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May 27, 2014

City of Rochester Hills

Fire Department Master Plan & Needs Assessment

Station No. 2 1251 E. Auburn
Station No. 3 2137 W. Auburn
Station No. 4 2723 Walton Blvd.
Station No. 5 251 E. Tienken

CHMP Job No. 14002200

Deficiency Report

Inspected by: Gregory Mason (CHMP); Dan Lutes (DSDI); Bob Sopko (DSDI)

Dates of Inspections: May 9, 2014, 9 a.m. May 19, 2014 9 a.m.

Weather Conditions: Overcast – 65 degrees Fahrenheit

PURPOSE

Provide a visual assessment of existing Stations No. 2, 3, 4, & 5 using CHMP's standard "Facility Checklist" for evaluating existing conditions relative to building code compliance and the physical conditions of the existing construction. The intent is to identify deficiencies recommended for corrective action as part of an overall plan to upgrade and expand the existing stations targeted under this evaluation.

STATION NO. 2

1251 E. Auburn

I GENERAL INFORMATION

- A. Site Area: 0.83 Acres
- B. Year Constructed: 1968 Remodeled 1999
- C. Building Area: 4,400 s.f.
- D. Building Use: Fire Station
- E. General Observations:

This Fire Station was originally built in 1968 with three drive thru bays, later remodeled to (2) drive thru bays. This Station also contains: workshop with mezzanine; kitchen/dining, office, (1) locker/shower room; (1) unisex toilet room; a dayroom; and a dormitory. The building exterior construction consists of brick/block construction (original building) and EIFS (Exterior Insulating Finish System)/wainscoting-1999

remodel. In 1999 the building was remodeled and a standing seam metal roofing system was added over an existing flat roof. In general the building appears to have been very well maintained with minor defects noted in the EIFS exterior and minor deficiencies in the site paving.

Total cost of all identified deficiencies for Station No. 2 is \$188,145.00

II SITE DEFICIENCIES

- A. Parking/Paving Areas: There is an area of asphalt pavement that has deteriorated south of the apron in front of the building overhead doors adjacent to Auburn that will need to be replaced. There was also several cracks in the existing asphalt paving that will need to be sealed. Cost is \$6,500.00
- B. Pedestrian Walks: The existing sidewalk along Auburn is in fair condition.
- C. Irrigation System: No lawn irrigation system was not noted during the walk thru.
- D. Signage: An illuminated building identification sign located in the front of the building is in good condition. The signage on the building is broken up by a wall mounted light fixture and should be removed. Cost is \$500.00
- E. Lighting: The building has surface mounted light fixtures. There are no Light fixtures in the parking lot area or entrance drives.
- F. Drainage: Two drainage problem areas were identified during the walk-thru. The first area of ponding was noted on the west side of the west parking lot entrance drive. The second area noted for ponding was the south west corner of the main entrance drive/approach into the apparatus garage. Regrading of will be necessary to correct these deficiencies. Cost is \$7,000.00
- G. Landscaping: The site has minimal landscaping. A small lawn area exists in the front of the site with ground cover and plantings around the flagpole and building sign. All look to be well maintained and in fair condition. There is also a stone/gravel filled area west of the building where the transformer and picnic tables are located.

III BUILDING DEFICIENCIES

A. Architectural

- 1. Building Envelope:
 - (a) Roof: A standing seam pitched roof system was installed in 1996 and appears to be in good condition and includes 6" of fiberglass insulation (R-19). A membrane roof system over 2 ½" rigid insulation (R-12) was installed during this renovation over the Dayroom and Office area wing with no evidence of leakage noted during the walk-thru. The overall insulation value of the roof is substandard to the Michigan Energy Code (R-38 is recommended)
 - (b) Exterior Wall: The exterior walls consist of brick and block composite construction on the south elevation and concrete block on all other elevations with a painted finish. The original building was built in 1968 and the drawings do not indicated any insulation in the block cavities. There were no visible

evidence of movement however the brick and mortar joints are stained and unsightly. Exterior brick should be stained. The Exterior Insulated Finish System installed in the 1999 renovations is broken and damaged in several locations and should be repaired.. The overall insulation value of the wall is substandard to today's building codes. The existing wall provides an R-5 and R-11.4 is the minimum recommended. Cost is \$8,500.00

- (c) Windows: Fixed windows were installed during the 1996 remodel project and consist of insulated glass in aluminum frames and appear to be in good condition.
- (d) Doors: Interior and exterior passage doors are hollow metal doors in hollow metal frames. Doors appear to be in good condition with updated lever type hardware however the exterior door frames are believed to be original and are rusted at the bottom needing repair or replacement. The existing overhead doors are operable but old, frames are rusted at the bottom and in need of repair or replacement. Consideration should be given for replacement of the existing overhead doors based upon age and condition. Cost is \$34,500.00

