Public Works Facility
Description and Observations

The Town of Windham Public Works Facility is comprised of a 9,672 square foot, CMU and wood framed maintenance garage building and a 12,000 square foot, concrete and wood framed salt shed. The salt shed was constructed in 2000. The original four bay garage building was constructed in 1980. Two additions of two bays each were constructed in 1982 and 1985.

Civil

The Public Works Facility is located on the south side of Windham Center Road in the westerly part of Windham Center. The site is bounded by the Windham Center Road on the northeast, a residence and the Pleasant River on the west, undeveloped woodland on the south, and related town facilities on the southeast. Related town facilities include the municipal brush dump, and a public works outdoor storage yard.

Existing buildings on the site include a maintenance garage with attached office/personnel space near the central part of the site and a salt storage shed situated north of the office/garage. The site is shared with the School District and is used for school bus parking and associated operations. Two modular buildings located just northwest of the garage building are used by the School District and are not part of this assessment.

Vehicular access is via a wide driveway near the northerly corner of the site. An existing welded pipe swing gate in fair condition is available at the driveway to prevent vehicular access to the site if desired. The driveway splits soon after the entrance, with the leg straight ahead providing access to the large paved maneuvering area southeast and southwest of the garage and the garage bays on the "lower level." This leg is also utilized by the bus drivers, both driving the buses and their personal vehicles. Parking for approximately 24 school buses exists along the southeast edge of the maneuvering area and parking for approximately 27 personal vehicles is available along the west side of the drive to the lower level. Additional parking for eight or nine vehicles is available just west of the garage and southwest of the modular buildings. This parking is used by the School District. The majority of the asphalt concrete pavements on site, including the maneuvering area and driveways, are in good condition with minimal cracking observed.

Other facilities located on the lower level include storage racks along the southwest edge of pavement and aboveground diesel and gas tanks just south of the garage. These tanks are also used by the School District for the buses and, at 3,000 and 2,000 gallons respectively, are undersized. They were originally intended to be used "temporarily" until new tanks of adequate size could be obtained.

Access to the outdoor storage yard is via a gravel drive off the southerly corner of the maneuvering area. Three recycling containers ("silver bullets") are located in this area. Their location present somewhat of a problem for the facility because they allow public access over the entire facility. The silver bullets, and the fact that the site is shared by the School District, complicate the issue of security/restricting access to the facility.

The left branch of the entrance drive extends to the west end of the salt shed and continues easterly to access pull-in parking associated with the public works garage/office building. Pull-in parking spaces are marked along the northeast end of the garage/office building and continue along a large stone retaining wall immediately to the east, for a total of 14 spaces. The drive continues and provides access at the east end of the salt shed and loops around the retaining wall to connect to the lower level. The paved drive continues easterly to the brush dump area.

There is no underground storm drain system on the site. Overall site topography is generally to the south and west toward the river. The vegetated area north of the salt shed drains easterly in channels and then southerly in a culvert under the paved drive to the brush dump. This runoff continues in a ditch along the southeast side of the lower level maneuvering area, there is a culvert under the drive to the "boneyard" and discharges in a gully on the steep bank well above the river. The garage/office building has a pitched roof and the southeast half of the roof and the paved maneuvering area drain southeast and is collected in the ditch. The northwest half of the roof, and most of the entrance drive, drain into a turf area between the garage/offices and the entrance drive. This area drains southerly in a turf swale to a culvert under the entrance drive and discharges on the vegetated bank above the river.

Utilities serving the facility include domestic water, on-site wastewater, and overhead electric, telephone and cable. Heating fuel is oil (#2 supplemented with waste oil) with fill pipes located near the northerly corner of the garage/office building. Water service is municipal (Portland Water District) via a 1.5 or 2 inch service line off of a main in the Windham Center Road. Based on discussions with Town representatives, the line is too small to provide adequate volume/pressure for the facility.

The sanitary leach field is located in the turf area north of the garage/office building. The system was replaced/upgraded in 2001 and is sized for 800 gallons per day. It appears the two modular buildings share the leach field but have their own septic tank and pump station.

Primary electric runs overhead to a pole mounted transformer located near the northerly corner of the garage/office building. Secondary electric splits with overhead feeds to the garage/offices and to the sand/salt storage shed. Telephone and cable service follow essentially the same route as the electric.

In summary, and in part based on discussions with representatives of Public Works, the following are existing deficiencies at the site.

- Lack of security/unrestricted public access to the site. It appears the only need for the public to routinely access the site is for the recycling containers. Consider relocating the silver bullets to the turf area just west of the entrance drive. The gate could be placed just south of the containers so the public would not have to enter the facility. In addition, the location is highly visible so there would be less chance of people discarding non-recyclable items at the containers. Consider screening the containers from the road and the adjacent residence.
- The existing gate at the entrance to the site is unwieldy and inconvenient. An electronic gate is desired.
- There is insufficient personal vehicle parking area.
- There is insufficient equipment storage and maintenance space, including insufficient number of garage bays.
- The existing diesel and gas storage tanks (which are also used by the school buses) are inadequately sized and were intended as a "temporary" arrangement. A complete packaged system with larger tanks is desired.

There is no indoor wash facility. Regular vehicle/equipment washing, especially in the winter, will prolong the service life of the equipment, resulting in long term cost savings. Upgrading the water service line to the main is recommended to serve a wash facility and provide adequate volume and pressure for other uses.

Structural

The existing structural system consists of a single story wood and concrete structure with reinforced concrete foundations. The original structure was constructed in approximately 1980 with subsequent additions within the last thirty years.

Roof framing consists of metal plated connected wood trusses spaced at 24 inches on center with plywood sheathing spanning between the trusses. A review of available construction plans indicated that the trusses were to be designed for a total load of 50 pounds per square foot. No provisions were given for wind forces acting on the trusses. The plans did not indicate if the trusses were to have been designed by a professional engineer. The current snow load exceeds the total load of 50 pounds per square foot. Current building codes also require that un-balanced snow loads be considered in the design of sloped roof structures, which occur when the wind pushes snow from the windward to the leeward side of the building. Original plans did not indicate any provisions for truss hold down anchors.

Concrete masonry walls are used to support the wood trusses. The original construction plans did not indicate if the walls contained vertical reinforcing steel. Based on this it is doubtful that the walls would have sufficient capacity to resist current building code requirements. Along the west wall there was cracking in the masonry that could be visible on both the exterior and interior sides of the wall, which is a possible indicated of differential settlement of the building. Refer to Structural Photos 1 and 2. There

was a section of masonry that was damaged, at the North West corner, due to a vehicle impact. Refer to Structural Photo 3.

Administrative areas have a wood floor structure that is supported by the masonry walls.

Foundations consist of reinforced concrete foundation walls and walls footings as noted above there is some evidence of settlement along the west wall of the building.

