Honeywell

Honeywell Building Solutions

INVESTMENT GRADE AUDIT REPORT
AND
ENERGY SERVICES PROPOSAL (DRAFT)
FOR
CITY OF PORT TOWNSEND,
THE WASHINGTON STATE DEPARTMENT OF ENTERPRISE SERVICES

JANUARY 9, 2013

ENERGY & ENVIRONMENTAL SOLUTIONS

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EXECUTIVE SUMMARY

Honeywell Building Solutions (Honeywell) proposes to enter into an Energy Savings Performance Contract agreement with Washington State Department of Enterprise Services (WA DES) and the City of Port Townsend (COPT) for six City facilities: City Hall, Mountain View, Library, Cotton Building, Pope Marine, and Waste Water Treatment Plant. This proposal includes the facility infrastructure upgrades and energy conservation measures, as well as the water meter AMI (Automated Meter Infrastructure) upgrade measure. Proposed Energy Conservation Measures (ECMs) include boiler replacement, control system upgrades, and improvements in HVAC mechanical, lighting, and building envelope. Water Meter AMI (Automated Meter Infrastructure) project is supported by the operational cost savings, including cost associated with meter reading operation, meter repair / replacement, and utility billing operation. Summary of savings and BUDGETARY investment is provided in the table found on the following page.

Two preliminary scope options for the Water Meter AMI project are provided in this proposal: AMI installation with all meter replacement, and AMI installation with meter retrofit. This ECM scope will be further developed upon agreement of the cost of operations savings and scope of work. **This project is intended to be implemented as an addition or change order to the base construction contract described above. Exact timing of the change order will depend upon client decisions regarding scope and ultimate cost. At this time the magnitude of the change order is anticipated to be approximately $3,000,000, as shown on the next page.**

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ECM ID	ECM Name	Bldg	Utility $ Savings	O&M/Other $ Sav	Total $ Savings	Budget Investment	SPBP, yrs
1.1	Boiler replacement	Mountain View	$26,101	$0	$26,101	$736,000	28.2
3.1	Control system upgrade - EMS and retro-commissioning and demand control ventilation at AHU-3	Mountain View	$6,449	$0	$6,449	$359,000	55.7
4.1 A.2	HVAC Mechanical Option A.2 - Replace AHU-7	Mountain View	$4,969	$0	$4,969	$402,000	80.9
4.1 B	HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6	Mountain View	$18,362	$0	$18,362	$105,000	5.7
4.2	HVAC Mechanical - Retro-commision FCs and Uvs	Mountain View	$16,444	$0	$16,444	$64,000	3.9
5.1	Lighting	Mountain View	$7,504	$1,600	$9,104	$135,000	17.8
6.1	Envelope upgrades	Mountain View	$2,023	$0	$2,023	$18,000	8.9
3.1	Control system upgrade - EMS	City Hall	$0	$0	$0	$97,000	-
3.2	Control system upgrade - Programmable Thermostat	Library, Pope Marine, Cotton Bldg	$0	$0	$0	$70,000	-
5.1	Lighing	City Hall, Library, Cotton Bldg, Pope Marine, WWTP	$7,331	$1,435	$8,766	$104,000	14.0
6.1	Envelope upgrades	City Hall	$3,275	$0	$3,275	$33,000	10.1
	Totals:		$92,456	$3,035	$95,492	$2,123,000	22.2

ECM ID	ECM Name	Bldg	Utility $ Savings	O&M/Other $ Sav	Total $ Savings	Budget Investment	SPBP, yrs
18.1 A	Water Meter AMI - All Meter Replacement	City wide		$139,000	$139,000	$3,600,000	25.9
18.1 B	Water Meter AMI - Meter Retrofit	City wide		$139,000	$139,000	$3,050,000	21.9

O&M savings of $3,035 for ECM 5.1 including the following costs avoidance: lamp recycling cost, lamp replacement material cost, and ballast replacement material cost. The breakdown of savings is shown in the Attachment 3.4 – ECM Calculations Lighting.

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1. DESCRIPTION OF THE FACILITY AND A DESCRIPTION OF THOSE BUILDINGS AND SYSTEMS WHICH SHALL RECEIVE ESCO EQUIPMENT AND SERVICES

Honeywell's proposal is to implement ECMs for the City of Port Townsend facilities listed below (Table 1). The Mountain View facility is in need of facility upgrades, including controls, mechanical, and boiler replacement. Existing Direct Digital Controls (DDC) at the City Hall will be integrated into a new central DDC system front-end. E.xisting manual control thermostats will be replaced with programmable thermostats at Library, Cotton Building and Pope Marine. Lighting upgrades are proposed at all six facilities. Building envelope upgrades are proposed at Mountain View and City Hall.

Table 1: City of Port Townsend Facilities

Facility	SQ FT	Address
City Hall	11,795	250 Madison St
Cotton Bldg	2,400	900 Madison St
Library	8,290	1220 Lawrence St
Mountain View Mod B	2,400	1919 Blaine St
Mountain View	27,600	1919 Blaine St
Pope Marine	1,500	900 Madison St
WWTP	2,700	5300 Kuhn St
Total	56,685	

CITY HALL:

General

The City Hall building is a 3-story, 11,795 square foot brick and concrete building. The southwest side of the facility was built in 1891, and it is occupied by the Jefferson County Art Museum. The facility's northeast side was built in 2005 and it is occupied by the City of Port Townsend. The facility controls, lighting, and building envelope were observed during the investment grade audit.

HVAC

Facility heating and ventilation are provided by three (3) heat recovery ventilators (HRVs). The first floor is served by HRV-1, providing 825 cfm of 100% outside air. The second floor is served by HRV-2, providing 525 cfm of 100% outside air. The third floor is served by HRV-3, providing 970 cfm of 100% outside air. The heating is provided by Fulton Pulse HW propane condensing boiler with input MBH of 300 and output MBH of 270. The facility has a Delta DDC control system. The facility is scheduled to operate during the set occupied hours in summer months, and 24/7 in winter months. During the facility walk-through, the summer months' (June through October) schedule, was set to the following:

Sunday: 8:00AM – 11:00AM
Monday through Friday: 6:00AM – 5:00PM
Saturday: 6:00AM – 11:00AM

During the winter months, the facility is conditioned 24/7, in order to protect works of art in the Art Museum. There is currently no zone scheduling done at the facility.

Lighting

Interior lighting is 32W T8 fluorescent lamps in City Hall side building. In some places, there are 32W and 42W compact fluorescent lamps. The Museum side of the building has predominantly 60W and 75W

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incandescent lamps. Exterior lighting is a combination of 70W, 150W, and 175W high pressure sodium and metal halide lamps. Line-by-line audit report is provided in Attachment 1.

Building Envelope

The facility is in good condition and well maintained. Air leaks were observed mostly around doors and windows. The doors have poor quality weather-stripping materials, and some of the weather-strips were found missing. All roof-exhaust units require new sealant between the curb and the duct. The double-hung windows throughout the facility were found to be leaky. The building envelope audit report is provided in the Attachment 2.

COTTON BUILDING:

General

Cotton Building (Visitor Plaza) is a single-story 2,400 sq.ft., historic brick building. The building was renovated in 2009. The facility temperature controls and lighting were observed during the investment grade audit.

HVAC

Facility heating and ventilation are provided by AHU-1, AHU-2, and electric unit heater. Heating is served by electricity. The temperature set-points are manually adjusted by City clerks. During the winter months, heating is left on nearly 24/7.

Lighting

Interior lighting is 32W T8 fluorescent lamps with small number of compact fluorescent lamps. Exit signs have LED lamps, and outside lighting has compact fluorescent lamps. Line-by-line audit report is provided in Attachment 1.

LIBRARY:

General

Library is a two-story 8,290 sq.ft. building renovated in 1998. During the investment grade audit, the facility was under seismic upgrade, and new doors and windows were being installed. The facility temperature controls and lighting were observed during the investment grade audit.

HVAC

Facility heating is served by electricity. There are (3) manual control thermostats. The temperature set-points are manually adjusted by occupants.

Lighting

Interior lighting is 32W T8 fluorescent lamps with small number of compact fluorescent lamps. Exit signs have incandescent lamps, and exterior lighting has a combination of 70W and 150W high pressure sodium lamps. Line-by-line audit report is provided in Attachment 1.

MOUNTAIN VIEW:

General

Mountain View is an old elementary school built in 1960's, and has been occupied and maintained by the Port Townsend school district until 2008. The facility was modernized in 1994, which included HVAC equipment replacement. The City is leasing the facility from the school district, and the lease agreement

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is currently being renewed. The old classroom facility (east side of the facility) is occupied by the local food bank and police department. West side of the facility has a community swimming pool, gym, and library.

HVAC

During the facility survey, heating, ventilation, and occupant comfort issues were observed at the Mountain View facility.

The facility has (2) 2,678MBH fuel oil boilers that are in need of replacement. During the facility survey, one of the boilers was shut down due to a fuel leak. The boilers generate hydronic hot water for space heating, swimming pool water heating, and domestic hot water heating. There is a heat exchanger for the domestic hot water located in the boiler room. Domestic hot water is used mainly as shower hot water in the locker rooms. The swimming pool water heat exchanger is located in the pool mechanical room by natatorium. There are small pumps located in the boiler room for the hydronic hot water loop serving different locations of the facilities: classroom (east) building, locker room units (AHU-5 and AHU-6), gym and library units (AHU-3 and AHU-4), and natatorium unit (AHU-7).

Facility space heating and ventilation are provided by (7) Air Handling Units (AHUs), (15) classroom Fan Coil units (FCs), and (16) classroom Unit Ventilators (UVs). All (7) AHUs are operated by hand; in some cases, the damper actuators are detached from the unit, and heating coils are opened and closed by hand. AHU-3 (gym unit), AHU-4 (library), AHU-5 (men's locker room), and AHU-6 (women's locker room) currently do not have filters, and dust is clogging the heating coils and plugging the airflow. The filters were removed initially due to the dust issues; dust covered filters were blocking the airflow and not providing ventilation. Now without filters, dust is delivered directly into the units, and this is preventing the units from providing an adequate amount, and quality, of ventilation into the space. Also, AHU-5 was not operational during the facility survey.

AHU-7 is located in the pool mechanical room and serves the natatorium heating and ventilation. The existing unit is not equipped with dehumidification system, and the natatorium has condensation along the perimeter walls and chlorine odor is also an issue. Equipment in the pool mechanical room is in poor condition; the heating coil valves have leaks. This is creating a puddle of water in the mechanical room. Duct work and supporting structure for AHU-7 are corroded. The electrical conduit is also damaged / corroded and the electrical lines are exposed to the water on the mechanical room floor.

The existing Barber Colman DDC control system is obsolete, and the system has communication issues. All operational AHUs are controlled manually and stay on 24/7. (5) of the FCs and UVs have no communication, and units stay off even during the occupied hours.

Lighting

Interior lighting is 32W T8 and 34W T12 fluorescent lamps with small number of compact fluorescent lamps. Exit signs have incandescent lamps. Exterior lighting has combination of 150W and 175W high pressure sodium and metal halide lamps. Line-by-line audit report is provided in Attachment 1.

Building Envelope

The facility was constructed in the 1960's, and all the doors in the building were found to be leaky. Some of the weather-seals around doors were intact, where other doors had missing weather-strips. Window corners have shrunk and are allowing air to infiltrate throughout the facility. Roof exhaust units require the curb to the duct to be sealed. The building envelope audit report is provided in Attachment 2.

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POPE MARINE:

General
Pope Marine is a single-story 1,500 sq.ft. building located by the water front. The building was renovated in 2002. The facility temperature controls and lighting were observed during the investment grade audit.

HVAC
The facility has electric service only. Heating is provided by electric heaters. The temperature set-points are manually adjusted by City clerks. During the winter months, heating is left on nearly 24/7.

Lighting
Both interior and exterior lighting are 60W incandescent lamps. Line-by-line audit report is provided in Attachment 1.

WWTP:

General
Existing Waste Water Treatment Plant (WWTP) was constructed in 1993. The site has a main control building, a clarifier RAS/WAS (Return Activated Sludge / Waste Activated Sludge) building, and a digester building. The main control building has a control room, laboratory, maintenance shop, blower room, and belt press room.