2. Interior Finishes:

- (a) Ceilings: The Living area/Office wing ceiling is a 2x4 lay-in suspended ceiling installed in 1999 and is in fair condition. The ceiling in the apparatus bay is exposed structure painted and is in fair condition.
- (b) Interior Partitions: Interior partitions consist of a combination of drywall and concrete block partitions (at Living/Office wing). Partitions are painted and in fair condition. Toilet/shower rooms has ceramic tile on walls up 6 feet high.
- (c) Floors: The Living/Office wing consist of a combination of carpet and resilient floor tile finish with 4" resilient base and are in fair condition. The Apparatus Bays have a worn epoxy floor finish in need of recoating. The walls in the Apparatus Bays are painted block in fair condition. Cost is \$25,000.00
- (f) Miscellaneous: Kitchen cabinets are plastic laminate with plastic laminate counter tops installed in 1999 and are in fair condition. No dishwasher provided and the range and hood are residential quality. CHMP typically recommends a commercial hood and range, stainless steel countertops and a high grade dishwasher for a full time fire department use. Costs will be determined during with the recommended building improvements package.

B. Structural

- 1. Existing Systems: The Building structure consists of steel roof joists supporting metal decking bearing on 12" concrete block (17'-4" at Apparatus Bays & 11'-4" at Living/Office wing) bearing on concrete spread footings (Apparatus Bays) & concrete trench footings (Living/Office wing). No evidence of any structural concerns were noted during the walk-thru. Roof structure added in 1999 consists of plywood decking over wood trusses. No evidence of problems were noted during the walk-thru.

C. Building Code Compliance

- 1. Life Safety: An emergency escape is required for sleeping rooms (MBC 1029.1). The Existing Dormitory does not comply, replace existing windows with

- operable escape windows. Architect also recommends a direct egress door from the Apparatus Bays. Cost is \$6,500.00
2. The existing building envelope does not comply with the current Michigan Energy Code (MBC 1301.1.1). No cost determined at this time.

D. HVAC

1. The humidity levels in the office/ kitchen/day room area are extremely high requiring the use of floor mounted portable dehumidifiers in the space. One possible cause is that the existing rooftop serving the area is oversized and does not run long enough to dehumidify the space. Another cause could be the lack of ventilation in the apparatus bay where humidity levels rise when the vehicles are washed.
2. Recommend a certified air balance for the existing HVAC system including the rooftop unit, exhaust fans, diffusers, etc. Cost is \$3,100.00.
3. Provide and install a Rawal refrigeration valve in the rooftop unit which will make the unit operate longer so it dehumidifies better. Cost is \$3,650.00.
4. Provide a ventilation system for the apparatus bay consisting of exhaust and make up air. (See Item #2 below.)
5. Provide minimum ventilation system per MMC 2012 Table 403.3 for the apparatus bay sized for 0.75 cfm per sq. ft. of floor area consisting of ducted high-low exhaust and a gas fired makeup air unit. Cost is \$20,000.00.
6. Provide a CO/NO₂ ventilation control system required by the MMC 2012 Section 404.1 for Item #2 listed above. The ventilation system will not be required to operate 24/7/365 when controlled by a CO/NO₂ sensor. Cost is \$8,600.00.
7. Provide low level continuously operated exhaust system per MMC 404.2 for the apparatus bay sized for 0.05 cfm per sq. ft. of floor area. Cost is \$3,500.00.

E. Plumbing

1. Provide backflow preventers for the CW hose bibs per MPC 2012 Section 608.13.6. Cost is \$550.00.
2. Provide expansion tank and relief valve on the CW line to the water heater. Cost is \$950.00.
3. Provide a drain pan for the water heater. Cost is \$270.00.
4. Provide a listed and labeled oil interceptor for the trench drains in the apparatus bay per MPC 2012 Section 1003. Cost is \$13,250.00
5. Provide inline trap primers for existing floor drains per MPC 2012 Section 1002.4. Cost is \$875.00.
6. Insulate HW & CW piping at water heater, water meter and in laundry room per ASHRAE 90.12007 Michigan energy code and MPC 2012 Section 607.5. Cost is \$1,500.00.

