SHALER AREA SCHOOL DISTRICT

1800 Mt. Royal Boulevard
Glenshaw, PA. 15116
412-492-1200

Facility Study Update

ENGINEERS HSDR ARCHITECTS

#4475

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1500 Burchfield Road
Allison Park, PA 15101

BUILDING ENROLLMENT: 354 Students (K-3)

CONSTRUCTION HISTORY:
1964 Original building
1968 Addition- 4 Classrooms
1971 Addition and Alterations
4 Classrooms/multipurpose room
1987 Alterations
2021 Fire Alarm System Replacement

SIZE: 84,595 sq. ft. on approximately 10.75 acres

BUILDING STRUCTURE:
The building is physically located in Shaler Township.
Building is constructed with concrete spread footings and column pads with steel columns and beams supporting the 1st floor steel joist and steel purlin pitched roof construction.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. The main building entrance and walkways are not protected from vehicles driving off the asphalt and hitting pedestrians.

   Propose: Install decorative pipe bollards and/or landscape boulders at main entrance and walkways to protect pedestrians.
   Priority Level (1-4): 2 **Estimated Cost: $15,000 - 20,000**

2. The interior stair guard rails do not include elements to protect users from climbing and/or falling through their 'open' arrangement. The handrails also do not meet accessibility standards regarding their mounding height and grip arrangement.

   Modify and/or replace existing handrails with code complaint painted steel handrails.
   Priority Level (1-4): 3 **Estimated Cost: $30,000 – 35,000**

3. The building's main entrance vestibule was reconfigured and installed which allows visitors / staff to enter the building office monitored creating secure vestibule.
   Priority Level (1-4): N/A **Estimated Cost: N/A**

RESTROOMS

4. Gang, and single-user restrooms throughout building do not meet today's accessibility requirements. Floor clearances and turning areas are not sufficient to accommodate a disabled individual within the spaces. Plumbing fixtures and toilet accessories heights and locations are also not compliant.
   Renovate all building restrooms to provide adequate clearances for handicap and to meet ADA requirements.

   Priority Level (1-4): 2 **Estimated Cost: $1,200,000- 1,400,000**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

DOORS/HARDWARE

5. Interior doors are in poor condition and corridor entry areas do not provide ADA code required clearances at door latches to permit operation by a disabled person.

   Propose: Modify adjacent walls at inadequate clearance locations.
   Priority Level (1-4): 2 **Estimated Cost: $166,000 – 215,000**

6. Door hardware throughout building is not code compliant, door hardware throughout the building is knob-type.

   Replace non-compliant door hardware on interior doors with new lever-type locksets and panic devices at exit egress doors. Install classroom security locksets for added safety for intrusion prevention.
   Priority Level (1-4): 2 **Estimated Cost: $111,000 – 166,000**

ADA SIGNAGE/COMPLIANCE

7. Building does not have required tactile braille interior signage to accommodate visually impaired occupants as required per ADA guidelines.

   Propose: Replace interior building signage with code-compliant signs.
   Priority Level (1-4): 3 **Estimated Cost: $42,000 – 47,000**

8. The building's elevator does not meet ADA guidelines. The hallway and cab's control panel height, fireman's recall, fire alarm integration, and emergency power improvements all need addressed on the elevator.

   Propose: Upgrade the elevator components to comply with current accessibility and building codes and modernize equipment.
   Priority Level (1-4): 2 **Estimated Cost: $38,000 - 42,000**

PLUMBING

9. Current plumbing code requires that all faucets for handwashing must be provided with thermostatic mixing valves set at no more than 109 degrees.

   Propose: Install thermostatic mixing valves.
   Priority Level (1-4): 2 **Estimated Cost: $50,000 - $70,000**

ELECTRICAL

10. Camera Surveillance System:
    The camera surveillance system of cameras located in the corridors and on the building exterior. The system is networked and connected to the district-wide system. This system is manufactured by ExacqVision and was installed in 2021.
    Propose: No work required
    Priority Level (1-4):4 **Estimated Costs: N/A**

11. Door Access System:
    The door access system was manufactured by Konntech, installed in 2019, and is in good working order
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Costs: N/A**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

12. Door Intercom System:
    The door intercom system was manufactured by ExacqVision, was installed in 2021, is connected to the building network and the door access system and is in good working condition.
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Costs: N/A**

13. Fire Alarm:
    The fire alarm system has been upgraded to a Honeywell/Game well-FCI voice system in 2021.
    Propose: No work required.
    Priority Level (1-4):4 **Estimated Costs: N/A**

14. Federal ADA and state building codes require Areas of Rescue in two story buildings located within stairs or in fire protected areas for disabled individuals to wait until fire personnel arrive and assist them to safety.
    Locate an Area of Rescue within or near 2nd floor stairs and install a remote call station system for communication to fire alarm panel.

    Priority Level (1-4): 1 **Estimated Cost: 38,000 – 62,000**

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $1,690,000 – $2,057,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The existing asphalt in parking lots and drives are showing signs showing signs of cracking in the front and rear lots. Storm structures are in fair condition.
   Propose: Remove all existing asphalt in drives and parking lots (+/- 5") down to stone sub-base. Re-compact and add or replace additional stone base (as needed) and install new asphalt binder and new wearing top courses.
   Priority Level (1-4): 2 **Estimated Cost: $1,120,000 – 1,250,000**

2. Select concrete walks and curbs are cracking and joints have started to widen due to settlement, creating a tripping hazard. Concrete surfaces have also started to spall and deteriorate at several locations due to weather and salts.
   Propose: Replace select concrete walks and curbs during a parking lot resurfacing project.
   Priority Level (1-4): 2 **Estimated Cost: $80,000 - 90,000**

3. The existing EPDM rubber membrane on the flat portions of the building's roof in fair/poor condition and were installed in 1997; and the 1987 metal mansard roof, soffits, and fascia were repainted in 2000 and is also in fair/poor condition due to reoccurring leaks and failing seams. The flat roof warranty expired in 2017. Metal roofing leaks on the pitched portion of the front wall of the upper gymnasium. Gutters and downspouts were replaced in 2012 and are filled with debris, require frequent cleaning and are backing up.
   Propose: Monitor existing roof coating for leaks and plan for a future roof replacement on flat and pitched roof portions. Install snow guards on the pitched roofs to prevent falling snow and ice and repair or replace gutters and downspouts.
   Priority Level (1-4): 2 **Estimated Cost: $1,200,000 – 1,300,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

4. Monumental entrance sign at street does not match other district buildings. Install matching masonry sign w/ acrylic panel.
   Priority Level (1-4): 4 **Estimated Cost: $15,000 – 20,000**

5. The building's main aluminum entrance vestibules are original and contain single glazed glass which leak air and water and offer no insulation from the exterior environment.

   Priority Level (1-4): 2 **Estimated Cost: $30,000 - 40,000**

6. The original steel frames and doors at service and secondary entrances are rusted beyond repair and need replaced. Other entrances have been replaced with fiberglass reinforced panel doors and are in good condition.
   Priority Level (1-4): 2 **Estimated Cost: $32,000 - 40,000**

7. The building's exterior windows leak air and water at their perimeter and are in poor condition. They also contain phenolic insulation in their solid panels, which cause premature rusting and are deteriorating beyond repair. Some have been replaced but many still need to be addressed.
   Priority Level (1-4): 2 **Estimated Cost: $400,000 – 550,000**

8. Playground is surfaced with wood mulch causing washouts and buildup of material, leading to poor drainage following rain events.
   Propose: Replace playground surface with rubberized surface suitable for all age groups using equipment and install subsurface drainage.
   Priority Level (1-4):4 **Estimated Cost: $65,000 – 72,000**

9. The existing exterior brick masonry walls (inc. the loading dock) are showing signs of brick-and-mortar deterioration due to weather and exposure.
   Repair / repoint any brick-and-mortar joints; clean and seal all masonry surfaces to extend life of exterior walls.
   Priority Level (1-4): 2 **Estimated Cost: $300,000 – $400,000**

10. Overhead entry canopy columns and framing have rust / corrosion at base of supports. Columns should be cleaned, painted and a concrete form base installed at bottoms.
    Priority Level (1-4): 1 **Estimated Cost: $85,000 - $150,000**

11. Gymnasium basketball backstops, wall crash pads, and miscellaneous athletic equipment are in fair condition. Multipurpose room finishes which are vinyl tile flooring, painted concrete masonry walls, and exposed structural acoustic roof deck are all in good condition.
    Additional wall padding is recommended to protect students from injury during gym events.
    Priority Level (1-4): 4 **Estimated Cost: $ 25,000 – 30,000**

12. Lockers are original and in fair/poor condition but could be electrostatically painted to update finish and replace latching hardware.
    Priority Level (1-4): 3 **Estimated Cost: $ 75,000 – 90,000**

13. Wall paint throughout the building is in fair condition.
    Propose: Repaint all interior / exterior surfaces in building.
    Priority Level (1-4): 4 **Estimated Cost: $200,000 – 230,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

14. Lay-in acoustic ceilings are in poor condition. They are sagging due to humidity issues in building and are stained in several locations from roof and/or above ceiling equipment leaks
    Propose: Replace lay-in ceilings with new humidity resistant ceiling panels

    Priority Level (1-4): 4 **Estimated Cost: $332,000 – 377,000**

15. Flooring throughout the building is generally in fair condition, The terrazzo floors need filled at various cracks/pitted locations. VCT flooring throughout the classrooms is in fair condition and needs to be replaced.

    Propose: Restore existing terrazzo flooring by grinding and polishing to restore their original look. Replace VCT in all spaces.
    Priority Level (1-4):4 **Estimated Cost: $310,000 – 355,000**

16. Existing rubber treads and risers are original to the building and worn.
    Propose: Replace stair treads and risers with new.
    Priority Level (1-4):2 **Estimated Cost: $20,000 – 30,000**

17. Existing educational casework/ marker/tack boards are in poor condition. They are worn due to use and life.
    Priority Level (1-4):4 **Estimated Cost: $1,125,000 – 1,350,000**

18. Assumed asbestos containing materials (ACMs) include 9” x9” and 12” x 12” vinyl asbestos tile in many of the classrooms on the ground and first floors, fiberglass pipe elbows and insulation above ceilings in the basement and corridors. Items should be regularly monitored for damage and removed or contained by a certified abatement employee or Contractor.
    Propose: An updated hazardous material inspection should be performed to confirm presence of asbestos materials should a major building renovation occur. All suspected asbestos containing materials should be regularly monitored and removed / contained by a certified abatement employee or contractor if damaged. Any major renovations that may affect ACM’s should be sampled to confirm their existence and removed in their entirety prior to work occurring.
    Priority Level (1-4): 3 **Estimated Cost: $80,000 – 95,000**

Total Estimated General Building Improvements Construction Cost: $5,494,000 – 6,469,000

FOOD SERVICE EQUIPMENT

The production kitchen, prep, storage, and ware washing spaces encompass approximately 2,000 square feet with a serving space size of approximately 250 square feet. Students are being served over two meal periods. The most recently known renovation was in the early 1970's during the construction of the facility. Overall condition of space and equipment was noted to be in fair condition with 95% of the equipment original from the last renovation. Our recommendation is for a complete renovation of the space to make the kitchen facilities compliant with all codes, regulations, and in order to replace all equipment that is beyond it's expected service life.

(Cost estimates include equipment costs only, removal and disposal of existing equipment, installation of new equipment, and any required general trades or utility work is not included.)

1. General Recommendation: The general recommendation for the kitchen is for a complete renovation due to the age of all the equipment, department of health concerns with installation of utilities and equipment finishes, as well as the use of cooking equipment that is not properly vented or protected by fire suppression systems. In addition to code compliance issues, all equipment (major and ancillary) is needing replacement. This includes the walk-in cooler/freezer, refrigeration system, serving line equipment that includes cold food holding, cooking appliances, hoods, etc. All plumbing utilities to equipment are ran exposed along the building walls. This results in areas that are not easily cleanable and that do not have the proper clearances as required by current department of health guidelines. All utilities in a commercial kitchen space should be concealed in building walls or chases. Current plumbing utility installation results in exposed piping that cannot be easily cleaned. This exposed piping is also holding equipment off walls and creating voids where debris can accumulate and is not easily cleanable. Various pipes have been painted, insulated, or left unfinished. The piping is in various stages of insulation and surface finish degradation. It was also noted that the serving line opens into an emergency egress corridor. Students stage in this corridor when being served food. (See Images at the end of the section)

   Priority Level (1-4): 1 **Estimated Cost Range of $560,000 to $625,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

HVAC

1. Two (2) boiler rooms exist in the building. Each room contains a new high efficiency boiler (2019) Bryan water-tube. All the boilers are gas-fired.

   Propose: Monitor condition of new high efficiency boiler and pan for replacement in 10-15 years due to high condensation levels.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

2. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Many of the units appear to be original and should be replaced due to the decreasing availability of repair parts, along with the likelihood that they can no longer properly ventilate the classrooms.

   Replace units and convert to central ducted air (VAV) system.
   Priority Level (1-4): 2 **Estimated Cost: $2,030,000 - $2,131,000**

3. Existing hot water pumps are in good condition. New hot water pumps were installed during the 2019 energy upgrade project.

   Priority Level (1-4): 4 **Estimated Cost: N/A**

4. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability. Only the head end system incorporates new direct digital Control (DDC) system.

   Upgrade building ATC system to full DDC to optimize control and energy efficiency.
   Priority Level (1-4): 1 **Estimated Cost: $125,000 - $131,000**

   Replace all existing pneumatic valves and damper actuators with electric type to compliment the ATC system conversion to DDC.
   Priority Level (1-4): 1 **Estimated Cost: $285,000 - $300,000**

   To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
   Priority Level (1-4): 1 **Estimated Cost: $125,000 - $131,000**

Estimated HVAC Temperature Controls Subtotal: $535,000 - $562,000

5. Existing air handling units serving the Cafeteria/Gymnasium are in poor condition. They are nearing the end of their serviceable life.

   Replace air handling units. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention.
   Priority Level (1-4): 1 **Estimated Cost: $150,000 - $158,000**

6. Exhaust fans are in fair to poor condition and do not provide adequate ventilation to spaces.

   Replace exhaust fans.
   Priority Level (1-4): 2 **Estimated Cost: $105,000 - $110,000**

7. Simple (non-moving) terminal equipment has the potential to be reused if its condition is acceptable.
   Replace terminal equipment such as convectors and finned-tube radiation if necessary.
   Priority Level (1-4): 3 **Estimated Cost: $60,000- 80,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

8. X-ray testing has confirmed the existing hot water distribution piping is of varying vintage and up to 58 years old in places. It is in fair to poor condition.

   Replace existing hot and chilled water piping systems.
   Priority Level (1-4): 2 **Estimated Cost: $676,000 - $710,000**

Total Estimated HVAC Subtotal: $3,556,000 - $3,751,000

PLUMBING IMPROVEMENTS

1. Existing fixtures are dated. Fixtures have manual flush valves and faucets. Fixtures may need to be adjusted for ADA requirements. Faucets and valves should be replaced with newer, water saving valves.
   Adjust plumbing fixtures for ADA requirements and provide new valves and faucets.
   Priority Level (1-4): 2 **Estimated Cost: $100,000 - $125,000**

2. Existing domestic water heating boiler located in the front/older mechanical room appears to be very old and showing signs of age. No installation date could be found during the site evaluation, but previous reports indicate it was installed in 1987.

   Replace existing domestic water heating boiler.
   Priority Level (1-4): 1 **Estimated Cost: $50,000 – $60,000**

3. Existing domestic water heating boiler located in the back mechanical room was installed in 2017. This water heater appears to be in decent condition with no noticeable issues.

   No action need taken for this item.
   Priority Level (1-4): NA **Estimated Cost: NA**

4. Existing domestic water piping is original from 1964 and showing signs of age including numerous areas of corrosion. Existing valves, fittings, etc. should be replaced as well.

   Replace existing domestic water piping systems (cold water, hot water, hot water return) throughout building. This would include all valves.
   Priority Level (1-4): 1 **Estimated Cost: $250,000 - $350,000**

5. Existing storm water piping downspouts are leaking in numerous locations throughout the building.
   Replace downspout locations and scope/camera existing storm piping in those areas to ensure no clogging or other damages
   Priority Level (1-4): 4 **Estimated Cost: $15,000 - $25,000**

6. Existing sanitary system within the building should be scoped and cleaned to ensure longevity of the system and document any issues that may be discovered.
   Scope and clean existing sanitary piping.
   Priority Level (1-4): 4 **Estimated Cost: $30,000 - $40,000**

Total Estimated Plumbing Subtotal: $445,000 - $600,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

ELECTRICAL IMPROVEMENTS

1. Electrical Service and Service Panelboard:
   The school's electrical service is provided by Duquesne Light Company via pad mounted transformer. The service consists of underground feeders from the transformer to the main service panelboard. This service panelboard is rated for 1200A, 208/120V, 3-phase, 4-wire. The panelboard is manufactured by General Electric, was installed in 1997, and appears to be in good condition. There is one breaker space available for future use. Latest power company billing is showing a peak demand of 133 KW (369 A) in August of 2020.
   Recommendation: No work at this time.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

2. Panelboards:
   Distribution panelboards and branch circuit panelboards within the building are multiple vintages by various manufacturers. Although the panelboards appear to have been well maintained, most panels are original to the building construction (1964) or renovation (1970, 1987) dates, which means some of them are over fifty years old and past the expected life. The newest panels seem to have been installed with the generator replacement. There are minimal spare breakers or spaces within the branch circuit panels.
   Recommendation: Replace older panelboards
   Priority Level (1-4): 2 **Estimated Cost: $152,000 - $183,000**

3. Feeders:
   Most of the feeders are older to the building and should be replaced due to age. These feeders mostly run from the distribution panels to the branch circuit panels.
   Recommendation: Replace original feeder wiring within existing conduits
   Priority Level (1-4):2 **Estimated Cost: $101,000 - $125,000**

4. Branch Circuiting and Devices:
   Most of the branch circuits and associated devices were installed approximately 21 years ago in surface mounted raceways and are in good condition, but others are original to the building. However, per the 2017 National Electrical Code (NEC), the receptacles within elementary educational facilities shall be tamper resistant.
   Recommendation: Replace devices to meet code and branch circuits to devices installed originally to the building.
   Priority Level (1-4):2 **Estimated Cost: $114,000 - $138,000**

5. Generator & Transfer Switch:
   The natural gas generator is rated for 25 KW/25 KVA at 120/240V, 1- phase, 3-wire and associate Automatic Transfer Switch (ATS) is manufactured by Generac. These were installed in 2019. The emergency system serves lighting only, no HVAC, kitchen equipment, or other equipment is connected. The current NEC code requires any generator serving life safety lighting
   and equipment shall have a fuel source that cannot be interrupted. This is usually accomplished with a generator operating with an on-site fuel storage tank.
   Recommendation: At time of building renovation, replace generator with an on-site fuel source. Consideration should also be given to adding HVAC equipment, Kitchen equipment, and other loads on to the generator system.
   Priority Level (1-4):2 **Estimated Costs: $68,000 - $85,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

6. Arc Flash Analysis:
   To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.
   Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
   Priority Level (1-4):2 **Estimated Costs: $12,000 - $15,000**

7. Interior Lighting and Lighting Controls:
   Currently, most of the interior lighting fixtures are of prismatic type and have a T-8 fluorescent lamp source with electronic ballasts. A few of the fixtures require new lenses as they are cracked or broken, but generally the fixtures are in fair to good condition. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED lamp sources and new digital controls should be considered for additional energy savings.
   Propose: Replace all lighting with new LED, lighting controls, exit signage, and all associated wiring.
   Priority Level (1-4):2 **Estimated Costs: $825,000 - $1,057,000**

8. Exterior Lighting:
   Exterior lighting is being upgraded to using LED light sources during Summer, 2022.
   Recommendation: No work at this time.
   Priority Level (1-4):4 **Estimated Costs: N/A**

9. PA System:
   PA System has recently been updated.

   Recommendation: No work required.
   Priority Level (1-4):4 **Estimated Costs: N/A**

10. Phone System:
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.
    Recommendation: Undertake a district-wide phone system upgrade, outside the scope of building study.
    Priority Level (1-4):4 **Estimated Costs: N/A**

11. Data Network System
    The data network system consists of a MDF and (3) IDF closets or rooms. The MDF shares the room with the main electrical service. None of these spaces have cooling. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are adequate outlets through-out the building. Network system has been installed within the last 7 years.

