

Building and Site Assessment

Charter Township of Delta

April 23, 2020



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INTRODUCTION

With several aging community facilities presenting condition issues and challenges, Delta Township wanted to plan for building renovations or replacements. The Township performed a condition evaluation of the following eight buildings and sites:

Drolet Community Center	7550 W. Willow Highway
Enrichment Center	4538 Elizabeth Road
Eaton Sheriff Sub-Station	7708 Administration Drive
Administration Building	7710 W. Saginaw Highway
Parks and Rec. Maintenance	7720 Administration Drive
Parks and Rec. Storage	7720 Administration Drive
Delta Township Fire Station 1	811 Canal Road
Delta Township Fire Station 3	215 Snow Road

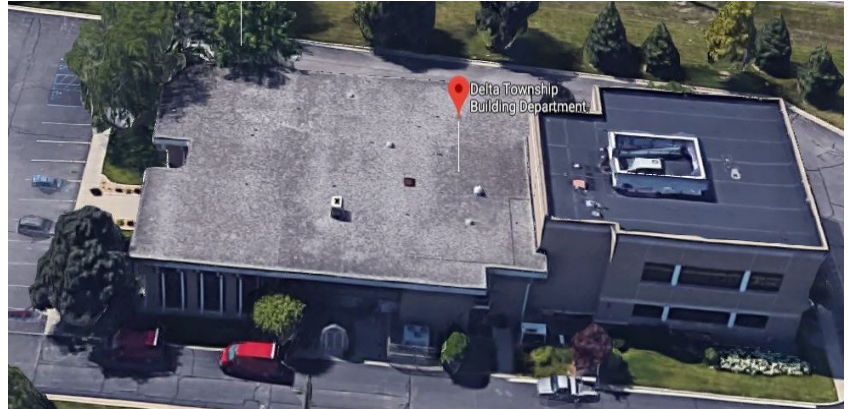
C2AE/Christman performed a Phase 1 condition assessment to inform the Township’s planning efforts from both a programming and financial standpoint. This Phase 1 assessment looked at ten different categories, identified as site, structure, life safety/security, envelope/roof, finishes, mechanical systems, electrical systems, program adequacy, energy consumption/efficiency and accessibility. The team and the Township then met to identify any pertinent items that needed immediate attention.

C2AE identified each deficiency and relayed a fix—whether repair or replacement—for each deficiency to Christman, who provided an associated cost to remedy the issue. Taking these steps allowed the Township to analyze the possibility of replacing a building if indeed the cost of necessary repairs was too high. Finally, the team compiled and prioritized a total cost for remediating these building issues for use in capital improvement planning.

In this Phase 1 condition assessment, a detailed list and/or description of these items can be seen in the subsequent report. It should be noted that this building assessment did not include any analysis of the suitability of the existing buildings to meet the program needs; rather the results of the analysis are to be used in capital improvement planning. Also note that this study does not include any recommendations for replacing buildings, enlarging buildings, relocating programs to different locations or prioritizing any of these activities, as such items were outside the scope of this Phase I assessment and will require additional policy discussions at the Township.

1. Administration Building Summary

The Administration Building was originally constructed in 1969 with an addition in 2000. The overall square footage is 21,173; the original building is two stories and the addition consists of three stories including the basement. The primary structural system is masonry bearing wall for the original building and steel frame for the addition. The exterior elevations are clad in a combination of face brick and aggregate panel. The roof system is a single ply membrane that is ballasted at the original building and fully adhered at the addition. The building is generally in good shape, but with dated finishes. The facility received an overall score of **75** out of 100, which is **satisfactory**.



Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$ 70,800
2-5 Years Category 2	\$ 2,265,064
5-10 Years Category 3	\$ 1,066,899
Total	\$ 3,402,763

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

1.1 Site

- No sidewalk connectivity from administration building to fire station, sheriff sub-station or parks maintenance sites.



- East parking lot has many cracks.
- Site signage outdated.
- North building entrance not ADA accessible, but leads directly to staircase.
- A storage building added on north side of site. This creates an undesirable aesthetic.

1.2 Structure

- Nothing significant to report

1.3 Life Safety / Security

- There is a functioning fire suppression system in the building. A storage room added below the North stair. Building code does not allow it. The north stair separated by a non-rated aluminum system at the corridor at the upper level; this does not provide adequate separation from the corridor.
- Stair at the original building do not comply with current codes. Risers too high (over 7") and treads too small (10.5" and should be 11").
- The location of several rated doors and frames are inconsistent with the fire rating of the wall.
- Some fire rated doors were propped open for occupant convenience. Not allowed.
- Occupants requested additional emergency button locations in the building. In some cases, second means of egress for departments are desired.
- Emergency lighting – mixture of wall mounted unit equipment, fixture mounted emergency battery packs and selected fixtures on generator, see generator comment below. No exterior emergency lighting at egress doors.
- Generator – outdoors, natural gas, 60kW, 120/208V, three-phase. Does not comply with current NEC requirements for an emergency system since the generator fed transfer switch and panelboards supply both emergency and non-emergency loads. See Appendix for additional information.
- Fire alarm system – Cerberus, adequate.
- East side of building, elevator is original 1969, needs major renovations. Door access to elevator on south side of building is not ADA.
- West side of building, elevator is original, needs minor renovations.

1.4 Envelope / Roof

- Glazing at exterior doors and adjacent sidelight are non-insulated.
- West canopy soffit has water damage. May have leaking roof. Drainpipe above soffit may be leaking.
- North, South, and East canopy soffits are metal and starting to rust. All four (4) canopies need new roofing, soffit and lighting.
- Roof or wall is leaking at the area between the original 1969 building and the 1999 addition.
- Metal flashing at original building near addition is rusting.
- The original 1969 building roof is ballasted EPDM. West roof is almost 20 years old, replace in 5 -10 years.

- Wall sealants are showing signs of wear and should be replaced.
- The masonry wall between the original building and the addition is uninsulated; and should be insulated between low roof and high roof.
- The ladder accessing the low roof is difficult to climb which could lead to injuries.

1.5 Architectural Systems and Finishes

- The counter at the clerk's office is undersized in length to handle their current traffic and should be increased; or an additional counter added to improve flow at busy times.
- Some lay-in ceiling panels have been replaced and do not match the original ones. There are multiple styles of ceiling panel in the building.
- Window coverings are inconsistent, a mix of vertical blinds, horizontal blinds, and roller shades.
- Some interior walls are demountable (furniture system walls). Renovations that include these walls will require surface mounting of new services if the walls are not replaced. These walls stop at the ceiling with the ceiling running over the wall.
- Elevator in oldest portion of building is original and requires repairs, which should be done in the next three years. Work on the existing elevator should include car modernization, door replacement, and controller/power unit replacement. The new elevator needs minor repairs including a soft start replacement and emergency light battery replacement.

1.6 Mechanical

- Natural gas piping on roof rusting and should be painted.
- Drain waste vent piping on old side of building is original cast iron and past expected service life. This piping replacement throughout the building should be in next five years. In particular, a section of under floor drain piping was reported as plugged/collapsed on new building side and should be repaired as soon as possible.
- Air handling units serving original building area are dated and should be replaced with new more energy efficient natural gas fired heating and direct expansion refrigerant cooling forced air units.



- Rooftop unit and basement air handling unit on new side are original; should be replaced within the next two to five years.
- Boiler installed in 2003; this should be replaced within the next five years.

- Condensing units on grade are in poor shape and should be replaced except for the condensing unit on the old side of building which was replaced in 2018.



- Basement restrooms have odor issues, installation of a trap seal on floor drains typically throughout building to prevent sewer gases from entering the building.
- Existing restroom exhaust fans were observed to be operating but are approaching end of expected service life. Exhaust fans should be replaced in the next five years with test and balance performed at same time to verify adequate exhaust volumes are present in each restroom in order to control odors.

1.7 Electrical

- 1200A, 120/208V, three-phase service, upgraded as part of 2000 project, adequate.
- Building lighting – adequate mainly T8 fluorescent with electronic ballasts, building mounted LED exterior.
- Electrical distribution equipment –2000 remodel equipment is in good condition, 1969 equipment nearing end of service life.
- Site lighting pole mounted LED, adequate.
- Emergency lighting – mixture of wall mounted unit equipment and selected fixtures on generator, see generator comment below.
- Electrical receptacles, circuiting – aged but adequate.
- Replace existing lights in the 1969 addition with LED lights.
- Lighting controls – do not comply with MI Energy Code.

1.8 Program Adequacy

- The building functions adequately for a township office.
- Wayfinding within the building is difficult due to the five levels that do not connect. Any consideration of significant renovations should include aligning floors to improve access for all users.

1.9 Energy Consumptions / Efficiency

- Roof insulation on the building is inadequate compared to current energy guidelines. Any new roofing should strive to improve/supplement this insulation. Current ASHRAE standard is R30 for roofs.

- Windows in the original building likely to not have a low e-coating; which reduces solar heat gain and cooling load. Consider adding operable windows to allow users to control environment.
- Minimal lighting controls present. Existing lighting (T8 with electronic ballasts) is not as energy efficient as currently available LED lighting fixtures.
- Minimal insulation in wall of original building.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas at a commercial office style building is 20. The administration building's natural gas EUI based on one year's worth of utility bills (2018-2019) provided by the township was 173. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a commercial office style building is 52. The administration building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 90. The admin building is significantly above median EUI.

1.10 Accessibility

- The main accessible entrance is located on the south side. Major issues with accessibility and entry wayfinding at this location, improvement needed.
- East entrance second floor need accessible service counter as do most customer service counters. This applies to both guests and employees.
- While not required, exterior entrances could get power assisted door openers to improve accessibility
- Restroom facilities in the original building do not meet current standards. For example, door openings are not wide enough to meet code. Adding power door operators will make opening a door easier but still not compliant. Adding power door operators are to west side restrooms can further improve access to accessible restrooms.
- Restroom facilities in the addition do not have insulation on drain pipes

1.11 Final Overview

- Building is sound, generally in good condition and generally functional but represents access issues and wayfinding issues for the visiting public due to the staggered floors, lack of good accessible route from parking lot to south entrance and poor elevator access at south entrance.
- Consider eventually tearing down east side and re-building to match up to floors on west side to eliminate access issues.
- Building is in need of some improvements to building envelope, finishes, mechanical, plumbing and electrical systems
- Building could benefit from some energy efficiency upgrades.