Process
WWTP has two oxidation ditches, each equipped with a paddle for the aeration process. Paddles provide air to the wastewater. They also mix and move the wastewater through the oxidation ditches. Aerator motors are 75 hp two speed motors, and currently operating at low speed (55 hp) 24 hours a day. One of the two ditches (Ditch #2) has a mixer installed to improve the mixing in the ditch. The Ditch #1 is not equipped with a mixer, and there is a settling problem due to a lack of proper mixing in the wastewater stream. Solids in the wastewater stream are sent to two digesters, where two positive displacement blowers provide aerobic digestion. Digester blowers serve both of the digesters, and are equipped with 60 hp motors. For energy conservation purposes, the plant operators run one of the two blowers at a time. These blowers run approximately 19 hours a day.

During the facility survey, DO (dissolved oxygen) measurements were taken at 5 locations: Ditch #1 after aerator, Ditch #1 before aerator, Ditch #2 after aerator, Ditch #2 before aerator, and south digester. These measurements were taken as part of the feasibility study for the VFD installation on the ditch aerator paddle motors and digester blower motors. 5-minute trends were taken for 20 to 24 hours at each of the locations to measure the variation in the oxygen concentration throughout the day. The result showed that the dissolved oxygen level is kept very low; 0.6 to 1.5 mg/L for approximately 80% of the day after the aerator, 0.1 to 0.2 mg/L throughout the day before the aerator, and 0.7 to 1.2 mg/L throughout the day in the digester. The target DO levels in the ditches should be 1.5 to 2 mg/L.

HVAC
The WWTP facility has electric service only. The control building is occupied by the operators and lab workers. The facility heating, ventilation, and air conditioning are provided by water source heat pumps. The water source heat pumps utilize the treated effluent water from the clarifiers, where the effluent water temperature is approximately about 55 degrees F throughout the year. The effluent water is piped underground between the discharge location and the control building, where a heat exchanger located in the blower room transfers heat from the effluent water to the heat pump water.

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The other buildings and rooms at the WWTP hold pumps and other process equipment. Each room has minimal occupancy, thus space temperature is kept around 55 – 60 degrees F during the heating months. The RAS/WAS room is located between two clarifier tanks, and water in the clarifier provides most of the heat to the space throughout the year. There are (2) 15kW and (2) 5kW electric heaters in the RAS/WAS room to supplement the space temperature. The MCC room and generator room each have electric heaters. Since the generator room is normally unoccupied, and the generator is equipped with a block heater, the space heater rarely turns on even during the winter months. The digester room is located in between two digester tanks, and equipped with a 15kW electric heater. Similar to the RAS/WAS room, the space temperature is maintained mostly by the heat provided from the digester tanks. Heater operations in these process equipment rooms are minimal.

Lighting

Interior lighting is 34W T12 fluorescent lamps with small number of 60W and 75W incandescent lamps. Exterior lighting has 70W and 175W metal halide and high pressure sodium lamps. Line-by-line audit report is provided in Attachment 1.

WATER METERS:

City of Port Townsend provides residential, commercial, government, and irrigation water to approximately 15 square miles of the city's service area. There are approximately 5,200 utility accounts for water and wastewater services, where most of the meters are 3/4 inches Sensus meters. Currently, meters are read with hand-held touch read devices once a month by two drive-by meter readers. The city has been replacing approximately 200 to 450 meters each year since 2000, and total of 4,400 meters have been replaced since 2000. Those newer Sensus meters can be retrofitted with two-way transceivers for AMI (Automated Meter Infrastructure) application. The city's unaccounted for water (unbilled water amount) is 7% of the total produced or purchased. The meter accuracy test was performed by the city in August 2012 on large meters (3" meter or larger). 6 out of 7 tested meters yielded 98.5% or higher accuracy. One 4" meter measured 15% accuracy under low flow condition (5 GPM), and this meter was repaired to yield at least 99% accuracy at all flow levels. The existing utility billing software is Springbook.

2. COST-EFFECTIVE ECMS TO BE INSTALLED OR CAUSED TO BE INSTALLED BY THE ESCO, AND A DESCRIPTION OF THE ECMS ANALYZED BUT DISQUALIFIED UNDER THE COST EFFECTIVENESS CRITERIA.

COST-EFFECTIVE ECMS

The cost-effective ECMs (Energy Conservation Measures) to be installed are summarized in the following table:

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Table 2: Summary of Cost Effective ECMs

ECM ID	Bldg	ECM Name
1.1	Mountain View	Boiler replacement
3.1	Mountain View	Control system upgrade - EMS and retro-commissioning and demand control ventilation at AHU-3
4.1 A.2	Mountain View	HVAC Mechanical Option A.2 - Replace AHU-7
4.1 B	Mountain View	HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6
4.2	Mountain View	HVAC Mechanical - Retro-commission FCs and UVs
5.1	Mountain View	Lighting
6.1	Mountain View	Envelope upgrades
3.1	City Hall	Control system upgrade – EMS
3.2	Pope Marine, Cotton Bldg, Library	Control system upgrade - Programmable Thermostat
5.1	City Hall, Library, Cotton Bldg, Pope Marine, WWTP	Lighting
6.1	City Hall	Envelope upgrades
18.1 A	City Wide	Water Meter AMI - All Meter Replacement
18.1 B	City Wide	Water Meter AMI - Meter Retrofit

Mountain View:

A. ECM 1.1: Boiler Replacement

The existing (2) fuel oil boilers at Mountain View facility are each 50-years-old, inefficient (combustion efficiency of 78%), and are in need of replacement. This measure will replace these boilers with two high efficiency (92% part load efficiency) propane condensing boilers. Currently the propane cost is lower than fuel oil per therm. Fuel switching will provide additional savings in addition to the energy consumption savings based on the efficiency improvements. It is the City's intention to apply for the Department of Ecology Diesel Emission Reduction grant for the boiler upgrade project.

B. ECM 3.1: Control System Upgrade – EMS, Retro-Commissioning, and Demand Control Ventilation at AHU-3

Existing Barber Colman control system at the Mountain View facility is obsolete, and has minimal control capabilities along with communication issues with HVAC equipment. Most of the HVAC units are operated manually by hand, and equipment operation is not scheduled (operating 24/7).

This ECM involves the installation of an Energy Management Control System (EMCS) that will monitor and/or control the building's HVAC systems including the boilers, pumps, air handling units, unit ventilators, fan coil units, exhaust fans, and reheat coils. The EMCS will consist of distributed controllers that will communicate with a central computer with WEB access. The EMCS will provide Direct Digital Control (DDC) for the HVAC equipment, which will vastly improve the operation of the buildings by providing centralized monitoring, trend logging, alarming, equipment sequencing, scheduling, and other control capabilities. The comfort level of the building's occupants will be improved because the EMCS will provide for consistent air temperatures, rather than the existing manual system that adjusts temperatures based on operators' manual adjustments.

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The EMCS will provide control strategies including:

- Scheduling
- Demand control ventilation
- Outside air ventilation control

Retro-commissioning and replacement of HVAC equipment (AHUs, FCs, and UVs) will be performed along with the installation of the new EMCS to allow automated equipment controls. Applied control strategies will reduce the energy consumption.

C. ECM 4.1 A.2: HVAC Mechanical Option A.2 - Replace AHU-7

AHU-7 serves the natatorium at the Mountain View facility. The unit is located in the pool mechanical room. AHU-7 is in poor and damaged condition with corrosion on the ducts and electrical conduits. Hot water valves have leaks, creating puddles of water on the mechanical room floor.

Install like equipment in pool mechanical room to serve the natatorium. The existing unit is not equipped with a dehumidification system, and the natatorium has condensation issues along the perimeter walls of the facility. The new unit will be equipped with a dehumidification system to provide moisture control for the natatorium. Additionally, the new unit will provide better ventilation, and thus reduce existing chlorine odors. All damaged / corroded supporting structures, electrical conduit, and leaky valves will be replaced.

This measure, implemented together with ECM 3.1, will provide energy savings by enabling unit scheduling and temperature controls.

D. ECM 4.1 B: HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6

AHU-1 and AHU-2 serve the classroom side (east side) of the building, and are located in the control room by the police department. Currently, both of the units are operated manually. The units have damaged duct work and air is leaking from the units. AHU-3 serves the gym, and is located above the ceiling in the gym closet. The filter on AHU-3 was removed, and dust is clogging the airflow. The unit is operated manually. During the site walk, the heating coil by AHU-3 was leaking. AHU-4 serves the library. AHU-4 is also missing the filter, and dust is clogging the airflow. The hot water valve actuator is attached upside down. AHU-5 and AHU-6 serve locker rooms. The men's locker room unit is not operational, and currently there is no heating and ventilation provided to the men's locker room. AHU-6 is missing the filter, and the dust is clogging the heating coil, plugging the airflow. All units are currently not controlled from the front-end control system, and are operated manually.

Honeywell recommends the City to retro-commission units to trouble shoot and allow automated controls, and achieve optimal operation efficiency. This measure will be implemented together with ECM 3.1: control system upgrade. Retro-commission will include complete unit cleaning of heating coils, ducts, blower wheels, and dampers. Existing operational conditions will be diagnosed and necessary repair / replacement of parts will be provided as required. Filters will be installed where filters are missing from the system.

This measure implemented with ECM 3.1 will provide energy savings by enabling unit scheduling and temperature controls.

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E. ECM 4.2: HVAC Mechanical Option B - Retro-commission FCs and UVs

Several of the existing units are not operating as designed due to their age, dust, and lack of maintenance on the units, causing the units to not turn on.

Retro-commission units to trouble shoot and allow automated controls, and achieve optimal operation efficiency. This measure will be implemented together with ECM 3.1: control system upgrade. Retro-commission will include complete unit cleaning of heating coils, ducts, blower wheels, and dampers. Existing operational conditions will be diagnosed and necessary repair / replacement of parts will be provided as required. Filters will be installed where filters are missing from the system.

This measure implemented with ECM 3.1 will provide energy savings by enabling unit scheduling and temperature controls.

F. ECM 5.1: Lighting Retrofit

Interior lighting affected by this measure consists of the T8 and T12 fluorescent lamps and incandescent lamps. Existing fluorescent lamps will be replaced with higher efficiency T8 lamps. Exit signs have incandescent lamps, and lamps will be replaced with LED lamps. Exterior lamps affected by this measure include high pressure sodium lamps, metal halide lamps, and incandescent lamps. These lamps will be replaced with appropriate size LED lamps.

Additional detail and counts of the existing lightings that will be affected by this measure are provided in Attachment 1: Lighting Audit.

G. ECM 6.1: Envelope Upgrade

There are air infiltrations observed at Mountain View facility, including door weather-seals, window corner seals, and roof exhaust duct to the curb. Leaky doors will be sealed with weather-stripping and sweeps, window corners will be caulked, and roof exhaust duct to the curb will be sealed. This measure will reduce the infiltration through the building envelope, and improve occupant's comfort. The building envelope audit report is provided in the Attachment 2.

Other Facilities:

A. ECM 3.1: Control System Upgrade – EMS, City Hall

City Hall has the Delta Control System, which was installed in 2005. The proposed installation will utilize / reuse the existing controls, and utilize the BACnet communications to bring the buildings HVAC operations into the new EMCS. Scheduling, programming, and technical labor will be included for testing and proper operation of EMCS. This measure will provide improved operation, providing convenience to the facility operators to change equipment scheduling from remote locations.

B. ECM 3.2: Control System Upgrade – Programmable Thermostat, Library, Cotton Building, Pope Marine

Space temperature at Library, Cotton Building, and Pope Marine are currently adjusted manually by occupants and City clerks. 7-day programmable thermostats will be installed to allow temperature scheduling. Thermostats will be networked into the new EMCS. This measure will provide convenience to the City clerks and improve the occupants' comfort.