7. Label and paint all gas piping per International Fuel Gas Code. Cost is \$1,750.00.
8. Label all piping per MPC 2012 Section 606.7. Cost is \$650.00

F. Fire Protection

1. The building is 100% fire protected except for the attic. Cost is \$16,500.00.

G. Lighting

1. Most of the interior general lighting fixtures are 2' x 4' recessed fluorescent type. Chain hung industrial open reflector fixtures are used in storage areas and Apparatus Room. Most have T8 type lamps while the Apparatus Room has more energy efficient T5 type lamps. Some have broken lenses and are old with stained dirty lenses with the exception of the Apparatus Room which appear to be newer and in good condition. Cost to replace broken lenses is \$1,000.00.
2. The flag pole is lighted from a spot light mounted to the building sign.

H. Power

1. The building has a Siemens 400 amp-120/240 volt-three phase-four wire fused switch type electrical service main distribution panel located in a closet off Kitchen #108 which appears to be in good condition.
2. Branch electrical panels in the building are a good brand, "Siemens", 120/240V-1ø-3W, and appear to be in good condition.
3. The building seems to have an adequate amount of electrical outlets
4. The drop cords that provide power to the trucks in the Apparatus Room are not on separate circuits and get overloaded. Cost is \$1,500.00.
5. There is a 47KW Cummins natural gas stand-by generator and automatic transfer switch that serves the building which appears to be in good working condition. It is not required by code, but if provided it has to be designed per NEC code. If considered a "stand-by" generator it requires three levels of backup power and transfer switches; it currently only has one. If the building is considered a "Critical Operations Power System" for the community to use during an emergency it can be considered an "Emergency" generator which only requires one automatic transfer switch.
6. The building electrical and telephone services are both overhead wiring into the building.

I. Electrical Systems:

1. The building does not have a fire alarm system but has one combination fire alarm horn/strobe device for the fire suppression system. A fire alarm system is not required by code for the building although smoke detectors are required in the living quarters which the building has.

J. Electrical Code Violations:

1. The lighting in the building does not meet the ASHRAE Energy Code, which limits the interior lighting power density to 1.0 watts per square foot, which the lighting exceeds. Cost is \$5,000.00.
2. There is not enough emergency egress lighting in the building to comply with NFPA Life Safety Code which requires a minimum of one foot candle of lighting along the entire area of egress passageways. Cost is \$3,000.00.
3. There is not enough night lighting in the building to comply with the NFPA Life Safety Code. Cost is \$2,500.00.
4. The building has no occupancy sensors to control the lighting which are required by the ASHRAE Energy Code for all rooms in the building. Cost is \$7,000.00.
5. All of the duplex receptacles in the bathrooms, locker room, kitchen and apparatus room are not ground fault type which is required by the National Electrical Code (NEC). Cost is \$3,000.00.
6. There is not enough emergency egress exit lighting in the building to guide people to the emergency exits and comply with the NFPA Life Safety Code. Cost is \$1,500.00.

STATION NO. 3
2137 W. Auburn

I GENERAL INFORMATION

- | | | |
|----|-----------------------|--------------|
| A. | Site Area: | 0.67 Acres |
| B. | Year Constructed: | 1993 |
| C. | Building Area: | 4,402 s.f. |
| D. | Building Use: | Fire Station |
| E. | General Observations: | |

This Fire Station was rebuilt in 1993 and contains 1 drive thru bay and 2 non drive thru bays, small office area, dayroom, (2) toilet/shower rooms, kitchen/dining area, and a storage room with mezzanine. The building exterior construction consists of brick/block construction (original building) and is in fair condition. The roofs are high pitch metal panel roof systems. The site is small with no room for future expansion. Although the finishes are dated the building in general is clean and well maintained.

Total cost of all identified deficiencies for Station No. 3 is \$ 128,395.00.

II SITE DEFICIENCIES

- A. **Parking/Paving Areas:** The apron approach to the building is concrete and is in good condition. The existing asphalt parking areas and drives have been recently reconstructed and are in excellent condition.

- B. Pedestrian Walks: The existing sidewalk immediately in front of the building found in good condition.
- C. Irrigation System: No evidence of a lawn irrigation system was noted during the walk thru.
- D. Signage: An illuminated building identification sign located in the front of the building is in good condition.
- E. Lighting: The building has surface mounted light fixtures. There are no Light fixtures in the parking lot area or entrance drives.
- F. Drainage: No evidence of any drainage problems were noted during the walk-thru
- G. Landscaping: The site has a small lawn area at the front of the building and was noted to be in good condition

