



## Facility Assessment Update of Chardon High School

Located at: 151 Chardon Ave., Chardon, Ohio 44024

May 2024



## Preface:

ThenDesign Architecture (TDA) conducted a field investigation of conditions at Chardon Local School District's Chardon High School in May of 2024. The goal of the assessment was to identify the facility condition and renovation/improvement needs of the building and to understand the immediate, short-term, and long-term needs of the facility. The benchmark standard for the evaluation is based on current codes (including ADA), general condition, and anticipated life expectancies of building materials, components, and systems. Costs are based on a variety of resources, regional cost data sources, current market conditions, and recent project bid experiences. The structure of the report is outlined in a twenty-three-point checklist which includes:

- A) Heating
- B) Roofing
- C) Ventilation/Air Conditioning
- D) Electrical Systems
- E) Plumbing & Fixtures
- F) Windows
- G) Foundations
- H) Walls & Chimneys
- I) Floors & Roofs
- J) General Finishes
- K) Interior Lighting
- L) Security System
- M) Emergency/Egress Lighting
- N) Fire Alarm System
- O) Handicapped Access
- P) Site Condition
- Q) Sewage System
- R) Water Supply
- S) Exterior Doors
- T) Asbestos
- U) Life Safety Code
- V) Loose Equipment
- W) Technology

Each of the above categories includes a description, recommendation, and cost associated to the identified improvement. Upon subtotal of the cost of work, soft costs including contingencies, A/E Fees, CMR Fees, etc. have been included and tabulated. Additionally, the scope of required work has been broken down in the following manner:

**Priority 1** – Needs that should occur as soon as possible – within 1-2 year timeframe

**Priority 2** – Items that are approaching the end of useful life – within 3-5 year timeframe



**Priority 3** – Replacement of components that are recommended to enhance performance and functionality, but is not necessarily urgent – 6+ year timeframe

General Description:



Chardon High School is a brick school building originally constructed in 1955 (single story), comprised of 16,552 SF, with subsequent additions constructed in 1953 (single story – 36,058 SF), in 1957 (single story – 14,131 SF), in 1964 (two story – 12,864 SF), and in 1974 a two-story academic building (37,810 SF) and single-story auxiliary gym at 5,295 SF. All combined, the facility is 122,710 SF.

The school sits on a campus-type site, comprised of 12 parcels with a combined 33.29 acres. Chardon High School is directly across the street from Chardon Early Learning Center (formally Maple Elementary). The stadium, middle school, and Board of Education rest to the west of the High School. A bus garage and bus parking are attached to Chardon High School on the north side of the site. The site is provided with asphalt parking which provides much fewer parking spaces than the OSDM recommends for this grade level and enrollment. An additional gravel parking lot is located across the street for high school parking. The site features moderate floral, bush, and tree-type landscaping. The site is pleasant and suitable for outdoor learning.

The roof system of the overall building is a newer EPDM roof system installed in 2022. The roof replacement was a complete tear-off and replacement, with all underlayment layers removed before the new EPDM was installed. There are no reported active leaks on the roof, however, signs of previous water leaks were evident throughout the building with stained ceiling tiles.

Though well maintained, the building's major systems are in worn condition. Both the HVAC and electrical systems are outdated and do not meet the Ohio School Facilities Commission's (OSFC) Design Manual requirements. There is no central air conditioning system, and the HVAC system does not provide the Ohio Code requirements for fresh air requirements. However, many improvements have been made in recent years, including but not limited to partial window replacement in several elevations (mainly east side facing Maple St.), updated weight room and fab lab, asphalt resurfacing, and replacement of fluorescent lights and ballasts with LED type. The district is currently installing a secure vestibule addition at the main entrance point, which will also provide an ADA ramp for accessibility to the half levels in that vicinity.

Chardon High School's kitchen is the district's central kitchen, and the district has recently replaced many pieces of kitchen equipment, with additional pieces scheduled for replacement soon. The school has 2 gymnasiums and a large open cafeteria, but no stage. Performances are conducted at the Auditorium building located at Park Elementary. The school floor plan and layout are a bit of a hodgepodge due to the multiple additions over the years, coupled with the topography challenges that create many half-levels throughout the building. The building is equipped with an elevator which had recent improvements, but still does not give full ADA accessibility to all the academic spaces in the building, due to the half levels.

#### Item A: Heating and Ventilation

##### Description:

The facility heating system is comprised of a two-pipe steam boiler system. The two steam boilers were installed in 2009. Unit ventilators are used to provide heat and ventilation in most of the classrooms, but the equipment does not provide the required outside air delivery to meet the OBC mechanical code. The system temperature controls are pneumatic. The system does not provide the capability for simultaneous heating and cooling operation which is not compliant with OSDM requirements. There are also radiators located in the hallways.



According to school officials in 2016, the site does not contain underground fuel tanks for heating.



Classroom unit ventilator



Dated restroom unit



Dated motor



Boiler

### **Recommendations:**

Provide a new overall heating, ventilating, and air conditioning system to achieve compliance with OBC and OSDM standards. The heating system has exceeded its expected service life of 35 years. Replace the entire heating system and add air conditioning. The new ducted system will likely require architectural soffits to accommodate the installation of the ductwork.

This work is outlined as Priority 3.

#### **Priority 1 Recommendation:**

None at this time.

#### **Priority 2 Recommendation:**

None at this time.

#### **Priority 3 Recommendation:**

Provide a new OSDM-compliant HVAC system including new ductwork.

#### **Priority 3 Costs:**

|   |                       |
|---|-----------------------|
| HVAC System Replacement: 122,710 SF x \$54.42/SF =  | \$6,677,878.20        |
| Convert to ducted system: 122,710 SF x \$10.37/SF = | <u>\$1,272,502.70</u> |
| Subtotal =  | \$7,950,380.90        |

**Total Item A:**

**\$7,950,380.90**

### **Item B: Roofing**

#### **Description:**

The roof over the overall facility is a new EPDM system installed in 2022 and has a 20-year warranty. All previous roof layers were torn off during this roof replacement project. New tapered insulation was installed for the proper flow of water to the internal drains. Some metal decks were rusted and that was replaced as well. Additionally, it was reported that 3" internal drains were replaced with 5" drains for proper drainage. There are no reports of current leaking, but there are signs of past leaking in the building via stained ceiling tiles.