    Recommendation: No work required
    Priority Level (1-4):4 **Estimated Costs: N/A**

12. Clock System

The clock system is manufactured by Sapling and was installed in 2021. The system is wireless and has analog style clocks in classrooms and digital style clocks in the corridors.

Recommendation: No work required.

Priority Level (1-4):4 **Estimated Costs: N/A**

Total Estimated Electrical Subtotal: $1,272,000 - $1,603,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $11,327,000- 13,048,000

GRAND TOTAL BURCHFIELD PRIMARY: $13,017,000- $ 15,960,000

Burchfield Primary – Main entrance storefront leak air and water.

Canopy Column base Deteriorating at Sidewalk.

Typical Non-compliant Interior door -do not provide accessible clearances.

Stair's handrail is non-compliant per ADA requirements.

Non-compliant lavatories, sinks and toilets do not provide adequate accessibility clearances at the fixtures.

Brick Veneer / Mortar joints damaged due to water infiltration.

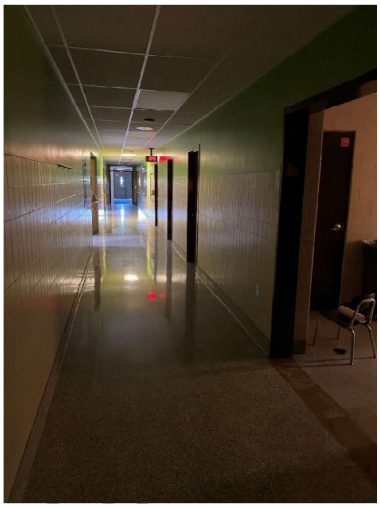
Interior of Walk-in Cooler.

Condensation at degraded Walk-in Seam.

Exposed Plumbing and Gap at Rear of Sink.

Convection Oven Without Venting or Hood.

Typical Exposed Plumbing Utilities Throughout Kitchen Space.



Exit Corridor where the serving line opens to and students are served their lunches.

Type 2 Hoods without Fire Suppression Being Used Above Gas Fired Cooking Appliances.

CAPITAL IMPROVEMENTS PLAN

	Priority #1 - Immediate Need	**Estimated Cost:**
1	Locate an area of rescue assistance at the rear stairway.	$38,000 - $62,000
2	Provide concrete base at canopy entry columns.	$85,000 - $150,000
3	Complete renovation of Kitchen. (See detailed report.)	$560,000- $625,000
4	Replace existing domestic water heating boiler.	$50,000 - $60,000
5	Replace existing water piping system including valves throughout.	$ 250,000- $350,000
	Priority #1 -Total	**$983,000-1,247,000**

	Priority #2 - Approaching Need (3-5 Years)	**Estimated Cost:**
1	Install decorative pipe bollards and landscape stones at main entrance.	$15,000 - $20,000
2	Renovate restrooms to provide adequate accessibility clearances.	$1,200,000 - $1,400,000
3	Modify classroom entry walls for clearances.	$166,000 - $215,000
4	Install new interior door hardware.	$111,000-$166,000
5	Upgrade elevator components.	$38,000 - $42,000
6	Repave parking lots and driveways.	$1,120,000 - $1,250,000
7	Replace concrete walks and curbs.	$80,000-$90,000
8	Replace roof with new adhered rubber or modified bitumen roof system.	$1,200,000 - $1,300,000
9	Replace main aluminium entrance vestibule.	$30,000-$40,000
10	Replace service /secondary entrance steel frame and doors.	$32,000 - $40,000
11	Replace exterior windows.	$400,000 - $550,000
12	Repoint, clean, and seal all exterior walls.	$300,000 - $400,000
12	Replace stair tread and risers.	$20,000-$30,000
16	Replace hot and chilled water piping systems.	$676,000- $710,000
17	Replace existing plumbing fixtures.	$100,000-$125,000
18	Provide all faucets with thermostatic mixing valves.	$50,000 - $70,000
20	Replace original feeder wiring.	$101,000- $125,000
21	Replace original circuit devices.	$114,000-$138,000
23	Arch-flash analysis needs to be performed.	$12,000 - $15,000
	Priority #2 -Total	**$5,765,000-6,726,000**

Priority #3 - Moderate Need (5-8 Years)		**Estimated Cost:**
1	Replace existing handrails.	$30,000 - $35,000
2	Install code-compliant signage throughout the building.	$42,000 - $47,000
3	Lockers to be electrostatically painted, replace hardware.	$75,000 - $90,000
	Priority #3 -Total	**$147,000-172,000**

Priority #4 - Eventual Need (8-12 Years)		**Estimated Cost:**
1	Install entrance masonry sign w/ acrylic panel.	$15,000-$20,000
2	Replace playground surface.	$65,000-$72,000
3	Add wall padding in gymnasium.	$25,000 -$30,000
4	Repaint interior and exterior surfaces throughout the building.	$200,000 - $230,000
5	Replace flooring throughout the building.	$310,000 - $355,000
6	Replace downspout locations after scoping.	$15,000-$25,000
7	Scope and clean sanitary piping.	$30,000-$40,000
	Priority #4 -Total	**$660,000-$772,000**

Comprehensive HVAC upgrades project (including AC)		**Estimated Cost:**
1	Upgrade building ATC system to full DDC.	$125,000 - $131,000
2	Replace pneumatic valves and damper actuators.	$285,000- $300,000
3	Install CO2 sensors.	$125,000-$131,000
4	Replace air handling units in cafeteria /gymnasium.	$150,000 - $158,000
5	Replace unit ventilators and convert to VAV system.	$2,030,000 - $2,131,000
6	Replace exhaust fans.	$105,000- $110,000
7	Replace old panelboards.	$152,000 - $183,000
8	Replace generator & consider adding HVAC control loads to the new system.	$68,000 - $85,000
9	Replace all lighting, controls, exit signs, and wiring.	$825,000 - $1,057,000
10	Remove hazardous material and asbestos materials.	$80,000 - $95,000
11	Replace terminal HVAC equipment.	$60,000- $ 80,000
12	Replace lay in ceilings with humidity resistant ceiling panels.	$332,000 - $377,000
13	Replace casework /marker/tack boards.	$1,125,000-$1,350,000
	Total	**$5,462,000-$6,188,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

101 Marzolf Road Extension
Pittsburgh, PA 15209

BUILDING ENROLLMENT: 297 Students (K-3)

CONSTRUCTION HISTORY:
1968 Original building
1987 Addition and Alterations
2021 Asphalt pavement resurfacing

SIZE: 51,825 sq. ft. on approx. 9 acres

BUILDING STRUCTURE:
The building is physically located in Shaler Township.
Building is 2-story steel framed structure with steel joist and metal deck supporting the upper floor and roof. The structure bears on concrete spread footings below the lower floor which is partially crawl space at the front of the building.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. The main building entrance and walkways are not protected from vehicles driving off the asphalt and hitting pedestrians.
   Propose: Install decorative pipe bollards and/or landscape boulders at main entrance and walkways to protect pedestrians.
   Priority Level (1-4): 2 **Estimated Cost: $15,000 – 20,000**

2. The stair guard rails do not include elements to protect users from climbing and/or falling through their 'open' arrangement. The handrails also do not meet accessibility standards regarding their mounding height and grip arrangement.

   Modify and/or replace existing handrails with code complaint painted steel handrails.
   Priority Level (1-4): 3 **Estimated Cost: $30,000 – 35,000**

3. The building's main entrance has been updated to include a transition window within the vestibule which allows visitors to interact with the building office without having to access the main corridor.

   Priority Level (1-4): N/A **Estimated Cost: N/A**

RESTROOMS

4. Gang student restrooms are small and need to meet today's accessibility requirements. There is only one single-user restroom in all the kindergarten classrooms throughout building and all should meet ADA size requirements. Other restrooms floor clearances and turning areas are not sufficient to accommodate a disabled individual within the spaces. Plumbing fixtures and toilet accessories heights and locations are also not compliant.
   Renovate building restrooms to provide adequate clearances for handicap and to meet ADA requirements.
   Priority Level (1-4): 2 **Estimated Cost: $600,000 – 700,000**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

DOORS/HARDWARE

5. Interior doors and corridor entry alcoves do not provide ADA code required clearances at door latches to permit operation by a disabled person.

   Propose: Modify adjacent walls at inadequate clearance locations.
   Priority Level (1-4): 2 **Estimated Cost: $105,000 – 135,000**

6. Door hardware throughout building is not code compliant, door hardware throughout the building is knob-type.
   Replace non-compliant door hardware on interior doors with new lever-type locksets and panic devices at exit egress doors. Install classroom security locksets for added safety for intrusion prevention.

   Priority Level (1-4): 2 **Estimated Cost: $70,000 – 115,000**

ADA SIGNAGE/COMPLIANCE

7. Building does not have required tactile braille interior signage to accommodate visually impaired occupants as required per ADA guidelines.
   Propose: Replace interior building signage with code-compliant signs.

   Priority Level (1-4): 3 **Estimated Cost: $42,000 – 47,000**

8. The building's elevator does meet ADA guidelines and has been updated to current code requirements.

   Priority Level (1-4): 4 **Estimated Cost: N/A**

9. Faculty room / Boiler room's corridors on both floors of the building are not code compliant; Their distance creates a dead end without an exit path to the exterior. This current arrangement is grandfathered by the code, but if the building undergoes major renovations, this will need to be addressed.
   Propose: Reconfigure corridor and provide an exit path and doors to exit from the existing corridor to exterior at grade to meet exit requirements per code.

   Priority Level (1-4): 4 **Estimated Cost: $200,000 – $300,000**

10. The stage's floor is original to the building's construction and is not ADA complaint. This design is grandfathered into the building and if the building undergoes major renovations this will need to be addressed.
    Propose: Create ADA compliant stage by constructing a ramp and /or a platform lift.

    Priority Level (1-4): 4 **Estimated Cost: $120,000 – 135,000**

PLUMBING

11. Current plumbing code requires that all faucets for handwashing must be provided with thermostatic mixing valves set at no more than 109 degrees.

    Propose: Install thermostatic mixing valves.
    Priority Level (1-4): 2 **Estimated Cost: $50,000 - $70,000**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

ELECTRICAL

12. Fire Alarm
    The fire alarm system is an Ademco system. The newest codes require that fire alarm systems within educational facilities be a voice system.
    Recommendation: During the next building renovation, update to the voice style system as required by code.
    Priority Level (1-4):2 **Estimated Cost: $65,000 - $91,000**

13. Camera Surveillance System
    The camera surveillance system of cameras located in the corridors and on the building exterior. The system is networked and connected to the district-wide system. This system is manufactured by Exacqvision and was installed in 2021.

    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: N/A**

14. Door Access System
    The door access system was manufactured by Konntech, installed in 2019, and is in good working order.
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: N/A**

15. Door Intercom System:
    The door intercom system was manufactured by Exacqvision, was installed in 2021, is connected to the building network and the door access system and is in good working condition.
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: $ N/A**

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $1,297,000 – 1,648,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The asphalt drives and parking areas were resurfaced in 2021and are in excellent condition. Select concrete walks and curbs were also repaired at this time.
   New asphalt surfaces should be seal coated every 3-5 years to preserve life expectancy.
   Priority Level (1-4): 4 **Estimated Cost: $40,000-50,000**

2. EPDM rubber roof membrane was installed in 2002 and is in good condition. The warranty expired in August 2022.
   Consider replacement of roof membranes and edging after 2022 when warranty expires. Monitor existing roof coating for leaks and contact roof installer for repairs.
   Priority Level (1-4): 2 **Estimated Cost: $880,000 – 920,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

3. Existing canopy steel column base is rusted and needs to be repaired.
   Propose: Clean, paint and repair the column bases.
   Priority Level (1-4):1 **Estimated Cost: $2,500 – 4,000**

4. The main building's aluminum entrance vestibules (interior and exterior) are original and outdated, aluminum storefront is not insulated and should be replaced.

   Propose: Replace the aluminum storefront for better insulation.
   Priority Level (1-4): 2 **Estimated Cost: $32,000 – 40,000**

5. Some secondary exterior doors have been replaced with new FRP doors and are in good condition. The original hollow metal frames and doors from lower classrooms are rusted beyond repair and need replaced.
   Priority Level (1-4): 2 **Estimated Cost: $50,000 – 60,000**

6. The building's exterior windows and spandrel panels leak air and water at their perimeter. South side of the building is in particularly poor condition and all need to be replaced.

   Propose: Replace all windows /panels with new aluminum framed windows, insulated glass, and spandrel panels.
   Priority Level (1-4): 2 **Estimated Cost: $392,000 - 425,000**

7. There are several window and door openings with rusting lintels causing exterior brick wall damage above them.
   Propose repair /replace the damaged lintels and repoint the joints and seal all masonry surfaces to extend the life of the walls.
   Priority Level (1-4): 2 **Estimated Cost: $185,000 – 225,000**

8. The existing exterior brick and CMU masonry walls (near classrooms and chimney) are showing signs of deterioration due to weather and exposure.
   Repoint /replace damaged brick and install masonry sealer on walls to extend life.
   Priority Level (1-4): 2 **Estimated Cost: $138,000 – 147,000**

9. Exterior handrails at loading dock have paint chipping and require painting to prevent from corrosion.
   Propose: Repaint existing handrails to protect steel and galvanized coating.
   Priority Level (1-4): 2 **Estimated Cost: $10,000 - 15,000**

10. Lockers are original and in fair/poor condition. They need electrostatically painted and new hardware installed throughout. Lockers in Kindergarten classrooms need to be replaced due to their condition.

    Priority Level (1-4): 3 **Estimated Cost: $138,000 – 145,000**

11. Multipurpose room divider curtain is original, and parts have become obsolete to make repairs.
    Replace divider curtain.
    Priority Level (1-4): 2 **Estimated Cost: $70,000 – 80,000**

12. Additional wall padding is recommended to be installed in the multipurpose room to protect students from injury during gym events.
    Priority Level (1-4): 2 **Estimated Cost: $24,000 – 30,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

13. Wall paint throughout the building is in fair condition.

    Propose: Repaint all interior / exterior surfaces in building.
    Priority Level (1-4): 4 **Estimated Cost: 130,000 – 145,000**

14. Lay-in acoustic ceilings are in poor condition. Tile sagging occurring in corridors due to humidity. Painted plaster ceilings are in fair/poor condition.

    Propose: Replace lay-in ceilings with new humidity resistant ceiling panels
    Priority Level (1-4): 2 **Estimated Cost: $220,000 - 250,000**

15. Original flooring throughout the building is generally in fair/ poor condition. The terrazzo flooring tiles are in fair condition, but the VCT installed to concrete floors is delaminating.

    Propose: Restore existing terrazzo flooring by grinding and polishing to restore their original look. Replace VCT in all spaces.
    Priority Level (1-4): 4 **Estimated Cost: $300,000 –330,000**

16. Existing rubber treads and risers are original to the building and worn.
    Propose: Replace stair treads and risers with new.
    Priority Level (1-4):2 **Estimated Cost: $15,000 – 20,000**

17. Existing educational casework/ marker/tack boards are in poor condition. They are worn due to use and life.
    Priority Level (1-4):4 **Estimated Cost: $900,000 – 1,000,000**

18. Assumed asbestos containing materials (ACMs) include 9” x9” and 12”x12” vinyl asbestos tile in many of the classrooms on the ground and first floors, asbestos pipe fittings and insulation above ceilings and concealed in walls should be regularly monitored for damage and removed or contained by a certified abatement employee or Contractor.

    Propose: An updated hazardous material inspection should be performed to confirm presence of asbestos materials should a major building renovation occur. All suspected asbestos containing materials should be regularly monitored and removed / contained by a certified abatement employee or contractor if damaged. Any major renovations that may affect ACM’s should be sampled to confirm their existence and removed in their entirety prior to work occurring.
    Priority Level (1-4): 3 **Estimated Cost: $70,000 – 80,000**

Total Estimated General Building Improvements **Construction Cost: $3,396,500 – 3,766,000**

FOOD SERVICE EQUIPMENT

The production kitchen, prep, storage, and ware washing spaces encompass approximately 1,200 square feet with a serving space size of approximately 460 square feet. Students are being served over three meal periods. The space was originally constructed in the late 1960’s or early 1970’s. Equipment has been replaced as needed over the years with the last major overhaul estimated to be ten years old. Overall condition of space and equipment was noted to be in good condition. The existing convection is currently being replaced by the district and therefore not being noted as part of this report.

1. The two-section freezer has been problematic and needing continual service.
   Recommendation: Replace with similar unit.
   Priority Level (1-4): 1 **Estimate Cost: $12,800 -14,000**

2. The hot well units on the serving line have reached the end of their useful life. (See Images at the end).

Recommendation: Replace both units.
Priority Level (1-4): 2 Estimated Cost: $4,200-4500 per unit or $8,400- 9000 total

3. There is currently no 2-bowl prep sink in the kitchen space. This is a department of health requirement.
   Recommendation: Install counter with 2-bowl sink and indirect waste next to cookline.
   Priority Level (1-4): 1 Estimated Cost: $4,800 - 5,000

4. The storage shelving in the kitchen dry storage room is painted metal shelving not rated for use in kitchens.
   Recommendation: Replace all shelving with mobile wire shelving that is NSF listed for use in commercial kitchens.
   Priority Level (1-4): 2 Estimated Cost: $9,500 - 10,500

5. The existing hood system does not include a UL300 fire suppression system and does not include the current hood testing and listings for use over gas fired cooking equipment that can produce grease laden air.
   Recommendation: Replace exhaust hood with listed Type 1 Hood and UL300 Fire Suppression System.
   Priority Level (1-4): 1 Estimated Cost: $22,500- 24,000

Total Estimated Food Service Equipment Construction Cost: $58,000 – 62,500

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

HVAC

1. A two-pipe type hot water distribution system exists in the building. There are two (2) gas-fired, Patterson Kelly boilers and both were replaced in 2001.

   Propose: Replace the boiler and pan due to high condensation levels.
   Priority Level (1-4): 1 Estimated Cost: $265,000 - $278,000

2. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Many of the units appear to be original and should be replaced due to the decreasing availability of repair parts, along with likelihood that they can no longer properly ventilate the classrooms.

   Replace units and convert to central ducted air (VAV) system.
   Priority Level (1-4): 1 Estimated Cost: $1,156,000 - $1,214,000

3. Base-mounted pumps serve the heating water systems; they are constant volume, original and in poor condition. Given their age they should be replaced. Replace hot water pumps and incorporate variable speed drives for energy savings.
   Priority Level (1-4): 1 Estimated Cost: $45,000 - $47,000

4. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability.

   Upgrade building ATC system to full DDC to optimize control and energy efficiency.
   Priority Level (1-4): 1 Estimated Cost: $113,000 - $119,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

Replace all existing pneumatic valves and damper actuators with electric type to complement the ATC system conversion to DDC.
Priority Level (1-4): 1 **Estimated Cost: $175,000 - $184,000**

To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
Priority Level (1-4): 1 **Estimated Cost: $77,000 - $81,000**

Estimated HVAC Temperature Controls Subtotal: $365,000 - $384,000

5. Replace office rooftop unit. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention.
Priority Level (1-4): 1 **Estimated Cost: $75,000 - $79,000**

6. Miscellaneous terminal heating equipment such as unit heaters, cabinet heaters and fin-tube radiation exist and serve unoccupied spaces. These are generally in poor condition.
Priority Level (1-4): 1 **Estimated Cost: $35,000 - $37,000**

7. Exhaust fans are in poor condition and do not provide adequate ventilation to spaces.

   Replace exhaust fans.
   Priority Level (1-4): 1 **Estimated Cost: $55,000 - $58,000**

8. Existing hot water distribution piping is 54 years old, is in poor condition and is not appropriate for long term reuse.

