Facilities Assessments

The purpose of this section of the Study is to document the condition of the City Hall, the Public Works Facility, and the two Fire Stations. This information provides the necessary data to enable the City to make informed decisions regarding how to best address any repairs, upgrades and/or replacements as part of the City's long-range planning. There are two components to the Assessment:

An on-site *Physical Condition Assessment* of the building was performed to determine maintenance issues, safety and code concerns, remaining useful life for the building systems and finishes, and to review how current conditions affect building system operations and energy costs.

A *Functional Assessment* was performed through observations and discussions with key staff. It determined how existing building conditions are affecting staff operations and the ability to serve the community. The Functional Assessment also examined how present operations and workflows compare to current recommended best practices in the industry.

The assessments are intended to provide an indication of the capital maintenance requirements, potential code and regulatory required upgrades, and other building conditions which should be considered as part of the facility's general upkeep as well as part of any building project. This study does not address areas of the building that are concealed behind walls or locked doors.

The facility assessments were conducted on May 1, 2017 by the following individuals:

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Facility Assessment – Fire Station #1

Fire Station #1 is located at 3510 Laverne Ave N. It is 4,624 square feet and is located on an ~0.5 acre lot. It was built in 1957 and has been added onto twice, the most recent time in 1979 when the ladder truck bay and kitchen were added to the west side. There were originally three vehicle bays. A fourth bay was added to the south but has been converted into a training room. An additional bay for a ladder truck was added in 1979. Parking is located south of the building and the public entry door is on the east side.

A Note on Facility Assessments for Fire Stations:

Firefighters are at significantly higher risk than the general population to develop cancer (21% higher colon cancer risk, 32% higher brain cancer risk, 39% higher skin cancer risk, 102% higher testicular cancer risk, etc.). This risk is a direct result of their volunteer activities – they are frequently exposed to highly toxic and carcinogenic compounds at the fireground (arsenic, benzene, acrylonitrile, polycyclic aromatic hydrocarbons, etc.), and they bring those compounds back to the fire station on every hose, ladder, fire truck, and piece of personal protective equipment that was anywhere near the fire. In addition, operating diesel fire trucks inside the fire station every day for years has resulted in massive amounts of diesel particulates to permeate the apparatus bay (one large study showed a typical apparatus bay has 16x above EPA Standards). Both the fireground toxins and the diesel particulates are so small that they hang suspended in the air for long periods of time, so the risk does not go away between calls but rather is consistent every time the apparatus bay is entered. Apparatus Bays are not a safe place to work, not a safe place to store equipment and supplies (especially absorptive materials like paper products), and not a safe place to walk through to gain access to adjoining spaces. Any adjoining space that is not properly protected through air pressure differentials and air locks also becomes contaminated. The increased risk of cancer becomes a major factor in evaluating the functionality of a fire station, and it will be covered in detail in section I.

Architectural Report

A. Building Description
   1. The building is constructed of concrete block walls, with brick veneer on the east façade and 4" concrete block veneer on the north, west, and south sides. The roof is low slope supported by steel joists and is broken into three areas corresponding to the three construction phases.

B. Site
   1. Topography
      a. The site has only minor topography.
   2. Storm Water Drainage
      a. Storm water sheets flows from the site to storm sewer grates in the street.
      b. The north downspout on the west side is missing a splashblock.
      c. The splashblock below the downspout on the north side is not pitched away from the building, allowing water to drain back down the face of the foundation.
   3. Access and Egress
      a. The parking lot is accessed from the alley on the west side only. The east access point into the parking lot was eliminated because it was being used as a shortcut. Currently, only the east-facing apparatus bays can exit onto Laverne Street, but people unfamiliar with the building are entering from the response apron and driving

over the paved front yard to access parking. We recommend additional signage to direct drivers to the rear alley.