Overall the structure is in average condition with the exception of the items noted above. It is recommended that the damage masonry at the North West corner be repaired. Should additional roof insulation be provided as part of future renovations projects be added a structural analysis of the roof structure would be recommended. It is also recommended that the cracking at the west wall be monitored to determine if there is any movement in the building as well as sealing and repairing the crack.

Architectural

The building exterior of the maintenance garage is concrete masonry units with painted tongue and groove wood siding at the gable ends. The building has a pitched asphalt shingle roof with painted wood fascias and soffits. The asphalt shingles are approximately twelve years old and have a thirty year warranty. Overhead doors are insulated metal and man doors are painted metal in metal frames. Windows are vinyl clad wood, double hung with insulating glass.

The east end of the building is built into a hill. This allows access to both the garage level and the upper office area level from the exterior. A door on the south side of the building enters into a stair landing. The maintenance area is accessed directly from this space. The stair provides access to the upper level office area. The overhead doors for the maintenance bays are also located on the south side of the building. The upper level is also accessed from a door on the northeast side of the building. There is a concrete stoop at this entrance and a step at the door.

The upper level has offices, a lunch room, storage and a toilet. The floor in the lunch room is painted plywood. Other spaces have sheet vinyl flooring. Ceilings are painted gypsum board. Walls are gypsum board on wood studs. Doors are hollow core wood in wood frames. The stair is constructed of wood and has rubber treads and a rubber tile landing. A wood handrail exists on one side. There is a solid core wood door at the top of the stair.

The Public Works end of the lower level consists of a toilet room which is accessed from the stair, four maintenance bays, a locker room, parts office and storage. Floors on the lower level are concrete. The toilet room floor is painted concrete. Most of the paint is worn off. A concrete masonry wall separates the maintenance bays from the stair and other spaces. The parts office ceiling is suspended acoustic tile. Ceilings throughout the remainder of the Public Works lower level are painted gypsum board.

The stair well door is hollow metal in a metal frame. Other doors are hollow core wood.

The Public Works portion of the building was not designed to meet ADA accessibility requirements. The entrance door at the lower level is at grade and has a lever handle, but the required maneuvering clearances are not met within the building. There are two steps at the upper level entrance and no ADA ramp. There is no accessible route throughout the building and no handicapped access between floors. Toilet rooms do not have accessible fixtures and do not have adequate space to meet the required clearances.

The School District portion of the building consists of the four bays that were constructed as additions at the west end of the original building. The construction of the additions is similar to that of the original structure. Concrete masonry walls separate the additions and the original buildings and metal doors in metal frames provide access between the sections. An area within the two-bay addition at the end of the building has been sectioned off by one-hour rated partitions with a rated metal door and frame. Within the rated space are two handicapped accessible toilet rooms and a stair that leads to an upper level storage area. The upper level is separated from the stair by a rated metal door and frame in a rated partition. Loading access to the storage area is provided by a set of double metal doors located nine feet above the floor of the adjacent vehicle bay. Partitions in this area are constructed of wood studs and gypsum board. The upper level has a plywood floor. Flooring on the lower level is an epoxy resin over the concrete slab.

The salt shed has a concrete and vinyl siding exterior. The roof is metal panels with a perforated metal soffit. The southeast end has a metal door and frame. The northwest and southeast ends each have a metal overhead coiling door. Trim around the coiling doors is metal. The building interior is an open space with concrete dividers and exposed wood structure.

Mechanical

There are two main sections of the public works garage – the four large vehicle maintenance bays, and the smaller two story section of offices and support spaces. There are four more vehicle bays at the far end of the building which are leased to the school district for servicing buses and storage.

The four Public Works vehicle maintenance bays are heated by two suspended oil-fired furnaces. The primary furnace heats by burning used and reclaimed vehicle oil. It is located at the back of the west end of the four bays and uses oil from a large floor mounted oil tank below. Supply air is discharged through a unit louver and is not ducted though the space in any way. A galvanized steel gas flue extends up through the roof. This suspended furnace is notably newer than the secondary unit and is in good condition - age is not known.

The secondary heating furnace is suspended at the back of the opposite end of the maintenance bays. This furnace could be original to the building, dating back to 1980, but actual age is not known. Unit

appears to be in poor to fair condition and is probably beyond its useful expected service life. This unit burns clean heating oil which is delivered to and stored in a large oil storage tank on the floor below. This oil tank is not interconnected with the other oil tanks, and heating oil deliveries are deposited here. An oil fill line as well as a vent line extend out through the rear wall of the building. A galvanized steel gas fire extends through the roof.

Supply air from this secondary unit is ducted along the back wall of the bays with two supply grilles evenly spaced to blow air into the area. A return air duct is provided which runs to the east end wall and drops along the wall to be open ended approximately 7 feet above the floor level.

There are a total of four, large, rectangular oil tanks located along the back wall of the maintenance bays. Beyond the two already mentioned above, there is the oil reclaim tank which has two suction pumps and hoses mounted on the top which remove the oil from the vehicles and drain pans. The last tank is the transfer tank which has a manifold assembly mounted on the top as well as some pumps. This assembly is used to transfer oil from one tank to another, and includes oil transfer to a tank located in the school district bays as well.

A vehicle tailpipe exhaust system has been provided for the Public Works maintenance bays. There are three ceiling mounted hose reels for the first three bays, each of which has a rubber nozzle end for attachment to the various vehicle exhaust pipes. Exhaust duct from the reels runs exposed across the ceiling, joining to exit out the back side of the building. An exhaust fan is mounted on the exterior of the back wall of the building and the exhaust discharge terminates vertically with a silencer on the duct end. This system is manually operated. This system appears to be in good condition.

The fourth Public Works vehicle bay is used as a welding area and is provided with a wall mounted, movable arm, welding fume extraction unit with hood. This hood, fan and duct system is in good condition and appears to have been recently installed. Exhaust from this unit also runs across the ceiling and out through the back wall. It is provided with a dedicated exhaust fan mounted on the exterior wall and a vertical exhaust discharge duct with silencer. This system is manually operated.

To remove other fumes and gases not from vehicle exhaust pipes, a general space exhaust system has also been provided for the four Public Works bays. An outside air intake hood is provided in the rear wall of the bays and ducted to a ceiling mounted in-line supply fan. This fan discharges to a flexible, inflatable “duct sox” which runs parallel to the rear wall of the bays for most of the length of the space.

The original exhaust fan for this system was a through wall propeller type exhaust fan installed in the rear wall of the bays as well. This location placed the fan below the supply duct and resulted in short circuiting the air, limiting airflow to the back of the bays and not pulling the fumes from the work areas. This fan is still in place but is not used.