There were no observations of significant areas of standing water on the roof during the physical assessment. No problems requiring attention were encountered with any roof penetrations.



New EPDM roof system



Roof system is in good condition

### Recommendations:

No work is required at this time.

**Total Item B:**

**\$ 0.00**

### Item C: Air Conditioning

#### Description:

There is air conditioning provided in only select areas which include the library, computer room, and second-floor classrooms above the library. The chiller was replaced in the last year. Some spaces in the school receive air conditioning through window units; these serve the business computer room, below chorus room, and two classrooms in the 300 wing. A rooftop unit (RTU) provides air conditioning in the choir room itself, main office area, teacher breakroom, computer area, and some classrooms in the 200 wing. The RTU was just recently replaced and is in good condition. A ground air conditioning unit is provided for a science room (Rm 110). The chemistry lab received a new hood and is in good condition. The overall system is not compliant with OSDM requirements. The two art kilns are in a room with an exhaust fan but are not properly, directly vented to the outside.





Kiln not properly vented



New chiller

**Recommendations:**

Provide complete replacement of HVAC system. See Item A for recommendations and pricing.  
Provide kiln exhaust.

**Priority 1 Recommendation:**

None at this time.

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

Provide kiln exhaust.

**Priority 3 Costs:**

|   |             |
|---|-------------|
| Kiln Exhaust: 2 units x \$6,478.25/unit = | \$12,956.50 |
|---|-------------|

|               |             |
|---------------|-------------|
| Total Item C: | \$12,956.50 |
|---------------|-------------|

## Item D: Electrical

### Description:

There is a combination of single-phase 240-volt and three-phase 240-volt delta systems dating from 1965 to 1975, with 3000 amp capacity from the utility company. There are single-phase panels with surge protection added for classroom receptacles for IT equipment upgrades in 2000. Adequate GFI-protected outlets are not provided around the perimeter of the building. There is no lightning protection. There is no generator in the building.

Recent upgrades include the replacement of the service feeders from one distribution to another distribution panel for the kitchen. The electrical for all rooms that were flooded in 2023 received new switches and receptacles. Room 103 was completely rewired. Rooms upstairs and downstairs (100 & 101) had their electrical floor boxes removed. Additionally, the district added a new transformer for the elevator.

The overall electrical system does not meet OSDM requirements in supporting the current needs of the school and will be inadequate to meet the facility's future needs.



Electrical panel



Electrical panel

### Recommendations:

The entire electrical system requires replacement to meet OSDM guidelines for overall capacity due to age. Work outlined as a Priority 3 is to be coordinated with associated work outlined in Item A and Item U.

**Priority 1 Recommendation:**

None at this time.

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

Provide for complete electrical system replacement.

**Priority 3 Costs:**

Electrical System: 122,710 SF x \$37.26/SF =

\$ 4,572,174.60

**Total Item D:**

**\$ 4,572,174.60**

**Item E: Plumbing & Fixtures**

**Description:**

There is one 4" water service line that connects to a 2" domestic galvanized steel supply piping throughout the building and is in fair condition. The sanitary waste piping is cast iron and is in very poor condition.

The school contains 5 restrooms for girls, 5 restrooms for boys, and 6 restrooms for staff. The facility contains 10 toilets, 2 ADA toilets, 18 urinals, and 12 lavs for boys and they are in good condition. The school contains 13 toilets, 1 ADA toilet, and 13 lavs for girls and they are in good condition. The school contains 10 toilets and 8 lavs for staff and they are in good condition. There are 3 toilets, 5 urinals, 3 lavs and 17 shower heads in the boys' locker rooms. There is one staff restroom in the boys' locker room area with 1 toilet, 1 lav, and 1 shower. There is one staff restroom in the girls' locker room area with 1 toilet, 1 lav, and 1 shower. There are 2 toilets, 2 lavs and 12 showers in the girls' locker room area. The restrooms meet the requirements for the total number of fixtures. The majority of the water closets are floor mounted.

The district recently replaced all sink faucets with touchless units and also replaced all the flush valves with auto flushers on toilets and urinals. Additionally, some fixtures themselves have been recently replaced, including in the main boys' restrooms as well as the men's and women's restrooms near the auxiliary gym. Overall, the plumbing fixtures are in good



**New touchless faucets**



condition, though the fixtures that just received auto-flush valves will not meet OFCC/LEED guidelines for low flow.



Floor mounted toilet



New auto flush valves on urinals



New kitchen tankless water heaters



Older drinking fountain

There are 11 drinking fountains in the school. 7 of them have been recently replaced and feature bottle fillers. Safety eyewash sinks are provided in the science labs, including room 103 which was recently installed. The school meets the OBC requirements for fixtures and ADA requirements are met for fixtures and drinking fountains.

There are an adequate number of hose bibbs on the perimeter of the building in good condition. A backflow preventer is not provided at the water service entrance. The hot water is heated by a 2006 Camus hot water boiler with a 1965 vintage holding tank, the kitchen has two new tankless water heaters. There is a grease interceptor for the kitchen in this school.

### **Recommendations:**

Water closets and urinals need to be upgraded to low-flow fixtures to meet OFCC's LEED requirements for water usage. Install a backflow preventer. Replace the hot water holding tank, it has exceeded its service life. Sanitary waste cast iron piping needs total replacement in building tunnels. Replace domestic water supply galvanized piping throughout the building.

#### **Priority 1 Recommendation:**

None at this time.

#### **Priority 2 Recommendation:**

Replace hot water holding tank due to end-of-life.

