PART 1 – PRODUCTS & EXECUTION

Article I. LIGHTING RETROFIT

A. General Lighting Description

1. The Lighting Scope of Work is set forth in Exhibit A-1 attached hereto and incorporated herein by reference. Honeywell will provide project supervision, labor, and any appurtenances necessary for proper execution and completion of the scope outlined in Exhibit A-1. In general, the project consists of replacing HID fixtures with high performance fluorescent fixtures, converting existing T12 lamps and magnetic ballast to energy efficient 30 watt T8 lamps and high efficiency electronic ballast, either through retrofit or replacement of fixtures. Finally, occupancy sensors will be installed in appropriate spaces to further eliminate waste. Existing T8, T5, HID, Compact Fluorescent and LED fixtures will not be included in this scope of work-unless specified otherwise in Exhibit A-1.

B. Lighting Upgrade Specifics

1. 800 series, 30,000 hour, 30 watt T8 lamps will be used
2. Lenses will be dry wiped to remove dust and debris at time of installation.
3. Broken and missing lenses will be replaced on fixtures that will be retrofit.
4. In compliance with federal regulations, Honeywell will recycle all lamps and PCB laden ballasts. A manifest will be provided to the customer at the end of the job stating the number of lamps and ballasts that were recycled.

C. Lighting Materials Warranty

1. The electronic ballasts installed on this project have a manufacturer's warranty of 5 years.
2. The fluorescent lamps installed on this project have a manufacturer's warranty of 2 year.
3. Specific damage to the lighting system caused by lightning, significant changes in power quality, power surges, physical damage to the equipment or abnormal operation are excluded from this warranty. The warranty shall commence upon completion and acceptance by the customer of each facility. The customer will be asked to sign off on the installation tracking forms on a regular, ongoing basis. As a result, a portion of the individual facility warranty(s) will commence in advance of the overall project completion.
4. During the warranty period the Customer's staff shall replace all defective lamps and ballasts under warranty. A 1% supply of replacement lamps, ballasts and compact fluorescent lamps shall be left on-site, to cover any pre mature failures. The customer shall be reimbursed $10 for every defective ballast replaced by their staff during the warranty period and receive new lamps and ballasts for every defective component returned, on a one for one basis, throughout the warranty period. The Customer shall work directly with the manufacturer on all warranty issues.

D. Lighting Scope of Work per Building - See Exhibit A-1 for room by room detail per building.

1. CITY HALL

Lighting in the building is primarily fluorescent fixtures with electronic ballasts and energy saving T12 lamps.

The following work will be performed.

1.1. Replace existing T12 lamps and electronic ballasts with new high performance 30 watt T8 lamps and high efficiency T8 electronic ballasts.

1.2. Install high performance reflectors and de-lamp in identified fixtures, along with the T8 lamp and ballast retrofit

1.3. Re-lamp any existing T8 fixtures with new high performance 30 watt T8 lamps

1.4. Install wall or ceiling mounted occupancy sensors in rest rooms

2. CITY YARD/PUBLIC WORKS GARAGE

Lighting in the building is a combination of metal halide fixtures in the vehicle storage areas and primarily fluorescent fixtures with electronic ballasts and energy efficient T8 lamps in the shops and office areas. New high bay fluorescent fixtures were installed recently in the vehicle maintenance area and the welding shop.

The following work will be performed.

2.1. Retrofit any remaining T12 fixtures to high performance T8 lamps and high efficiency electronic ballasts

2.2. Install high performance reflectors and de-lamp identified fixtures

2.3. Re-lamp existing T8 fixtures with new high performance 30 watt T8 lamps

2.4. Install wall or ceiling mounted occupancy sensors in identified rest rooms

2.5. Install (10) wall or ceiling mount occupancy sensors in customer selected areas.

2.6. Replace the exiting 250 watt metal halide fixtures in the vehicle storage area with high performance, 4 lamp high bay fluorescent fixtures.

2.7. Replace low pressure sodium fixtures with new fluorescent fixtures.

2.8. Replace the 400 watt HPS fixtures in the wash bay with vapor tight, 6 lamp high bay fluorescent fixtures.

3. LIBRARY

Lighting in the building is primarily fluorescent fixtures with energy saving magnetic ballasts and T12 lamps. Some metal halide fixtures are located in the foyer.