**Delta Township
Lansing, MI
Facility Assessment**



April 15, 2020



Administration Building

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 - 5
			0 to 2 Yrs	3 to 5 Yrs	to 10 Yrs
<u>1</u>	Mil 1.5" & Repave East Lot	\$94,469	0	\$94,469	0
<u>2</u>	Extend Sidewalk Along North Side for Facility Connectivity	\$63,115	0	\$63,115	0
<u>3</u>	Site Monument Sign - Allowance	\$16,668	0	0	\$16,668
<u>4</u>	Replace the Existing Storage Shed and Locate at West End of Parking Lot	\$11,001	0	0	\$11,001
<u>5</u>	Remove & Replace 5 Flights of Stairs That Do Not Meet Code	\$202,789	0	0	\$202,789
<u>6</u>	Remove & Replace Incorrect Fire Rated Doors	\$27,224	0	0	\$27,224
<u>7</u>	Remove & Replace Exterior Glass in 1969 Portion of Building	\$157,120	0	0	\$157,120
<u>8</u>	Remove & Replace Soffit and Fascia at Entry Canopies & Lighting	\$47,597	0	\$47,597	0
<u>9</u>	Remove & Replace the Ballasted Roof & Insulation on the 1969 Portion	\$233,713	0	\$233,713	0
<u>10</u>	Remove & Replace Exterior Caulking	\$37,742	\$37,742	0	0
<u>11</u>	Remove & Replace the Roof Counter Flashing at the West Canopy	\$4,334	0	\$4,334	0
<u>12</u>	Remove & Replace the Roof Access Ladder from the High Roof to the Lower 1969 Roof	\$5,556	0	\$5,556	0
<u>13</u>	Install and Additional 12 Lineal Feet of Counter at the Clerk's Office & Replace Existing	\$58,948	0	\$58,948	0
<u>14</u>	Remove & Replace the Acoustical Ceiling/Lights/Diffusers in the 1969 Portion	\$318,284	0	\$318,284	0
<u>15</u>	Furnish & Install New Blinds on Exterior Windows in 1969 Portion	\$5,600	0	0	\$5,600
<u>16</u>	Remove & Replace all Interior Signage	\$33,530	0	0	\$33,530
<u>17</u>	Remove & Replace Toilet Room Accessories to Meet Code	\$15,168	0	\$15,168	0
<u>18</u>	Remove & Replace Interior Door Hardware in 1969 Portion	\$24,279	0	\$24,279	0
<u>19</u>	West Roof Replacement	\$194,844	0	0	\$194,844
<u>22</u>	Replace Roof Top Units	\$94,450	0	0	\$94,450
<u>23</u>	Elevator Work / Repair / Refurbish	\$16,668	0	\$16,668	0
<u>24</u>	Replace Collapsed/Plugged underfloor drain in New Portion of building	\$6,667	\$6,667	0	0
<u>25</u>	Replace Drain Waste Vent Piping in the Older Side of the Building	\$132,407	0	\$132,407	0
<u>26</u>	Add additional emergency button locations in the building	\$13,334	0	\$13,334	0
<u>27</u>	Paint natural gas piping	\$722	0	\$722	0
<u>28</u>	Replace AHU's (NG w/DX)	\$259,159	0	\$259,159	0
<u>29</u>	Install Trap Seal on floor drains throughout building	\$2,778	\$2,778	0	0
<u>30</u>	Electrical Distribution Equipment replacement (vintage 1969)	\$85,005	0	\$85,005	0
<u>31</u>	Replace Existing Outlets / Add Outlets	\$57,368	0	\$57,368	0
<u>32</u>	Update Lighting Controls	\$30,194	0	\$30,194	0
<u>33</u>	Restroom Plumbing Trap Covers	\$2,133	\$2,133	0	0
<u>34</u>	Replace Floor Mounted Return Fan	\$26,113	0	\$26,113	0
<u>35</u>	Replace Restroom Exh Fans	\$10,667	0	\$10,667	0
<u>36</u>	Replace Trane Condenser	\$42,291	0	\$42,291	0
<u>37</u>	Replace Water Tube Boiler	\$38,502	0	\$38,502	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$2,370,438	\$49,321	\$1,577,892	\$743,225

2. Drolett Community Center

Summary

The Drolett Community Center was originally constructed in 1971 as a church with a small addition in 1996. It is a 6,900 sq. ft. in size and is two stories with the basement level located half way in the ground. The exterior elevations are face brick. The roof system asphalt



shingles. The building is generally unoccupied and is generally in good shape, but with dated finishes. The facility received a score of **61**, which is **borderline**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	321,409
2-5 Years Category 2	\$	1,623,719
5-10 Years Category 3	\$	135,585
Total	\$	2,080,713

Facility (Condition) Cost Index = Cost to Renovate/Cost to Replace

- \$2,080,713/\$3,000,000 = 69.4% (Replace at existing size)
- \$8,400,000 would be the cost to combine the Enrichment Center and the Community Center on the Community Center property.

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

2.1 Site

- Need additional parking capacity for large events and elections.
- Parking lot pavement in poor condition.
- Concrete curb in parking lot in poor condition.
- Potential parking lot expansion and secondary entrance on Canal Street.
- Need concrete dumpster pad.
- Handicap building entrance not accessible.

- Roof downspouts release gutter on grade which is positively sloped to carry water away from the building

2.2 Structure

- Nothing significant to report

2.3 Life Safety / Security

- There is no fire suppression system in the building. While this is not required by code, the various levels and the transient large population make having fire protection desirable.
- The lack of easy at grade emergency egress could provide challenges in event of an incident.
- Because other primary purpose is for elections where occupants are unfamiliar with the building, having some type of emergency alarm would be desirable.
- Emergency lighting – wall mounted battery backed units, adequate. No exterior emergency lighting provided at egress doors.
- The building does not have a fire alarm. Code does not require one.
- There is no emergency generator. The lighting is on battery backup.

2.4 Envelope / Roof

- Wood deck platforms at some exterior door is aging.
- Roof water is collected via gutters and downspouts which are in good condition
- Asphalt roof shingles are in good condition
- Facebrick and mortar is in good condition. Sealant in masonry expansion joints should be removed and replaced.
- Foundation wall moisture issue on east wall, waterproofing system or drainage improvements needed.
- Sealant at windows should be removed and replaced

2.5 Architectural Systems and Finishes

- Interior walls are drywall on wood stud.

- Finishes are generally in good condition. Due to relatively light uses infrequently in the building, existing finishes should be fine.
- The acoustical sound is poor in the main room due to all the hard surfaces not absorbing sound. Speech intelligibility in the space can be improved and background noise/reverberation reduced by the addition of acoustic absorption panels. Flooring replaced in 2020 with vinyl, which worsen the issue even more and should be address.
- Windows lack any light control.
- In 1996, the barrier free lifting device was installed and is near end of life. Consider replacing if maintaining the building or if reconstructing the building, possibly making one level.

2.6 Mechanical

- Two natural gas fired heating and direct expansion refrigerant cooling air handling units are in poor shape and at end of their expected service life and should be replaced.



- Exterior ductwork from air handling units into the building is original; this should be replaced when the air handling units are replaced.
- Natural gas piping on building exterior serving the air handling units should be repainted.
- Domestic water heater in good shape with five or more years of expected service life remaining.
- Domestic hot and cold water copper plumbing piping in basement not insulated.
- Lavatories missing pipe covers for ADA compliance.

2.7 Electrical

- There are two electric services 120/240V, single-phase and 277/480V, three-phase; equipment nearing end of useful life.
- Building lighting – some LED, minimal building mounted exterior.
- Electrical distribution equipment nearing end of service life.
- Site lighting minimal.
- Electrical receptacles, circuiting – aged but adequate.
- Lighting controls – do not comply with MI Energy Code.



- Since there is no generator, there is not possibility of standby power, which may be desirable on election days in the event of a loss of power.

2.8 Program Adequacy

- The spaces provided are appropriately sized for the main use of the building.
- With the primary use of the building as an election polling station, the lack of easy at entry access to all levels is challenging.

2.9 Energy Consumptions Efficiency

- Wall insulation is minimum and does not meet current standards.
- Windows in the original building likely do not have a low e-coating, which reduces solar heat gain and cooling load.
- Minimal lighting controls present. Existing lighting is not energy efficient.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas at a public assembly style building is 60. The Drolett community center building's natural gas EUI based on one year's worth of utility bills (2018-2019) provided by the township was 32. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a public assembly style building is 28. The Drolett community center building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 4. The community center is below median EUI.

2.10 Accessibility

- There is one uni-sex toilet room.
- There is no drinking fountain within the building
- The lower level is not accessible by wheelchair. The 1996 addition installed a barrier free lifting device, which services one person per trip.

2.11 Final Overview

- Building is generally sound but multiple levels and access issues are challenging. If rebuilding, consider a single story building
- Parking is adequate for most events but during elections, parking is inadequate.
- Room acoustics are poor
- Building systems such mechanical and electrical should be replaced.



Delta Township
Lansing, MI
Facility Assessment



April 15, 2020

Drolett Community Center

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 -
			0 to 2 Yrs	3 to 5 Yrs	5 to 10 Yrs
<u>1</u>	Enlarge Parking Area to Provide an Additional 65 Spaces to the North and Add Second Entrance to the West	\$182,497	0	\$182,497	0
<u>2</u>	Demo & Replace the Existing Parking Lot Area	\$175,723	0	\$175,723	0
<u>3</u>	Remove & Replace Curb & Gutter in Existing Lot Due to Damage	\$47,521	0	\$47,521	0
<u>4</u>	Provide a New Dumpster Pad and CMU Enclosure	\$38,602	0	0	\$38,602
<u>5</u>	Remove Existing Ramp & Stairs at Main Entry and Replace to Meet Code	\$112,567	\$112,567	0	0
<u>6</u>	Remove Wood Decks and Provide Concrete Walkways	\$54,560	0	0	\$54,560
<u>7</u>	Allowance to Provide Emergency Egress Points at Each Level	\$83,338	\$83,338	0	0
<u>9</u>	Remove & Replace Exterior Caulking	\$9,584	0	\$9,584	0
<u>10</u>	Replacing 1996 Barrier Free Equipment	\$42,225	0	\$42,225	0
<u>11</u>	Add fire protection to the building	\$289,500	0	\$289,500	0
<u>12</u>	Improve East Wall Moisture Issues/Waterproofing	\$13,572	\$13,572	0	0
<u>13</u>	Add Acoustic Treatments to improve performance	\$13,890	\$13,890	0	0
<u>14</u>	Replace 1996 barrier free lift	\$55,892	0	\$55,892	0
<u>27</u>	Add Emergency Power	\$33,335	0	\$33,335	0
<u>28</u>	Replace AHU's (NG w/DX)	\$173,866	0	\$173,866	0
<u>29</u>	Basement Domestic Hot & Cold Water Plumbing Insulation	\$889	0	0	\$889
<u>30</u>	Restroom plumbing trap covers	\$533	\$533	0	0
<u>31</u>	Replace Electrical Distribution Equipment	\$18,668	0	\$18,668	0
<u>32</u>	Upgrade Site Lighting	\$64,893	0	\$64,893	0
<u>33</u>	Update Lighting in Small Rooms In Basement	\$20,446	0	\$20,446	0
<u>34</u>	Update Recepticals	\$10,634	0	\$10,634	0
<u>35</u>	Paint NG Piping	\$400	0	0	\$400
<u>36</u>	Add Kitchen Hood	\$6,334	0	\$6,334	0
	Direct Trade Cost Numbers Only**		0	0	0
	GRAND TOTALS:	\$1,449,469	\$223,900	\$1,131,117	\$94,451

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3. Eaton County Sherriff Substation Summary

The Sheriff Substation was originally constructed in 1982 and an addition in 1991, with an interior renovation in 2013. The building is 7,120 sq. ft. in size and is one story. The primary structural system is wood stud bearing wall for all portions of the building. The exterior elevations are primarily face brick. The roof is clad in architectural standing seam metal with the north portion clad in asphalt shingles. The building is generally used for business use with offices and supporting when used it can hold appropriately 30 occupants. The facility received a score of **58**, which is



Borderline.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$ 749,266
2-5 Years Category 2	\$ 1,356,908
5-10 Years Category 3	\$ 52,046
Total	\$ 2,158,220

Facility (Condition) Cost Index = Cost to Renovate/Cost to Replace

- \$2,158,220/\$4,150,000 = 52.0% (Replace at existing size)
- New 20,800 sq. ft. Sheriff Sub-Station (from 2008 Study) inflated to 2020 dollars: \$12,200,000

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

3.1 Site

- Rear parking lot in poor condition and should be replaced.
- Erosion is occurring in rear corner of parking lot near wetland.
- Drainage issue under overhang is causing deterioration of the exterior concrete near the building and erosion of the engineered fill surrounding the foundation wall.
- There is no maintenance strip around the building, which would be desirable to protect the building and reduce exterior maintenance costs.