#### **Priority 2 Costs:**

|  |             |
|--|-------------|
| Hot water tank: 1 unit x \$12,852/unit = | \$12,852.00 |
|--|-------------|

#### **Priority 3 Recommendation:**

Provide for replacement of urinals, toilets, and showers to meet low flow requirements for OFCC/LEED (sans units just installed). Note: ADA fixture counts are provided in Item O. Provide 5 electric water coolers/drinking fountains. Replace sanitary and supply piping due to age and condition.

#### **Priority 3 Costs:**

|  |                   |
|--|-------------------|
| Toilets: 53 units x \$4,923.27/unit =            | \$260,933.31      |
| Urinals: 19 units x \$ 4,923.27 / unit =         | \$93,542.13       |
| Showers: 26 units x \$800/unit =                 | \$20,800.00       |
| Electric water coolers: 5 units x \$3,886.95 =   | \$19,434.75       |
| Sanitary piping: 122,710 SF x \$4.53 =           | \$555,876.30      |
| Domestic supply piping: 122,710 SF x \$4.53/SF = | \$555,876.30      |
| Backflow preventer: 1 unit x \$6,478.25/unit =   | <u>\$6,478.25</u> |
| Subtotal =                                       | \$1,512,941.04    |

**Total Item E:**

**\$ 1,525,793.04**



## Item F: Windows

### Description:

The overall facility contains a mix of window systems that range in condition and age. Recently, the district installed new windows in rooms 210, 211, and 213.

These are aluminum frame, double insulated windows with no integral blinds, and are in very good condition. In the 100 wing and 300 wing, all east-facing windows were also replaced, as well as the weight room, select offices, band room, and choir room windows. All are aluminum frame windows with double glazing in good condition. This summer, the district is replacing the west elevation windows of the 300 and 100 wings. These windows are aluminum frame, single pane windows with glass block, and are in very poor condition. Glass block is also present in the gym and is discolored and dated. The older window systems are a source of energy loss to the building and should be replaced. No skylights were observed. There is not a greenhouse associated with this school.



Old single pane windows and glass block



New aluminum window system



Old single pane windows and glass block

### Recommendations:

Provide for replacement of all old, single pane window systems due to age and condition. All work is recommended as a Priority 1 to ensure the building is warm, safe, and dry as a priority. Original Assessment calculated 8,481 SF of window area needing replacement. A total of 3,767 SF has been replaced since that time (and slated for replacement this summer), thus leaving 4,714 SF of window area to be replaced.

**Priority 1 Recommendation:**

Provide for replacement of the remaining old single pane window system.

**Priority 1 Costs:**

Window replacement: 4,714 SF x \$131.57/SF=

\$620,220.98

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

None at this time.

**Total Item F:**

**\$620,220.98**

**Item G: Structure – Foundation****Description:**

The building is poured concrete slab on grade. Most foundations are not visible. Where it could be observed showed signs of minor spalling. However, seismic activity in 1986 is reported to have damaged other portions of the building's structure. A thorough analysis of the foundation should be performed. The district reported having some issues with water infiltration in the tunnels only, not into any rooms. They have reduced about half of the water infiltration issues by adding a drain tile system. The area in need of additional work is around the courtyard.



**Concrete foundation**

**Recommendations:**

Provide additional drain tile systems and waterproofing of the tunnels near the courtyard. The original assessment recommended professional engineering analysis due to the 1986 earthquake to determine if remedial measures are required for the building's structure.

**Priority 1 Recommendation:**

Provide waterproofing and drain tile system to prevent water infiltration into the tunnels.

**Priority 1 Costs:**

Drain Tile & Waterproofing: Lump Sum =

\$50,000.00

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

None at this time.

**Total Item G:**

**\$50,000.00**

**Item H: Structure (Walls & Chimneys)**

**Description:**

The building envelope consists of masonry unit load-bearing walls with an orange-blonde face brick veneer. Several areas of spalled brick were observed in the original assessment where water overruns the roof edge and runs directly down the wall causing damage. Nearly all areas of the brick face around the chimney display signs of advanced deterioration. Insufficient expansion joints were observed around the building. Some were observed to have mortar in the joint. Several stains from moisture running down the face of the brick were observed as well.

In recent years, the district has been addressing the tuckpointing needs of the exterior façade. About \$10,000 worth of tuckpointing has been performed, which has addressed about 50% of their tuckpointing needs.

Brick veneer masonry walls are not cavity walls given the construction dates. The exterior masonry needs cleaning and sealing. No mold or efflorescence was observed. There are no major elements of exterior accent materials on the exterior. Installation of the new HVAC systems recommended in Item A will result in the removal of existing unit ventilators, necessitating the exterior masonry infill of associated exterior wall voids. Lintel replacement has occurred when necessary, during window replacement.

Interior walls are concrete masonry, glazed block units, brick, and drywall, and range condition from poor to good condition. Some interior wall cracking was observed and may be related to



**Interior wall cracks**



**Exterior facade**

the 1986 earthquake. The window sills are mainly stone, and they are in fair condition. One overhang requires replacement, while the remaining should be scraped and painted at window overhangs.

### **Recommendations:**

As a Priority 2, provide for replacement of brick as needed, tuckpointing, masonry cleaning, and sealing of the entire masonry façade. Replace overhang in need, and provide scraping and painting to the remaining overhangs over the windows. This work will protect the integrity of the exterior façade. As a Priority 3, provide for the installation of control joints to relieve masonry walls of movement forces and infill brick at unit vent openings in coordination with HVAC replacement outlined in Item A.

#### **Priority 1 Recommendation:**

None at this time.

#### **Priority 2 Recommendation:**

Provide masonry tuckpointing, replacement where needed, overhang replacement, and scraping/painting, as well as cleaning and sealing of the entire masonry façade.