III. BUILDING DEFICIENCIES

A. Architectural

1. Building Envelope:

- (a) Roof: Roof system is comprised of painted metal roof panels over a pitched (4:12) steel framing system. There were a minor number of interior ceiling panels reflecting past leaks, source is unknown but could be attributed to the roof system failure. Client noted there is a persistent ice damming problem on the west side of the north elevation by the main entrance. We recommend heat tape on a timer be installed. It would appear from the original construction drawings the roof insulation consist of 2 inches of rigid insulation (R-10) which is deficient in complying with the current Michigan Energy Code. Not cost for correcting this is included at this time. Cost for heat tape is \$1,500.00
- (b) Exterior Wall: The exterior walls consist of brick and block composite construction on all elevations. Original (incomplete) construction drawings provided make no mention of insulation however based upon the date of construction it was common practice to fill the block cores with foam insulation. The composite wall assuming block fill insulation would provide an R value of approximately 11. This will close to complying with the R-11.4 minimum recommended insulating value per the Michigan Energy Code.

No cost for upgrading the wall insulation has been determined.

- (c) Windows: Operable double hung type windows appear to with insulated glass and in fair condition.
- (d) Doors: Interior and exterior passage doors consist of hollow metal doors in hollow metal frames with painted finish. Door hardware is old style knobs, non-compliant with Barrier Free requirements. Doors appear to be in good working condition with some evidence of frames rusting at ground level and in need of painting and perimeter caulking. The existing overhead doors are operable but old, minor areas of frames rusted at the bottom were noted and in need of repair or replacement. Consideration should be given for replacement of the existing overhead doors based upon age and condition. Cost is \$26,500.00

2. Interior Finishes:

- (a) Ceilings: The Living area/Office wing ceiling is a 2x4 lay-in suspended ceiling appear to be original and show minor evidence of past roof leaks, in general these ceilings are older with our recommendation for replacement. The ceiling in the apparatus bay is exposed structure painted and is in need of painting. Cost is \$9,750.
- (b) Interior Partitions: Interior partitions are concrete block partitions. All partitions are painted and are in need of painting. Toilet/shower rooms has ceramic tile on walls up 4 feet high. The walls in the Apparatus Bays are painted block and require painting. Cost is \$10,500.00
- (c) Floors: The Living/Office wing consist of a combination of carpet and resilient floor tile finish with 4" resilient base and are in poor condition and in need of replacement. The Apparatus Bays have an epoxy floor finish found in satisfactory condition. \$7,750.00
- (f) Miscellaneous: Kitchen cabinets are plastic laminate with plastic laminate counter tops installed in 1999 and are in fair condition. No dishwasher provided and the range and hood are residential quality. CHMP typically recommends a commercial hood and range, stainless steel countertops and a high grade dishwasher for a full time fire department use. Costs will be determined during with the recommended building improvements package.

B. Structural

- 1. Existing Systems: The Building structure consists of a steel roof framing system supporting metal decking. Perimeter composite masonry walls are load bearing on on concrete trench footings. No evidence of any structural concerns were noted during the walk-thru.

C. Building Code Compliance

- 1. Life Safety: No life safety concerns were noted during the walk-thru
- 2. The existing building envelope does not comply with the current Michigan Energy Code (MBC 1301.1.1). No cost determined at this time.

D. HVAC

- 1. Provide minimum ventilation system per MMC 2012 Table 403.3 for the apparatus bay sized for 0.75 cfm per sq. ft. of floor area consisting of ducted high-low exhaust and a gas fired makeup air unit. Cost is \$20,000.00.
- 2. Provide a CO/NO₂ ventilation control system required by the MMC 2012 Section 404.1 for Item #2 listed above. The ventilation system will not be required to operate 24/7/365 when controlled by a CO/NO₂ sensor. Cost is \$8,600.00.
- 3. Provide low level continuously operated exhaust system per MMC 404.2 for the apparatus bay sized for 0.05 cfm per sq. ft. of floor area. Cost is \$3,650.00.

E. Plumbing

1. Provide backflow preventers for the CW hose bibs per MPC 2012 Section 608.13.6. Cost is \$550.00.
2. Provide expansion tank and relief valve on the CW line to the water heater. Cost is \$950.00.
3. Provide a drain pan for the water heater. Cost is \$270.00.
4. Provide a listed and labeled oil interceptor for the trench drains in the apparatus bay per MPC 2012 Section 1003. Cost is 13,250.00.
5. Provide inline trap primer for existing floor drains per MPC 2012 Section 1002.4. Cost is \$875.00.
6. Insulate HW & CW piping at water heater and in laundry room per ASHRAE 90.1-2007 Michigan Energy Code. Cost is \$1,500.00.
7. Provide hot water recirculating system including pump, piping, aqua- stat, etc. per MPC 2012 Section 607.2.2. Cost is \$2,750.00.
8. Insulate all HW & CW piping at water heater, water meter, laundry room, etc. per ASHRAE 90.1-2007 Michigan Energy Code and MPC 2012 Section 607.5. Cost is \$1,500.00.
9. Label and paint all gas piping per International Fuel Gas Code. Cost is \$1,750.00.
10. Label all piping per MPC 2012 Section 606.7. Cost is \$650.00.