   Replace existing hot water piping systems.
   Priority Level (1-4): 1 **Estimated Cost: $415,000 - $436,000**

Total Estimated HVAC Subtotal: $2,411,000 - $2,533,000

PLUMBING IMPROVEMENTS

1. Existing fixtures are in good condition with manually operated valves. Plumbing fixtures may need to be adjusted for current ADA requirements and code required low flow /use fixtures.
   Replace all plumbing fixtures, faucets, and flush valves.
   Priority Level (1-4): 2 **Estimated Cost: $150,000 - $200,000**

2. Current drinking fountains are not ADA compliant due to mounting heights and controls.
   Replace and provide fixtures that are ADA compliant.
   Priority Level (1-4): 2 **Estimated Cost: $18,000 – $20,000**

3. Existing domestic water heater is dated from 2011. This is beyond the typical life expectancy of this type of equipment.
   Replace domestic water heater and master mixing valve.
   Priority Level (1-4): 2 **Estimated Cost: $40,000 – $50,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

4. Existing domestic water piping is original, and there is evidence of leaks, pinholes, corrosion, and other failures throughout the building. Water hammer issues were observed in the mechanical room.

   Replace existing domestic water piping systems (cold water, hot water, hot water return) throughout building. This would include all valves, fittings, accessories.
   Priority Level (1-4): 1 **Estimated Cost: $125,000 - $140,000**

5. Existing sanitary system is reported to be having issues. Based upon the visible piping within the mechanical room, the sanitary system is original to the building and should be replaced (sanitary and vent piping).

   Replace existing sanitary and vent piping systems throughout building.
   Priority Level (1-4): 1 **Estimated Cost: $190,000 - $220,000**

Total Estimated Plumbing Subtotal: $523,000 - $630,000

ELECTRICAL IMPROVEMENTS

1. Electrical Service and Service Panelboard:
   The school's electrical service is provided by Duquesne Light Company via pole mounted transformer. The service consists of underground feeders from the transformer to the main service switchboard. This service switchboard is rated for 600A, 208/120V, 3-phase, 4-wire. The panelboard is manufactured by Eaton/Cutler-Hammer, was installed in 2003, and appears to be in good condition. There are four spare breakers available for future use. Latest power company billing is showing a peak demand of 119 KW (331 A) in January of 2022.

   Recommendation: No work at this time.
   NOTE: Electrical service and switchboard will need replaced if new VAV /Air Conditioning system and/or building additions are planned.
   Priority Level (1-4): 4 **Estimated Cost: $95,000 - $111,000**

2. Panelboards:
   Distribution panelboards and branch circuit panelboards within the building are multiple vintages by various manufacturers. Although the panelboards appear to have been well maintained, some panels are original to the building construction or renovation dates, which means some of them are over fifty years old and past the expected life. The newest panels seem to have been installed with the generator replacement. The older panelboard has very few spare breakers and spaces.

   Recommendation: Replace older panelboards.
   Priority Level (1-4): 2 **Estimated Cost: $117,000 - $139,000**

3. Feeders:
   Feeders that are original to the building should be replaced due to age. These feeders mostly run from the distribution panels to the branch circuit panels.
   Recommendation: Replace older feeder wiring within existing conduits
   Priority Level (1-4):2 **Estimated Cost: $78,000 - $96,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

4. Branch Circuiting and Devices:
   Most of the branch circuits and associated devices were installed approximately 21 years ago in surface mounted raceways and are in good condition, but others are original to the building. However, per the 2017 National Electrical Code (NEC), the receptacles within elementary educational facilities shall be tamper resistant.
   Recommendation: Replace devices to meet code and branch circuits to devices installed originally to the building.
   Priority Level (1-4):2 **Estimated Cost: $75,000 - $91,000**

5. Generator & Transfer Switch:
   The natural gas generator is rated for 10 KW/10 KVA at 120/240V, 1- phase, 3-wire and is manufactured by Dayton. The associated Automatic Transfer Switch (ATS) is manufactured by Generac. These were installed in approximately 2013. The emergency system serves lighting, PA system, fire alarm system, boilers #1 and #2, heating pump #3, hot water tank, and elevator controls. The current NEC code requires any generator serving life safety lighting and equipment shall have a fuel source that cannot be interrupted. This is usually accomplished with a generator operating with an on-site fuel storage tank. In addition, the NEC code also requires that life safety equipment be on a separate ATS than optional equipment such as HVAC.

   Recommendation: At time of building renovation, replace generator with an on-site fuel source. A second ATS should be added to serve HVAC loads.
   Priority Level (1-4):2 **Estimated Cost: $42,000 - $52,000**

6. Arc Flash Analysis:
   To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.

   Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
   Priority Level (1-4):2 **Estimated Cost: $12,000 - $15,000**

7. Interior Lighting and Lighting Controls
   Currently, most of the interior lighting fixtures are of prismatic type and have T-8 fluorescent lamp source with electronic ballasts. A few of the fixtures require new lenses as they are cracked or broken, but generally the fixtures are in fair to good condition. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED lamp sources and new digital controls should be considered for additional energy savings.
   Recommendation: Replace all lighting, lighting controls, exit signage, and all associated wiring.
   Priority Level (1-4):2 **Estimated Cost: $505,000 - $648,000**

8. Exterior Lighting:
   Exterior lighting has been upgraded to use LED light sources.
   Recommendation: No work at this time
   Priority Level (1-4):4 **Estimated Cost: N/A**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

9. PA System:
   The PA System is working but is old and should be replaced with new.

   Recommendation: During the next building renovation, replace the PA system
   Priority Level (1-4):3 **Estimated Cost: $21,000 - $29,000**

10. Phone System:
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.
    Recommendation: Undertake a district-wide upgrade, outside the scope of building study.
    Priority Level (1-4):4 **Estimated Cost: $ N/A**

11. Data Network System:
    The data network system consists of a MDF room. The MDF room has an air conditioning unit. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are
    adequate data outlets through-out the building. Network rack equipment has been installed within the last 7 years and is in good working order.

    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: $ N/A**

12. Clock System:
    The clocks are stand alone and are either cord and plug connected, or battery operated. Clock faces are analog style.

    Recommendation: Provide a full building clock system. Clock system shall be linked with PA System
    Priority Level (1-4):2 **Estimated Cost: $18,000 - $26,000**

Total Estimated Electrical Subtotal: $963,000 - $1,207,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $7,351,500- 7,631,500

GRAND TOTAL MARZOLF PRIMARY: $8,648,500- $ 9,279,500

Windows, frames, panels, and doors are rusted and need to be replaced.

Lockers need to be replaced in kindergarten classrooms.

Marzolf Primary –Exit from Gymnasium.

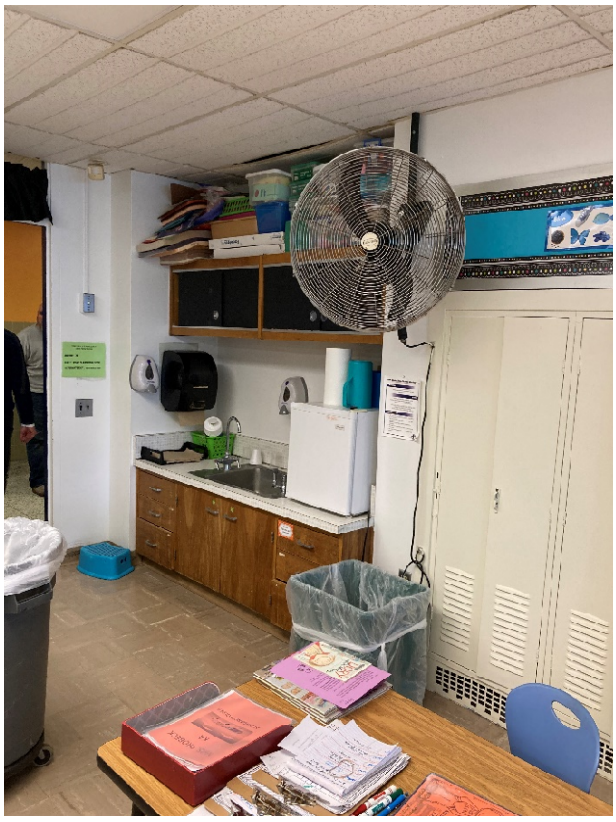
Exterior walls deteriorating due to exposure to weather.

New hardware with lever type are required to meet ADA requirements.

Gymnasium/ Cafeteria- Existing stage level is not ADA compliant.

Plumbing fixtures and toilet accessories heights and locations are not ADA compliant.

Exterior handrails at loading dock to be painted to prevent from corrosion.



Sagging of lay in ceiling tile throughout the building. New humidity resistant panels should be installed.

Hot Wells at Serving Line.

Non-Food Grade Shelving in Storage Room.

CAPITAL IMPROVEMENTS PLAN

	Priority #1 - Immediate Need	Estimated Cost:
1	Clean/repair concrete base at overhead entry columns.	$2,500 - $4,000
2	Replace food service equipment. (See detailed report.)	$40,100 - $43,000
3	Replace domestic water piping systems.	$125,000 - $140,000
4	Replace existing sanitary and vent piping systems.	$190,000-$220,000
	Priority #1 -Total	**$357,600- 407,000**

	Priority #2 - Approaching Need (3-5 Years)	Estimated Cost:
1	Install decorative pipe bollards and landscape stones at main entrance.	$15,000 - $20,000
2	Renovate restrooms to provide adequate accessibility clearances.	$600,000 - $700,000
3	Replace existing hardware and modify walls for clearances.	$105,500 - $135,000
4	Install new interior door hardware.	$70,000- $113,000
5	Provide all faucets with thermostatic mixing valves.	$50,000 - $70,000
6	Update the voice system to meet code.	$65,000 - $91,000
7	Replace roof with new adhered rubber or modified bitumen roof system.	$880,000 - $920,000
8	Replace aluminum storefront.	$32,000 - $40,000
9	Replace entrance steel frame and doors.	$50,000 - $60,000
10	Replace exterior windows.	$392,000 - $425,000
11	Replace damaged lintels and repoint joints.	$185,000 - $225,000
13	Replace damaged masonry on exterior walls.	$138,000 - $147,000
14	Add wall padding in gymnasium.	$24,000 -$30,000
15	Repaint existing handrail to protect from corrosion.	$10,000 - $15,000
16	Replace divider curtain.	$70,000-$80,000
17	Replace stair tread and risers.	$15,000-$20,000
19	Replace food service equipment. (See detailed report.)	$17,900-$19,500
20	Replace existing plumbing fixtures.	$150,000-$200,000
22	Replace drinking fountain to meet code.	$18,000 - $20,000
24	Replace domestic water heater and mixing valve.	$40,000 - $50,000
25	Replace original feeder wiring.	$78,000- $96,000
26	Replace original circuit devices.	$75,000-$91,000
27	Arch-flash analysis needs to be performed.	$12,000 - $15,000
28	Provide full building clock system.	$18,000- $26,000
	Priority #2 -Total	**$2,310,400-2,778,500**

	Priority #3 - Moderate Need (5-8 Years)	**Estimated Cost:**
1	Replace existing handrails.	$30,000 - $35,000
2	Install code-compliant signage throughout the building.	$42,000 - $47,000
3	Replace kindergarten lockers and electrostatically paint/replace hardware at others.	$138,000 - $145,000
5	Replace PA system.	$21,000- $ 29,000
	Priority #3 -Total	**$231,000-256,000**

	Priority #4 - Eventual Need (8-12 Years)	**Estimated Cost:**
1	New asphalt surfaces to be seal coated.	$40,000-$50,000
2	Provide exit path and doors - if major renovations are done.	$200,000-$300,000
3	Install an ADA complaint stage - if major renovations are done.	$120,000-$135,000
5	Repaint interior and exterior surfaces throughout the building.	$130,000 - $145,000
6	Replace flooring throughout the building.	$300,000 - $330,000
	Priority #4 -Total	**$790,000-$960,000**

	Comprehensive HVAC upgrades project (including AC)	**Estimated Cost:**
1	Replace boiler and condensation pan.	$265,000-$278,000
2	Convert to central ducted air (VAV) system.	$1,156,000-$1,214,000
3	Replace hot water pumps.	$45,000- $47,000
4	Upgrade building ATC system to full DDC.	$113,000 - $119,000
5	Replace pneumatic valves and damper actuators.	$175,000- $184,000
6	Install CO2 sensors.	$77,000-$81,000
7	Replace office roof top unit.	$75,000 - $79,000
8	Replace heating terminal equipment.	$35,000 - $37,000
9	Replace exhaust fans.	$55,000- $58,000
10	Replace existing hot water piping system.	$ 415,000- $436,000
11	Replace lay in ceilings with humidity resistant ceiling panels.	$220,000 - $250,000
13	Replace old panelboards.	$117,000 - $139,000
14	Replace generator and consider adding HVAC loads to the new system.	$42,000 - $52,000
15	Replace all lighting, controls, exit signs and wiring.	$505,000 - $648,000
16	Remove hazardous material and asbestos materials.	$70,000 - $80,000
17	Replace existing educational casework/marker/tack boards.	$900,000-$1,000,000
18	Electrical service and switch board to be replaced- if HVAC improvements and/or additions occur.	$95,000-$111,000
	Total	**$4,360,000-$4,813,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

2107 Lonsdale Street
Pittsburgh, PA 15212

BUILDING ENROLLMENT: 141 Students (K-3)

CONSTRUCTION

HISTORY: 1965 Original building
1971 Addition
1987 Addition and Alterations-Doors and windows (upgrades to existing)

SIZE: 29,575 sq. ft. on approx. 4.25 acres

BUILDING STRUCTURE:
This building is physically located in Reserve Township.
The building is constructed with concrete spread footings. Sloped steel joist (for roof drainage) resting on masonry bearing walls and steel columns for interior support structure.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. The main building entrance and walkways are not protected from vehicles driving off the asphalt and hitting pedestrians.

   Propose: Install decorative pipe bollards and/or landscape boulders at main entrance and walkways to protect pedestrians.
   Priority Level (1-4): 2 **Estimated Cost: $8,000 – 12,000**

2. The building's main entrance has been updated to include a secure vestibule which directs visitors to the office when entering the building, without gaining access to the remainder of the building.

   Priority Level (1-4): N/A **Estimated Cost: N/A**

RESTROOMS

3. One boys/girl's gang and single-user restrooms throughout building do not meet today's accessibility requirements. Floor clearances and turning areas are not sufficient to accommodate a disabled individual within the spaces. Plumbing fixtures and toilet accessories heights and locations are also not compliant.
   Renovate all building restrooms to provide adequate clearances for handicap and to meet ADA requirements.
   Priority Level (1-4): 2 **Estimated Cost: $250,000 - 375,000**

DOORS/HARDWARE

4. Interior doors and corridor alcove areas do not provide ADA code required clearances at door latches to permit operation by a disabled person.
   Propose: Replace existing doors. Modify adjacent walls at inadequate clearance locations.
   Priority Level (1-4): 2 **Estimated Cost: $37,000 – 45,000**

5. Door hardware has been replaced for some of the doors, but most of them throughout building is not code compliant, door hardware throughout the building is knob-type

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

Replace non-compliant door hardware on interior doors with new lever-type locksets and panic devices at exit egress doors. Install classroom security locksets for added safety for intrusion prevention.
Priority Level (1-4): 2 **Estimated Cost: $18,000 – 24,000**

ADA SIGNAGE/COMPLIANCE

6. Building does not have the required tactile braille interior signage to accommodate visually impaired occupants as required per ADA guidelines.

   Propose: Replace interior building signage with code-compliant signs.
   Priority Level (1-4): 3 **Estimated Cost: $42,000 – 47,000**

PLUMBING

7. Current plumbing code requires that all faucets for handwashing must be provided with thermostatic mixing valves set at no more than 109 degrees.
   Priority Level (1-4): 2 **Estimated Cost: $60,000 – $85,000**

ELECTRICAL

8. Fire Alarm:
   The fire alarm system is manufactured by Fire Lite Alarms and installed in 2021. However, the newest codes require all education building to have a voice system.

   Recommendation: Upgrade to a voice fire alarm system per latest codes.
   Priority Level (1-4):2 **Estimated Cost: $51,000 - $65,000**

9. Camera Surveillance System:
   The camera surveillance system of cameras located in the corridors and on the building exterior. The system is networked, but not connected as part of the district wide system. This system is manufactured by Viconnet and was installed in 2000. The system has exceeded the expected life expectancy. The district currently has an RFP out for pricing for the replacement of this system.

   Recommendation: No work required as part of this study
   Priority Level (1-4):4 **Estimated Cost: N/A**

10. Door Access System:
    The door access system was manufactured by Konntech, installed in 2019, and is in good working order
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: $ N/A**

11. Door Intercom System:
    The door intercom system was manufactured by Viconnet and was installed in 2015. The system is not connected to the building network and the door access system. The system appears in good working condition.
    Recommendation: No work required.
    Priority Level (1-4):4 **Estimated Cost: N/A**

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $466,000 – 653,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The existing asphalt in parking lots and drive is cracking in the front drop off and side lots. Storm structures are in inlets have deteriorated causing pavement to sink. Pavement has heaved due to subsurface water causing further cracking and base undermining.
   Propose: Remove all existing asphalt and stone base in drives and parking lot. Add or replace additional stone base (as needed) and install new asphalt binder and new wearing top courses.

   Priority Level (1-4): 1 **Estimated Cost: $700,000 – 750,000**

2. Select concrete walks and curbs at drop off are cracking and joints have started to widen due to settlement, creating a tripping hazard. Concrete surfaces have also started to spall and deteriorate at several locations due to weather and salts. New sidewalks are needed to connect rear access from adjacent neighborhood.

   Propose: Replace select concrete walks and curbs during a parking lot resurfacing project.
   Priority Level (1-4): 2 **Estimated Cost: $200,000 - 225,000**

3. The rear areas of the building have overgrown trees and saplings that prevent monitoring of site from unwanted intruders.
   Remove overgrowth of trees to permit improved visibility along sloping hillside at building rear areas. Replace existing chain link fence to improve site security.
   Priority Level (1-4): 2 **Estimated Cost: $35,000 – 40,000**

4. Playground surfaced with brick pavers has been replaced recently with grass and new sidewalks connecting to existing at building rear. Existing deteriorating wood retaining wall has also been removed.

   Priority Level (1-4): N/A **Estimated Cost: N/A**

5. The existing exterior brick masonry walls (near upper gymnasium wall) are showing signs of brick-and-mortar deterioration due to weather and exposure.

   Propose: Repair / repoint any brick-and-mortar joints; clean and seal all masonry surfaces to extend life of exterior walls.
   Priority Level (1-4): 3 **Estimated Cost: $140,000 – 200,000**

6. Overhead entry canopy column and framing have rust / corrosion at base of support. The base of column should be repaired /replaced and repainted.

   Priority Level (1-4): 1 **Estimated Cost: $5,000 - $8,000**

7. Subsurface cut-off drains were recently added at the rear of the building to prevent flooding during rain events into the adjacent classrooms.
   Priority Level (1-4): N/A **Estimated Cost: N/A**

8. EPDM rubber membrane on rigid insulation installed in 1998.The warranty has since expired. Overall roofing membrane condition is in poor condition, and frequent leaks are noted.
   Replace roof with new adhered rubber roof membrane and rigid insulation.
   Priority Level (1-4): 1 **Estimated Cost: $600,00 – 675,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS (continued):

9. The building's main entrance aluminum doors were replaced in 2000, but water seeps at their bases, from lack of drainage and slope of the exterior sidewalk. The aluminum doors at secondary entrances (and select other building entrances) are in fair condition but should be considered for replacement if a major building renovation occurs.