4. Paving and concrete
    a. The asphalt parking area is in excellent condition.
    b. The concrete apron outside the ladder truck bay is severely cracked. We recommend replacement within 6 months.
    c. The front apparatus apron concrete is in good condition.
5. Landscaping and Appurtenances
    a. The rear grass yard has not recovered from construction work on the adjacent streets.
    b. The flagpole is rusting. We recommend scraping off rust and re-painting.
6. Recreational Facilities
    a. Not applicable.
7. Utilities
    a. Water
        (1) Domestic water entrance was not observed.
    b. Electricity
        (1) The electrical transformer is pole mounted north of the building.
        (2) The service entrance and electric meter are on the north wall of the building.
    c. Natural Gas
        (1) Gas enters the building on the north wall, towards the east side
    d. Sanitary Sewer
        (1) The routing of sanitary sewer could not be determined.
    e. Storm Sewer
        (1) There is no storm sewer piping on site.
    f. Communications
        (1) Communications enter the building from the north side.

C. Structural Frame and Exterior Enclosure
1. Foundation
    a. The foundation system appears to be in satisfactory condition, as there is no evidence of building settlement.
2. Slab-on-grade
    a. Where visible, the concrete floor slab has major cracking. It is still serviceable. The cracks make it impossible to completely clean the facility of fireground toxins or bacteria from medical calls. We recommend sealing the cracks with a high-quality traffic sealant.
3. Superstructure
    a. The building is supported on masonry bearing walls and has a steel joist roof structure with metal roof deck.
4. Exterior walls
    a. The bricks on the east elevations are in good condition.
    b. The exposed concrete block on the north, west, and south sides is in good condition except for a few areas.
        (1) The painted concrete block around the window on the south side is peeling. We recommend re-painting within six months to protect the block.
        (2) The painted concrete windows sills on the west elevation have lost paint in certain areas. We recommend re-painting within six months to protect the block.

(3) The concrete block at the base of the wall near the side entrance door is crumbling. This is likely due to free-thaw cycles of water trapped between the sidewalk and the wall. We recommend repairing the block with concrete and sealing the joint between the sidewalk and the wall within six months. If necessary, remove and replace the concrete sidewalk to pitch away from the building.
(4) There is a major crack in the masonry at the man door into the truck bay that resulted from an impact. It appears to have been repaired properly, but should be painted to protect from moisture infiltration.
(5) Where the rainwater leader and downspout discharges at the north side of the building, water has splashed back against the wall and damaged the concrete block. We recommend pitching the splashblock away from the building and patching/painting the damaged block.

c. The area of wall that has been infilled with fiber-cement lap siding is in good condition. The backup wall consists of air barrier, sheathing, studs, and insulation. The fiber cement is in good condition.
d. The sealant joint between the exterior wall and the concrete sidewalk on the south side of the building is failing. We recommend replacement within two years.

5. Windows and Doors
   a. There are dents and scratches in the finish of the three front overhead doors. They are in otherwise good condition.
   b. The glass windows in the overhead doors are in good condition.
   c. The paint at the bottom of the overhead door at the ladder truck bay peeling. We recommend painting to protect the door.
   d. The steel angles protecting the brick at the ladder truck overhead door jambs are rusting. We recommend cleaning off the rust and re-painting.
   e. The steel corner bollards at the front apparatus doors are in good condition.
   f. The steel angle at the sill of the south overhead door in the main apparatus room rusted away and had to be removed. The concrete was damaged by the process and patched.
   g. The hollow metal man doors and frames are showing signs of rust where the paint has scratched off. We recommend scraping loose rust and re-painting.
   h. The hinges at the man door into the ladder truck bay are rusting. We recommend replacement with non-ferrous hinges.
6. Roof
   a. The building has a low-slope roof approximately 20 years old. It was not accessible and was not reviewed.
   b. The prefinished metal parapet caps/ roof edge flashings are in excellent condition.
   c. The original building roof drains into a roof drain and a conductor head and downspout that outlet on the north elevation. The training room roof drains into a conductor head and downspout on the south side of the building. The ladder truck addition drains into two conductor heads with downspouts on the west elevation.

D. Interior Elements
   1. Flooring
      a. The carpet in the training room and the chief's office is heavily worn and should be replaced within two years.
      b. The ceramic tile floor in the open office area is in good condition.
      c. The quarry tile in the restrooms is in good condition.
      d. The mosaic tile in the radio room and kitchen is in good condition.