F. Fire Protection

1. The building is 100% fire protected except for the attic. Cost is \$14,500.00.

G. Lighting

1. The interior lighting fixtures in the building do not have any broken lenses.
2. Lighting in storage rooms is 8' fluorescent strips, surface mounted.
3. There are some recessed square metal halide type exterior canopy lights. One is missing a lens. Cost is \$100.00 to provide a lens.
4. The flag pole is lighted from a ground mounted spot light.

H. Power

1. There are no branch electrical panels in the building.
2. The building has a General Electric 200 amp-120/240 volt-single phase-three wire electrical service main panel, located in Janitor Room #108 which appears to be in good condition.

3. Electrical and telephone services are both underground wiring into the building.

STATION NO. 4
2723 Walton Blvd.

I GENERAL INFORMATION

- A. Site Area: 1.26 Acres
- B. Year Constructed: 1976
- C. Building Area: 3,806 s.f.
- D. Building Use: Fire Station
- E. General Observations:

This Fire Station was originally built in 1976 and contains 2 narrow truck bays, office area, dayroom, toilet/shower rooms, kitchen/dining area, and a converted fitness area and dormitory room. The building exterior construction consists of brick/block construction (original building) and is in fair condition. The roofs are low pitch membrane type roofs. The site is larger than the other sites with a cell tower and cell tower building leased out a larger parking lot and vacant lot to the east at a slightly lower elevation. Although the finishes are dated the building in general is clean and well maintained.

Total cost of all identified deficiencies for Station No. 4 is \$150,675.00.

II SITE DEFICIENCIES

- A. Parking/Paving Areas: The apron approach to the building is concrete and is in good condition. The existing asphalt parking areas is in poor condition with our recommendation to provide an 1 ½" asphalt cap and restripe. Cost is \$ 17,500.00
- B. Pedestrian Walks: The existing sidewalk immediately in front of the building is in good condition with the balance in fair condition.
- C. Irrigation System: Evidence of a lawn irrigation system was noted during the walk thru.
- D. Signage: An illuminated building identification sign located in the front of the building is in good condition. The signage on the building is also noted to be in good condition.
- E. Lighting: The building has surface mounted light fixtures. There are no Light fixtures in the parking lot area or entrance drives.
- F. Drainage: No evidence of any drainage problems were noted during the walk-thru
- G. Landscaping: The site has lawn areas around the building including an island between parking lots with flowering trees. Some minor lawn damage was noted in the front, overall in satisfactory condition. Cost is \$200.00

III BUILDING DEFICIENCIES

- A. Architectural
 - 1. Building Envelope:

- (a) Roof: Unable to access roof during walk-thru. Owner has indicated a roof was installed in 2004 with a 24 year warranty. No evidence of leakage was noted during the walk thru. No information on level of insulation provided.
 - (b) Exterior Wall: The exterior walls consist of brick and block composite construction on all elevations. Original construction drawings make no mention of insulation however based upon the date of construction it was common practice to fill the block cores with vermiculite insulation. The composite wall assuming block fill insulation would provide an R value of approximately 8. The overall insulation value of the wall is substandard to today's building codes. The existing wall provides an R-8 and R-11.4 is the minimum recommended. No cost for upgrading the wall insulation has been determined. There are control joints and caulking required around doors and windows and the brick is need of cleaning. Cost is \$5,500.00
 - (c) Windows: Operable casement type windows appear to be single glazed (low energy efficient) and in fair condition. Consideration for replacement of existing windows is recommended based upon the Michigan Energy Code requirements. Cost is \$ 4,000.00
 - (d) Doors: Interior and exterior passage doors are a combination of painted wood and hollow metal doors in hollow metal frames. Some hardware has been replaced with code compliant levers and some remain original knobs. Doors appear to be in good working condition with some evidence of frames rusting at ground level. The existing overhead doors are operable but old, frames are rusted at the bottom and in need of repair or replacement. Consideration should be given for replacement of the existing overhead doors based upon age and condition. Cost is \$16,500.00
2. Interior Finishes:
- (a) Ceilings: The Living area/Office wing ceiling is a 2x4 lay-in suspended ceiling appear to be original and show minor evidence of past roof leaks, in general these ceilings are very old with our recommendation for replacement. The ceiling in the apparatus bay is exposed structure painted and is in need of painting. Cost is \$9,750.
 - (b) Interior Partitions: Interior partitions are concrete block partitions. All partitions are painted and are in need of painting. Toilet/shower rooms has ceramic tile on walls up 4 feet high. The walls in the Apparatus Bays are painted block and require painting. Cost is \$11,000.00
 - (c) Floors: The Living/Office wing consist of a combination of carpet and resilient floor tile finish with 4" resilient base and are in poor condition and in need of replacement. The Apparatus Bays have a worn epoxy floor finish with chips along trench drains and need of recoating. \$24,500.00
 - (f) Miscellaneous: Kitchen cabinets are plastic laminate with plastic laminate counter tops installed in 1999 and are in fair condition. No dishwasher provided and the range and hood are residential quality. CHMP typically recommends a commercial hood and range, stainless steel countertops and a high grade dishwasher for a full time fire department use. Costs will be determined during with the recommended building improvements package.