- No sidewalk connectivity to administration building.

3.2 Structure

- Exterior piers are showing damage at base, perhaps due to settlement or heaving

3.3 Life Safety / Security

- There is fire protection in the building that is in poor condition and requires routine repairs. This should be replaced.
- Fire alarm system – Faraday, adequate.
- Emergency lighting – mixture of battery backed unit equipment and selected fixtures on generator, see generator comment below. No exterior emergency lighting provided at egress doors.
- Video monitoring of interview rooms should be added.

3.4 Envelope / Roof

- Asphalt shingles on the original 1982 building are near end of expected life.
- Standing seam metal roof and fascia on the 1991 addition is in good condition.
- Exterior finish on windows is fading and thinning.
- Moisture is getting thru some masonry walls. Consider sealing brick if moisture is wicking through open mortar joints.
- Exterior slab near 1991 canopy addition is getting wash out below it.
- Wood planter, wood trim on original 1982 building and deteriorating.
- The roof gutter system is inadequate and is not properly draining water off roof and away from building.



- Wood soffits and vent on the original 1982 building are damaged and deteriorating and should be repaired/replaced.
- The coating on the wood gable end is failing, should be cleaned, repainted and/or restained.

3.5 Architectural Systems and Finishes

- Some of the original 1982 garage areas were converted in to occupied spaces and some of the exterior walls in

these spaces not insulated.

- Exterior windows have horizontal blinds for light control.
- Carpet in some areas is stained and beyond being able to be cleaned or replaced. Replacement should consider a resilient flooring product in some areas to address constant staining.
- Water damage to drywall in area where IT is located from previous roof leak.
- No floor drainage in garage results in ponding water, no access to sanitary sewer at this location, would require a new sewer lead to the main in road to the south.
- Technology wiring and head end would need to be cleaned up and redone in any renovation project. Need a dedicated IT closet with cooling, equipment racks and backup power wiring for computer/phone technology.
- No video monitoring of interview rooms currently, consider adding.

3.6 Mechanical

- Six natural gas fired, forced air furnaces serve the building with condensing units mounted outside on grade. Condensing units are in poor shape and should be replaced. All furnaces are original and approaching end of expected service life. They should be replaced with new in kind units or a single air handling unit with ductwork to serve each space independently. New thermostats should be installed when replacing the units. Installation of a single unit will require significant interior renovations to run new ductwork.
- Plumbing fixtures in all rest rooms, locker and shower rooms are original and dated and should be replaced in the next five years.
- All DWV piping below slab piping has reported issues, with some sections failing and should be entirely replaced if building is renovated.



- Domestic hot and cold water copper plumbing piping not insulated.

- The Lavatories missing pipe covers for ADA compliance.
- A booster pump should be installed on domestic water service to address reported low water pressure at various restroom fixtures in the building.
- There is no control system to take advantage of unoccupied times to reduce energy use.

3.7 Electrical

- 200A, 120/240V, single-phase service, upgraded as part of 1991 project, adequate.
- Building lighting – mainly fluorescent, building mounted HID exterior.
- Electrical distribution equipment – 1991 remodel equipment is in good condition, 1982 equipment nearing end of service life.
- Site lighting pole mounted HID, adequate.
- Electrical receptacles, circuiting – aged but adequate and a minimum number except at workstations where additional receptacles and circuits are required
- Lighting controls – do not comply with current MI Energy Code.
- Generator – indoors, natural gas, 17kW, 120/240V, single-phase. Does not comply with current NEC requirements for an emergency system since the generator fed transfer switch and panelboard supplies both emergency and non-emergency loads. See Appendix for additional information
- Existing IT racks are located in a crowded closet. Any renovation should include creation of a dedicated; air-conditioned IT closet and provided with backup power.

3.8 Program Adequacy

- The building feels cramped, small, low ceiling, and un-inviting. Many of the spaces have become inadequate for their current function.
- Electrical and technology has been retro fitted as an afterthought and in many cases is exposed. Computers, radios, TVs are throughout the building and their electrical power is not integrated into the building.
- There is limited covered or indoor parking for police vehicles.
- Not enough sufficient storage and requires utilization off detached storage space.
- Facilities are lacking for female staff.

3.9 Energy Consumptions Efficiency

- Wall insulation is minimum and does not meet current standards.
- Windows in the original building likely do not have a low e -coating which reduces solar heat gain and cooling load.
- There are minimal lighting controls. Existing lighting is not energy efficient.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas

at a public safety style building is 70. The sheriff sub-station building's natural gas EUI based on one year's worth of utility bills (2018-2019) provided by the township was 20. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a public safety style building is 70. The sheriff sub-station building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 44. The sheriff sub-station is below median EUI.

3.10 Accessibility

- Correctional facilities are generally not required to be accessible, but public areas in them need to be. There are no accessible toilets in the public area.
- Some doors have knobs and should be levers.
- Some doors swings do not comply with current accessibility requirements.

3.11 Final Overview

- Building is generally inadequate for the uses of the building.
- Poor mechanical, plumbing, electrical and technology systems.
- Significant roof and site drainage issues cause deterioration of building envelope and structural systems around the canopy.
- Building should be considered for replacement or major addition and renovation project.



**Delta Township
Lansing, MI
Facility Assessment**



April 15, 2020

Eaton Country Sherriff Substation

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 - 5
			0 to 2 Yrs	3 to 5 Yrs	to 10 Yrs
<u>1</u>	Demo all Site Paving, Add Storm Sewer System & Replace Paving	\$222,621	0	\$222,621	0
<u>2</u>	Provide Curb & Gutter and Reconstruct Catch Basin & Pipe to Wetlands - ALLOWANCE	\$37,502	0	\$37,502	0
<u>3</u>	Remove & Repalce Concrete Paving Under Overhang	\$21,036	\$21,036	0	0
<u>4</u>	Install an 18" Wide Stone Mow Strip Along Building Where There is Grass	\$6,389	0	0	\$6,389
<u>5</u>	Shoring / Repair of Overhang Columns Due to Erosion - ALLOWANCE	\$111,117	\$111,117	0	0
<u>6</u>	Remove & Replace Timber Retaining Wall with CMU	\$19,767	0	0	\$19,767
<u>7</u>	Remove & Replace Shingles	\$14,734	0	\$14,734	0
<u>8</u>	Remove & Replace Exterior Caulking	\$9,889	0	\$9,889	0
<u>9</u>	Repaint Wood Gables	\$1,667	\$1,667	0	0
<u>10</u>	Remove & Replace Double Hung Windows	\$40,119	0	\$40,119	0
<u>11</u>	Remove & Replace Wood Fascia & Soffit	\$18,001	\$18,001	0	0
<u>12</u>	Remove & Replace Wood Soffit at Overhang	\$29,113	\$29,113	0	0
<u>13</u>	Install Furring, Insulation, & Drywall in the Garage Area for Insulation	\$17,015	0	\$17,015	0
<u>14</u>	Remove & Replace Carpet with Resilient Flooring	\$65,248	0	\$65,248	0
<u>15</u>	Remove & Replace Interior Door Hardware to Lever Type to Meet Code	\$21,723	0	\$21,723	0
<u>16</u>	Remove & Replace Acoustical Ceilings/Diffusers	\$53,600	0	\$53,600	0
<u>17</u>	Remove & Replace VCT Flooring	\$1,933	0	\$1,933	0
<u>18</u>	Remove & Replace Cermaic Floor Tile in Restrooms	\$9,523	0	\$9,523	0
<u>19</u>	Remove & Replace Millwork in Breakroom - 8 Lineal Feet	\$9,212	0	0	\$9,212
<u>20</u>	Repaint Interior of the Facility	\$19,779	0	\$19,779	0
<u>21</u>	Allowance to Make Unisex Restroom ADA Compliant - ALLOWANCE	\$22,223	\$22,223	0	0
<u>22</u>	Replace the failing fire protection system	\$104,557	\$104,557	0	0
<u>23</u>	New Sanitary Sewer Lead	\$18,334	0	\$18,334	0
<u>24</u>	Replace/Rework Gutter System	\$6,111	\$6,111	0	0
<u>25</u>	Replace water damaged material in IT closet	\$2,778	\$2,778	0	0
<u>26</u>	Replace mechanical equipment & controls	\$290,116	0	\$290,116	0
<u>27</u>	Domestic Hot & Cold Water Plumbing Insulation	\$889	0	0	\$889
<u>28</u>	Restroom plumbing trap covers	\$1,067	\$1,067	0	0
<u>29</u>	Replace the Domestic Water Piping system to correct flow issues	\$83,649	\$83,649	0	0
<u>30</u>	Update Lighting	\$49,843	0	\$49,843	0
<u>31</u>	Replace Electrical Distribution Equipment	\$19,157	0	\$19,157	0
<u>33</u>	New Emergency Generator	\$24,090	0	\$24,090	0
<u>34</u>	Video Monitoring should be added in interview rooms	\$12,778	\$12,778	0	0
<u>35</u>	Add Drainage in Garage - New Sanitary Line	\$19,168	\$19,168	0	0
<u>36</u>	Clean Up IT and Comm, Add Cooling, Equipment Racks	\$15,556	0	\$15,556	0
<u>37</u>	Replace Plumbing Fixtures and Faucets	\$14,467	0	\$14,467	0
<u>38</u>	Replace Drain & Vent Piping	\$67,022	\$67,022	0	0
<u>39</u>	Add receptacles and branch wiring where needed	\$21,668	\$21,668	0	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$1,503,462	\$521,955	\$945,251	\$36,256

4. Enrichment Center Summary

The Enrichment Center was originally constructed in 1939 as a school and in 1955, a six-classroom addition was added. In 1981, some of the school was partially demolished and renovated for use as the township library with some minor renovation in 2008 to support the new



use as a community center. It is a 14,100 sq. ft. in size and is one story. The primary structural system is bearing wall masonry. The exterior elevations are face brick with vinyl siding on stud infills at areas that were previously large windows. The building is used often during the week and weekend as a community center. The building is showing its age especially since portions are 80 years and 64 years old. The facility received a score of **49**, which is **Poor**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	956,333
2-5 Years Category 2	\$	1,998,705
5-10 Years Category 3	\$	374,351
Total	\$	3,329,389

Facility (Condition) Cost Index = Cost to Renovate/Cost to Replace

- $\$3,329,389 / \$5,974,000 = 55.7\%$ (Replace at existing size)

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

4.1 Site

- Parking lot pavement in poor condition and should be reconstructed rather than overlaid.
- Sink holes in parking lot, perhaps due to compacted fill around old building foundations.
- Parking lot reconstruction should include over excavation of existing soils, mass grading, curb and gutter, and storm water control including both green infrastructure and catch basins/storm sewer.



- Ponding in road east of building
- Remove asphalt parking area on east side of building
- Dumpster in bad location directly adjacent to sidewalk, which is not desirable.