2. Walls
    a. The painted masonry is in excellent condition.
        (1) The paint at the bottom of the walls between the bay doors has peeled off. We recommend re-painting to protect the block.
        (2) The paint adjacent to the range has been burned and should be scraped off and re-painted.
        (3) The masonry above the side entry door has cracked. This is likely the result of minor building movement and the lack of a control joint. We recommend sealing the crack.
    b. The painted wood-look paneling in the training room is in decent condition.
    c. The wood-look paneling in the Chief's Office is in decent condition.
3. Doors and Windows
    a. The interior of the public entry door is peeling and should be re-painted.
    b. The windows between the offices and the truck bay are showing signs of wear. We recommend stripping and staining or removing the windows and infilling with concrete masonry.
    c. The window between the radio room and the main apparatus room is in good condition.
    d. The overhead door operators are reported to be in good condition.
4. Ceilings
    a. The ceiling tiles in the training room are sagging.
    b. The painted gypsum board ceilings are in good condition.
5. Casework
    a. The build in worksurface in the radio room is in decent condition.
    b. The countertops in the kitchen are in decent condition. The cabinets in the kitchen are nearing the end of their service life and should be replaced within five years.
6. Equipment
    a. The projection screen in the training room is in good condition.
    b. The icemaker in the ladder truck bay is in good condition.
    c. The flammable storage cabinet is in good condition
    d. The Gear-Grid wall-mounted turnout storage racks are in good condition.
    e. The Gear-Grid hose drying rack is in good condition.
    f. The Gear-Grid mobile hose storage rack is in good condition.
    g. The Craftsman workbench is in good condition.
    h. The washer-extractor is reported to be in good condition.
    i. The combination dryer is reported to be in good condition.
    j. The Bauer SCBA air compressor, cascade, and fill station are tested and certified each year and are in good condition.
    k. The ceiling fans are in good condition.
    l. The range and coffee maker are nearing the end of their service life and should be replaced within two years.
    m. The popcorn machine, microwave, refrigerator, hot dog roller, and pizza oven are in decent condition.

E. Vertical Transportation
1. There is a retractable ladder and ceiling hatch for access to the mezzanine storage area. It is in good condition.
2. The ladder to a mezzanine area above the kitchen is wobbly.

F. Building Code Issues
   1. The training room has a capacity of more than fifty people, so the exit doors need to be equipped with panic hardware.

G. Accessibility Code Issues
   1. There are no truncated dome detectable warning strips where the sidewalk crosses the front apparatus apron.
   2. The men's restroom is not accessible. The door is too narrow, the lavatory supply and waste valves are unprotected, the lavatory faucet requires twisting of the wrist, the flush control is on the wrong side of the toilet tank, the toilet seat height is too low, there is insufficient maneuvering clearance around the toilet, the mirror is mounted too high, and there are no grab bars.
   3. The women's restroom is not accessible. The door is too narrow, the lavatory supply and waste valves are unprotected, the lavatory faucet requires twisting of the wrist, the flush control is on the wrong side of the toilet tank, the toilet seat height is too low, there is insufficient maneuvering clearance around the toilet, the mirror is mounted too high, and there are no grab bars.
   4. Doors throughout the facility have knob hardware instead of lever hardware.

H. Health and Safety Issues
   1. There is insufficient space to fit fire apparatus comfortably within the building. The apparatus is parked very close to the rear walls, very close to the side walls, and very close to other apparatus. These proximities increase the risk that a firefighter will be injured by moving apparatus, whether it is backing into the station or whether it is responding while firefighters are getting onto the adjacent rig. We typically recommend that our clients move all equipment stored along the side of the apparatus bays to another location. In this instance, there is no alternative location without building a significant addition.
   2. The downspout from the training room roof discharges onto the sidewalk near the side entry door. This can create slippery conditions.
   3. The overhead doors do not meet the provisions of UL325 because they do not have a photoeye within 6" of the floor.

I. Functionality Issues
   1. Site wayfinding is difficult because the main door has no signage.
   2. The Chief's office is too small to handle personnel issues with privacy.
   3. The training room is too small and improperly equipped to accommodate modern fire training functions. This may lead to problems complying with NFPA 1720.
   4. There is only one floor drain in the apparatus bays. This creates slip and fall hazards after returning from calls on a rainy day or while cleaning the apparatus.
   5. There is poor separation between the "clean" areas of the station and the areas that are expected to have fireground toxins and diesel particulates suspended in the air. Each of these issues exposes everyone who enters the station to carcinogenic chemicals.
      a. The kitchen opens directly onto the apparatus bay floor, exposing the counters and food preparation equipment to fireground toxins.
      b. The training room opens directly onto the apparatus floor, allowing fireground toxins and diesel particulates to waft into the room and get tracked into the carpet.
      c. The restrooms open off the apparatus bays, forcing people to enter a contaminated space every time they must use the facilities.

d. The HVAC systems are located in the apparatus bays, creating significant cross contamination issues between clean and dirty spaces.