B. Structural

3. Existing Systems: The Building structure consists of steel roof joists supporting metal decking bearing on 12" concrete block (19'-0" at Apparatus Bays & 13'-0" at Living/Office wing) bearing on concrete spread footings. No evidence of any structural concerns were noted during the walk-thru.

C. Building Code Compliance

1. Life Safety: An emergency escape is required for sleeping rooms (MBC 1029.1). The Existing Dormitory does not comply; Provide an emergency egress window. Architect also recommends a direct egress door from the Apparatus Bays. Cost is \$7,500.00
4. The existing building envelope does not comply with the current Michigan Energy Code (MBC 1301.1.1). No cost determined at this time.

D. HVAC

1. Provide minimum ventilation system per MMC 2012 Table 403.3 for the apparatus bay sized for 0.75 cfm per sq. ft. of floor area consisting of ducted high-low exhaust and a gas fired makeup air unit. Cost is \$20,000.00.
10. Provide a CO/NO₂ ventilation control system required by the MMC 2012 Section 404. for Item #2 listed above. The ventilation system will not be required to operate 24/7/365 when controlled by a CO/NO₂ sensor. Cost is \$8,600.00.
11. Provide low level continuously operated exhaust system per MMC 404.2 for the apparatus bay sized for 0.05 cfm per sq. ft. of floor area. Cost is \$3,500.00.

E. Plumbing

1. Provide backflow preventers for the CW hose bibs per MPC 2012 Section 608.13.6. Cost is \$550.00.
2. Provide a listed and labeled oil interceptor for the trench drains in the apparatus bay per MPC 2012 Section 1003. Cost is \$13,500.00.
12. Provide a floor drain in the laundry room. Cost is \$1,500.00.
13. Repair/replace existing air intake louver. Cost is \$1,500.00.
14. Provide inline trap primers for existing floor drains per MPC 2012 Section 1002.4. Cost is \$875.00.
15. Insulate HW & CW piping at water heater, water meter laundry room, etc. per ASHRAE 90.1-2007 Michigan Energy Code and MPC 2012 Section 607.5. Cost is \$1,500.00.
16. Label and paint all gas piping per International Fuel Gas Code. Cost is 1,750.00.
17. Label piping per MPC 2012 Section 606.7. Cost is \$650.00.

F. Fire Protection

1. The building is 100% fire protected.

G. Lighting

1. The interior lighting fixtures in the building do not have any broken lenses.
2. Lighting in the mezzanine storage room is 4' fluorescent strips, surface mounted.
3. There are some recessed square metal halide type exterior soffit lights.
4. The flag pole is lighted from a building mounted spot light.
5. There are some 1' x 4' recessed fluorescent lights.
6. The building only has one occupancy sensor located in Storage Room #115.

H. Power

1. Electrical and telephone services are both underground wiring into the building.
2. The building has a Square D exterior main switchboard electrical service.
3. The electrical panels in the building are Square D, 120/240V-3Ø-4W.
4. There is a Kohler 20KW natural gas generator with a manual transfer switch, as well as the Cummins 47KW generator.