   Priority Level (1-4): 3 **Estimated Cost: $75,000 – 85,000**

10. The building's exterior Traco aluminum windows still leak air and water at their perimeter and are in poor condition. They also contain phenolic insulation in their solid panels, which cause premature rusting and are deteriorating beyond repair. Some have been selectively replaced recently but many still need to be addressed.
    Propose: Replace all windows /panels.
    Priority Level (1-4): 2 **Estimated Cost: $230,000 – 280,000**

19. Lockers are in fair condition and may have some hardware components updated.
    Priority Level (1-4): 4 **Estimated Cost: $12,000 – 15,000**

20. Existing educational classroom cabinets which are integral to unit ventilators are in poor condition. Wardrobe coat closets are original, they are worn due to use and life. Existing chalkboards should be updated with marker boards. Library finishes are original and need updated.
    Priority Level (1-4): 3 **Estimated Cost: $50,000 – 60,000**

21. Gymnasiums wood floor and athletic equipment are in fair condition. Acoustics is poor due to hard ceiling and walls. Storage for chairs is lacking. Stage curtains and rigging are in fair condition.
    Additional wall padding is recommended to protect students from injury due to small court size. Acoustic absorbing material should be installed to reduce noise.
    Priority Level (1-4): 4 **Estimated Cost: $50,000 – 60,000**

22. Wall paint throughout the building is in fair condition.
    Propose: Repaint all interior / exterior surfaces in building.
    Priority Level (1-4): 4 **Estimated Cost: $67,000 – 75,000**

23. Structural glazed face tile (SGFT) wainscot with painted plaster above throughout the original building is in fair condition.
    Priority Level (1-4): N/A **Estimated Cost: N/A**

24. Lay-in acoustic ceilings is in fair condition mostly with a few exceptions of stained tiles due to leakage. Low ceilings exist at several locations in corridors of 1987 addition.
    Propose: Replace ceiling grid and tile.
    Priority Level (1-4): 4 **Estimated Cost: $110,000 – 125,000**

25. Flooring throughout the building is generally in fair condition, The terrazzo floors need filled at various cracks/pitted locations followed by grinding and polish to restore their original look.

    Propose: Replace VCT and/or carpet flooring in all spaces / classrooms. Refinish terrazzo floors.
    Priority Level (1-4): 4 **Estimated Cost: $205,000 – 220,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS (continued):

26. Assumed asbestos containing materials (ACMs) include 9 x 9 and 12”x12” vinyl asbestos tile in hallway, asbestos pipe elbows and insulation in the boiler room remain at this time. The boilers’ tube material may also be asbestos containing and should be tested prior to a renovation project. Items should be regularly monitored for damage and removed or contained by a certified abatement employee or Contractor.

    Propose: An updated hazardous material inspection should be performed to confirm presence of asbestos materials should a major building renovation occur. All suspected asbestos containing materials should be regularly monitored and removed / contained by a certified abatement employee or contractor if damaged. Any major renovations that may affect ACM’s should be sampled to confirm their existence and removed in their entirety prior to work occurring.
    Priority Level (1-4): 3 **Estimated Cost: $80,000 – 95,000**

Total Estimated General Building Improvements: $2,559,000 - $2,913,000

FOOD SERVICE EQUIPMENT

The production kitchen, prep, storage, and ware washing spaces encompass approximately 725 square feet. The serving line is not a permanent fixture and includes a mobile steam table and refrigerator. Students are being served over two meal periods. The space was originally constructed in the late 1960’s. Equipment has been replaced as needed and noted to be in overall good condition.

27. The kitchen was not originally designed as a production kitchen. The original design drawings indicate that this kitchen was designed to receive food from an offsite kitchen, it would be held, and then served. There is currently not Type 1 Hood or UL 300 Fire Suppression for the gas fired cooking equipment, no prep sink, no hand wash sink, and no three-compartment sink for washing and sanitizing of utensils. Storage is very limited resulting in one unit being installed on the stage and another in the kitchen space blocking an electrical panel. The counter in the kitchen space is set on a wood base with galvanized legs and undershelf. (See images at the end of this section.)
    Recommendation: Our recommendation for this kitchen is for an expansion and/or a change in program. The space will need to be expanded to include proper storage capacities, preparation, hand washing, and scullery areas. The addition of a Type 1 Hood and UL300 fire suppression system will also be required should the program move forward with onsite cooking. A potential solution would be to demo the existing stage and expand the food service operation into the area currently occupied by the stage.

    Priority Level (1-4): 1 Estimated Cost Range of $275,000 to $375,000 depending on final program.

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

HVAC

1. Three (3) boilers serve the heating needs of the building. All of them are gas-fired, Peerless cast-iron type. One is newer (1987). Two appear to be dated to 1965.

   Replace and upgrade. Consolidate existing 3 into two (2) boilers.
   Priority Level (1-4): 1 **Estimated Cost: $205,000 - $215,000**

2. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Units appear to be original, are in poor condition and reported to have difficulty heating in cold conditions. Units should be replaced due to the decreasing availability of repair parts along with the likelihood that they can no longer properly ventilate the classrooms

   Replace units and convert to central ducted air (VAV) system.
   Priority Level (1-4): 1 **Estimated Cost: $660,000 – 693,000**

3. (3) Inline hot water pumps serve the heating needs of the building.

   Replace hot water pumps and incorporate variable speed drives for energy savings.
   Priority Level (1-4): 1 **Estimated Cost: $35,000 - $37,000**

4. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability.

   Upgrade building ATC system to full DDC to optimize control and energy efficiency.
   Priority Level (1-4): 1 **Estimated Cost: $65,000 - $68,000**
   Replace all existing pneumatic valves and damper actuators with electric type to complement the ATC system conversion to DDC.
   Priority Level (1-4): 1 **Estimated Cost: $100,000 - $105,000**

   To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
   Priority Level (1-4): 1 **Estimated Cost: $42,000 - $44,000**

Estimated HVAC Temperature Controls Subtotal: $207,000 - $217,000

5. Existing air handling units serving the multi-purpose room are in poor condition. They are beyond their serviceable life and require frequent maintenance and repairs.
   Replace air handling units. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention.
   Priority Level (1-4): 1 **Estimated Cost: $115,000 - $121,000**

6. Exhaust fans are in poor condition and do not provide adequate ventilation to spaces.
   Replace exhaust fans.
   Priority Level (1-4): 1 **Estimated Cost: $35,000 - $37,000**

7. X-ray testing is recommended to determine if the 1987 vintage hot water piping can be reused. 1987 vintage piping should be replaced.

Replace existing hot and chilled water piping systems from central plant to and thru building.
Priority Level (1-4): 1 **Estimated Cost: $237,000 - $249,000**

Estimated HVAC Subtotal: $1,494,000 - $1,569,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

PLUMBING IMPROVEMENTS

1. Existing fixtures are manual and do not meet ADA requirements. Plumbing fixtures should be replaced with new, water conserving fixtures and faucets.

   Replace all plumbing fixtures, faucets, and flush valves.
   Priority Level (1-4): 2 **Estimated Cost: $120,000 - $180,000**

2. Existing domestic water heater was recently replaced. Exposed piping within the mechanical room was not replaced.
   No action at this time.
   Priority Level (1-4): NA **Estimated Cost: N/A**

3. Existing domestic water piping is original where observed and there is no evidence of leaks, pinholes, and other failures throughout the building. Existing piping should be tested to ensure longevity of the system.
   Test existing piping for and leaks or corrosion within the system.
   Priority Level (1-4): 4 **Estimated Cost: $40,000 - $60,000**

4. Existing sanitary system within the building should be scoped and cleaned to ensure longevity of the system.
   Scope and clean existing sanitary piping.
   Priority Level (1-4): 4 **Estimated Cost: $30,000 - $40,000**

5. Site waterline service recently replaced outside the building to connection @ street in 2022(spring).
   Priority Level (1-4): NA **Estimated Cost: N/A**

Estimated Plumbing Subtotal: $190,000 - $280,000

ELECTRICAL IMPROVEMENTS

6. Electrical Service and Service Panelboard:
   The school's electrical service is provided by Duquesne Light Company via pole mounted transformer. The service consists of underground feeders from the transformer to the main service disconnect switch. This service disconnect switch is rated for 800A, 120/240V, 1-phase, 3-wire. The disconnect switch is manufactured by ITE and was installed in 1965. The disconnect switch then feeds a distribution panelboard rated for 800A, 120/240V, 1-phase, 3-wire that was manufactured by Eaton/Cutler-Hammer, installed in 1998, and appear to still be in good condition.
   There are no spare breakers or breaker space available for future use. Latest power company billing is showing a peak demand of 63 KW (263 A) in October of 2020. NOTE: There is a step-up transformer to 480V, 1-phase, 2-wire that feeds the ballfield lights.

   Recommendation: No work at this time.
   Priority Level (1-4): 4 Estimated Cost: $ N/A

7. Panelboards:
   Distribution panelboards and branch circuit panelboards within the building are multiple vintages by various manufacturers. Although the panelboards appear to have been well

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

maintained, most panels are original to the building construction (1965) or renovation (1970, 1987) dates, which means some of them are over fifty years old and past the expected life. Other panels were installed in 1998 and 2002. Newer panels seem to have been installed with the generator replacement. There are minimal spare breakers or spaces within the branch circuit panels.

Recommendation: Replace older panelboards.
Priority Level (1-4): 2 Estimated Cost: $66,000 - $80,000

8. Feeders:
   Most of the feeders are 35 years old or older and should be replaced due to age. These feeders mostly run from the distribution panel to the branch circuit panels.

   Recommendation: Replace older feeder wiring within existing conduits.
   Priority Level (1-4):2 Estimated Cost: $45,000 - $55,000

9. Branch Circuiting and Devices:
   Most of the branch circuits and associated devices were installed approximately 21 years ago in surface mounted raceways and are in good condition, but others are original to the building. However, per the 2017 National Electrical Code (NEC), the receptacles within elementary educational facilities shall be tamper resistant.

   Recommendation: Replace devices to meet code and branch circuits to devices installed originally to the building.
   Priority Level (1-4):2 Estimated Cost: $80,000 - $96,000

10. Generator & Transfer Switch
    The natural gas generator is rated for 10 KW/10 KVA at 120/240V, 1- phase, 3-wire, and associate Automatic Transfer Switch (ATS) are manufactured by Dayton. These were installed approximately 7 years ago. The emergency system serves mainly egress lighting loads. The current NEC code requires any generator serving life safety lighting and equipment shall have a fuel source that cannot be interrupted. This is usually accomplished with a generator operating with an on-site fuel storage tank.

    Recommendation: At time of building renovation, replace generator with an on-site fuel source. Consideration should also be given to adding HVAC equipment, Kitchen equipment, and other loads on to the generator system.
    Priority Level (1-4):2 Estimated Cost: $25,000 - $34,000

11. Arc Flash Analysis
    To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.

    Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
    Priority Level (1-4):2 Estimated Cost: $10,000 - $12,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

12. Interior Lighting and Lighting Controls:
    Currently, most of the interior lighting fixtures are of prismatic type and has a T-8 fluorescent lamp source with electronic ballasts. A few of the fixtures require new lenses as they are cracked or broken, but generally the fixtures are in fair to good condition. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED lamp sources and new digital controls should be considered for additional energy savings.
    Recommendation: Replace all lighting, lighting controls, exit signage, and all associated wiring.
    Priority Level (1-4):2 **Estimated Cost: $288,000 - $360,000**

13. Exterior Lighting
    Exterior lighting has been upgraded to use LED light sources.
    Recommendation: No work at this time.
    Priority Level (1-4):4 **Estimated Cost: N/A**

14. PA System
    The PA System is working, but it is past the expected life.
    Recommendation: Provide a new PA system through-out the building.
    Priority Level (1-4):2 **Estimated Cost: $18,000 - $21,000**

15. Phone System
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.
    Recommendation: Undertake a district-wide upgrade, outside the scope of building study.
    Priority Level (1-4):4 **Estimated Cost: N/A**

16. Data Network System
    The data network system consists of a MDF room, which is accessed through the boiler room. The MDF room does not have any dedicated cooling units. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are adequate outlets through-out the building. Network rack equipment has been installed within the last 7 years
    Recommendation: Provide an air conditioning unit to cool the MDF room.
    Priority Level (1-4):1 **Estimated Costs: $ 9,500 - $12,000**

17. Clock System
    The clocks are stand-alone clocks are either cord and plug or battery operated and are analog style. Recommendation: No work Required.
    Recommendation: Provide a clock system that can be linked to the PA system.
    Priority Level (1-4): 2 **Estimated Cost: $15,000 - $21,000**

Estimated Electrical Subtotal: $556,500 - $691,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $5,074,500- 5,828,000

GRAND TOTAL RESERVE PRIMARY: $5,540,500- $ 6,481,000

Sidewalk needs replaced that connects rear access from adjacent neighborhood for student walkers.

Shelving and tables in library need to be replaced.

Existing lavatory fixtures do not meet ADA requirements.

Gym / Cafeteria: Serves as dual function.
Storge for chairs is lacking. Stage curtains and rigging are in fair condition. Multipurpose room is undersized.

Existing cabinets integral to unit ventilators are in poor condition.

Kitchen serving /cashier window undersized.

Existing play area being removed to receive new grass and sidewalks to

Warning Sign for cooking without fire suppression.

Gas Appliance Not Vented or Protected by Fire Suppression or Fire/Fuel Shut-off.

Gas Oven Direct Vented without Fire/Fuel Shut-off or Fire Suppression.

Refrigeration Unit Blocking Elec. Panel.

CAPITAL IMPROVEMENTS PLAN

Priority #1 - Immediate Need		Estimated Cost:
1	Repave parking lots and driveways.	$700,000-$750,000
2	Provide concrete base at overhead entry columns.	$5,000 - $8,000
3	Replace roof with new adhered rubber or modified bitumen roof system.	$600,000 - $675,000
4	Complete renovation of Kitchen equipment.	$275,000- $375,000
5	Replace and upgrade boilers.	$205,000-$215,000
	Priority #1 -Total	**$1,785,000-2,023,000**

Priority #2 - Approaching Need (3-5 Years)		Estimated Cost:
1	Install decorative pipe bollards and landscape stones at main entrance.	$8,000 - $12,000
2	Renovate restrooms to provide adequate accessibility clearances.	$250,000 - $375,000
3	Modify classroom entry walls for ADA clearances.	$37,500 - $45,000
4	Install new interior door hardware.	$18,000-$24,500
5	Provide all faucets with thermostatic mixing valves.	$60,000 - $85,000
6	Upgrade to voice fire alarm system.	$51,000- $65,000
7	Replace select concrete sidewalks and curbs.	$200,000-$225,000
8	Remove overgrown trees from rear of building.	$35,000-$40,000
9	Replace exterior windows.	$230,000 - $280,000
10	Replace existing plumbing fixtures.	$120,000-$180,000
11	Replace original feeder wiring.	$45,000- $55,000
12	Replace original circuit devices.	$80,000-$96,000
13	Arch-flash analysis needs to be performed.	$10,000 - $12,000
14	Provide a new PA system.	$18,000- $ 21,000
15	Provide a clock system linked to PA system.	$15,000- $21,000
	Priority #2 -Total	**$1,177,500-1,536,500**

Priority #3 - Moderate Need (5-8 Years)		Estimated Cost:
1	Install code-compliant signage throughout the building.	$42,000 - $47,000
2	Repoint clean and seal all exterior walls.	$140,000 - $200,000
3	Replace aluminum main entrance doors.	$75,000- $80,000
	Priority #3 -Total	**$257,000-327,000**

Priority #4 - Eventual Need (8-12 Years)		Estimated Cost:
1	Replace select hardware for lockers.	$12,000 - $15,000
2	Add wall padding in gymnasium.	$50,000 -$60,000
3	Repaint interior and exterior surfaces throughout the building.	$67,000 - $75,000

4	Replace flooring throughout the building.	$205,000 - $220,000
5	Test existing domestic water piping for leaks or corrosion.	$40,000- $ 60,000
6	Scope and clean sanitary piping.	$30,000-$40,000
	Priority #4 -Total	**$404,000-$470,000**

Comprehensive HVAC upgrades project (including AC)		**Estimated Cost:**
1	Replace unit ventilators and convert to VAV system.	$660,000 - $693,000
2	Replace hot water pumps.	$35,000- $37,000
3	Upgrade building ATC system to full DDC.	$65,000 - $68,000
4	Replace pneumatic valves and damper actuators.	$100,000- $105,000
5	Install CO2 sensors.	$42,000-$44,000
6	Replace air handling units in multi-purpose room.	$115,000 - $121,000
7	Replace exhaust fans.	$35,000- $37,000
8	Replace existing water piping system including valves throughout.	$ 237,000- $249,000
9	Provide air-conditioning to cool MDF room.	$9,500- $ 12,000
10	Replace old panelboards.	$66,000 - $80,000
11	Replace generator and consider adding HVAC loads to the new system.	$25,000 - $34,000
12	Replace all lighting, controls, exit signs, and wiring.	$288,000 - $360,000
13	Existing classroom cabinets need to be replaced.	$50,000 -$60,000
14	Remove hazardous material and asbestos materials.	$80,000 - $95,000
15	Replace lay in ceilings with humidity resistant ceiling panels.	$110,000 - $125,000
	Total	**$1,917,500-$2,120,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

700 Scott Avenue
Glenshaw, PA 15116

BUILDING ENROLLMENT: 869 Students (4-6)

CONSTRUCTION HISTORY:
1957/1959 Original building
1964 Classroom Addition
1968 Addition
1987 Addition and Alterations
1990 Addition Classroom
1991/2003/2008 Partial Alterations
2019-2020 Roof Replacement

SIZE: 184,205 square feet on approximately 22 acres

BUILDING STRUCTURE:
This building is physically located in Shaler Township
Building is of steel roof joist resting on steel beams supported by steel columns. These columns bear on concrete pier foundations. Other non-load bearing walls bear on concrete spread footings.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. The main building entrance and walkways are not protected from vehicles driving off the asphalt and hitting pedestrians

   Propose: Install decorative pipe bollards and landscape stones at main entrance and walkways to protect pedestrians
   Priority Level (1-4): 2 **Estimated Cost: $15,000 – 20,000**

RESTROOMS

2. (3) Gang, and single-user restrooms were updated in 2003. Other restrooms in building do not meet today's accessibility requirements. Floor clearances and turning areas are not sufficient to accommodate a disabled individual within the spaces. Plumbing fixtures and toilet accessories heights and locations are also not compliant. Finishes in restrooms are worn and due for replacement.

   Renovate all building restrooms and locker rooms to provide adequate clearances for handicap; replace plumbing fixtures and accessories.
   Priority Level (1-4): 2 **Estimated Cost: $700,000 - 800,000**

DOORS/HARDWARE

3. Select interior doors and corridor entry alcoves do not provide ADA code required clearances at door latches to permit operation by a disabled person. Other door alcoves have been addressed during last building renovation.

   Propose: Modify adjacent walls at inadequate clearance locations.
   Priority Level (1-4): 2 **Estimated Cost: $110,000 - 140,000**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

4. Miscellaneous door hardware throughout building is not code compliant. Some are knob-type that does not meet the grasping requirements directed by ADA standards.

   Replace non-compliant door hardware on select interior doors with new lever-type locksets and panic devices at exit egress doors. Install classroom security locksets for added safety for intrusion prevention.
   Priority Level (1-4): 2 **Estimated Cost: $40,000 – 75,000**

ADA SIGNAGE/COMPLIANCE

5. Natatorium /pool is not accessible to a disabled individual who desires to access pool deck level from the spectator seating area.

   Provide platform lift from pool deck to spectator deck and provide appropriate seating accommodations for a wheelchair.
   Priority Level (1-4): 2 **Estimated Cost: $95,000 – 115,000**

6. Current plumbing code requires that all faucets for handwashing must be provided with thermostatic mixing valves set at no more than 109 degrees.