6. The floor drains in the ladder truck bay are centered in the room and not on the overhead door, so the truck rests at a 1 percent slope when parked. This causes long-term damage to the suspension and will cause the ladder truck to need replacement early.
7. There is insufficient space for the maintenance shop. This may lead to problems complying with NFPA 1737.
8. There is insufficient space for storage of hoses, extra turnout gear, hoses, paper products, etc. These items are then stored in the apparatus bay where they are exposed to fireground toxins and diesel particulates.
9. There is no dedicated space for turnout gear lockers that can segregate them from the remainder of the building. This is a violation of NFPA 1937.
10. There is insufficient space for decontamination equipment. This can result in incomplete cleaning or in injuries during the cleaning process.
11. There is no separate cleaning equipment for the apparatus bays and the business areas. This results in the mops being used to clean fireground toxins and diesel particulates from the apparatus bay floor to be used in the remainder of the station, exposing everyone who enters the station to carcinogenic chemicals.
12. There is no space for strength and cardiovascular training in the fire station. A properly equipped physical training room is a key part of compliance with NFPA 1583.
13. There are no functional showers in the facility. To reduce the risk of cancer, firefighters exposed to fireground toxins are expected to shower within one hour of returning from a call to remove the hazardous chemicals from their skin (skin absorption of carcinogens increases 400% for each 5 degree elevation in skin temperature). If showers are not provided at the station, the firefighters are delayed in showering because they are cleaning equipment and restocking the apparatus. In addition, firefighters sit in their personal vehicles and enter their private homes, exposing everyone in their family to carcinogenic compounds until every surface they touch or sit on has been decontaminated.


