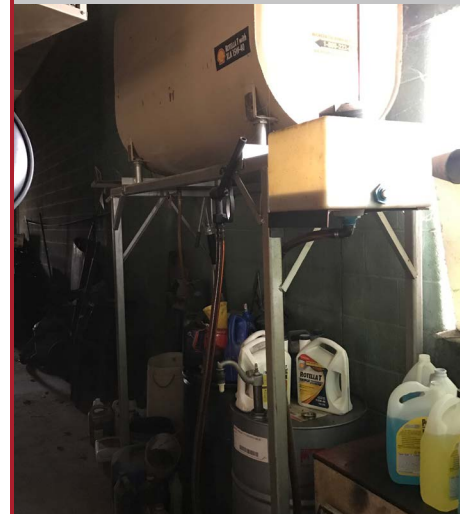


Figure 2 - Fluid storage



Figure 3 - Exterior paint peeling



Figure 4 - Overall view of bus garage



Figure 5 - Foundation isolation

The bus garage is served by an overhead electrical service on the west side of the building. The service size was increased when the additional bus parking structure was added. The older part of the bus garage is still served by the original panelboard.

RECOMMENDATIONS

- Replace windows.
- Adjust ADA compliant building needs.
- Pain restrooms and have fixtures updated.
- Install Metal door frames as doors are replaced.

PRIORITY	1	2	3
Replace single pane windows		●	
Repaint exterior of building		●	
Increase door security		●	
Update building and restroom to be ADA compliant			●
Repaint restroom and update fixtures			●

ADDITIONAL PROPERTY CONDITIONS

HIGH SCHOOL STADIUM/CONCESSION

OBSERVATIONS

The electrical service at the football field is mounted on a wooden backboard that is starting to lean. It appears that the backboard is currently being held up by PVC electrical conduits. This puts a lot of stress on these conduits, and the plastic will eventually break. If the conduit breaks, water will enter into the conduit, which can cause problems if it gets into the electrical system.

Access inside the building wasn't possible during the site walk-through. The building from the exterior appears to be a wood frame structure. Wood panel siding is on the exterior with asphalt shingles on the roof.

The exterior is in need of paint. Wood panel sidings need to be maintained regularly otherwise the siding becomes delaminated, leaving only replacement as an option. Siding located close to the ground appears to be in poor condition and may require replacement prior to painting. Shingles appear to be original to the structure and may need replacement within a few years. Walk in doors are also wood frame doors, and if not maintained and kept painted, they can deteriorate quickly.

A wood frame storage garage is also situated just west of the concessions building. This is in similar condition and construction of the concession stand. Again access was not possible to the interior during our walk-through. Some siding on the south side of the building was deemed in need of replacement due to deterioration/delamination.

RECOMMENDATIONS

- Paint exterior of the stadium and concession stand.
- Replace necessary siding prior to painting. Siding on the storage garage needs to be replaced.

PRIORITY	1	2	3
Replace siding on south side of building and as needed	●		
Replace shingles		●	
Paint exterior of stadium and concession stand		●	



Figure 1 - Concession stand and press box

PRIORITIZED TASK TABLES



PRIORITY TABLES

PRIORITY SUMMARY

Based on the items evaluated in the previous sections, any issues or deficiencies documented have been assigned a level of priority and an estimate for costs.

The following summary outlines the priority levels within this report, as well as the recommended time frame to address any issues.

PRIORITY	ISSUE	DESCRIPTION
1	Life Safety	As typically noted by Fire Marshall/ Life Safety Officials.
	Deterioration	Further deterioration will create higher future repair costs or may cause damage to other areas of the structure.
	Health	Areas that do not meet the state health code requirements. Mechanical systems that do not currently comply with ASHRAE Standards are given a high priority. However, these upgrades are not mandated and would not be required unless other substantial work is being done to the facility and systems in question.
	Accessibility	Items that must be completed to allow access to the building or primary function areas within the building.
	Haz. Materials	Items that pose a significant impact to building occupants.
2	Energy	Item results in payback within 10 years or less.
	Deterioration	Material or system that currently functions but will require replacement or major maintenance within five years.
	Accessibility	Modifications required to meet state guidelines.
	Haz. materials	Removal of items affected by other changes occurring in Priority 2.
3	Health	Inadequate exhaust and ventilation near lab equipment or other areas lacking adequate ventilation.
	Energy	Item results in payback in more than 10 years.
	Health	Items that do not meet state health code requirements.
	Deterioration	Material or system currently functions but will require replacement or major maintenance in 6-10 years.
4	Haz. Materials	Removal of item affected by other changes occurring in Priority 3.
	Aesthetics	Item which impacts the visual environment.
	Haz. Materials	Removal of items affected by other changes occurring in Priority 4.
4	Accessibility	Items which do not meet full requirements of federal accessibility guidelines.

The issues with the highest priority items, include life safety deficiencies, while less urgent issues including necessary maintenance, replacement, and aesthetic improvements are defined with lower priority levels. While lower priority items still warrant attention, they are not critical to safety, security, or health concerns.

Please note that current costs shown are estimated construction costs only. For total project costs, 20% - 25% should be added to the construction costs of the following items:

- Project administration
- Permitting
- Owner fixtures and finishes
- Design fees

PRIORITY TABLES

NRHEG ELEMENTARY

PRIORITY	ISSUE	DESCRIPTION/TASK
1	Site	Regrade areas adjacent to building to direct water away from building
	Site	Regrade area around door 11W
	Site	Repair drain by door 10W (appears to be draining into wall)
	Site	Repair concrete slope issues outside door 13W
	Site	Replace sidewalk panels near doors 6S and 7S
	Site	Regrade playground area and provided additional fill around sidewalks and stoops to eliminate trip hazards. Reseed and reestablish grass areas.
	Site	Install gate at NE corner of playground area
	Site	Repair roof drain leaders in playground area to extend to ground surface
	Site	Provide rip rap or other energy dissipation devices at roof drain outlets to reduce erosion issues
	Site	Sand and repaint football goal posts
	Site	Replace sidewalk panels in front of door 13W to eliminate trip hazard
	Exterior	Recaulk building control joints
	Exterior	Tuckpoint area below windows at door 3E
	Exterior	Tuckpoint area near door 75 and in the corner by door 8S
	Exterior	Tuckpoint approximately 25-50% of south, west, and north sides of C-wing
	Exterior	Replace missing bricks on south side of the building
	Exterior	Repair control joints on the exterior walls of the competition gym
	Exterior	Repair roof drains, associated insulation and supports
	Exterior	Verify roof drains for cafeteria and gym do not leak
	Exterior	Replace missing chimney cap
	Exterior	Repair masonry cracking in area of missing chimney cap
	Exterior	Investigate/Repair potential roof leaks in corridor outside locker rooms (D112 + D119)
	Exterior	Investigate/Repair potential roof leaks along east cafeteria wall outside room A119
	Exterior	Investigate/Repair potential water infiltration in C108

PRIORITY	ISSUE	DESCRIPTION/TASK
1 CONT.	Interior	Cracks should be further reviewed by an engineer to determine possible causes and required repairs
	Interior	Seal leaks at door 8S
	Interior	Replace broken pane of glass in boys locker room
	Interior	Replace broken pane of glass in fire cabinet outside competition gym
	Structural	Repair cracks in select interior/exterior CMU walls
	Structural	Tuckpointing and sealants
	Structural	Crack at stage area
	Life Safety	Fix sidewalk elevation differences
	Life Safety	Conduct ongoing maintenance of fire doors and walls due to no fire sprinkler system
	Mechanical	Add dehumidification to entire building
	Mechanical	Remove or seal old unit ventilator louvers for classroom B115 to eliminate water accumulation on the floor
	Mechanical	Improve HVAC system in band/choir area (D107) to include DDC
	Mechanical	Remove and replace HVAC system in old locker rooms under stage
	Mechanical	Update mechanical system for old gymnasium (B125)
	Mechanical	Install permanent stair or ladder access to gymnasium air handling unit (B125)
	Mechanical	Insulate pipe in gymnasium air handling area (B125)
	Mechanical	Replace leaking thermostat for gymnasium with digital controls
	Mechanical	Shorten flex duct runs in cafeteria HVAC system to not more than 5'
	Mechanical	Repair pipe insulation above cafeteria ceiling
	Mechanical	Install makeup air unit for kitchen
	Mechanical	Convert all controls to DDC for the facility
	Mechanical	Install air supply/exhaust to workshop area adjacent to boiler room
	Mechanical	Replace damage exterior louvers
	Mechanical	Remove unused exterior louvers and verify cap on backside to prevent water intrusion
	Mechanical	Review control sequencing to ensure energy recovery wheels are operating
	Electrical	Add GFCI protection to outlets near sinks
	Technology	Upgrade to wireless clock system
	Technology	Create Synology for back-up
	Security	Create new Secure Entrance



PRIORITY	ISSUE	DESCRIPTION/TASK
2	Site	Sealcoat and restripe staff parking lot
	Exterior	Clean exterior EFIS to remove algae growth
	Exterior	Repair exterior wall crack by music/gymnasium west entrance
	Exterior	Repair base of columns near door 7S
	Exterior	Replace roof flashing at the end of C-wing
	Exterior	Replace corner flashing outside door 12W
	Exterior	Replace cracked sidewalk sections near door 3E
	Exterior	Repair concrete sidewalk issues at door 6S
	Interior	Replace delaminating toilet partitions in A-wing restrooms
	Interior	Replace ceiling tiles at the north end of the kitchen dry goods area
	Interior	Refinish gym floor
	Interior	Repair finishes in room B115
	Interior	Repair loose sink fixtures in locker rooms
	Interior	Replace door to E112
	Interior	Replace door 7S
	Interior	Replace door sweep at door 9S
	Interior	Replace wire or non-tempered glass with tempered glass - B111 Nurse's office sidelights, Main office entrance, D105, E106 sidelights and 7' x 4' window to E10, E116 in door
	Interior	Replace wire or non-tempered glass with tempered glass - E115 (door), E120 (sidelights), E121 (sidelights), E122, E123, E124, E112 (door)
	Interior	Replace wire or non-tempered glass with tempered glass - Door 4E, Door 11W and Door 8S
	Interior	Replace wire or non-tempered glass with tempered glass - Locker Room Offices
	Interior	Replace seals in clerestory glass above main office
	Interior	Paint or replace rusted toilet partitions in B118
	Interior	Replace door hinges - C106
	Structural	Provide positive drainage away from building foundation
	Life Safety	Add stairs to AHU (B125)
	Life Safety	Install emergency egress lighting to building exterior near entrances
	Haz. Materials	Testing of potential asbestos-containing materials, and abatement if necessary
	Accessibility	Renovate restroom group near nurse's office to full ADA compliance
	Accessibility	Renovate restrooms adjacent to library to ADA compliance

PRIORITY	ISSUE	DESCRIPTION/TASK
2 CONT.	Plumbing	Replace drinking fountains on classroom sinks in Area E
	Plumbing	Repair loose and leaking faucets at classroom sinks in Area C
	Plumbing	Replace drinking fountains on classroom sinks in Area C
	Plumbing	Remove all fixtures and water lines in old locker rooms under stage
	Plumbing	Replace broken hose bibs on building exterior
	Plumbing	Route roof drain water away from building
	Mechanical	Replace VAV system return air flex duct with rigid ductwork in area C
	Mechanical	Repair or replace C112 exhaust fan
	Mechanical	Replace on/off switch for cabinet unit heater near the cafeteria with a thermostat
	Mechanical	Install vibration isolation and sound attenuation on air handling unit in A133
	Mechanical	Replace refrigerant piping insulation on roof
	Mechanical	Install new high efficiency hot water heating plant
	Mechanical	Reverse order of cooling and heating coils in roof top units and allow for dehumidification
	Mechanical	Add a return grill to the nurse's office
	Electrical	Improve library circuits to eliminate extension cord use
	Electrical	Add exterior Emergency Egress lighting near each entrance
	Security	Add exterior cameras to improve coverage near entrances
Security	Add cameras to improve coverage with building	
3	Site	Replace sidewalk storm grates at north and east building walkways
	Site	Provide 1 handicap van accessible parking stall on site
	Site	Maintain wood chip surfacing in play areas
	Site	Refresh aglime at all softball and baseball fields
	Site	Replace concrete panels near door 1N
	Exterior	Remove unit ventilator louvers in room B115
	Interior	Replace carpet in music room and practice rooms
	Interior	Replace 12"x12" ceiling tiles in practice rooms
	Interior	Replace 12"x12" ceiling tiles in room E107
	Interior	Replace casework in C111, C112, C106 (15' of base cabinet), C103, C102, E107 (8'), E117
	Structural	Repair cracks in select interior/exterior CMU walls



PRIORITY	ISSUE	DESCRIPTION/TASK
3 CONT.	Plumbing	Repair hot water to women's lavatory in area A
	Plumbing	Replace cracked water closet bowl in area B
	Plumbing	Install pipe wrap on p-traps in area B restrooms
	Plumbing	Install bottle filler on electric water closet bowl in area "B" restroom group
	Plumbing	Replace electric water cooler in area E hallway
	Plumbing	Repair leaking fitting on roof drain in Room E115 and reinsulate
	Plumbing	Insulate rood drain in D105
	Plumbing	Repair and wrap p-trap in D107
	Plumbing	Replace electric water coolers outside locker rooms with high/low fixture with bottle filler
	Plumbing	Repair inoperable shower handle in women's locker room
	Plumbing	Replace damaged and leaking fixture in handicap stall of women's locker room
	Plumbing	Replace inoperable urinal flush valve in men's locker room
	Plumbing	Repair water source to center sink in men's locker room
	Plumbing	Install pipe wrap on P-traps in men's locker room
	Plumbing	Replace leaking shower head in men's locker room
	Plumbing	Replace water closet flush valve in men's locker room office restroom
	Plumbing	Verify roof drain in gym does not leak, and insulate roof drain pipe
	Plumbing	Verify roof drain in cafeteria does not leak, insulate roof drain pipe
	Plumbing	Replace electric water cooler in are E hallway
	Mechanical	Balance noisy diffuser in A128
	Mechanical	Install supply or exhaust ventilation to room A132
	Mechanical	Install return air diffuser within ceiling grid in room A108
	Mechanical	Clean exhaust grill and rebalance air flow in area A restrooms
	Mechanical	Replace B116 cabinet unit heater fan bearings and balance
	Mechanical	Tie area B restrooms exhaust fan controls into building management system
	Mechanical	Install cabinet unit heater at exterior door 5
	Mechanical	Remove unused equipment in former shop classroom - hood exhaust system, exhaust fans, air handler in corner of room, uninsulated piping to air handler
	Mechanical	Replace roof piping supports