#### **Priority 2 Costs:**

|   |                    |
|---|--------------------|
| Tuckpointing: 1,500 SF x \$9.72/SF =              | \$14,580.00        |
| Brick veneer replacement: 1,500 SF x \$45.35/SF = | \$68,025.00        |
| Masonry cleaning: 39,429 SF x \$1.95/SF =         | \$76,886.55        |
| Masonry sealing: 39,429 SF x \$1.30/SF =          | \$51,257.70        |
| Replace overhang: 1 unit x \$12,000/unit =        | \$12,000.00        |
| Scrape & Paint overhangs: Lump Sum =              | <u>\$10,000.00</u> |
| Subtotal =  | \$232,749.25       |

#### **Priority 3 Recommendation:**

Provide infill of brick @ unit vent voids when HVAC system is replaced. Install control joints.

#### **Priority 3 Costs:**

|  |                   |
|--|-------------------|
| Control joints: 820 LF x \$77.73/LF =                | \$63,738.60       |
| Infill brick @ unit vent voids: 90 SF x \$73.90/SF = | <u>\$6,651.00</u> |
| Subtotal =   | \$70,389.60       |

**Total Item H: \$303,138.85**



### Item I: Structure (Floors & Roofs)

#### Description:

The floor construction of the base floor is concrete construction and is generally in fair condition. The floor construction of the intermediate floor is a concrete deck on steel joists. The roof construction is a combination of steel bar joists and steel beams with metal deck and concrete plank, where it could be observed.



Concrete deck above pipe tunnels



Concrete deck above pipe tunnels

The district reports that they recently replaced some deteriorated steel beams between the gymnasium wall and transition into the 100 hallway. This was discovered during the roof replacement. Since the entire roof was replaced, it is assumed this was the only location where deterioration was occurring.

#### Recommendations:

None at this time.

Total Item I:

\$0.00



## Item J: General Finishes

### Description:

The school features conventionally partitioned classrooms generally with painted block walls, VCT flooring, and lay-in acoustic ceiling tiles. The classroom finishes range in condition from poor to good condition. The typical classroom has little casework; the exception would be the science labs which were renovated and replaced last year due to a pipe bursting and flooding in the 100/300 wing. The casework that is present in the other areas of the building is dated. Most of the ceilings throughout the building are lay-in, acoustic ceiling tiles, many of which are bowing and stained.

The corridors are primarily terrazzo flooring, but some were observed to be quarry tile, painted block, glazed block and brick walls and 2' x 4 lay-in ceiling tiles. Main corridors feature metal lockers which are in worn and damaged condition. Interior doors are both wood and metal units, some are equipped with louvers and vision panels and are in worn, dated condition. The classroom doors have been retrofitted with ADA hardware in recent years. Doors are generally not recessed and open into the corridor. The terrazzo ranges in condition from good to damaged, depending on the location. The district has recently replaced one small area of terrazzo, but many locations remain of cracking and pitting.

The large group restrooms have a combination of terrazzo and quarry tile floors, glazed and painted block walls, and plaster, concrete plank, and 2 x 4 lay in acoustic ceiling tiles. Some of the restrooms have newer high-density plastic partitions, while others still have the old marble partitions that have been retrofitted with high-density plastic doors. The finishes in the restrooms range from good to worn out.



Dated casework



Stained ceiling tiles



Metal lockers



Typical interior door



Main gym wood flooring



Kitchen finishes (central kitchen)





Typical corridor finishes



Typical classroom finishes



Typical corridor finishes



Worn finishes



Newly renovated science lab



Large group restroom finishes

The school has both a main gymnasium and an auxiliary gymnasium. The main gymnasium has wood flooring, painted block walls, and an exposed steel joist and a metal deck ceiling. This gymnasium has electric plastic telescoping stands, which were recently refurbished. Glass basketball backboards are present and appear in good condition, but the district would like the 2 end ones to be electric. The auxiliary gym has a concrete floor and should be provided with a wood floor finish.

The kitchen is full-service and serves as the district's central kitchen. The kitchen is equipped with quarry tile and VCT flooring, glazed block walls, and 2 x 4 lay-in ceilings in fair condition. The district has replaced a good portion of kitchen equipment in recent years. This includes a freezer, several coolers, a double oven, and an ice machine. A new walk-in cooler and dishwasher are slated for replacement soon. The remaining pieces are older units, including the steamers and serving lines.

The cafeteria is a large and open space, equipped with VCT flooring, painted block walls, and 2 x 4 lay-in ceiling tiles. The floor was pitted from cafeteria tables/chairs, and the ceiling tiles are bowing at the corners from humidity. Some were observed in stained condition as well.

#### **Recommendations:**

Provide for complete replacement of finishes and casework throughout due to age, condition, lack of compliance with OSDM requirements, and in conjunction with mechanical, electrical, plumbing, and life safety upgrades. Some finishes in some rooms recently renovated may be

salvaged but replacement cost is provided herein as a safeguard. Provide new toilet partitions and accessories on a case by case situation due to age and condition where applicable. Provide for about ½ of the kitchen equipment replacement due to some pieces still being dated and beyond their anticipated useful life span. In the auxiliary gym space, provide a wood floor. New interior door replacement is outlined in Item O. The building is not provided with the exterior wall insulation necessary to meet the LEED requirements by OFCC. Additional wall insulation is required to meet this requirement.

**Priority 1 Recommendation:**

None at this time.

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

Provide complete replacement of finishes and casework, new toilet partitions and accessories, additional wall insulation, and replacement of select kitchen equipment. See Item O for ADA requirements of ADA toilet partitions and interior door replacement.

