Building and Site Audit/Assessment

of the

City of Fridley
Public Works Facility
400 71st Avenue NE
Fridley, MN  55432

December 6, 2013
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1. Purpose of this Study

The purpose of this study is to review and analyze the existing conditions of the City of Fridley Public Works Campus and provide base Architectural, Mechanical and Electrical Engineering assessment of the existing spaces. The review will look at the site and facilities, both architecturally and from an engineering standpoint, in terms of accessibility, building codes, condition of the envelope, building systems, energy use & efficiency, and life safety. In addition a basic overall code review of the facility will be included. Representatives from HCM Architects and Emanuelson Podas (EP) visited the building, reviewed state and local building codes, and met with City of Fridley Staff representatives to prepare this assessment.

This assessment of the existing facility, along with a similar study of the Municipal Center will be part of the “basis for design” for a City Facility master-plan.
2. Conditions of the Existing Facility

Site

The facility is located on City Property in Anoka County, southeast of the intersection of 73rd Street NE and University Ave. NE. The site has one working entrance at the northeast corner and shares property lines with 71st Street NE, the Fire Department Training Facility and Anoka County property at Locke Park. There is one main building on the site, housing reception, offices, break & locker spaces and vehicle maintenance. There are numerous smaller storage and cold storage buildings on the site, as well as a salt/sand shelter and the Police Department Impound area. The site is well organized and well kept, but is lacking in covered storage and racking, which would promote even more organization and improve safety.

Items noted regarding areas of concern for the Site are:

- The facility is served by one working gate at the NE corner of the site. The gate has an overhead cross bar that is low enough to have been hit by vehicles.
- The second curb cut into the site has a gate that is not working and is overgrown by vines.
- Access to the salt / sand storage area shares access with the Police Department impound area.
- There is substantial outdoor storage of vehicles and equipment (photos 57, 58).
- Outdoor storage is tidy, but lacking racking and proper storage (photos 54, 59, 64, 65).
- There is little racking available for outdoor storage, making access difficult (photo 93).
- The site is too small for temporary storage of storm damaged trees, etc. Adjacent land is owned by the City but has a direct visual impact on Locke Park.
- The fuel pumps do not have a canopy (photo 68).
- Storage bins of materials are front and center of the facility.
- Personnel vehicles and City vehicles intermingle in the parking lot.
Building

The main facility consists of an original structure that has had at least two additions. The buildings are concrete masonry unit construction with precast concrete “T” structure over the shop space and metal bar joists with metal deck over the newer office addition. There are numerous out buildings with a variety of wood and metal framing.

Exterior Items to be noted regarding areas of concern for the building are:

Main Building:
- Exterior caulk joints have reached the end of their serviceable life and are showing signs of cracking and loss of elasticity (photos 70, 83, 88).
- Nearly all of the concrete slabs and stoops have settled or shifted, creating trip hazards, gaps and cracks to form (photos 87, 90).
- Compressible filler has deteriorated or been removed along slab to wall conditions of the newer portion of the building, allowing moisture to enter along the foundation wall (photos 79, 80).
- The plaster stucco skim coating over CMU has cracking on all surfaces of the building (photos 70, 71, 81, 128).
- Settling has caused cracked mortar and in some cases significant joint opening (photos 51, 82, 118).
- The clerestory entrance lobby glazing and framing system has had significant work done on it. The work has damaged the flashing and seals, screws are missing and bent metal has been used to hold some pieces in place (photos 24, 25, 26, 98, 99, 100).
- Overflow rain leaders from roof daylight without splash blocks and have stained CMU (photo 76).
- Exterior electrical is surface mounted and is open to the elements where it enters paving (photo 77).
- At grade planting has been pushed back at full height glazing, but sealant joint to foundation is a potential area of moisture entry into the building (photo 78).
- Scuppers drain directly into concrete paving joints, which have eroded open, causing cracking (photos 84, 85, 92).
- Masonry is generally in good condition, but patching and repair are needed around building (photos 76, 86, 89, 94, 125, 129).
- Overhead door thresholds at shop and storage spaces have significant deterioration (photos 114, 116, 117).

Storage Buildings:
- Some of the storage facilities are very old and nearing the end of their serviceable life (photo 52).
- Most have dirt floors (photos 53, 55, 56).
- There is a lack of adequate storage racking, contributing to interior clutter and outdoor storage (photo 53).
- There are multiple small, inadequate structures used to store required materials
Buildings have damage to exterior envelope and doors (photos 60, 62).
Most of the buildings are too small for same use and movement (photo 61).
The salt / sand storage is relatively new and in good condition.
Pavement and joints are in need of maintenance, repair and replacement (photo 119).
Buildings are in need of basic exterior painting and maintenance (photo 120).
Flammable storage cabinets are one site, but in some cases damaged beyond functional use (photo 121).

Roof and Associated Components:
Main Building Roof:
The oldest portion of the building has an aging roof, with popped fasteners, areas of ponding, stretched membrane, numerous patches and missing coping fasteners (photos 9, 10, 11, 12, 13, 14, 18, 19, 22, 23, 95, 96).

Storage Buildings Roofs:
Metal roofs seem to be functional.
Asphalt shingle roofs are functional, but nearing replacement in some cases.

Interior building items to be noted regarding areas of concern include for the building are:

General:
- Doors throughout the building are not accessible per the American with Disabilities Act and the Minnesota State Accessibility Code, items which need to be addressed include:
  - Lack of accessible hardware at some locations (photo 106 as an example).
- Restrooms throughout the building are not accessible per the American with Disabilities Act and the Minnesota State Accessibility Code, items which need to be addressed include:
  - Clearances required at accessible water closets (photo 27 as example).
  - Grab bars required at accessible water closets (photos 5 & 27 as examples).
  - Insulation of water and drain piping at sinks (photo 7).
  - Spout heights at drinking fountains (photo 30).
- Stairs, handrails and guardrails:
  - Stairs lack proper guardrails and toe kicks (photos 29, 102, 103).
  - Handrails lack proper extension at top and bottom (photos 101, 104, 109, 110).

Reception & Office Area:
- Monitor extends beyond code maximum of 4” from wall at head level (photo 2).
- Inadequate storage shelving and organization space (photo 3).
- Break room is too small for staff size (photo 4).
- Too few lockers to accommodate staff size (photo 6).
• Main hallway floor finish was removed after water damage (see exterior notes regarding photos 8 & 78).
• Lack of storage requires use of lockers for sign shop materials (photo 28).
• Storage under stairs (photo 105).
• Likely asbestos containing materials (photo 107).

Vehicle Maintenance areas:
• “Large” truck bay is significantly undersized for modern maintenance vehicle sizes, creating tight working space and unsafe conditions (photos 32, 33, 34, 36).
• “Large” truck bay is not tall enough to facilitate maintenance of large vehicles (photo 35).
• Inadequate space for safe storage of fluids (photo 37).
• Storage mezzanine lacks compliant toe kicks (photo 38).
• Storage room is undersized for maintenance department’s needs (photos 38, 39).
• Inadequate space for safe storage of batteries (photos 93, 107).
• Tire storage is scattered on campus to any location where space is available (photo 111).
• Fluid dispensing system is basic, with only minimal service available (photo 41).
• Pressure wash and compressed air system is very old (photos 41, 112).
• Inadequate overhead clearance (photos 42, 45, 113).
• Inadequate lighting (photo 42).
• Lack of safe circulation space (photos 43, 44, 115).

Vehicle Storage areas:
• Lack of safe circulation space (photo 46).
• Inadequate equipment service access (rolling stair – photo 47).

Parks Department Shop:
• Shop, storage and muster / break spaces are intermingled (photos 48, 49, 50).
Preliminary Building Code Review

The following is the building code review for the County of Anoka, Highway Department Building located in Andover, MN. While the building did meet code at the time of construction, there are many items which need to be addressed if the building is remodeled or expanded.

A. Location
City of Fridley
Municipal Center
400 71st Avenue NE
Fridley, MN  55432

B. Applicable Codes
- International Building Code (IBC) - 2006 Edition
- Minnesota State Accessibility Rules (Chap. 1341) - 2007
- Minnesota State Special Fire Protection Systems (Chap. 1306) - 2007
- International Mechanical Code – 2006 Edition
- Minnesota Energy Code – 2007 MSBC (Chap. 1323)

C. Existing Site/Building Conditions

<table>
<thead>
<tr>
<th>Square Footage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Level</td>
<td>17,586 G.S.F.</td>
</tr>
<tr>
<td>Upper Level</td>
<td>850 G.S.F.</td>
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</tbody>
</table>

Total Existing Building Area 18,436 G.S.F.