PRIORITY	ISSUE	DESCRIPTION/TASK
3 CONT.	Electrical	Replace warped or broken light fixture lenses
	Electrical	Replace exterior HID lights with LED
	Technology	Upgrade to new operating system
4	Site	Expand sidewalk to allow for vehicle overhand and accessible route in student drop-off area
	Site	Provide 2 accessible parking stalls in student drop-off area with associated ADA compliant signage
	Site	Sealcoat and restripe visitor parking lot
	Site	Provide accessible route to east athletic fields
	Site	Add top rail to fencing at north athletic fields and south east softball fields
	Site	Repair gravel access to athletic fields between houses and remove stumps within access
	Site	Install ADA accessible walkways to play areas

PRIORITY TABLES

NRHEG SECONDARY

PRIORITY	ISSUE	DESCRIPTION/TASK
1	Site	Provide infiltration barrier and replace bituminous around catch basin in north staff parking lot
	Site	Provide additional wheel stops along north sidewalk and building in north staff parking lot
	Site	Patch cracked bituminous and place ribbon curb along south and northwest edges of south staff parking lot
	Site	Provide sidewalk along west side of student parking lot (Ash Avenue South)
	Site	Add striped crosswalk mid-block across Ash Avenue South from student parking lot to school with associated signage and flashing lights
	Site	Restripe arrows in student parking lot
	Site	Replace corner of modular block retaining wall and anchor top blocks along Birch Avenue South
	Site	Pave gravel area northwest of stands to provide handicap accessible parking near stands
	Exterior	Replace roofing on press box/concession building
	Exterior	Repair roof leaks identified in rooms C106 + C107
	Exterior	Investigate potential roof leak/mold grow in Room D138B (Board Room)
	Exterior	Repair roof curb leak above kitchen dishwasher
	Exterior	Remove and replace wall termination flashing caulk along the north gym wall
	Exterior	Add splash blocks where upper roofs discharge water to lower roofs
	Exterior	Repair areas blistering on Garland roofs
	Exterior	Replace sidewalk by entrance door 12W
	Exterior	Replace sealants around all doors and windows
	Exterior	Replace sealants between precast concrete panels on the west gym
	Exterior	Replace exterior building control joint sealant
	Exterior	Caulk sky facing masonry joints
Exterior	Reposition splash blocks at roof drain location	
Exterior	Rework sidewalks outside doors 11W, 14N, and 15N to reduce threshold lip	

PRIORITY	ISSUE	DESCRIPTION/TASK
1 CONT.	Exterior	Regrade areas adjacent to building to direct water away from building
	Exterior	Stabilized grade and above ground fuel tank support
	Exterior	Paint press box/concession and storage garage buildings
	Interior	Investigate/Repair leaking pipe in west mens locker room
	Structural	Repair and coat column base plates in boiler room
	Structural	Investigate/Repair cracks along vertical columns and beam support in Room B120
	Life Safety	Add elevator to lower level of locker room (requires extensive structural modifications or addition)
	Life Safety	Fill fire wall penetrations with Fire Stop - Code Area 3
	Life Safety	Separate Wood and Metal Shops
	Life Safety	Install proper exhaust ventilation in wood shop finishing room
	Life Safety	Improve lighting in wood shop finishing room to explosion proof
	Life Safety	Create adequate clearance around wood and metal shop equipment
	Life Safety	Install stair handrail to lower level of boiler room
	Life Safety	Extend stair handrail in main gym lobby (F103) 12 inches past last riser
	Life Safety	Install compliant stair and handrail to AHU room by door 15N
	Life Safety	Install handrail on exterior stair near door 16E
	Life Safety	Repair delaminating epoxy floor on stair and corridor serving doors 14N and 15N
	Life Safety	Renovate locker rooms to provide two means of egress and ADA compliance
	Life Safety	Renovate wrestling room to provide two means of egress
	Plumbing	Install clay interceptor in are room (D153) sink drain
	Plumbing	Install code compliant natural gas shut-off valve or emergency shut-off button in Science area (D143 + D147)
	Plumbing	Install code compliant natural gas shut-off valve or emergency shut-off button in Home Economics area (E104)
	Mechanical	Seal former unit ventilator wall penetrations
	Mechanical	Release stuck relief dampers for Area A gym
	Mechanical	Replace damaged diffusers in Area A gym
	Mechanical	Replace Area A gym roof top HVAC units in poor condition



PRIORITY	ISSUE	DESCRIPTION/TASK
1 CONT.	Mechanical	Increase dishwasher hood air flow
	Mechanical	Provide ventilation to back storage room where building management system is operated
	Mechanical	Repair exhaust fan in shop finishing room
	Mechanical	Migrate from pneumatic controls to DDC
	Mechanical	Reinsulate bare pipes in tunnel system
	Mechanical	Balance kiln exhaust system in room D154
	Mechanical	Install exhaust ventilation in chemical storage room (off D145)
	Mechanical	Provide ventilation to concession stand space
	Mechanical	Repair or replace locker room unit ventilators and controls (F-wing)
	Mechanical	Add vibration isolators to AHU near F-wing women's locker room
	Mechanical	Update air handlers and associate controls off the stage
	Mechanical	Reslope roof in area surrounding AHU's for Area B
	Mechanical	Correct control sequences for RTUs
	Mechanical	Reinsulate large runs of refrigerant piping on roof
	Mechanical	Replace condensing unit in Area F
	Mechanical	Replace Area D RTUs
	Electrical	Add switches to gymnasium light circuits to prevent students from accessing the electrical panel
	Electrical	Install explosion proof lighting and electrical devices in chemical storage room
	Electrical	Install explosion proof lighting and electrical devices in finishing room
	Technology	Create Synology for back-up files

PRIORITY	ISSUE	DESCRIPTION/TASK
2 CONT.	Exterior	Recoat areas of missing gravel on built up Garland roofs
	Exterior	Reset secondary roof scuppers to proper level
	Exterior	Mitigate moisture intrusion into code area 3 crawlspace
	Exterior	Mitigate moisture intrusion into AHU room by door 15N
	Exterior	Prevent moisture penetration through exterior wall - Rooms B135, 139, D106
	Exterior	Replace windows in the main gym lobby by door 16E
	Exterior	Replace skylights above the locker commons
	Exterior	Replace doors at entrance 2S
	Exterior	Replace sealants between green house and main building
	Exterior	Replace boiler room door
	Exterior	Replace sealants in west locker room shower areas
	Exterior	Tuckpoint lower half of 1953 addition
	Exterior	Tuckpoint various locations of facility (approximately 10%)
	Exterior	Replace stone below door frame 2S
	Exterior	Rework base flashing and foam insulation termination along east side of building
	Exterior	Replace windows and panels in wood and metals shop
	Exterior	Replace concession area doors
	Exterior	Seal railing posts on retaining wall at the east side of the building
	Interior	Install fire dampers in HVAC ducts at ceiling grid line in code area 2
	Interior	Reduce length of flex duct on dryer in room E104 (Home Economics)
	Interior	Replace VTC flooring in D143
	Interior	Replace VCT flooring in D147
	Interior	Replace VCT flooring near door 13W
	Interior	Repair delaminating epoxy in single shower of womens locker room
	Interior	Replace walk-in coat column base plates in boiler room
	Accessibility	Renovate restroom group in code area 3 to be ADA compliant
	Plumbing	Replace galvanized pipe in C-wing restroom chase
	Plumbing	Repair broken ADA showers in west gym locker room
	Plumbing	Install proper floor cleanout in area B restroom group
	Plumbing	Replace galvanized pipe in C-wing classroom plumbing
	Mechanical	Install exhaust ventilator in C-wing south storage room
	Mechanical	Shorten refrigerant piping for mini-splits in room B120

PRIORITY	ISSUE	DESCRIPTION/TASK
2 CONT.	Mechanical	Replace RTU ductwork to incorporate slope
	Mechanical	Rebalance exhaust fans for C-wing restroom group
	Mechanical	Repair issue with condensate pumps
	Mechanical	Add spring isolation to AHU in kitchen
	Mechanical	Rebalance exhaust ventilation for E104 (Home Economics)
	Mechanical	Install cabinet heater in E-wing vestibule
	Mechanical	Replace cabinet heater in stairwell to air handling room near women's locker room
	Mechanical	Re-install missing ductwork in wrestling room
	Mechanical	Install ducted return or exhaust ventilation in room D108
	Mechanical	Rebalance airflow for room D152
	Mechanical	Install exhaust ventilation in custodial room D159
	Electrical	Add exterior Emergency Egress lighting near each entrance
	Electrical	Replace electrical panel backboard, with adequate footings at the football field
	Electrical	Replace light fixtures in junior high lighter rooms with vandal resistant fixtures
Security	Migrate to electronic access control	
3	Site	Extend west sidewalk of Ash Avenue South to the north for additional bus stacking
	Site	Provide one van accessible parking stall with associated ADA-compliant signage
	Site	Provide additional handicap stalls with loading zone striping in student parking lot and associated ADA-compliant signage
	Site	Mill and overlay handicap stalls to achieve 2% ADA slopes in student parking lot
	Site	Replace rusted fence around northeast playground
	Site	Replace stretched chain-link fabric on fencing around track and stands
	Site	Replace stretched chain-link fabric and sagging vertical top bars on fencing around track
	Site	Provide additional aglime on shot put throw area
	Site	Paint faded portions of spectator stands
	Site	Relocate and improve scoreboard
	Site	Provide new mulch in playground area
	Site	Provide new landscape edging around playground area
	Site	Replace or reset leaning basketball hoops
	Site	Add accessible paths or trails to and within the playground areas
	Site	Create ADA compliant parking and access to athletic fields

PRIORITY	ISSUE	DESCRIPTION/TASK
3 CONT.	Mechanical	Replace RTU ductwork to incorporate slope
	Exterior	Replace stone sills by wood and metal shop windows
	Exterior	Evaluate footing soil coverage to determine if under or over 42 inches
	Exterior	Install exterior roof access ladders
	Exterior	Replace windows in boiler room
	Exterior	Replace glazing in the green house
	Exterior	Caulk all areas where sidewalks adjoin the building
	Exterior	Replace metal filler panels at entrance 6W
	Interior	Repair or replace folding wall in D105A + B
	Interior	Repair wall tile in west women's locker room shower area
	Interior	Replace poor condition casework in code area 3
	Interior	Replace very poor condition casework tops in room B120
	Interior	Replace poor condition casework in B121
	Interior	Polish and seal stained terrazzo floor areas in restroom group of code area 2
	Interior	Polish and seal stained terrazzo floor areas in restroom group of code area 3
	Interior	Polish and seal stained terrazzo floor areas in restroom group off F103 (gym lobby)
	Interior	Replace ceiling in women's locker room by west gym (A108)
	Interior	Replace ceiling and grid in men's locker room by west gym (A108)
	Interior	Replace flooring in B136 and B135 (moisture penetration from below)
	Interior	Replace carpet in D155
	Interior	Replace VCT in D153 (Art) and E104 (Home Economics)
	Interior	Replace carpet in D149 with hard surface flooring
	Interior	Replace carpet in D148, D156, D157, D102, D104, D105B
	Interior	Replace ceilings - B122 (fire rated), D143, D147, D155, D152, D148, E110, E109, F126, F121, D102, D104, D105A, D137, and D135
	Interior	Replace door to stage at top of stair landing
	Interior	Freshen main gym lobby (F103 to be more inviting)
	Interior	Paint rooms B120 and B121
Interior	Replace rusted toilet partitions - Staff restroom in kitchen area	
Interior	Replace rusted toilet partitions - Restrooms in main gym lobby (F103)	



PRIORITY	ISSUE	DESCRIPTION/TASK
3 CONT.	Interior	Improve signage to lower level locker rooms
	Interior	Update sound panels in rooms F126 (Choir Room) and F121 (Band Room)
	Interior	Repaint walls of Nurse's office
	Interior	Install flooring in upper commons
	Interior	Repair casework drawer operation issues in D143
	Interior	Improve casework in D135 workroom
	Interior	Additional casework in D108 to accommodate needs
	Interior	Replace casework in D135 workroom
	Interior	Add coffee station to district office area
	Interior	Replace ceiling tile and grid in D138B (Board Room)
	Interior	Install flooring in lower commons
	Interior	Install rubber flooring in D152 (Weight Room)
	Interior	Replace risers in F121 with non-wood material risers in F121 with non-wood material risers
	Accessibility	Fix exterior sidewalk elevation issues
	Accessibility	Fix interior handrails
	Accessibility	Renovate restroom group in code area 5 to be ADA compliant
	Accessibility	Renovate kitchen restroom to be ADA compliant
	Accessibility	Update door hardware in 1953 and 1969 wings to ADA compliant lever style
	Accessibility	Renovate women's restroom near west gym to full ADA compliance
	Accessibility	Renovate restroom group in code area 2 to be ADA compliant
	Accessibility	Renovate restroom group in gym lobby (F103) to be ADA compliant
	Plumbing	Install pipe wrap on p-traps in C-wing restrooms
	Plumbing	Replace leaking flush valve in women's C-wing restroom
	Plumbing	Replace poor condition sinks in C-wing classrooms
	Plumbing	Replace leaking water faucet in E124
	Plumbing	Replace filters for bottle filling water fountains
	Plumbing	Repair broken water filler in women's locker room
	Plumbing	Repair loose lavatory fixture in room D161
	Plumbing	Replace leaking water faucet in D111
	Plumbing	Clear plugged room drain intakes on roof
	Plumbing	Replace broken or unusable hose bibs

PRIORITY	ISSUE	DESCRIPTION/TASK
3 CONT.	Mechanical	Repair or replace unit heater in C-wing south vestibule
	Mechanical	Replace rusted unit heaters in C-wing restroom group
	Mechanical	Repair ductwork in men's locker room (Area A)
	Mechanical	Replace fin tube radiation in hall outside Area A gym
	Mechanical	Repair VAV rattle in B135
	Mechanical	Replace door to men's restroom near kitchen
	Mechanical	Replace rusted exhaust grill in janitors room outside boiler room
	Mechanical	Clean return grille in wrestling room
	Mechanical	Create new HVAC zone for D138
	Mechanical	Remove poster Remove poster from transfer grille in room D137
	Technology	Upgrade to new operating system
	Electrical	Replace warped or broken light fixture lenses
	Electrical	Replace exterior HID lights with LED
	Electrical	Replace nylon wall plates with stainless steel wall plates
	Electrical	Replace surface mounted receptacles in the gymnasium with impact resistant receptacles with covers
Security	Add exterior cameras to improve coverage near entrances	
Security	Add cameras to improve coverage within building	
4	Site	Monitor cracking near door 15N
	Haz. Materials	Ceiling tile abatement
	Accessibility	Modify classroom doors in code area 3 to be ADA compliant
	Accessibility	Relocate restroom grab bars in D108 and D111 to be code compliant
	Plumbing	Replace washing matching water supply hoses