**Priority 3 Costs:**

|  |                            |                     |
|--|----------------------------|---------------------|
| Complete replacement of finishes & c.w.: | 122,710 SF x \$35.95/SF =  | \$4,411,424.50      |
| Toilet partitions:                       | 18 units x \$1,606.50/SF = | \$28,917.00         |
| Toilet partition accessories:            | 122,710 SF x \$.26/SF =    | \$31,904.60         |
| Additional wall insulation:              | 39,429 SF x \$7.78/SF =    | \$306,757.62        |
| Aux. Gym floor:                          | 3,240 SF x \$18.21/SF =    | \$59,000.40         |
| Basketball Backboards (electric):        | 2 units x \$8,421.72 =     | \$16,843.44         |
| Partial kitchen equipment replacement:   | 1,577 SF x \$145.76/SF =   | <u>\$229,863.52</u> |
| Subtotal =                               |                            | \$5,084,711.08      |

**Total Item J:**

**\$5,084,711.08**

**Item K: Interior Lighting**

**Description:**

When the facility was assessed in 2016, it contained primarily recessed, fluorescent-type lighting. The lighting in classrooms was T-12 and T-8 fluorescent 1x4 and 2x4 fixtures with electronic ballast. The lighting levels were as follows: classrooms 60 FC, media center 55 FC, cafeteria 75 FC, kitchen 65 FC, gym 55 FC, computer science 60 FC, offices 77 FC, restrooms 50 FC, art 45 FC, and corridors at 70 FC. In 2017 – 2018, the district cut out all the ballasts and put in LED lamps. The lighting levels are much improved in all of the spaces.

**Recommendations:**



Although all new LED lighting is provided, complete replacement of lighting system in areas with dropped ceilings will be required due to the installation of mechanical systems and fire suppression systems outlined in Items A & U.



New LED lighting



Workroom LED lighting

**Priority 1 Recommendation:**

None

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

Replace lighting system in all areas which have lights in the lay in ceilings and are recommended for HVAC system and sprinkler system installation.

**Priority 3 Costs:**

Interior lighting replacement: 105,993 SF x \$8.42/SF =

\$ 892,461.06

**Total Item K:**

**\$892,461.06**

**Item L: Security System**

**Description:**

The security system is a 1992 Fire Burglary system maintained by Vector Security. All school district cameras are connected to the high school recording equipment with 2 weeks of storage. There is a card reader located at the main entrance of the classroom building with 2-way communication and a door release for visitors. Exterior doors do not have position switches.

Currently, the district is installing a secure vestibule at the main entrance for security via an addition. The district has replaced all exterior cameras as well as some new ones in the interior of the building. The district has augmented and added new exterior lighting including 7 new exterior lighting on the east side and added 2 LED flood lights to the teacher parking lots and one by the gym. They also replaced exterior lighting on the southwest corner. Bus garage flood lights have been added and the district reports there are no longer any dark spots on the site.



Main entry – a secure vestibule addition is being constructed under canopy

**Recommendations:**

Provide a new security system to meet OFCC design manual standards as a Priority 1 which is focused on warm, safe, and dry. The costs for exterior site lighting have been removed due to updated and adequate exterior lighting conditions.

**Priority 1 Recommendation:**

Provide a new security system to meet OFCC guidelines, including a new secure vestibule.

**Priority 1 Costs:**

Security system replacement: 122,710 SF x \$3.69/SF = \$ 452,799.90

**Priority 2 Recommendation:**

None at this time.

**Priority 3 Recommendation:**

None at this time.

Total Item L:

**\$452,799.90**

## Item M: Emergency / Egress Lighting

### Description:

The overall facility is equipped with an emergency egress lighting system consisting of compact fluorescent and LED exit signs, and emergency lighting with battery packs. The system is not adequately provided throughout and is not compliant with OSFC design manual guidelines. The only upgrades in recent years include putting in a few new LED signs when existing ones need replacement. There is no emergency generator.



Exit sign



Exit signs

### Recommendations:

Provide a complete replacement of emergency egress lighting due to lack of compliance with OSDM and due to the installation of systems outlined in this report. A new generator is included as part of Item D.

#### Priority 1 Recommendation:

None



**Priority 2 Recommendation:**

Provide a new egress lighting system.

**Priority 2 Costs:**

Emergency/Egress Lighting: 122,710 SF x \$1.30/SF =

\$159,523.00

**Priority 3 Recommendation:**

None at this time.

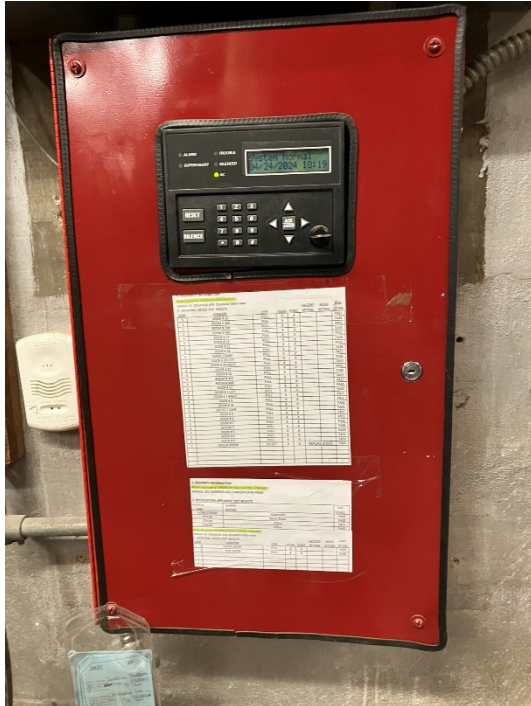
**Total Item M:**

**\$159,523.00**

**Item N: Fire Alarm**

**Description:**

The fire alarm system is a zoned type system (non-addressable) and is annually tested and remotely monitored by Vector Security. The district recently replaced the fire alarm panel in the boiler room 2 years ago. There is not an adequate number of horn/strobe units. The existing system does not have enough capacity to add additional horn strobes or duct fire suppression system detectors for the shutdown of air handling equipment to meet NFPA and OFCC standards. It is not likely that the current system would accommodate the addition of a fire suppression system.



New Fire Alarm Control Panel



Fire pull



### **Recommendations:**

Replacement of the system will be required due to lack of compliance with NFPA and OFCC standards and when the work in A and C- upgrading the ventilation and air conditioning is completed. At that time, the devices would be replaced and added to with addressable devices.

#### **Priority 1 Recommendation:**

None at this time.

#### **Priority 2 Recommendation:**

None at this time.

#### **Priority 3 Recommendation:**

Provide for replacement of fire alarm system.