C. ECM 5.1: Lighting Retrofit, City Wide

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Interior lighting affected by this measure consists of the T8 and T12 fluorescent lamps and incandescent lamps. Existing fluorescent lamps will be replaced with higher efficiency T8 lamps. Exit signs have incandescent lamps, and lamps will be replaced with LED lamps. Exterior lamps affected by this measure include high pressure sodium lamps, metal halide lamps, and incandescent lamps. These lamps will be replaced with appropriate size LED lamps.

Additional detail and counts of the existing lightings that will be affected by this measure are provided in Attachment 1: Lighting Audit.

D. ECM 6.1: Envelope Upgrade, City Hall

There are air infiltrations observed at City Hall, including door weather-seals, window seals, and the roof exhaust duct to the curb. Leaky doors will be sealed with weather-stripping and sweeps, window corners will be caulked, and roof exhaust duct to the curb will be sealed. This measure will reduce the infiltration through the building envelope, and improve occupant's comfort. The building envelope audit report is provided in the Attachment 2.

Water Meter AMI:

Two preliminary scope options for the Water Meter AMI project are provided: AMI installation with all meter replacement, and AMI installation with meter retrofit. This ECM scope will be further developed upon agreement of the cost of operations savings and scope of work. **This project is intended to be implemented as an addition or change order to the base construction contract. Exact timing of the change order will depend upon client decisions regarding scope and ultimate cost. At this time the magnitude of the change order is anticipated to be approximately $3,000,000.**

A. ECM 18.1 A: Water Meter AMI – All Meter Replacement

This measure description is preliminary, and is intended for informational purposes only.

Replace all meters with new low-lead meters to comply with new Safe Drinking Water Act of 2014. All meters replaced will be equipped with two-way transceivers for AMI operation. Small meters (1.5" and smaller) will be replaced with positive displacement meters. Large meters (2" and larger) will be replaced with electromagnetic meters. All meters will be integrated into the new AMI system. Honeywell will provide and install data collectors, interface computer hardware and software for AMI operation and system setup and commissioning. This measure will provide cost benefit in the following areas:

- Future meter reader cost and vehicle cost
- Meter repair and replacement cost
- Utility billing operation
- Revenue impact based on meter accuracy increase

B. ECM 18.1 B: Water Meter AMI –Meter Retrofit

This measure description is preliminary, and is intended for informational purposes only.

Replace all meters installed prior to 2000 with new low-lead meters and retrofit meters installed after 2000. All meters replaced / retrofitted will be equipped with two-way transceivers for AMI

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operation. Small meters (1.5" and smaller) will be replaced with positive displacement meters. Large meters (2" and larger) will be replaced with electromagnetic meters. All meters will be integrated into the new AMI system. Honeywell will provide and install data collectors, interface computer hardware and software for AMI operation, and system setup and commissioning.

ECMs analyzed but disqualified under the cost effectiveness criteria

A. ECM 4.1 A.1: HVAC Mechanical Option A.1 - Replace AHU-1 through AHU-6
Retro-commissioning is recommended over replacement of the existing units due to the significant cost difference.

B. ECM 4.2: Install water source heat pumps (WSHPs) at the RAS / WAS and BFP rooms
During the facility survey, electric heater operation was found to be minimal throughout the year; the space temperature in the equipment rooms is kept around 55 degrees F. Due to the small usage of these electric heaters, the measure is disqualified.

C. ECM 19.2 Install VFDs and DO sensors for aeration
During the facility survey, the DO (dissolved oxygen) concentration measurements were taken at the oxidation ditches. The measured concentration was very low, below 1.5 mg/L after the aerator throughout the day for 80% of the time, where recommended DO concentration is 1.5 to 2 mg/L. The proposed operation with VFD will run the aerators motors at increased speed, providing a minimal energy savings.

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3. SERVICES THAT THE ESCO WILL PERFORM OR CAUSE TO BE PERFORMED ON OR IN THE FACILITY, INCLUDING BUT NOT LIMITED TO ENGINEERING, CONSTRUCTION MANAGEMENT, THE OPERATIONS AND MAINTENANCE PROCEDURES FOR USE ON ESCO EQUIPMENT, TRAINING FOR FACILITY PERSONNEL, PROVIDING WARRANTY SERVICE, AND EQUIPMENT MAINTENANCE.

A. ECM 1.1: BOILER REPLACEMENT

Mountain View:

- Demolition and disposal of existing boilers along with existing flue vent, fuel train, and controls.
- Closure of existing fuel oil tank.
- All equipment, materials and labor to install new propane condensing boilers, including a new propane tank and heat trace for the propane tank.
- Modification of hydronic piping to accommodate new boilers.
- Installation of new expansion tank.
- New propane gas piping and connections.
- Startup, commissioning and 4 hours of training for the City operator.
- All engineering, construction management, permitting, operations and maintenance manuals as well as a one-year installation warranty and pass-through of the manufacturer's warranty are included.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

B. ECM 3.1: CONTROL SYSTEM UPGRADE - EMS

Mountain View:

- New Energy Management Control System at the Mountain View facility.
- Replacement of the existing controls and provide new controllers for all Air Handling Units (AHUs), Fan Coils (FCs), Unit Ventilators (UVs), Exhaust Fans (EFs), Heating Coils (HCs), Boilers, and heating hot water systems.
- Repair / replace valves and actuators at HVAC equipment as necessary.
- Provide and install CO_2 sensor on the return duct to control ventilation airflow at AHU-3.
- Controller programming and technical labor for check-out and testing of new controls for all mechanical systems. This will include scheduling, night setback control, and demand control ventilation control at the gym AHU (AHU-3).
- Incorporate occupied / unoccupied time schedules and associated space temperature set-points into control strategies.
- Provide BTU load monitoring for (4) hydronic heating systems: main campus space heating, gym and cafeteria space heating, pool and locker room heating, and pool water heat exchanger loop.
- Startup, commissioning and 4 hours of training for the City operator.

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- All engineering, construction management, permitting, operations and maintenance manuals as well as a one-year installation warranty and pass-through of the manufacturer's warranty are included.
- Excludes any and all Interface and/or Connections to Third Party Fire Alarm Panels.
- Excludes network LAN drops and IP addresses.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

City Hall:

- Bring existing controls into new Energy Management Control System through BACnet communications.
- Controller programming and technical labor for check-out and testing of new controls for all mechanical systems.
- Incorporate occupied / unoccupied time schedules and associated space temperature set-points into control strategies.
- Startup, commissioning and 4 hours of training for the City operator.
- All engineering, construction management, permitting, operations and maintenance manuals as well as a one-year installation warranty and pass-through of the manufacturer's warranty are included.
- Excludes any and all Interface and/or Connections to Third Party Fire Alarm Panels.
- Excludes network LAN drops and IP addresses.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

C. ECM 3.2: CONTROL SYSTEM UPGRADE – PROGRAMMABLE THERMOSTAT

Library, Cotton Building and Pope Marine:

- Provide and install programmable space thermostats to replace the existing manual control thermostats. (3) Thermostats at Library, (3) thermostats at Cotton Building, and (1) thermostat at Pope Marine.
- Central monitoring system for thermostats
- Incorporate occupied / unoccupied time schedules and associated space temperature set-points into control strategies.
- Startup and commissioning, and 4 hours of customer training for the City operator.
- All engineering, construction management, permitting, operations and maintenance manuals as well as a one-year installation warranty and pass-through of the manufacturer's warranty are included.
- Excludes network LAN drops and IP addresses.
- Excludes wall, floor or ceiling patching and painting.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

D. ECM 4.1 A.2: HVAC MECHANICAL OPTION A.2 - REPLACE AHU-7

Mountain View:

- Remove and dispose of existing AHU-7 and supporting structure, including removal of all damaged / corroded duct work, electrical line and conduit in the pool mechanical room.

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- Provide and install new DX unit to match the existing units heating and ventilation specifications. Provide and install all necessary supporting structure.
- All other equipment, materials and labor to install new AHU-7.
- Startup, commissioning and 4 hours of training for the City operator.
- All engineering, construction management, permitting, operations and maintenance manuals as well as a one-year installation warranty and pass-through of the manufacturer's warranty are included.
- Excludes any and all Interface and/or Connections to Third Party Fire Alarm Panels.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

E. ECM 4.1 B: HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6

Mountain View:

- Provide complete unit cleaning. This includes cleaning heating coils, ducts, blower wheels, and dampers.
- Repair damaged duct work attached to AHU-1 and AHU-2 in the mechanical room.
- Retro-commission existing (6) AHUs for proper operation – diagnose existing conditions with damper, fan, and heating coil operations and provide repair / replacement of parts as needed.
- Replace filters or install filters where filters were removed from the system.
- Supply and install damper end switch for each AHU to indicate minimum OSA damper position.
- Test and balance airflows through new AHUs and provide a report.
- Provide documentation of work completed, including total number of failed parts and repairs made.
- Excludes any and all Interface and/or Connections to Third Party Fire Alarm Panels.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

F. ECM 4.2: HVAC Mechanical Option B - Retro-commission FCs and UVs

Mountain View:

- Provide complete unit cleaning. This includes cleaning heating coils, ducts, blower wheels, and dampers.
- Retro-commission existing (16) UVs and (15) FCs for proper operation – diagnose existing conditions with damper, fan, and heating coil operations and provide repair / replacement of parts as needed.
- Replace filters or install filters where filters were removed from the system.
- Where power issues exist at controller and units, troubleshoot and repair up to control transformer.
- Supply and install minimum OSA position switch for each AHU.
- Verify proper airflows to UVs and FCs, and document and provide airflows.
- Provide documentation of work completed, including total number of failed parts and repairs made.
- Excludes any and all Interface and/or Connections to Third Party Fire Alarm Panels.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

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G. ECM 5.1: Lighting Retrofit

All facilities:

- All labor and materials to install new fixtures, motion sensors and new components in any existing fixtures that we show being retrofitted in Attachment 1.
- All engineering, construction management, permitting, operations and maintenance manuals as well as warranty service are included.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

H. ECM 6.1: Envelope Upgrade

Mountain View and City Hall:

- All labor and materials to install new sealant and weather strips that we show being retrofitted in Attachment 2.
- All engineering, construction management, permitting, operations and maintenance manuals as well as warranty service are included.
- Detailed Scope of Work is provided in Attachment A (DRAFT).

I. ECM 18.1: Water Meter Replacement / Retrofit and AMI

- Using data provided by the City, Honeywell will perform the replacement and retrofit of 5,209 meters ranging in size from (5/8" – 6") equipped with an encoder register and transducers.
- Install AMI data collectors, software and hardware to integrate with existing billing software, and provide system startup and commissionning.

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4. THE GUARANTEED MAXIMUM ALLOWABLE PROJECT COST, ITEMIZED IN DETAIL, WHICH MAY BE AMENDED TO REPRESENT ACTUAL COSTS.

The following table represents the BUDGETARY project cost for each of the ECMs. Budget price for water meter AMI project will be provided separately.

Table 3: Budgetary Schedule of Values

Project Costs

			Lighting	Boiler	HVAC	Envelope	Controls	Other	Site Supervision	SubTotal
Engineering Audit			$ -	$ -	$ -	$ -	$ -	$ 68,537	$ -	$ 68,537
Labor and Materials Cost			$ 137,902	$ 425,000	$ 330,250	$ 29,421	$ 303,269	$ -	$ -	$ 1,225,842
Direct Site Supervision			$ -	$ -	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000
Design at:	10.0%	of labor and Materials	$ 13,790	$ 42,500	$ 33,025	$ 2,942	$ 30,327	$ -	$ -	$ 122,584
Project Management at:	6.0%	of labor and Materials	$ 8,274	$ 25,500	$ 19,815	$ 1,765	$ 18,196	$ -	$ 1,500	$ 75,051
Bonding at:	2.0%	of construction costs	$ 2,758	$ 8,500	$ 6,605	$ 588	$ 6,065	$ -	$ 500	$ 25,017
Overhead and Profit at:	18.0%	of labor and Materials	$ 24,822	$ 76,500	$ 59,445	$ 5,296	$ 54,588	$ -	$ 4,500	$ 225,152
M&V year 1	7.5%	of guaranteed savings	$ -	$ -	$ -	$ -	$ -	$ 7,034	$ -	$ 7,034
		Subtotal:	$ 187,547	$ 578,000	$ 449,140	$ 40,013	$ 412,446	$ 75,571	$ 31,500	$ 1,774,216
Construction Contingency	10.0%	of labor and Materials	$ 13,790	$ 42,500	$ 33,025	$ 2,942	$ 30,327	$ -	$ 2,500	$ 125,084
		Subtotal Max Proj Cost:	$ 201,337	$ 620,500	$ 482,165	$ 42,955	$ 442,773	$ 75,571	$ 34,000	$ 1,899,300
Sales Tax	8.6%	of Max Proj Cost:	$ 17,315	$ 53,363	$ 41,466	$ 3,694	$ 38,078	$ 6,499	$ 2,924	$ 163,340
			$ 218,652	$ 673,863	$ 523,631	$ 46,649	$ 480,851	$ 82,070	$ 36,924	$ 2,062,640
DES Project Management Fee										$ 60,000
										$ 2,122,640

Water Meter AMI project cost will be provided as an addition to the Budgetary Schedule of Values summarized above.