PRIORITY TABLES

ADDITIONAL PHYSICAL CONDITIONS

PRIORITY	SITE	DESCRIPTION/TASK
1	HS Stadium + Concessions	Replace siding on south side of concessions building
2	HS Bus Garage	Replace single pane windows
	HS Bus Garage	Repaint exterior of existing
	HS Bus Garage	Increase door security
	HS Bus Garage	General maintenance of building property
	HS Stadium + Concessions	Replace shingles
	HS Stadium + Concessions	Replace siding close to ground
	HS Stadium + Concessions	Paint Exterior
3	HS Bus Garage	Update restroom

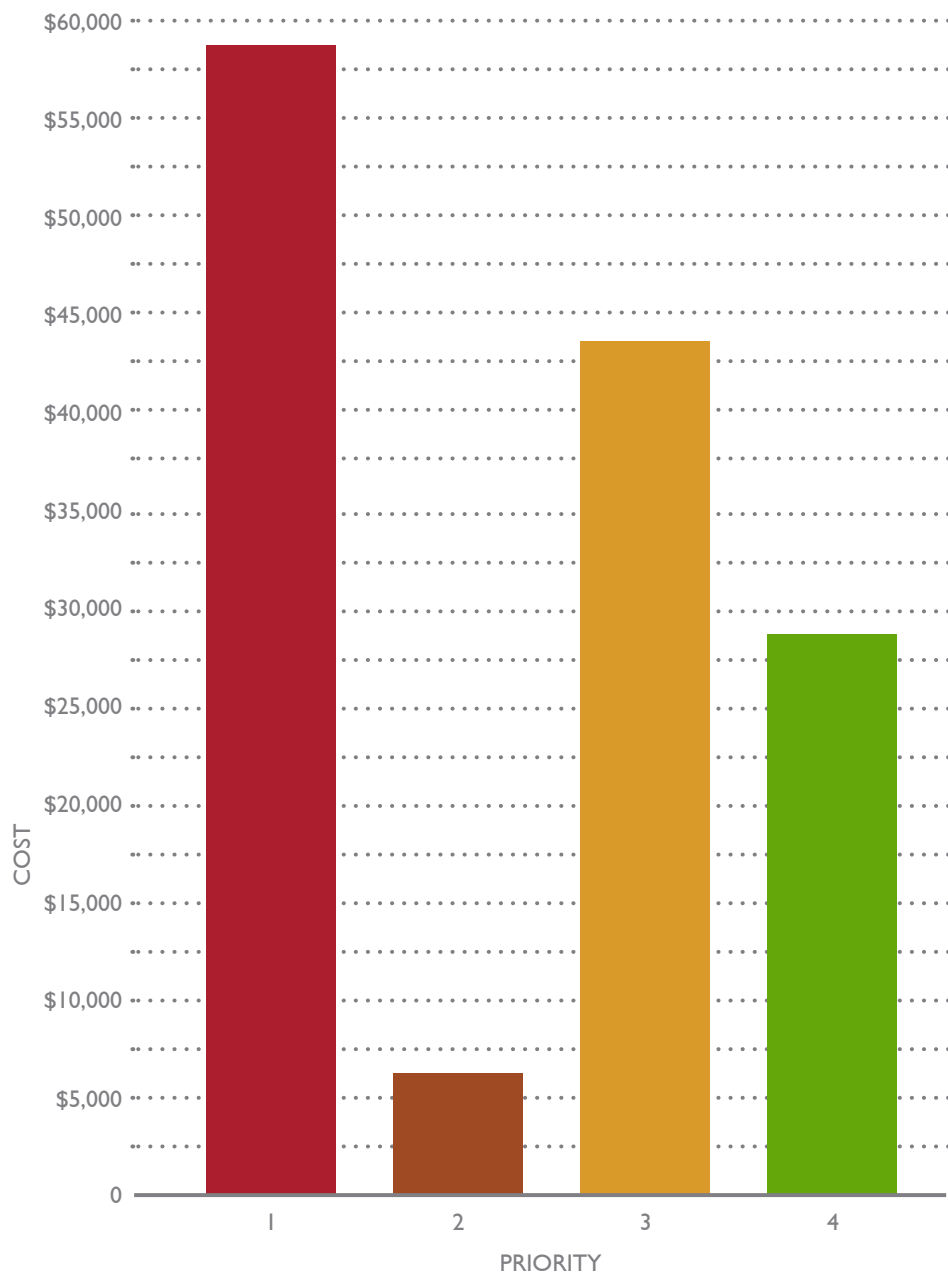
COST ESTIMATES



COST ESTIMATES ELLENDALE ELEMENTARY

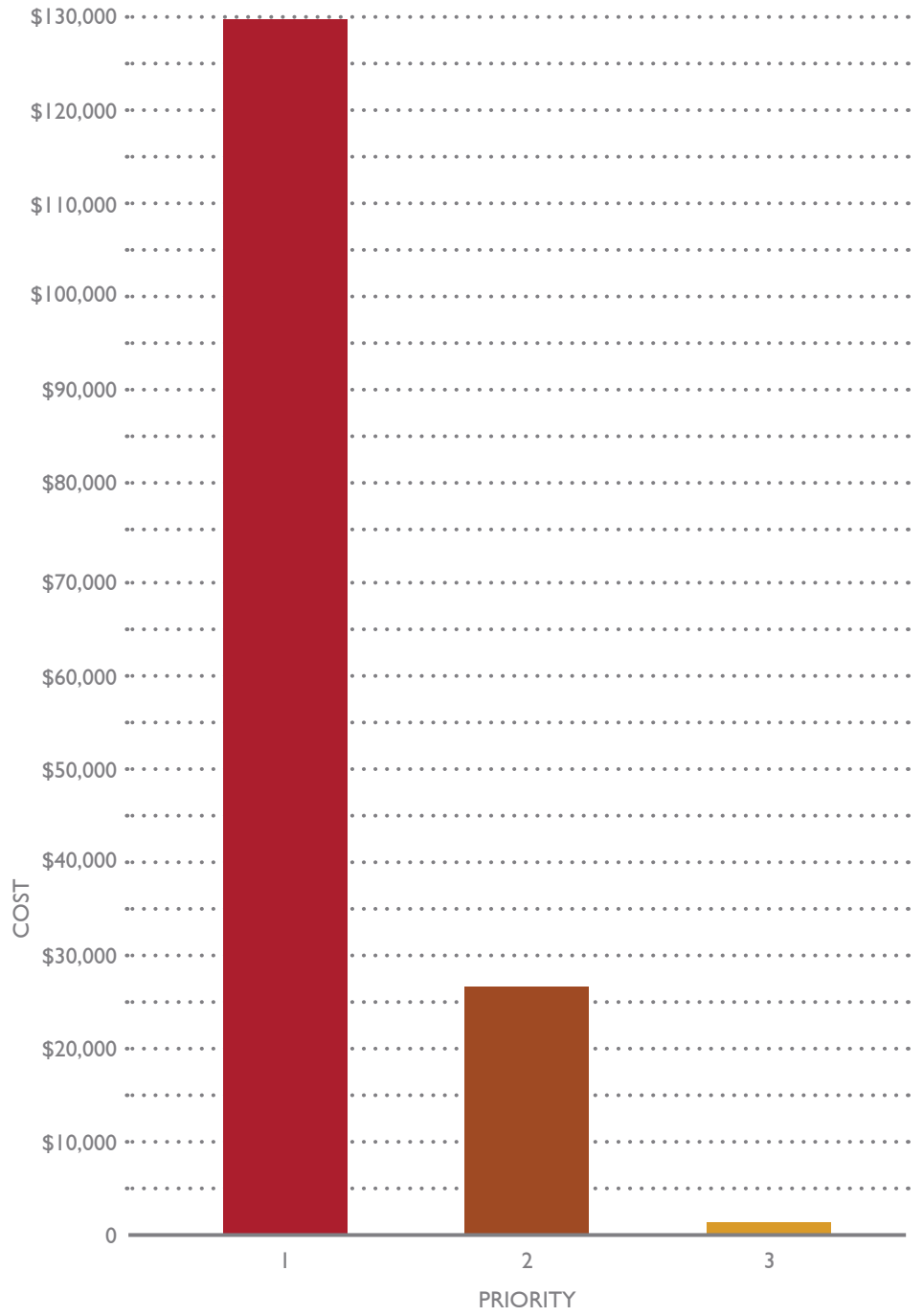
The following pages include cost estimates for each section based on the priority tables.





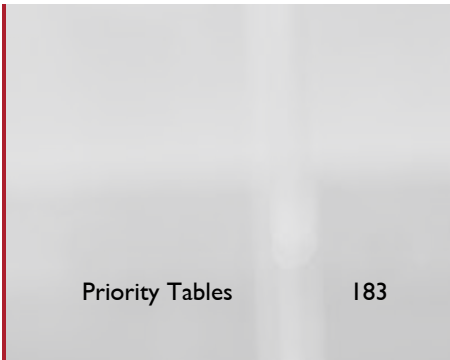


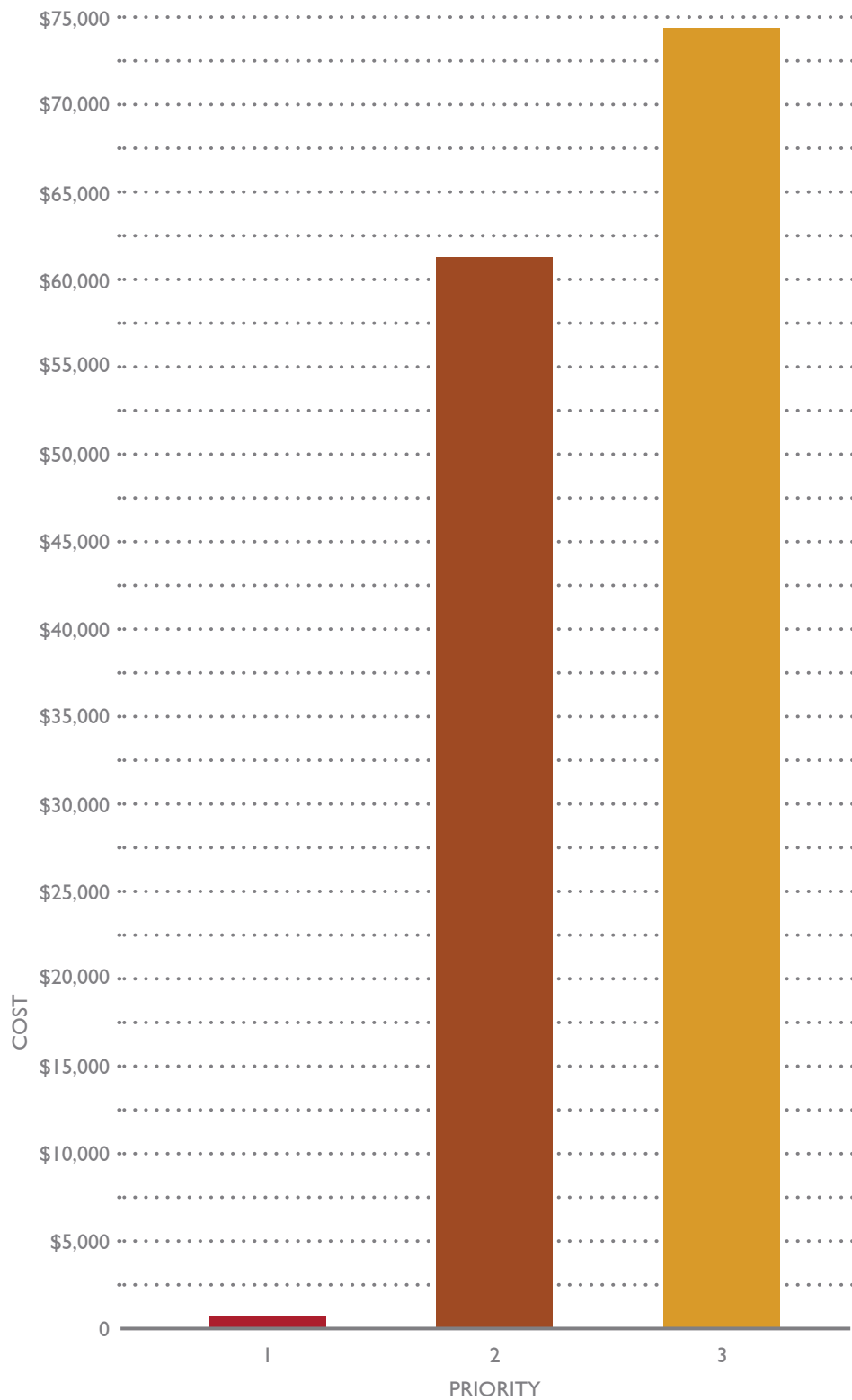
ELLENDALE SITE PRIORITY	1	2	3	4	COST
Regrade areas adjacent to building to direct water away from building	●				\$8,500
Regrade area around door 11W	●				\$2,000
Repair drain by door 10W (appears to be draining into wall)	●				\$10,000
Repair concrete slope issues outside door 13W	●				\$7,500
Replace sidewalk panels near doors 6S and 7S	●				\$2,700
Regrade playground area and provided additional fill around sidewalks and stoops to eliminate trip hazards. Reseed and reestablish grass areas.	●				\$18,000
Install gate at NE corner of playground area	●				\$750
Repair roof drain leaders in playground area to extend to ground surface	●				\$1,400
Provide rip rap or other energy dissipation devices at roof drain outlets to reduce erosion issues	●				\$3,500
Sand and repaint football goal posts	●				\$1,000
Replace sidewalk panels in front of door 13W to eliminate trip hazard	●				\$3,000
	PRIORITY 1 COST				\$58,350
Sealcoat and restripe staff parking lot		●			\$6,225
	PRIORITY 2 COST				\$6,225
Replace sidewalk storm grates at north and east building walkways			●		\$10,000
Provide 1 handicap van accessible parking stall on site			●		\$750
Maintain wood chip surfacing in play areas			●		\$6,700
Refresh aglime at all softball and baseball fields			●		\$15,600
Replace concrete panels near door 1N			●		\$10,500
	PRIORITY 3 COST				\$43,550
Expand sidewalk to allow for vehicle overhand and accessible route in student drop-off area				●	\$4,500
Provide 2 accessible parking stalls in student drop-off area with associated ADA compliant signage				●	\$1,500
Sealcoat and restripe visitor parking lot				●	\$4,250
Provide accessible route to east athletic fields				●	\$6,350
Add top rail to fencing at north athletic fields and south east softball fields				●	\$500
Repair gravel access to athletic fields between houses and remove stumps within access				●	\$3,375
Install ADA accessible walkways to play areas				●	\$7,975
	PRIORITY 4 COST				\$28,450
	TOTAL COST				\$136,575