The following work will be performed.

3.1. Replace existing T12 lamps and magnetic ballasts with new high performance 30 watt T8 lamps and high efficiency T8 electronic ballasts.

3.2. Replace the 400 watt metal halide fixtures in the high bay library area with new 6 lamp, high bay fluorescent fixtures.

3.3. Replace fluorescent EXIT fixtures with new LED EXIT fixtures

3.4. Install wall or ceiling mounted occupancy sensors in rest rooms

4. POLICE DEPARTMENT

Lighting in the building is primarily fluorescent fixtures with electronic ballasts and T8 lamps. Many of the fluorescent fixtures in the hallways are using a very expensive 40 watt biax compact fluorescent lamp in a 2 x 2 recessed fixture. There are also some metal halide fixtures in the central office area

The following work will be performed.

4.1. Retrofit the existing 2x2 fixtures, using 40 watt biax lamps, to use linear 2 foot lamps and a new electronic ballast.

4.2. Retrofit T12 fixtures in the sally port to T8 and electronic ballasts.

4.3. Replace existing indoor metal halide fixtures with fluorescent high bay fixtures.

4.4. Install occupancy sensors in identified restrooms, locker rooms and fitness areas.

4.5. NOT INCLUDED - existing efficient T8, Compact Fluorescent and LED type fixtures.

Article II. BUILDING ENVELOPE IMPROVEMENTS

A. General Description

1. Honeywell has performed a comprehensive survey of the building envelope; walls, windows, doors and roofs of the identified Buildings. During this survey, areas of infiltration were identified and cost-effective improvements were developed to reduce the amount of infiltration and improve the overall building envelope. The Building Envelope Scope of Work is set forth in Exhibit A-3 attached hereto and incorporated herein by reference. The following work will be performed where applicable in each building

B. City Hall

2. Doors - Leakage detected around most doors through-out building. Some doors only leaked at bottoms and or centers

2.1. Weather-strip all sides of (6) doors marked on Exhibit A-3
2.2. Weather-strip only center and bottoms of (6) doors indicated on plans
2.3. Weather-strip only bottoms of (6) doors indicated on plan

3. Mechanical Rooms - There is a vented mechanical room on ground floor and one on the roof

2.4. Weather-strip (1) oversized hallway door to ground floor mechanical room
2.5. Block and seal grill in hallway door to roof mechanical room

C. City Yard/Public Works Garage

1. Doors - Leakage detected around most doors through-out building

1.1. Weather-strip (15) doors marked on Exhibit A-3

2. Windows. Leakage detected with lobby window in water division.

2.1. Seal perimeter of top window of system
2.2. Seal marble sill perimeter

3. Overhead Doors. Daylight visible around some overhead doors.

3.1. Weather-strip only top and sides of overhead doors marked on Exhibit A-3

D. Library

1. Doors. Leakage detected around some doors.

1.1. Weather-strip all sides of (4) doors marked on Exhibit A-3
1.2. Weather-strip only center and bottom of (4) doors marked on Exhibit A-3

2. Mechanical Room

2.1. Weather-strip hallway door of second floor mechanical room

E. Police Department

1. Doors. Leakage detected around some doors. Some doors only leaked at centers and/or bottoms.

1.3. Weather-strip all sides of (3) doors marked on Exhibit A-3
1.4. Weather-strip only center and bottoms of (2) doors marked on Exhibit A-3
1.5. Weather-strip only bottoms of (2) doors marked on Exhibit A-3
1.6. Weather-strip (6) exterior doors of garage
1.7. Weather-strip (1) roof top door

2. Boiler Room

2.1. Weather-strip (2) hallway doors

F. Police Department East Substation

1. Doors

1.1. Weather-strip all sides of (1) side entrance door
1.2. Weather-strip only center and bottom of (2) main entrance doors