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5. RECOMMENDATIONS FOR REPLACEMENT OF EXISTING EQUIPMENT, ALONG WITH RECOMMENDATIONS FOR IMPROVEMENTS TO EXISTING EQUIPMENT AND OPERATING CONDITIONS.

A. ECM 1.1: BOILER REPLACEMENT

Mountain View:

Existing fuel oil boilers are 50-year-old and inefficient. During the facility survey, a combustion test was performed at a full load condition, and the test result was 78%. Honeywell recommends the replacement of these boilers with (2) 3,000MBH 93% propane condensing boilers. Existing expansion tank requires seismic upgrade, and replacement will be part of this measure along with new propane tank installation. (2) Boiler primary pumps should also be replaced with new pumps with VFDs for speed control. Specifications for the proposed equipment are as follows:

Hot Water Boiler Schedule

Mark	Type	Water Flow (GPM)	EWT (F)	LWT (F)	Min Eff	Eff	WPD (FT)	Pressure Rating (pgsi)	Burner [4]			V	Hz	Phase	Basis of design
									Fuel	Input (MBH)	Min Inlet Press (In WG)				
B-1,2	Condensing	261	180	160	84% EC	93%	7	160	Propane	3000	4.5	208	60	3	AERCO BMK3000 or equivalent

Pump Schedule

Mark	Location	Service	Pump					Motor					Basis of Design	Notes
			Type	Speed	RPM	Flow (GPM)	Total Head (FT)	BHP	HP	V	Hz	Phase		
P-1,2	Mech Rm	Boiler Primary	Cent, End Suction	VAR	1,750	287	60.5	7.33	10	208	60	3	B&G Series 1510 3BC or equivalent	Provide with VFD for speed control

Expansion Tank Schedule

Mark	Location	Volume (gal)	Acceptance (gal)	Dimensions		Operating Temp Range (F)	Orientation	Mounting	Basis of Design
				DIA (IN)	Long (IN)				
ET-1	Boiler Room	33.6	11.3	16	43	160 - 120	Vertical	Suspended	Amtrol AX-60 or equivalent

B. ECM 3.1: CONTROL SYSTEM UPGRADE - EMS

Mountain View:

Existing control system at the Mountain View facility is a Barber Colman system from 1990's. The system is no longer supported by the manufacturer. Honeywell recommends the replacement / installation of a new Energy Management Control System along with control retro-commissioning of the HVAC units. Equipment operation will be scheduled to match the facility occupancy. The proposed HVAC schedule is 4:00AM – 7:00PM Monday through Friday for all units except for the police department unit (AHU-2). Police department unit schedule will be kept at 24/7 operation.

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A CO_2 sensor will be installed in the return duct at AHU-3 (gym) unit to control outside air ventilation based on the occupancy.

City Hall:

Replacement of existing control system is not part of this measure. The existing controls will be brought into the new Energy Management Control System through BACnet communications, which would allow central control operation and monitoring.

C. ECM 3.2: CONTROL SYSTEM UPGRADE – PROGRAMMABLE THERMOSTAT

Library, Cotton Building, and Pope Marine:

Honeywell proposes to provide and install new 7-day programmable thermostats to replace the existing manual control thermostats. This will reduce the operating cost for the City clerks to visit each of the facilities to adjust temperature settings manually.

D. ECM 4.1 A.2: HVAC MECHANICAL OPTION A.2 - REPLACE AHU-7

Mountain View:

AHU-7 serving the natatorium is severely damaged / corroded. Honeywell recommends replacing this unit with a new DX unit to provide dehumidification of the space.

E. ECM 4.1 B: HVAC MECHANICAL OPTION B - RETRO-COMMISSION AHU-1 - AHU-6

Mountain View:

Replacement of existing AHUs is not part of this measure. However, existing actuators are proprietary units, and cannot be integrated into the new Energy Management Control Systems. Valves and actuators will be replaced to allow the units to be integrated into the proposed control system.

F. ECM 4.2: HVAC MECHANICAL OPTION B - RETRO-COMMISSION FCS AND UVS

Mountain View:

Replacement of existing FCs and UVs is not part of this measure. However, existing actuators are proprietary units, and cannot be integrated into the new Energy Management Control Systems. Valves and actuators will be replaced to allow the units to be integrated into the proposed control system.

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G. ECM 5.1: LIGHTING RETROFIT

All facilities:

Existing 32W T8 and 34W T12 fluorescent lamps will be replaced with higher efficiency 28Q T8 lamps. Where exit signs have incandescent lamps, they will be replaced with LED lamps. Exterior lamps affected by this measure include high pressure sodium lamps, metal halide lamps, and incandescent lamps. These lamps will be replaced with appropriate size LED lamps.

Additional detail and counts of the existing lightings that will be affected by this measure are provided in Attachment 1: Lighting Audit.

H. ECM 6.1: ENVELOPE UPGRADE

Recommended replacement of weather-seals, weather-strips, and caulking include the following:

Mountain View

Replace and close 4.40 Sq Ft of effective air leakage area at following locations:

- Seal roof exhausts (13 Roof Vents)
- Seal roof hatches/doors (2 roof hatches)
- Caulk and seal windows (180 linear feet and 608 window corners)
- Seal with weather-stripping and sweeps exterior door leaks (15 doors)

Port Townsend City Hall:

Replace and close 9.47 Sq Ft of effective air leakage area at following locations

- Seal roof exhausts (6 roof vents)
- Seal roof hatches/doors (2 roof hatches)
- Caulk in areas the door/window intersection (24 lineal feet of transom)
- Caulk and seal windows (115 windows/2117 lineal feet of V-strip or foam tape)
- Seal with weather-stripping and sweeps exterior door leaks (13 doors)
- Caulk and seal lower jail storage (132 linear feet)

J. ECM 18.1: WATER METER REPLACEMENT / RETROFIT AND AMI

Depending on the option selected (meter replacement or retrofit), existing meters will be replaced completely or retrofitted and equipped with two-way transceivers. Replacement meters and meter types (positive displacement or electromagnetic) will be determined based on cost-benefit agreement with the City of Port Townsend. All meters will be integrated with new AMI system.

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6. STANDARDS OF COMFORT AND SERVICE APPROPRIATE FOR THE FACILITY.

Mechanical systems must comply with the Washington State Ventilation & Indoor Air Quality Code for state compliance. This guideline is loosely based on ASHRAE-62, but has different compliance paths. State code overrides standards unless specifically adopted. This standard will be applied only to buildings and areas of buildings in which Honeywell is installing HVAC equipment that has direct control over space conditions.

HVAC SYSTEMS

(a) Occupied Areas:
- Winter heating minimum setpoint = 70°F dry bulb
- Winter heating maximum setpoint = 74°F dry bulb
- Summer cooling minimum setpoint = 72°F dry bulb where cooling is provided
- Summer cooling maximum setpoint = 78°F dry bulb where cooling is provided
- 40% minimum relative humidity - 60% maximum relative humidity if humidity control is provided.

(b) Unoccupied Period:
- Minimum setpoint = 55°F dry bulb
- Maximum setpoint = 85°F dry bulb where cooling is provided

(c) Minimum outside air per occupant shall be in accordance with ASHRAE standards and Washington State Ventilation and Indoor Air Quality code.

LIGHTING SYSTEMS

Except where special circumstances exist, illumination levels shall be maintained as near as practical to the Illuminating Engineering Society of North America (IES) recommended illumination level.

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7. BASELINE ENERGY CONSUMPTION FOR THE FACILITY, INCLUDING THE DATA, METHODOLOGY AND VARIABLES USED TO COMPUTE THE BASELINE, AND THE BASELINE CALENDAR PERIOD WHICH SHALL NOT BE LESS THAN TWELVE (12) MONTHS.

Facility baseline energy consumption was established based on the utility bills provided by the City of Port Townsend. Twelve-month data between February 2011 and January 2012 was used to establish the base year energy cost (Table 4). The base year monthly energy consumption and cost by facility are provided in the following pages.

Table 4: Baseline Utility Cost Summary

Facility	SQFT	Address	Electric Cost	Electric Rate	Fossil Fuel Cost	Fuel Rate	Total Energy Cost
City Hall	11,795	250 Madison St	$13,008	PSE 24	$19,890	Propane	$32,898
Cotton Bldg	2,400	900 Madison St	$6,773	PSE 24	$0	-	$6,773
Library	8,290	1220 Lawrence St	$21,716	PSE 24	$0	-	$21,716
Mountain View Mod B	2,400	1919 Blaine St	$2,169	PSE 24	$0	-	$2,169
Mountain View	27,600	1919 Blaine St	$39,813	PSE 25	$105,332	SC Fuels	$145,145
Pope Marine	1,500	900 Madison St	$2,502	PSE 24	$0	-	$2,502
WWTP	2,700	5300 Kuhn St	$108,579	PSE 25	$0	-	$108,579
Total	56,685		$194,560		$125,222		$319,782

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Customer Name:	City of Port Townsend - City Hall												
Facility Name:	City Hall												
Base Year:	3	Feb-11	through	Jan-12									
Conditioned Area:	11,795	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	758	689	567	536	368	163	53	14	58	346	616	747	4915
Cooling Degree Days	0	0	0	0	0	1	16	67	55	0	0	0	139
Electrical Data													
kW-hrs Used	10,775	10,080	11,640	11,586	11,408	10,924	10,850	11,077	10,238	10,912	10,335	11,083	130,908
Daily Ave kW-hrs	348	360	375	386	368	364	350	357	341	352	345	358	359
$/kW-hr	$0.100	$0.100	$0.099	$0.096	$0.099	$0.099	$0.098	$0.099	$0.099	$0.102	$0.102	$0.101	$0.099
Daily kW-hr Cost	$35	$36	$37	$37	$36	$36	$34	$35	$34	$36	$35	$36	$36
Total kW-hr Cost	$1,079	$1,004	$1,151	$1,115	$1,124	$1,078	$1,069	$1,092	$1,012	$1,110	$1,051	$1,123	$13,008
kW Used	0	0	0	0	0	0	0	0	0	0	0	0	0
$/kW	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total Demand Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Factor	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Electric Cost	$1,079	$1,004	$1,151	$1,115	$1,124	$1,078	$1,069	$1,092	$1,012	$1,110	$1,051	$1,123	$13,008
Daily Electric Cost	$35	$36	$37	$37	$36	$36	$34	$35	$34	$36	$35	$36	$36
Cost/Square Foot	$0.09	$0.09	$0.10	$0.09	$0.10	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.10	$1.10
Fossil Fuel Data													
Therms Total	1177	921	1155	710	576	214	214	84	79	86	1535	1167	7,918
MMBTUs Total	118	92	116	71	58	21	21	8	8	9	153	117	792
Daily Ave MMBTUs	4	3	4	2	2	1	1	0	0	0	5	4	2
$/MMBTU	$25.11	$24.46	$24.00	$24.36	$23.73	$24.45	$24.45	$24.91	$24.91	$25.56	$27.26	$25.34	$25.12
Daily MMBTU Cost	$95	$80	$89	$58	$44	$17	$17	$7	$7	$7	$139	$95	$54
Total MMBTU Cost	$2,956	$2,252	$2,772	$1,729	$1,367	$524	$523	$209	$197	$220	$4,184	$2,958	$19,890
Cost/Square Foot	$0.25	$0.19	$0.24	$0.15	$0.12	$0.04	$0.04	$0.02	$0.02	$0.02	$0.35	$0.25	$1.69
Energy Usage Indices													
Elec BTU/Sq Ft/Day	101	104	109	112	106	105	101	103	99	102	100	103	104
kW-hrs/Sq Ft/Month	0.9	0.9	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Proj kW-hrs/Sq Ft/Yr	11.0	10.3	11.8	11.8	11.6	11.1	11.0	11.3	10.4	11.1	10.5	11.3	11.1
Fossil Fuel BTU/Sq Ft/Day	322	279	316	201	157	61	59	23	22	23	434	319	184
Fossil Fuel BTU/Sq Ft/Mnth	9,979	7,806	9,793	6,016	4,882	1,816	1,814	711	672	728	13,014	9,897	5,594
Proj FF Btu/Sq Ft/Year	119,754	93,677	117,518	72,191	58,582	21,788	21,763	8,528	8,058	8,736	156,163	118,768	67,127
Total BTUs/Sq Ft/Day	422	383	425	312	264	166	160	126	121	125	533	423	288
Energy Cost/Sq Ft	$0.34	$0.28	$0.33	$0.24	$0.21	$0.14	$0.13	$0.11	$0.10	$0.11	$0.44	$0.35	$2.79
EUI in BTUs/Sq Ft	13,096	10,722	13,160	9,367	8,182	4,976	4,952	3,915	3,633	3,885	16,003	13,103	104,996
Year to Date Usage	13,096	23,819	36,979	46,347	54,528	59,504	64,456	68,371	72,004	75,889	91,892	104,996	
Tot Energy & Demand Cost	$4,035	$3,257	$3,923	$2,843	$2,491	$1,601	$1,591	$1,301	$1,209	$1,330	$5,236	$4,081	$32,898
Year to Date Cost	$4,035	$7,291	$11,214	$14,058	$16,549	$18,150	$19,742	$21,043	$22,252	$23,582	$28,817	$32,898	