ELLENDALE EXTERIOR PRIORITY	1	2	3	COST
Recaulk building control joints	•			\$10,000
Tuckpoint area below windows at door 3E	•			\$2,000
Tuckpoint area near door 75 and in the corner by door 8S	•			\$2,000
Tuckpoint approximately 25-50% of south, west, and north sides of C-wing	•			\$90,000
Replace missing bricks on south side of the building	•			\$3,500
Repair control joints on the exterior walls of the competition gym	•			\$3,500
Repair roof drains, associated insulation and supports	•			\$5,000
Verify roof drains for cafeteria and gym do not leak	•			\$2,000
Replace missing chimney cap	•			\$2,000
Repair masonry cracking in area of missing chimney cap	•			\$2,000
Investigate/Repair potential roof leaks in corridor outside locker rooms (D112 + D119)	•			\$2,500
Investigate/Repair potential roof leaks along east cafeteria wall outside room A119	•			\$2,500
Investigate/Repair potential water infiltration in C108	•			\$2,800
PRIORITY 1 COST				\$129,800
Clean exterior EFIS to remove algae growth		•		\$3,500
Repair exterior wall crack by music/gymnasium west entrance		•		\$10,000
Repair base of columns near door 7S		•		\$1,500
Replace roof flashing at the end of C-wing		•		\$3,500
Replace corner flashing outside door 12W		•		\$2,000
Replace cracked sidewalk sections near door 3E		•		\$3,000
Repair concrete sidewalk issues at door 6S		•		\$3,000
PRIORITY 2 COST				\$26,500
Remove unit ventilator louvers in room B115			•	\$1,500
PRIORITY 3 COST				\$1,500
TOTAL COST				\$157,800



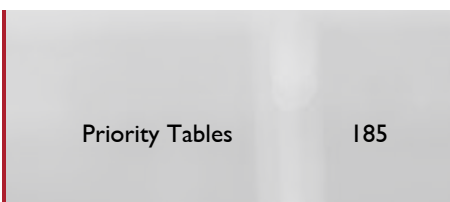


**Graph does not include TBD cost estimate values*



ELLENDALE INTERIOR PRIORITY

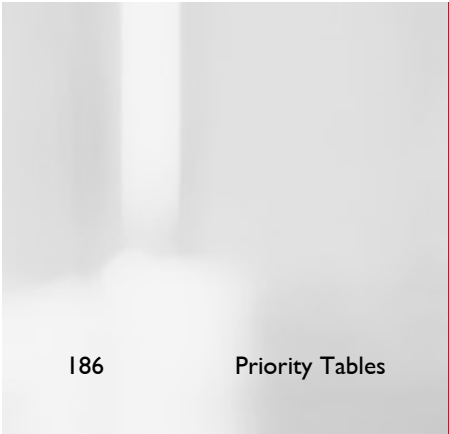
	1	2	3	COST
Cracks should be further reviewed by an engineer to determine possible causes and required repairs	•			TBD
Seal leaks at door 8S	•			\$75
Replace broken pane of glass in boys locker room	•			\$500
Replace broken pane of glass in fire cabinet outside competition gym	•			\$100
	PRIORITY 1 COST			TBD
Replace delaminating toilet partitions in A-wing restrooms		•		\$6,000
Replace ceiling tiles at the north end of the kitchen dry goods area		•		\$850
Refinish gym floor (assumes 8000 sf)		•		\$32,000
Repair finishes in room B115		•		\$2,500
Repair loose sink fixtures in locker rooms		•		\$2,000
Replace door to E112		•		\$2,200
Replace door 7S		•		\$2,200
Replace door sweep at door 9S		•		\$50
Replace wire or non-tempered glass with tempered glass - B111 Nurse's office sidelights, Main office entrance, D105, E106 sidelights and 7' x 4' window to E10, E116 in door		•		\$2,000
Replace wire or non-tempered glass with tempered glass - E115 (door), E120 (sidelights), E121 (sidelights), E122, E123, E124, E112 (door)		•		\$2,000
Replace wire or non-tempered glass with tempered glass - Door 4E, Door 11W and Door 8S		•		\$2,500
Replace wire or non-tempered glass with tempered glass - Locker Room Offices		•		\$1,000
Replace seals in clerestory glass above main office		•		\$2,000
Paint or replace rusted toilet partitions in B118		•		\$4,500
Replace door hinges - C106		•		\$100
	PRIORITY 2 COST			\$61,900
Replace wire or non-tempered glass with tempered glass - (interior windows) E114, E112, E111, E105, E104			•	\$1,200
Replace wire or non-tempered glass with tempered glass - Door 13W (exterior sidelight and interior)			•	\$2,000
Replace carpet in music room and practice rooms			•	\$22,000
Replace 12"x12" ceiling tiles in practice rooms			•	\$7,600
Replace 12"x12" ceiling tiles in room E107			•	\$1,250
Replace casework in C111, C112, C106, C103, C102, E107, E117			•	\$40,000
	PRIORITY 3 COST			\$74,505
	TOTAL COST			TBD





ELLENDALE STRUCTURAL PRIORITY

	1	2	3	COST
Repair cracks in select interior/exterior CMU walls	•			TBD
Tuckpointing and sealants	•			TBD
Crack at stage area	•			TBD
	PRIORITY 1 COST			TBD
Provide positive drainage away from building foundation		•		TBD
	PRIORITY 2 COST			TBD
Other cracks			•	TBD
	PRIORITY 3 COST			TBD
	TOTAL COST			TBD





ELLENDALE LIFE SAFETY PRIORITY

	1	2	3	COST
Fix sidewalk elevation differences	•			TBD
Conduct ongoing maintenance of fire doors and walls due to no fire sprinkler system	•			TBD
PRIORITY 1 COST				TBD
Add stairs to AHU (B125)		•		TBD
Install emergency egress lighting to building exterior near entrances		•		TBD
PRIORITY 2 COST				TBD
TOTAL COST				TBD



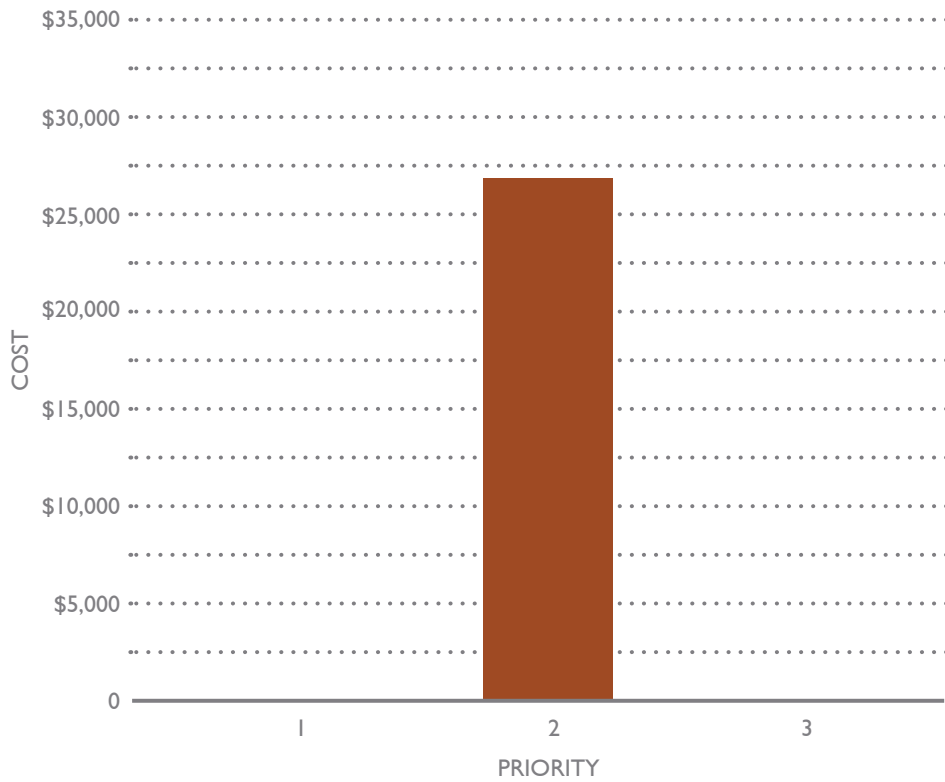


ELLENDALE HAZARDOUS MATERIALS PRIORITY

Testing of potential asbestos-containing materials, and abatement if necessary

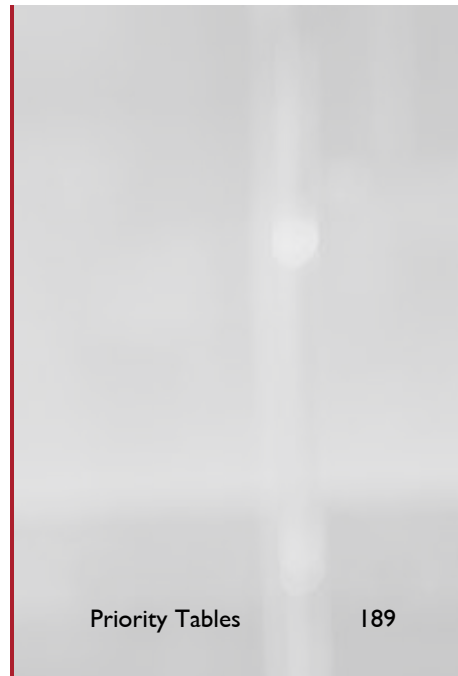
1	2	3	COST
	●		\$
PRIORITY 2 COST			\$
TOTAL COST			\$

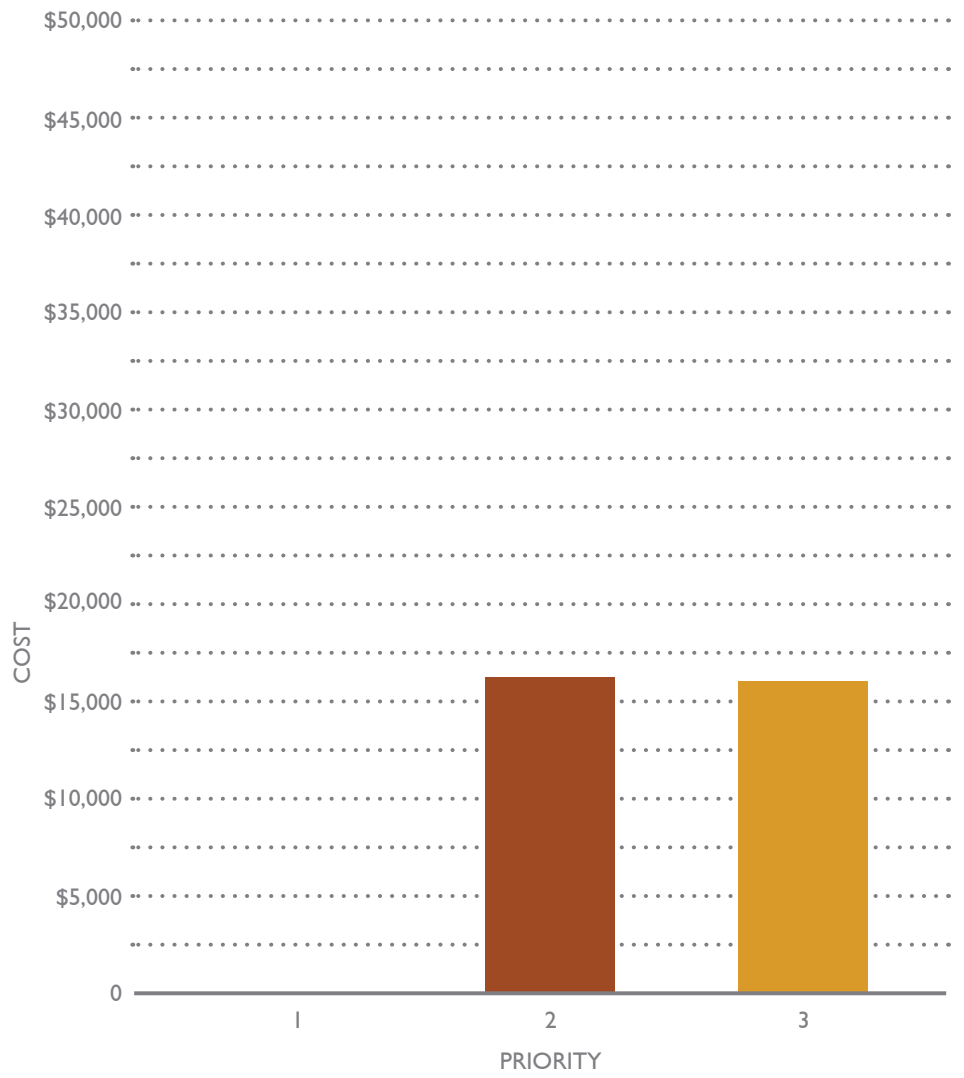




ELLENDALE ACCESSIBILITY PRIORITY

	1	2	3	COST
Renovate restroom group near Nurse's office to full ADA compliance		●		\$12,000
Renovate restrooms adjacent to Library to ADA compliance		●		\$15,000
	PRIORITY 2 COST			\$27,000
	TOTAL COST			\$27,000