Figure FS1-B.2.b: Missing splashblock


Figure FS1-B.2.c: Ineffective splashblock

Figure FS1-B.4.b: Cracked concrete apron

Figure FS1-B.5.b: Rust at flagpole

Figure FS1-C.2.a: Cracking at floor slab

Figure FS1-C.4.b.1: Peeling paint by windows

Figure FS1-C.4.b.2: Missing paint at sill

Figure FS1-C.4.b.3: Cracked block at base of wall

Figure FS1-C.4.b.4: Crack at man door into truck bay

Figure FS1-C.4.b.5: Damage to block from water splashing

Figure FS1-C.4.d: Failing sealant at base of wall

Figure FS1-C.5.a: Damage to overhead door

Figure FS1-C.5.c: Peeling paint at bottom of overhead doors

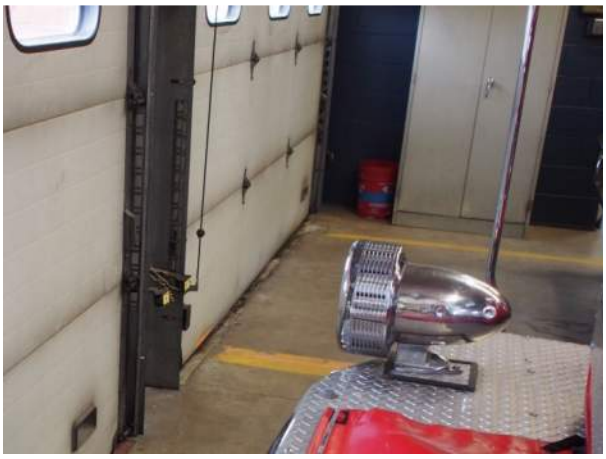

Figure FS1-C.5.f: Steel sill removed

Figure FS1-C.5.g: Scratched paint at man doors

Figure FS1-D.1.a: Worn carpet

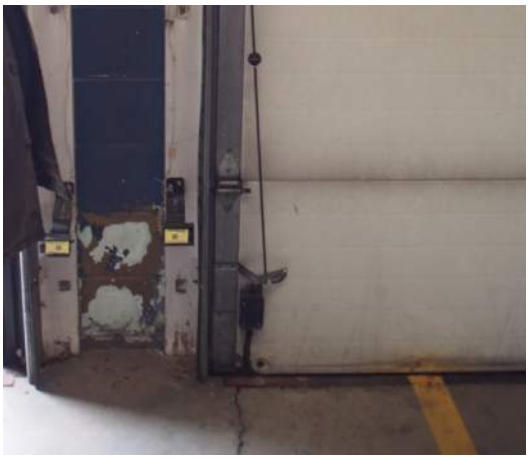

Figure FS1-D.2.a.1: Paint damaged at base of wall

Figure FS1-D.2.a.2: Damaged paint at range

Figure FS1-D.2.a.3: Crack in masonry above side door

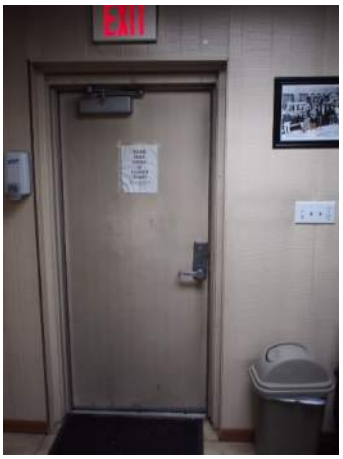

Figure FS1-D.3.a: Peeling paint at doors

Figure FS1-D.3.b: Damage at interior windows

Figure FS1-D.5.b: Cabinets at end of service life

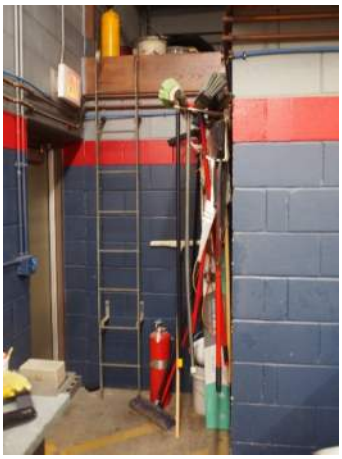

Figure FS1-E.2: Ladder not secure

Figure FS1-G.1: No truncated dome detectible warnings

Figure FS1-G.2: Men's Restroom not accessible

Figure FS1-G.3: Women's Restroom not accessible

Figure FS1-G.4: Door hardware not accessible

Figure FS1-H.1: Insufficient space in apparatus bays

Figure FS1-H.3: Overhead doors do not meet UL325

Figure FS1-I.6: Ladder truck parked at angle

Mechanical Report

J. Building Description
   1. In general, the heating, ventilation and air conditioning (HVAC) system are in fair condition. There are some issues relating to required ventilation for the apparatus bays and the kitchen/ break room. The overall usage of the facility is mainly for housing and maintenance of emergency vehicles.

K. Fire Protection
   1. There is no fire protection system installed.

L. Plumbing
   1. In general, the plumbing systems within the building are in fair to poor condition mainly due to their age and overall service life.
   2. Water Heater

a. A 40-gallon water heater, located in the Women's restroom, serves the entire building. No recirculation pump is installed. The water heater is over 25 years old and beyond its service life (Figure FS1-L.2.a).
b. Life Expectancy: According to the latest ASHRAE Equipment Life Expectancy information, water heaters of this type have a 10-year service life.
   (1) Install Date: 25+ years ago
   (2) Life Expectancy: 10
   (3) Years Remaining: none
c. Efficiency: According to the ASHRAE 90.1 – 2010 Energy Standard for Buildings, the following comparisons can be stated:
   (1) Estimated Efficiency: 80% AFUE
   (2) Regulatory Efficiency: 80% AFUE
d. Typically, water heaters are placed within normally unoccupied areas where they may be serviced. We recommend replacement within two years, with relocation occurring at that time. A new location may be on the mezzanine.

3. Plumbing Fixtures
   a. The plumbing fixtures were in fair condition except as noted below.
   b. The water closet in the Women's restroom has a valve which sticks and does not allow for water to shut off when the tank is full. A new valve is required (Figure FS1-L.3.b).
   c. Life Expectancy: According to the latest industry information, toilets of this type have an estimated 70-year service life.
      (1) Install Date: 30+ years ago
      (2) Life Expectancy: 70
      (3) Years Remaining: 40
   d. The toilet components (i.e. valves, float, handle) have a 7-year service life.