Honeywell

Customer Name:	City of Port Townsend - Cotton Building												
Facility Name:	Cotton Building												
Base Year:	3	Feb-11	through	Jan-12									
Conditioned Area:	2,400	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	758	689	567	536	368	163	53	14	58	346	616	747	4915
Cooling Degree Days	0	0	0	0	0	1	16	67	55	0	0	0	139
Electrical Data													
kW-hrs Used	7,919	12,059	9,482	7,262	4,353	2,250	1,595	1,639	1,976	4,243	7,052	8,439	68,268
Daily Ave kW-hrs	255	431	306	242	140	75	51	53	66	137	235	272	187
$/kW-hr	$0.099	$0.098	$0.098	$0.096	$0.099	$0.101	$0.103	$0.103	$0.102	$0.102	$0.101	$0.101	$0.099
Daily kW-hr Cost	$25	$42	$30	$23	$14	$8	$5	$5	$7	$14	$24	$27	$19
Total kW-hr Cost	$784	$1,183	$929	$694	$430	$227	$163	$168	$201	$433	$712	$849	$6,773
kW Used	0	0	0	0	0	0	0	0	0	0	0	0	0
$/kW	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total Demand Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Factor	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Electric Cost	$784	$1,183	$929	$694	$430	$227	$163	$168	$201	$433	$712	$849	$6,773
Daily Electric Cost	$25	$42	$30	$23	$14	$8	$5	$5	$7	$14	$24	$27	$19
Cost/Square Foot	$0.33	$0.49	$0.39	$0.29	$0.18	$0.09	$0.07	$0.07	$0.08	$0.18	$0.30	$0.35	$2.82
Total BTUs/Sq Ft/Day	363	612	435	344	200	107	73	75	94	195	334	387	266
Energy Cost/Sq Ft	$0.33	$0.49	$0.39	$0.29	$0.18	$0.09	$0.07	$0.07	$0.08	$0.18	$0.30	$0.35	$2.82
EUI in BTUs/Sq Ft	11,258	17,143	13,480	10,324	6,189	3,199	2,267	2,330	2,810	6,032	10,026	11,997	97,055
Year to Date Usage	11,258	28,401	41,882	52,206	58,395	61,594	63,861	66,191	69,000	75,032	85,058	97,055	
Tot Energy & Demand Cost	$784	$1,183	$929	$694	$430	$227	$163	$168	$201	$433	$712	$849	$6,773
Year to Date Cost	$784	$1,967	$2,895	$3,589	$4,019	$4,247	$4,410	$4,579	$4,779	$5,212	$5,925	$6,773	

Honeywell

Customer Name:	City of Port Townsend - Library												
Facility Name:	Library												
Base Year:	3	Feb-11	through	Jan-12									
Conditioned Area:	8,290	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	758	689	567	536	368	163	53	14	58	346	616	747	4915
Cooling Degree Days	0	0	0	0	0	1	16	67	55	0	0	0	139
Electrical Data													
kW-hrs Used	29,290	24,677	21,600	18,869	14,632	11,131	10,153	9,734	10,613	17,691	24,310	25,730	218,428
Daily Ave kW-hrs	945	881	697	629	472	371	328	314	354	571	810	830	598
$/kW-hr	$0.099	$0.100	$0.103	$0.094	$0.095	$0.096	$0.096	$0.100	$0.097	$0.106	$0.102	$0.100	$0.099
Daily kW-hr Cost	$94	$88	$72	$59	$45	$36	$32	$31	$34	$60	$82	$83	$59
Total kW-hr Cost	$2,902	$2,464	$2,229	$1,783	$1,389	$1,070	$977	$971	$1,028	$1,875	$2,468	$2,561	$21,716
kW Used	68	71	66	58	48	40	42	42	50	56	64	63	670
$/kW	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Demand Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Factor	58%	52%	44%	45%	41%	38%	32%	31%	29%	42%	53%	55%	45%
Total Electric Cost	$2,902	$2,464	$2,229	$1,783	$1,389	$1,070	$977	$971	$1,028	$1,875	$2,468	$2,561	$21,716
Daily Electric Cost	$94	$88	$72	$59	$45	$36	$32	$31	$34	$60	$82	$83	$59
Cost/Square Foot	$0.35	$0.30	$0.27	$0.22	$0.17	$0.13	$0.12	$0.12	$0.12	$0.23	$0.30	$0.31	$2.62
Energy Usage Indices													
Elec BTU/Sq Ft/Day	389	363	287	259	194	153	135	129	146	235	334	342	246
kW-hrs/Sq Ft/Month	3.5	3.0	2.6	2.3	1.8	1.3	1.2	1.2	1.3	2.1	2.9	3.1	2.2
Proj kW-hrs/Sq Ft/Yr	42.4	35.7	31.3	27.3	21.2	16.1	14.7	14.1	15.4	25.6	35.2	37.2	26.3
Fossil Fuel BTU/Sq Ft/Day	0	0	0	0	0	0	0	0	0	0	0	0	0
Fossil Fuel BTU/Sq Ft/Mnth	0	0	0	0	0	0	0	0	0	0	0	0	0
Proj FF Btu/Sq Ft/Year	0	0	0	0	0	0	0	0	0	0	0	0	0
Total BTUs/Sq Ft/Day	389	363	287	259	194	153	135	129	146	235	334	342	246
Energy Cost/Sq Ft	$0.35	$0.30	$0.27	$0.22	$0.17	$0.13	$0.12	$0.12	$0.12	$0.23	$0.30	$0.31	$2.62
EUI in BTUs/Sq Ft	12,055	10,157	8,890	7,766	6,022	4,581	4,179	4,006	4,368	7,281	10,005	10,590	89,901
Year to Date Usage	12,055	22,212	31,102	38,868	44,890	49,472	53,650	57,656	62,024	69,305	79,311	89,901	
Tot Energy & Demand Cost	$2,902	$2,464	$2,229	$1,783	$1,389	$1,070	$977	$971	$1,028	$1,875	$2,468	$2,561	$21,716
Year to Date Cost	$2,902	$5,366	$7,595	$9,378	$10,767	$11,836	$12,813	$13,784	$14,812	$16,687	$19,155	$21,716	

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Customer Name:	City of Port Townsend - Mountain View												
Facility Name:	Mountain View												
Base Year:	3	Feb-11	through	Jan-12									
Conditioned Area:	27,600	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	758	689	567	536	368	163	53	14	58	346	616	747	4915
Cooling Degree Days	0	0	0	0	0	1	16	67	55	0	0	0	139
Electrical Data													
kW-hrs Used	37,510	37,899	40,637	42,068	42,053	42,129	39,483	42,147	38,268	42,211	39,561	36,300	480,266
Daily Ave kW-hrs	1,210	1,354	1,311	1,402	1,357	1,404	1,274	1,360	1,276	1,362	1,319	1,171	1,316
$/kW-hr	$0.089	$0.081	$0.081	$0.069	$0.074	$0.068	$0.074	$0.070	$0.073	$0.077	$0.079	$0.089	$0.077
Daily kW-hr Cost	$108	$109	$106	$97	$100	$96	$94	$96	$94	$105	$104	$104	$101
Total kW-hr Cost	$3,336	$3,053	$3,272	$2,916	$3,098	$2,882	$2,929	$2,969	$2,807	$3,257	$3,127	$3,228	$36,874
kW Used	84	86	86	85	84	81	82	80	78	85	82	84	997
$/kW	$3.62	$3.72	$3.56	$2.44	$2.41	$2.25	$2.29	$2.22	$2.25	$3.31	$3.53	$3.62	$2.95
Total Demand Cost	$304	$320	$306	$208	$203	$182	$188	$177	$175	$281	$289	$304	$2,939
Load Factor	60%	66%	64%	69%	67%	72%	65%	71%	68%	67%	67%	58%	66%
Total Electric Cost	$3,640	$3,373	$3,578	$3,124	$3,301	$3,064	$3,117	$3,147	$2,983	$3,539	$3,417	$3,532	$39,813
Daily Electric Cost	$117	$120	$115	$104	$106	$102	$101	$102	$99	$114	$114	$114	$109
Cost/Square Foot	$0.13	$0.12	$0.13	$0.11	$0.12	$0.11	$0.11	$0.11	$0.11	$0.13	$0.12	$0.13	$1.44
Fossil Fuel Data													
Therms Total	4104	3115	4551	3356	2925	1919	1909	1865	1794	2326	3729	4176	35,771
MMBTUs Total	410	312	455	336	293	192	191	187	179	233	373	418	3,577
Daily Ave MMBTUs	13	11	15	11	9	6	6	6	6	8	12	13	10
$/MMBTU	$28.85	$26.99	$30.14	$31.78	$31.78	$30.09	$28.11	$28.35	$28.85	$29.51	$30.71	$27.49	$29.45
Daily MMBTU Cost	$382	$300	$443	$356	$300	$192	$173	$171	$173	$221	$382	$370	$289
Total MMBTU Cost	$11,841	$8,409	$13,719	$10,666	$9,298	$5,774	$5,367	$5,288	$5,177	$6,864	$11,451	$11,478	$105,332
Cost/Square Foot	$0.43	$0.30	$0.50	$0.39	$0.34	$0.21	$0.19	$0.19	$0.19	$0.25	$0.41	$0.42	$3.82
Energy Usage Indices													
Elec BTU/Sq Ft/Day	150	167	162	173	168	174	157	168	158	168	163	145	163
kW-hrs/Sq Ft/Month	1.4	1.4	1.5	1.5	1.5	1.5	1.4	1.5	1.4	1.5	1.4	1.3	1.5
Proj kW-hrs/Sq Ft/Yr	16.3	16.5	17.7	18.3	18.3	18.3	17.2	18.3	16.6	18.4	17.2	15.8	17.4
Fossil Fuel BTU/Sq Ft/Day	480	403	532	405	342	232	223	218	217	272	450	488	355
Fossil Fuel BTU/Sq Ft/Mnth	14,871	11,288	16,489	12,159	10,599	6,953	6,918	6,758	6,501	8,428	13,510	15,130	10,800
Proj FF Btu/Sq Ft/Year	178,452	135,455	197,870	145,907	127,190	83,433	83,018	81,094	78,016	101,132	162,118	181,565	129,604
Total BTUs/Sq Ft/Day	629	570	694	579	510	405	381	386	374	440	613	633	518
Energy Cost/Sq Ft	$0.56	$0.43	$0.63	$0.50	$0.46	$0.32	$0.31	$0.31	$0.30	$0.38	$0.54	$0.54	$5.26
EUI in BTUs/Sq Ft	19,508	15,973	21,513	17,360	15,798	12,161	11,799	11,968	11,232	13,646	18,401	19,618	188,976
Year to Date Usage	19,508	35,481	56,994	74,354	90,151	102,312	114,112	126,080	137,312	150,958	169,358	188,976	
Tot Energy & Demand Cost	$15,481	$11,781	$17,297	$13,790	$12,599	$8,838	$8,483	$8,435	$8,160	$10,403	$14,868	$15,010	$145,145
Year to Date Cost	$15,481	$27,262	$44,559	$58,349	$70,948	$79,786	$88,270	$96,705	$104,864	$115,267	$130,135	$145,145	