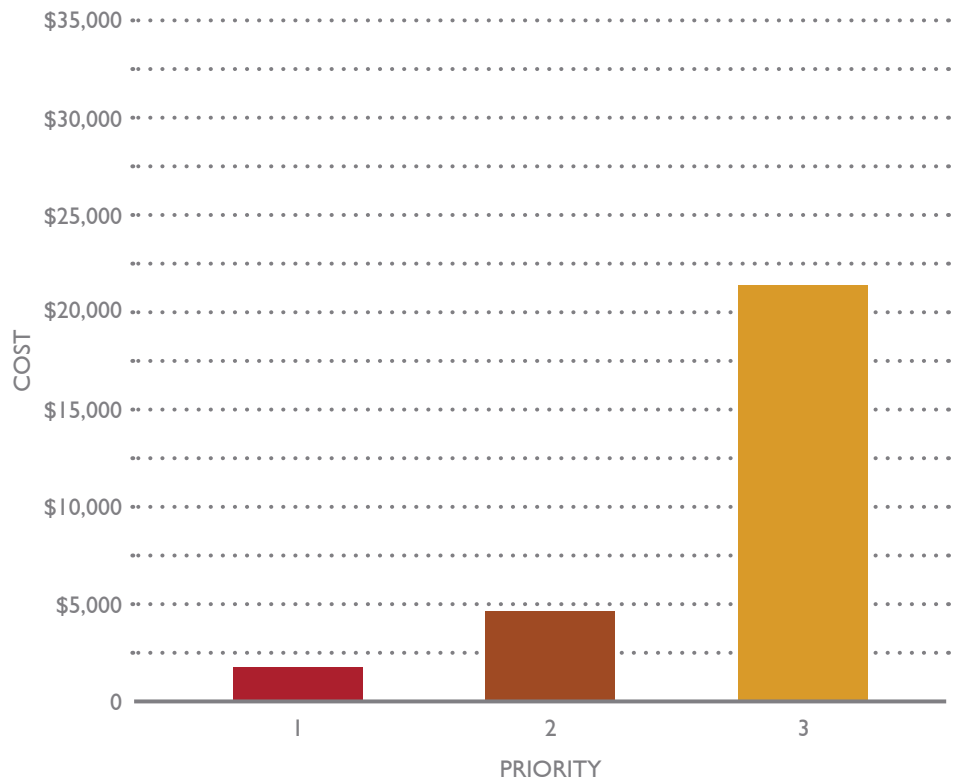


ELLEDALE PLUMBING PRIORITY	1	2	3	COST
Replace drinking fountains on classroom sinks in Area E		●		\$2,400
Repair loose and leaking faucets at classroom sinks in Area C		●		\$4,000
Replace drinking fountains on classroom sinks in Area C		●		\$2,000
Remove all fixtures and water lines in old locker rooms under stage		●		\$3,000
Replace broken hose bibs on building exterior		●		\$400
Route roof drain water away from building		●		\$5,000
	PRIORITY 2 COST			\$16,800
Repair hot water to women's lavatory in Area A			●	\$500
Replace cracked water closet bowl in Area B restroom			●	\$800
Install pipe wrap on p-traps in Area B restrooms			●	\$400
Install bottle filler on electric water closet bowl in Area B restroom group			●	\$1,200
Repair leaking fitting on roof drain in Room E115 and reinsulate			●	\$1,500
Insulate roof drain in D105			●	\$500
Repair and wrap p-trap in D107			●	\$600
Replace electric water coolers outside locker rooms with high/low fixture with bottle filler			●	\$1,200
Repair inoperable shower handle in womens locker room			●	\$1,000
Replace damaged and leaking fixture in handicap stall of women's locker room			●	\$1,000
Replace inoperable urinal flush valve in men's locker room			●	\$400
Repair water source to center sink in men's locker room			●	\$1,500
Install pipe wrap on p-traps in men's locker room			●	\$400
Replace leaking shower head in men's locker room			●	\$1,000
Replace water closet flush valve in men's locker room office restroom			●	\$400
Verify roof drain in gym does not leak, insulate roof drain pipe			●	\$1,500
Verify roof drain in cafeteria does not leak, insulate roof drain pipe			●	\$1,500
Replace electric water cooler in Area E hallway			●	\$1,200
	PRIORITY 3 COST			\$16,600
	TOTAL COST			\$33,400





ELLENDALE MECHANICAL PRIORITY	1	2	3	COST
Add dehumidification to entire building	•			\$2,100,000
Remove or seal old unit ventilator louvers for classroom B115 to eliminate water accumulation on the floor	•			\$1,200
Improve HVAC system in Band/Choir area (D017) to include DDC	•			\$85,000
Remove and replace HVAC system in old locker rooms under stage	•			\$4,000
Update mechanical system for old gymnasium (B125)	•			\$250,000
Install permanent stair or ladder access to gymnasium air handling unit (B125)	•			\$5,000
Insulate pipe in gymnasium air handling area (B125)	•			\$3,000
Replace leaking thermostat for gymnasium with digital controls	•			\$5,000
Shorten flex duct runs in cafeteria HVAC system to not more than 5 feet	•			\$10,000
Repair pipe insulation above cafeteria ceiling	•			\$4,000
Install makeup air unit for kitchen	•			\$35,000
Convert all controls to DDC for the facility	•			\$420,000
Install air supply/exhaust to workshop area adjacent to boiler room	•			\$5,000
Replace damaged exterior louvers	•			\$6,000
Remove unused exterior louvers and verify cap on backside to prevent water intrusion	•			\$15,000
Review control sequencing to ensure energy recovery wheels are operating	•			\$3,000
	PRIORITY 1 COST			\$2,951,200
Replace VAV system return air flex duct with rigid ductwork in area C		•		\$5,000
Repair or replace C112 exhaust fan		•		\$2,500
Replace on/off switch for cabinet unit heater near the cafeteria with a thermostat		•		\$1,200
Install vibration isolation and sound attenuation on air handling unit in A133		•		\$8,000
Replace refrigerant piping insulation on roof		•		\$3,000
Install new high efficiency hot water heating plant		•		\$375,000
Reverse order of cooling and heating coils in roof top units and allow for dehumidification		•		\$85,000
Add a return grill to the nurse's office		•		\$500
	PRIORITY 2 COST			\$480,200
Balance noisy diffuser in A128A			•	\$1,200
Install supply or exhaust ventilation to room A132			•	\$3,000
Install return air diffuser within ceiling grid in room A108			•	\$500
Clean exhaust grill and rebalance air flow in area A restrooms			•	\$1,000
Replace B116 cabinet unit heater fan bearings and balance			•	\$1,200
Tie area B restrooms exhaust fan controls into building management system			•	\$2,000
Install cabinet unit heater at exterior door 5			•	\$3,000
Remove unused equipment in former shop classroom including hood exhaust system, exhaust fans, air handler in corner of room, uninsulated piping to air handler			•	\$4,000
Replace roof piping supports			•	\$4,000
	PRIORITY 3 COST			\$19,900
	TOTAL COST			\$3,451,300



ELLENDALE ELECTRICAL PRIORITY

	1	2	3	COST
Add GFCI protection to outlets near sinks	•			\$1,875
PRIORITY 1 COST				\$1,875
Improve library circuits to eliminate extension cord use		•		\$300
Add exterior Emergency Egress lighting near each entrance		•		\$4,575
PRIORITY 2 COST				\$4,875
Replace warped or broken light fixture lenses			•	\$2,000
Replace exterior HID lights with LED			•	\$19,500
PRIORITY 3 COST				\$21,500
TOTAL COST				\$28,250





ELLENDALE TECHNOLOGY PRIORITY

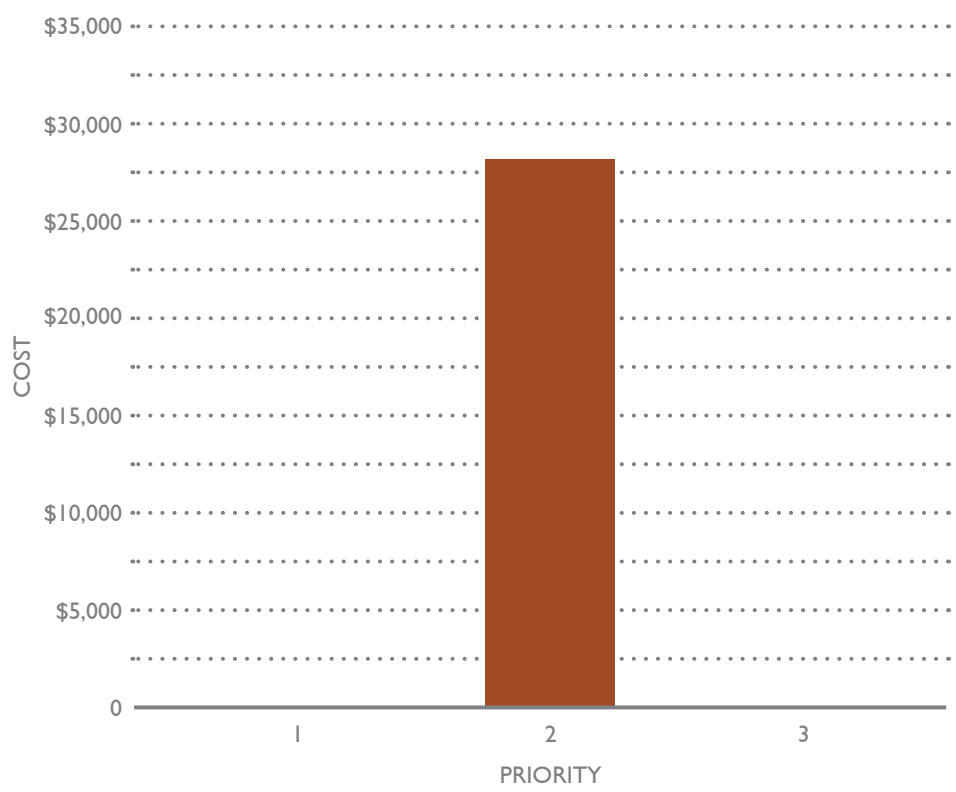
Upgrade to wireless clock system

Create Synology for back-up files

Upgrade to new operating system

	1	2	3	COST
Upgrade to wireless clock system	•			TBD
Create Synology for back-up files	•			TBD
PRIORITY 1 COST				TBD
Upgrade to new operating system			•	TBD
PRIORITY 3 COST				TBD
TOTAL COST				TBD





*Graph does not include TBD cost estimate values

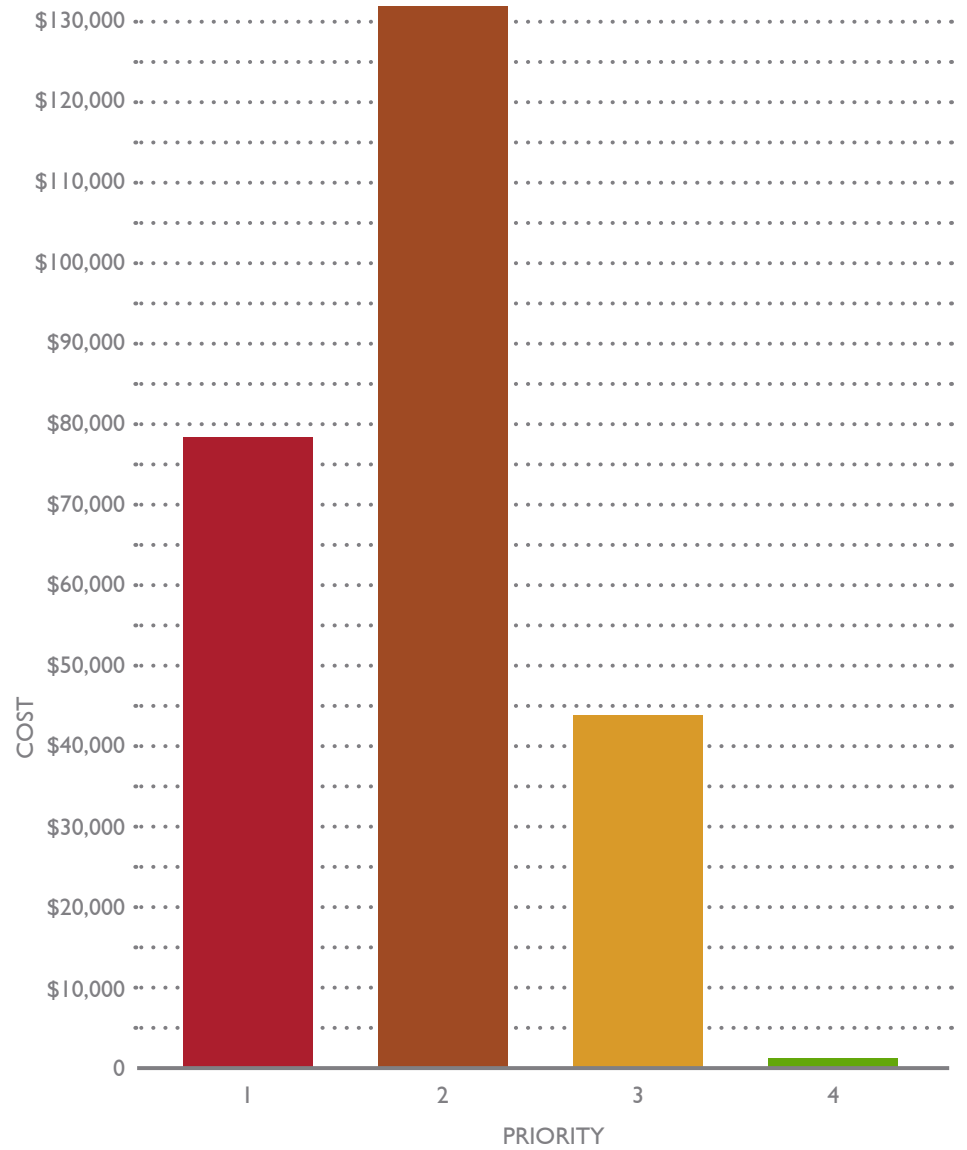
ELLENDALE SECURITY PRIORITY

	1	2	3	COST
Create new secure entrance	●			TBD
	PRIORITY 1 COST			TBD
Add cameras to improve coverage with building		●		\$13,500
Add exterior cameras to improve coverage near entrances		●		\$15,000
	PRIORITY 2 COST			\$28,500
	TOTAL COST			TBD

COST ESTIMATES NRHEG SECONDARY

The following pages include cost estimates for each section based on the priority tables.