4.2 Structure

- Primary structural system is 80 years old.
- There is a settlement issue with column footing on west side of building on exterior column at roof overhang.

4.3 Life Safety / Security

- There is no fire alarm in the building; code does not require one. Some individual smoke detectors installed. Considering the average age of the typical user, a fire alarm/ detection system would be desirable.
- Emergency lighting is wall-mounted units, which provide adequate lighting. There is not exterior emergency lighting at egress doors.
- There is no emergency generator.

4.4 Envelope / Roof

- One area of the roof does not have an overhang, which causes roof water to drain down the face of the brick. This is causing mold growth on wall, eroding the brick face, and likely admitting water into the wall system, which can cause continued deterioration, and could eventually lead to failure of the wall.
- All of the roofing needs replacement. All of the gutter/downspout system needs replacement.
- Some metal trim has come off; the exposed wood is now deteriorating.
- Vinyl siding is a 20-25 year solution for cladding. If installed in 1981, it is beyond end of life.
- The original building likely has minimal insulation within the walls. The amount of roof insulation is unknown.
- While the “new” smaller windows likely perform better than the original windows, they are inadequate by current standards.

4.5 Architectural Systems and Finishes

- Many partial finish upgrades have occurred within the building.

- The main assembly room has laminate flooring over old carpet.
- Some assembly rooms (old classrooms) have 2x4 lay-in ceilings, and the tiles are sagging.
- Some areas / rooms have low ceilings that do not comply with current building codes.
- Carpet in some rooms is old, stained and should be replaced.
- Flooring in kitchen needs replacing.

4.6 Mechanical

- Multiple natural gas fired heating and direct expansion refrigerant cooling air handling units are located in two mechanical rooms and are in fair shape and should be replaced within the next ten years.
- Unit ventilators serve the classroom area and are at end of service life. These units should be replaced in next five years.
- Condensing units mounted on the roof are in fair shape and should be replaced within next ten years.
- Domestic hot and cold water copper plumbing piping in basement and crawl space on south end of building not insulated.
- The Lavatories are missing pipe covers for ADA compliance.
- DWV drain piping in walls and below slab reportedly leaks in some areas and failed in other areas, piping should be replaced in its entirety if building renovated.
- The kitchen originally designed to prep intermittent meals in the building, but now being used as meal prep area on a more regular basis. However, it is working for their use.

4.7 Electrical

- There are two electric services 120/240V, single-phase and 277/480V, three-phase; equipment nearing end of useful life.
- Building lighting – some LED, minimal building mounted exterior.
- Electrical distribution equipment nearing end of service life, one distribution panel uses pullout fuses.
- Site lighting minimal.
- Electrical receptacles, circuiting – aged but adequate.
- Lighting controls – do not comply with MI Energy Code.
- Generator – none.
- Very limited IT wiring in classroom wing of building; renovation of building should include adding IT wiring to these spaces.

4.8 Program Adequacy

- The existing site is landlocked between two streets and adjacent occupied residential parcels. This limits the ability for future expansion of the program at this location without the purchase of adjacent parcels.
- The size of the spaces is adequate for the building program. The variety of spaces allow flexibility in use. Some

smaller breakout spaces would be desirable for 2-4 person meetings.

- Due to the two levels of the building, the spaces and areas located on the non-accessible level are predominantly unused.
- While many spaces have windows, they are small. More daylight would be desirable.
- Parking lot needs second driveway to accommodate traffic during elections.

4.9 Energy Consumptions Efficiency

- Wall insulation is minimum and likely nonexistent.
- Windows in the original building likely do not have a low e-coating; which reduces solar heat gain and cooling load.
- Roof insulation is minimum and does not meet current standards.
- Minimal lighting controls present. Existing lighting is not energy efficient.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas at a public assembly style building is 60. The enrichment center building's natural gas EUI based on one year's worth of utility bills (2018-2019) provided by the township was 74. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a public assembly style building is 60. The enrichment center building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 4. The enrichment center is slightly above median EUI for natural gas and significantly lower for electrical EUI.

4.10 Accessibility

- The building has split-levels. See comment above regarding program adequacy.
- There is one uni-sex toilet room in the building, and it is not up to the current ADA requirements. The other toilet facilities are not accessible.
- Attempts to make the west entry accessible are an improvement.
- The south entrance has stairs.

4.11 Final Overview

- Building is in poor condition and given its age, site issues, roof issues, and accessibility, plumbing and mechanical issues. Given the costs to rehabilitate, replacement of the building should be strongly considered.
- While location for building might be suitable for current users, the site will limit expansion of the program.



**Delta Township
Lansing, MI
Facility Assessment**



April 15, 2020

Enrichment Center

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 - 5
			0 to 2 Yrs	3 to 5 Yrs	to 10 Yrs
<u>1</u>	Remove & Replace Asphalt Parking Lot and Add Storm Sewer to City System	\$195,813	\$195,813	0	0
<u>2</u>	Excavate West 1/2 of Parking Lot to a Depth of 10'-0 and Backfill with Engineered Fill to Mitigate Sinkholes	\$314,092	\$314,092	0	0
<u>3</u>	Remove Asphalt Paving Area on East Side & Plant Grass	\$12,526	0	\$12,526	0
<u>4</u>	Add Second Driveway to City Street on West Side	\$12,667	0	\$12,667	0
<u>5</u>	New Dumpster Pad & Enclosure	\$46,586	0	\$46,586	0
<u>6</u>	Remove & Replace all Roofs	\$320,436	0	\$320,436	0
<u>7</u>	Remove & Replace Vinyl Siding	\$32,352	0	\$32,352	0
<u>8</u>	Fur Perimeter Walls and Add Insulation for Energy Code	\$99,672	0	\$99,672	0
<u>9</u>	Remove & Replace Windows & Aluminum Glass Doors	\$146,453	0	\$146,453	0
<u>10</u>	Remove & Replace Flooring in Assembly Room	\$38,247	0	\$38,247	0
<u>11</u>	Remove & Replace Carpet in the Classroom Wing	\$68,559	0	\$68,559	0
<u>12</u>	Remove & Replace ACT Ceilings	\$107,437	0	\$107,437	0
<u>13</u>	Add More Glass at Exterior (Approximately 500 SF)	\$63,892	0	\$63,892	0
<u>14</u>	Allowance to Add Two (2) Additional ADA Restrooms	\$66,670	0	\$66,670	0
<u>15</u>	Allowance to Make Current Unisex Restroom ADA Compliant	\$11,112	\$11,112	0	0
<u>16</u>	Allowance to Make Existing West Entry More ADA Friendly	\$25,001	0	\$25,001	0
<u>26</u>	Replace 2 - Air Handling Equipment	\$124,385	0	\$124,385	0
<u>27</u>	Domestic Hot & Cold Water Plumbing, Vent, Sanitary Replacement	\$141,008	0	0	\$141,008
<u>28</u>	Restroom plumbing trap covers	\$1,067	\$1,067	0	0
<u>29</u>	Replace Plumbing Fixtures	\$60,359	0	\$60,359	0
<u>30</u>	Upgrade to Commercial Kitchen	\$119,773	0	0	\$119,773
<u>31</u>	Fire Alarm System	\$39,836	\$39,836	0	0
<u>32</u>	Add Emergency Generator	\$24,090	0	\$24,090	0
<u>33</u>	New Electrical Distribution/Branch Equipment	\$80,338	0	\$80,338	0
<u>34</u>	Update Lighting & Controls	\$62,670	0	\$62,670	0
<u>35</u>	Replace Kitchen Flooring w / Vinyl Tile	\$4,278	\$4,278	0	0
<u>36</u>	Replace 2 Classroom Unit Ventilators	\$53,336	\$53,336	0	0
<u>37</u>	Increase IT infrastructure and capacity throughout	\$15,556	\$15,556	0	0
<u>38</u>	Additional Drive for parking lot	\$31,113	\$31,113	0	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$2,319,324	\$666,202	\$1,392,340	\$260,781

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5. Fire Station No. 1 Summary

Fire Station No. 1 was originally constructed in 2002. It is a 25,520 sq. ft. in size and is one story with storage mezzanines on either side of the apparatus bay. The primary structural system is bearing wall masonry and steel stud bearing wall. The exterior elevations a combination of masonry low and synthetic stucco high.



Windows are a prefinished aluminum storefront system. The roof system is high slope clad in asphalt shingles. The building primary use has always been a fire station. The building can sleep 10 firefighters. It is generally not open to the public. The building looks like a 17-year-old building but well maintained. The facility received a score of **77**, which is **Satisfactory**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	347,022
2-5 Years Category 2	\$	266,266
5-10 Years Category 3	\$	1,076,899
Total	\$	1,690,187

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

5.1 Site

- Joint sealants along curbs need to be redone.
- There is a large crack in concrete in parking lot on west side of building that we recommend being removed and replaced.
- Areas of concrete curb in parking lot in poor condition.
- Parking lot striping needs to be redone.
- Drainage/flooding issue west of the South Entry to the building due to existing landscaping. Landscape improvements should be performed to improve drainage patterns and infiltration. Building footing drain system should be inspected to check subsurface soil/gravels, drainage fabrics and pipe condition. There are

inconsistencies with connected and disconnected roof downspouts throughout.

- It would be desirable to relocate irrigation system control panel and isolation valve from inside building to exterior.

5.2 Structure

- Nothing to report.

5.3 Life Safety / Security

- Fire alarm system – Faraday, adequate.
- Emergency lighting is a mixture of wall mounted unit equipment and selected fixtures on generator (see generator comment below). No exterior emergency lighting provided at egress doors.
- Due to firefighters spending overnights at the station, smoke and CO detectors should be installed in living quarters.
- Need card access for doors expanded to some interior doors to control public access to building for firefighter safety.
- Existing security videos cameras do not record (no DVR), equipment is obsolete, and coverage needs to be expanded to some interior areas as well as rear parking lot areas.

5.4 Envelope / Roof

- Ivy on the exterior of the building should be removed. Ivy opens cracks in the building exterior allowing moisture into the wall system.
- Street address number not on building or site. There is signage on east side, should be added on the south side as well.
- Roof has leaks. There is ice damming during the winter, near louvers adjacent to lower roof.
- Some of the joints in gutters are leaking. In general, need to address getting roof drainage to direct water away from the building.
- Exterior sliding door at dining room not working/sliding.

5.5 Architectural Systems and Finishes

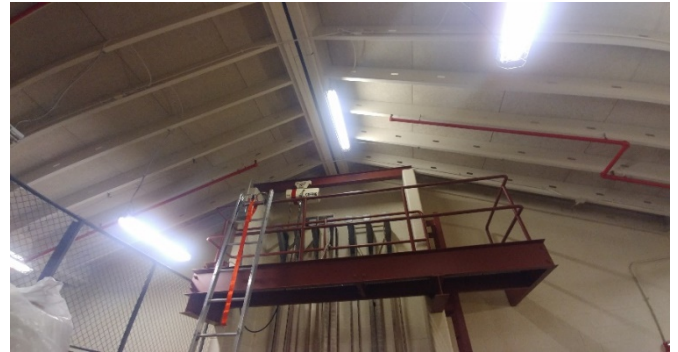
- Interior finishes are generally in good conditions, but there is little color throughout building
- Epoxy floor finish in truck bay has come off in some areas.
- Concrete damage to floor in truck bays, near trench drains. Trench drain cast iron embedded frames rusting/swelling. Cannot get grates out to clean in some areas.
- Ceiling panels are stained from roof leaks.