#### **Priority 3 Costs:**

Fire alarm system replacement: 122,710 SF x \$3.89/SF = \$ 477,341.90

**Total Item N:**

**\$477,341.90**

### **Item O: Handicap Access**

#### **Description:**

At the site, there is an accessible route provided from the public right-of-way, accessible parking areas, and from the passenger unloading zone to the main entrance of the school. There is an accessible route connecting about half of the site (south and east sides) via sidewalks and asphalt parking areas. The north side of the site is occupied by the bus garage and bus parking, and the west side of the site is flanked by the football stadium.

ADA parking is limited. Two dedicated ADA spaces were observed in the south parking lot near the main entrance, however, based on existing regular parking spaces of 103 spots, a total of 5 ADA spaces should be provided. There is not an ADA power door assist provided currently, but one will be provided in the secure vestibule entrance that is under construction.

On the interior of the building, space allowances and reach ranges are not fully compliant. The main entrance is bilevel which impedes ADA accessibility, but a ramp is being provided with the new secure vestibule entrance project. There is no stage for ADA considerations.



Interior doors are generally the original door leafs and most have been retrofitted with ADA hardware in recent years. Interior doors are primarily wood and metal, some feature louvers, and are not recessed.



Staff door without ADA hardware



ADA signage mounted too high



Elevator



ADA hardware on classroom door

The drinking fountains are a mix of ADA compliant and non-ADA compliant fixtures. There are 11 drinking fountains in the school. 7 of them have been recently replaced and feature bottle fillers. Some restrooms are provided with ADA fixtures, but others are not.

ADA signage is present in some areas, but not fully throughout the facility and varies in age and condition. Several locations are not at proper ADA mounting heights. There is an elevator in the building but due to the multiple half levels of various additions, there are still spaces that are not ADA accessible. The existing elevator recently had new controls installed, is provided with a smoke alarm and a telephone, and also has a card reader. The car itself and its hydraulics were not replaced.



ADA signage

### **Recommendations:**

Provide ADA-compliant fixtures in large group restrooms. Provide an additional elevator in the building so that all spaces are ADA-accessible. Although many of the building doors have been retrofitted with ADA hardware, the doors themselves are dated and should be replaced. Additionally, 2 doors in the original require wider openings. Provide new ADA signage in the building. ADA drinking fountains are addressed in Item E. The scope and cost for an ADA power door assist and ramp at the main entrance are not included herein since they are already under construction.

#### **Priority 1 Recommendation:**

None at this time.

#### **Priority 2 Recommendation:**

None at this time.

#### **Priority 3 Recommendation:**

Provide ADA compliant large group restrooms fixtures. Provide a 2-stop elevator for ADA accessibility, interior door replacement, ADA signage and lift. Provide ADA signage in the building. Provide a lift for the library.

#### **Priority 3 Costs:**

|   |               |
|---|---------------|
| ADA signage: 122,710 SF x \$0.26/SF =                         | \$31,904.60   |
| Replace doors: 197 leafs x \$1,684.34/leaf =                  | \$ 331,814.98 |
| Replace/widen doorway: 12 leafs x \$6,478.25/leaf =           | \$77,739.00   |
| Elevators: (2 stops): 2 stops x \$66,078.15=                  | \$ 132,156.30 |
| Lift: 1 unit x \$19,434.75/unit =                             | \$19,434.75   |
| ADA Toilets/sinks/urinals: 19 fixtures x \$4,923.47/fixture = | \$ 93,545.93  |
| ADA toilet partitions: 10 units x \$1,750/unit =              | \$17,500.00   |



|   |                    |
|---|--------------------|
| Remount Restroom mirrors to ADA hgt.: 4 units x \$369.26/unit = | \$1,477.04         |
| ADA showers: 3 showers x \$3,886.95/restroom =                  | <u>\$11,660.85</u> |
| Subtotal:   | \$717,233.45       |

**Total Item O:** **\$717,233.45**

### Item P: Site Condition

#### Description:

Chardon High School is located on a campus of 12 parcels of land owned by the district and houses the Middle School and Board of Education facilities as well. The majority of the high school rests on one parcel comprised of 7.5 acres. According to the Geauga County Auditor's website, the total acreage for all twelve parcels collectively is 33.29 acres. The high school is across the street from Chardon Early Learning Center (formally Maple Elementary) and is flanked by the stadium to the west. The site is provided with moderate tree and shrub-type landscaping and is suitable for outdoor learning.

There is not ample parking provided onsite based on student enrollment and Ohio School Design Manual recommendations. There are 103 regular parking spaces and 2 ADA parking spaces in the asphalt lots on site. Ohio School Design Manual recommendations are 338 parking spaces. There is an additional gravel student parking lot owned by the City across Maple Street, but the exact count is unknown as it is not striped. The existing asphalt lots located directly on the high school site are in good condition. An additional parking lot is provided on the north end of the site, but is not calculated into the above figures, as it is dedicated to the bus garage. The bus garage will be relocating shortly offsite, thus the opportunity to provide asphalt parking there exists.



Drop off and parking in good condition



Spalling concrete

The sidewalks are a mix of ages and conditions from good to poor with only minor sidewalk replacement occurring in recent years (near weight room) and additional improvements include the replacement of the loading dock and replacement of steps at door 18.

There is one dedicated loading/unloading zone on the south side of the site. The buses line up further down the lane by the stadium. No playground consideration was given due to the grade levels.

### **Recommendations:**

Provide for curb, sidewalk, stoops, and exterior handrails as needed on site. Construct a dedicated concrete pad and enclosure for the dumpster. Add parking lot catch basins as needed. Note: OFCC automatically puts in a lump sum for unforeseen circumstances. This allowance remains in this assessment report and is under Priority 3.

#### **Priority 1 Recommendations:**

None at this time.

#### **Priority 2 Recommendations:**

None at this time.

#### **Priority 3 Recommendations:**

Provide dumpster pad and enclosure. Replace curbs, sidewalks, exterior hand rails, and stoops as needed. OFCC allowances for unforeseen site circumstances.