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Customer Name:	City of Port Townsend - Pope Marine												
Facility Name:	Pope Marine												
Base Year:	3	Feb-11	through	Jan-12									
Conditioned Area:	1,500	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	758	689	567	536	368	163	53	14	58	346	616	747	4915
Cooling Degree Days	0	0	0	0	0	1	16	67	55	0	0	0	139
Electrical Data													
kW-hrs Used	4,417	3,371	2,751	2,113	1,235	564	399	267	744	1,815	3,242	3,461	24,379
Daily Ave kW-hrs	142	120	89	70	40	19	13	9	25	59	108	112	67
$/kW-hr	$0.100	$0.100	$0.100	$0.099	$0.105	$0.115	$0.120	$0.135	$0.109	$0.105	$0.103	$0.102	$0.103
Daily kW-hr Cost	$14	$12	$9	$7	$4	$2	$2	$1	$3	$6	$11	$11	$7
Total kW-hr Cost	$442	$337	$276	$209	$129	$65	$48	$36	$81	$191	$333	$354	$2,502
kW Used	0	0	0	0	0	0	0	0	0	0	0	0	0
$/kW	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Total Demand Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Load Factor	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Electric Cost	$442	$337	$276	$209	$129	$65	$48	$36	$81	$191	$333	$354	$2,502
Daily Electric Cost	$14	$12	$9	$7	$4	$2	$2	$1	$3	$6	$11	$11	$7
Cost/Square Foot	$0.29	$0.22	$0.18	$0.14	$0.09	$0.04	$0.03	$0.02	$0.05	$0.13	$0.22	$0.24	$1.67
Energy Usage Indices													
Elec BTU/Sq Ft/Day	324	274	202	160	91	43	29	20	56	133	246	254	152
kW-hrs/Sq Ft/Month	2.9	2.2	1.8	1.4	0.8	0.4	0.3	0.2	0.5	1.2	2.2	2.3	1.4
Proj kW-hrs/Sq Ft/Yr	35.3	27.0	22.0	16.9	9.9	4.5	3.2	2.1	6.0	14.5	25.9	27.7	16.3
Fossil Fuel BTU/Sq Ft/Day	0	0	0	0	0	0	0	0	0	0	0	0	0
Fossil Fuel BTU/Sq Ft/Mnth	0	0	0	0	0	0	0	0	0	0	0	0	0
Proj FF Btu/Sq Ft/Year	0	0	0	0	0	0	0	0	0	0	0	0	0
Total BTUs/Sq Ft/Day	324	274	202	160	91	43	29	20	56	133	246	254	152
Energy Cost/Sq Ft	$0.29	$0.22	$0.18	$0.14	$0.09	$0.04	$0.03	$0.02	$0.05	$0.13	$0.22	$0.24	$1.67
EUI in BTUs/Sq Ft	10,047	7,668	6,258	4,807	2,809	1,282	908	606	1,693	4,127	7,374	7,873	55,454
Year to Date Usage	10,047	17,715	23,973	28,780	31,589	32,872	33,780	34,386	36,079	40,207	47,581	55,454	
Tot Energy & Demand Cost	$442	$337	$276	$209	$129	$65	$48	$36	$81	$191	$333	$354	$2,502
Year to Date Cost	$442	$779	$1,056	$1,265	$1,394	$1,459	$1,507	$1,543	$1,624	$1,815	$2,148	$2,502	

Honeywell

Customer Name:	City of Port Townsend												
Facility Name:	Waste Water Treatment Plant												
Base Year:	3	Apr-11	through	Mar-12									
Conditioned Area:	2,700	square feet											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Weather Data													
Days in Month	31	28	31	30	31	30	31	31	30	31	30	31	365
Heating Degree Days	616	747	758	689	567	536	368	163	53	14	58	346	4915
Cooling Degree Days	0	0	0	0	0	0	0	1	16	67	55	0	139
Electrical Data													
kW-hrs Used	100,800	97,331	106,854	108,120	105,840	97,200	96,968	103,230	96,677	106,888	104,282	104,337	1,228,528
Daily Ave kW-hrs	3,252	3,476	3,447	3,604	3,414	3,240	3,128	3,330	3,223	3,448	3,476	3,366	3,366
$/kW-hr	$0.080	$0.079	$0.079	$0.077	$0.077	$0.076	$0.078	$0.078	$0.078	$0.078	$0.079	$0.079	$0.078
Daily kW-hr Cost	$259	$276	$271	$277	$262	$245	$244	$260	$252	$270	$275	$266	$263
Total kW-hr Cost	$8,040	$7,716	$8,388	$8,311	$8,122	$7,357	$7,570	$8,063	$7,551	$8,356	$8,240	$8,245	$95,960
kW Used	191	186	220	222	194	196	171	184	184	187	201	201	2337
$/kW	$6.49	$6.46	$6.82	$6.84	$6.28	$4.39	$4.16	$3.90	$3.90	$4.31	$5.29	$5.29	$5.40
Total Demand Cost	$1,240	$1,202	$1,501	$1,518	$1,219	$860	$711	$717	$717	$807	$1,064	$1,064	$12,619
Load Factor	71%	78%	65%	68%	73%	69%	76%	75%	73%	77%	72%	70%	72%
Total Electric Cost	$9,279	$8,918	$9,889	$9,830	$9,340	$8,218	$8,281	$8,780	$8,268	$9,163	$9,304	$9,309	$108,579
Daily Electric Cost	$299	$319	$319	$328	$301	$274	$267	$283	$276	$296	$310	$300	$297
Cost/Square Foot	$3.44	$3.30	$3.66	$3.64	$3.46	$3.04	$3.07	$3.25	$3.06	$3.39	$3.45	$3.45	$40.21

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8. ESTIMATED ENERGY SAVINGS AND ENERGY COST SAVINGS THAT ARE EXPECTED TO RESULT FROM THE INSTALLATION OF THE ESCO EQUIPMENT AND FROM THE ESCO SERVICES AND AN EXPLANATION OF THE METHOD USED TO MAKE THE ESTIMATE.

The energy consumption savings calculations are detailed in Attachment 3. In some cases, baseline operations were determined based on the analysis of data trending of the HVAC equipment along with the site surveys and utility data analysis. Baseline energy consumption was adjusted based on the increased outside air intake and repair of non-operational energy consuming equipment. Table 5-1 summarizes the estimated energy savings per year, and associated cost savings. Table 5-2 summarizes the estimated energy savings per year based on the current operation before baseline adjustment.

Cost of operations savings for Water Meter AMI project will be provided separately along with budgetary pricing.

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Table 5-1: Summary of ECM Savings (After Baseline Adjustment)

ECM ID	ECM Name	Bldg	Electric, kWh	kWh, $	Demand, kW	Demand, $	Fuel, Therm	Fuel, $	Total, $	Guarantee Factor	Total Guaranteed Savings
1.1	Boiler replacement	Mountain View	0	$0	0	$0	6,684	$29,001	$29,001	90%	$26,101
3.1	Control system upgrade - EMS and retro-commissioning and demand control ventilation at AHU-3	Mountain View	0	$0	0	$0	2,866	$7,165	$7,165	90%	$6,449
4.1 A.2	HVAC Mechanical Option A.2 - Replace AHU-7	Mountain View	8,284	$544	0	$0	1,991	$4,976	$5,521	90%	$4,969
4.1 B	HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6	Mountain View	26,509	$1,742	0	$0	7,464	$18,660	$20,402	90%	$18,362
4.2	HVAC Mechanical - Retro-commision FCs and Uvs	Mountain View	15,643	$1,028	0	$0	6,897	$17,243	$18,271	90%	$16,444
5.1	Lighting	Mountain View	114,860	$7,548	242	$1,818	-411	-$1,029	$8,337	90%	$7,504
6.1	Envelope upgrades	Mountain View	0	$0	0	$0	899	$2,247	$2,247	90%	$2,023
3.1	Control system upgrade - EMS	City Hall	0	$0	0	$0	0	$0	$0	90%	$0
3.2	Control system upgrade - Programmable Thermostat	Library, Pope Marine, Cotton Bldg	0	$0	0	$0	0	$0	$0	90%	$0
5.1	Lighing	City Hall, Library, Cotton Bldg, Pope Marine, WWTP	95,620	$8,032	63	$470	-165	-$357	$8,146	90%	$7,331
6.1	Envelope upgrades	City Hall	0	$0	0	$0	1,677	$3,639	$3,639	90%	$3,275
	Totals:		260,918	$18,895	305	$2,288	27,902	$81,546	$102,729		$92,456

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Table 5-2: Summary of ECM Savings (Current Operation)

ECM ID	ECM Name	Bldg	Electric, kWh	kWh, $	Demand, kW	Demand, $	Fuel, Therm	Fuel, $	Total, $
1.1	Boiler replacement	Mountain View	0	$0	0	$0	4,484	$19,454	$19,454
3.1	Control system upgrade - EMS and retro-commissioning and demand control ventilation at AHU-3	Mountain View	0	$0	0	$0	110	$275	$275
4.1 A.2	HVAC Mechanical Option A.2 - Replace AHU-7	Mountain View	8,284	$544	0	$0	1,623	$4,058	$4,603
4.1 B	HVAC Mechanical Option B - Retro-commission AHU-1 - AHU-6	Mountain View	24,852	$1,633	0	$0	1,091	$2,728	$4,361
4.2	HVAC Mechanical - Retro-commision FCs and Uvs	Mountain View	8,190	$538	0	$0	3,312	$8,281	$8,819
5.1	Lighting	Mountain View	114,860	$7,548	242	$1,818	-411	-$1,029	$8,337
6.1	Envelope upgrades	Mountain View	0	$0	0	$0	899	$2,247	$2,247
3.1	Control system upgrade - EMS	City Hall	0	$0	0	$0	0	$0	$0
3.2	Control system upgrade - Programmable Thermostat	Library, Pope Marine, Cotton Bldg	0	$0	0	$0	0	$0	$0
5.1	Lighing	City Hall, Library, Cotton Bldg, Pope Marine, WWTP	95,620	$8,032	63	$470	-165	-$357	$8,146
6.1	Envelope upgrades	City Hall	0	$0	0	$0	1,677	$3,639	$3,639
	Totals:		251,807	$18,296	305	$2,288	12,620	$39,296	$59,881

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First year energy cost savings were calculated based on the base year utility rates that were established based on the utility rate analysis. The following table summarizes the base year utility rates.