Another exhaust system was provided which has two large exhaust grilles located in the ceiling toward the front of the bays. These grilles are ducted above the ceiling to a fan also located above the ceiling, neither of which were visible or accessible during the site visits. It is believed that the vertical discharge duct located over the upper level entry door at the east end of the building is from the general exhaust system.

The two story office and support portion of the building is heated by various electric terminal heating units. Most of the upper level spaces are provided with sections of electric baseboard. The installed baseboard does not appear to be adequate to heat all of the spaces as several additional portable electric space heaters were noted as well. It was also noted that furniture and file cabinets are pushed up against the baseboard in some spaces. This will restrict the heat output of the element by restricting the airflow required for convective heating. Record drawings for the building are dated 1980 and electric baseboard appears to be original dating from that time, making it well past the expected useful service life of twenty years.

On the lower level wall mounted electric unit heaters are installed at the bottom of the stairwell as well as the supply office areas. The stairwell unit appears to be original while the supply area is a recent renovation with newer wall heaters installed.

There is a ceiling mounted combination fan and light assembly provided in the upper level unisex toilet room.

Ventilation air for the upper and lower levels of the office areas is provided by two separate air-to-air heat recovery ventilation units which are mounted on the east wall of the maintenance bay. A larger Lennox unit appears to be older and serves the upper level. This unit has flexible ducts connections on one side and hard duct connections to the other. A smaller and newer Fantech unit is provided for the lower level support spaces. All four unit connections to the smaller unit are made with flexible duct and the exposed lengths are excessive. This will result in higher static pressure drops and reduced airflow.

Outside air intake and unit exhaust ducts from both of the units apparently run in the attic space above the upper level to a total of four separate hoods on the east end of the building. Supply and return ducts from each of the units is run above ceilings to grilles installed in each of the spaces.

The upper level lunch room contains an electric oven and range with no range hood provided. Instead a wood shelf has been installed which holds a TV, a VCR and computer equipment. There is general exhaust from this area by means of the heat recovery ventilator, but it is not located to remove odors from the cooking area.

The far four bays of the Public Works building are used by the School District. The two bays adjacent to the Public Works bays are used for school bus repair while the last two bays, which are the newest, are used for storage and have toilet rooms for the bus drivers.

The bus repair bays are heated by a large, suspended, gas-fired unit heater which appears to be in good condition. There are four exterior liquefied petroleum gas tanks located at the rear of the building with exposed piping and a gas regulator and then piping penetrates the rear wall to the heater. The unit heater is an indirect fired unit with a flue vent which also exits through the rear wall. A wall mounted, programmable thermostat is located on one wall of the repair bays to control the heater and emergency gas shut-off switch was found located on the opposite wall of the bays.

The two bus repair bays are provided with a single, centrally located vehicle exhaust hose reel. The exhaust duct from the reel rises up through the ceiling where the exhaust fan is assumed to be as it was not visible below the ceiling. Condition and age of the exhaust fan is unknown. There is also a ceiling mounted circulating fan centrally located between the two repair bays.

There are two floor mounted oil tanks at the back of the repair bays. In the corner adjacent to the public works bays is a larger tank similar to the public works tanks with a top mounted suction pump. This tank is also provided with fill and vent lines out through the rear wall. The second, smaller tank appears to be piped to the tank transfer manifold system located in the public works area.

The large ground level storage area in the end two bays appears to be unheated, as is the upper level storage area created over the toilet rooms. In the upper storage room it was noted that a CMU block has been removed in the wall to the repair bays and a manually operated fan is placed on a shelf in front of the opening. It appears that this fan is run manually during very cold periods to pull warm air from the repair bays into the upper storage room, but the fan was not running at the time of the site visit.

The lower level corridor and toilet rooms are provided with electric baseboard for heating, each with a dedicated wall mounted thermostat. Each section of baseboard appears to be in fair condition.

Each of the toilet rooms is provided with a ceiling mounted exhaust fan which is controlled by the room lighting occupancy sensor. The fans appear to be ducted to a common louvered vent in the rear exterior wall. It was noted that the fan exhaust grille is missing from the women's room fan and that the fan was not operational at the time of the site visit.

There is no central cooling provided for any areas of this building. There were also no window air conditioners in place in the upper level Public Works office windows at the time of the site visits.

The building domestic water service rises up through the floor in back corner of the lower level supply room of the Public Works area. A shutoff valve, water meter and backflow preventer are provided on the water service although they are not readily accessible behind the piled storage in the space.

The domestic water line rises up in the supply room to run above the lower level ceilings, upfeeding to the fixtures above. Cold water piping was noted as not being insulated and would be subject to sweating in warm humid weather, possibly creating moisture problems in this concrete space built into the adjacent hill.

A 40-gallon electric hot water heater is located in the lower level toilet room and it appears to be in fair condition, although a bit oversized for the building load. There is no mixing valve installed on the system indicating that the hot water is being generated at the delivery temperature of approximately 115 deg F. Storing hot water at temperatures below 140 deg F has been found to promote the growth of Legionella bacteria.

Plumbing fixtures in the Public Works areas of the building are very limited with only two toilet rooms and a lunch room, and no fixtures are located in the lunch room. The lower level toilet room has a floor mounted, white vitreous china, tank type water closet, a wall mounted white vitreous china urinal with manual flush valve, and a floor mounted plastic laundry tray. The urinal and laundry tray are in fair to good condition while that water closet is in poor condition. None of the fixtures are ADA compliant.

The upper level toilet room contains another floor mounted, tank type toilet also in fair condition as well as a large plastic laundry type sink mounted in a base cabinet. This sink is used for cleanup in the break room as well as the toilet room lavatory.

The final plumbing fixture in the Public Works area is a wall mounted stainless steel eyewash station located at the bottom of the stairwell. The eyewash appears to be direct connected to the sanitary system at the toilet room laundry tray on the other side of the wall. The installation does not appear to be provided with a thermostatic mixing valve in order to provide the tempered water supply required at the fixture by current safety standards.

Across the Public Works vehicle bays entries is a continuous trench drain with a slotted steel grate. Record drawings indicate that the sanitary line for this system exits out the back of the building with no indication that an oil or gasoline interceptor has been provided. The sanitary piping for the toilet room fixtures is indicated to separately run to the rear of the building with a cleanout provided in the lower level supply room before the line exits the building.

There are two large air compressors located at the rear of the lower level Public Works locker room area. There is a newer compressor mounted on an 80 gallon vertical tank as well as an older compressor mounted on a horizontal tank. Both units appear to be active and have tags indicating regular testing of the equipment. Both of the compressors are connected to a 2-inch compressed air

main which runs along the rear wall of the maintenance bays; it continues into the adjacent school district vehicle bays as well.

There are several compressed air stations located along the rear wall of the Public Works bays where filters and a pressure regulator are installed for both general use as well as to connect to overhead piping running to several compressed air hose reels located adjacent to vehicle work areas.