D. Occupancy Classifications  (IBC Ch. 3)
- B Office Areas
  - S-1 Moderate-hazard Storage (automotive repair)
  - S-2 Low-hazard Storage (enclosed parking)

E. Building Classification  (IBC Table 601)
Type of Construction (Existing) Type II-B

F. Occupancy Separation  (IBC Table 508.3.3)
- S-1 to B = 0 hour
- S-2 to S-1 = 1 hour

G. Building Limitations  (IBC Ch. 5 and Table 503)
- Allowable Floor Area (S-1 used per 506.4.1)
  - S-1 Occupancy/Type II-B Construction – 17,500 square feet per floor, maximum 3 stories


Allowable Area Increases (506.3)

Second level is a mezzanine, fitting the definition of Exception 2 in 505.4, thereby being a 1 story building and allowing a 300 % increase per 506.3.

Building is fully sprinklered. 300% Increase
52,500 sq. ft. allowable area.

The building has 60’ side yards on all but one side. That side has 40’ side yard. Exception to 506.2.1 allows for increase of 2.

105,000 sq. ft. maximum building size per floor.

Exterior Walls
- 2 hour construction, if less than 5 feet to property line. 1 hour construction, if less than 10 feet to property line, 0 hour if greater than 10’ to the property line. No existing walls are less than 10'-0" from property line.

Openings
- Protected less than 10’ - not permitted less than 5’ to property line. No existing openings are less than 10'-0" from the property line.

H. Construction Requirements (IBC Ch. 6: Table 601 & Table 602)

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>Construction Type</td>
<td>Type II-B</td>
</tr>
<tr>
<td>Structural Frame</td>
<td>0 hours (may be 1 hour where supporting the roof only)</td>
</tr>
<tr>
<td>Bearing Walls (Exterior)</td>
<td>0 hour</td>
</tr>
<tr>
<td>Bearing Walls (Interior)</td>
<td>0 hours (may be 1 hour where supporting the roof only)</td>
</tr>
<tr>
<td>Partitions (Exterior)</td>
<td>0 hour if under 30’ of separation distance</td>
</tr>
<tr>
<td>Partitions (Interior)</td>
<td>0 hour</td>
</tr>
<tr>
<td>Floors</td>
<td>0 hours</td>
</tr>
<tr>
<td>Roof Construction</td>
<td>0 hour</td>
</tr>
</tbody>
</table>

I. Exit Requirements (IBC Ch. 10 & Tables 1015.1, 1016.1, 1017.1 & 1019.1)

B and A Occupancies: 2 exits required minimum, if over 49 occupants.
S Occupancy: 2 exits required minimum, if over 29 occupants.

Exit travel distance
- B 300’ with sprinkler system
- S-1 250’ with sprinkler system
- S-2 400’ with sprinkler system

Common path of egress travel – 75’ in A occupancy without fixed seats (break room). 100’ in B and S occupancies that are fully sprinklered.
Occupancy Load

<table>
<thead>
<tr>
<th>Total Main Level Occupant Load</th>
<th>202 Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office (B)</td>
<td>2,690 G.S.F. / 100 SF 26</td>
</tr>
<tr>
<td>Conf. &amp; Break Room</td>
<td>1,190 G.S.F. / 15 SF 78</td>
</tr>
<tr>
<td>Vehicle Maintenance (S-1)</td>
<td>7,015 G.S.F. / 100 SF 70</td>
</tr>
<tr>
<td>Parking / Storage (S-2)</td>
<td>5,520 G.S.F. / 200 SF 28</td>
</tr>
</tbody>
</table>

Total Upper Level Occupant Load (Mezzanine) | 9 Occupants |
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<tr>
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<th></th>
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<tbody>
<tr>
<td>Office Area (B)</td>
<td>445 G.S.F. / 100 SF 4</td>
</tr>
<tr>
<td>Locker Area</td>
<td>255 G.S.F / 50 SF 5</td>
</tr>
</tbody>
</table>

Required Exit Stair Widths (Table 1005.1)
Total Stair width required = 9 Occupants x .2 = 1.8 inches

44 inches provided from Second Level.

Required Exit Widths (Table 1005.1)
Total Exit width required = 211 Occupants x .15 = 31.7 inches

128 inches provided.

J. Accessibility

Existing spaces are not fully accessible. All new and altered spaces will need to be fully accessible (State of Minnesota Building Code - Minnesota Accessibility Code, Chapter 1341).

K. Automatic Fire Extinguishing System

Existing Building is fully sprinklered.

L. Plumbing Fixture Requirements (Chap. 29)

B Occupancy = 30 Occupants
15 men and 15 women
Toilet Fixtures = 1 per 25 for the first 50 and 1 per 50 for remainder exceeding 50
1 Men’s fixtures and 1 Women’s fixtures
Lavatories = 1 per 40 for the first 80 and 1 per 80 for remainder exceeding 80
1 Men’s lavatories and 1 Women’s lavatories

A-3 Occupancy = 78 Occupants
39 men and 39 women
Toilet Fixtures = 1 per 125 men and 1 per 65 women
1 Men’s fixture and 1 Women’s fixtures
Lavatories = 1 per 200
1 Men’s lavatories and 1 Women’s lavatories

S-1 & S-2 Occupancy = 98 Occupants
49 men and 49 women
Toilet Fixtures = 1 per 100
1 Men’s fixtures and 1 Women’s fixtures
Lavatories = 1 per 100
1 Men’s lavatories and 1 Women’s lavatories

Total Required
3 Men’s Toilets and 3 Men’s Lavatories
3 Women’s Toilets and 3 Women’s Lavatories
3. **Recommendations**

The existing building was the central, original shop space. Additions extending in two directions to form an “L” were added over time. The office addition (constructed in 2003) has masonry walls with bar joists and metal decking. The shop spaces have masonry walls with precast concrete double “T” roof structure. In general the building is in good condition, but showing its age and in need of remedial maintenance.

In addition there are space deficiencies that create unsafe working environments in the shop space and create a lack of safe egress paths from all of the shop and vehicle storage spaces. Also, the shop and vehicle storage spaces do not have carbon monoxide detection and proper ventilation.

**Key Issues:**

**Site:**

**Entrance & circulation.** The working gate at the NE corner has a cross bar that has been hit by larger vehicles in the past. This gate system should be replaced. The NW gate is overgrown and unused. This entrance should be cleared and re-opened, which could improve circulation on site. If this entrance were used it would be visible from the front desk, providing better security on site. Site circulation should be studied to provide more efficient flow.

**The Police Department’s forfeited vehicle lot is only accessible through the same entrance as the salt/sand building access.** These should be separated and secured.

**Site storage.** There is a lack of organized, covered storage with racking to keep materials off the ground. This should be provided to prevent damage, increase efficiency and extend the life of materials, plows and equipment.

**Site Storage.** Organic materials are piled in the back of the site and overflow from storm damage has to be kept outside the fenced boundary. A possible land swap with Anoka County and expansion of secured / visually screened fenced yard space should be explored with the County.

**Vehicle parking.** Site circulation and vehicle parking that segregate personal vehicles from City vehicles should be explored to enhance safety and security.

**Fuel island.** Fueling island should be upgraded, including a canopy with lighting.
Exterior Envelope:

Cement parging over CMU masonry. The exterior has areas of cement parging on the CMU walls. All of these areas are cracked and deteriorated. If the parging is to remain and remain exposed, it should receive a fresh skim coat surface.

Caulking and sealant. Most joints are beyond their serviceable life and should be cut out and re-caulked.

Frames and Glazing. Exterior frames over the main entrance lobby at the light monitor should be evaluated, replaced and/or repaired and joints re-caulked as necessary. Much of the aluminum frame system and flashing have been damaged by poor repairs.

Roofing. The older portion of roofing on the shop and garage spaces is beyond its serviceable life. There are numerous patches, over stretched membrane and areas of ponding. It should be replaced. Scuppers, coping and fasteners should be reviewed over the entire roof and repaired / replaced at areas where missing or damaged.

Masonry. Exterior masonry should be reviewed and repaired at holes, cracks, damaged mortar, etc.

Open Face Downspouts. Splash blocks should be installed below open faced downspouts to help prevent further deterioration at concrete joints and slabs along the maintenance, shop and parking bays.

Overhead door thresholds. Thresholds have rusted and deteriorated. In addition, slabs have settled. These should be repaired / replaced / re-built.

Exit door thresholds. Stoops have settled around the building, creating trip hazards and making the entry / exit doors non-compliant from an accessibility standpoint. Concrete slabs at stoops should be replaced.