G. Senior Center

1. Doors. Leakage detected around most doors in building.

1. Doors. Leakage detected around most doors in building.

1.3. Weather-strip (8) exterior door indicated on Exhibit A-3
1.4. Weather-strip (1) attic entrance door

2. Boiler Room

2.1. Weather-strip (1) hallway door
2.2. Seal pipe penetrations

H. Health Department

1. Doors

1.1. Weather-strip (4) exterior doors marked on Exhibit A-3
1.2. Weather-strip oversized roof top door

2. Boiler Room

2.1. Weather-strip (1) hallway door
2.2. Seal pipe penetrations

I. Fire Department Administration

1. Doors

1.1. Weather-strip doors listed below;
- 1.1.1. Main floor door on east side
- 1.1.2. Main floor door on S/E side
- 1.1.3. Only bottom of main entrance door

2. Mechanical Room

2.1. Weather-strip hallway door

J. Fire Station #1

1. Doors. Existing weather-strip of doors on west side of building in good shape but requires adjusting

1.1. Adjust existing weather-strip and install new door bottoms on (2) doors
1.2. Weather-strip roof top door

2. Mechanical Room

2.1. Weather-strip hallway door

K. Fire Station #2

1. Doors. Leakage detected around many doors, but often only at center and/or bottoms.

1.1. Weather-strip all sides of front door (beside garage)
1.2. Weather-strip only centers and bottoms of doors listed below;

1.2.1. (2) Gym entrance doors
1.2.2. (2) Turn-out gear room doors
1.3. Weather-strip only bottoms of doors listed below;
1.3.1. Main entrance
1.3.2. Roof door
1.3.3. Rear door of garage door
1.3.4. Front door of garage door

Article III. HEATING, VENTILATING & AIR CONDITIONING (HVAC) IMPROVEMENTS

A. CITY HALL – Install Variable Frequency Drive (VFD) on Cooling Tower Fan

1. Install a 20 HP VFD on the cooling tower fan and automatically adjust the speed of the cooling tower fan to maintain the condenser water set point, through the existing building automation system (BAS).

B. CITY YARD/PUBLIC WORKS GARAGE – Reduce Run-Times of Make Up Air Units and Exhaust Fans

1. Re-program the existing Building Automation System to reduce the run-time of the make up air unit and exhaust fans to the code minimum of 5 hours per day as well as automatic operation as dictated by the CO and NO2 sensors to maintain appropriate air quality in the vehicle storage areas.

C. CITY YARD/PUBLIC WORKS GARAGE – Replace Existing Steam Heating System with a Gas Infrared & Hot Water Heating System

1. Replace the existing steam heating system with a hybrid gas infrared/hot water heating system. Steam systems are inherently inefficient and much more complex and costly to operate due to the steam traps, condensate handling equipment, additional controls required on steam boilers and the required water treatment equipment and materials.

2. In order to save energy, simplify operation of the heating system and to replace an old heating system, which is past its expected useful life, we will install a new hybrid system to include the following items:

2.1. Install new high efficiency CO RAY VAC gas infrared tube heating systems in the main vehicle storage area, the west addition vehicle storage area and the vehicle maintenance area.

2.2. Install high efficiency hot water boilers in the mezzanine above the main office area. Install hot water pumps, expansion tank and other hot water auxiliaries as required to provide a hot water heating system to serve the main office and the shops and offices to the south and north of the vehicle storage area.

2.3. Provide new insulated hot water supply and return piping.

2.4. Retrofit the following steam coils to operate with hot water

2.4.1. (5) booster coils for the main office area
2.4.2. Heating coil for the water division office RTU
2.4.3. Women's restroom fan-coil unit
2.4.4. Sign shop make up air unit

2.5. Install new hot water baseboard heating in the northeast office area, the lunch room smoking area, Buildings & Electrical office area and the forestry division office.

2.6. Replace (18) existing steam unit heaters with new hot water unit heaters and connect to hot water system

2.7. Install new cabinet unit heater in the men's restroom and connect to hot water system.

2.8. In the 1977 addition, where the existing steam unit heaters or convectors are in decent shape, hot water supply and return will be piped to the units and the units will be converted to use hot water. Some of the existing piping may also be re-used as appropriate.