There is a small stainless steel hand sink with a side bubbler installed in a plywood cabinet located in the back corner of the school bus repair bays. On one side of the sink is a floor mounted, 20-gallon, electric hot water heater in poor condition and on the other side is a wall mounted emergency eyewash station. The domestic water for these fixtures comes from a hard pipe connection to a hose bibb which was originally on the exterior of the public works building. These fixtures are in poor condition.

None of the hot or cold water in this area is insulated. The electric hot water heater supply line is not provided with a thermostatic mixing valve and therefore is only heating water to the supply temperature and not to 140 deg F to prevent the growth of Legionella bacteria.

It was noted that the eyewash station is also not provided with a thermostatic mixing valve as required by current codes. The eyewash was noted to be covered with a thick layer of duct which indicates that it has noted been tested in quite a while. The eyewash drain is simply an open pipe, intended to drain onto the floor, but if currently operated it would fill the plastic recycling bin filled with rags currently placed below the eyewash.

A second domestic cold water line enters the bus repair bays from the public work bays at the front by the overhead doors. This cold water line serves several hose bibbs along the front of the building, both interior and exterior. At the opposite side of the repair bays a cold water branch extends from this line to the toilet rooms and their water heater. The cold water line then continues through the unheated storage bays to serve an exterior wall hydrant at the end of the building.

A men's and a women's toilet room has been provided for the bus drivers in the second to last bay of the building. Each of the toilet rooms contains two floor mounted, white vitreous china, tank type water closets, one of which is provided at the required ADA height. Each room also has a wall mounted, white vitreous china lavatory with a manual level handle faucet and pipe insulation provided on exposed lines below. Record drawings provided called for the installation of a floor drain in each of the toilet rooms which were not installed. The current plumbing code does require the installation of a floor drain in toilet rooms where more than one flush fixture is installed.

At the rear of the building, behind the toilet rooms is an alcove off of the corridor which contains a water heater and a laundry tray type utility sink. The water heater is a floor mounted, 20-gallon electric

heater in good condition. Neither cold nor hot water piping exposed at the heater is insulated and no thermostatic mixing valve has been provided at this location either.

The service sink is a floor mounted plastic laundry tray which is currently only supported on two legs; the other two legs are lying on the floor below the sink. The sink faucet has a manual faucet and a swing spout. The faucet outlet is provided with a two-way manual splitter valve; one side is open for discharge and the second is a hose connection to the wall mounted detergent dispenser adjacent to the sink. It was noted that there is no vacuum breaker provided on the faucet, nor is there any type of backflow preventer to stop the detergent from siphoning back into the building domestic water system.

Exposed drain piping at the service sink was noted as being PVC pipe. The PVC vent line for these fixtures was noted as being exposed PVC in the storage area above where it continues up through the ceiling and presumably through the roof above.

The bus repair bays are provided with compressed air from the compressors and piping in the public works area. Exposed compressed air piping runs along three walls of the bus bays with various quick connections in place, some in use with filters and regulators and other not in use. Compressed air piping also rises up on the rear wall to run exposed on the ceiling to serve a total of six ceiling mounted air hose reels.

In the bus bays there is a continuous trench drain located near the overhead doors. In the two adjacent storage bays, the floor trench drain appears to have been filled in with concrete.

There is no sprinkler system provided for this building.

The salt shed is provided with a whole building ventilation system. A large air intake louver is located above the overhead door at the southeast end of the building, and a motorized damper is placed behind the louver. It was noticed during the walk through that the damper blades or axles are bent or damaged and several sections of the louver cannot fully close.

A large through wall exhaust fan is located at the northwest end of the salt shed and the fan is interlocked with the intake damper actuator. A large louver had initially been installed at the exhaust fan, but the louver is no longer in place. The blades of the exhaust fan are starting to rust, and without the louver in place, the fan is fully exposed to the elements.

Electrical

The existing electrical service to the building runs overhead from a 50KVA pole mounted transformer at the northwest corner of the building. Information from Central Maine Power Company indicates the peak demand for the last 12 months was 49.3-kVA, which is close to the full rated capacity of the transformer. However, the average demand of the last 12 months is 34.4-kVA which is approximately

two thirds of the rated transformer capacity. The electrical service is not recommended for upgrade unless significant load is to be added to the electrical system. The service entrance feeder is terminated in a 600A 120/240V main circuit breaker panelboard located in an electrical closet off of the break room. The electrical closet also serves as a telephone equipment room. The building's single meter is located on the outside of the building adjacent the front entrance.

The building is equipped with a back-up generator to provide power for operations during power outages. The generator provides power for both life safety and non-life safety loads. Under current code separate transfer switches are required for the two types of loads. The generator provides power to general lighting and receptacle loads in the garage. Heating loads are not connected to the generator.

Branch wiring within the building appears to consist primarily of non-metallic sheathed cable (NM or romex).

Branch panelboards in the building are circuit breaker type and appear to be in good condition. The labeling and circuit directory for panelboards appears to be recent and assumed to be up to date. Panelboards must have a dedicated 3-foot working space in front as required by NEC 110.26. General use receptacles in the garage area do not have ground fault protection. Ground fault circuit interrupting receptacles or circuit breakers should be installed for the garage area of the building. Receptacles located on the exterior of the building are required to have weather proof while in use covers.

General lighting in the facility is primarily fluorescent type. Some of the fixtures have been upgraded to energy efficient T8 and garage area lights were recently upgraded to high efficiency T5. Lighting control throughout the building is via local switching only and not occupancy sensor control.

The exterior lighting for the building is provided by wall pack type fixtures and high intensity discharge and LED flood lights. Parts of the driveway and parking areas are illuminated by cobra head style street lights leased from CMP. Flood lighting is not optimal for lighting of the parking area due to non-uniform light and shadowing effect. Although providing general security lighting, flood lighting creates glare and trip hazards. Exterior lighting should be replaced with energy efficient LED fixtures.

Emergency egress lighting in the facility is provided by the normal lighting fixtures connected to the generator. The current wiring scheme does not meet life safety code for emergency egress lighting. Separate battery type lighting units are required to cover the egress paths. Exterior emergency lighting is not provided at the building egress points.

Exit signage is required to be located along egress paths and at the egress points but does not currently exist.

There is not currently a fire alarm system for the building.

Public Works Facility
Opinion of Probable Cost

Civil
No cost estimates were developed for the civil programmatic deficiencies.

Structural
Repair damaged corner at northwest corner of building - $500.

Repair and seal crack at west masonry wall - $800.