I. Electrical Code Violations:

1. The building does not have a combination fire alarm horn/strobe device. Cost is \$300.00.

STATION NO. 5
251 E. Tienken

I GENERAL INFORMATION

- | | | |
|----|-----------------------|--------------|
| A. | Site Area: | 1.65 Acres |
| B. | Year Constructed: | 1999 |
| C. | Building Area: | 4,344 s.f. |
| D. | Building Use: | Fire Station |
| E. | General Observations: | |

This Fire Station was replaced with a new station in 1999 and contains 2 drive thru bays, 1 non drive thru bay, office area, dayroom, single occupancy toilet room, toilet/shower room, kitchen/dining area, and a storage room with mezzanine. The building exterior construction consists of brick/block construction (original building) and is in good condition. The roofs high pitch standing seam metal roofs that appear to be in good condition. The site is the largest of all the sites however the building is constructed on

the edge of an apparent wetland to the east and the entrance drive to the west which limits the expandability of the building. This building is the newest of all the target facilities.

Total cost of all identified deficiencies for Station No. 5 is \$122,875x.00.

II SITE DEFICIENCIES

- A. Parking/Paving Areas: The apron approach to the building is concrete and is in good condition. The existing asphalt parking areas is in fair condition with exception of the drive parking lot connection which is need of repair.. Cost is \$ 3,500.00
- B. Pedestrian Walks: The existing paved walking path immediately in front of the building that is in fair condition.
- C. Irrigation System: No evidence of a lawn irrigation system was noted during the walk thru.
- D. Signage: An illuminated building identification sign located in the front of the building is in good condition.
- E. Lighting: The building has surface mounted light fixtures. There are no Light fixtures in the parking lot area or entrance drives.
- F. Drainage: No evidence of any drainage problems were noted during the walk-thru
- G. Landscaping: The site has lawn areas around the south, east, and west sides of the building. The lawn areas were in poor condition needing patching, seeding, and some repair. Cost is \$1,000.00

III BUILDING DEFICIENCIES

A. Architectural

- 1. Building Envelope:
 - (a) Roof: The roof consist of standing metal seam roofing over wood trusses and appear to be in good condition with exception of a number of ice guards missing over door openings. There is also a few areas of roof panels needing touch up paint (east elevation) Cost is \$1,500.00
 - (b) Exterior Wall: The exterior walls consist of brick and block composite construction on all elevations. Original construction drawings make no mention of insulation however based upon the date of construction it was common practice to fill the block cores with foam insulation. The composite wall assuming block fill insulation would provide an R value of approximately 11. The overall insulation value of the wall is close to compliance with current building codes.
 - (c) Windows: The apparatus bays have glass block windows providing day lighting. The Office/Living wing has fixed insulated window units in metal frames and appear to be in good condition with exception of re-caulking required around the perimeter. Cost is \$ 800.00

- (d) Doors: Interior and exterior passage doors consist of hollow metal doors in hollow metal frames. Hardware appears code compliant levers s. Doors appear to be in good working and physical condition l. The existing overhead doors are operable but old, frames are rusted at the bottom and in need of repair or replacement. Consideration should be given for replacement of the existing overhead doors based upon age and condition. Cost is \$16,500.00
- 2. Interior Finishes:
 - (a) Ceilings: The Living area/Office wing ceiling is a 2x4 lay-in suspended ceiling appear to be good condition. The ceiling in the apparatus bay is exposed structure painted and is in need of painting. Cost is \$3,500.
 - (b) Interior Partitions: Interior partitions are concrete block partitions. All partitions have a painted finish and are in need of repainting. The walls in the Apparatus Bays are painted block and require painting. Cost is \$11,000.00
 - (c) Floors: The Living/Office wing consist of a combination of carpet and resilient floor tile finish with 4" resilient base and are in fair condition. The Apparatus Bays have a worn epoxy floor finish and need of recoating. \$19,500.00
 - (f) Miscellaneous: Kitchen cabinets are plastic laminate with plastic laminate counter tops installed in 1999 and are in fair condition. No dishwasher provided and the range and hood are residential quality. CHMP typically recommends a commercial hood and range, stainless steel countertops and a high grade dishwasher for a full time fire department use. Costs will be determined during with the recommended building improvements package.

B. Structural

- 1. Existing Systems: There was insufficient information provided on the original building construction to determine the actual roof construction but appears to be wood trusses over loading bearing masonry walls. No evidence of structural concerns were noted during the walk-thru.

C. Building Code Compliance

- 2. Life Safety: Building appears to be compliant with life safety requirements.
- 5. There was insufficient information provided on the original building construction to determine compliance with the current Michigan Energy Code (MBC 1301.1.1). No cost determined at this time.