   Priority Level (1-4): 2 **Estimated Cost: $65,000 – 90,000**

ELECTRICAL IMPROVEMENTS

7. Fire Alarm

   The fire alarm system is a FS250 system by Siemens, was installed in 2008, and is in good operating condition. The newest codes require that fire alarm systems within educational facilities be a voice system.

   Recommendation: During the next building renovation, update to the voice style system as required by code.
   Priority Level (1-4):2 **Estimated Cost: $230,000 - $280,000**

8. Camera Surveillance System

   The camera surveillance system is comprised of cameras located in the corridors and on the building exterior. The system is networked and connected to the district-wide system. This system is manufactured by Geovision and was installed in 2018.

   Recommendation: No work required.
   Priority Level (1-4):4 **Estimated Cost: N/A**

9. Door Access System

   The door access system was manufactured by Konntech, installed in 2014, and is in good working order

   Recommendation: No work required.
   Priority Level (1-4):4 **Estimated Cost: N/A**

10. Door Intercom System:

    The door intercom system was manufactured by Geovision, was installed in 2018, is connected to the building network system and is in good working condition.

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

Recommendation: No work required.
Priority Level (1-4):4 **Estimated Cost: N/A**

11. A new security vestibule was recently installed adjacent to the office suite to allow visitors to communicate with (via an intercom/camera) and enter the office prior to entering the building. A card access system is installed on all exterior doors and cameras are positioned at the exterior and throughout the building's interior.
Priority Level (1-4): 4 **Estimated Cost: $ N/A**

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $1,255,000 – 1,520,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The existing asphalt in parking lots and drives are showing signs of cracking in the front and rear lots. Storm structures are in fair condition.

   Propose: Remove all existing asphalt in drives and parking lots down to stone sub-base based on recommendation by a geotechnical evaluation. Re-compact and add or replace additional stone base (as needed) and install new asphalt binder and new wearing top courses.
   Priority Level (1-4): 2 **Estimated Cost: $850,000 - $950,000**

2. Select concrete walks and curbs are cracking and joints have started to widen due to settlement, creating a tripping hazard. Concrete surfaces have also started to spall and deteriorate at several locations due to weather and salts.
   Propose: Replace select concrete walks and curbs during a parking lot resurfacing project.
   Priority Level (1-4): 2 **Estimated Cost: $80,000- $ 90,000**

3. The Johns Manville EPDM rubber membrane roof and pitched metal roof was replaced in 2020 and is in excellent condition.

   Warranty expires in 2050 for rubber roof areas and 2040 for metal roofs. Monitor existing roof coating for leaks and contact roof installer for repairs.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

4. The existing exterior brick masonry walls have brick-and-mortar deterioration occurring due to weather and exposure. Upper gym /music room walls were repaired in 2019 and are in good condition.
   Propose: Repair / repoint selective brick-and-mortar joints; clean and seal all masonry surfaces to extend life of exterior walls.
   Priority Level (1-4): 3 **Estimated Cost: $220,000 - $300,000**

5. All the building's aluminum storefront entrance doors and windows (2002) leak with water and permit air infiltration. Hardware components are becoming worn due to use and require frequent replacement.
   Replace all aluminum entrance doors and glass sidelights.
   Priority Level (1-4): 2 **Estimated Cost: $80,000 – 90,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS (continued):

6. The building's exterior windows replaced in 1987 leak air and water at their perimeter and are in poor condition. The solid panels contain phenolic insulation, which deteriorate the metal framing further. The windows in the upper chorus and band rooms are original and inaccessible also non-operable. Insulated panel wall system at cafeteria is in poor condition and needs replacement.

   Priority Level (1-4): 2 **Estimated Cost: $ 682,000 – 800,000**

7. The upper outdoor track surface was last spot repaired in 2001 but is again showing signs of cracking.
   Propose: Replace stone base and asphalt topcoat surface in its entirety.

   Priority Level (1-4): 2 **Estimated Cost: $ 325,000 – 375,000**

8. Athletic lockers in Gymnasium and Natatorium locker rooms are in poor condition.
   Propose: Replace athletic lockers in locker rooms.

   Priority Level (1-4): 2 **Estimated Cost: $70,000 –90,000**

9. Gymnasium finishes, bleachers and athletic equipment are in good condition which were updated in 2008.Although there is limited space for daily and after school activities.

   Priority Level (1-4): 2 **Estimated Cost: $ N/A**

10. If major HVAC replacement project occurs, classroom storage cabinets at outside wall UV locations will require replacement throughout the building.

    Priority Level (1-4): 3 **Estimated Cost: $750,000 –800,000**

11. Wall paint throughout the building is in fair/good condition.

    Priority Level (1-4): 4 **Estimated Cost: $ N/A**

12. Lay-in acoustic ceilings are also in fair/good condition. Due to their replacement during the 2008 alterations replacement should be considered if above ceiling work occurs associated with a HVAC replacement project.

    Priority Level (1-4): 4 **Estimated Cost: $ 525,000- 600,000**

13. Vinyl tile flooring throughout the building was mostly replaced in 2008 and is generally in fair condition, The 9" x 9" original vinyl flooring located in various areas is in poor condition and needs replacement. Terrazzo flooring is in good condition.

    Propose: Replace select VCT/carpet flooring in all assembly spaces.
    Priority Level (1-4): 4 **Estimated Cost: $ 190,000 – 230,000**

14. The auditorium and stage's finishes, seating and theatrical equipment were replaced and/or restored in 2008 and are in good condition. Stage curtains are also in good condition.

    Priority Level (1-4): 4 **Estimated Cost: $N/A**

BUILDING INFRASTRUCTURE IMPROVEMENTS (continued):

15. The pool and pool equipment, gutter, and spectator area, were last renovated in 2002. The pool filter room in the basement leaks from the pool deck above through the ceramic tile floor. Pool equipment was last replaced in 1994 and new chlorine system is to be installed this summer.

    Propose: Replace pool deck ceramic tile and floor drains to prevent leaks into filter room below. Repair miscellaneous pool equipment. Inspect cement plaster on walls and floor of pool tub to determine condition.
    Priority Level (1-4): 2 **Estimated Cost: $675,000 - $775,000**

16. Assumed asbestos containing materials (ACMs) include 9"x9" vinyl asbestos tile, duct work vibration dampers, fiberglass pipe elbows and select ceiling plaster. Items should be regularly monitored for damage and removed or contained by a certified abatement employee or Contractor.

    Propose: An updated hazardous material inspection should be performed to confirm presence of asbestos materials should a major building renovation occur. All suspected asbestos containing materials should be regularly monitored and removed / contained by a certified abatement employee or contractor if damaged. Any major renovations that may affect ACMs should be sampled to confirm their existence and removed in their entirety prior to work occurring.
    Priority Level (1-4): 3 **Estimated Cost: $60,000 – 70,000**

Total Estimated General Building Improvements Construction Cost: $4,427,000 – 5,080,000

FOOD SERVICE EQUIPMENT

Students are being served over three meal periods. The most recent renovation being completed in the late 2010. The main production kitchen currently includes centralized storage of dry product, cold product, preparation, cooking, serving, and ware washing facilities. The production kitchen space is approximately 2,500 square feet with approximately 1,300 square feet dedicated to serving space. Overall condition of space and equipment was noted to be in good condition.

1. The two Federal air curtain refrigerated merchandisers have been problematic and needing continual service.
   Recommendation: Replace the two Federal refrigerated merchandisers with similar units
   Priority Level (1-4): 1 **Estimated cost: $15,000 -$16,000**

2. There are pendant heat lamps located above the hot food stations. These heat lamps project down on to the top stainless-steel shelf of the sneeze guard below. The heat lamps are not used as they are installed in a manner that will not aid in holding food temperature in the hot wells below.
   Recommendation: Remove the pendant heat lamps and replace with signage or decorative lighting. Heat lamps could be eliminated and not replaced with anything for better sight lines.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

3. The two-section roll-in refrigerator has been repaired numerous times and is original to the last renovation.
   Recommendation: Replace unit with similar unit.
   Priority Level (1-4): 2 **Estimated Cost: $14,000 - $16,000**

4. The Imperial double deck convection oven is original to the last renovation and has been problematic with repairs completed several times.
   Recommendation: Replace unit with similar unit.

   Priority Level (1-4): 3 **Estimated Cost: $18,000 -$20,000**

5. The gas fired double deck conveyor pizza oven is placed below a Type 2 Condensate Hood without fire suppression. This type of oven is required to be below a Type 1 Grease Hood with UL300 listed fire suppression.
   Recommendation: Replace the gas fired double deck conveyor pizza oven with an electric double stacked unit tested and listed under UL710B (KLNZ) for use without a Type 1 Grease Hood and UL300 suppression system.
   Priority Level (1-4): 1 **Estimated Cost: $40,000 -$45,000**

6. The Imperial six burner range and the Accutemp double deck steamer are currently not utilized by the staff based on their current program.
   Recommendation: Replace both units with a single deck ½ size combination oven/steamer for additional capacity.

   Priority Level (1-4):3 **Estimated Cost: $26,000 -$30,000**

7. The three Hatco hot boxes are at or near the end of their useful life. One unit is noted as not working, the second unit has an internal electrical short. All three units are showing signs of door gasket and hinge wear.
   Recommendation: Replace all three units.

   Priority Level (1-4): 1 Estimated Cost: $7,200 per unit or $21,600 total- $25,000

8. The hot well unit in the second line from the left as you enter the space is not functioning.
   Recommendation: Replace hot well counter with sneeze guard with similar unit.

   Priority Level (1-4):1 **Estimated Cost: $11,000 -$14,000**

9. One of the three lever wastes assemblies on the three-compartment sink is not working.
   Recommendation: Replace all three lever waste assemblies to ensure sink bowls can be used as required by code.
   Priority Level (1-4):1 **Estimated Cost of $600 -$1000**

10. The dish machine has reached the end of its expected life span.
    Recommendation: Replace unit with similar sized unit with integral booster heater and energy recovery system.
    Priority Level (1-4): 2 **Estimated Cost: $42,000- $48,000**

11. The doors at the walk-cooler and freezer are not sealing to the building floor. This is most likely due to an installation issue at the time the units were originally installed. There is a large amount of water forming at the bases of the doors and ice forming at the interior of the freezer compartment. (See Images 7 & 8)
    Recommendation: Replace doors or custom build thresholds to minimize air gap at bottom of doors. Potential to replace entire walk-in in in 5-7 years due to age.
    Priority Level (1-4): 2 **Estimated Cost: $8,000 - $125,000**

Estimated Food service Equipment Subtotal: $ 199,600 – 340,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

HVAC:

1. The HVAC system is a two-pipe type hot water distribution system. Approximately half of the building is air conditioned via roof top units installed in 2008. Life expectancy of packaged cooling rooftop units is 25 years.

   Priority Level (1-4): 4 **Estimated Cost: $900,000 - $945,000**

2. There are two boiler rooms- The one near the Auditorium consists of two (2) gas-fired, high efficiency Patterson Kelly boilers in fair condition. Boiler stack is in poor condition and needs repair.

   Repair boiler Stack
   Priority Level (1-4): 1 **Estimated Cost: $25,000 - $27,000**

   Replace Boilers by monitoring the condition of the high efficiency boilers for high condensation levels.
   Priority Level (1-4): 1 **Estimated Cost: $300,000 - $315,000**

3. The boiler room near the Pool contains two (2) gas-fired Bryan water-tube type boilers. (3) base mounted pumps serve the hot water system. These are constant volume and are in poor condition. Replace pumps and warranty rebuild boilers.

   Priority Level (1-4): 1 **Estimated Cost: $225,000 - $236,000**

4. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Units appear to be good condition and should remain but generate a list of deficiencies and scope of repairs. Recommission to confirm proper operation.

   Priority Level (1-4): 1 **Estimated Cost: $75,000 - $79,000**

5. Wall PTAC units are in poor condition and should be replaced.

   Priority Level (1-4): 1 **Estimated Cost: $50,000 - $53,000**

6. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability.

   Upgrade building ATC system to full DDC to optimize control and energy efficiency.
   Priority Level (1-4): 1 **Estimated Cost: $400,000 - $420,000**

   Replace all existing pneumatic valves and damper actuators with electric type to compliment the ATC system conversion to DDC.
   Priority Level (1-4): 1 **Estimated Cost: $620,000 - $651,000**
   To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
   Priority Level (1-4): 1 **Estimated Cost: $271,000 - $285,000**

Estimated HVAC Temperature Controls Subtotal: $1,291,000 - $1,356,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

7. Existing air handling units serving the Gym and Library are in very poor condition. They are beyond their serviceable life and require frequent maintenance and repairs.

   Replace air handling units. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention.
   Priority Level (1-4): 1 **Estimated Cost: $350,000 - $368,000**

8. Exhaust fans are in good condition.

   Replace exhaust fans during building renovation or failure.
   Priority Level (1-4): 4 **Estimated Cost: $200,000 – $210,000**

9. A new AAON roof top unit was installed to serve the Auditorium in 2008. The space has noise issues that need to be addressed.

   Incorporate sound attenuation devices in the ductwork.
   Priority Level (1-4): 2 **Estimated Cost: $70,000 - $74,000**

10. Pool units (2) are 20 years old, and the room is very humid and has a high chlorine content and no air delivery / exhaust down at the water level.
    Propose: Units should be replaced with new dehumidification heat recovery type units. Condensate reclaim should be reinvestigated and incorporated if approved by local authorities. Rework of the supply air should also be considered to allow for better air distribution and quality at the pool surface area.
    Priority Level (1-4): 1 **Estimated Cost: $550,000 - $650,000**

11. X-ray testing should be conducted to determine condition of existing hot water distribution piping.

    Replace existing hot and chilled water piping systems from central plant to and thru building.
    Priority Level (1-4): 3 **Estimated Cost: $1,500,000 - $1,575,000 (If full replacement is determined)**

Estimated HVAC Subtotal: $5,536,000 - $5,888,000

PLUMBING IMPROVEMENTS

1. Existing plumbing fixtures are original. Fixtures need to be replaced to meet new water-saving technology and to meet ADA requirements

   Replace all plumbing fixtures.
   Priority Level (1-4): 2 **Estimated Cost: $275,000 - $385,000**

2. Existing domestic water heating boiler located in front mechanical room is dated from 2006 with a storage tank dated from 2016. This is beyond the typical life expectancy of this type of equipment. Recommend replacing existing boiler.

   Replace existing water heating boiler.
   Priority Level (1-4): 1 **Estimated Cost: $25,000 – $45,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

3. Existing domestic water heater located in back mechanical room is dated from 2015 with a storage tank dated from 2005. This is nearing the typical life expectancy of this type of equipment. Recommend replacing existing water heater and storage tank.

   Replace existing water heater and storage tank.
   Priority Level (1-4): 2 **Estimated Cost: $40,000 – $50,000**

4. Existing pool water heater located in back mechanical room is dated from 2000. The piping connected to this heater is corroded with what appears to be electrolysis complications. This is beyond the typical life expectancy of this type of equipment and the interconnected piping will need to be replaced.
   Replace existing pool heater and interconnecting piping.
   Priority Level (1-4): 1 **Estimated Cost: $50,000 – $60,000**

5. Existing domestic water piping is original, and there is evidence of leaks, pinholes, and other failures throughout the building. Existing valves and associated fittings should be replaced as well.
   Replace existing domestic water piping systems (cold water, hot water, hot water return) throughout building. This would include all valves.
   Priority Level (1-4): 1 **Estimated Cost: $400,000 - $600,000**

6. Existing kitchen has issues regarding grease waste back up. Sanitary piping in this area should be cleaned and scoped as well as video recorded to determine if there are problems within the sanitary piping below the floor.

   Re-pipe underground sanitary piping in kitchen and install grease trap.
   Priority Level (1-4): 4 **Estimated Cost: $25,000 - $35,000**

7. Existing sanitary system within the building should be scoped and cleaned to ensure longevity of the system.
   Scope and clean existing sanitary piping.
   Priority Level (1-4): 4 **Estimated Cost: $30,000 - $40,000**

Estimated Plumbing Subtotal: $845,000 - $1,215,000

ELECTRICAL IMPROVEMENTS

1. Interior Lighting and Lighting Controls
   Currently, the interior lighting fixtures include prismatic, parabolic, downlights, recessed indirect, and Hi-Bay types. Most have a T-8 fluorescent lamp source with electronic ballasts. High bays utilizes a metal halide lamp source. A few of the fixtures will require replacement of prismatic lenses, but generally the fixtures are in fair to good condition. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED light sources and new digital controls should be considered for additional energy savings.
   Auditorium house lighting was renovated approximately 9 years ago to utilize fluorescent lamp sources. The stage lighting system uses fixtures with an incandescent or quartz sources. The dimming system is manufactured by Colortran.
   Recommendation: Replace all lighting, lighting controls, exit signage, and all associated wiring

   Priority Level (1-4):2 **Estimated Cost: $1,700,000 - $2,300,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

Recommendation: Replace auditorium lights with fixtures with LED light source and update stage dimming control system.
Priority Level (1-4):3 **Estimated Cost: $157,000 - $225,000**

2. Electrical Service and Service Switchboard:
   The school's electrical service is provided by Duquesne Light Company via pad mounted transformer. The service consists of underground feeders from the transformer to the main service switchboard. This service switchboard is rated for 4000A, 208/120V, 3-phase, 4-wire. The panelboard is manufactured by Siemens, was installed in 1991, appears to be maintained in good condition but is approaching end of expected life. There are minimal spare breakers available for future use. On switchboard of this size the newest NEC codes require that an arc-flash reduction method be incorporated into the equipment to be used during maintenance. Latest power company billing is showing a peak demand of 484 KW (1345 A) in June of 2021.

   Recommendation: Upon building renovation, replace with new switchboard.
   Priority Level (1-4): 2 **Estimated Cost: $180,000 - $220,000**

3. Sub-Distribution Switchboards and Panelboards:
   The sub-distribution switchboard (original service switchboard) is manufactured by Westinghouse, is original to the building (1957), and has exceeded the expected life. There are no spare switches.
   The branch circuit panelboards within the building are multiple vintages by various manufacturers. Some of the older panelboards are in very poor condition. Some of the panels are original to the building construction or renovation dates, which means some of them are over fifty years old and past the expected life. The older panelboards have very few spare breakers and spaces.

   Recommendation: Replace sub-distribution switchboard and older panelboards
   Priority Level (1-4): 2 **Estimated Cost: $310,000 - $348,000**

4. Feeders:
   Feeders that are associated with the older panelboards should be replaced due to age. These feeders mostly run from the distribution panels to the branch circuit panels.
   Recommendation: Replace feeder wiring within existing conduits
   Priority Level (1-4):2 **Estimated Cost: $207,000 - $256,000**

5. Branch Circuiting and Devices:
   Most of the classroom branch circuits and associated devices were installed approximately 21 years ago in surface mounted raceways and are in good condition, but others are original to the building. Some locations, receptacle need to be replaced with GFI type receptacles to meet current NEC code. However, per the 2017 National Electrical Code (NEC), the receptacles within elementary educational facilities shall be tamper resistant.
   Recommendation: Replace devices to meet code and branch circuits to devices installed originally to the building.
   Priority Level (1-4):2 **Estimated Cost: $1,000,000 - $1,200,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

6. Generator & Transfer Switch:
   There are two generators located within the building. One in each boiler room. The first, is a natural gas generator rated for 13 KW/13 KVA at 120/240V, 1-phase, 3-wire and is manufactured by Kohler. The associated Automatic Transfer Switch (ATS) is manufactured by Kohler also. These were installed in approximately 2005. This emergency system serves egress lighting, fire alarm system, and the boiler control panel.
   The second, is a natural gas generator rated for 55 KW/69 KVA at 208/120V, 3-phase, 4-wire and is manufactured by Kohler. The associated Automatic Transfer Switch (ATS) is manufactured by ASCO and is installed in an older enclosure. This emergency system serves egress lighting, boilers, and pumps.