Architectural
Toilets on both levels of the Public Works space do not meet ADA requirements. The toilet on the lower level should also not be accessed from the stair because of egress requirements and the emergency eyewash should also not be located in the stairwell. Reconstruct toilet rooms, provide new finishes, provide new fixtures, relocate eyewash to maintenance bays outside lower level toilet room, and provide sink in upper level break room and smaller lavatory in ADA toiler room. $28,500

There is no accessible means of travel between the upper and lower Public Works levels. An elevator would be needed to provide accessibility between the floors. $100,000

The door from the stair to the Public Works maintenance bays has a fire rating label that has been painted over. At the time of the field investigation, the door was being held open by a strap. The door needs to remain closed to perform as a fire rated door. This door is also rusting and does not have handicapped accessible hardware. Replace door, frame and hardware. $1,250

Most doors on the Public Works upper level do not have ADA hardware. Replace knobs with lever handles. $300

Doors between sections of maintenance bays have fire ratings but are missing latches or closers. These doors and the exterior door on the west end of the building have rusted metal frames. Replace doors, frames and hardware. $3,750

The enclosed space within the School District bays is designed to be fire rated. The masonry wall that separates this area from the adjacent bays has an opening where a concrete block is missing. Fill opening in masonry wall. $300

Metal doors providing loading access to the upper level storage in the School District section require closers to act as fire rated doors. Provide closers. $500

Sections of the salt shed roof panels and aluminum trim are damaged. The entrance door, frame and trim are severely corroded. Repair roofing, replace trim and replace door, frame and hardware. $2,500

Mechanical

At the salt shed, the automatic damper at the southeast air intake louver should be replaced so that it can fully close. A new louver should also be provided at the exhaust fan to help protect the fan from the elements, extending its service life. The total installed cost for a replacement intake damper and a replacement exhaust louver should be approximately $1,575.

The secondary clean oil-fired furnace for the public works maintenance bays appears to be original (from 1980) and is beyond its expected useful service life of 20 years. Replacement of this unit should be scheduled within the next 5 years to prevent unexpected failure. The total replacement cost for this should be approximately $8,750 based on a 400 MBH unit.

The public works office and support area electric baseboard and wall heaters appear to be original to the building, except for two units on the lower level and they are beyond their expected useful service life of 20 years. Replacement of this equipment should be scheduled within the next 5 years to prevent unexpected failure. The total replacement cost for this should be approximately $2,000.

The School District women's toilet room exhaust fan should be removed and replaced with an operational fan if repairs cannot be made to make the existing fan operational again. The total replacement cost for this should be approximately $450.

We recommend that a thermostatic mixing valve be provided on each of the three the domestic hot water supplies and that the electric water heater setpoints be raised to 140 deg F. This would result in a higher water storage temperature, preventing growth of Legionella bacteria. The total installed cost for providing three small mixing valves should be approximately $2,700.

Neither the eyewash station in the public works stairwell nor the eyewash in the school bus repair bays is currently provided with a thermostatic mixing. Current safety standards require that the supply water temperature to emergency fixtures be "tepid" or around 85 deg F so that full flushing of eyes can occur. We recommend that a thermostatic valve be provided for both of these fixtures. The total installed cost for providing two thermostatic mixing valves should be approximately $2,200.

We recommend that money be budgeted to remove the small electric hot water heater in the School District bus repair bays and to extend domestic hot water piping from the newer water heater near the toilet rooms since this older water heater appears to be beyond its useful service life. When this heater is removed we recommend that the existing stainless steel sink also be removed and replaced with a larger plastic laundry tray type fixture which would be more useful to the personnel. Space for a larger

sink would become available from the water heater removal. The total installed cost for the water heater removal and the sink replacement should be approximately $900.

Electrical

Provide emergency lighting and exit signage to meet current life safety code. $8,000

Provide code required ground fault protection for equipment bay receptacles. $4,400

Provide code required weatherproof while in use receptacle covers. $600

Provide energy efficient LED exterior lighting. $800

Install occupancy sensors throughout the building for energy savings. $1,700 (not including potential rebates)

Install a fire alarm system for the building. $13,500

Public Works Facility
Photographs

Civil Photo 1 - The Site Entrance and "Half" of the Manual Swing Gate

Civil Photo 2 - The Entrance Driveway

Civil Photo 3 - Public Works Office Entrance

Civil Photo 4 - Personal Vehicle Parking

Civil Photo 5 - Emergency Generator and Other Utilities on Northwest Side of Office/Garage

Civil Photo 6 - Septic System Area with (school) Modular Building and Driveway in Background

Civil Photo 7 - Looking Northwest Along the Southeast Side of the Garage

Civil Photo 8 - The Diesel and Gas Tanks

Civil Photo 9 - The Maneuvering Area

Civil Photo 10 - Note the Recycling Containers at the Southerly Corner of the Maneuring Area

Civil Photo 11 - The "Active End" of the Sand/Salt Storage Building

Civil Photo 12 - Four Public Works Garage Bays and Outdoor Equipment Maintenance Area