D. HVAC

- 1. Provide minimum ventilation system per MMC 2012 table 403.3 for the apparatus bay sized for 0.75 cfm per sq. ft. of floor area consisting of ducted high-low exhaust and a gas fired makeup air unit. Cost is \$25,000.00.
- 2. Provide a CO/NO₂ ventilation control system required by the MMC 2012 Section 404 for Item #2 listed above. The ventilation system will not be required to operate 24/7/365 when controlled by a CO/NO₂ sensor. Cost is \$8,600.00.

3. Provide low level continuously operated exhaust system per MMC 404.2 for the apparatus bay sized for 0.05 cfm per sq. ft. of floor area. Cost is \$3,650.00.

E. Plumbing

1. Provide backflow preventers for the CW hose bibs per MPC 2012 Section 608.13.6. Cost is \$550.00.
2. The existing oil interceptor for the trench drains in the apparatus bay appears to be undersized based on MPC 2012 Section 1003. Code requires 6 cu. ft. storage for the first 100 sq. ft. of floor space and an additional 1 cu. ft. of storage for each additional 100 sq. ft. of floor space. Cost is \$15,000.00.
3. Provide trap primers for existing floor drains per MPC 2012 Section 1002.4. Cost is \$1,875.00.
4. Insulate HW & CW piping at water heater and in laundry room per ASHRAE 90.1-2007 Michigan Energy Code. Cost is \$1,500.00.
5. Insulate HW & CW piping at water heater, water meter, laundry room, etc. per ASHRAE 90.1-2007 Michigan Energy Code and MPC 2012 Section 607.5. Cost is \$1,500.00.
6. Label and paint all gas piping per International Fuel Gas Code. Cost is \$1,750.00.
7. Label piping per MPC 2012 Section 606.7. Cost is \$650.00.

F. Fire Protection

1. The building is 100% fire protected including the attic with a dry pipe type system.

G. Lighting

1. The lighting in the Apparatus Room is older fixtures with T8 lamps.
2. Most of the interior general lighting fixtures are surface mounted strip fluorescent type. Some have more energy efficient T8 type lamps while some have non-energy efficient old T12 type lamps, which are being discontinued by the lighting industry and will no longer be made. Some lamps are missing in the fixtures and some are burned out or not operating properly. Cost is \$3,000.00 to make operational.
3. Three rooms have occupancy sensors.

H. Power

1. The building main distribution panel is located in Apparatus Room #101.
2. Electrical and telephone services are both underground wiring into the building.
3. There is a Winco natural gas generator with a Generac manual transfer switch, as well as the Cummins 47KW generator.

I. Electrical Code Violations:

1. The building does not have any smoke detectors. Cost is \$2,500.00.

This concludes our assessment of the target facilities. Please forward any questions or additional information required to me at (810) 695-5910, gmason@chmpinc.com.

Respectfully Submitted,

CHMP, INC.

Gregory N. Mason, AIA
Architect

GNM:mfg

Master Plan and Needs Assessment

Preliminary Budget Analysis

Station No.	Location	Existing Bldg Area	Proposed Addition	Deficiency Costs (per report)	Remodel Costs	Additional Costs	Total Costs
Station 1	1111 Horizon Court	N/A	N/A	N/A	\$110,000.00	\$20,000.00	\$130,000.00
Station 2	1251 E. Auburn	4440 s.f.	2860 s.f.	\$188,145.00	\$399,600.00	\$572,000.00	\$1,159,745.00
Station 3	2137 W. Auburn	4402 s.f.	2661 s.f.	\$128,395.00	\$396,180.00	\$532,200.00	\$1,056,775.00
Station 4	2723 Walton Blvd.	3806 s.f.	3589 s.f.	\$150,675.00	\$342,540.00	\$717,800.00	\$1,211,015.00
Station 5	251 E. Tienken	4344 s.f.	2940 s.f.	\$122,875.00	\$390,960.00	\$588,000.00	\$1,101,835.00

Sub-Total (Remodel Station #4) \$4,659,370.00 Sub-Total (Replace Station 4) \$5,060,565.00

Site Survey (4-Stations) \$20,000.00

Architect/Engineering/Testing Fees (7.5%) \$350,952.75

Contingency (10%) \$503,032.20

Temporary living quarters (trailer), furniture, equipment, and moving expenses. (7%) \$387,334.84

Signage \$250,000.00

Total \$6,170,689.70

Note 1- Station 4 replacement cost would be \$1,612,210.00 based upon \$200.00 s.f. for new construction, plus \$35.00 s.f for demolition.

Note 2- Station 1 cost is for renovating current fitness area and Inspector's Offices into individual dorm rooms (sleeping quarters) and relocating fitness area and Inspectors Offices into another part of building. This cost was estimated prior to station assessment by CHMP, Inc.