   The current NEC code requires any generator serving life safety lighting and equipment shall have a fuel source that cannot be interrupted. This is usually accomplished with a generator operating with an on-site fuel storage tank. In addition, the NEC code also requires that life safety equipment be on a separate ATS than optional equipment such as HVAC.

   Recommendation: At time of building renovation, the emergency system shall be reviewed. Provide an updated emergency system that meets current codes, including a generator, that feeds life safety loads, having on-site fuel storage
   Priority Level (1-4):2 **Estimated Cost: $147,000 - $178,000**

7. Arc Flash Analysis:
   To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.

   Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
   Priority Level (1-4):2 **Estimated Cost: $26,000 - $33,000**

8. Exterior Lighting:
   Exterior lighting has been upgraded to use LED light sources.
   Recommendation: No work at this time
   Priority Level (1-4):4 **Estimated Cost: N/A**

9. PA System
   The PA System is working but is old and should be replaced with new.
   Recommendation: During the next building renovation, replace the PA system
   Priority Level (1-4):2 **Estimated Cost: $74,000 - $101,000**

10. Phone System
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

Recommendation: Undertake a district-wide upgrade, outside the scope of building study.
Priority Level (1-4):4 **Estimated Cost: N/A**

11. Data Network System
    The data network system consists of a MDF room and (3) IDF closets. None of these spaces have dedicated cooling units. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are adequate data outlets through-out the building. Network rack equipment has been installed within the last 7 years and is in good working order.

    Recommendation: Provide cooling for the MDF room.
    Priority Level (1-4):2 **Estimated Costs: $10,000 - $12,000**

12. Clock System
    The clock system is dated and having operational issues. Many of the clocks are broken. In some locations stand-alone clocks are being used. Clock faces are analog style.
    Recommendation: Provide a full building clock system. Clock system shall be linked with PA System
    Priority Level (1-4):1 **Estimated Costs: $64,000 - $92,000**

Estimated Electrical Subtotal: $3,875,000 - $4,965,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $15,023,000 – 17,488,000

GRAND TOTAL FOR SHALER ELEMENTARY SCHOOL: $16,278,000 – 19,008,000

Building's exterior windows leak air and water at their perimeter and are in poor condition.

Concrete walkways are in poor condition. Building entrance and walkways are not protected from vehicles driving off the asphalt.

Asphalt in driveways is showing signs of cracking in the front.

Renovate all building restrooms to provide adequate clearances for handicap; replace plumbing fixtures and accessories.

Replace non-compliant door hardware on interior doors with new lever-type locksets and panic devices at exit egress doors.

Interior of Dish machine.

Federal Merchandiser.

Ice Forming in Walk-in Freezer.

Water Pooling at Exterior of Walk-in Doors.

CAPITAL IMPROVEMENTS PLAN

Priority #1 - Immediate Need		Estimated Cost:
1	Replace food service equipment (see detailed report).	$ 88,200- 101,000
2	Replace pool HVAC units.	$550,000-$650,000
3	Replace existing water heating boiler.	$25,000-$45,000
4	Replace existing pool heater and its piping.	$50,000-$60,000
5	Replace existing domestic water piping systems.	$400,000-$600,000
6	Provide a clock system linked to PA system.	$64,000- $92,000
	Priority #1 -Total	**$1,177,200-$1,548,000**

Priority #2 - Approaching Need (3-5 Years)		Estimated Cost:
1	Install decorative pipe bollards and landscape stones at main entrance.	$15,000 - $20,000
2	Renovate restrooms to provide adequate accessibility clearances.	$700,000 - $800,000
3	Modify classroom alcove walls for clearances.	$110,000 - $140,000
4	Install new interior door hardware.	$40,000-$75,000
5	Install Pool platform lift for HC access.	$ 95,000-$115,000
6	Provide all faucets with thermostatic mixing valves.	$60,000 - $90,000
7	Upgrade to voice fire alarm system.	$230,000- $280,000
8	Repave parking lots and driveways.	$850,000-$950,000
9	Replace select concrete sidewalks and curbs.	$80,000-$90,000
10	Monitor exiting roof for leaks and repair as required.	$1,000,000 - $1,400,000
11	Replace aluminum main entrance doors.	$80,000- $90,000
12	Replace exterior windows.	$682,000 - $800,000
13	Replace asphalt at track.	$325,000-$375,000
14	Replace athletic lockers in locker room.	$70,000-$90,000
15	Pool filter equipment needs replacement. Replace pool tile and floor drains.	$675,000- $775,000
16	Replace food service equipment (see detailed report).	$64,000-$189,000
17	Incorporate sound attenuation devices in auditorium duct work.	$70,000-$74,000
18	Replace existing plumbing fixtures.	$275,000-$385,000
19	Replace existing water heater and storage tank.	$40,000-$50,000
20	Replace original feeder wiring.	$207,000- $256,000
21	Replace original circuit devices.	$1,000,000-$1,200,000
22	Replace generator and consider adding HVAC loads to the new system.	$147,000 - $178,000
23	Arch-flash analysis needs to be performed.	$26,000 - $33,000
24	Provide a new PA system.	$74,000- $ 101,000
25	Provide cooling for the MDF room.	$10,000-$12,000
	Priority #2 -Total	**$6,925,000-$8,568,000**

	Priority #3 - Moderate Need (5-8 Years)	**Estimated Cost:**
1	Repoint clean and seal all exterior walls.	$220,000 - $300,000
2	Replace food service equipment (see detailed report).	$44,000-$50,000
3	Replace auditorium lights.	$157,000-$225,000
	Priority #3 -Total	**$421,000-$575,000**

	Priority #4 - Eventual Need (8-12 Years)	**Estimated Cost:**
1	Replace flooring in all assembly spaces.	$190,000 - $230,000
2	Re-pipe underground sanitary piping in kitchen and install grease trap.	$25,000- $ 35,000
3	Scope and clean sanitary piping.	$30,000-$40,000
	Priority #4 -Total	**$245,000-$305,000**

	Comprehensive HVAC upgrades project (including AC)	**Estimated Cost:**
1	Replace boiler stack.	$25,000-$27,000
2	Replace and upgrade boilers.	$300,000-$315,000
3	Replace hot water pumps.	$225,000- $236,000
4	Recommission unit ventilators for proper commission.	$75,000 - $79,000
5	Wall PTAC units need to be replaced.	$50,000 - $53,000
6	Upgrade building ATC system to full DDC.	$400,000 - $420,000
7	Replace pneumatic valves and damper actuators.	$620,000- $651,000
8	Install CO2 sensors.	$271,000-$285,000
9	Replace air handling units.	$350,000 - $368,000
10	Replace all lighting, controls, signage, and wiring.	$1,700,000 - $2,300,000
11	Replace main switch boards, upon building renovation.	$180,000-$220,000
12	Replace old panelboards.	$310,000 - $348,000
13	Replace classroom storage cabinets at next major renovation project.	$750,000 - $850,000
14	Remove hazardous material and asbestos materials.	$60,000 - $70,000
15	Replace existing hot and chilled water piping.	$1,500,000-$1,575,000
16	Replace ceiling tile when HVAC replacement project occurs.	$525,000-$600,000
17	HVAC system & chilled water pipe installed will need replacement to add AC.	$900,000-$945,000
18	Replace exhaust fans.	$200,000- $210,000
	Total	**$8,441,000-$9,552,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

1810 Mount Royal Boulevard,
Glenshaw, PA 15116

BUILDING ENROLLMENT: 590 Students (7-8)

CONSTRUCTION HISTORY: 1998 Additions/Alterations
2008 Renovations

SIZE: 194,175 square feet on approximately 23 acres

BUILDING STRUCTURE: This building is physically Located in Shaler Township; it shares its campus with the football stadium.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. The building's main entrance vestibule is not adjacent to the school office which allows visitors to enter the building unmonitored and have access to the main corridor.

   Reconfigure the entry vestibule to create a security office adjacent to the vestibule to permit staff to monitor visitors' entry.

   Priority Level (1-4): 1 **Estimated Cost: $100,000 – 150,000**

2. Stair tower landings on 2nd /3rd floors have a gap between their landing and window wall which is a hazard for students.

   Extend railing height to prevent access to gap.
   Priority Level (1-4): 3 **Estimated Cost: $20,000 – 30,000**

3. Directional site signage throughout the vehicular drives is needed to direct visitors to parking areas / building entrances and away from bus traffic.

   Install new directional signage throughout the site to improve vehicle circulation.
   Priority Level (1-4): 4 **Estimated Cost: $30,000 – 40,000**

DOORS/HARDWARE

4. Interior doors and corridor entry alcoves are ADA compliant.
   Door hardware throughout building is also code compliant, which is lever type lockset. No action needed.
   Priority Level (1-4): N/A **Estimated Cost: N/A**

ADA SIGNAGE/COMPLIANCE

5. Building interior signage accommodates visually impaired occupants as required per ADA guidelines.
   Priority Level (1-4): N/A **Estimated Cost: N/A**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

6. The building's elevator meets all ADA guidelines and has recently had its elevator shaft replaced.
   Priority Level (1-4): N/A **Estimated Cost: N/A**

ELECTRICAL

7. Fire Alarm
   The fire alarm system is a 4020 system by Simplex, was installed in 2008, and is in good operating condition. However, the newest codes require that fire alarm systems within educational facilities be a voice system. Fire alarm panel is reported to have frequent issues and should be addressed.
   Recommendation: Upon building renovation, fire alarm will need to be replaced.
   Priority Level (1-4):4 **Estimated Costs: $256,000 - $325,000**

8. Camera Surveillance System
   The camera surveillance system of cameras located in the corridors and on the building exterior. The system is networked, but not connected as part of the district wide system. This system is manufactured by Viconnet/Geovision and was installed in 2000. The system has exceeded the expected life expectancy. The district currently has an RFP out for pricing for the replacement of this system.
   Recommendation: No work required as part of this study
   Priority Level (1-4): 4 **Estimated Cost: N/A**

9. Door Access System
   The door access system was manufactured by Konntech, installed in 2014, and is in good working order. Recommendation: No work required.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

10. Federal ADA and state building codes require Areas of Rescue in two story buildings located within stairs or in fire protected areas for disabled individuals to wait until fire personnel arrive and assist them to safety.

    Locate an Area of Rescue within or near 2nd floor stairs and install a remote call station system for communication to fire alarm panel.
    Priority Level (1-4): 2 **Estimated Cost: 125,000 – 140,000**

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $531,000 - 685,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The existing asphalt in parking lots and drives are deteriorating due to cracks permitting water /ice into subgrade causing further damage. South and stadium lots are worse than north library lot and rear drive. Storm structures are in fair condition but may require upgrades if subsurface storm retention tanks need replaced due to backups occurring during rain events.
   Propose: Remove existing asphalt and stone base in drives and parking lots. Assess condition of each subgrade and install new stone base, asphalt binder and new wearing top courses. Replace underground retention tank if PENNDOT cannot assist with cleaning Mt. Royal Boulevard storm inlets.
   Priority Level (1-4): 1 **Estimated Cost: $1,300,000 – 1,600,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

2. The building's north, east and west entrance walkways and sidewalks have recently been replaced. The south walks adjacent to the district office have not been replaced but should be replaced when asphalt is addressed.

   Priority Level (1-4):1 **Estimated Cost: $150,000- $200,000**

3. Original building's roof is in fair condition and the warranty expires in September of 2022.

   Consider replacement of roof membranes when warranty expires. Monitor existing roof coating for leaks and replace roof with new adhered rubber roof membrane and rigid insulation in future.
   Priority Level (1-4): 3 **Estimated Cost: $1,640,000 – 2,100,000**

4. Minor masonry repairs need to be addressed at building's exterior walls. Repointing, cleaning, and sealing at various locations are needed.
   Priority Level (1-4): 3 **Estimated Cost: $20,000 – 30,000**

5. All the building's aluminum entrance vestibules are original to 1998 and in poor condition due to extended wear. Door components require frequent replacement.

   Replace the entire aluminum storefront doors at all entrance/exit points of the building.

   Priority Level (1-4): 2 **Estimated Cost: $75,000 – 100,000**

6. The loading dock concrete stairs and railing are deteriorating from salt usage in winter months and need replaced.

   Priority Level (1-4): 1 **Estimated Cost: $25,000 – 40,000**

7. The building's exterior windows are in good condition.

   Priority Level (1-4): N/A **Estimated Cost: N/A**

8. Exterior site railings throughout perimeter of the school are in poor condition. And these handrails have paint chipping, rusting and require painting.

   Propose: Repaint the existing handrails to protect steel and galvanized coating ad re-attach these railings to the concrete curb base.
   Priority Level (1-4): 2 **Estimated Cost: $45,000 - 60,000**

9. The Auditorium curtains, catwalk and related items need replacement. Existing Auditorium has popcorn type ceiling to control acoustics but is extremely dirty and in need of repainting.

   Priority Level (1-4):3 **Estimated Cost: $350,000 – 400,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

10. Band classroom has issues of always being too hot from the boiler room located below exterior wall. Band room is also extremely cold in winter months.

    Propose: Insulate the ceiling in the boiler room below the band room and insulate exterior wall by furring with insulation.

    Priority Level (1-4): 3 **Estimated Cost: $50,000 –60,000**

11. Gymnasium interior walls appear to have a leak from a roof drain. Lower levels also have water ponding condition due to storm system backups and should be evaluated following correction. See Asphalt Repair item above and Plumbing Item below for additional information.

    Priority Level (1-4): 1 **Estimated Cost: $60,000 –70000**

12. Catwalk in ceiling roof joist to access mechanical equipment in main gym has insufficient safety railings and supports. Previous repairs were performed but needs additional attention by adding more steel.

    Priority Level (1-4): 3 **Estimated Cost: $60,000 – 75,000**

13. Rubber tile treads/ risers at all stair towers are worn and is a potential tripping hazard.
    Propose: Replace stair tread and riser with new finishes.

    Priority Level (1-4): 2 **Estimated Cost: $75,000 – 90,000**

14. Wall paint throughout the interior of the building is in fair condition.
    Building interior should be re-painted if a major renovation project occurs.

    Priority Level (1-4): 4 **Estimated Cost: $380,000 – 400,000**

15. Lay-in acoustic ceilings are in fair/poor condition due to staining from humidity and/or above ceiling equipment leaks.
    Propose: replace ceiling tiles if any major above ceiling work is planned.
    Priority Level (1-4):4 **Estimated Cost: $325,000 – 425,000**

16. Corridor linoleum installed in 1998 is cracking and separating at seams and in need of replacement. Terrazzo floors should be ground and polished to restore finish.

    Priority Level (1-4): 4 **Estimated Cost: $370,000 – 450,000**

17. Assumed asbestos containing materials (ACMs) include vinyl asbestos tile and possibly fiberglass pipe elbows and insulation above ceilings in the basement and corridors. Items should be regularly monitored for damage and removed or contained by a certified abatement employee or Contractor.
    Propose: An updated hazardous material inspection should be performed to confirm presence of asbestos materials should a major building renovation occur. All suspected asbestos containing materials should be regularly monitored and removed / contained by a certified abatement employee or contractor if damaged. Any major renovations that may affect ACM's should be sampled to confirm their existence and removed in their entirety prior to work occurring.
    Priority Level (1-4): 3 **Estimated Cost: $70,000 –85,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

TITAN STADIUM:

18. Exterior Bleacher structure tread and risers need existing paint to be removed and repainted. Concrete repairs are needed at front row, voids between steel structure and concrete block wall need to be filled to prevent bird nesting; rusted lintels above doors need replaced and control joints need to be caulked. Exterior walls need to be repainted and louvers need replacement as their finish is worn out. The seat brackets, railing posts and steel column base plates are corroded/ rusted and need to be removed repainted and /or replaced. The existing fence fabric of railings is worn out and also in need of replacement.
    Priority Level (1-4): 1 **Estimated Cost: $500,000 – 650,000**

19. The Concession Stand's wood siding is in poor condition and needs overlayed with new low maintenance cladding material. Service windows are original, and needs replaced with roll-up coiled counter doors.
    Priority Level (1-4): 1 **Estimated Cost: $70,000 – 80,000**

20. The Press Box's wood stair and landings are in poor condition and rotted. Exterior vinyl siding is in fair condition and roof material is not conducive to foot traffic. There is water leakage from base of the walls into finished spaces of the locker room below.
    Press box structure and room should be replaced with new prefab box behind bleachers.
    Priority Level (1-4): 1 **Estimated Cost: $350,000 – 400,000**

Estimated Titan Stadium Subtotal: $920,000 - $1,130,000

Total Estimated General Building Improvements Construction Cost: $5,915,000 –7,315,000

FOOD SERVICE EQUIPMENT

The central kitchen space is approximately 2,000 square feet. The production kitchen, prep, storage, and ware washing spaces encompass approximately 1,800 square feet with a serving space size of approximately 1,000 square feet. Students are being served over two meal periods. The most recent renovation being completed in the late 1990's. The main production kitchen currently includes centralized storage of dry product, cold product, preparation, cooking, serving, and ware washing facilities. Overall condition of space and equipment was noted to be in good condition.
(Cost estimates include equipment costs only, removal and disposal of existing equipment, installation of new equipment, and any required general trades or utility work is not included.)

1. The kettle is no longer used by the cooking staff and the triple deck steamer is no longer in service.
   Recommendation: Replace the kettle and steamer with a single deck full size combination oven/steamer.

   Priority Level (1-4): 1 **Estimated cost: $29,500 -$35,000**

2. The six-burner range is original to the last renovation and has become problematic from a service standpoint.
   Recommendation: Replace the existing six burner range.
   Priority Level (1-4): 2 **Estimated costs: $8,350 -$10,000**

3. The two single section hot boxes are original to the last renovation and are in working condition. Some parts are no longer available.

Recommendation: Consider planning on replacing the two single section hot boxes soon. These existing units have reached their life expectancy and parts are becoming obsolete and not available.
Priority Level (1-4): 3 Estimated costs: $8,800.00 per unit- Total $17,600-$20,000

4. The food chopper is original to the last major renovation. The unit is in working order; however, the finish has degraded and is no longer smooth and cleanable.
   Recommendation: Replace the food chopper (See images at the end of the section).
   Priority Level (1-4): 2 Estimated costs: $13,300- $16,000

5. The walk-in cooler and freezer unit is original to the installation. There is evidence of floor panel delamination and joint degradation on both the ceiling and wall panels. There is also condensation build-up on the interior of the units which is evidence of air leaks in the panel seams.
   Recommendation: Replace the walk-in cooler/freezer and their associated refrigeration systems. (See Images at the end of the section.)
   Priority Level (1-4): 2 Estimated costs: $66,000 -$70,000

6. The prep top refrigerator manufactured by Continental is no longer in working condition.
   Recommendation: Replace the prep top refrigerator.
   Priority Level (1-4): 1 Estimated cost: $47,000- $50,000

7. A gas fired conveyor pizza oven is being used in the serving space without a Type 1 Hood and Fire Suppression system. This type of oven is required to be under a Type 1 Hood with a UL300 Listed fire suppression system.
   Recommendation: Replace the gas fired pizza oven with an electric unit certified and tested under UL710B (KLNZ) for use without a Type 1 Hood and fire suppression system.
   Priority Level (1-4): 1 Estimated cost: $19,800- $ 22,000

8. The dish room is oversized based on current demands and the dish machine is at the end of its useful life.
   Recommendation: The dish room could be reutilized for another program or expansion of the serving area should the district continue with the use of disposable trays. The dish machine should be considered for replacement based on its age and the development of more efficient units since the time of the original installation.
   Priority Level (1-4): 3 Estimated dish machine cost: $52,000-$60,000

9. The serving space is setup using mobile and non-mobile equipment from the original installation and several pieces that have been purchased more recently. The result is a non-cohesive design and one that is not on trend with other middle schools currently being constructed or remodeled.