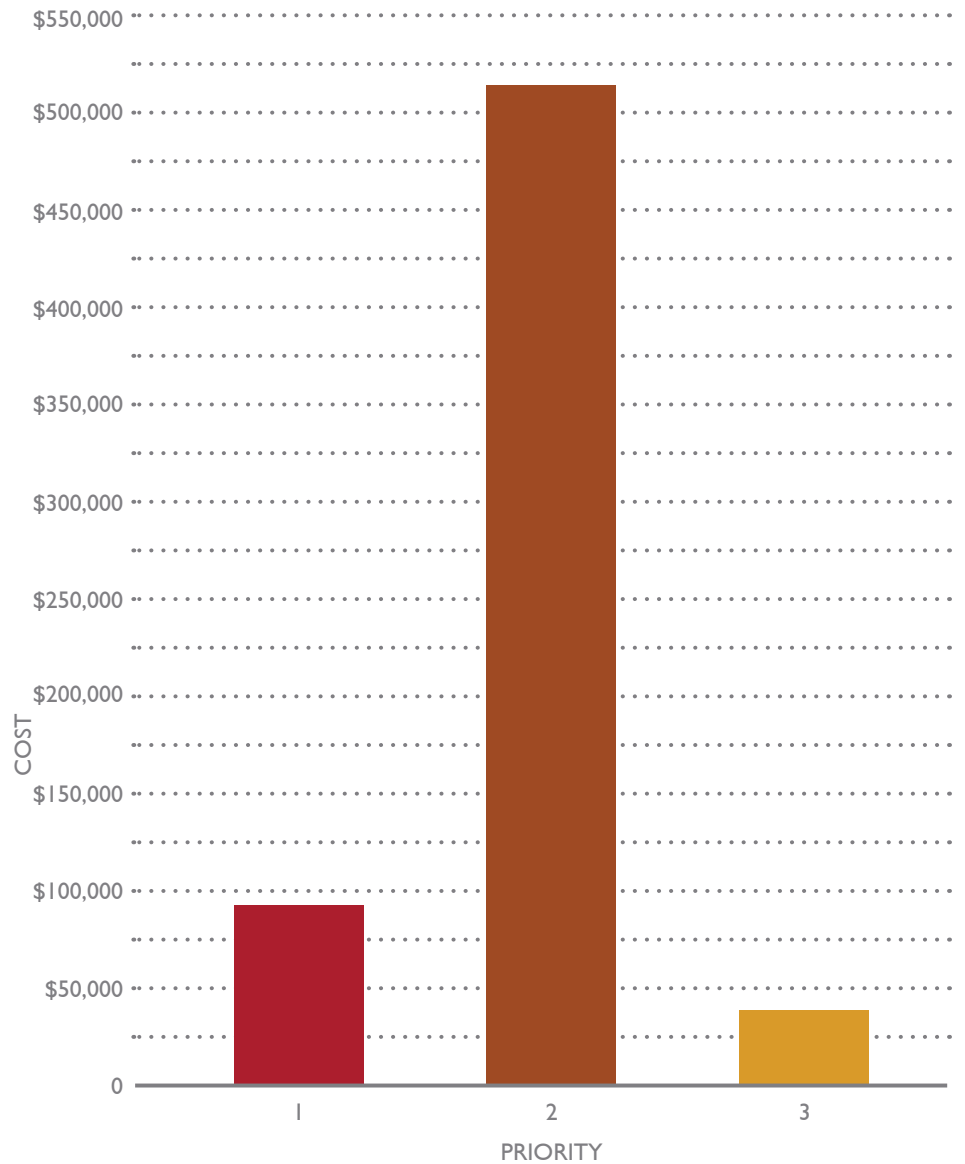




ELLEDALE SITE PRIORITY

	1	2	3	4	COST
Provide infiltration barrier and replace bituminous around catch basin in north staff parking lot	•				\$1,000
Provide additional wheel stops along north sidewalk and building in north staff parking lot	•				\$4,500
Patch cracked bituminous and place ribbon curb along south and northwest edges of south staff parking lot	•				\$7,900
Provide sidewalk along west side of student parking lot (Ash Avenue South)	•				\$11,550
Add striped crosswalk mid-block across Ash Avenue South from student parking lot to school with associated signage and flashing lights	•				\$1,750
Restripe arrows in student parking lot	•				\$2,200
Replace corner of modular block retaining wall and anchor top blocks along Birch Avenue South	•				\$2,500
Pave gravel area northwest of stands to provide handicap accessible parking near stands	•				\$47,600
	PRIORITY 1 COST				\$79,000

ELLEDALE SITE PRIORITY	1	2	3	4	COST
Provide striping in “no parking” area of north staff parking lot near 13W		●			\$500
Provide striped handicap loading zone and ADA compliant signage in south staff parking lot		●			\$750
Replace driveway and sidewalk approach to Ash Avenue South from student parking lot		●			\$1,850
Replace sidewalk panels in front of door 13W		●			\$3,000
Replace sidewalk panels in front of door 12W		●			\$1,200
Replace sidewalk panels near the catch basin between doors 11W and 12W		●			\$1,800
Perform additional grading at southeast corner of inner field		●			\$1,080
Provide paved parking surface northwest of track		●			\$55,500
Create ADA compliant parking and access to athletic fields		●			\$65,000
	PRIORITY 2 COST				\$130,680
Extend west sidewalk of Ash Avenue South to the north for additional bus stacking			●		\$660
Provide one van accessible parking stall with associated ADA-compliant signage			●		\$750
Provide additional handicap stalls with loading zone striping in student parking lot and associated ADA-compliant signage			●		\$1,500
Mill and overlay handicap stalls to achieve 2% ADA slopes in student parking lot			●		\$8,050
Replace rusted fence around northeast playground			●		\$3,400
Replace stretched chain-link fabric on fencing around track and stands			●		\$8,000
Replace stretched chain-link fabric and sagging vertical top bars on fencing around track			●		\$6,000
Provide additional aglime on shot put throw area			●		\$500
Provide additional field irrigation to assist with maintaining turf in high traffic areas			●		\$5,000
Paint faded portions of spectator stands			●		\$3,000
Provide new mulch in playground area			●		\$1,020
Provide new landscape edging around playground area			●		\$2,125
Replace or reset leaning basketball hoops			●		\$500
Add accessible paths or trails to and within the playground areas			●		\$4,125
	PRIORITY 3 COST				\$44,630
Monitor cracking near door 15N				●	\$1,440
	PRIORITY 4 COST				\$1,440
	TOTAL COST				\$255,750

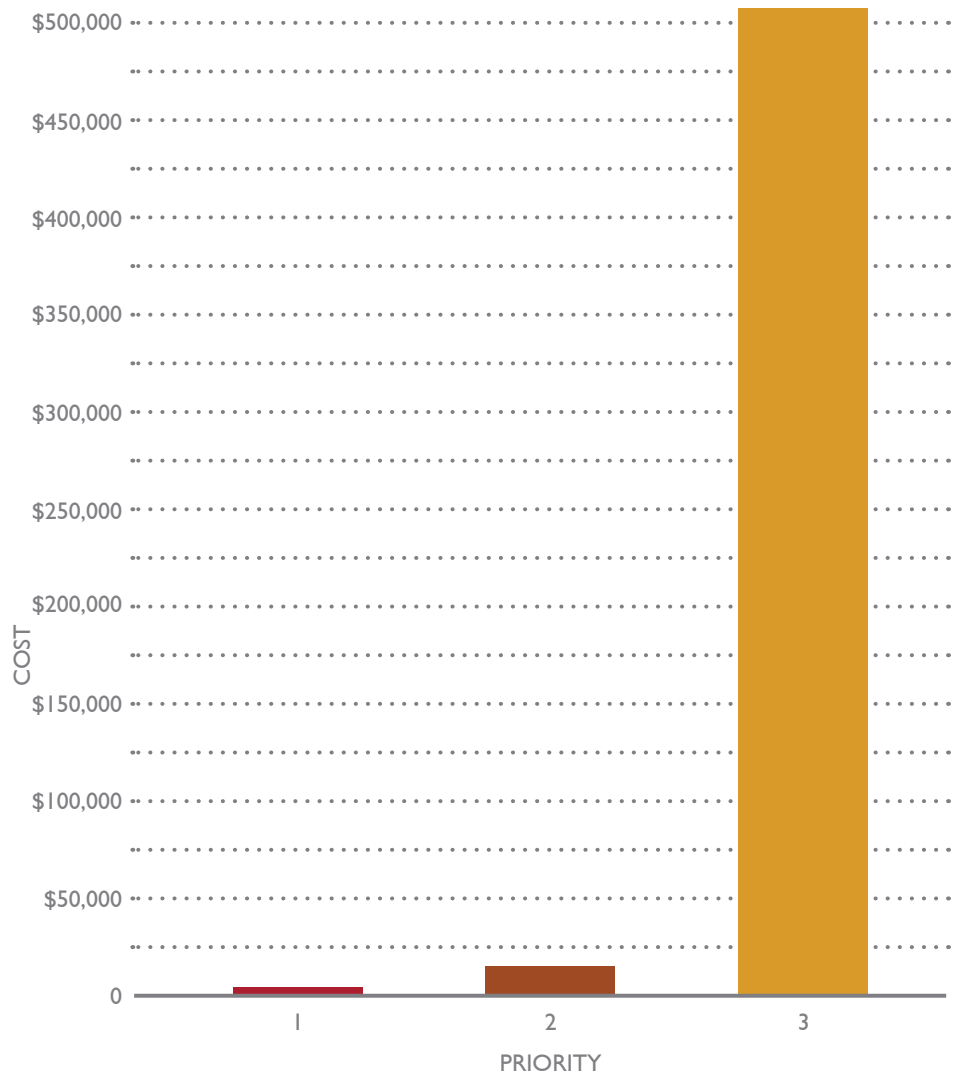


SECONDARY EXTERIOR PRIORITY

	1	2	3	COST
Replace roofing on press box/concession building	•			\$5,000
Repair roof leaks identified in rooms C106 + C107	•			\$2,500
Investigate potential roof leak/mold grow in Room D138B (Board Room)	•			\$2,500
Repair roof curb leak above kitchen dishwasher	•			\$2,500
Remove and replace wall termination flashing caulk along the north gym wall	•			\$800
Add splash blocks where upper roofs discharge water to lower roofs	•			\$500
Repair areas blistering on Garland roofs	•			\$500
Replace sidewalk by entrance door 12W	•			\$7,500
Replace sealants around all doors and windows	•			\$20,000
Replace sealants between precast concrete panels on the west gym	•			\$10,000



SECONDARY EXTERIOR PRIORITY	1	2	3	COST
Replace exterior building control joint sealant	●			\$10,000
Caulk sky facing masonry joints	●			\$10,000
Reposition splash blocks at roof drain location	●			\$500
Rework sidewalks outside doors 11W, 14N, and 15N to reduce threshold lip	●			\$4,000
Regrade areas adjacent to building to direct water away from building	●			\$8,500
Stabilized grade and above ground fuel tank support	●			\$5,000
Paint press box/concession and storage garage buildings	●			\$5,000
	PRIORITY 1 COST			\$94,800
Recoat areas of missing gravel on Garland roofs		●		\$500
Reset secondary roof scuppers to proper level		●		\$3,500
Mitigate moisture intrusion into code area 3 crawlspace		●		\$175,000
Mitigate moisture intrusion into AHU room by door 15N		●		\$10,000
Prevent moisture penetration through exterior wall - Rooms B135, 139, D106		●		\$3,500
Replace windows in the main gym lobby by door 16E		●		\$29,000
Replace skylights above the locker commons		●		\$35,000
Replace doors at entrance 2S		●		\$8,500
Replace sealants between green house and main building (included in other sealant amounts)		●		-
Replace sealants in west locker room shower areas		●		\$300
Tuckpoint lower half of 1953 addition		●		\$75,000
Tuckpoint various locations of facility (approximately 10%)		●		\$140,000
Replace stone below door frame 2S		●		\$1,500
Rework base flashing and foam insulation termination along east side of building		●		\$3,500
Replace windows and panels in wood and metals shop		●		\$25,000
Replace concession area doors		●		\$3,000
Seal railing posts on retaining wall at the east side of the building		●		\$500
	PRIORITY 2 COST			\$513,800
Evaluate footing soil coverage to determine if under or over 42			●	\$2,000
Replace stone sills by wood and metal shop windows			●	\$2,000
Install exterior roof access ladders			●	\$10,000
Replace windows in Boiler Room (includes door)			●	\$6,500
Replace glazing in the green house			●	\$10,300
Caulk all areas where sidewalks adjoin the building			●	\$7,500
Replace metal filler panels at entrance 6W			●	\$500
	PRIORITY 3 COST			\$38,800
	TOTAL COST			\$647,400

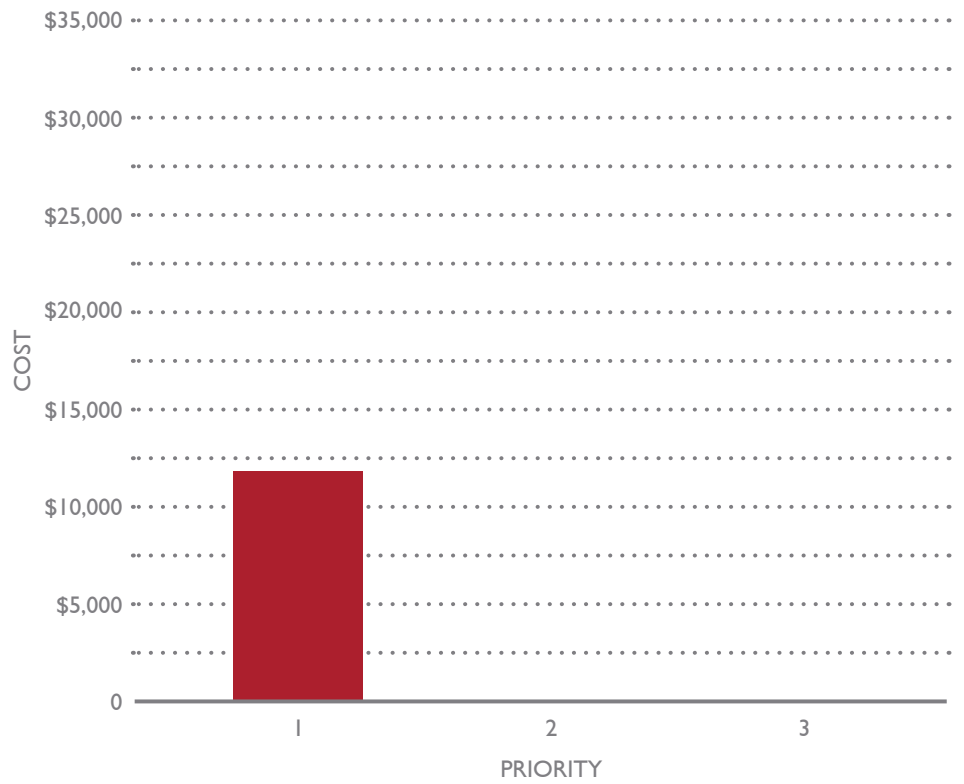


*Graph does not include TBD cost estimate values

SECONDARY INTERIOR PRIORITY

	1	2	3	COST
Investigate/Repair leaking pipe in west men's locker room	•			\$3,500
	PRIORITY 1 COST			\$3,500
Install dire dampers in HVAC ducts at ceiling grid line in code area 2		•		TBD
Reduce length of flex duct on dryer in room EI04 (Home Economics)		•		\$700
Replace VTC flooring in DI43		•		\$3,500
Replace VCT flooring in DI47		•		\$3,500
Replace VCT flooring near door I3W		•		\$1,000
Repair delaminating epoxy in single shower of womens locker room		•		\$2,000
Replace walk-in coat column base plates in boiler room		•		\$4,000
	PRIORITY 2 COST			TBD