Civil Photo 13 - The Maneuvering Area Viewed from the South

Civil Photo 14 - School District Parking and South end of Garage

Structural Photo 1 - Crack at Exterior Side of Masonry Wall

Structural Photo 2 - Crack at Interior Side of Masonry Wall

Structural Photo 3 - Damaged Corner Due to Vehicle Impact

Architectural Photo 1 – Upper Level Entrance

Architectural Photo 2 – Lower Level Entrance

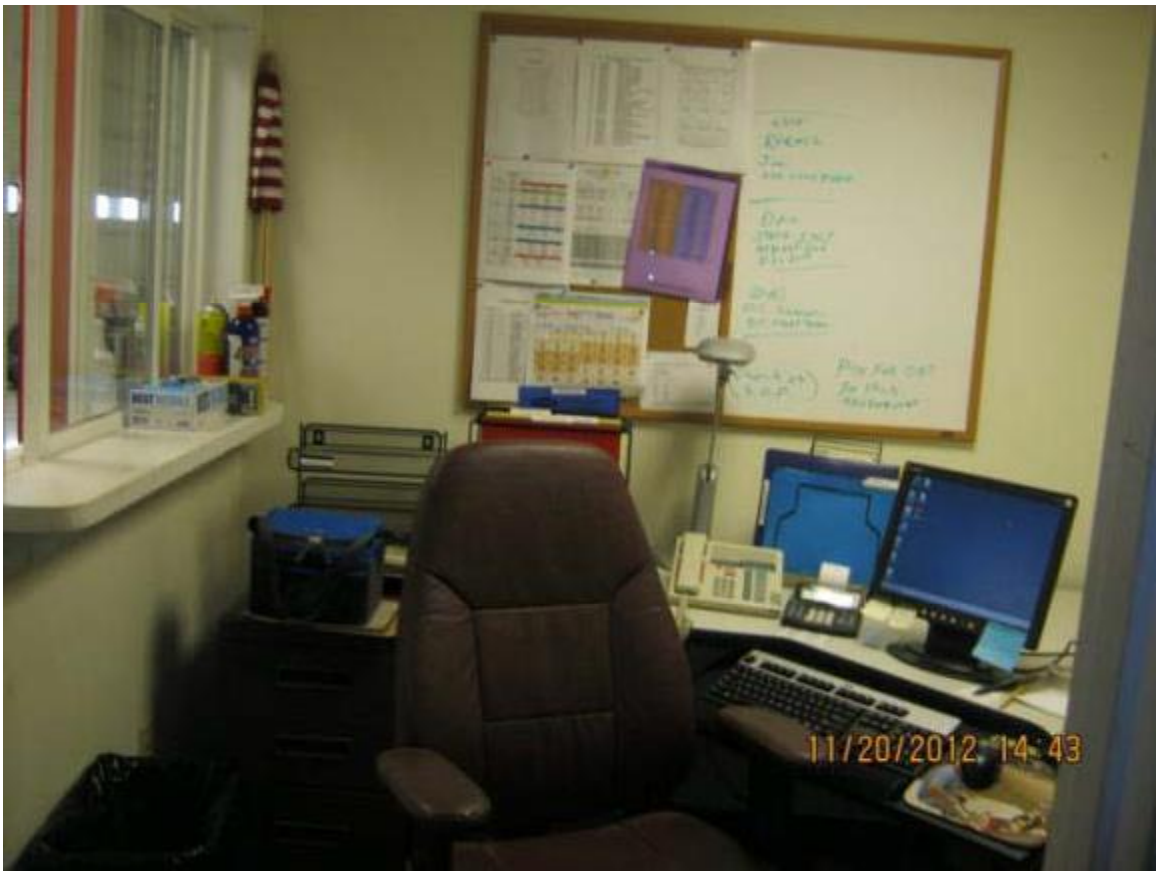
Architectural Photo 3 – Lunch Room with Ceiling Ventilation Grilles