   Recommendation: Potential to renovate the entire serving space utilizing equipment that is more coordinated in style, specific to the needs of the school, and more on track with current trends for middle school serving spaces.
   Priority Level (1-4) :4 – Estimate cost of equipment for a space of this size is $400,000 to $500,000 depending on program and level of finishes used on the serving line equipment.

Estimated Food Service Equipment Subtotal: $653,550 – $783,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

HVAC

1. Two (2) HB Smith Cast-Iron boilers serve the heating needs of the building. The boilers are gas-fired, 24 years old and in good condition.

   Priority Level (1-4): 3 **Estimated Cost: $600,000 - $630,000**

2. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Units appear to date from the 1998 project. Future upgrade project should consider conversion to central air VAV system. UV removal would require modifications to classroom shelving (not included in estimate below.)

   Priority Level (1-4): 3 **Estimated Cost: $5,250,000 - $5,512,000**

3. Existing hot water pumps appear to be in good condition.

   Replace hot water pumps and incorporate variable speed drives for energy savings.
   Priority Level (1-4): 3 **Estimated Cost: $ 75,000 - $79,000**

4. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability.

   Upgrade building ATC system to full DDC.
   Priority Level (1-4): 3 **Estimated Cost: $445,000 - $467,000**

   Replace all existing pneumatic valves and damper actuators with electric type to compliment the ATC system conversion to DDC.
   Priority Level (1-4): 3 **Estimated Cost: $690,000 - $725,000**

   To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
   Priority Level (1-4): 3 **Estimated Cost: $302,000 - $317,000**

Estimated HVAC Temperature Controls Subtotal: $1,437,000 - $1,509,000

5. Existing air handling units are in fair condition.

   Replace air handling units. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention.
   Priority Level (1-4): 3 **Estimated Cost: $525,000 - $552,000**

6. Exhaust fans are in fair condition.

   Replace exhaust fans.
   Priority Level (1-4): 3 **Estimated Cost: $250,000 - $263,000**

7. Simple (non-moving) terminal equipment appears to be in good condition.

   Replace terminal equipment such as convectors and finned-tube radiation if necessary.
   Priority Level (1-4): 4 **Estimated Cost: $175,000 - $184,000**

Total Estimated HVAC Subtotal: $8,312,000 - $8,729,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING (continued):

PLUMBING IMPROVEMENTS

8. Existing kitchen water heater is 27 years old. The existing domestic water heater that serves hot water for all plumbing fixtures except the showers is 26 years old. These are beyond the typical life expectancy of this type of equipment.

   Replace existing kitchen and domestic water heaters.
   Priority Level (1-4): 1 **Estimated Cost: $40,000 – $50,000**

9. Existing gang toilet room plumbing fixtures appear to not meet ADA requirements, have damaged, and corroded manual valves, and are very dated in some parts of the school, like locker rooms. Fixtures should be replaced to meet new water-saving recommendations and adjusted for ADA requirements.

   Replace existing plumbing fixtures, adjust for ADA, and provide new valves and faucets.
   Priority Level (1-4): 2 **Estimated Cost: $325,000 – $450,000**

10. Water infiltration is occurring in the lower levels during periods of heavy rain. The site catch basins outside are also backed up which may be contributing to this. The roof drains over the gymnasium should be investigated with video and photo reports to determine if there are any leaks or clogs in that portion of the storm drainage system.

    Investigate existing storm drainage system and provide report on findings.
    Priority Level (1-4): 1 **Estimated Cost: $15,000 – $20,000**

11. Existing domestic water piping is original, and there is no evidence of leaks, pinholes, and other failures throughout the building. Existing piping should be tested to ensure longevity of the system.

    Test existing piping for and leaks or corrosion within the system.
    Priority Level (1-4): 4 **Estimated Cost: $40,000 - $60,000**

12. Existing sanitary piping is original, and there is evidence of leaks, backups, or other failures within the building. Existing piping should be scoped and cleaned to ensure longevity of the system.

    Test existing piping for and leaks or corrosion within the system.
    Priority Level (1-4): 4 **Estimated Cost: $80,000 - $100,000**

Total Estimated Plumbing Subtotal: $500,000 - $680,000

ELECTRICAL IMPROVEMENTS

13. Electrical Service and Service Switchboard
    The school's electrical service is provided by Duquesne Light Company via transformer located within an outdoor vault. The service consists of underground feeders from the transformer to the main service switchboard. This service switchboard is rated for 4000A, 480/277V, 3-phase, 4-wire with a main circuit breaker rated at 3500A. The panelboard is manufactured by Square D, was installed in 1996, appears to be maintained in good condition, but is approaching end of expected life. There is (1) 50A minimal spare breaker

BUILDING INFRASTRUCTURE IMPROVEMENTS – ELECTRICAL (continued):

and a few spares available for future use. There is a capacitor unit connected to this main switchboard to keep the power factor of the system load close to unity. On a switchboard of this size the newest NEC codes require that an arc-flash reduction method be incorporated into the equipment to be used during maintenance. Latest power company billing is showing a peak demand of 553 KW (665 A) in August of 2021.

Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

14. Distribution and Branch Circuit Panelboards
The branch circuit panelboards within the building are mostly manufactured by Square D and appear to be installed in 1996. The 480/277V panelboards feed lighting and HVAC equipment and the 208/120V feed receptacle loads throughout the building. The panelboards are well maintained in good condition. There are spare breakers and/or spaces available in most panelboards for future load addition.

Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

15. Transformers
Transformer formers are utilized in the electrical distribution system between 480V panelboards and 208/120V panelboards. All transformers are in good condition, and none appear to be overloaded.
Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

16. Feeders
Panelboard feeders that are associated with the branch circuit panelboards and transformers were installed in 1996
Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

17. Branch Circuiting and Devices
Most of the branch circuits and associated devices were installed in 1996 and are in good condition. Some of the classrooms have the devices installed in surface mounted raceways. The 2017 National Electrical Code (NEC) now requires receptacles in assembly areas such as the gymnasiums and the auditorium be tamper resistant.
Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

18. Generator & Transfer Switch
The natural gas generator is rated for 80 KW/100 KVA at 480/277V, 3-phase, 4-wire and is manufactured by Onan. The associated Automatic Transfer Switch (ATS) is manufactured by Onan also. These were installed in approximately 1997 and is approaching end of life due to age and available parts. This emergency system serves egress lighting, and data room receptacles.
The current NEC code requires any generator serving life safety lighting and equipment shall have a fuel source that cannot be interrupted. This is usually accomplished with a generator operating with an on-site fuel storage tank. In addition, the NEC code also

BUILDING INFRASTRUCTURE IMPROVEMENTS – ELECTRICAL (continued):

requires that life safety equipment be on a separate ATS than optional equipment such as HVAC.

Recommendation: Consider providing an updated emergency generator system that meets current codes. Consider additional building loads that may be wanted on back-up power including HVAC kitchen loads, and additional data servers.
Priority Level (1-4):3 **Estimated Costs: $164,000 - $205,000**

19. Arc Flash Analysis
To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.

Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
Priority Level (1-4):2 **Estimated Costs: $29,000 - $36,000**

20. Interior Lighting and Lighting Controls
Currently, the interior lighting fixtures include prismatic, parabolic, downlights, Hi-Bay, and linear pendant types. Most have a T-8 fluorescent lamp source with electronic ballasts. High-bays utilize a metal halide lamp source. It appears that some of the linear pendants in the main stairwell are missing some of the lenses and some of the ballasts may not be working. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED light sources and new digital controls should be considered for additional energy savings.

Auditorium house lighting utilizes incandescent/quartz lights which only have a 2000 hour rated life and are difficult to reach for replacement. The stage lighting system uses fixtures with an incandescent/quartz lamp source. The dimming system is manufactured by ETC.

Recommendation: Replace all lighting, lighting controls, exit signage, and all associated wiring.
Priority Level (1-4):2 **Estimated Costs: $2,000,000 - $2,565,000**

Recommendation: Replace auditorium lights with fixtures with LED light source and update stage dimming control system.
Priority Level (1-4):3 **Estimated Costs: $180,000 - $255,000**

21. Exterior Lighting
Exterior lighting has been upgraded to use LED light sources.
Recommendation: No work at this time
Priority Level (1-4): 4 **Estimated Cost: N/A**

22. PA System
The PA System is working, but has a few operational issues, and is nearing the end of the expected life cycle.
Recommendation: Replace the PA System.
Priority Level (1-4):2 **Estimated Costs: $82,000 - $113,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – ELECTRICAL (continued):

23. Phone System
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.
    Recommendation: Undertake a district-wide upgrade, outside the scope of building study.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

24. Data Network System
    The data network system consists of the district hub/building MDF room and (5) IDF closets. The district hub/building MDF room is currently having cooling units replaced. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are adequate data outlets through-out the building. Network rack equipment has been installed within the last 7 years and is in good working order.
    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

25. Clock System
    The clock system is a wireless system, is manufactured by Sapling and was installed in 2021. Clocks are analog style in the classrooms and digital style in the corridors.
    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

26. Door Intercom System:
    The door intercom system was manufactured by Geovision, was installed in 2019, and is in good working condition.
    Recommendation: No work required.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

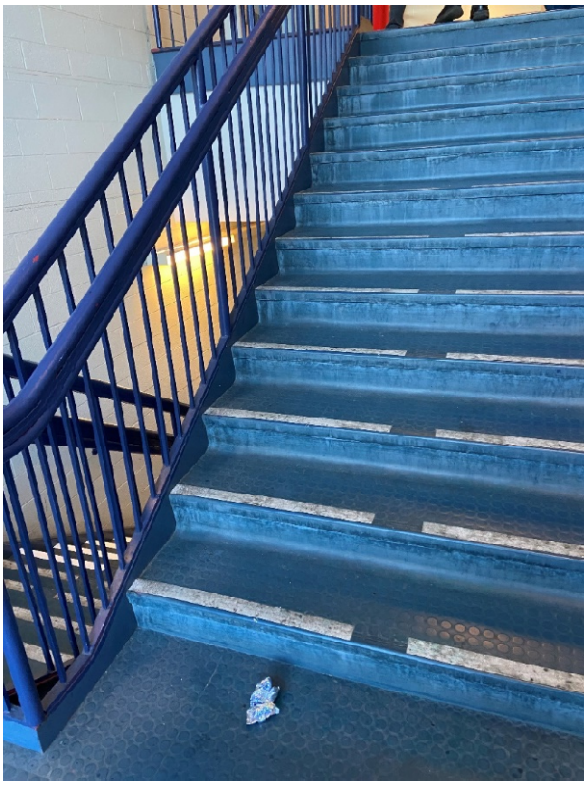
Total Estimated Electrical Subtotal: $2,455,000 - $3,174,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $18,366,550- 20,426,000

GRAND TOTAL SHALER MIDDLE SCHOOL: $18,346,550- $ 20,406,000

Shaler Middle school –Entrance stairs with metal inserts are in poor condition.

Existing parking lot showing signs of cracking in the front and rear lots.



Existing Tread and risers are original and need replacement.

Food Chopper is original, and finish has degraded.

Walk-in cooler/freezer floors. The floor panel delamination and joint degradation occurring on both the ceiling and wall panels.

Condensation occurring Inside Walk-ins.

Walk-in cooler /freezer Ceilings.

Existing entrance walkways have been replaced with new sidewalks.

Existing site railings have paint chipping, rusting and require painting

Gang toilet room plumbing fixtures appear to not meet ADA requirements, some have damaged, and corroded manual valves.

CAPITAL IMPROVEMENTS PLAN

	Priority #1 - Immediate Need	Estimated Cost:
1	Reconfigure entry vestibule for security reasons.	$100,000-$150,000
2	Repave parking lots and driveways.	$1,300,000 - $1,600,000
3	Replace some of the sidewalks when asphalt is next addressed.	$150,000-$200,000
4	Loading dock stairs and railing needs replacement.	$25,000-$40,000
5	Gymnasium interior wall leaks need to be fixed. (Storm system.)	$60,000-$70,000
6	Renovations at Titan Stadium bleacher structure.	$500,000-$650,000
7	Renovations at Titan Stadium concession stand.	$70,000-$80,000
8	Renovations at Titan Stadium press box.	$350,000-$400,000
9	Replace existing domestic water heating boiler.	$40,000 - $50,000
10	Investigate existing storm drainage issues.	$15,000-$20,000
11	Food service equipment renovations (see detailed report).	$96,300- $107,000
	Priority #1 -Total	**$2,706,300- $3,367,000**

	Priority #2 - Approaching Need (3-5 Years)	Estimated Cost:
1	Locate an area of rescue assistance at the rear stairway.	$125,000 - $140,000
2	Replace main aluminium entrance vestibules.	$75,000 - $100,000
3	Repaint and re-attach existing site railings.	$45,000-$60,000
4	Replace existing stair tread and risers.	$75,000-$90,000
5	Replace existing plumbing fixtures with new valves and faucets.	$325,000-$450,000
6	Arch-flash analysis needs to be performed.	$29,000 - $36,000
7	Replace PA systems.	$82,000-$113,000
8	Food service equipment renovations.	$87,650 - $96,000
	Priority #2 -Total	**$843,650- 1,085,000**

	Priority #3 - Moderate Need (5-8 Years)	Estimated Cost:
1	Extend railing height to prevent access to gap in stair landing.	$20,000-$30,000
2	Replace roof with new adhered rubber or modified bitumen roof system.	$1,640,000 - $2,100,000
3	Minor masonry repairs required.	$20,000-$30,000
4	Auditorium stage, curtain, ceiling replacement.	$350,000-$400,000
5	Insulate ceiling in boiler room below band room.	$50,000-$60,000
6	Gymnasium catwalk needs to be replaced.	$60,000-$75,000
7	Replace auditorium lights.	$180,000-$255,000
8	Food service equipment renovations.	$69,600 - $80,000
	Priority #3 -Total	**$2,389,600- $3,030,000**

	Priority #4 - Eventual Need (8-12 Years)	**Estimated Cost:**
1	Install new directional signage on site.	$30,000-$40,000
2	Fire alarm to be replaced, upon building renovation.	$256,000-$325,000
3	Repaint interior surfaces throughout the building.	$380,000 - $400,000
4	Replace flooring in corridors.	$370,000 - $400,000
5	Food service equipment renovations.	$400,000 - $500,000
6	Test existing domestic piping system for leaks and corrosion.	$40,000- $60,000
7	Test existing sanitary piping for leaks and corrosion.	$80,000-$100,000
	Priority #4 -Total	**$1,556,000-$1,825,000**

	Comprehensive HVAC upgrades project (including AC)	**Estimated Cost:**
1	Replace all lighting, controls, signage, and wiring.	$2,000,000 - $2,565,000
2	Remove hazardous material and asbestos materials.	$70,000 - $85,000
3	Replace old boilers.	$600,000-$630,000
4	Replace unit ventilators and convert to VAV system.	$5,250,000 - $5,512,000
5	Replace hot water pumps.	$75,000-$79,000
6	Upgrade building ATC system to full DDC.	$445,000 - $467,000
7	Replace pneumatic valves and damper actuators.	$690,000- $725,000
8	Install CO2 sensors.	$302,000-$317,000
9	Replace air handling units.	$525,000 - $552,000
10	Replace exhaust fans.	$250,000- $263,000
11	Replace generator and consider adding HVAC loads to the new system.	$164,000 - $205,000
12	Replace lay in ceilings with humidity resistant ceiling panels.	$325,000 - $425,000
13	Replace terminal HVAC equipment.	$175,000- $ 184,000
	Total	**$10,873,000-$12,009,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

381 Wible Run Road,
Pittsburgh, PA 15209

BUILDING ENROLLMENT: 1257 students

CONSTRUCTION HISTORY:
1978 Original construction
1991 Renovations
2008 Additions and alterations

SIZE: 280,750 sq. ft. on approximately 155 acres

BUILDING STRUCTURE: The building is physically located in Shaler Township.

CODE REQUIRED/SAFETY IMPROVEMENTS

SITE ENTRANCE /WALKWAYS/ STAIRS /ACCESS WAYS

1. Entrance walkways are not protected from vehicles driving off the asphalt and hitting pedestrians.

   Propose: Install decorative pipe bollards and landscape stones at main entrance and walkways to protect pedestrians.
   Priority Level (1-4): 2 **Estimated Cost: $20,000 – 30,000**

RESTROOMS

2. Some locker room and toilet rooms not updated in 2008 need to be adjusted for ADA requirements.
   Update restrooms /locker rooms to satisfy ADA requirements.

   Priority Level (1-4): 2 **Estimated Cost: $200,000 - $225,000**

DOORS/HARDWARE

3. Most of the door hardware throughout building is code compliant, but some knob type hardware exists and should be replaced with lever type lockset.

   Priority Level (1-4):2 **Estimated Cost: $38,000 – 42,000**

ADA SIGNAGE/COMPLIANCE

4. Building does have required tactile braille interior signage to accommodate visually impaired occupants as required per ADA guidelines.

   Priority Level (1-4): N/A **Estimated Cost: N/A**

5. The building's elevator needs updated to meet building code and ADA guidelines.
   Priority Level (1-4): 2 **Estimated Cost: $60,000-80,000**

CODE REQUIRED/SAFETY IMPROVEMENTS (continued):

ELECTRICAL

6. Fire Alarm
   The fire alarm system is a E3 series by Honeywell/Gamewell-FCI, was installed in 2008, and is in good operating condition. However, the newest codes require that fire alarm systems within educational facilities be a voice system.

   Recommendation: Upon building renovation, fire alarm will need to be replaced.
   Priority Level (1-4):4 Estimated Cost: $374,000 - $523,000

7. Camera Surveillance System
   The camera surveillance system of cameras located in the corridors and on the building exterior. The system is networked, but not connected as part of the district wide system. This system is manufactured by Viconnet/Geovision and was installed in 2000. The system has exceeded the expected life expectancy. The district currently has an RFP out for pricing for the replacement of this system.

   Recommendation: No work required as part of this study
   Priority Level (1-4): 4 Estimated Cost: $ N/A

8. Door Access System
   The door access system was manufactured by Konntech, installed in 2008 and 2014, and is in good working order

   Recommendation: No work required.
   Priority Level (1-4): 4 Estimated Cost: $ N/A

9. Federal ADA and state building codes require Areas of Rescue in two story buildings located within stairs or in fire protected areas for disabled individuals to wait until fire personnel arrive and assist them to safety.

   Locate an Area of Rescue within or near upper floor stairs and install a remote call station system for communication to fire alarm panel.
   Priority Level (1-4): 2 Estimated Cost:125,000 – 140,000

CODE REQUIRED / SAFETY IMPROVEMENTS TOTAL: $817,000 – 1,040,000

BUILDING INFRASTRUCTURE IMPROVEMENTS

GENERAL

1. The existing asphalt in parking lots and drives were resurfaced in 2020 and are in good condition. Sidewalks are also in good condition and replaced in 2020, except at main entry doors which have some damage due to salt.

   Propose: Replace sidewalks at main entrance.
   Priority Level (1-4): 3 Estimated Cost: $64,000 – 70,000

2. Existing rubber membrane roof was replaced in 2002 and is in fair condition. Roof's warranty expires in October 2022.

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

Consider replacement of roof membrane on main building when warranty expires in October 2022. Monitor existing roof coating for leaks and replace roof with new adhered rubber roof membrane and rigid insulation.

Priority Level (1-4): 3 **Estimated Cost: $1,400,000 – 1,650,000**

3. Asphalt shingles, gutters, and downspouts on Matulevic, Biles, and Hilltop fields are in poor condition and require replacement with standing seam metal roof systems.
   Priority Level (1-4): 1 **Estimated Cost: $425,000 – 500,000**

4. Lockers replaced in 2008 alterations are in good condition, but other corridor and locker room lockers are older and in poor condition. Lockers need to be replaced.
   Priority Level (1-4):3 **Estimated Cost: $330,000 – 350,000**

5. The building's aluminum entrances (not installed in 2008), are leaking air and water and are problematic in operation. Sidelight windows also leak air and water.
   Replace all aluminum storefront doors and windows at entrances.
   Priority Level (1-4): 2 **Estimated Cost: $220,000 –250,000**

6. Classroom windows are in fair/ good condition but do not include an operable pane for natural ventilation or emergency egress at ground level floors.
   Modify existing windows to provide operable awning type windows.
   Priority Level (1-4): 4 **Estimated Cost: $145,000 – 180,000**

7. Rubber stair tread and risers with select stair risers are in poor condition and in need of replacement.1978 stairs are terrazzo and in good condition.