2.9. Install a new direct gas fired make up air unit to replace the existing steam make up air unit for the paint booth.

2.10. Install (11) ceiling fans on 3-speed controllers in the vehicle storage areas.

2.11. Install a new gas fired unit heater in the weld shop along with a new Clean Burn waste oil heater. Both the waste oil heater and gas fired unit heater will be sized for the entire heating load of the weld shop. A new 660 gallon waste oil storage tank will be installed, in a 10' x 10' area, in the northeast corner of the electrical shop storage area, in a certified manner, to store the waste oil for the heater.

2.12. The existing steam boilers will be demolished and removed. Owner shall be responsible for associated asbestos abatement, if required.

2.13. Existing steam and condensate return lines will be abandoned in place, unless they need to be removed to make room for new equipment.

2.14. All Engineering, design, drawings, state submittal and permitting is included.

2.15. The new hybrid heating system will be controlled and monitored by the existing Honeywell Building Automation System.

2.16. Existing exhaust fans and gas fired make up air units will remain in place and operational.

D. LIBRARY - Upgrade Temperature Controls to Direct Digital Controls (DDC)

1. Upgrade the existing pneumatic controls to DDC on (4) air handling units, (6) modular boilers, (2) hot water pumps and (35) VAV boxes. Work will include the following.

1.1. Control the existing pneumatic valve and damper actuators on the (4) air handling units, through electric – pneumatic transducers.

1.2. Control the (6) modular boilers directly through the DDC system, eliminating the existing Hydro-therm boiler control system.

1.3. Retrofit (35) VAV boxes from pneumatic control to DDC, including the following work.

1.3.1. Replace the pneumatic controllers with DDC controllers
1.3.2. Disconnect the pneumatic branch line to the existing internal pneumatic damper and install a new circular damper, with electric actuator, upstream of the existing VAV box.
1.3.3. Re-use the existing air velocity sensors/pick up tubes.
1.3.4. Replace (27) pneumatically controlled valves on the perimeter baseboard with (27) new valves with electric actuators.
1.3.5. Replace (4) VAV pneumatically operated reheat valves with (4) new valves with electric actuators.
1.3.6. Replace the VAV box pneumatic thermostats with new electronic wall modules/temperature sensors.

1.3.7. For (17) zones we will also supply and install a ceiling or wall mounted, low voltage occupancy sensor, to be wired into to the VAV box controller to detect occupancy in the zone. During scheduled occupied times, if no occupancy is detected in the zone for 10 minutes (adjustable), the VAV box shall be put into a standby mode, where the damper and heating valve shall completely close and the VAV box shall control to a standby heating/cooling set point which will be 2 degrees (adjustable) lower than the occupied heating set point and 2 degrees (adjustable) above the occupied cooling set point.

2. Provide a graphical "front end" interface which will be accessible from the internet.

E. POLICE DEPARTMENT – Add Ventilation Control to the Garage Make Up Air Unit & Exhaust Fans

1. Code requires continuous exhaust and make up air in vehicle storage facilities, with capacity for 6 or more vehicles, unless an automatic monitoring and control system is in place. Currently exhaust fans and a gas fired make up air unit provide this ventilation for the Police Garage and the exhaust fans and MUAU run continuously.

2. We will install a monitoring and control system to monitor the levels of carbon monoxide (CO) and nitrogen dioxide (NO_2), in the Police Department Garage. The monitoring and control system will automatically control the exhaust fans and make up air unit to only ventilate the areas as required, and will provide energy savings over the existing continuous operation. The control system will be an expansion to the existing Building Automation System. Customer will be responsible for on-going calibration and maintenance of the CO & NO_2 sensors after the 1 year warranty period.

F. POLICE DEPARTMENT – Upgrade HVAC Zone Controls on (14) Large VAV Boxes to Direct Digital Controls (DDC)

1. In order to provide night setback and standby control in large areas, which are currently run 24/7 we will replace the existing pneumatic VAV box controls on the following zones:

1.1. Fan Powered VAV Boxes

VAV Box	Serves	Room #	Max CFM
FPVAV 1	Fitness	006	700
FPVAV 2	Patrol	021	1100
FPVAV 4	Training	025 & 026	1950
FPVAV 6	Muni Court	103	1840
FPVAV 7	Muni Court	103	1840
FPVAV 9	Lobby	154	2100
FPVAV 10	Records	146	2400