#### **Priority 3 Costs:**

|  |                     |
|--|---------------------|
| Dumpster pad and enclosure: Lump Sum =     | \$10,000.00         |
| Curbs: 60 LF x \$41.47/LF =                | \$2,488.20          |
| Sidewalks: 5,850 SF x \$9.72/SF =          | \$56,862.00         |
| Exterior rails: 40 LF x \$55.71/LF =       | \$2,228.40          |
| Catch basin: 2 units x \$3,239.12 =        | \$6,478.24          |
| New stoop and handrails = Lump Sum =       | \$25,000.00         |
| Base Sitework allowance: Lump Sum =        | \$50,000.00         |
| Additional site work allowance: Lump Sum = | <u>\$150,000.00</u> |
| Subtotal =                                 | \$303,056.84        |

**Total Item P:**

**\$303,056.84**

## Item Q: Sewer System

### Description:

The existing system is a cast iron system, which is reported to be 8" city service. The district reports recent sections of the sewer piping bursting and having to be replaced. This includes a 10' section as well as another 6' section in the pipe tunnels. The sewer piping is in poor condition and will require replacement. To do so, there will be classrooms and areas of the building which will require saw cutting into the floors for pipe access. The district intends on scoping out the line to assess the extent of deterioration.

### Recommendations:

Provide for replacement of sewer line piping. Cost includes an estimate for saw-cutting floors and replacing floor slab and finishes. This work is outlined as a Priority 1 given the two recent pipe bursts.

#### Priority 1 Recommendations:

Replace sewer line. Costs include the saw cutting of floors and the replacement of slabs and finishes as a rough estimate, as the full scope/impact is unknown at this time.

#### Priority 1 Costs:

|                                |              |
|--------------------------------|--------------|
| Sewer Replacement: Allowance = | \$350,000.00 |
|--------------------------------|--------------|

#### Priority 2 Recommendations:

None at this time.

#### Priority 3 Recommendations:

None at this time.

**Total Item Q:**

**\$350,000.00**

## Item R: Water Supply

### Description:

There is a 4-inch water supply serving the school. The service is city water. A new meter was recently installed. The existing water supply system will not provide adequate support for a future fire suppression system. A backflow preventer and new shut-off valve are required. Backflow installation is already accounted for in Item E., under plumbing.



**Recommendations:**

Provide a new fire line system to accommodate the future system – cost in Item U. Provide a new shut-off valve.

**Priority 1 Recommendations:**

None at this time.

**Priority 2 Recommendations:**

None at this time.

**Priority 3 Recommendations:**

Install a new shut-off valve.

**Priority 3 Costs:**

Shut off valve: Lump Sum =

\$8,000.00

**Total Item R:**

**\$8,000.00**

**Item S: Exterior Doors**

**Description:**

The exterior doors throughout the building are a mix of materials, age, and condition. They include both hollow metal doors which are generally in dated/poor condition, and some newer FRP doors in poor to good condition. The district recently replaced the boiler room door, 1 exterior kitchen door (door 3) door 15.5, and door 16. One of the garage doors outlined in the original assessment has been removed, and that space was converted into a maker space. Lastly, the district has also replaced the weight room door.

**Recommendations:**

Provide for replacement of all old exterior doors. Due to condition and age, work is recommended as a Priority 2.



New FRP door

**Priority 1 Recommendations:**

None at this time.

**Priority 2 Recommendations:**

Replace all dated/aged exterior doors.

**Priority 2 Costs:**

Exterior Door Replacement: 21 leafs x \$3,239.12/leaf = \$68,021.52

**Priority 3 Recommendations:**

None at this time.

**Total Item S:**

**\$68,021.52**

**Item T: Hazardous Materials****Description:**

In 2019, the OFCC sent an environmental engineer to confirm the presence of hazardous materials (including asbestos) in the facility. They conducted testing as part of this assessment. They listed boiler insulation, duct insulation, pipe insulation, pipe fittings, cement board, fire door, ceiling/wall, window components, resilient flooring, mastic, carpet over RFC, and sink undercoatings as confirmed asbestos-containing materials. Note: Since 2019, the district has replaced all the fluorescent lighting in the building district-wide, thus the recommendation for incineration of fluorescent lamps is removed from this report. Additionally, the science lab table/counters and fume hood have been replaced, thus that is also removed.

**Recommendations:**

Remove asbestos and hazardous material-containing materials.



VAT flooring in clinic

**Priority 1 Recommendations:**

None at this time.

**Priority 2 Recommendations:**

None at this time.

**Priority 3 Recommendations:**

Remove hazardous material identified in the Enhanced Environmental Assessment prepared by OFCC in 2019.

**Priority 3 Costs:**

|   |                   |
|---|-------------------|
| Boiler/Furnace Insulation Removal: 235 SF x \$16.07/SF =              | \$3,776.45        |
| Duct Insulation removal: 80 SF x \$12.85/SF =                         | \$1,028.00        |
| Est. Cost for Lead Mock-ups: 5,000 units x \$1.30/unit=               | \$6,500.00        |
| Special Engineering for LBP Mock-ups: 5,000 units x \$1.30/unit=      | \$6,500.00        |
| Pipe insulation Removal: 55 LF x \$32.13/LF =                         | \$1,767.15        |
| Pipe fitting removal: 112 fittings x \$32.40/fitting =                | \$3,628.80        |
| Pipe insulation (hidden behind walls): 2,550 LF x \$32.13/LF =        | \$81,931.50       |
| Dismantling of Boiler/Furnace/Incinerator: 1 each x \$2,591.30/each = | \$2,591.30        |
| Cement Board Removal: 660 SF x \$6.48/SF =                            | \$4,276.80        |
| Fire Door Removal: 10 each x \$129.57/each =                          | \$1,295.70        |
| Non-ACM Ceiling/Wall Removal (for access): 10,202 SF x \$2.59/SF =    | \$26,423.18       |
| Window Component 1: 78 each x \$388.70/each =                         | \$30,318.60       |
| Window Component 2: 78 each x \$388.70/each =                         | \$30,318.60       |
| Resilient flooring removal, including mastic: 24,704 SF x \$4.28/SF = | \$105,733.12      |
| Carpet removal over RFC: 2,680 SF x \$1.30/SF =                       | \$3,484.00        |
| Sink undercoating removal: 20 each x \$129.57/each =                  | \$2,591.40        |
| Additional resilient flooring removal: 9,500 units x \$1.00/unit =    | <u>\$9,500.00</u> |
| Subtotal =  | \$ 321,664.60     |

**Total Item T:****\$ 321,664.60****Item U: Life Safety****Description:**

The overall facility is not equipped with an automatic fire suppressant system. Exit corridors are situated such that dead-end corridors are not present. The building contains multiple interior stair towers, some of which contain handrails/guardrails that are not compliant with current code requirements. There are no exterior stair towers.