   Priority Level (1-4): 1 **Estimated Cost: $40,000 – 50,000**

8. Auditorium stage curtains are in poor condition and auditorium catwalk to prevent a fire hazard needs to be replaced. Wood frame construction which is not permitted by the building code should be replaced.

   Priority Level (1-4): 3 **Estimated Cost: $230,000 – 280,000**

9. Existing kitchen equipment was reported by school staff to be in good condition; no issues reported by staff. Food service equipment report was excluded from review due to its condition.

10. Wall paint throughout the building is in fair/good condition. Consider repainting if a major renovation project occurs.

    Repaint all interior surfaces in building.
    Priority Level (1-4): 4 **Estimated Cost:300,000 – 400,000**

11. Lay-in acoustic ceilings are in fair condition. Stained tile exists in several locations from roof and/or above ceiling equipment leaks.
    Lobby administration /guidance suites have acoustical/sound control issues at times.

    Propose: New ceiling tiles should be installed at stained tiles locations as needed to minimize sound transmission in lobby offices. Consider installing support framing, ceiling lights in lobby offices.
    Priority Level (1-4):4 **Estimated Cost: $230,000 – 365,000**

BUILDING INFRASTRUCTURE IMPROVEMENTS – GENERAL (continued):

12. VCT and terrazzo flooring throughout the building corridor and classrooms is generally in good condition.

    Propose: Replace VCT flooring in classroom spaces.
    Priority Level (1-4): 4 **Estimated Cost: $400,000 – 500,000**

13. Demountable / moveable metal walls were used as classroom dividers in the original portions of the building. These walls provide little sound control and are difficult to secure equipment and install additional power in.
    Walls should be replaced with stud framed cavity walls with acoustical insulation and painted dry wall finish.

    Priority Level (1-4): 4 **Estimated Cost: 310,000 – 360,000**

14. Previously identified asbestos containing materials (ACMs) vinyl asbestos tile, mastic, asbestos cement chemistry hood liners and shelving have been removed.

    Propose: School appears to meet EPA AHERA exclusion requirements and may be omitted from inspection if designing architectural firm submits a letter indicating no asbestos was specified for construction.
    Priority Level (1-4): 4 **Estimated Cost: $ N/A**

15. Existing wood bleachers in Gymnasium 'B' are original and in poor condition. They do not provide code required handrails, guards, or handicapped seating.

    Propose: Replace bleachers to meet code requirements.
    Priority Level (1-4): 3 **Estimated Cost: $45,000 - $60,000**

Total Estimated General Building Improvements Construction Cost: $4,139,000 - 5,015,000

BUILDING INFRASTRUCTURE IMPROVEMENTS – HEATING, VENTILATION, & AIR CONDITIONING

1. The Heating Plant consists of four (4) Patterson-Kelly Boilers (2007) and one (1) HB Smith Boiler (1991). Boilers appear to be in good shape.
   Replace boilers.
   Priority Level (1-4): 3 **Estimated Cost: $550,000 - $578,000**

2. The cooling plant consists of two (2) Trane R-Series, water-cooled screw chillers. These appear to date to 1991. Given age, efficiency, and phase out of refrigerant, units should be replaced. Cooling tower is new and in good condition.
   Replace Chillers.
   Priority Level (1-4): 2 **Estimated Cost: $1,122,000 - $1,178,000**

3. The perimeter classroom areas of the building are served by traditional classroom unit ventilators. Units appear to be from the 1991 project and are in good condition. Units are 4-pipe and provide heating and air conditioning.
   Priority Level (1-4): 3 **Estimated Cost: $6,675,000 - $7,008,000**

4. Existing hot and chilled water pumps appear to date to the 1991 project and look to be in good condition.
   Replace hot water pumps and incorporate variable speed drives for energy savings.
   Priority Level (1-4): 4 **Estimated Cost: $206,000 - $216,000**

5. The building's existing temperature control system is pneumatic and offers limited energy saving/building management capability.

   Upgrade building ATC system to full DDC.
   Priority Level (1-4): 1 **Estimated Cost: $650,000 - $683,000**

   Replace all existing pneumatic valves and damper actuators with electric type to compliment the ATC system conversion to DDC.
   Priority Level (1-4): 1 **Estimated Cost: $1,005,000 - $1,055,000**

   To better manage energy consumption, incorporate demand control ventilation sequences to limit the amount of outside air brought into the building to match occupant load. Install CO2 sensors to manage air quality and energy control.
   Priority Level (1-4): 1 **Estimated Cost: $439,000 - $461,000**

Estimated HVAC Temperature Controls Subtotal: $2,094,000 - $2,199,000

6. Existing rooftop and interior air handling units are in fair condition.

   Replace air handling units. Units will need fabricated to be assembled within penthouse to accommodate space limitations. New units to include filtration, UV lighting and bipolar ionization to provide better air quality and virus prevention. Gymnasiums and wrestling room air handling units have recently had hot, and chilled water coils replaced.
   Priority Level (1-4): 3 **Estimated Cost: $550,000 - $578,000**

7. Exhaust fans are in fair condition.

   Replace exhaust fans.
   Priority Level (1-4): 1 **Estimated Cost: $300,000 - $315,000**

8. Simple (non-moving) terminal equipment has the potential to be reused if its condition is acceptable.

   Replace terminal equipment such as convectors and finned-tube radiation if necessary.
   Priority Level (1-4): 4 **Estimated Cost: $175,000 - $184,000**

Estimated HVAC Subtotal: $11,672,000 - $12,256,000

PLUMBING IMPROVEMENTS

1. There are 3 existing domestic water heating boilers and 2 large domestic hot water tanks that are dated from 2007. This is beyond the typical life expectancy of this type of equipment. The boilers are making water at 119 degrees F which is lower than the recommended 125 degrees for domestic water heating systems.

   Replace existing domestic water heating system that operates at 125 degrees, including new master mixing valve.
   Priority Level (1-4): 2 **Estimated Cost: $100,000 – $115,000**

2. Existing domestic water piping in good condition with no noticeable or reported issues. No action need taken
   Priority Level (1-4): NA **Estimated Cost: NA**

3. Existing sanitary system within the building has multiple areas of failure and deterioration due to pipe production period, inadequate drainage and/or sewer gas. Sanitary system lateral and vent piping in its entirety will need to be replaced resulting in repairs /replacement to floors, walls, and ceiling finishes.

Replacement of sanitary piping system.
Priority Level (1-4): 1 **Estimated Cost: $1,010,000 - $1,200,000**

4. Existing kitchen grease interceptor is located within the floor of the kitchen. Facility personnel indicated that the piping to the interceptor needs to be cleaned often due to clogging and being undersized. Recommend replacing piping from grease receiving fixtures to the grease interceptor with adequately sized and sloped piping.

   Re-pipe underground sanitary piping in kitchen and install grease trap.
   Priority Level (1-4): 4 **Estimated Cost: $10,000 - $15,000**

Estimated Plumbing Subtotal: $1,120,000 – 1,330,000

ELECTRICAL IMPROVEMENTS

5. Electrical Service and Service Switchboard
   The school's electrical service is provided by Duquesne Light Company via pad mounted transformer. The service consists of underground feeders from the transformer to the main service switchboard. This service switchboard is rated for 4000A, 480/277V, 3-phase, 4-wire. The switchboard is manufactured by Siemens. The main service circuit breaker section was installed in 2021 and includes arc-flash reduction. The remainder of the switchboard comprises of five sections each serving sub-distribution switchboards, has been well maintained and is in good operating condition. A capacitor bank was also installed in 2021, connected to the main switchboard to reduce the building's power factor. Latest power company billing is showing a peak demand of 915 KW (1102 A) in August of 2021.

   Recommendation: No work at this time.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

6. Sub-Distribution Switchboards and Branch Circuit Panelboards

   The sub-distribution switchboards and branch circuit panelboards are manufactured by Siemens or Eaton/Cutler-Hammer and were installed in either 1998 or 2008. The 480/277V panelboards feed lighting and HVAC equipment and the 208/120V feed receptacle loads throughout the building. The panelboards are well maintained in good condition. There are spare breakers and/or spaces available in most panelboards for future load addition.

   Recommendation: No work at this time.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

7. Transformers
   Transformer formers are utilized in the electrical distribution system between 480V panelboards and 208/120V panelboards. All transformers are in good condition, and none appear to be overloaded.
   Recommendation: No work at this time.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

8. Feeders
   Panelboard feeders that are associated with the branch circuit panelboards and transformers were installed in 1998 or 2008.

Recommendation: No work at this time.
Priority Level (1-4): 4 **Estimated Cost: N/A**

9. Branch Circuiting and Devices
   The branch circuits and associated devices are in good condition. Some of the classrooms have the devices installed in surface mounted raceways. The 2017 National Electrical Code (NEC) now requires receptacles in assembly areas such as the gymnasiums and the auditorium be tampered resistant.

   Recommendation: No work at this time.
   Priority Level (1-4): 4 **Estimated Cost: N/A**

10. Generator & Transfer Switch

    The diesel generator is rated for 200 KW/250 KVA at 480/277V, 3-phase, 4-wire and is manufactured by Onan. The generator is located outdoors within an enclosure and atop the diesel belly tank. The two associated Automatic Transfer Switches (ATS) are manufactured by Onan also. These were installed in 2008.This emergency system serves egress lighting, boilers and pumps.

    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

11. Arc Flash Analysis
    To meet the requirements of NFPA 70, NFPA 70E, IEEE Std. 1854, and OSHA 29 CFR 1910.269, the power distribution system should have an arc-flash analysis completed with all protective device components and switches field labelled. Currently, there is not any arc-flash labels on any of the electrical distribution equipment.

    Recommendation: Have an arc-flash analysis completed and document all protective device components and switches field labelled.
    Priority Level (1-4):2 **Estimated Cost: $42,000 - $53,000**

12. Interior Lighting and Lighting Controls
    Currently, the interior lighting fixtures include prismatic, parabolic, downlights, Hi-Bay, and linear pendant types. Most have a T-8 fluorescent lamp source with electronic ballasts. High-bays utilize a metal halide lamp source. Recently, the main entry area fixtures have been updated to utilize LED lamp tubes. Fixtures through-out the building appear to be in good condition. The corridors are connected to a lighting control system where they can be controlled via time-of-day scheduling. Most classrooms have lighting controls consisting of an occupancy sensor and wall switches. A lot of the sensors no longer work properly. Fixtures with LED light sources and new digital controls should be considered for additional energy savings.
    The auditorium house lighting utilizes incandescent/quartz lights which only have a 2000 hour rated life and are difficult to replace as there are no walkways about the ceiling. The stage lighting system uses fixtures with an incandescent/quartz lamp source. The dimming system is manufactured by ETC and was installed in 2008.
    Recommendation: Replace all lighting, lighting controls, exit signage, and all associated wiring.
    Priority Level (1-4):2 **Estimated Cost: $2,625,000 - $3,366,000**

Recommendation: Replace auditorium lights with fixtures with LED light source and update stage dimming control system.
Priority Level (1-4):3 **Estimated Cost: $180,000 - $225,000**

13. Exterior Lighting
    Exterior lighting has been upgraded to use LED light sources.
    Recommendation: No work at this time
    Priority Level (1-4): 4 **Estimated Cost: N/A**

14. PA System
    The PA System was installed in 2008 and is in good operating condition.
    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

15. Phone System
    The phone system is VoIP type and is part of the district-wide solution. The phone system is manufactured by Alcatel Lucent, was installed in approximately 2010, and is nearing end-of-life.
    Recommendation: Undertake a district-wide upgrade, outside the scope of building study.
    Priority Level (1-4): 4 **Estimated Cost: N/A**

16. Data Network System
    The data network system consists of the building MDF room and IDF closets. The MDF room has cooling. The network cabling through-out the building is CAT 5e. There are wireless access points located through-out the building, at least in every other classroom. In addition, there are adequate data outlets through-out the building. Network rack equipment has been installed within the last 7 years and is in good working order.
    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost:** **$ N/A**

17. Clock System
    The clock system is a wired system, was installed in 2008, and is in good working order.. Clocks are analog style in the classrooms and digital style in the corridors.

    Recommendation: No work at this time.
    Priority Level (1-4): 4 **Estimated Cost:** **$ N/A**

18. Door Intercom System:
    There is not a door intercom system at this building as the security office is located adjacent to the secured entry.
    Recommendation: No work required.
    Priority Level (1-4): 4 **Estimated Cost:** **$ N/A**

Estimated Electrical Subtotal: $2,847,000 - $3,644,000

BUILDING INFRASTRUCTURE IMPROVEMENTS TOTAL: $ 19,778,000- 22,245,000

GRAND TOTAL SHALER HIGH SCHOOL: $20,595,000- $ 23,285,000

Main aluminum entrance doors need to be replaced.

New rubber tread and risers need to be installed throughout the building.

Athletic field support buildings roofing /fascia soffits, downspouts need to be replaced.

Existing bleachers are in poor condition.

Lobby administration /guidance areas have acoustical issues through ceiling that need to be addressed.

CAPITAL IMPROVEMENTS PLAN

Priority #1 - Immediate Need		Estimated Cost:
1	Replace asphalt shingles, gutters, downspouts on athletic field's buildings.	$425,000-$500,000
2	Install new stair rubber tread and risers.	$40,000-$50,000
3	Replace existing sanitary piping system.	$ 1,010,000- $1,200,000
	Priority #1 -Total	**$1,475,000-$1,750,000**

Priority #2 - Approaching Need (3-5 Years)		Estimated Cost:
1	Install decorative pipe bollards and landscape stones at main entrance.	$20,000 - $30,000
2	Update restrooms within locker rooms to provide adequate accessibility clearances.	$200,000 - $225,000
3	Replace select door hardware with lever type lockset.	$38,000-$42,000
4	Existing elevator needs to be updated to meet code.	$60,000-$80,000
5	Replace all aluminum storefront doors.	$220,000 - $250,000
6	Locate an area of rescue assistance at the rear stairways.	$125,000 - $140,000
7	Main stairs need an enclosure for safety reasons.	$230,000-$300,000
8	Elevator's panel controls need to be updated.	$30,000-$45,000
9	Replace existing domestic water heating system.	$100,000 - $115,000
10	Arch-flash analysis needs to be performed.	$42,000 - $53,000
11	Replace all lighting, controls, signage, and wiring.	$2,625,000 - $3,366,000
	Priority #2 -Total	**$3,690,000- 4,646,000**

Priority #3 - Moderate Need (5-8 Years)		Estimated Cost:
1	Replace sidewalks and walkways at main entrance.	$64,000-$70,000
2	Replace roof with new adhered rubber or modified bitumen roof system.	$1,400,000 - $1,650,000
3	Lockers need to be replaced.	$330,000 - $350,000
4	Replace auditorium's stage, catwalk, and floor.	$230,000 - $280,000
5	Update hazardous material and asbestos materials.	$60,000 - $65,000
6	Replace bleachers in gymnasium "B".	$45,000- $ 60,000
	Priority #3 -Total	**$2,129,000-2,475,000**

	Priority #4 - Eventual Need (8-12 Years)	**Estimated Cost:**
1	Upon building renovation fire alarm to be replaced.	$374,000-$523,000
2	Modify existing windows to provide operable ones.	$145,000-$180,000
3	Repaint interior surfaces throughout the building.	$300,000 - $400,000
4	Replace flooring throughout the building.	$400,000 - $500,000
5	Replace /update temporary movable walls in interior classrooms.	$310,000-$360,000
6	Replace underground sanitary piping and install grease trap.	$10,000-$15,000
	Priority #4 -Total	**$1,539,000-$1,978,000**

	Comprehensive HVAC upgrades project (VAV system)	**Estimated Cost:**
1	Upgrade building ATC system to full DDC.	$650,000 - $683,000
2	Replace pneumatic valves and damper actuators.	$1,005,000- $1,005,000
3	Install CO2 sensors.	$439,000-$461,000
4	Replace exhaust fans.	$300,000- $315,000
5	Replace chillers for HVAC equipment.	$1,122,000-$1,178,000
6	Replace boilers.	$550,000-$578,000
7	Replace unit ventilators and convert to VAV system.	$6,675,000 - $7,008,000
8	Replace air handling units.	$550,000 - $578,000
9	Replace auditorium lights with LED fixtures.	$180,000-$225,000
10	Replace lay in ceilings with humidity resistant ceiling panels.	$230,000 - $365,000
11	Replace hot water pumps for energy savings.	$206,000-$216,000
12	Replace terminal equipment for HVAC system.	$175,000 -$184,000
	Total	**$12,082,000-$12,796,000**

REMOVED FOR SAFETY PURPOSES

REMOVED FOR SAFETY PURPOSES

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REMOVED FOR SAFETY PURPOSES

OPTION 1 - RENOVATE EXISTING BUILDINGS(AS IS)

	BURCHFIELD PRIMARY CENTER (K-4)	MARZOLF PRIMARY CENTER (K-4)	RESERVE PRIMARY CENTER (K-4)	SHALER AREA ELEMENTARY SCHOOL (5-6)	SHALER AREA MIDDLE SCHOOL (7-8)	SHALER AREA HIGH SCHOOL (9-12)	TOTAL
CONSTRUCTION COSTS:							
CODE REQD./SAFETY IMPROVEMENTS	$1,690,000 - $2,057,000	$1,297,000 - $1,648,000	$466,000 - $653,000	$1,255,000 - $1,520,000	$531,000 - $685,000	$817,000 - $1,040,000	$6,056,000 - $7,603,000
INFRASTRUCTURE IMPROVEMENTS:							
INCLUDES BUILDING/ HVAC /PLUMBING / ELECTRICAL/FOOD SERVICE EQUIPMENT	$11,327,000 - $13,903,000	$7,351,500 - $7,631,500	$5,074,500 - $5,828,000	$15,023,000 - $17,488,000	$17,835,550 - $19,741,000	$19,778,000 - $22,245,000	$76,389,550 - $86,836,500
SUBTOTAL:	$13,017,000 - $15,960,000	$8,648,500 - $9,279,500	$5,540,500 - $6,481,000	$16,278,000 - $19,008,000	$18,366,550 - $20,426,000	$20,595,000 - $23,285,000	$82,445,550 - $94,439,500
PROGRAMMATIC IMPROVEMENTS	NONE - NONE	NONE - NONE	NONE - NONE	NONE - NONE	NONE - NONE	NONE - NONE	NONE - NONE
SUBTOTAL CONSTRUCTION COSTS:	**$13,017,000 - $15,960,000**	**$8,648,500 - $9,279,500**	**$5,540,500 - $6,481,000**	**$16,278,000 - $19,008,000**	**$18,366,550 - $20,426,000**	**$20,595,000 - $23,285,000**	**$82,445,550 - $94,439,500**
RELATED COSTS:							
DESIGN,PERMITING,FINANCING,CONTINGENCY,ETC.)	3,255,000 - 3,990,000	2,163,000 - 2,320,000	1,386,000 - 1,621,000	4,070,000 - 4,752,000	4,592,000 - 5,107,000	5,149,000 - 5,822,000	$20,615,000 - $23,612,000
TOTAL PROJECT COSTS:	**$16,272,000 - $19,950,000**	**$10,811,500 - $11,599,500**	**$6,926,500 - $8,102,000**	**$20,348,000 - $23,760,000**	**$22,958,550 - $25,533,000**	**$25,744,000 - $29,107,000**	**$103,060,550 - $118,051,500**

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