M. HVAC
1. Boiler System
   a. A boiler system is installed within the Women's Restroom and serves the perimeter fin-tube radiation for the building. All supply and return connections appear to be operational with very few leaks. The vintage of the boiler appears to be mid-to-late 1940s. When compared to the values listed in the ASHRAE Life Expectancy Service Values, the unit has far exceeded its useful life. The hydronic piping system is also original to the building (1957) is also beyond its expected service life (Figure FS1-M.1.a).
   b. Life Expectancy: According to the latest ASHRAE Equipment Life Expectancy information, boilers of this type have a 25-year service life.
      (1) Install Date: 1957
      (2) Life Expectancy: 25
      (3) Years Remaining: none
   c. Efficiency: According to the ASHRAE 90.1 – 2010 Energy Standard for Buildings, the following comparisons can be stated:
      (1) Estimated Efficiency: 77% AFUE
      (2) Regulatory Efficiency: 80% AFUE
   d. Typically, boilers and heat producing equipment is placed within normally unoccupied areas where they may be serviced. We recommend replacement within two years with relocation occurring at that time. A new location may be on the mezzanine.
2. Furnace
   a. A natural gas fired furnace is installed in the mezzanine storage area of the apparatus bays. It is a horizontal style unit which is currently operational. The unit serves the rear

of the apparatus bays, office areas and kitchenette. A test and balance report was not available during our observation. There were diffusers which did not receive supply air at their location. The unit appears to be around 10 years old based upon the style and the observed condition (Figure FS1-M.2.a).

b. Life Expectancy: According to the latest ASHRAE Equipment Life Expectancy information, furnace units of this type have an estimated 18-year service life.
   (1) Install Date: 2007
   (2) Life Expectancy: 18
   (3) Years Remaining: 8

c. Efficiency: According to the ASHRAE 90.1 – 2010 Energy Standard for Buildings, the following comparisons can be stated:
   (1) Estimated Efficiency: 90% AFUE
   (2) Regulatory Efficiency: 80% AFUE

3. Kitchen Area
   a. The kitchen was not receiving much air movement. Transfer grilles were installed within the serving windows to allow migration between the apparatus bay and the kitchenette. This is not code compliant separation between these two spaces (Figure FS1-M.3.a).
   b. Typically, kitchen areas are somewhat isolated from vehicle service areas and other areas where objectional odors are able to traverse into the space. Also, there were no ventilation hoods or other make-up air sources for the stove, griddle, or warmers. This equipment has the potential to produce a large amount of grease vapors and can be hazardous to the space and its occupants (Figure FS1-M.3.b).
   c. We recommend investigating a new location for the kitchen to eliminate the issue of air contamination. A make-up air and exhaust hood ventilation system shall be considered in order to provide a code-compliant environment for the kitchen/ break room areas.
4. Exhaust
   a. The Men's Restroom is equipped with an exhaust fan. The fan is operational, however, the amount of air exhausted is limited. The exhaust system should have a test and balance report completed. The age of the system appears to be more than 30 years old (Figure FS1-M.4.a).
   b. Life Expectancy: According to the latest ASHRAE Equipment Life Expectancy information, exhaust fans of this type have an estimated 25-year service life.
      (1) Install Date: 30+ years ago
      (2) Life Expectancy: 25
      (3) Years Remaining: none
5. Unit Heater
   a. A natural gas fired unit heater is installed in the apparatus bay. The unit was installed within the last two years (Figures FS1-M.5.a.1 and FS1-M.5.a.2).
   b. Life Expectancy: According to the latest ASHRAE Equipment Life Expectancy information, gas fired unit heaters have an estimated 13-year service life.
      (1) Install Date: 2016
      (2) Life Expectancy: 13
      (3) Years Remaining: 12
   c. Efficiency: According to the ASHRAE 90.1 – 2010 Energy Standard for Buildings, the following comparisons can be stated:
      (1) Estimated Efficiency: 80% AFUE
      (2) Regulatory Efficiency: 80% AFUE

6. Apparatus Bay Ventilation
    a. The apparatus bays are heated via a natural gas unit heater (as noted). However, there was no ventilation system present. Typically, apparatus bays require an area-based ventilation system which also includes a gas detection system which engages an exhaust system to draw in fresh air upon detection of Carbon Monoxide (CO) or Nitrogen Dioxide (NO2). This a current code requirement and important for the long-term health and safety of the firefighters. We recommend providing a make-up air system which interlocks with an exhaust system and gas detection system to remove contaminated air as required.