Table 6: Summary of Utility Rates applied to the savings calculations

Rate schedule by facility		Energy Charge ($/kWh)			Demand ($/kW)			Fuel
Facility name	PSE Electric Schedule	Summer	Winter	Annual Average	Summer	Winter	Annual Average	$/Therm*
Mountain View - gym, pool, and offices	25	$0.065714	$0.065714	$0.065714	$6.01	$9.01	$7.51	$2.50
Mountain View - Mod A (KPTZ)	24	$0.088288	$0.091386	$0.089837	-	-	-	-
Mountain View - Mod B (YMCA)	24	$0.088288	$0.091386	$0.089837	-	-	-	-
WWTP	25	$0.065714	$0.065714	$0.065714	$6.01	$9.01	$7.51	-
Pope Marine	24	$0.088288	$0.091386	$0.089837	-	-	-	-
Cotton Bldg	24	$0.088288	$0.091386	$0.089837	-	-	-	-
City Hall	24	$0.088288	$0.091386	$0.089837	-	-	-	$2.17
Library	24	$0.088288	$0.091386	$0.089837	-	-	-	-

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9: THE METHOD BY WHICH ENERGY SAVINGS AND ENERGY COST SAVINGS WILL BE CALCULATED DURING THE TERM OF THE ENERGY SERVICES AUTHORIZATION.

Methodology to calculate energy consumption savings and energy savings are detailed in Attachment 3.

10. A DESCRIPTION OF HOW THE ESCO WILL FINANCE ITS ACQUISITION OF THE ESCO EQUIPMENT AND WHEN TITLE TO THE ESCO EQUIPMENT WILL PASS TO THE OWNER.

A significant portion of the project will be funded through the various grant programs. The remaining amount will be funded through the City's budget. Title to the equipment will pass upon owner acceptance and final payment to Honeywell.

11. A DESCRIPTION OF HOW ENERGY SAVINGS WILL BE GUARANTEED BY THE ESCO.

Honeywell has proposed a guarantee for the performance of the installed ECMs as shown in Table 5 in Section 8 of this proposal.

12. A DESCRIPTION OF HOW THE ESCO PROPOSES TO BE COMPENSATED.

a) Terms: Net 30 days from the date of invoice, monthly billing for percent completion.
b) Payments to be the amount of the invoice, less retention of 5.0% per the contract at the completion and implementation of any individual ECM.
c) Payments due and unpaid shall be subject to interest charges.

13. THE TERM OF THE ENERGY SERVICES AUTHORIZATION.

The term of the ESA is 3 years or less. Ongoing M&V is included in the first year as a single line item (required M&V). Years 2 and 3 are an optional cost should the client agree to multiple year M&V.

14. THE TERMINATION VALUE FOR EACH YEAR DURING THE TERM OF THE ENERGY SERVICES AUTHORIZATION.

Not applicable due to the use of Capital funds for this project.

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15. THE SCHEDULE FOR PROJECT COMPLETION.

Draft schedule is summarized in Attachment 4.

16. THE NATURE AND EXTENT OF THE WORK AND EQUIPMENT THAT THE ESCO ANTICIPATES IT WILL RECEIVE FROM OTHER FIRMS UNDER SUBCONTRACT.

We intend to subcontract out the lighting, mechanical, and envelope upgrades, including labor and equipment, and the electrical labor for the controls.

17. THE ESCO'S MEASUREMENT AND VERIFICATION (M&V) PLAN FOR DOCUMENTING ENERGY SAVINGS.

Measurement and verification (M&V) plan is outlined in the Attachment G (DRAFT), Schedule of Savings. Measure specific M&V plans are as follows. Attachment A and Attachment G referred in this section are provided as DRAFT EXAMPLES.

EXHIBIT G-6 M&V Plan

ECM 1.1 – Boiler Replacement - M&V Plan

1. ECM Savings-and-M&V Objective & Rationale: The objective of this ECM is to reduce the energy consumption by replacing the existing fuel oil boilers with condensing propane boilers. M&V option "C" was selected as a cost-effective method to both (a) verify the potential-to-save and (b) to determine the quantity of energy use avoidance.

2. Baseline Conditions & Adjustments and Boundary of Savings Determination

2.1. Boundary of Energy Use and Savings Determination: The energy cost avoidance determination for this ECM is based on the adjusted baseline fuel load, therm savings of ECM 3.1, 4.1, 4.2, and 6.1, and measured combustion efficiency.

2.2. Baseline Conditions & Baseline Utility/Environmental/Process Data: The energy performance baseline was determined based on the history of utility bills, baseline adjustment due to increased ventilation rate (ECM 4.1 and 4.2), and engineering calculations. Baseline cost is determined from the utility rate schedules presented in Exhibit G-4. This ECM is affected by the increase in the boiler combustion efficiency.

2.3. Planned and Unplanned (Routine and Non-Routine) Baseline Adjustments: All other existing or new equipment directly using electricity and fuel oil are not accounted for in this energy analysis, including new equipment added under this contract or by others.

3. Potential-to-Save Verification Plan: The verification of potential-to-save will be based on completion of the following:

- The Customer's sign-off of the Delivery & Acceptance certificate

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- Inspection of installed boilers including boiler efficiency
- Utility bill data analysis

4. Parameters to be Monitored & Sampling Plan

4.1. Baseline Verification, Installation & Acceptance Period: Following the installation, boiler combustion efficiency will be measured, and the information will be used to calculate the actual savings based on the engineering calculation provided in Exhibit G-1 and Attachment 3.1.

4.2. Performance Period (On-Going): Performance period savings will be calculated based on the boiler combustion efficiency measures during the Baseline Verification, Installation & Acceptance Period, and the engineering calculation provided in Exhibit G-1 and Attachment 3.1. Utility bill data will be monitored.

5. Determination of Energy & Cost Avoidance: Annual savings will be measured with actual gas utility data.

6. Determination of Non-Energy O&M Impact: No O&M savings are being claimed as part of this ECM.

7. Customer Responsibilities and Honeywell-Customer Risk Allocation: By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1 and Attachment 3.1 appropriate for determination of energy avoidance.

7.1. Customer Responsibilities:

- By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1and Attachment 3.1 appropriate for determination of energy avoidance
- Customer agrees to maintain post retrofit operational use per project specifications as delineated in the Energy Guarantee Special Provisions outlined in Attachment D and Attachments F and G
- Customer agrees to provide Honeywell with notification of changes that would impact the baseline of this ECM

7.2. Risk Allocation: Successful guarantee performance is determined by meeting the avoidance presented in Section 1 of Attachment G, Attachment A, Attachment F, Attachment G, Exhibits to Attachments A and G, and this M&V plan. Honeywell is allowed to make baseline appropriate modifications to reflect observed changes in usage that impact the energy baseline.

8. Performance Period Definition, On-Going Activities, and Reports

8.1. Performance Period Definition: The performance period term overall is 3 years

8.2. On-going Activities: Each guarantee year Honeywell will verify continued operation of the ECM as shown in Attachments A, D, F and G.

8.3. Reports & Documentation: An annual report will be issued summarizing the guarantee year energy savings and site survey results.

ECM 3.1 – Control System Upgrade - M&V Plan

1. ECM Savings-and-M&V Objective & Rationale: The objective of this ECM is to install an Energy Management Control System (EMCS), retro-commission existing HVAC equipment, and implement scheduling and

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demand control ventilation control strategies. Implementation of this measure will be performed along with ECM 4.1 and 4.2, HVAC mechanical upgrade. M&V option "B – measured" was selected as a cost-effective method to both (a) verify the potential-to-save and (b) to determine the quantity of energy use avoidance.

2. Baseline Conditions & Adjustments and Boundary of Savings Determination

2.1. Boundary of Energy Use and Savings Determination: The energy cost avoidance determination for this ECM is isolated to the individual HVAC equipment (Mountain View AHU-3). The proposed unit's performance data, measured outside air ventilation rate, and measured unit operating hours will be used to calculate therm energy savings. The energy cost avoidance determination for this ECM is isolated to the specified equipment as shown in Attachment 3.1.

2.2. Baseline Conditions & Baseline Utility/Environmental/Process Data: The energy performance baseline was determined using engineering calculations that utilize Mechanical System Specifications, site observations, estimated occupancy and usage, etc. Baseline cost is determined from the utility rate schedules presented in Exhibit G-4. This ECM is affected by operational run time and reduction of ventilation rate. The cost avoidance analysis will be based on manufacturers' data, measured ventilation rate, measured operating hours, and engineering calculations.

2.3. Planned and Unplanned (Routine and Non-Routine) Baseline Adjustments: Mountain View YMCA schedule provided by the City of Port Townsend was used to establish the occupancy hours. Occupancy schedule change will be treated as baseline adjustments.

3. Potential-to-Save Verification Plan: The verification of potential-to-save will be based on completion of the following:

- The Customer's sign-off of the Delivery & Acceptance certificate
- Verification of AHU-3 unit operating hours
- Verification of ventilation rate reduction
- Engineering calculations based on measured operating hours, ventilation rate, and mechanical specifications

4. Parameters to be Monitored & Sampling Plan

4.1. Baseline Verification, Installation & Acceptance Period: Trend or data-log the following parameters to verify the operation of Demand Control Ventilation. Take 15-minute interval data for 4 weeks following the installation during the normal operation of the facility.

- Outside air temperature, °F
- AHU-3 Return air temperature, °F
- AHU-3 Mixed air temperature, °F
- AHU-3 Unit on/off
- AHU-3 Return CO2 reading, ppm

Other parameters used for energy savings calculation will be stipulated.

- Existing gym minimum outdoor air flowrate (GMOAFR), 2,000 cfm
- AHU-3 Total cfm = 8,000 cfm
- Average occupied room temperature (RT), 70°F
- Air density correction factor (ADCF), 1.0
- Existing boiler combustion efficiency (BCE), 78%

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- Existing Sensible ventilation heating load (SVHL), 119.4 kBtu/SCFM – SVHL is calculated based on the TMY3 Bin data during the scheduled hours for existing operation. 4:00AM – 7:00PM Monday through Friday operation is stipulated.

4.2. Performance Period (On-Going): On an annual basis, occupancy schedule will be verified to calculate energy savings compared against the baseline.

5. Determination of Energy & Cost Avoidance: Energy savings calculations are as presented in Exhibit G-1 and Attachment 3.1 to determine realized energy avoidance.

6. Determination of Non-Energy O&M Impact: No O&M savings are being claimed as part of this ECM.

7. Customer Responsibilities and Honeywell-Customer Risk Allocation: By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1 and Attachment 3.1 appropriate for determination of energy avoidance, years 2 through term energy cost avoidance will be equal to the value of year 1 energy cost avoidance.

7.1. Customer Responsibilities:

- By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1and Attachment 3.1 appropriate for determination of energy avoidance
- Customer agrees to maintain post retrofit operational use per project specifications as delineated in the Energy Guarantee Special Provisions outlined in Attachment D and Attachments F and G
- Customer agrees to provide Honeywell with notification of changes that would impact the baseline of this ECM

7.2. Risk Allocation: Successful guarantee performance is determined by meeting the avoidance presented in Section 1 of Attachment G, Attachment A, Attachment F, Attachment G, Exhibits to Attachments A and G, and this M&V plan. Honeywell is allowed to make baseline appropriate modifications to reflect observed changes in usage that impact the energy baseline.

8. Performance Period Definition, On-Going Activities, and Reports

8.1. Performance Period Definition: The performance period term overall is 3 years

8.2. On-going Activities: Each guarantee year Honeywell will verify continued operation of the ECM as shown in Attachments A, D, F and G.

8.3. Reports & Documentation: An annual report will be issued summarizing the guarantee year energy savings and site survey results.

ECM 4.1 and 4.2 – HVAC Mechanical Upgrade - M&V Plan

1. ECM Savings-and-M&V Objective & Rationale: The objective of this ECM is to retro-commission or replace existing HVAC mechanical equipment for proper operation. Implementation of this measure will be performed with ECM 3.1 Control System Upgrade. M&V option "B – measured" was selected as a cost-effective method to both (a) verify the potential-to-save and (b) to determine the quantity of energy use avoidance.

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2. Baseline Conditions & Adjustments and Boundary of Savings Determination

2.1. Boundary of Energy Use and Savings Determination: The energy cost avoidance determination for this ECM is isolated to the individual HVAC equipment. The proposed units' performance data and measured unit operating hours will be used to calculate energy savings. The energy cost avoidance determination for this ECM is isolated to the specified equipment as shown in Attachment 3.1.