5.6 Mechanical

- Upgrade HVAC systems with new units and controls to allow independent control in each occupied space and to

provide improved humidity control within the building within the next ten years.

- Two natural gas fired domestic water heaters are at end of expected service life and should be replaced within next five years.
- Multiple natural gas fired, forced air furnaces with remote refrigerant condensers serve the building and are approaching the end of their expected service life, original to the building but are in fair shape.
- Hose tower drying rack lacks positive ventilation to promote faster drying of hoses and removal of odors. A fan should be added to provide airflow at hose rack and existing exhaust fan operation should be adjusted to ensure humidity control in the hose rack area. Hose tower exhaust fan needs to be larger to remove toxic off gassing of fire hose.
- Laundry room (south side) has no makeup air. The existing ventilation system should be modified to provide air into the room.
- Move ice machine out of apparatus bay and into a room that is separate from the bay.
- Turn out gear locker area lacks ventilation, which does not meet current NFPA recommendations. The existing ventilation system should be modified to provide more ventilation into the room including makeup air.
- Plumbing fixtures in all rest rooms, locker and shower rooms are original and dated and should be replaced in the next five years.



5.7 Electrical

- 1200A, 120/208V, three-phase service, good condition.
- Building lighting – mainly fluorescent, LED in equipment bays, building mounted HID exterior.
- Electrical distribution equipment –good condition.
- Site lighting pole mounted HID, adequate.
- Electrical receptacles, circuiting – good condition.
- Lighting controls – do not comply with MI Energy Code.
- Generator – outdoors, natural gas, 125kW, 120/208V, three-phase. Does not comply with current NEC requirements for an emergency system since the generator fed transfer switch and panelboards supply both emergency lighting and non-emergency loads. See Appendix for additional information
- Currently the IT equipment housed in rafter space of high bay area with no cooling. Any renovation should create a dedicated air conditioned IT closet for equipment racks, and provided with backup power.

5.8 Program Adequacy

- Building functions adequately as a fire station.
- Some rooms are not being used as originally programmed.
- In general, spaces occupied by firefighters need to be highly impact resistant. As finishes replaced, consider

materials and finishes that are more abuse resistant. Examples include abuse or impact resistant drywall, ceramic or epoxy paint, or rub rails.

5.9 Energy Consumption / Efficiency

- Wall insulation is adequate.
- Some existing lighting is not energy efficient.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas at a public safety style building is 70. The fire station building's natural gas EUI based on one year's worth of utility bills (2018-2019) provided by the township was 125. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a public safety style building is 44. The fire station building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 47. The fire station is significantly above median natural gas EUI and slightly above electrical EUI.

5.10 Accessibility

- Since firefighters are required to be ambulatory, many areas typically required to be accessible and exempt from this requirement. However, administrative staff could be physically disabled so those administrative areas should still comply with applicable accessibility codes.
- The building is on one level except for the storage mezzanines.
- Restrooms are compliant based on the applicable code at the time of construction.

5.11 Final Overview

- Building is generally in good condition, functions well and should continue to do so with proper capital investment into upkeep.
- Need to address site pavement and roof drainage issues.
- Roof leaks have been a historical problem at this building and should be addressed ASAP.
- Mechanical systems are original and nearing end of life.



Delta Township
Lansing, MI
Facility Assessment



April 15, 2020

Fire Station No. 1

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 -
			0 to 2 Yrs	3 to 5 Yrs	5 to 10 Yrs
<u>1</u>	Remove & Replace Pavement Joint Sealants	\$26,311	0	\$26,311	0
<u>2</u>	Remove & Replace Concrete Paving at West Side Entry Due to Heavy Cracking	\$37,413	0	\$37,413	0
<u>3</u>	Remove & Replace 50 Lineal Feet of Curb & Gutter Due to Damage	\$1,945	0	\$1,945	0
<u>4</u>	Re-stripe Parking Lot	\$944	0	\$944	0
<u>5</u>	Adjust Landscaping to Alleviate Flooding on West Side of South Entrance - ALLOWANCE	\$8,889	\$8,889	0	0
<u>6</u>	Remove & Replace Exterior Caulking	\$35,446	0	\$35,446	0
<u>7</u>	Furnish & Install New Monument Sign - ALLOWANCE	\$16,668	0	0	\$16,668
<u>8</u>	Remove & Replace Shingles & Add Venting	\$144,182	\$144,182	0	0
<u>9</u>	Remove & Replace Exterior Glass Sliding Door	\$3,334	\$3,334	0	0
<u>10</u>	Remove & Replace Epoxy Floor Coating	\$165,343	0	0	\$165,343
<u>11</u>	Remove & Replace Damaged Floors & Trench Drains	\$197,233	0	0	\$197,233
<u>12</u>	Remove & Replace Acoustical Ceilings (50% of Total Approximately 12,700 sf)	\$105,839	0	0	\$105,839
<u>26</u>	Replace mechanical equipment and controls	\$163,236	0	0	\$163,236
<u>27</u>	Remove & Replace Trench Drain - Plumbing Work	\$20,557	0	0	\$20,557
<u>28</u>	Add Fan for Hose Drying	\$10,334	0	\$10,334	0
<u>29</u>	Laundry Ductwork	\$6,689	0	\$6,689	0
<u>30</u>	Emergency Power Distribution Rework	\$81,316	0	0	\$81,316
<u>31</u>	Lighting Controls Upgrade	\$28,357	0	\$28,357	0
<u>32</u>	CO & Smoke detection added in living quarters	\$889	\$889	0	0
<u>33</u>	Additional Card Access	\$17,779	\$17,779	0	0
<u>34</u>	Replace/Update Security Equipment	\$23,335	\$23,335	0	0
<u>35</u>	Rework Roof Drainage where needed	\$2,778	\$2,778	0	0
<u>36</u>	Replace Dom Water Heaters	\$12,223	0	\$12,223	0
<u>37</u>	Gear Locker room ventilation modifications	\$6,111	\$6,111	0	0
<u>38</u>	Replace All Plumbing Fixtures	\$25,824	0	\$25,824	0
<u>39</u>	Add Dedicated IT space with Cooling	\$34,446	\$34,446	0	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$1,177,421	\$241,743	\$185,487	\$750,191

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6. Fire Station No. 3 Summary

Fire Station No. 3 originally constructed in 1991. It is 11,280 sq. ft. in size and is one story with storage mezzanines on either side of the apparatus bay. The primary structural system is bearing wall masonry. The exterior elevations were originally decorative CMU, but



upgraded to face brick. Synthetic stucco used on the exterior above bay doors and at the entry. Windows are a prefinished aluminum storefront system. The roof system is high slope and clad in architectural metal standing seam. The building's primary use has always been a fire station. The building can sleep 10 firefighters. It is generally not open to the public. The building looks like a 28-year-old building but well maintained. The facility received a score of **71**, which is **Satisfactory**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	199,566
2-5 Years Category 2	\$	635,589
5-10 Years Category 3	\$	119,641
Total	\$	954,796

Note: These costs do not address any functional issues that currently exist in this building.

FACILITY ASSESSMENT FINDINGS

6.1 Site

- Front drive has some cracking.
- Trees at southwest corner are crowding the building which and reduce views and daylight and promote mold growth on building surface. Need to be trimmed back.
- Need to replace joint sealants in old pavement on west and east side of building.

6.2 Structure

- Nothing significant to report.
- There is some floor cracking with vertical displacement on west side, north half of building and some interior

doors that will not close on west side, south half of building. Possible settlement issue?

6.3 Life Safety / Security

- Security cameras, intercom, and access control should be added to the exterior doors
- Emergency lighting – selected fixtures on generator, see generator comment below. No exterior emergency lighting provided at egress doors
- The building does not have a fire alarm. Code does not require one.
- Due to firefighters spending overnights at the station, smoke and CO detectors should be installed.
- Building has fire suppression, some minor leaks have occurred.

6.4 Envelope / Roof

- Street address number not on building or site.
- Fire department name not very visible.
- There is no gutter and no overhang, which leads to water running down the face of the wall, which can facilitate water infiltration through wall and at floor to wall transition.
- Staff has maintenance done and/or replaced some operators.
- Some insulated glass has seal leaks; condensate is present between panes of glass.
- The synthetic stucco that is located at the first story has damage in some areas with exposed edge beads and penetrations. This product is not as durable as masonry and has a shorter lifespan.
- Concrete slab damage near overhead door.
- Sealant at all control joints should be inspected and replaced.

6.5 Architectural Systems and Finishes

- Overall, finishes are dated and in need of an update.
- Carpet appears original and showing wear. This should be replaced.
- Numerous ceiling panels show stains from leaks. These may be related to the roof of piping. The leak should be repaired and the ceiling panel replaced. In addition, there is a mix of panel styles present.
- Window coverings consist of vertical blinds.
- Dispatch area floor cracking with vertical offset and tile damage, which creates a door issue. In addition, EMS area door has a similar issue.
- Some doors and binding on the frame. There may be some foundation settling in some areas or door adjustments needed.
- Men's locker room in need of full remodel. Poor ventilation, lighting, finishes and plumbing fixtures. Showers are group style and should be changed to individual type showers. Women's locker room needs lighting.

6.6 Mechanical

- Upgrade HVAC systems and controls to allow independent control in each occupied space and to provide

improved humidity control within the building.

- Multiple natural gas fired, forced air furnaces with remote refrigerant condensers serve the building and are in fair shape. Three furnaces replaced within the last three years; however, condensers not replaced and should be within the next five years. The units are past their expected service life and should be replaced with new in kind units or air handling units allowing individual space temperature control.
- Hose storage racks lacks positive ventilation to promote removal of odors. A fan should be added to provide airflow at hose rack.
- Plumbing fixtures are outdated as they are original to the building. The fixtures should be replaced with new in kind units utilizing battery operated automatic sensor flush control valves.
- Natural gas fired hot water heaters are original to the building and need to be replaced.
- Plumbing fixtures in all rest rooms, locker and shower rooms are original and dated and should be replaced in the next five years.

6.7 Electrical

- 400A, 120/208V, three-phase service, adequate.
- Building lighting – mainly fluorescent, LED in equipment bays, building mounted HID exterior.
- Electrical distribution equipment –adequate.
- Site lighting pole mounted HID, adequate.
- Electrical receptacles, circuiting – good condition.
- Lighting controls – do not comply with MI Energy Code.
- Generator – outdoors, relatively new, natural gas, 18kW, 120/240V, single-phase. Does not comply with current NEC requirements for an emergency system since the generator fed transfer switch and panelboard supply both emergency lighting and non-emergency loads. See Appendix for additional information.
- Building IT equipment housed in the electrical room without any protection/security. Need to create an air-conditioned IT closet with backup power to house IT equipment racks.

6.8 Program Adequacy

- Building functions adequately as a fire station.
- Some rooms are not being used as originally programmed.
- In general, spaces occupied by firefighters need to be highly abuse resistant. See comments under Station 1.

6.9 Energy Consumptions Efficiency

- Wall insulation is minimal and does not meet current standards.
- Some existing lighting is not energy efficient.
- A comparison of energy usage at a typical building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was performed. Climate Zone 5A cool-humid was utilized for the DOE database. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for natural gas at a public safety style building is 70. This building's EUI based on one year's worth of utility bills (2018-2019)

provided by the township was 110. The median Energy Use Intensity (EUI) (KBtu/SF/Year) from the DOE database for electricity at a public safety style building is 44. The fire station building's electrical EUI based on one year's worth of utility bills (2018-2019) provided by the township was 25. The fire station is significantly above median natural gas EUI and significantly below electrical EUI.