N. Energy Efficiency
    1. The gas and electric meter data provided by the utility was used to determine the Energy Usage Index (EUI) for the building. According to the utility data, the current EUI is 127.5 kBtu/ft^2, 17.4% better than the median building of this type. A make-up air system is not present for this building. Code requires the space be ventilated and be provided with a gas detection system.


Figure FS1-L.2.a: Water heater in Women's Restroom


Figure FS1-L.3.b: Women's toilet valve sticks


Figure FS1-M.1.a: Boiler in Men's Restroom


Figure FS1-M.2.a: Furnace suspended from roof structure

Figure FS1-M.3.a: Vents between kitchen and apparatus bay

Figure FS1-M.3.b: No kitchen ventilation hoods

Figure FS1-M.4.a: Exhaust in Men's Restroom

Figure FS1-M.5.a.1: Unit heater in apparatus bays

Figure FS1-M.5.a.2: Unit heater in apparatus bays

Electrical Report

O. Building Description

The electrical systems include the service, a single panel for distribution, lighting systems, and communication systems.

P. Power Distribution

1. The electrical service is a pole mounted transformer that feeds a 120/240V, single phase, 200 Amp panel located in the bay. The 200 Amp Wadsworth Electric panel was installed at the time of construction in 1957 (Figure FS1-O.1). The panel has a 200 Amp main fuse and service disconnect, and feeds (1) 100 A Wadsworth sub panel located in the meeting room and (1) Square D sub panel to feed the new addition.
2. Capacity
    a. The electrical service for the building is rated at 48 kVA. With a building area of approximately 3800 square feet, the load capacity for the building is 12.63 VA/SF. This capacity is acceptable for the expected load of a building of this type and use. There appeared to be adequate cord/reel receptacle coverage to provide power for the fire trucks.
    b. The owner mentioned that the compressor and dryer could not be run at the same time without the circuit breaker tripping (Figure FS1-O.2.b). It is recommended dedicated circuits with appropriately sized breakers be run to the compressor and the dryer in the near term (0-5 years).
3. The electrical panels and all circuit breakers appear to be in fair working condition. Panels are well past their expected service lives, and Wadsworth Electric is no longer in business, making the purchase of new breakers for the panels difficult. It is recommended that the two Wadsworth electrical panels that were installed during original construction be replaced in the near term (0-5 years).

Q. Emergency Power Distribution

1. There is no emergency generator. As this is an essential facility, we recommend that an emergency generator be installed.
2. Exit sign/remote head battery backup combo units are used for emergency egress lighting. These appeared to be in working order, but should continue to be tested regularly.

R. Lighting

1. Exterior
    a. Lighting for the exterior is composed of High Intensity Discharge (HID) wall pack fixtures and an HID flood light for flag pole lighting (Figure FS1-Q.1.a).
    b. There was no apparent damage to any of the fixtures, and the lighting control was working as expected.
    c. Efficiency could be improved by replacing HID fixtures with LED.
2. Interior
    a. General lighting for the interior spaces is composed of recessed fluorescent troffers and incandescent adjustable down lights in the meeting room and surface mounted fluorescent strip fixtures in the bay. All interior lighting control consists of line voltage toggle switches.
    b. Efficiency of the interior lighting system could be improved by retrofitting all fluorescent and incandescent fixtures with LED lamps and adding occupancy sensors to appropriate spaces.

S. Systems, Safety, and Security
   1. Telephone/Data
      a. Telephone service enters the building near the electrical panel in the bay where it is terminated. The owner mentioned issues with signal outages. It is recommended that the signal infrastructure be upgraded and coordinated with signal provider.
   2. Fire alarm
      a. There was no fire alarm system (horns, strobes, etc.) observed in the building.


Figure FS1-O.1: Main service panel

Figure FS1-O.2.b: Circuits have insufficient capacity


Figure FS1-Q.1.a: Exterior lighting

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