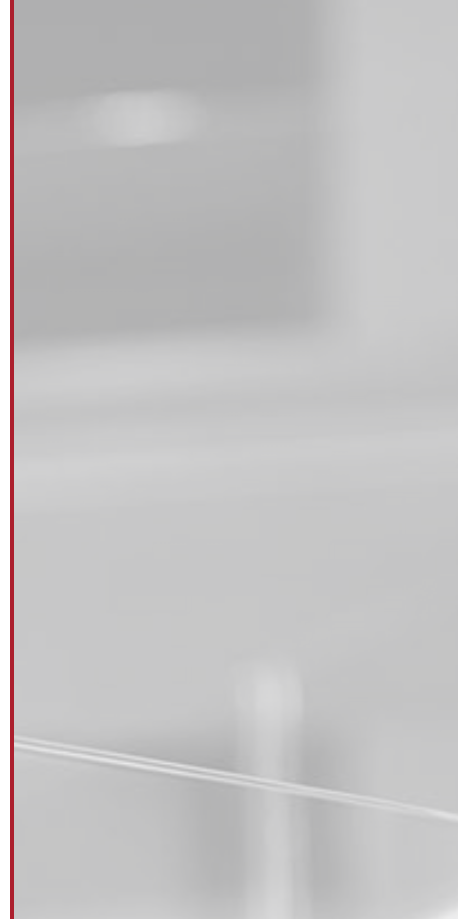
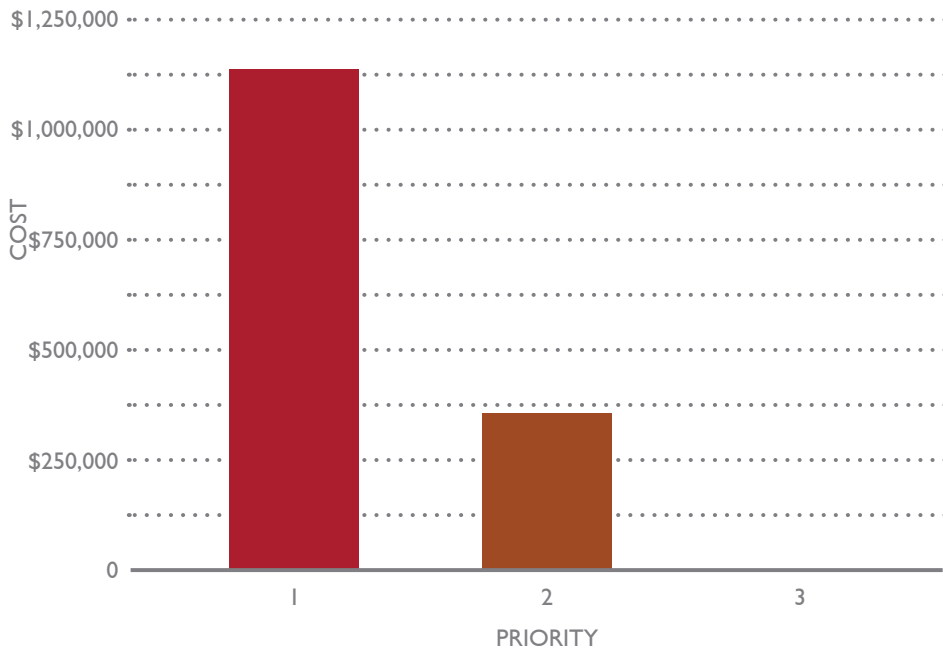
SECONDARY INTERIOR PRIORITY	1	2	3	COST
Repair or replace folding wall in D105A + B			●	\$4,500
Repair wall tile in west women's locker room shower area			●	\$900
Replace poor condition casework in code area 3			●	\$100,000
Replace very poor condition casework tops in room B120			●	\$10,000
Replace poor condition casework in B121			●	\$1,000
Polish and seal stained terrazzo floor areas in restroom group of code area 2			●	\$7,000
Polish and seal stained terrazzo floor areas in restroom group of code area 3			●	\$7,000
Polish and seal stained terrazzo floor areas in restroom group off F103 (gym lobby)			●	\$7,000
Replace ceiling in women's locker room by west gym (A108)			●	\$2,400
Replace ceiling and grid in men's locker room by west gym (A108)			●	\$2,400
Replace flooring in B136 and B135 (moisture penetration from below)			●	\$7,000
Replace carpet in D155			●	\$3,400
Replace VCT in D153 (Art) and E104 (Home Economics)			●	\$7,700
Replace carpet in D149 with hard surface flooring			●	\$1,800
Replace carpet in D148, D156, D157, D102, D104, D105B			●	\$25,500
Replace ceilings - B122 (fire rated), D143, D147, D155, D152, D148, E110, E109, F126, F121, D102, D104, D105A, D137, D135			●	\$60,000
Replace door to stage at top of stair landing			●	\$2,500
Freshen main gym lobby (F103 to be more inviting)			●	\$75,000
Paint rooms B120 and B121			●	\$1,500
Replace rusted toilet partitions - Staff restroom in kitchen area			●	\$1,800
Replace rusted toilet partitions - Restrooms in main gym lobby (F103)			●	\$9,000
Improve signage to lower level locker rooms			●	\$500
Update sound panels in choir and band rooms			●	\$8,000
Repaint walls of Nurse's office			●	\$600
Install flooring in upper commons			●	\$17,000
Repair casework drawer operation issues in D143			●	\$3,000
Improve casework in E104 (Home Economics)			●	\$25,000
Additional casework in D108 to accommodate needs			●	\$10,000
Replace casework in D135 workroom			●	\$15,000
Add coffee station to district office area			●	\$12,000
Replace ceiling tile and grid in D138B (Board Room)			●	\$3,000
Install flooring in lower commons			●	\$12,250
Install rubber flooring in D152 (Weight Room)			●	\$10,300
Replace risers in F121 with non-wood material risers in F121 with non-wood material risers			●	\$50,000
	PRIORITY 3 COST			\$504,050
	TOTAL COST			TBD



SECONDARY STRUCTURAL PRIORITY

	1	2	3	COST
Repair and coat column base plates in boiler room	•			\$2,000
Investigate/Repair cracks along vertical columns and beam support in Room B120	•			\$10,000
PRIORITY 1 COST				\$12,000
TOTAL COST				\$12,000





SECONDARY LIFE SAFETY

	1	2	3	COST
Fill fire wall penetrations with Fire Stop - Code Area 3	•			\$15,000
Separate wood and metal shops	•			\$35,000
Install proper exhaust ventilation in wood shop finishing room	•			\$7,500
Improve lighting in wood shop finishing room to explosion proof	•			\$2,500
Create adequate clearance around wood and metal shop equipment (cost assumes a 2500 sf addition which would be required unless number of machines is reduced)	•			\$750,000
Install stair handrail to lower level of boiler room	•			\$750
Extend stair handrail in main gym lobby (FI03) 12 inches past last riser	•			\$2,000
Install compliant stair and handrail to AHU room by door I5N	•			\$9,000
Install handrail on exterior stair near door I6E	•			\$1,100
Repair delaminating epoxy floor on stair and corridor serving doors I4N and I5N	•			\$4,000
Renovate locker rooms to provide 2 means of egress and ADA compliance (elevator required for lower level locker rooms to meet full compliance)	•			\$200,000
Renovate wrestling room to provide 2 means of egress	•			\$200,000
	PRIORITY 1 COST			\$1,226,850
Add elevator to lower level of locker room (Requires extensive structural modifications or addition)		•		\$350,000
	PRIORITY 2 COST			\$350,000
	TOTAL COST			\$1,576,850

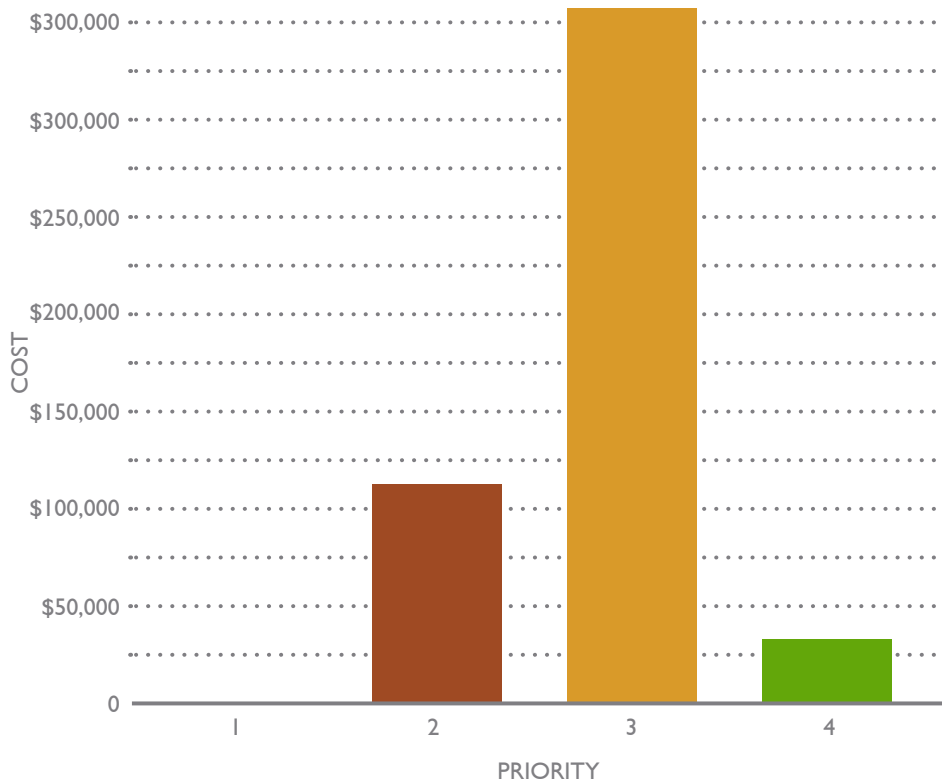


SECONDARY HAZARDOUS MATERIAL PRIORITY

Ceiling tile abatement

1	2	3	4	COST
			●	TBD
PRIORITY 4 COST				TBD
TOTAL COST				TBD



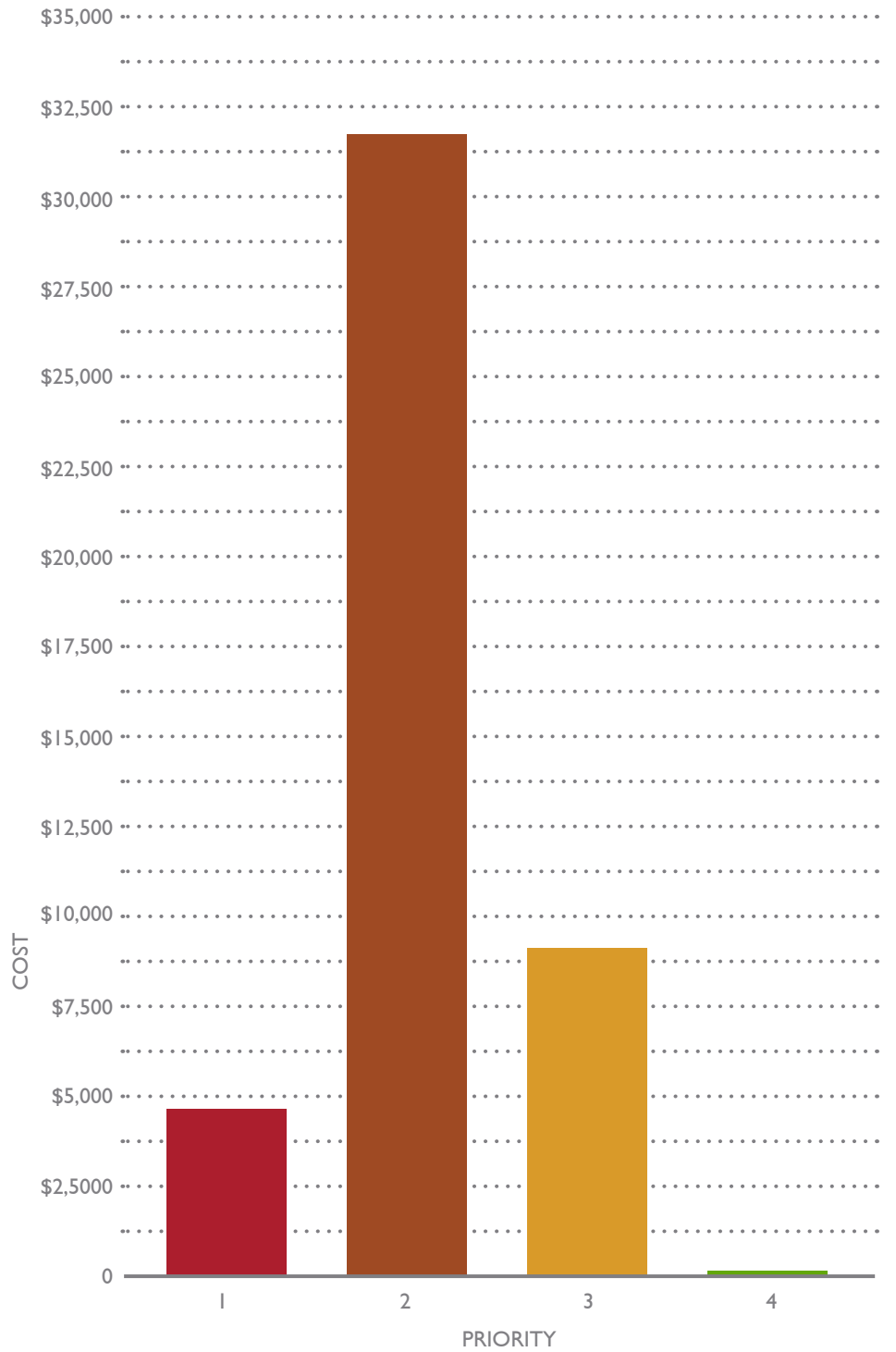


*Graph does not include TBD cost estimate values



SECONDARY ACCESSIBILITY PRIORITY

	1	2	3	4	COST
Renovate restroom group in code area 3 to be ADA compliant		●			\$120,000
	PRIORITY 2 COST				\$120,000
Fix exterior sidewalk elevation issues			●		TBD
Fix interior handrails			●		TBD
Renovate restroom group in code area 5 to be ADA compliant			●		\$50,000
Renovate kitchen restroom to be ADA compliant			●		\$12,000
Update door hardware in 1953 and 1969 wings to ADA compliant lever style			●		\$21,000
Renovate women's restroom near west gym to full ADA compliance			●		\$16,000
Renovate restroom group in code area 2 to be ADA compliant			●		\$175,000
Renovate restroom group in gym lobby (F103) to be ADA compliant			●		\$35,000
	PRIORITY 3 COST				TBD
Modify classroom doors in code area 3 to be ADA compliant				●	\$33,500
Relocate restroom grab bars in D108 and D111 to be code compliant				●	\$1,100
	PRIORITY 4 COST				\$34,600
	TOTAL COST				TBD