Painted finishes. Exterior painted finishes are in need of re-painting, including doors, frames, bollards, etc.

Lintels. All exposed steel lintels should be cleaned, rust removed and repainted. Lintels covered by damaged or partially missing mortar or caulking should be have their joints cleaned out and be re-caulked.
Interior (office wing):

Accessibility:
The facility lacks accessible route components. Multiple areas of non-compliant door hardware were noted. An accessible route into building should be prioritized per the State of Minnesota Building Code (Chap. 1341).

The facility does not have any accessible toilet fixtures that meet current accessibility standards. The first toilet fixture in all remodeled or new toilet rooms needs to be an accessible fixture. The facility has the required minimum number of plumbing fixtures, as required by code; however, none meet current accessibility standards. The facilities toilet rooms are close to compliance with current code and both the Men’s and Women’s toilet rooms could be made accessible by adding grab bars, insulating pipes and making a few other small modifications. All new toilet rooms and any toilet rooms altered as part of renovation work will need to be fully accessible per State of Minnesota Building Code, Chapter 1341.

Drinking fountain is not accessible. An accessible model should be installed as a replacement.

Stairs do not have compliant handrails. Handrails meeting current accessibility standards should be installed throughout.

The facility does not have adequate, safe locker areas for each sex. Addressing this issue will not only provide a safer work environment, but also allow for more efficient flow for staff to start and end shifts.

Break Room. The existing space is not large enough for staff needs. The countertop space appears adequate, but additional microwaves, refrigerator space and seating is needed to accommodate current staffing numbers.

Storage under Stair to Mezzanine. This stair is a required exit from the Mezzanine Level. The area under the stair is required to be enclosed with the wall so that it is not used as storage space. This is also required by accessibility code to protect individuals with vision impairments.

Safe storage. Current storage is stacked bankers boxes, with no shelving provided to stabilize.

Maintenance Shop and Storage:
No CO detectors and coordinated ventilation system. These systems should be added.

Low light levels. Lighting should be updated and foot candle levels increased.
Shop space for large vehicles is not adequate. Unsafe work environments that lack proper clearance, safe working space and clear heights that allow safe maintenance / repairs should be rectified. At least one large vehicle repair bay is needed.

Hazardous materials storage. Shop materials storage is undersized and storage of hazardous materials storage is not adequately separated from general storage. In addition lack of space has reduced circulation clearances below required safe minimum widths. A hazardous storage room should be constructed. This will likely require the addition of regular shop storage space to accommodate materials moved out of the existing room.

Compressed air and hot water systems. These systems are aging and are not safely separated from staff.

Shop lighting and ventilation are not adequate. Natural and artificial lighting and natural and artificial ventilation contribute to a safer, healthier work place. The existing facilities will be evaluated for opportunities to bring in natural light and all existing ventilation infrastructure and equipment have been evaluated in the following Mechanical and Electrical assessments.

No vehicle wash bay. A dedicated vehicle wash bay would improve staff safety and increase the life of equipment. This addition should be studied in the context of site flow.

Wood framed storage and mezzanines. Wood framed storage, mechanical spaces and mezzanine spaces should be removed and replaced with steel systems. This would restore the building's Construction Type to a Type II-B, allowing for greater flexibility related to expansion and maximum allowable area. These spaces should be accessed by compliant stairs.

Parks Department Shop. The Parks Department shop space is shared with other Parks functions, including muster and break room space. These staff areas should be provided separately from the shop / storage / maintenance environment.

Out Buildings. Although the various Out Buildings provide covered storage they all are showing age and lack of maintenance. They have insufficient storage and in some cases have insufficient clearance for circulation and exiting. Several have dirt floors and one is simply a pole barn without doors on a portion of the south side. Several sheds and lean-tos exist on site as well. The west central building is in reasonable condition and with some basic maintenance and concrete floors could be serviceable into the future.
4. Mechanical & Electrical Systems Reports
General Mechanical Systems Assessment and Comments

On October 11, 2013, representatives of Hagen, Christenson & McIlwain Architects and Emanuelson-Podas, Inc. met with a City of Fridley representative to perform an onsite review of the facility architectural, mechanical and electrical systems of the Fridley Public Works Facilities.

The following subject headings cover the mechanical systems under review:

- Site Utilities
- Plumbing
- Life Safety - Fire Protection
- Space Heating, Ventilation and Air Conditioning
- Recommendations

This report describes the present condition of the mechanical systems serving the facility and outlines recommendations for future improvements. The Appendix includes mechanical photo data sheets of the existing installation indicating some of the assessments findings.
Site Utilities

Natural gas is supplied to the facility and serves the water heater, rooftop units and unit heaters in the bay areas.

A 6" water service crosses the site east to west and was rerouted around the most recent north addition. The facility is towards the end of the main. A fire hydrant on the east side of the building is used to fill city trucks. When the hydrant is opened the pressure in the system fluctuates causing the valves in the fire and water services in the building to rattle.

A 12" storm sewer serves the north addition and extends to the east side of the property where it heads south.

A 4" sanitary service serves the original 1967 building and extends from the east elevation to a manhole where a 6" sanitary sewer extends to the southeast. This 6" sanitary sewer connects to a north-south 60" sanitary sewer near the eastern edge of the property. A 6" branch line was extended along the south of the building to serve the 1971 bay area addition. An additional 4" branch line was extended the manhole near the original building service along the east side of the building north to serve the 1978 and 2002 additions.

There are two 6000 gallon underground fuel tanks that supply gasoline and diesel fuel to two pumping stations located on the east side of the building.

Plumbing Systems

Storm Water Systems

Roof drainage is accomplished through perimeter scuppers on all but the latest 2002 north addition. The 2002 north addition roof drainage utilizes two roof drains internally piped below grade to the storm sewer on the east of the building. Overflow drainage of this portion of the roof is through roof drains piped through an internal system that discharge above grade.

Sanitary Sewer System

The 1971 bay area addition on the west has trench drains located under the maintenance bays. The drains are piped to a flammable waste trap in the southeast corner of the bay area where it then exits the building and connects to the site sanitary sewer system.

When the toilets are flushed in the women's room of the 2002 addition, the water swirls and splashes before it goes down the drain. The venting system may be obstructed resulting in poor drainage.

Domestic Water Piping System

The domestic water piping system in the older portions of the building utilize galvanized steel pipe. The most recent additions and areas that have been renovated use copper pipe. The piping is in good condition with no problems of leaks reported.
Domestic Hot Water

Domestic hot water is produced by a 100 gallon, 199,900 BTUH 80% efficiency gas-fired water heater manufactured by Ruud. The water heater was installed in 2002 and appears to be in good operating condition. However, minerals that have dissolved into the water source are be deposited on the inside of the tank over time. The result is the water heater slowly loses capacity as well as having to use more energy to heat the same volume of water as it ages. A typical service life for a gas-fire water heater is 10 years.

A fractional horsepower bronze circulating pump circulates the domestic hot water to the fixtures through the domestic hot water main. The pump is controlled by an aquastat to disable power to the pump when the domestic hot water system has reached design temperature.

Plumbing Fixtures

Public restrooms have plastic laminate counters with drop in porcelain sinks with single lever faucets. Water and waste piping at the lavatories are exposed below the countertops. The water pipes are protected as required by the Americans with Disabilities Act, however the drain pipes are not. Urinals and wall hung water closets utilize sensor type flush valves.

An upper level restroom has a plastic laminate counter with drop in porcelain sink with single lever faucet. Water and waste piping at the lavatories are exposed below the countertop. The water and drain pipes are protected as required by the Americans with Disabilities Act. A floor set water closet utilize a manual flush valve. There is also a floor drain located adjacent to the water closet.

A self contained, portable emergency eyewash station is located on the west end of the bay areas.

Life Safety - Fire Protection

A fire service was added to the building after the 2002 North addition. The sprinkler system extends through the office areas on the north and to all of the bay areas on the south, fully protecting the entire building.

Space Heating, Ventilation and Air Conditioning

General heating in the 1967 building is through gas-fired unit heaters located near the roof deck. The units heater have a combustion efficiency of 80%. The service bays on the east half of the 1967 building are heated and ventilated with a gas-fired makeup air unit and exhaust fan that was installed in 1998. The makeup air unit is direct fire and has a combustion efficiency of 80%. There are CO/NO2 sensors located in the main and east service bays that energized the makeup air unit and exhaust fan upon gas detection.