Architectural Photo 4 – Office

Architectural Photo 5 – Upper Level Toilet Room

Architectural Photo 6 – Stair

Architectural Photo 7 – Maintenance Bays

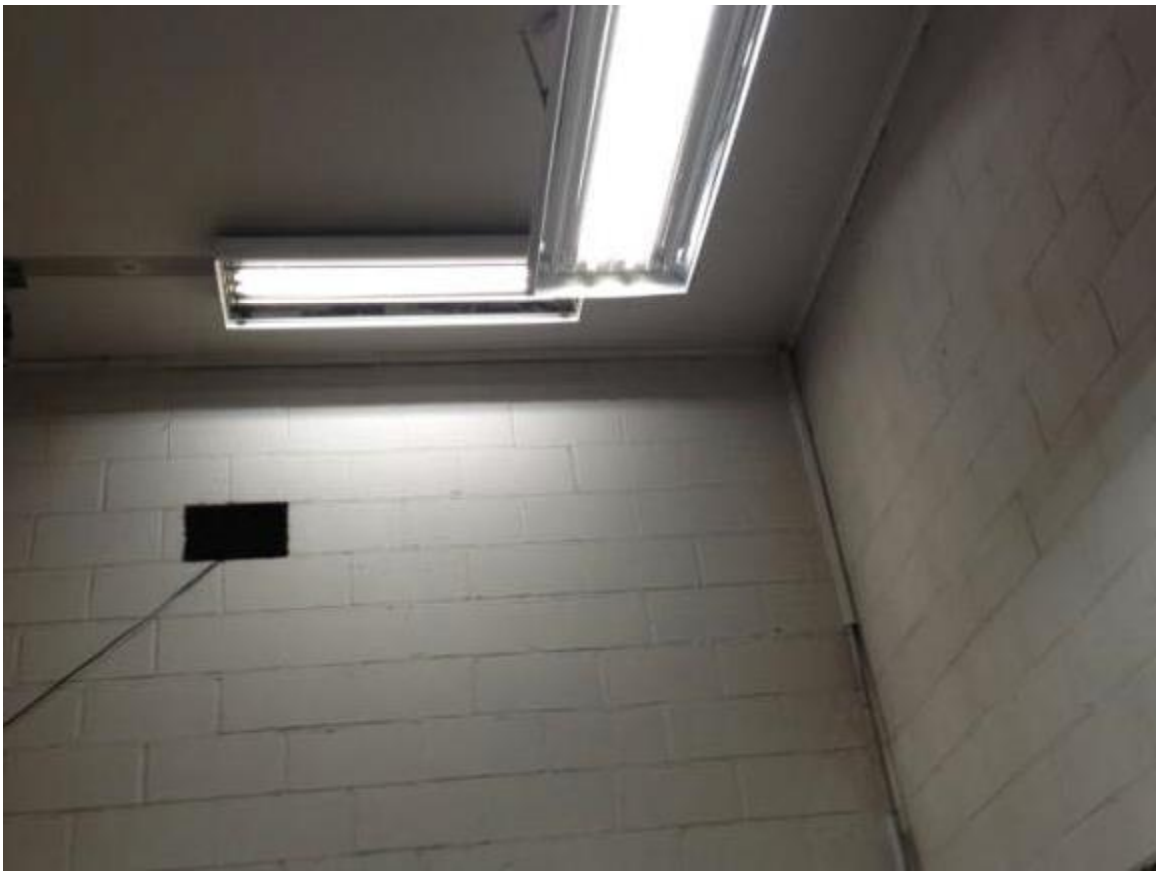


Architectural Photo 8 – Parts Office

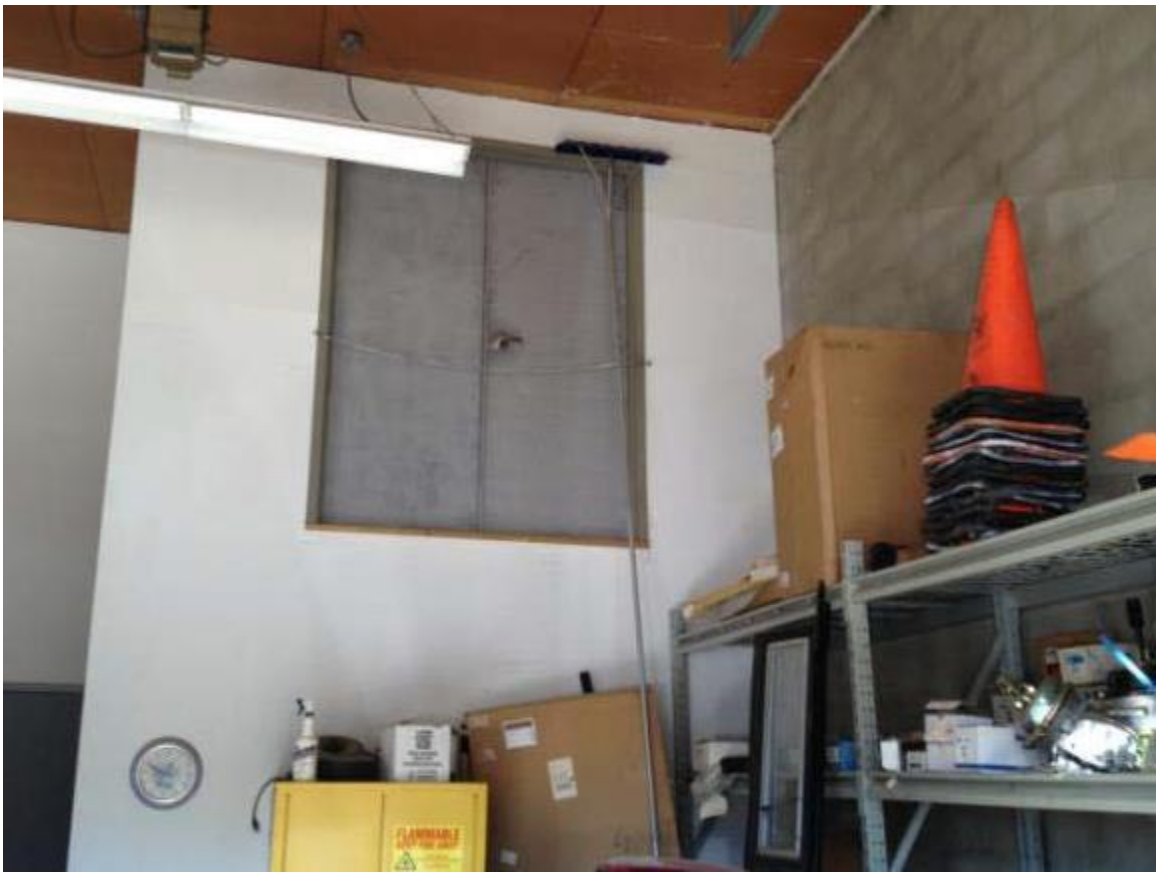
Architectural Photo 9 – Parts Storage

Architectural Photo 10 – Lower Level Toilet Room

Architectural Photo 11 - Rusted Door and Frame



Architectural Photo 12 - Opening in Fire Rated Masonry Wall



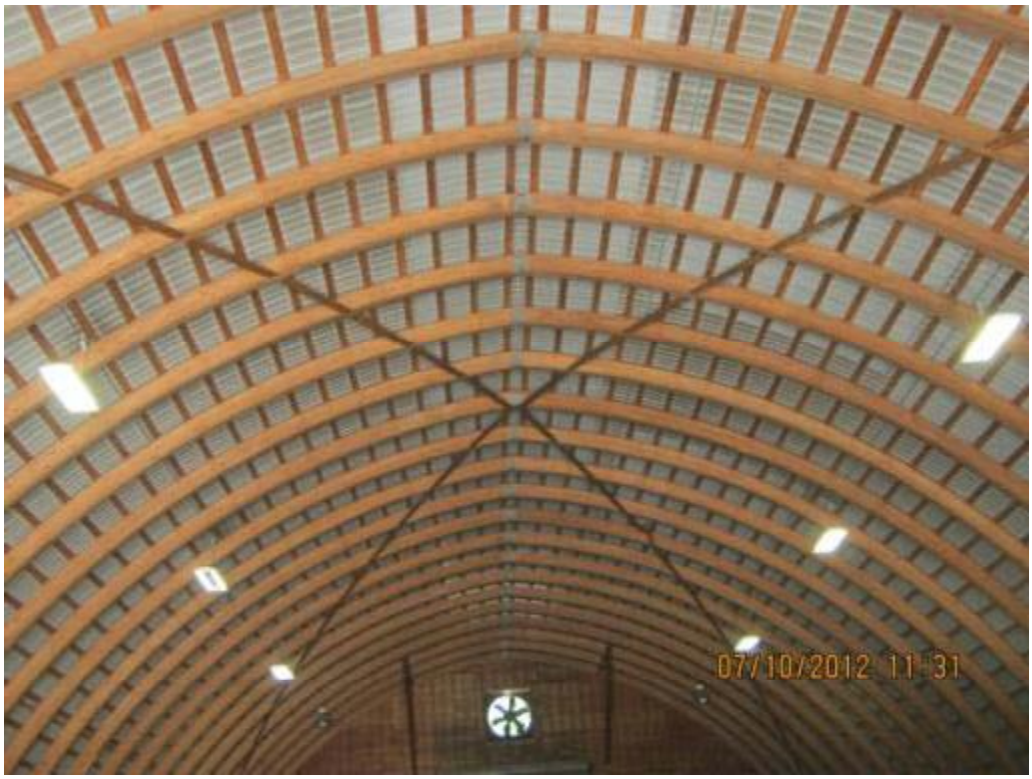
Architectural Photo 13 - Loading Access Doors

Architectural Photo 14 - ADA Toilet

Architectural Photo 15 – Salt Shed

Architectural Photo 16 – Damaged Aluminum Trim

Architectural Photo 17 – Rusted Door and Frame



Architectural Photo 18 – Salt Shed Interior - Exhaust Fan at Far End

Mechanical Photo 1 - Used Oil Recovery Tank with Suction Pumps on Top in Public Works Area

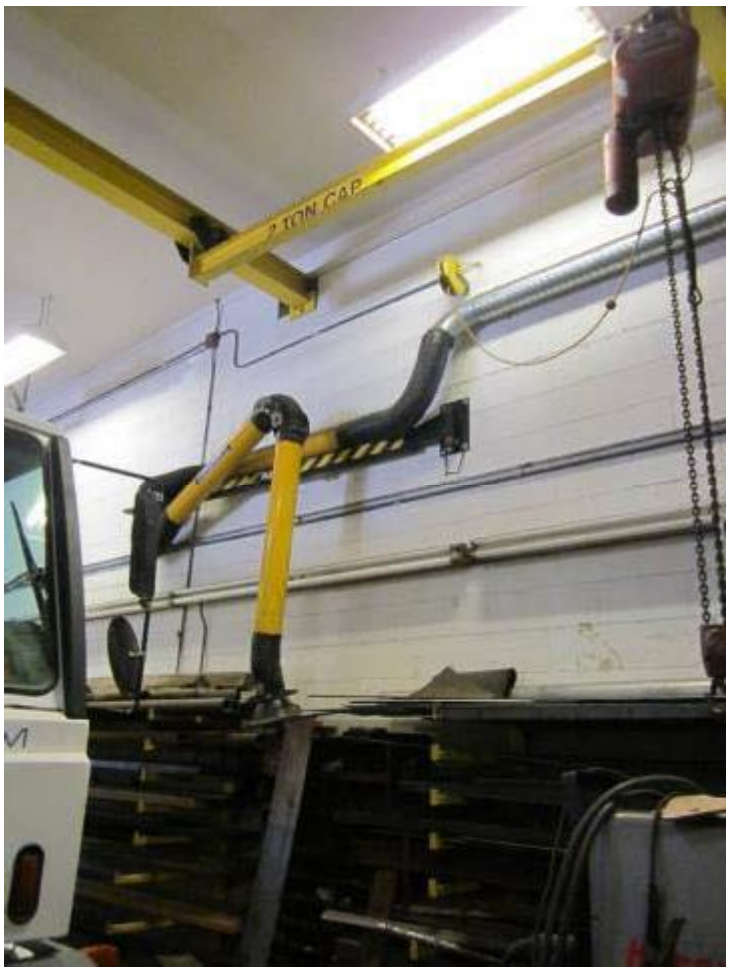
Mechanical Photo 2 - Tank Mounted Used Oil Distribution Manifold and Transfer Pumps in Public Works Area