2.2. Baseline Conditions & Baseline Utility/Environmental/Process Data: The energy performance baseline was determined using engineering calculations that utilize Mechanical System Specifications, site observations, estimated occupancy and usage, etc. Baseline cost is determined from the utility rate schedules presented in Exhibit G-4. This ECM is affected by operational run time. The cost avoidance analysis will be based on manufacturers' data, measured operating hours, mechanical specifications, and engineering calculations.

2.3. Planned and Unplanned (Routine and Non-Routine) Baseline Adjustments: All other existing or new equipment directly using electricity and fuel oil are not accounted for in this energy analysis, including new equipment added under this contract or by others.

3. Potential-to-Save Verification Plan: The verification of potential-to-save will be based on completion of the following:

- The Customer's sign-off of the Delivery & Acceptance certificate
- Verification of unit operating hours
- Engineering calculations based on measured operating hours and mechanical specifications

4. Parameters to be Monitored & Sampling Plan

4.1. Baseline Verification, Installation & Acceptance Period: Trend or data-log the programmed schedule of each unit: start/stop schedule. Take 15-minute interval data for 4 weeks following the installation during the normal operation of the facility.

Other parameters used for energy savings calculation will be stipulated.

- Average occupied room temperature (RT), 70°F
- Air density correction factor (ADCF), 1.0
- Existing boiler combustion efficiency (BCE), 78%
- Existing annual fan hours (AFH), 8760 hrs
- Supply fan motor horsepower as specified in below table, hp
- Supply fan total airflow as specified in below table, cfm
- Minimum Outside airflow as specified in below table, cfm
- Fan motor load factor (LF), 60%
- Fan motor efficiency(ME), 80%
- Overall building UA value (UAb), 2,976 Btu/(hr-°F)
- Where UAb = Roof area * U-value (roof) + Wall area * U-value (wall) + Window area * U-value (window)
    - Roof area = 27,600 Sq.ft.
    - U-value (roof) = 0.052 Btu/(hr-sq.ft.- °F)
    - Wall area = 11,739 sq.ft.
    - U-value (wall) = 0.047 Btu//(hr-sq.ft.- °F)
    - Window area = 2,072 sq.ft
    - U-value for windows = 0.48 Btu//(hr-sq.ft.- °F)

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4.2. Performance Period (On-Going): On an annual basis, programmed schedule will be verified to calculate energy savings compared against the baseline.

5. Determination of Energy & Cost Avoidance: Energy savings calculations are as presented in Exhibit G-1 and Attachment 3.1 to determine realized energy avoidance.

6. Determination of Non-Energy O&M Impact: No O&M savings are being claimed as part of this ECM.

7. Customer Responsibilities and Honeywell-Customer Risk Allocation: By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1 and Attachment 3.1 appropriate for determination of energy avoidance, years 2 through term energy cost avoidance will be equal to the value of year 1 energy cost avoidance.

7.1. Customer Responsibilities:

- By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1and Attachment 3.1 appropriate for determination of energy avoidance
- Customer agrees to maintain post retrofit operational use per project specifications as delineated in the Energy Guarantee Special Provisions outlined in Attachment D and Attachments F and G
- Customer agrees to provide Honeywell with notification of changes that would impact the baseline of this ECM

7.2. Risk Allocation: Successful guarantee performance is determined by meeting the avoidance presented in Section 1 of Attachment G, Attachment A, Attachment F, Attachment G, Exhibits to Attachments A and G, and this M&V plan. Honeywell is allowed to make baseline appropriate modifications to reflect observed changes in usage that impact the energy baseline.

8. Performance Period Definition, On-Going Activities, and Reports

8.1. Performance Period Definition: The performance period term overall is 3 years

8.2. On-going Activities: Each guarantee year Honeywell will verify continued operation of the ECM as shown in Attachments A, D, F and G.

8.3. Reports & Documentation: An annual report will be issued summarizing the guarantee year energy savings and site survey results.

ECM 5.1 – Lighting Retrofit - M&V Plan:

1. ECM Savings-and-M&V Objective & Rationale: Purpose of the ECM is to reduce energy consumption by retrofitting existing lighting fixtures with higher efficiency lamps and ballasts. M&V option "A" was selected as a cost-effective method to both (a) verify the potential-to-save and (b) to determine the quantity of energy use avoidance.

2. Baseline Conditions & Adjustments, and Boundary of Savings Determination

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2.1. Boundary of Energy Use and Savings Determination: The energy cost avoidance determination for this ECM is isolated to the specified lighting fixtures as shown in Attachment 1 and Attachment 3.4.

2.2. Baseline Conditions & Baseline Utility/Environmental/Process Data: This ECM is affected by the electrical load of the listed fixtures and the operational hours of the fixtures. This load in Watts is based on the figured published by ANSI (The American National Standards Institute). Baseline costs are determined from current lighting loads, utility rate schedules and billing data. The operating hours are determined by occupant information and logging data. The cost avoidance analysis is based on performance conditions being normalized to baseline values of these parameters.

2.3. Planned and Unplanned (Routine and Non-Routine) Baseline Adjustments: All other existing or new equipment directly using electricity are not accounted for in this energy analysis, including new equipment added under this contract or by others.

3. Potential-to-Save Verification Plan: The verification of potential-to-save will be based on completion of the following:

- The Customer's sign-off of the Delivery & Acceptance certificate
- Verification of pre and post installation energy consumed using ANSI and manufacturer's specifications respectively.
- Measured volt-amps for a sampling of each pre-retrofit and each post-retrofit fixture-type per utility electric meter
- Stipulated hours of operation
- Verification of utility implemented rate schedules

4. Parameters to be Monitored & Sampling Plan

4.1. Baseline Verification, Installation & Acceptance Period: Proposed fixture power draws will be stipulated based on figures published by the lamp and ballast manufacturer(s) and verified by using sampling of per utility electric meter.

- Measured volt-amps for a sampling of each pre-retrofit and each post-retrofit fixture-type
- One Light level reading (in footcandles) shall be taken for each usage type in each building before and after completion of the retrofit. The same room locations will be used for pre- and post-retrofit light level sampling.
- Sampling will occur on existing fixtures before retrofit and on replacement fixtures after retrofit
- The same control locations will be used for pre-retrofit and post-retrofit sampling
- For those fixtures included in the pre/post retrofit categories providing 20% or less lighting energy savings, manufacturers' documented performance data will be used.
- Baseline and proposed fixture and control device counts and types will be verified.

Baseline and proposed runtime hours will be stipulated based on lighting occupant information and datalogger results recorded during the Investment Grade Audit. Where occupancy sensors or photocells are installed, proposed runtime hours will be stipulated based on a percentage decrease in baseline hours appropriate to the lighting usage type. Demand diversity factors will be stipulated based on lighting datalogger result recorded during the Investment Grade Audit. Where occupancy sensors or photocells are installed, proposed demand diversity factors will be stipulated based on a percentage decrease in baseline hours appropriate to the lighting usage type.

4.2. Performance Period (On-Going): Performance period fixture power draws will be stipulated based on figures published by Manufacturer's data and the pre and post installation measurements.

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5. Determination of Energy & Cost Avoidance: Resulting energy savings calculations are as presented in Exhibit G-3.4 to determine realized energy avoidance.

6. Determination of Non-Energy O&M Impact: Resulting operational savings calculations are as presented in Exhibit G-3.4 to determine realized operational and maintenance cost avoidance.

7. Customer Responsibilities and Honeywell-Customer Risk Allocation:

7.1. Customer Responsibilities:

- By execution of this contract, Customer deems the lighting operational hours as stipulated and agreed-to
- By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-3.4 appropriate for determination of energy avoidance
- Energy avoidance is stipulated and agreed upon based on year 1 post retrofit measurements and calculations; years 2 through term energy cost avoidance will be equal to the value of year 1 energy cost avoidance times the escalation factor noted in section 1.1
- Customer agrees to maintain equipment to manufacturer's specifications for the term of the guarantee.
- Customer agrees to maintain post retrofit operational use per project specifications as delineated in the Energy Guarantee Special Provisions outlined in Attachment D and Attachments F and G
- Customer agrees to provide Honeywell with notification of changes that would impact the baseline of this ECM

7.2. Risk Allocation: Successful guarantee performance is determined by meeting the avoidance presented in Section 1 of Attachment G, Attachment A, Attachment F, Attachment G, Exhibits to Attachments A and G, and this M&V plan. Honeywell is allowed to make baseline appropriate modifications to reflect observed changes in usage that impact the energy baseline.

8. Performance Period Definition, On-Going Activities, and Reports

8.1. Performance Period Definition: The performance period term overall is 3 years

8.2. On-going Activities: An annual site survey will be performed towards the end of each guarantee year to verify continued operation of the ECM as shown in Attachments A, D, F and G.

8.3. Reports & Documentation: An annual report will be issued summarizing the guarantee year energy savings and site survey results.

ECM 6.1 – Building Envelope - M&V Plan

1. ECM Savings-and-M&V Objective & Rationale: The objective of this ECM is to reduce energy consumption by reducing the air leakage area. M&V option "A" was selected as a cost-effective method to both (a) verify the potential-to-save and (b) to determine the quantity of energy use avoidance.

2. Baseline Conditions & Adjustments and Boundary of Savings Determination

2.1. Boundary of Energy Use and Savings Determination: The energy cost avoidance determination for this ECM is isolated to the specified air leakage areas as shown in Attachment A.

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2.2. Baseline Conditions & Baseline Utility/Environmental/Process Data: The energy performance baseline was determined based on the TMY3 weather data, mechanical system specifications, stipulated operating parameters, and engineering calculations. Baseline cost is determined from the utility rate schedules presented in Exhibit G-4. This ECM is affected by leakage airflow rate to seal. The cost avoidance analysis will be based on sealed leakage area data and engineering calculations.

2.3. Planned and Unplanned (Routine and Non-Routine) Baseline Adjustments: All other existing or new equipment directly using electricity and fuel oil are not accounted for in this energy analysis, including new equipment added under this contract or by others.

3. Potential-to-Save Verification Plan: The verification of potential-to-save will be based on completion of the following:

- The Customer's sign-off of the Delivery & Acceptance certificate
- Verification of sealed leakage area
- Engineering calculations based on sealed leakage area

4. Parameters to be Monitored & Sampling Plan

4.1. Baseline Verification, Installation & Acceptance Period: Following the installation, the actual installation stating the sealed leakage area will be provided, and the information will be used to calculate the actual savings based on the engineering calculation provided in Attachment 3.2

4.2. Performance Period (On-Going): Performance period savings will be stipulated based on the verification of the installation.

5. Determination of Energy & Cost Avoidance: Energy savings calculations are as presented in Exhibit G-1 and Attachment 3.2 to determine realized energy avoidance.

6. Determination of Non-Energy O&M Impact: No O&M savings are being claimed as part of this ECM.

7. Customer Responsibilities and Honeywell-Customer Risk Allocation: By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1 and Attachment 3.2 appropriate for determination of energy avoidance, years 2 through term energy cost avoidance will be equal to the value of year 1 energy cost avoidance.

7.1. Customer Responsibilities:

- By execution of this contract, Customer deems the energy savings calculation, presented in Exhibit G-1and Attachment 3.2 appropriate for determination of energy avoidance
- Customer agrees to maintain post retrofit operational use per project specifications as delineated in the Energy Guarantee Special Provisions outlined in Attachment D and Attachments F and G
- Customer agrees to provide Honeywell with notification of changes that would impact the baseline of this ECM

7.2. Risk Allocation: Successful guarantee performance is determined by meeting the avoidance presented in Section 1 of Attachment G, Attachment A, Attachment F, Attachment G, Exhibits to Attachments A and G, and this M&V plan. Honeywell is allowed to make baseline appropriate modifications to reflect observed changes in usage that impact the energy baseline.

8. Performance Period Definition, On-Going Activities, and Reports

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8.1. Performance Period Definition: The performance period term overall is 3 years

8.2. On-going Activities: Each guarantee year Honeywell will verify continued operation of the ECM as shown in Attachments A, D, F and G.

8.3. Reports & Documentation: An annual report will be issued summarizing the guarantee year energy savings and site survey results.

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