6.10 Accessibility

- Since firefighters are required to be ambulatory, many areas typically required to be accessible and exempt from this requirement. However, administrative staff could be physically disabled so those administrative areas should still comply with applicable accessibility codes.
- The building is on one level except for the storage mezzanines.
- Restrooms are compliant based on the applicable code at the time of construction.
- There is no handicap parking on site adjacent to the public entrance. ADA spot in rear of building. Pavement striping needs redone.

6.11 Final Overview

- Building is generally in good condition, functions well and should continue to do so with proper capital investment into upkeep.
- Need to address site pavement and sealant issues.
- Adding roof drainage system should be considered.
- Men's locker room renovation needed.
- Floor cracking/door binding issue.
- AC units and plumbing fixtures at end of life.



**Delta Township
Lansing, MI
Facility Assessment**



April 15, 2020



Fire Station No. 3

Item #	Description of Work	Budget Amount	Category 1 -	Category 2 -	Category 3 -
			0 to 2 Yrs	3 to 5 Yrs	5 to 10 Yrs
<u>1</u>	Remove & Replace Pavement Joint Sealants	\$17,813	0	\$17,813	0
<u>2</u>	Add Parallel Parking Space at North Side for ADA Access to Main Entry	\$14,785	\$14,785	0	0
<u>4</u>	Furnish & Install New Monument Sign - Allowance	\$15,001	0	0	\$15,001
<u>6</u>	Remove & Replace Exterior Caulking	\$15,668	0	\$15,668	0
<u>7</u>	Repair Exterior EIFS Column Covers	\$23,335	\$23,335	0	0
<u>8</u>	Remove & Replace Storefront Glazing with Failed Seals	\$40,252	0	\$40,252	0
<u>9</u>	Overbuild High Bay Roof Over the South Addition to Alleviate Poor Roof Drainage - ALLOWANCE	\$42,400	\$42,400	0	0
<u>10</u>	Remove & Replace Carpeting - Approximately 2,800 sf	\$24,846	0	\$24,846	0
<u>11</u>	Remove & Replace Acoustical Ceilings (50% of Total Approximately 5,600 sf)	\$53,270	0	\$53,270	0
<u>12</u>	Adjust Interior Doors to Open & Close Properly	\$2,667	0	\$2,667	0
<u>13</u>	Trim Trees on South Side of Bldg	\$1,333	\$1,333	0	0
<u>14</u>	Add Door Buzzer/Camera/Intercom	\$5,556	\$5,556	0	0
<u>15</u>	Door Adjustments	\$3,556	\$3,556	0	0
<u>16</u>	Locker Room Remodel	\$157,787	0	\$157,787	0
<u>17</u>	Restripe Parking Lot	\$2,556	\$2,556	0	0
<u>23</u>	Create an IT Space for equipment - ALLOWANCE	\$7,223	\$7,223	0	0
<u>25</u>	Replace Condensing Units	\$38,280	\$38,280	0	0
<u>26</u>	Replace controls with New DDC	\$39,620	0	0	\$39,620
<u>27</u>	Add Fan for Hose Storage	\$10,334	0	\$10,334	0
<u>28</u>	Replace HVAC Units	\$52,936	0	\$52,936	0
<u>29</u>	Replace Plumbing Fixtures	\$28,724	0	0	\$28,724
<u>30</u>	Replace Water Heater / Storage Tank	\$12,790	0	\$12,790	0
<u>31</u>	Lighting Controls Upgrade	\$12,534	0	\$12,534	0
<u>32</u>	Emergency Power Distribution Rework	\$41,869	0	\$41,869	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$665,132	\$139,022	\$442,765	\$83,345

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7. Parks and Recreation Maintenance Building Summary

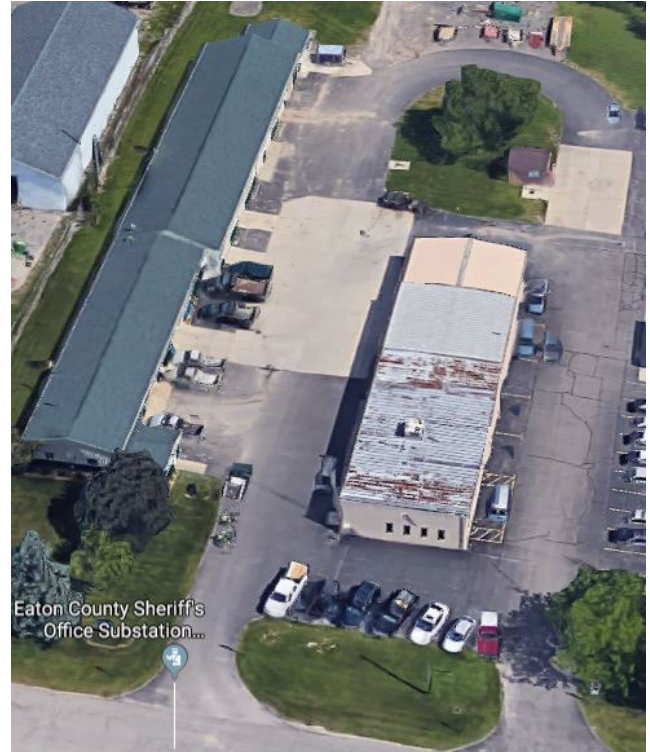
The Maintenance Building was added on to in 1982. It is unknown when the building was originally constructed though based on type and appearance it might be fair to assume a build date from the 1970s. It is a 10,550 sq. ft. in size and is one story. The primary structural system is wood post and beam sometimes referred to as pole barn construction. The addition is also this construction type. The exterior elevations are clad in metal siding with exposed fasteners. The roof system is a high slope clad in asphalt shingles. The building has approximately four occupants and is generally in good shape, but with dated finishes. The facility received a score of **54**, which is **Borderline**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	127,510
2-5 Years Category 2	\$	870,191
5-10 Years Category 3	\$	196,765
Total	\$	1,194,466

Note: These costs do not address any functional issues that currently exist in this building.



FACILITY ASSESSMENT FINDINGS

7.1 Site

- Entrance not ADA accessible.
- Parking lot pavement in poor condition.
- Need bollards to protect garage door entrances.
- Need dumpster enclosure.
- Could create hard surface, secured storage for implements.

7.2 Structure

- Wood post and beam construction is relatively inexpensive to construct and depending on maintenance

performed is typically only a 25-30 year life expectancy.

7.3 Life Safety / Security

- Emergency lighting is not present. The office area should have some installed.
- There is no fire alarm in the building; code does not require one. Since the building has minimal occupancy, some form of minimal fire detection with offsite monitoring should be installed. This could consist of individual smoke alarms.
- No security cameras and the township has experienced theft at this location.

7.4 Envelope / Roof

- Based on the type of construction, it is likely that wall insulation is minimal.
- Insulation in the attic is unknown.
- Windows are residential quality vinyl windows
- Damaged metal trim at overhead doorjamb.
- Overhead doors are residential quality but in good condition.
- Exterior man doors are clad wood residential quality, but are in good condition
- Roof water collected via gutters and discharged via downspouts on to grade. Some of these grade discharges are immediately adjacent to the wall is promotes potential water intrusion

7.5 Architectural Systems and Finishes

- Office area finish are well worn. Floor finishes are severely worn and should be replaced. Restroom tile is in good condition.
- While finishes in the garage area show signs of wear, they are in good condition for their intended use.
- Windows have horizontal blinds installed in the office area

7.6 Mechanical

- Office area served by window air conditioning units and cabinet unit heaters with office spaces not having any conditioning. Replace existing HVAC in the office area with natural gas heating and direct expansion refrigerant forced air furnace with new multi zone ductwork to serve spaces independently.
- Underground sanitary piping reported to plug frequently with jetting required to clear. Recommendation camera inspection of underground sanitary piping with replacement as needed to provide for working system.
- Inspect and replace if needed the existing oil water separator outside of the building.
- Domestic water heater at end of expected service life and should be replaced with in kind electric storage tank style.

- Domestic hot and cold water copper plumbing piping not insulated.
- Existing natural gas fired unit heaters serving vehicle bays are in poor shape and at end of expected service lives. Replace unit heaters in kind.

7.7 Electrical

- Two 120/240V, single-phase services, equipment is nearing end of its service life.
- Building lighting – mainly fluorescent, some LED has been installed, building mounted HID exterior.
- Electrical distribution equipment –aged, nearing end of service life.
- Site lighting – limited to building mounted fixtures.
- Electrical receptacles, circuiting – aged but adequate.
- Lighting controls – do not comply with MI Energy Code.
- Generator – none.
- Limited IT availability within the building. Building IT connection relies on copper cable from adjacent building. This cabling should be replaced with fiber optic cable and an air-conditioned IT closet created in the space for IT equipment racks. Building IT premises wiring should be upgraded to points of use.



7.8 Program Adequacy

- The building functions okay with the Parks Department. Multiple overhead doors allow equipment to be accessed without the need to move other equipment.

7.9 Energy Consumption Efficiency

- Wall insulation is minimal and does not meet current standards.
- Existing lighting is not efficient. There are no lighting controls. There are occupancy/motion sensors in some areas now.
- No HVAC controls other than thermostats are present, if building to be brought back into occupied use; programmable controls should be installed to operate HVAC systems at best efficiency.
- A comparison of energy usage at a typical storage building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was not performed, as there was not an equivalent building type in the DOE database to use for comparison.



7.10 Accessibility

- Doors have doorknobs and should be lever style hardware.

- Since the only restroom has a toilet and a urinal it is considered by code to be a male restroom and not unisex. There is a stool in this room.
- The restroom is not accessible. There are no grab bars and the sink has no forward approach clearances. Other required clearances are lacking also.