Mechanical Photo 3 - Primary Suspended Oil-Fired Heater Which Burns Used Oil in Public Works Area

Mechanical Photo 4 - Secondary Suspended and Ducted Oil-Fired Heater which Burns Clean Oil Only in Public Works Area

Mechanical Photo 5 - Outside Air Intake Duct, Fan and Flexible Supply Duct Sox for General Exhaust System in Public Works Area

Mechanical Photo 6 - Two of Three Vehicle Exhaust System Hose Reels and Exhaust Ductwork in Public Works Area



Mechanical Photo 7 - Wall Mounted Adjustable Welding Arm and Extraction Hood in Public Works Area

Mechanical Photo 8 - Rear of Garage Left to Right: Inactive Exhaust Fan Hood, Vehicle Exhaust System Fan, Outside Air Intake Hood for General Exhaust System, and Welding Hood Exhaust Fan

Mechanical Photo 9 - Lower Level Stairwell Wall Mounted Electric Unit Heater in Public Works Area

Mechanical Photo 10 - Upper Level Electric Baseboard Heater in Public Works Area - Partially Blocked

Mechanical Photo 11 - Small Wall Mounted FanTech Ventilation Heat Exchanger for Lower Level Spaces with Excessive Flexible Duct Installation Lengths in Public Works Area

Mechanical Photo 12 - Larger Wall Mounted Lennox Ventilation Heat Exchanger for Upper Level Spaces in Public Works Area

Mechanical Photo 13 - Upper Level Break Room in Public Works Area - Electric Range without Range Hood

Mechanical Photo 14 – Bus Bay LPG Gas-Fired Suspended Unit Heater

Mechanical Photo 15 – Exterior LPG Tanks for Bus Bay Heater

Mechanical Photo 16 – Bus Bay Exhaust Hose Reel and Circulating Fan

Mechanical Photo 17 – Corridor Electric Baseboard

Mechanical Photo 18 – Inoperable Women's Room Exhaust Fan

Mechanical Photo 19 - Domestic Water Service Entrance Up Through Floor with Water Meter and Backflow Preventer

Mechanical Photo 20 - Electric Domestic Hot Water Heater in Lower Level Toilet Room for Public Works Area

Mechanical Photo 21 - Lower Level Toilet Room Water Closet in Public Works Area - Poor Condition

Mechanical Photo 22 - Lower Level Toilet Room Plastic Laundry Tray in Public Works Area

Mechanical Photo 23 - Lower Level Stairwell Emergency Eyewash Station in Public Works Area

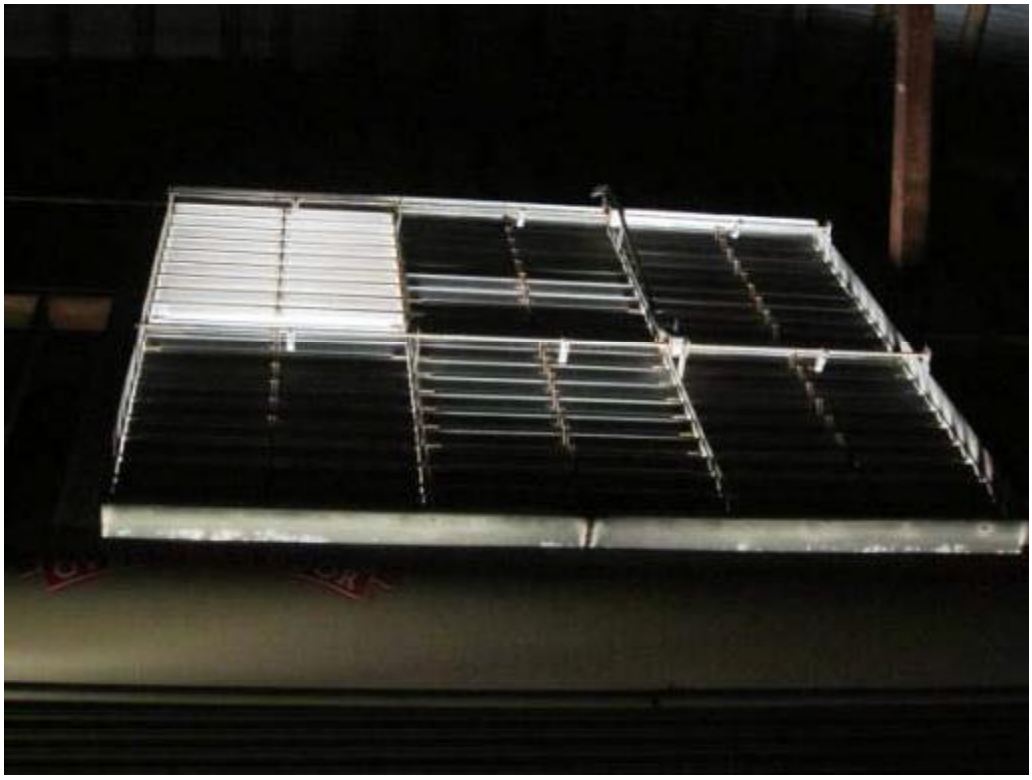
Mechanical Photo 24- Newer Vertical Tank Air Compressor and Older Horizontal Tank Air Compressor in Lower Level Locker Area in Public Works Area - Both In Use

Mechanical Photo 25 - Typical Ceiling Mounted Compressed Air Hose Reel in Public Works Area

Mechanical Photo 26 – Bus Bay Electric Water Heater, Sink and Emergency Eyewash

Mechanical Photo 27 – Electric Water Heater and Service Sink

Mechanical Photo 28 -Sand Salt Shed Air Intake Louver



Mechanical Photo 29 - Sand Salt Shed Air Intake Damper - Sections Do Not Fully Close

Mechanical Photo 30- Sand Salt Shed Exhaust Fan - Protective Louver Missing

Electrical Photo 1 – Main Disconnect and Panelboard

Electrical Photo 2 – Electrical Service Drop and Transfer Switch