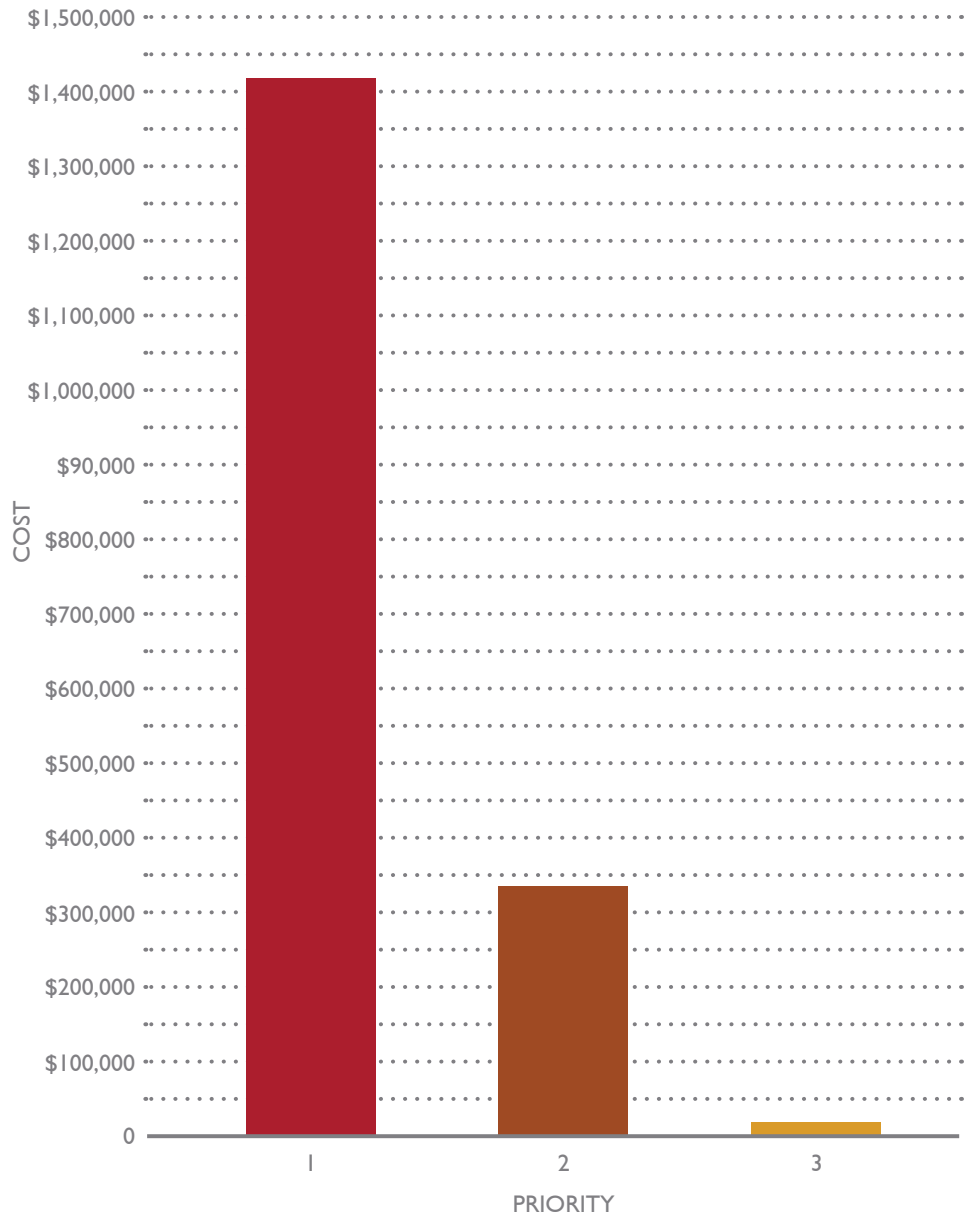




SECONDARY PLUMBING PRIORITY

	1	2	3	4	COST
Install clay interceptor in are room (D153) sink drain	●				\$1,200
Install code compliant natural gas shut-off valve or emergency shut-off button in Science area (D143 + D147)	●				\$2,400
Install code compliant natural gas shut-off valve or emergency shut-off button in Home Economics area (E104)	●				\$1,200
PRIORITY 2 COST					\$4,800
Replace galvanized pipe in C-wing restroom chase		●			\$25,000
Repair broken ADA showers in west gym locker room		●			\$500
Install proper floor cleanout in area B restroom group		●			\$800
Replace galvanized pipe in C-wing classroom plumbing		●			\$5,500
PRIORITY 2 COST					\$31,800
Install pipe wrap on p-traps in C-wing restrooms			●		\$700
Replace leaking flush valve in women's C-wing restroom			●		\$300
Replace poor condition sinks in C-wing classrooms			●		\$4,400
Replace leaking water faucet in E124			●		\$200
Replace filters for bottle filling water fountains			●		\$400
Repair broken water filler in women's locker room			●		\$1,200
Repair loose lavatory fixture in room D161			●		\$300
Replace leaking water faucet in D111			●		\$300
Clear plugged room drain intakes on roof			●		\$500
Replace broken or unusable hose bibs			●		\$600
PRIORITY 3 COST					\$8,900
Replace washing machine water supply hoses				●	\$100
PRIORITY 4 COST					\$100
TOTAL COST					\$45,600





SECONDARY MECHANICAL PRIORITY

	1	2	3	COST
Seal former unit ventilator wall penetrations	●			\$15,000
Release stuck relief dampers for Area A gym	●			\$3,000
Replace damaged diffusers in Area A gym	●			\$2,000
Replace Area A gym roof top HVAC units in poor condition	●			\$120,000
Increase dishwasher hood air flow	●			\$5,000
Provide ventilation to back storage room where building management system is operated	●			\$3,000
Repair exhaust fan in shop finishing room	●			\$200
Migrate from pneumatic controls to DDC	●			\$230,000
Reinsulate bare pipes in tunnel system	●			\$10,000
Balance kiln exhaust system in room D154	●			\$1,000

SECONDARY MECHANICAL PRIORITY	1	2	3	COST
Install exhaust ventilation in chemical storage room (off D145)	•			\$3,000
Provide ventilation to concession stand space	•			\$5,000
Repair or replace locker room unit ventilators and controls (F-wing)	•			\$10,000
Add vibration isolators to AHU near F-wing women's locker room	•			\$5,000
Update air handlers and associate controls off the stage	•			\$400,000
Reslope roof in area surrounding AHU's for Area B	•			\$10,000
Correct control sequences for roof top units	•			\$10,000
Reinsulate large runs of refrigerant piping on roof	•			\$8,000
Replace condensing unit in Area F	•			\$15,000
Replace Area D	•			\$560,000
	PRIORITY 1 COST			\$1,415,200
Dehumidification of existing RTU's that have the capability		•		\$280,000
Install exhaust ventilator in C-wing south storage room		•		\$3,000
Shorten refrigerant piping for mini-splits in room B120		•		\$1,000
Replace roof top unit ductwork to incorporate slope		•		\$25,000
Rebalance exhaust fans for C-wing restroom group		•		\$1,000
Repair issue with condensate pumps		•		\$5,000
Add spring isolation to AHU in kitchen		•		\$2,000
Rebalance exhaust ventilation for E104 (Home Economics)		•		\$2,000
Install cabinet heater in E-wing vestibule		•		\$3,000
Replace cabinet heater in stairwell to air handling room near women's locker room		•		\$2,000
Re-install missing ductwork in wrestling room		•		\$2,000
Install ducted return or exhaust ventilation in room D108		•		\$3,000
Rebalance airflow for room D152		•		\$500
Install exhaust ventilation in custodial room D159		•		\$3,000
	PRIORITY 2 COST			\$332,500
Repair or replace unit heater in C-wing south vestibule			•	\$2,500
Replace rusted unit heaters in C-wing restroom group			•	\$3,000
Repair ductwork in men's locker room (Area A)			•	\$5,000
Replace fin tube radiation in hall outside Area A gym			•	\$3,000
Repair VAV rattle in B135			•	\$500
Replace door to men's restroom near kitchen			•	\$1,200
Replace rusted exhaust grill in janitors room outside boiler room			•	\$400
Clean return grille in wrestling room			•	\$200
Create new HVAC zone for D138			•	\$3,000
Remove poster Remove poster from transfer grille in room D137			•	\$1
	PRIORITY 3 COST			\$18,801
	TOTAL COST			\$1,766,501

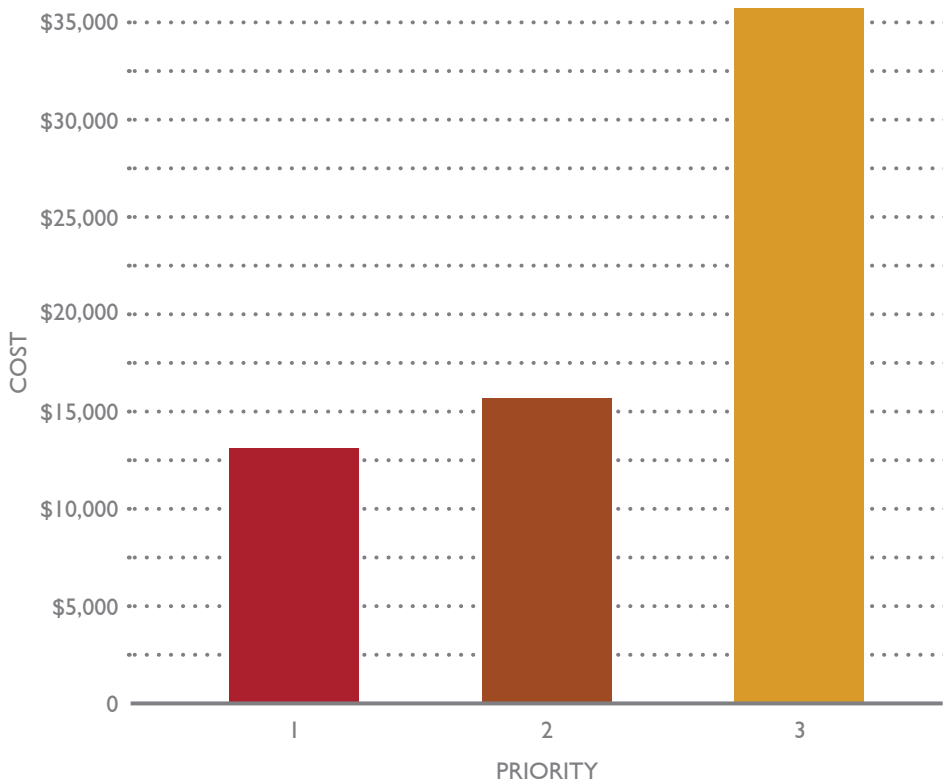


SECONDARY TECHNOLOGY PRIORITY

Create Synology for back-up files

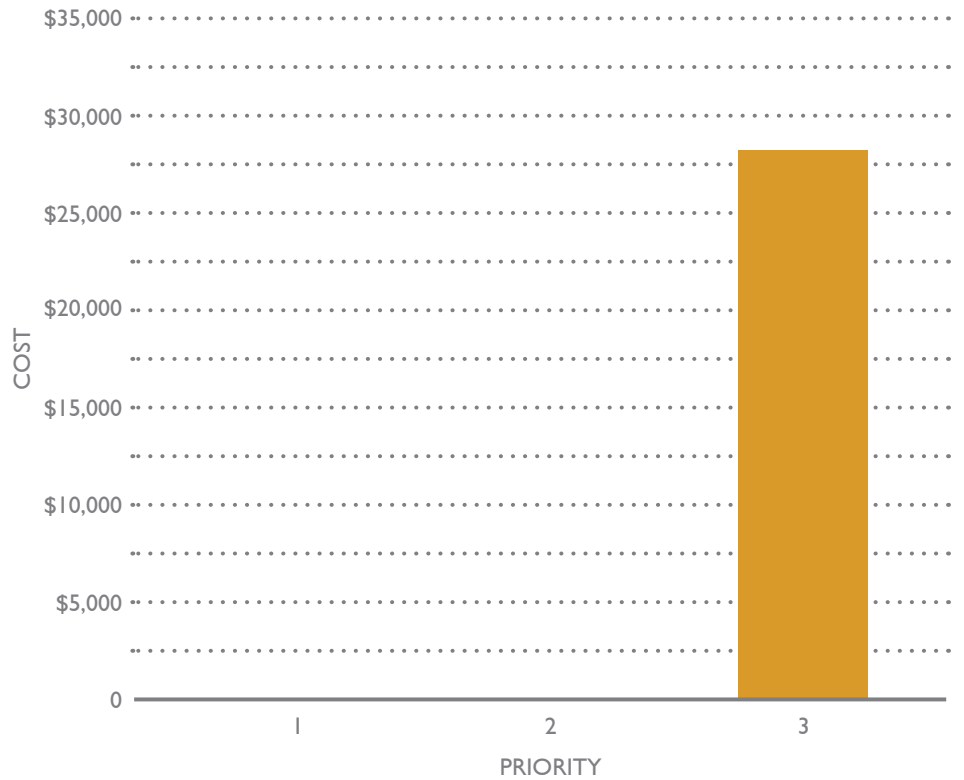
	1	2	3	COST
Create Synology for back-up files	•			TBD
	PRIORITY 1 COST			TBD
Upgrade to new operating system			•	TBD
	PRIORITY 3 COST			TBD
	TOTAL COST			TBD





SECONDARY ELECTRICAL PRIORITY

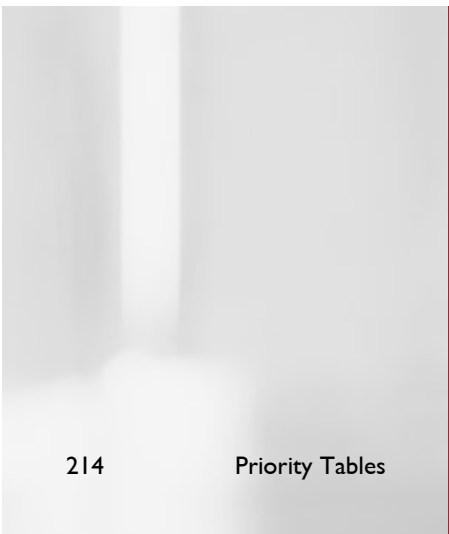
	1	2	3	COST
Add switches to gymnasium light circuits to prevent students from accessing the electrical panel	●			\$1,500
Install explosion proof lighting and electrical devices in chemical storage room	●			\$5,660
Install explosion proof lighting and electrical devices in finishing room	●			\$5,660
PRIORITY 1 COST				\$12,820
Add exterior Emergency Egress lighting near each entrance		●		\$5,185
Replace electrical panel backboard, with adequate footings at the football field		●		\$5,500
Replace light fixtures in a junior high locker rooms with vandal resistant fixtures		●		\$4,700
PRIORITY 2 COST				\$15,385
Replace warped or broken light fixture lenses			●	\$2,000
Replace exterior HID lights with LED			●	\$22,500
Replace nylon wall plates with stainless steel wall plates			●	\$10,500
Replace surface mounted receptacles in the gymnasium with impact resistant receptacles with covers			●	\$1,000
PRIORITY 3 COST				\$36,000
TOTAL COST				\$64,205



*Graph does not include TBD cost estimate values

SECONDARY SECURITY PRIORITY

	1	2	3	COST
Migrate to electronic access control		●		TBD
		PRIORITY 2 COST		TBD
Add exterior cameras to improve coverage near entrances			●	\$15,000
Add cameras to improve coverage within building			●	\$13,000
		PRIORITY 3 COST		\$28,000
	TOTAL COST			TBD





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