There is of a tailpipe exhaust system in the main service bay with exhaust duct drops near the floor and a snorkel intake on a flexible duct overhead. The tailpipe exhaust system is rarely used as the overhead
snorkel is difficult to maneuver. Often is a vehicle needs to run in the building a hose is located over the exhaust and extended out through the garage door.

General heating in the 1971 bay area addition on the west is through gas-fired unit heaters located near the roof deck. The units heater have a combustion efficiency of 80%. ASHRAE service life estimate for gas-fired heaters is 13 years. Throughout the 1971 bay area addition there are exhaust fans near the center of the bays. However, these fans are only to collect warm air near the ceiling in the center of the building and discharge it near the exterior overhead doors. No mechanical exhaust system discharges the air to the outside of the building. The overhead ductwork has been damaged from vehicles brought in for service that are too big or from the vehicle being raised in the building.

Ceiling fans are located throughout all of the bay areas.

The two story 1978 portion of the building with the locker rooms on the lower level and an office, sign shop and toilet room on the upper level are served with a gas-fired power vented furnace installed in 2002.

The 2002 North addition is served from three rooftop air-condition units. A 6-ton unit serves the Lunch/Training Room. A 4-ton unit serves the offices and conference on the west exposure. A 5-ton unit serves the north reception and office areas. The units are in fairly good condition but some signs of corrosion are evident on the heater exhaust. Four power roof ventilators remove exhaust air from the women's locker room, men's locker room, restroom and upper level rest room. The fans are in good working order and condition.

A computer room is served from a 1-ton, ceiling mounted cassette type mini-split system. The condensing unit is located on the roof above the computer room. The fan assembly of the condensing unit is showing signs of corrosion. ASHRAE service life estimate for computer room air conditioning units is 20 years.

The mechanical systems have done a poor job of providing comfort to the occupants especially in the north wing. The locker rooms are usually too hot in the winter and the adjacent corridor is too cold. Often the locker door is left open to allow the heat to migrate to the corridor. The west offices and north reception areas are usually cold in the winter. Summer time comfort is generally better throughout the space.

**Welding Area**

There is a welding bench in the main service bay of the 1967 building. An abandoned exhaust duct is stubbed down from the structure to close to the welding bench. There is no operational exhaust system used in the welding area.

**Compressed Air System**
The air compressor system located in the original building was installed in 1968 and has been operational for 46 years. The storage tank is inspected annually. There is no backup or redundant equipment installed should the air compressor fail.
Recommendations

Review of the rooftop unit heater operation for design heating performance. Review HVAC zoning and thermostat placement and potential to for the addition of electric duct heating coils to supplement the heating system. Review of adding a cabinet unit heater or air curtain near the exterior door from the corridor outside the locker rooms.

An exhaust system and hood should be installed in the welding area to remove harmful products from the welding process from the building.
General Electrical Systems Assessment and Comments

On October 11, 2013, representatives of Hagen, Christenson & McIlwain Architects and Emanuelson-Podas, Inc. met with a City of Fridley representative to perform an onsite review of the facility architectural, mechanical and electrical systems of the Fridley Public Works Facilities.

The following subject headings cover the electrical systems under review:

- Electric Utility
- Power Distribution
- General Power
- Lighting
- Life Safety Egress Lighting
- Life Safety Fire Alarm
- Low Voltage Systems
- Recommendations

This report describes the present condition of the electrical systems serving the facility and outlines recommendations for future improvements. The Appendix includes electrical photo data sheets of the existing installation indicating some of the assessments findings.
**Public Works Facility**

**Electric Utility**

The electric utility serving the Public Works Facility consists of a pole mounted transformer bank located on the east side of the Public Works Building. The building is served at 208Y/120 volt 3 phase 4 wire. The Utility metering is located within the main electrical/mechanical room. The pole mounted transformer bank is owned and maintained by XCEL Energy.

Electric Service consists of 800 amp 208Y/120 volt 3 phase 4 wire switchgear. Electric Utility usage information was obtained and the maximum demand for the facility is 41 kW. This occurred in February and April of 2013.

**Power Distribution**

**Main Switchgear**

The Public Works main switchgear consists of an incoming lug and metering section with an 800 amp main fused switch. The main fused switch serves an 800 amp automatic transfer switch which in turn then serves an 800 amp fusible switch distribution section. The main switchgear was replaced in 2002 and is in good condition.

**Standby Power Generation**

There is a portable generator adjacent to the pole mounted utility transformers being used as a permanent generator for the facility. The generator is a 1990’s vintage 120/208 volt 3 phase 4 wire 60 kW diesel model Manufactured by Onan/Cummins. This unit serves an 800 amp fusible automatic transfer switch which in turn serves an 800 amp distribution section. This section then serves various panelboards, distribution panels and miscellaneous large loads. The existing generator is actually a portable generator used as a permanent one. The portable generator is in fair condition.

**Electrical Distribution Equipment**

The facility was equipped with a new electrical service during a 2002 addition. This service upgrade also added an 800 amp transfer switch and distribution equipment. This distribution equipment then backfeeds the original 400 amp main distribution equipment. The distribution panels are the fused switch type. The distribution panels serve additional branch circuit panels within the same room and also in other parts of the building. There are (2) two panels located in the Parks Maintenance area, (1) one panel in the cold storage building and (2) two small panels located in the pole barn building. The equipment installed in 2002 is in good condition. The remaining older equipment in the mechanical room is in fair condition. The electrical panels in the Parks Maintenance area are in fair condition and the (2) two small panels in the pole barn building are in poor condition.
**General Power**

Electrical panels are located throughout the facility. These panels serve general purpose receptacles throughout the associated areas. It appears most areas have adequate amounts of receptacles. These panels also serve small mechanical equipment loads, small motor loads and general office equipment loads. Panels located in the service and Vehicle Storage areas also serve repair and service equipment and receptacles located in those areas. Numerous surface mounted devices and raceways appear to have been added over the years in the original building and 1971 bay addition to satisfy additional equipment, receptacle and usage needs.

Fuel island power, fuel tank monitoring system and the Gas Boy fuel management systems are all in good condition. The pole mounted HID area fixtures located at the fuel island is also in good condition. The fuel system has an emergency power off switch in good operating order. All systems are functioning properly.

**Lighting**

The 2002 addition interior lighting in offices consists of 2 x 4 recessed parabolic fluorescent fixtures. Restroom, locker room, training room, hallways and similar rooms utilize 2 x 4 recessed acrylic prismatic fluorescent fixtures. These fixtures utilize 4’ 32 watt T8 lamps. The 2002 addition vestibule/reception/work area utilizes linear direct/indirect cable hung fluorescent fixtures with 4’ 32 watt T8 lamps. In addition there is a decorative flexible low voltage track system located in the upper portion of the clerestory area. The 1978 two story addition was relit in 2002. This area utilizes 2 x 4 recessed acrylic prismatic fluorescent fixtures with 4’ T8 lamps and surface mounted 2 lamp T8 harsh environment fixtures in the areas without ceilings. All of the lighting installed in 2002 is generally in good condition. The original building and 1971 bay addition generally utilizes 4’ and 8’ fluorescent industrial fixtures in the service and garage bays. These fixtures were retrofitted in the last few years to utilize newer type lamps and reflectors. It was noticed that there are times the vehicle storage areas are cold due to the overhead doors being left open because of work functions going on in the area. The open industrial fixtures are not rated for cold weather so when the spaces are cold, the light output of the fixtures is greatly reduced. Various types of 4’ fluorescent fixtures are used in the remaining interior rooms of the original building. These fixtures are in fair condition. The Cold Storage building consists of 4’ fluorescent open strip fixtures. The Pole Barn building consists of incandescent floodlights. The Cold Storage building lights are in good condition. The Pole Barn building lights are in poor condition.

The 2002 addition interior lighting control consists of local switches with motion sensor overrides in most rooms and areas. Areas where safety and security may be a concern, the motion sensors were omitted. The original building, 1971 addition and 1978 addition light fixtures are controlled by local switches. The motion sensors appear to be in good condition.

Exterior lighting mounted on the 2002 addition consists of full cutoff HID area fixtures. These fixtures are controlled via a time clock in the main switchgear room. On the north side of the vehicle storage there are twin headed incandescent floodlights utilizing screw-in fluorescent lamps mounted between every other overhead door. The lighting level provided by the floodlights is very inadequate. There are
two large roof mounted HID floodlights at the west end of vehicle storage. These floodlights provide a higher lighting level but are old and in need of replacement. The exterior lights on the 2002 addition are in good condition. The floodlights on the vehicle storage are in poor condition.