1.2. VAV Boxes

VAV Box	Serves	Room #	Max CFM
VAV 5	Work/Evid	032 & 033	550
VAV 8	Sergeants	040	600
VAV 12	Dare	157	450
VAV 28	Conference	177	450
VAV 38	Chief	127	480
VAV 43	Briefing	132	1050
VAV 57	Break	024	2050

2. We will provide all labor and materials necessary to replace the existing pneumatic VAV box controls, pneumatic damper actuator, pneumatic thermostat and hot water valve/pneumatic valve actuator with a new DDC system consisting of a new DDC VAV box controller, new direct coupled damper actuator, electronic wall module with set point adjustment and a new hot water valve with direct coupled electric actuator.

3. Each zone shall have a 7 day occupied/unoccupied schedule with adjustable occupied and unoccupied set points. During the unoccupied mode the damper and hot water valve shall be closed and the VAV box fan shall be off.

4. We will also supply and install a ceiling or wall mounted, low voltage occupancy sensor, to be wired into to the VAV box controller to detect occupancy in the zone. During scheduled occupied times, if no occupancy is detected in the zone for 10 minutes (adjustable), the VAV box shall be put into a standby mode, where the damper and heating valve shall completely close and the VAV box shall control to a standby heating/cooling set point which will be 2 degrees (adjustable) lower than the occupied heating set point and 2 degrees (adjustable) above the occupied cooling set point.

5. All new DDC points will be added to the existing front end, with a graphics interface. The front end software will be upgraded to a windows based graphical interface system, accessible via the internet.

G. POLICE DEPARTMENT – Add CO & NO2 Monitoring and Control of the Proposed Make Up Air Unit and (2) Exhaust Fans in the Garage Addition

1. Add (2) CO and (2) NO2 sensors and control of the make up air unit and exhaust fans which are being proposed in the garage addition. Tie control of this equipment into the existing KMC Building Automation System

H. POLICE DEPARTMENT EAST SUBSTATION – Installation of Occupancy Sensors for HVAC Control

1. The building has (3) single zone HVAC systems that are operated by programmable thermostats, however due to the intermittent use of the building the thermostats are set in the manual mode and maintain a constant temperature.

2. We will add (3) occupancy sensors in the building to be wired into (3) new programmable thermostats to signal the thermostats to go into a standby mode, with reduce set point temperatures, whenever occupancy is not detected in the building. The (3) new thermostats will be networked together and accessible through the internet via a Honeywell WebStat controller.

3. The City will be responsible for providing a LAN connection to the WebStat controller.

Article IV. L.E.D. TRAFFIC SIGNAL RETROFITS

A. CITY WIDE – Install L.E.D. Traffic & Pedestrian Signals

1. The City owns and maintains traffic signals at (69) intersections. (7) of the intersections have been upgraded to L.E.D. signals and L.E.D. pedestrian signals, (12) of the intersections have been upgraded to L.E.D. traffic signals, but still are using incandescent pedestrian signals. (13) of the intersections are located on 60th Street and (3) other intersections which will be re-done in the next few yeas with all new signals. This leaves (37) intersections with incandescent traffic and pedestrian signals and (12) intersections with incandescent pedestrian signals.

2. Honeywell will provide the labor and miscellaneous materials to install (1,348) customer supplied LED traffic signals and (362) customer supplied 12 " LED combination pedestrian signals, including customer

supplied 12" polycarbonate housings, at (49) intersections, as detailed in Exhibit A-2 Traffic Signal Detail. The existing pedestrian signals will be removed and replaced with the new 12" combination pedestrian signals and new 12" black polycarbonate housings.

3. Customer will work directly with the equipment supplier on any warranty issues associated with equipment, which will be supplied by the customer.