7.11 Final Overview

- Building functions adequately as a maintenance garage but the location of the facility and site layout are not ideal to allow for properly securing the site or exterior storage of equipment and materials. If a larger project considered on the site for a reconstructed Sheriff Office, consideration should be given to relocating the facility to a different site.
- Building structural system is generally considered past its expected life



Delta Township
Lansing, MI
Facility Assessment



April 15, 2020

Parks & Recreation Maintenance Building

Item #	Description of Work	Budget Amount	Category 1 - 0	Category 2 -	Category 3 -
			to 2 Yrs	3 to 5 Yrs	5 to 10 Yrs
<u>1</u>	Remove & Replace Concrete at Entry to Make ADA Compliant	\$2,459	\$2,459	0	0
<u>2</u>	Demo all Site Paving, Add Storm Sewer System & Replace Paving	\$340,908	0	\$340,908	0
<u>3</u>	Add Protective Bollards at OH Doors & Around the Site	\$22,668	0	\$22,668	0
<u>4</u>	Add a Dumpster Enclosure & Pad	\$43,669	0	\$43,669	0
<u>5</u>	Add Fencing, Stone & Concrete Pads for Outside Storage Yard	\$132,381	0	0	\$132,381
<u>6</u>	Remove & Replace 10% of the Siding Material Due to Damage	\$26,751	0	\$26,751	0
<u>7</u>	Remove & Replace Windows	\$3,800	0	0	\$3,800
<u>8</u>	Remove & Replace Trim at OH Doors	\$13,334	0	\$13,334	0
<u>9</u>	Connect Downspouts to Storm Drain System Underground	\$10,834	0	\$10,834	0
<u>10</u>	Remove & Replace VCT Flooring in Office Area	\$2,316	0	\$2,316	0
<u>11</u>	Remove & Replace Interior Door Hardware (4 each) with Lever Type Hardware	\$2,556	0	\$2,556	0
<u>12</u>	Allowance to Add a Unisex Restroom	\$47,225	0	\$47,225	0
<u>13</u>	Make Existing Restroom ADA Compliant - Add Grab Bars & Relocate Sink	\$4,318	\$4,318	0	0
<u>14</u>	Install Security Cameras	\$11,112	\$11,112	0	0
<u>26</u>	Add Furnace (NG Heat w/ AC)	\$24,001	\$24,001	0	0
<u>27</u>	Replace 6" Underground Sanitary Pipe	\$17,979	\$17,979	0	0
<u>28</u>	Replace Water Heater	\$11,478	0	\$11,478	0
<u>29</u>	Insulate Domestic Water Piping	\$889	0	0	\$889
<u>30</u>	Replace Unit Heaters in Vehicle Bays	\$17,979	0	\$17,979	0
<u>31</u>	Add CO2/NO x sensors & Exh Fan	\$28,957	\$28,957	0	0
<u>32</u>	New Electrical Distribution/Branch Equipment	\$60,614	0	\$60,614	0
<u>33</u>	Upgrade Lighting Controls	\$5,861	0	\$5,861	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$832,090	\$88,826	\$606,194	\$137,071

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8. Parks and Recreation Storage Building Summary

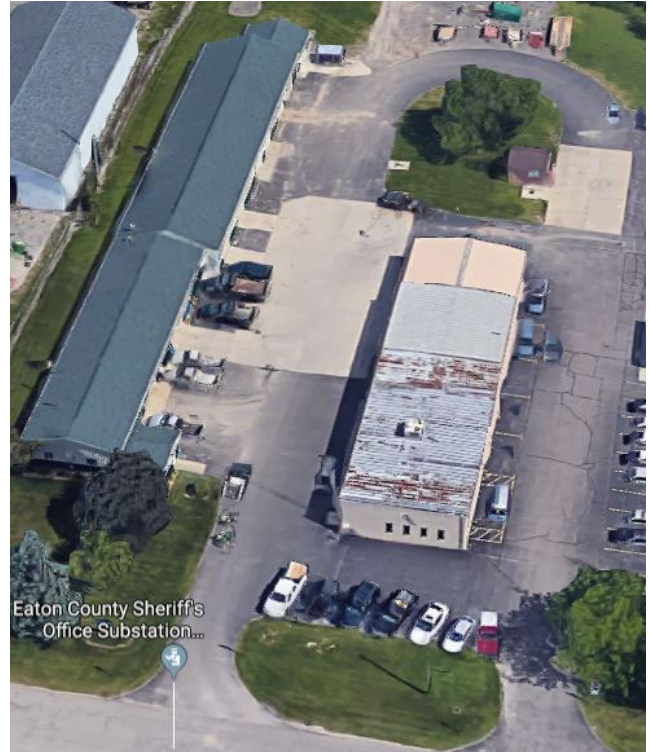
The Storage Building originally constructed in 1969 and an addition in 1982. An open-end cold storage addition added to the north side, but the date of that is unknown. It is a 5,600 sq. ft. in size and is one story. The primary structural system is bearing wall masonry; the most recent addition is wood post and beam construction. The exterior elevations are painted concrete masonry units (CMU) with the most recent addition clad in metal siding. The roof system is a low slope standing seam steel roof and exposed fastener steel roofing. The building used primarily for storage so there is no continuous occupancy. The building is in poor visual condition with dated finishes. The facility received a score of **46**, which is **Poor**.

Estimated Costs for Necessary Repairs

Categories

0-2 Years Category 1	\$	879,500
2-5 Years Category 2	\$	917,653
5-10 Years Category 3	\$	48,299
Total	\$	1,845,452

Note: These costs do not address any functional issues that currently exist in this building.



FACILITY ASSESSMENT FINDINGS

8.1 Site

- See maintenance building for comments

8.2 Structure

- Several bearing walls show significant through wall cracking. Stepped cracking tends to indicate settlement of the wall or supporting foundations. Vertical cracking tends to indicate overloading which overstresses the wall. The North masonry wall has separated from the west wall.
- Lintels over openings show cracking or, in one case, failure of the face, which exposed the reinforcement to weathering.
- The condition of the bearing wall system is poor will continue to lead to a worsening of the structural system.

8.3 Life Safety / Security

- There is no emergency lighting in the building.
- There is no fire alarm in the building; code does not require one. Since the building has minimal occupancy, some form of minimal fire detection should be installed. This could consist of individual smoke alarms.

8.4 Envelope / Roof

- There are multiple instances of cracking in the exterior wall, which allows moisture to penetrate the envelope.
- The paint on masonry severely worn and does not provide adequate resistance to moisture infiltration.



- Wall sealants are showing signs of wear and should be replaced.
- Overhead doors are commercial quality and in good condition
- Man doors are hollow metal in hollow metal frames and are in good condition.
- Finish on windows is fading and thinning.
- The roof on the original building is also original and has significant areas of rust. In addition, typically stand seam roofs are not installed on roofs with slopes less than 3:12; this roof is 1:12.

8.5 Architectural Systems and Finishes

- Finishes are dated and showing significant wear.

8.6 Mechanical

- Mechanical and plumbing systems currently shut off and abandoned. Natural gas fired unit heaters in vehicle bays are utilized for freeze protection only. If building is to be occupied replace existing natural gas heating and direct expansion refrigerant cooling forced air furnaces and unit heaters with new units serving each area independently.



8.7 Electrical

- 120/240V, single-phase service, equipment is nearing end of its service life.
- Building lighting – mainly fluorescent, some LED has been installed, building mounted HID exterior.
- Electrical distribution equipment –aged, nearing end of service life.
- Site lighting – limited to building mounted fixtures.
- Electrical receptacles, circuiting – aged but adequate.
- Lighting controls – do not comply with MI Energy Code.
- Generator – none.

8.8 Program Adequacy

- Building functions adequately for equipment storage; however refer to comments in the structural section above.

8.9 Energy Consumption / Efficiency

- The building intended for cold storage. If the single wythe walls are not insulated, provide a minimal R-value.
- Existing lighting is not efficient and there are no lighting controls.
- A comparison of energy usage at a typical storage building in the same climate zone as published by the U.S. Department of Energy (DOE) versus this building was not performed, as there was not an equivalent building type in the DOE database to use for comparison.

8.10 Accessibility

- There are toilets in this building; but are not normally used and are not accessible.

8.11 Final Overview

- This building re-purposed for dry storage for parks, engineering vans and sheriff's office. This building is not worth investing significant capital and consideration for replacement, likely if additional site space needed for a sheriff's office reconstruction. The structural defects are significant; but do not pose a hazard, as the building not occupied.



Delta Township
Lansing, MI
Facility Assessment



April 15, 2020

Parks & Recreation Storage Building

Item #	Description of Work	Budget Amount	Category 1 - 0	Category 2 -	Category 3 -
			to 2 Yrs	3 to 5 Yrs	5 to 10 Yrs
<u>1</u>	Demo all Site Paving, Add Storm Sewer System & Replace Paving - Approximately 41,500 sf	\$531,017	0	\$531,017	0
<u>2</u>	Allowance for Repair of Settlement Cracks in Exterior Walls	\$55,559	\$55,559	0	0
<u>3</u>	Remove & Replace All Lintels at 3 OH Doors	\$47,669	\$47,669	0	0
<u>4</u>	Tear Down the 2 Long Masonry Bearing Walls & Re-build	\$325,307	\$325,307	0	0
<u>5</u>	Blast Paint Off Exterior Walls & Re-paint	\$36,402	0	\$36,402	0
<u>6</u>	Recaulk the Exterior of the Facility	\$18,668	0	\$18,668	0
<u>7</u>	Fur and Insulate Interior Walls of Northern Most Bay - 40'-0 x 40'-0	\$33,646	0	0	\$33,646
<u>8</u>	Allowance to Make Restroom ADA Compliant	\$27,779	\$27,779	0	0
<u>9</u>	Remove & Replace Roofing	\$148,897	\$148,897	0	0
<u>26</u>	Replace HVAC System	\$20,057	0	\$20,057	0
<u>27</u>	Add Unit Heater in (1) Vehicle Bay	\$7,467	\$7,467	0	0
<u>28</u>	New Electrical Distribution/Branch Equipment	\$33,113	0	\$33,113	0
	Direct Trade Cost Numbers Only**				
	GRAND TOTALS:	\$1,285,581	\$612,679	\$639,257	\$33,646

9. Scoring

November 26, 2019

EXECUTIVE SUMMARY BUILDING SCORING

BUILDING	Site	Structure	Life Safety / Security	Envelope / Roof	Finishes	Mechanical	Electrical	Program Adequacy	Energy Consumption / Efficiency	Accessibility	Overall Score
	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-100
Administration Building	7.8	9.0	8.2	7.0	7.0	6.8	6.8	7.5	7.0	7.5	75
Drolet Community Center	6.3	8.0	4.5	7.0	8.0	5.8	4.0	7.0	7.0	3.0	61
Eaton County Sheriff Substation	7.0	7.0	7.0	5.0	5.0	3.7	5.3	5.0	6.5	6.0	58
Enrichment Center	4.5	5.0	5.0	4.0	6.5	5.5	4.2	5.5	5.0	4.0	49
Fire Station 1	8.8	8.0	7.0	7.0	8.0	7.7	6.7	8.0	8.0	8.0	77
Fire Station 3	7.7	8.0	7.0	6.0	8.0	6.2	5.8	8.0	7.5	7.0	71
Parks and Recreation Maintenance Building	4.4	5.0	7.5	7.0	5.0	3.7	3.5	7.0	5.5	5.0	54
Parks and Recreation Storage Building	4.4	2.5	7.5	4.0	5.0	3.3	3.5	5.5	4.0	6.0	46

Facility Condition Scale	Non-existent	Very Inadequate	Poor	Borderline	Satisfactory	Excellent
	0	1-29	30-49	50-69	70-89	90-100
	Consider Replacement	Additions / Renovations			Selective Improvements	

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10. Executive Summary Recommendations

Reference the following pages.