**Life Safety Egress Lighting**

The Life Safety Emergency Lighting in the 2002 and 1978 additions consist of integral battery backup mounted within selected fixtures in the paths of egress and in selected rooms for safety. Life safety exit signs consist of powered LED exit signs with red letters and battery backup and are located through-out the 2002 and 1978 additions. These appear to define the paths of egress adequately. The exit signage and egress lighting within the 2002 addition are in good condition. The exit signage and egress lighting in the remainder of the building are generally in fair condition with a few units in poor condition. It was noticed that there are times the vehicle storage areas are cold due to the overhead doors being left open because of work functions going on in the area. The exit signage and egress lighting are not rated for cold weather.

Life safety emergency egress lighting within the original building and the 1971 bay addition consist of wall mounted powered emergency lighting units with twin incandescent heads and battery backup. Life safety exit signs consist of wall mounted powered emergency powered fluorescent exit signs with red letters and battery backup. These appear to define the paths of egress adequately. The exit signage and egress lighting in the remainder of the building are generally in fair condition with a few units in poor condition. It was noticed that there are times the vehicle storage areas are cold due to the overhead doors being left open because of work functions going on in the area. The exit signage and egress lighting are not rated for cold weather.

**Life Safety Fire Alarm**

The fire alarm system at the Public Works Facility consists of a Notifier model APF-200 intelligent fire alarm panel. The entire system was replaced during the 2002 addition. The panel monitors the sprinkler tamper and flow switches, the pull stations and the smoke and heat detectors. Fire alarm horns and strobes are located through-out the facility. The fire alarm system is monitored by a central monitoring company as required by code. All of these systems and devices appear to be operating properly and are in good condition.

**Low Voltage Systems**

The facility is equipped with an Altronix access control system consisting of proximity readers and door locks/controls at key entrances and exits within the 2002 addition. This system does not include the vehicle storage or any of the Out buildings.

The facility is not equipped with any AV equipment or systems.
The Public Works Facility connection for telecommunications is a node on a distribution fiber of the fiber-optic Core Ring 1 Fiber which is part of the network that connects multiple cities in the area.

The facility is not equipped with an intrusion detection system or closed circuit television system (CCTV).

The facility is not equipped with a general paging system.
**Recommendations**

The generator serving the Public Works Facility is a portable unit. The unit should be replaced with an appropriately sized permanent generator. The existing portable unit could be repurposed and used for other functions.

Since the open industrial fixtures in the Vehicle Storage are not rated for cold weather, they should be replaced with cold weather rated fluorescent or LED fixtures. This would allow adequate lighting levels within the space during cold weather times. If LED is utilized, additional energy savings would be realized.

The site areas around the Vehicle storage building are under lit. The existing fluorescent floodlights should be replaced with appropriately designed HID or LED floodlights. This would increase lighting levels to usable levels, reduce maintenance and in the case of LED's, increase energy savings.

Since the emergency exit signs and emergency egress lights within the Vehicle Storage areas are not cold weather rated, they should be replaced with cold weather rated LED units. This would assure function during the times when the spaces are cold. They would also provide energy savings and reduced maintenance.

The panel boards and incandescent lights within the Pole Barn building are in very poor condition. They should be replaced with new weatherproof panel boards and LED floodlights. This would increase safety and usability for the panel boards and provide energy savings and reduced maintenance for the floodlights.
**Disclaimer**

The opinions stated in this report are based on limited visual observations only. No physical testing was performed, no equipment was disassembled and no calculations have been made to determine the adequacy of the electrical systems or their compliance with accepted building code requirements. No warranty expressed or implied as to the condition of the equipment or structures is intended.

The following services and responsibilities are specifically excluded from this report:

- Discovery, testing, monitoring, clean-up or neutralization of pollutants and hazardous substances.
- Determinations or advertisement related to the existence or proportion of asbestos or lead paint, or the modification, installation, abatement, or removal of any product, material, or process containing asbestos or lead paint.
5. Appendix

Architectural Assessment Photos

Appendix A – Mechanical Photo Data Sheets and Comments

Appendix B - Electrical Photo Data Sheets and Comments
Monitor is beyond allowed 4” clearance from wall surface
Break room too small for amount of staff

Inadequate Storage
Lacking ADA clearances and grab bar requirements

Too few lockers for amount of staff
Missing Insulated water piping

Floor Finish removed due to water damage
Aging Roof: Ponding & stretched membrane
Aging Roof: Missing coping fasteners

Aging Roof: Ponding, stretched membrane, & patching
Aging Roof: Stretched membrane at joint

Aging Roof: Repairs at existing collection box
Aging Roof: Exposed fasteners and no gravel stop

Aging Roof: Stretched membrane & failing sealant
Aging Roof: Missing coping fasteners

Aging Roof: Popped fasteners
Aging Roof: Stretched membrane and missing coping fasteners

Aging Roof: Stretched membrane
Aging Roof: Patching & ponding

Clerestory: Damaged flashing and seals
City of Fridley - Public Works Facility
Architectural Assessment Photos

Clerestory: Damaged flashing and seals

Clerestory: Damaged flashing and seals
Lacking ADA required clearances and grab bars

Lack of storage
Missing code compliant guardrail assembly

Missing ADA code compliant drinking fountain
Deteriorated floors and finishes at mech. space

Undersized maintenance space
Undersized maintenance space

Undersized maintenance space
Maintenance space too short for larger vehicles

Undersized maintenance space
Lacking safe storage of fluids

Stairs lack code compliant toe kicks / Undersized maintenance storage
Undersized maintenance space

Maintenance space too short for larger vehicles
Inadequate overhead clearances and lighting

Fluid dispensing and pressure wash system are outdated
Lack of safe circulation space

Lack of safe circulation space
Inadequate overhead clearance

Lack of safe circulation space
Inadequate service access equipment

Intermingled spaces / functions
Intermingled spaces / functions
Settling causing joints to crack / open

Storage Building: Old and not functional
Storage Building: Dirt floor and lacking storage racking

Site Storage: Lack of storage racking
Storage Building: Dirt floors

Storage Building: Dirt floors
Site Storage: Inadequate indoor vehicle storage
Site Storage: Inadequate material storage structures

Damaged overhead door
Inadequate safe circulation space

Damaged overhead door
Site Storage: Organized, but plows stored outside

Site Storage: Lacking storage racking
Site Storage: Lacking storage racking

Site Storage: Gate to adjacent park land
Site Utilities: Portable genset

Site Utilities: No canopy for fuel pumps
Site Utilities: Aging dispensing stations

Cracked / failing caulk joint & cracking stucco skim coat
Cracking stucco skim coat

Cracking stucco skim coat
Popped fasteners & cracked stucco skim coat

Cracking stucco skim coat
Stained concrete block & pavement due to overflow drainage

Repair needed to concrete block / stucco skim coat
Electrical is open to elements as it enters pavement

Potential area of moisture entry into the building
Cracking stucco skim coat

Settling causing joints to crack / open
Failing caulk joint

Scupper drainage has caused cracking & staining to concrete
Scupper drainage has caused cracking & staining to concrete

Masonry in need of repair
Settled concrete stoop

Failing caulk joint
Masonry in need of repair

Settled concrete stoop
City of Fridley - Public Works Facility
Architectural Assessment Photos

91

Masonry in need of repair

92

Scupper drainage causing cracking & staining to concrete
Site Storage: Lack of storage racking and safe battery storage

Masonry in need of repair
Aging Roof: Damaged joint cover & seal

Aging Roof: Popped fasteners
Typical coping detail outrigger support

Windows: Damaged seals
Windows: Damaged flashing and seals
Missing code compliant handrail extension

Missing code compliant guardrail assembly
Missing code compliant guardrail assembly