PART 2 – GENERAL

A. GENERAL CONDITIONS

1. Honeywell is not responsible for bringing existing lighting/electrical systems up to code or electrical service upgrades if required.
2. If Honeywell encounters any materials or substances classified as toxic or hazardous in performance of the Work associated with the mechanical systems, including asbestos, Honeywell will notify Customer and will stop work in that area until such area has been made safe by the Customer, or Customer's Representative, at Customer's expense. In the event such conditions cause a delay in Honeywell's performance, Honeywell shall be entitled to recovery of all costs associated with such delay, as well as an extension of time of performance.
3. Where demolition of certain areas of a building are required for removal and installation of equipment and that demolition is included in the scope of work defined herein, Honeywell will make every effort to replace such areas with similar materials as available. If such materials are not available, materials of similar quality will be supplied and installed.
4. Electrical: Should a problem with the existing wiring system occur, Honeywell will be limited to electrical wiring modifications (repairs) to three feet (36 inches) of the device or the nearest wall or coiling penetrating, whichever is smaller.
5. Piping: Should a problem with the existing piping system occur, Honeywell will be limited to piping modifications (repairs) to two feet (24 inches) of the device installed or the nearest wall or ceiling penetration, whichever is smaller. Piping includes but is not limited to domestic hot and cold water, cooling cold water, heating hot water, condensate, fuel oil, and cooling tower condensing water.
6. Clean-up: routine vacuuming, coil cleaning, and filter change of air handling devices, etc. is the responsibility of the Customer, or as included in Attachment D,
7. Utility Meter: If new utility meters are required, provision and coordination of utility meters is the responsibility of the customer.
8. Remote Access: Customer shall allow Honeywell remote access to the Building Automation System, through the customer's local area network, for off-site monitoring and remote diagnostics. Customer shall provide necessary IT support in setting up the remote access.
9. Efficiency Values: Honeywell will install equipment and lighting components (hereto referred as "equipment") under the scope described herein with specific energy and water efficiency values. The customer is required to replace any failed "equipment" no longer warranted by Honeywell or a Honeywell subcontractor, with "equipment" of equal or greater efficiency for the full contract guarantee term.
10. Limitation of Liability – Security Systems, Fire Alarm Systems and/or Components - Honeywell's total liability for damages of any kind or nature arising out of or relating to any aspect or component of the security or fire alarm systems and/or components provided under this Agreement is limited to $200,000.
11. Honeywell will provide information necessary to apply for utility incentives. Actual dollar amount of incentive will be determined by the Utility and is not guaranteed by Honeywell.
12. The following areas are specifically excluded from this scope of work. Correction of problems in these areas, if required by Federal, State or local law or ordinance, will be considered additional work and will be chargeable (with approval) to the Owner.
    a. Any work not specifically stated and outlined in this scope of work.
    b. Painting and patching of areas beyond those areas directly related to work.
    c. Existing non-code conditions (examples: existing electrical wiring which requires correction or approval by appropriate inspectors, existing penetrations in need of fire stopping, etc).

B. RELATED WORK SPECIFIED ELSEWHERE

Provision of equipment, material, and labor to provide functional measurement and verification systems coordinated under Attachment G – Schedule of Savings.

ATTACHMENT E
PAYMENT SCHEDULE

1. The following payment schedule has been established for the Work:

1. 1 The payment schedule reflected below has been established for the Work. Payment shall be made net twenty (20) days of invoice date. If issues surrounding lack of payment are not remedied within ten (10) business days, HONEYWELL may suspend all Work until payment is made.

Total payments by City are:	$1,503,483.00
City of West Allis Direct Purchase of Equipment:	$ 116,369.00
Asbestos Abatement Allocation for Municipal Building\Public Works:	$ 5,000.00
Payment to Honeywell for balance of the project implementation:	$1,382,745.00

Percent Complete

Percent of Project Complete	**Amount Due**
Upon contract execution:	$ 414,634.00
Progress Payments	$ 967,480.00
Total Honeywell Contract Amount	$ 1,382,114.00

2. The following payment schedule has been established for Support Services:

2.1 The first invoice will be issued upon completion of the Work and prior to commencement of Support Services as conditioned in Article 6 of this Agreement.

2.2 CUSTOMER shall pay or cause to be paid to HONEYWELL the full price for the Services as specified in Attachment D. HONEYWELL shall submit ☐ annual ☐ semi-annual ☒ quarterly invoices to CUSTOMER in advance for Services to be performed during the subsequent billing period, and payment shall be due within twenty (20) days after CUSTOMER's receipt of each such invoice. Payments shall be remitted by ☐ direct debit ☐ wire transfer ☒ check. Invoiced amounts shall be subject to the adjustments set forth in Attachment D.