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April 15, 2020

EXECUTIVE SUMMARY RECOMMENDATIONS

Facility	Category 1 - 0 to 2 Yrs	Category 2 - 3 to 5 Yrs	Category 3 - 5 to 10 Yrs	Subtotal Cost:
Administration Building	\$70,800	\$2,265,064	\$1,066,899	\$3,402,763
Drolett Community Center	\$321,409	\$1,623,719	\$135,585	\$2,080,712
Eaton Country Sherriff Substation	\$749,266	\$1,356,908	\$52,046	\$2,158,220
Enrichment Center	\$956,333	\$1,998,705	\$374,351	\$3,329,389
Fire Station No. 1	\$347,022	\$266,266	\$1,076,899	\$1,690,187
Fire Station No. 3	\$199,566	\$635,589	\$119,641	\$954,796
Parks & Recreation Maintenance Building	\$127,510	\$870,191	\$196,765	\$1,194,466
Parks & Recreation Storage Building	\$879,500	\$917,653	\$48,299	\$1,845,452
TOTAL ESTIMATED (ALL -IN) PROJECT COST :	\$3,651,406	\$9,934,094	\$3,070,485	\$16,655,986
Escalation	Included	\$1,986,819	\$1,228,194	\$3,215,013
Grand Total:				\$19,870,999

Location Summary

Facility	Bldg. SF	Totals	Site	Structure & Envelope	Arch. Systems & Finishes	Mechanical	Elec. / Life Safety / Security
Administration Building	27,173	\$2,370,438	\$185,251	\$680,906	\$472,476	\$615,890	\$415,914
Drolett Community Center	6,900	\$1,449,469	\$694,809	\$23,156	\$112,006	\$182,022	\$437,475
Eaton County Sheriff Substation	7,120	\$1,503,462	\$307,314	\$249,919	\$223,035	\$475,544	\$247,649
Enrichment Center	14,100	\$2,319,324	\$612,797	\$662,805	\$321,304	\$499,928	\$222,490
Fire Station No. 1	25,520	\$1,177,421	\$92,170	\$185,740	\$468,415	\$244,974	\$186,121
Fire Station No. 3	11,280	\$665,132	\$51,488	\$121,654	\$242,125	\$182,684	\$67,182
Parks & Recreation Maintenance Building	10,550	\$832,090	\$542,085	\$54,720	\$56,414	\$101,283	\$77,588
Parks & Recreation Storage Building	5,600	\$1,285,581	\$531,017	\$632,502	\$61,426	\$27,524	\$33,113
TOTAL DIRECT TRADE COSTS:		\$11,602,916	\$3,016,933	\$2,611,402	\$1,957,201	\$2,329,849	\$1,687,532
Contingency (Design, Estimate, Construction)	10.00%	\$1,160,292	\$301,693	\$261,140	\$195,720	\$232,985	\$168,753
		\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL I - INDIRECT CONSTRUCTION COSTS:		\$1,160,292	\$301,693	\$261,140	\$195,720	\$232,985	\$168,753
Construction Manager Fee Only (CM Costs are below)	3.50%	\$446,712	\$116,152	\$100,539	\$75,352	\$89,699	\$64,970
SUBTOTAL II - INDIRECT CONSTRUCTION COSTS:		\$446,712	\$116,152	\$100,539	\$75,352	\$89,699	\$64,970
TOTAL CONSTRUCTION COSTS:		\$13,209,920	\$3,434,778	\$2,973,081	\$2,228,273	\$2,652,533	\$1,921,256
Total Owner Costs		\$1,148,689	\$298,676	\$258,529	\$193,763	\$230,655	\$167,066
TOTAL ALLOWANCE OWNER COSTS: (includes; AE Fees/Costs, CM Fees/Costs, Insurance, Bonds, Permits, Testing, Survey, Borings, Abatement, Fundamental Commissioning, Owner purchased Technology, Owner Purchased PPE, and Bond Costs		\$3,446,066	\$896,029	\$775,586	\$581,289	\$691,965	\$501,197
TOTAL CONSTRUCTION & OWNER COSTS:		\$16,655,986	\$4,330,807	\$3,748,667	\$2,809,562	\$3,344,498	\$2,422,453
TOTAL ESTIMATED INVESTIGATION & REPAIR COSTS:		\$16,655,986					

11. Building Replacement Options Assumptions and Clarifications

Reference the following pages.

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Delta Township
Building Replacement Options
Assumptions & Clarifications

April 17, 2020

Drolet Community Center:

This option is based on approximately 7000 sf of first floor space (slab on grade. The range of magnitude “all-in” cost is between \$412.00 to \$445.00 per sf (\$2,884,000 to \$3,115,000). Below are the assumptions that were used to assemble the cost model.

1. Shallow spread foundation system
2. CMU load bearing exterior walls with brick exterior
3. Steel columns, beams and bar joist framing
4. Punched aluminum windows (5’x5’ approximately 675 sf)) and storefront glazing at the main entry
5. Membrane roof mechanically attached with rigid insulation
6. Interior drywall partitions based on .6 sf of partition per sf of floor area
7. Solid surface vanities in the restrooms
8. Wood door with hollow metal frame and passage set hardware based on one door per 2,500 sf of floor area
9. Porcelain tile in the restroom floors and walls
10. Vinyl plank flooring in all common area
11. 2x2 acoustical ceilings in all areas
12. No elevator
13. 10 plumbing fixtures. Distribution systems based on PVC for sanitary systems and copper for hot and cold water.
14. Gas fired heating equipment with associated ductwork
15. Standard wet fire suppression system
16. Standard LED lay-in light fixtures
17. Rough in for security and telecommunication systems by others
18. Stripping of topsoil and re-using on site
19. Balanced cut and fill of materials to allow for the building pad.
20. Light duty asphalt paving (3” asphalt on 6” base) to allow for 135 parking spaces
21. Dumpster enclosure allowance
22. Ground mounted sign allowance
23. Landscaping allowance
24. New water and sanitary services to the building from the street
25. Storm water system to onsite detention pond
26. Demolition of existing facility, asphalt paving and sidewalks

Enrichment Center:

This option is based on approximately 14,500 sf of first floor space (slab on grade). The range of magnitude “all-in” cost is between \$412.00 to \$445.00 per sf (\$5,974,000 to \$6,453,000). Below are the assumptions that were used to assemble the cost model.

1. Shallow spread foundation system
2. CMU load bearing exterior walls with brick exterior
3. Steel columns, beams and bar joist framing
4. Punched aluminum windows (5'x5' approximately 340 sf)) and storefront glazing at the main entry
5. Membrane roof mechanically attached with rigid insulation
6. Interior drywall partitions based on .8 sf of partition per sf of floor area
7. Solid surface vanities in the restrooms
8. Wood door with hollow metal frame and passage set hardware based on one door per 1,100 sf of floor area
9. Porcelain tile in the restroom floors and walls
10. Vinyl plank flooring in all common area
11. 2x2 acoustical ceilings in all areas
12. 13 plumbing fixtures. Distribution systems based on PVC for sanitary systems and copper for hot and cold water.
13. Gas fired heating equipment with associated ductwork
14. Standard wet fire suppression system
15. Standard LED lay-in light fixtures
16. Rough in for security and telecommunication systems by others
17. Stripping of topsoil and re-using on site
18. Balanced cut and fill of materials to allow for the building pad.
19. Light duty asphalt paving (3" asphalt on 6" base) to allow for 73 parking spaces
20. Dumpster enclosure allowance
21. Ground mounted sign allowance
22. Landscaping allowance
23. New water and sanitary services to the building from the street
24. Storm water system to city system
25. Demolition of existing facility, asphalt paving, and sidewalks

Sheriff Station – Larger Size:

This option is based on approximately 20,800 sf of first floor space (slab on grade). The range of magnitude “all-in” cost is between \$570.00 to \$605.00 per sf (\$11,856,000 to \$12,584,000).

Below are the assumptions that were used to assemble the cost model.

1. Shallow spread foundation system
2. CMU load bearing exterior walls with brick exterior
3. Steel columns, beams and bar joist framing
4. Punched aluminum windows (5’x5’ approximately 400 sf)) and storefront glazing at the main entry
5. Membrane roof mechanically attached with rigid insulation
6. Interior masonry partitions based on 1.5 sf of partition per sf of floor area
7. Solid surface vanities in the restrooms
8. Wood door with hollow metal frame and passage set hardware based on one door per 650 sf of floor area
9. 25 single tier metal lockers
10. Porcelain tile in the restroom floors and walls
11. Vinyl plank flooring and carpeting in all common area
12. 2x2 acoustical ceilings in all areas
13. 24 plumbing fixtures. Distribution systems based on PVC for sanitary systems and copper for hot and cold water.
14. Gas fired heating equipment with associated ductwork
15. Standard wet fire suppression system
16. Standard LED lay-in light fixtures
17. Rough in for security and telecommunication systems by others
18. Stripping of topsoil and re-using on site
19. Balanced cut and fill of materials to allow for the building pad.
20. Light duty asphalt paving (3” asphalt on 6” base) to allow for 74 parking spaces
21. Dumpster enclosure allowance
22. Ground mounted sign allowance
23. Landscaping allowance
24. New water and sanitary services to the building from the street
25. Storm water system to city system
26. Demolition of existing facility, asphalt paving, and sidewalks and the existing storage facility

Sheriff Station – same Size:

This option is based on approximately 7,120 sf of first floor space (slab on grade). The range magnitude “all-in” cost is between \$570.00 to \$605.00 per sf (\$4,058,000 to \$4,307,000). Below are the assumptions that were used to assemble the cost model.

1. Shallow spread foundation system
2. CMU load bearing exterior walls with brick exterior
3. Load bearing interior walls with “residential” trusses
4. Punched aluminum windows (5’x5’ approximately 350 sf)) and storefront glazing at the main entry
5. Shingle roofing with batt insulation
6. Interior masonry partitions based on 1.5 sf of partition per sf of floor area
7. Solid surface vanities in the restrooms
8. Wood door with hollow metal frame and passage set hardware based on one door per 500 sf of floor area
9. 25 single tier metal lockers
10. Porcelain tile in the restroom floors and walls
11. Vinyl plank flooring and carpeting in all common area
12. 2x2 acoustical ceilings in all areas
13. 12 plumbing fixtures. Distribution systems based on PVC for sanitary systems and copper for hot and cold water.
14. Gas fired heating equipment with associated ductwork
15. Standard wet fire suppression system
16. Standard LED lay-in light fixtures
17. Rough in for security and telecommunication systems by others
18. Stripping of topsoil and re-using on site
19. Balanced cut and fill of materials to allow for the building pad.
20. Light duty asphalt paving (3” asphalt on 6” base) to allow for 49 parking spaces
21. Dumpster enclosure allowance
22. Ground mounted sign allowance
23. Landscaping allowance
24. New water and sanitary services to the building from the street
25. Storm water system to city system
26. Demolition of existing facility, asphalt paving, and sidewalks

General Notes:

1. All costs are in current dollars. We have not included an escalation factor in any of the costs at this time due to actual timing of the options is unknown at this time.
2. We have not included any relocation costs associated with these options.
3. We have included 8% design costs.
4. We have included 10% Construction GC, Staff, Fee
5. We have included 4% for furniture, equipment, security systems, & telecom systems
6. We have included 0.5% insurance costs at this time.

APPENDIX A

EMERGENCY GENERATOR REQUIREMENTS

If a generator installation used to supply emergency power to exit/egress lighting and other emergency loads, the installation needs to comply with Chapter 27 of the Michigan Building Code, Article 700 of the National Electrical Code (NEC), Chapter 9 of NFPA-101 - Life Safety Code and applicable portions of NFPA-110 - Standard for Emergency and Standby Power Systems.

The NEC requires that the circuit wiring and transfer switch for power supplying emergency and egress lighting and any other emergency loads be separate from any other circuit wiring. This requires a dedicated transfer switch and circuit breaker panelboard for the emergency loads including emergency/egress lighting.

Circuits from an emergency panel to the emergency lighting fixture or other emergency load must be run dedicated conduits/raceways and separated from non-emergency circuit wiring.

Additionally, NFPA-110 defines the routine maintenance and operational testing requirements for generators classified as emergency generators.

An emergency generator can be used to provide backup power to non-emergency loads but that power would need to have its own transfer switch and circuit breaker panelboard. The circuit wiring for such standby loads does not need to be separated from normal power wiring.

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