Missing code compliant handrail extension
Inadequate storage space

Lack of accessible hardware
Likely asbestos containing materials

Lacking safe storage of batteries
Missing code compliant handrail extension

Missing code compliant handrail extension
Lacking adequate tire storage

Compressed air system is outdated
Inadequate overhead clearance

Deteriorated threshold
Lacking safe circulation space

Deteriorated threshold
Deteriorated threshold

Settling causing joints to crack / open
Pavement in need of repair

Storage Building: Required maintenance / painting
Damaged flammable cabinets

Potential moisture entry into building
Failing mortar & caulk joint

Failing mortar and caulk joint
Masonry in need of repair

Rusting steel header at overhead door
Masonry supports in need of repair

Cracking at stucco skim coat & concrete block
Masonry in need of repair

Cracking of stucco skim coat
<table>
<thead>
<tr>
<th>Public Works</th>
<th>Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe covering is installed on the water piping below the lavatories. Waste piping is not covered.</td>
<td></td>
</tr>
<tr>
<td>Fire and water service in the 2002 addition. Valves rattle when city trucks are being filled from hydrant on east side of the building.</td>
<td></td>
</tr>
<tr>
<td>Portable eyewash station in bay area.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Computer room condensing unit. Showing evidence of corrosion on condenser fan and fan guard.</td>
<td></td>
</tr>
<tr>
<td>Rooftop unit installed in 2002. Showing evidence of corrosion at burner blower outlet.</td>
<td></td>
</tr>
<tr>
<td>Furnace unit burners in good operating condition.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Condensing unit for furnace unit. Vegetation should be removed around the unit for proper airflow. Condenser coil should be cleaned.</td>
<td></td>
</tr>
<tr>
<td>Diffuser and adjacent ceiling grid system is dirty indicating duct system should be cleaned and review filter change frequency.</td>
<td></td>
</tr>
<tr>
<td>Duct mounted register from furnace unit. Ductwork and registers in need of cleaning to improve indoor air quality.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Snorkel for tailpipe exhaust system. The existing system is difficult to maneuver and seldom used.</td>
</tr>
<tr>
<td></td>
<td>Carbon monoxide and diesel sensors located in the service bays energize the gas-fired makeup air unit and exhaust fan on the roof. Sensors are tested annually.</td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Abandon exhaust duct adjacent to welding bench. No exhaust system exists in this area.</td>
<td></td>
</tr>
</tbody>
</table>

| Typical unit heaters and ceiling fan in service bay. |
## Appendix A - Mechanical Photo Data Sheets and Comments

<table>
<thead>
<tr>
<th>Public Works</th>
<th>Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exhaust duct in bay area transfers air from the center of the building and discharges back into space above garage doors.</td>
</tr>
<tr>
<td></td>
<td>Switches label exhaust fan. No air leaves the building. Transfer from center to perimeter only.</td>
</tr>
<tr>
<td></td>
<td>Damaged ductwork above service bay.</td>
</tr>
</tbody>
</table>
### Appendix A - Mechanical Photo Data Sheets and Comments

<table>
<thead>
<tr>
<th>Public Works</th>
<th>Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968 air compressor and storage tank. Still in operation but there is no backup system. The storage tank is inspected annually.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Existing Pole mounted Utility owned transformer bank serving the Public Works Facility.</td>
<td></td>
</tr>
<tr>
<td>Main service switchgear and automatic transfer switch located in the Mech./Elect. room</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>The Utility meter located in the Mech/Elect room.</td>
<td></td>
</tr>
<tr>
<td>The portable generator serving the Public Works Facility. The estimated age is approx. 25 years.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Typical Panel board in the Vehicle Storage area.</td>
<td></td>
</tr>
<tr>
<td>Gas pumps installation with pole mounted area lights.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gas island conduit isolation gutter with</td>
<td>Gas island conduit isolation gutter with emergency power off switch.</td>
</tr>
<tr>
<td>emergency power off switch.</td>
<td></td>
</tr>
<tr>
<td>Gas island fuel tank monitoring system and the</td>
<td>Gas island fuel tank monitoring system and the Gas Boy fuel management system.</td>
</tr>
<tr>
<td>Gas Boy fuel management system.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Typical office 2x4 fluorescent parabolic fixture.</td>
<td></td>
</tr>
<tr>
<td>Typical wall mounted fluorescent fixtures within the service bay area.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Typical ceiling mounted fluorescent fixtures within the service bay.</td>
<td></td>
</tr>
<tr>
<td>Decorative low voltage track lighting located in the front lobby/reception.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Typical full cutoff wall mounted HID area fixture located on the 2002 addition.</td>
<td></td>
</tr>
<tr>
<td>Typical exterior floodlight utilizing screw in fluorescent bulbs.</td>
<td></td>
</tr>
<tr>
<td>Typical Life Safety emergency exit sign.</td>
<td></td>
</tr>
<tr>
<td>Public Works</td>
<td>Conditions/Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>First Aid</td>
<td>Typical Life safety emergency egress lighting unit.</td>
</tr>
<tr>
<td>Fire alarm</td>
<td>The Fire alarm panel installed in 2002 serving the Public Works Facility.</td>
</tr>
</tbody>
</table>
6. Facility and Outbuildings Space Needs
### City of Fridley - Public Works Facility and Outbuildings

**Facility Space Needs - Building Program for the years 2016 and 2023**

<table>
<thead>
<tr>
<th>Area</th>
<th>Exist. Total SF</th>
<th>Total SF 2016</th>
<th>Total SF 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices, Reception, Restrooms, etc.</td>
<td>2,800</td>
<td>3,140</td>
<td>3,140</td>
</tr>
<tr>
<td>Garage, Storage, Mechanical</td>
<td>11,046</td>
<td>27,242</td>
<td>28,650</td>
</tr>
<tr>
<td>Subtotal SF</td>
<td>13,846</td>
<td>30,382</td>
<td>31,790</td>
</tr>
<tr>
<td>Circulation Factor- 25%</td>
<td>3,462</td>
<td>7,596</td>
<td>7,948</td>
</tr>
<tr>
<td><strong>Total Net SF- Building</strong></td>
<td>17,308</td>
<td>37,978</td>
<td>39,738</td>
</tr>
<tr>
<td>Net to Gross SF Factor (10%)</td>
<td>1,731</td>
<td>3,798</td>
<td>3,974</td>
</tr>
<tr>
<td><strong>Total Gross SF- Building</strong></td>
<td>19,038</td>
<td>41,775</td>
<td>43,711</td>
</tr>
<tr>
<td><strong>Total Net SF- Outbuildings</strong></td>
<td>17,071</td>
<td>34,142</td>
<td>34,142</td>
</tr>
<tr>
<td><strong>Total Gross SF- Buildings &amp; Outbuildings</strong></td>
<td>36,109</td>
<td>75,917</td>
<td>77,853</td>
</tr>
</tbody>
</table>
## City of Fridley
### Department Space Needs Summary

**Public Works Department**  
Contact: Jim Kosluchar  
Phone: 763-238-8047  
Email: Jim.Kosluchar@FridleyMN.gov  
Date: 2/1/14

<table>
<thead>
<tr>
<th>1. Staff</th>
<th>Reference Names</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Works</strong></td>
<td></td>
</tr>
<tr>
<td>Engineering Director</td>
<td>O 1 1 1</td>
</tr>
<tr>
<td>Managers - FT</td>
<td>O 2 2 2</td>
</tr>
<tr>
<td>Fleet Coordinator</td>
<td>C 1 1 1</td>
</tr>
<tr>
<td>Admin Assistant</td>
<td>C 1 1 1</td>
</tr>
<tr>
<td>Intern/Contract</td>
<td>WS 3 3 3</td>
</tr>
<tr>
<td>Field Employees - PT</td>
<td>26 26 26</td>
</tr>
<tr>
<td><strong>Staff Totals</strong></td>
<td>34 34 34</td>
</tr>
<tr>
<td><strong>Total Staff Spaces - Usable Square Footage</strong></td>
<td>560 560</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Support Spaces</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Service Counter</td>
<td>1 1 1</td>
</tr>
<tr>
<td>b. Breakroom</td>
<td>1 1 1</td>
</tr>
<tr>
<td>c. Mens Locker Room</td>
<td>0 1 1</td>
</tr>
<tr>
<td>d. Womens Locker Room</td>
<td>0 1 1</td>
</tr>
<tr>
<td>e. Mens Shower Room</td>
<td>0 1 1</td>
</tr>
<tr>
<td>f. Womens Shower Room</td>
<td>0 1 1</td>
</tr>
<tr>
<td>g. Maintenance Shop</td>
<td>1 1 1</td>
</tr>
<tr>
<td>h. Large Vehicle Bay</td>
<td>0 1 2</td>
</tr>
<tr>
<td>i. Wash Bay</td>
<td>0 1 1</td>
</tr>
<tr>
<td>j. Welding Shop</td>
<td>0 1 1</td>
</tr>
<tr>
<td>k. Small Engine Shop</td>
<td>0 1 1</td>
</tr>
<tr>
<td>l. Tire Storage</td>
<td>0 1 1</td>
</tr>
<tr>
<td>m. Tech Library</td>
<td>0 1 1</td>
</tr>
<tr>
<td>n. Paint Booth (within Maintenance Shop)</td>
<td>0 1 1</td>
</tr>
<tr>
<td>o. Materials Storage (within Maintenance Shop)</td>
<td>1 2 2</td>
</tr>
<tr>
<td>p. Sign Shop (within Maintenance Shop)</td>
<td>1 1 1</td>
</tr>
<tr>
<td>q. Garage</td>
<td>1 2 2</td>
</tr>
<tr>
<td><strong>Total Support Spaces - Usable Square Footage</strong></td>
<td>29,822 31,230</td>
</tr>
</tbody>
</table>

| **Total Staff/Support Spaces - Usable Square Footage** | 30,382 31,790 |
| **Total with Circulation Factors** | 37,978 39,738 |