The kitchen has one hood protected by an up-to-date Ansul suppression system. Fire extinguishers are provided throughout the building, though many are not at ADA-compliant height or provided with through-the-wall cabinets. The facility is not equipped with an emergency generator. The existing water supply system will need the installation of a dedicated fire water line for the new sprinkler systems. Rooms with a capacity greater than 50 occupants are equipped with adequate egress.

**Recommendations:**

Provide a complete sprinkler system that includes a new dedicated fire water line. Provide new handrails/guardrails as needed. Provide fire extinguisher cabinets throughout the building. An emergency generator is provided via complete electrical system replacement in Item D.

Note 1: This work is recommended as a Priority 3 to coordinate the timing of HVAC & electric replacement.



Stair handrail not compliant with current code



Stair handrail not compliant with current code



Fire extinguisher – not in wall cabinet

**Priority 1 Recommendations:**

None at this time.

**Priority 2 Recommendations:**

None at this time

### **Priority 3 Recommendations:**

Install new hand/guardrails that meet current code requirements. Provide an automatic fire suppression system throughout the facility and a dedicated water line connection. Provide new fire extinguishers through the wall cabinets at ADA height.

### **Priority 3 Costs:**

|   |                   |
|---|-------------------|
| Stair Handrails: 14 levels x \$6,478.25/level =         | \$90,695.50       |
| Fire extinguisher & cabinets: 27 each x \$757.96/unit = | \$20,464.92       |
| Sprinkler System: 122,710 SF x \$4.86/SF =              | \$596,370.60      |
| Dedicated fire main: 500 LF x \$64.78/LF =              | \$32,390.00       |
| Backflow preventer: 1 unit x \$6,478.25 =               | <u>\$6,478.25</u> |
| Subtotal =  | \$746,399.27      |

**Total Item U:**

**\$746,399.27**

### **Item V: Loose Furnishings**

#### **Description:**

The typical furniture is somewhat consistent in design and varies in condition from dated/poor to good condition, consisting of office desks & chairs, shelving, tables and chairs, lounge furnishings, file cabinets, and computer workstations.

The district has done some select classroom furniture replacement in recent years including obtaining 2<sup>nd</sup> hand furnishings in the 200's wing, as well as all new student and teacher furniture in the rooms that were flooded last year.

The facility's furniture and loose equipment were evaluated in the original assessment and on a scale of 1-10 the overall facility received a rating 3 out of 10 due to age, condition, and because it lacks some of the design manual required elements.



**Classroom furniture**



Classroom furnishings



Classroom furnishings

**Recommendations:**

Replace outdated, worn furniture.

**Priority 1 Recommendations:**

None at this time.

**Priority 2 Recommendations:**

None at this time.

**Priority 3 Recommendations:**

Provide for replacement of outdated furnishings.

**Priority 3 Costs:**

New furniture: 122,710 SF x \$10.71/SF =

\$1,314,224.10

**Total Item V:**

**\$1,314,224.10**

**Item W: Technology**

**Description:**

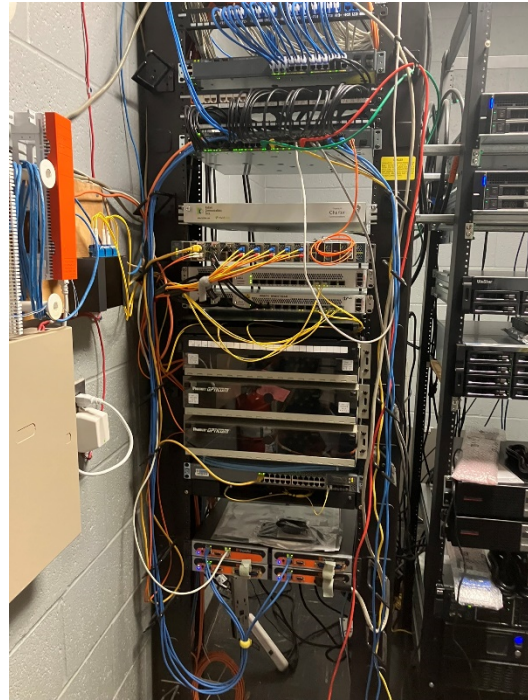
The typical classroom is equipped with two data ports in each classroom as well as wireless access through the building. The school just recently updated its PA system for communication and added more features including hallway speakers. A new digital bell system was recently installed.



Specialized electrical/sound systems requirements of the gymnasium, student dining, and music spaces are inadequately provided and what is present is outdated. The district is transitioning from ceiling-mounted projectors to 86" Promethean touchscreen interactive panels in the classrooms.



PA speaker



IT Rack

### **Recommendations:**

Provide for complete replacement of technology systems to meet Ohio School Design Manual requirements and due to technological advances in 3-5 years.

#### **Priority 1 Recommendations:**

None at this time.

#### **Priority 2 Recommendations:**

To meet OSDM requirements and to remain current with technological advancements it is recommended that an allowance for updates/replacement of the technology systems is required.

#### **Priority 2 Costs:**

Technology replacement: 122,710 sf x \$16.43/sf = \$2,016,125.30

#### **Priority 3 Recommendations:**

None at this time.

Total Item W:

\$ 2,016,125.30