<table>
<thead>
<tr>
<th><strong>Out Buildings</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>r. Small Shed</td>
<td>1 2 2</td>
</tr>
<tr>
<td>s. Large Shed</td>
<td>1 2 2</td>
</tr>
<tr>
<td>t. Pole Barn</td>
<td>1 2 2</td>
</tr>
<tr>
<td>u. Cold Storage</td>
<td>1 2 2</td>
</tr>
<tr>
<td><strong>Grand Total - Planning Square Footage</strong></td>
<td>71,778 73,538</td>
</tr>
</tbody>
</table>

### 3. Equipment
- Printer/copier for Engineering Office
- Maintenance Shop: lifts, tire machine, cranes, welding equip.

### 4. Adjacencies
- Primary Adjacency: Public Works
- Secondary Adjacencies: Community Development, Finance

### 5. Vehicles
- Inside Storage - 45
- Cold Storage - 80
- Outside Storage - 42
- Impound Lot - 50 vehicles (enclosed asphalt lot)
a. Primary functions of Public Works Dept.: Provide effective and efficient design, construction, operation and maintenance of the City's infrastructure
b. Department divided into 6 divisions: Engineering/Municipal, Park Maintenance, Street Maintenance, Sewer/Storm Water, Water, Garage
c. Public Works Garage: establish open office with workstations
d. Sign shop: open to visitors
e. On site parking: 51 employee spaces, 6 visitor spaces
f. Material storage: salt, road materials, fill materials, sewer/water components, sign storage, parks equipment
g. Maintenance Shop=Garage
h. Fuel Pump- exterior

7. Deficiencies
a. Nearly all departments store majority of equipment outside because there is not enough interior space
b. Breakroom too small
c. Maintenance Shop: 4 bays preferred (3 existing), fabrication area, vehicle washing bay, small paint booth
d. Garage Inefficiencies: Size of garage-need more space (larger doors, increase room height), increase heated storage space, separate welding, fabrication area, more interior storage for winter equip., car wash area, better exterior lighting, increase exterior storage space
e. Mechanic Space: increase size overall space and height, equipment outdated
7. User Group Programming Questionnaire
Date:  September 24, 2013

Re:  City of Fridley – City Hall and Public Works
     Department Leader Program Questionnaire

Please review the following questions and provide responses to each of the questions for us to discuss at our upcoming programming meeting.

Name of Department or Organization:

City of Fridley Public Works Department

James Kosluchar, (763) 238-8047, jim.kosluchar@fridleymn.gov

Primary function of your Department:

The Fridley Public Works Department has nine divisions:
1. Municipal Center (Building and Grounds Maintenance)
2. Engineering
3. Parks Maintenance
4. Street Maintenance
5. Street Lighting
6. Garage (Fleet Services)
7. Water
8. Sanitary Sewer
9. Storm Water

A summary of the functions of the department include:
• Street Maintenance
• Snow and Ice Control
• Parks Maintenance
• Sanitary Sewer Collection
• Storm Sewer Conveyance and Storm Water Quality Maintenance
• Water Treatment
• Water Distribution
• Surface and Ground Water Resource Management
• Capital Improvement Planning and Budgeting
• Engineering Design and Construction Administration
• Development/Redevelopment Site and Utility Permitting
• Provide Assistance in Planning Activities
• Public Right of Way Management
• Public Lands, Facilities, and Grounds Maintenance
• Fleet Maintenance for All City Departments
• Provide Emergency Management Resources
Relationship to other Departments:

What primary adjacencies are required to other departments required? (why?)

While adjacencies as a whole are not required, there are efficiencies gained or lost based on physical proximity to other Departments. Community Development and Finance Departments are main adjacencies for the best function of the Engineering Division. This is due to the need for coordinated project work with Finance and cooperative plan reviews with Community Development. A lacking adjacency that would benefit efficiencies of several departments is the connection to the Fleet Services Division. Due to distance and travel time departments outside of Public Works maintenance suffer time losses for refueling and maintenance.

The Municipal Center Division, in order to fulfill its role, must be based in the Municipal Center, and connect with those departments that are based in the facility.

What secondary adjacencies are desired? (why?)

Internally, Engineering and Maintenance Divisions would have benefits if in closer proximity to one another. Parks Maintenance Division would benefit from an improved connection to Recreation Department. Water Division would benefit from a closer connection to the Finance Utility Billing Division.

What other departments are you in contact with as part of the function of your department?

There is regular contact with all departments as part of Public Works function, as this department assists with basic manpower needs for projects and events (e.g. elections and delivery of related equipment).

Staffing: (Provide an org chart if available to determine number of employees and breakdown)

Attached.

Current:

How many full time year round employees?

<table>
<thead>
<tr>
<th>Department</th>
<th>Full Time Employees</th>
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<tbody>
<tr>
<td>Municipal Center (Building and Grounds Maintenance)</td>
<td>0.0</td>
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<tr>
<td>Engineering</td>
<td>6.0</td>
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<tr>
<td>Parks Maintenance</td>
<td>6.5</td>
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<tr>
<td>Street Maintenance</td>
<td>8.5</td>
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<tr>
<td>Street Lighting</td>
<td>0.0</td>
</tr>
<tr>
<td>Garage (Fleet Services)</td>
<td>4.0</td>
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<tr>
<td>Water</td>
<td>5.0</td>
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<tr>
<td>Sanitary Sewer</td>
<td>5.0</td>
</tr>
<tr>
<td>Storm Water</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL (2014)</td>
<td>35.0</td>
</tr>
</tbody>
</table>
How many part time or seasonal workers?

- Municipal Center (Building and Grounds Maintenance) 1
- Engineering 2
- Parks Maintenance 20
- Street Maintenance 1
- Street Lighting 0
- Garage (Fleet Services) 0
- Water 0
- Sanitary Sewer 2
- Storm Water 0
- TOTAL (2014) 26

How many shifts/staff per shift?

All Employees are mainly on a single shift. Maintenance Divisions work 7:00 AM to 3:30 PM M-F; in summer this is modified to 6:30 AM to 3:00 PM. Engineering Division works 8:00 AM to 4:30 PM. There are times when scheduled (e.g. softball tournaments) or callout (e.g. snow plowing) weekend or evening hours are worked in addition.

2016 (3 Year Projection):

What do you anticipate your staffing to be in 2016 (3 years)?
There are no reductions or increases in staffing levels currently considered. Our staffing can hopefully be maintained in the short-term at current levels.

2023 (10 Year Projection):

What do you anticipate your staffing to be in 2023 (10 years)?
We may see a reduction in one or two staff positions over the long-term due to efficiencies and technology improvements.

Interior Work environments:

Office Areas –

What is accomplished in those areas?
Basic office tasks, plan reviews, plotting and plan reproduction, staff collaboration

How many staff require private offices?
Director (existing) and Assistant Director (not existing), Maintenance Supervisory staff (existing)

How many staff utilize open office stations?
Engineering Technicians (3), Engineering Administrative (1), Interns (2), Contract GIS Staff (1)

How many staff could share offices/open office stations?
In the Engineering Division, Interns would be the only persons that could share office space reasonably, as during peak work seasons, all office space is needed. In the future, a shared office for maintenance leadpersons will be established with an existing open office at the public works garage. Mechanics share an office computer currently. We plan to establish a single at-large computer station at the front desk of the Public Works Garage for all other maintenance needs. Computer
needs will likely increase in the long-term, however, use of mobile computing devices will likely offset the needs for workstations.

How many staff do not need office space?
24 permanent and 24 seasonal field maintenance personnel.

Common/Staff areas
What types of common areas are required i.e. locker rooms, showers, breakrooms etc.?
A break room is provided at the Public Works Garage, although it is not large enough to accommodate staff during summer peak work periods, and breaks must be staggered. Locker rooms are sufficient currently, shower facilities would be an improvement.

Shop/Work Areas –
What is accomplished in those areas?
Fleet maintenance, fabrication, assembly and storage.

What type of shop or work environment is required?
A full modern maintenance shop is desirable, to include a minimum of 4 maintenance bays, fabrication area, and vehicle washing bay. A small paint booth would be beneficial.

How much/what type of equipment is utilized?
Lifts, tire machine, cranes, welding equipment, etc.

Vehicle/Equipment Storage Areas
What type of vehicles/equipment are to be stored inside? (How many?)
45 units are stored inside, 80 are in cold storage, and 42 are stored outside. See attached.

Materials Storage Area
What materials are required to be stored? (how much?)
Salt storage (sufficient).
Road materials in bins (sufficient).
Fill materials and sweepings (currently onsite in area that should be open).
Sewer and waste components.

Other Work Areas
Sign shop.

Site Criteria:
What type and how many visitors access the site and how often?
Sign shop.

Site access importance/routes? Preference?
Sign shop.

Required on-site parking, for whom, how long, how many?
  Engineering (8).
  Maintenance (43)
  Should have 6 additional public spaces at PW Garage

On site storage of materials, types/quantities/etc?
  Salt storage (sufficient).
  Road materials in bins (sufficient).
  Fill materials and sweepings (currently onsite in area that should be open).
  Sewer and water components.
  Sign storage.
  Parks Equipment storage.

On site storage of vehicles/equipment, types/quantity/etc?

**Existing Facilities/Operations Review:**

What are the strengths of your existing facility/operations... what works best?
  Engineering office area has plenty of space, it could benefit from reconfiguration. Public Works office space is sufficient.

What are the weakness of your existing facility/operations...what does not work?
  The Public Works Garage suffers from limited storage of materials and equipment, outdated facility with cramped working conditions (particularly for fleet maintenance staff), cold storage is not in great condition, layout is inefficient and site is distant from other Departments, facility lacks equipment washing facilities, sufficient break room space, and shower facilities. Limited fuel storage, particularly for gasoline (6,000 gallons). Storage spaces for equipment are too small. Facility has dated mechanicals and inefficient heating.

What would you change about your facility?

**Neighborhood Issues/Perceptions:**

Do any of your operations need to be visible/accessible to the public?
  Engineering staff should be available to the public.

How has the neighborhood reacted to your operations?
  While they occasionally mention that they hear some noise from the PW facility, it does not receive complaints.

Have there been reoccurring issues that the neighbors have brought up?
No.

What kind of interface do you want with the neighborhood?
*Facility should be generally inobtrusive.*

What type of problems has your operation had with the neighborhood?
*None other than occasional concerns about storage offsite in Locke Park.*

**Any Other Comments:**

Below is a summary of comments from Public Works staff including Engineering Division and Supervisory personnel.

**Garage**

**Recommendations**

*Mechanics: Increase the size of the garage working space to match the size of equipment and fleet.*

  - Separate maintenance from storage and vehicle washing area.
  - Separate work area for welding and fabrication

**Parks/Streets:**

1. *Car and truck wash area would help longevity of equipment and reduce repairs.*

2. *More inside storage would help longevity of equipment, save time by not having to move other equipment to get to it, save time from defrosting outside equipment, time hooking up equipment that is frozen or covered with snow and hazards of hooking up equipment in slippery and hazardous weather conditions.*

3. *Larger doors eliminate hazard of damaging equipment that has almost zero clearance entering or leaving building.*

4. *Proper washout areas—washing out equipment outside in hazardous weather conditions and having containment for washing off equipment in summer.*

5. *Outside lighting—safety hazards operating equipment and installing snow plow equipment.*

6. *More outside area for storing dirt and material used in daily operations.*

**Water:**

*We do not have enough indoor heated storage!*

**Sewer:**

*Provide more inside heated storage. Lack of outside storage areas to keep all of our equipment onsite ready for emergency procedures.*
Hinderances
Mechanics: Truck lifts are limited in capacity, height for lift areas is insufficient, width concerns (safety)
Mechanics: Due to limitations in space, several pieces of equipment must be worked on outside
Water: Equipment left outside
Sewer: During winter months much of our equipment is stored outside making it difficult to access and put into service without delays. We have several pieces of equipment that we store of site; water tower storage etc

Changes
Mechanics: Increase maintenance space and height to modern requirements
Water: Indoor equipment would be protected and ready to go!
Sewer: Provide more inside heated storage.

Strengths
Mechanics: Make do attitude
Parks/Streets: 1. Good location-can get to any area of city in short time.
               2. Industrial area-no close homes for noise issues.
Water: The facility is poorly heated, the roof leaks
       Dark
       Lunchroom too small
Sewer: The new addition provides good office space locker facilities and lunchroom facilities.

Weaknesses
Mechanics: Existing design is outdated with the number and variety of equipment worked on in our current operation
Mechanics: Technology changes have not been kept up with
Water: Need a wash area or wash bay
       Judges need for a complete new garage
Sewer: Inadequate space for equipment, maintenance garage for repairs and maintenance is inadequate; in floor drainage is poor in equipment storage and wash down area.
Poorly lighted and heating facility is inefficient to heat.

City Hall (Engineering)

Recommendations
Reorganize Cubicles
Size of office areas are limited
Accessibility to department offices is poor
Meeting areas are not central
Printer locations not most convenient
Meeting areas with work areas to look at plans, etc.

Hinderances
Municipal Center delivery door is not large enough (pallet-sized)

Changes
Location to display future and current project maps
Larger white board
Larger delivery door, larger offices/storage
Secured location for private information/computer visibility
Rearrange cubicles

Strengths
Staff proximity
Power availability
Two large conference rooms upstairs
Improvements in heating/cooling ongoing

Weaknesses
Old HVAC
Windows are cold in winter
Conference room C location and size
Layout of engineering
Facility and mechanicals are aging
Document storage downstairs

Comments
Walling off division would provide fewer interruptions
General maintenance needed on current building
Recreation could be moved upstairs for efficiency/security
Materials storage should be on each floor for ease of obtaining
Having PW Maintenance close would be helpful
We have room but not set up to work efficiently
This list only includes vehicles and equipment stored at Public Works. Does not include units stored off site at Water Towers or Parks.

List includes: Totals
- Inside
- Outside lot
- Cold storage

Equipment Accr.: 40

36 outside 4 inside

All plows and blades stored outside

10 Heavy Track Plows
3 loader plows and wings
7 Heavy Track Wing plows
1 Lt Track wide out Plow
2 V Plows Trackless
2 V Plows Lt Tracks
3 Lt Track straight plows
1 wide out Lt Track Plows
3 Snow blowers Trackless
2 Plows Trackless
2 Loader Fork attachments

Inside Storage Plows 13
4 wide out Lt track plows
<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Qty</th>
<th>Inside</th>
<th>C/S</th>
<th>1st</th>
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<td>1) LT tracks</td>
<td>36</td>
<td>5</td>
<td>9</td>
<td>22</td>
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<tr>
<td>2) Heavy tracks</td>
<td>13</td>
<td>9</td>
<td>4</td>
<td>2</td>
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<td></td>
<td></td>
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<tr>
<td>3) Loader + Side walk Plow</td>
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<td>Adj seasonal Qty 10</td>
<td>10</td>
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<tr>
<td>4) Trailers</td>
<td>18</td>
<td>1</td>
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<td>5) Generators</td>
<td>6</td>
<td>2</td>
<td>3</td>
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<td>6) Blacktop Equip</td>
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<td>10</td>
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<td>7) Sweepers</td>
<td>7</td>
<td>1</td>
<td>6</td>
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<td>3) Air Compressor</td>
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<td>7) Pumps + Vacs</td>
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<td>3</td>
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<td>5) Tractors</td>
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</tbody>
</table>
11) Lawn Mowers 7 7 7

12) Misc Equip 26 3 23

13) Tree Equip 3 3

14) Utility Veh. 3 3 3

adjust seasonal

The list is of numbered vehicles + equip.

Many pieces of equipment are stored as per season

Total # equip stored inside 45
outside 42
Cold storage 80
<table>
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<tr>
<th>DATE</th>
<th>VEHICLE NUMBER</th>
<th>COMPLAINT/REPAIR</th>
<th>DATE COMPLETE</th>
<th>MECH</th>
<th>RO #</th>
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<td>12</td>
<td>Ford 250 C/S</td>
<td>661</td>
<td>08</td>
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<tr>
<td>502</td>
<td>01</td>
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<td>667</td>
<td>09</td>
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<td>518</td>
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785 88  Gardner Denver  outside cold/5

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627 95  Weeks Vac  water tower
663 89  Rupp Pump  outside warm
665 88  Rupp Pump  outside warm
669 03  Vactor  water tower outside
675 93  Rupp Pump  outside warm
685 99  Greenlee Township  outside warm
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## CITY OF FRIDLEY PUBLIC WORKS GARAGE
### SERVICE REPAIR REQUEST

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