

2010 FACILITY CONSERVATION ACTION PLAN

FACILITY Skagit County Public Defender Building 121 W. Broadway, Mount Vernon, WA	SITE ID SC-49	DATE 10-20-10
CURRENT ENERGY USE INDEX (EUI) 51 kBtu/Sq Ft	TARGET EUI 45 kBtu/Sq Ft (10% reduction)	AVERAGE EUI (BENCHMARK) FOR THE FACILITY TYPE: TBD
NEXT REVIEW OF PLAN Review and update annually.	FACILITY RCM TEAM MEMBERS (NAME AND POSITION) 1. Ric Boge, SCOG RCM 2. Susan Barrett, Office Supervisor 3. Ross Bailey, Facilities Ops Supervisor	
WALK THROUGH SUMMARY AND PHOTOS	DATE AND TIME OF WALK THROUGH: 10-13-10	

OVERVIEW OF THE SITE VISIT AND OPPORTUNITIES FOR RESOURCE CONSERVATION IN THE FACILITY

The Public Defender Building is 2-story, a 4,400 square foot facility originally constructed in 1979 as an inpatient alcoholic recovery center. After many retrofits, it now houses most of the attorneys and support staff for the Skagit County Public Defender's Office. It is open to the public from 8:30 to 4:30 M-F, except closed from noon to 1pm. The building is staffed by 20 employees, several whom occasionally occupy the building during evening and weekend hours. It is comprised of a reception area, several offices, small kitchen, small storage and utility rooms, 'law library'/conference room and restrooms, one of which includes a shower. Two gas-fired furnaces located in a utility closet provide heat and two AC units mounted on the roof provide cooling. There is one 40-G gas-fired hot water tank. In 2009 this facility used 37,400 KWh of electricity, and 958 Therms of Natural Gas for a total energy cost of \$4,914.

One PSE electricity account services the facility: #169106000 (meter: #U014257422; rate: 24E-C). One Cascade Natural Gas account services the facility: #050-0007-1 (meter; #263723). Water service is provided by the Skagit PUD: account #2828-2. Sewer, storm water and refuse service is provided by City of Mount Vernon: account #05-000990.



Skagit County Public Defender Building

Key findings from the Resource Conservation Audit to save money on utility costs:

1. Retrofit overhead lighting with more efficient T8 fluorescent fixtures and lamps
2. Educate staff with stickers, or utilize motion sensors or timers to shut off lights left on in unoccupied offices and storage rooms
3. Disconnect and remove the hot/cold water dispenser in the kitchen
4. Seal the air leaks under both the main and back entry doors
5. Disconnect the electric wall heater below the sink in the upper restroom
6. Consider adding awnings above south and west-facing windows on bottom floor to reduce unwanted solar heat gain.



POTENTIAL CONSERVATION MEASURES, OPERATIONAL IMPROVEMENTS, OR MODIFICATIONS

MEASURE SUMMARY

FOLLOW UP ACTIONS

DISPLAYED TO THE RIGHT OF EACH MEASURE

HEATING/VENTILATION/AIR CONDITIONING (HVAC)

1. Kudos for the strict controls on thermostat settings.

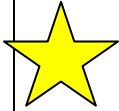
Funding: N/A

Staff: County Facilities Operations Supervisor

Schedule: N/A

Note: Two programmed thermostats are mounted in the furnace room. Sensors for those thermostats are in '3-hour occupied' thermostats mounted in the upstairs and downstairs hallways. This makes for full control over the settings for heating and cooling, while still accommodating conditioned-air needs of staff who frequently occupy the building in the evening and on weekends.

Of Note: County Facilities staff have done a great job of the challenging task of configuring the spaces and building systems for the current use of this facility from the inpatient treatment center it was originally designed as!



Three hour 'occupied' button



2. Consider adding awnings above south and west-facing windows on bottom floor to reduce unwanted solar heat gain

Funding: Operating Budget / Capital Budget

Staff: County Facilities Operations Supervisor

Schedule: As budget allows

Note: Awnings would still allow in natural light, but reduce unwanted solar heat gain in the summer. They would also allow for desired solar heat gain in the cooler months. In the meantime, utilize interior shades to reduce unwanted solar heat gain, such as the shade shown below.



Upper, west-side windows have some roof-overhang protection from summer sun, but not the lower windows



Nice solar-mesh shade on west-facing window in the reception area.

3. Seal the air leaks under both the main and back entry doors.



Main door into the reception area.

Funding: Operating budget

Staff: County Facility Operations Supervisor

Schedule: Immediate action.

Note:

Air leaks around doors make for easy loss of conditioned inside air to the outside.

4. Disconnect the electric wall heater below the sink in the upper restroom.



Electric wall heater with control knob on the unit.

Funding: Budget Neutral

Staff: County Facility Operations Supervisor in consultation with the Office Supervisor

Schedule: Immediate action.

Note:

This, somewhat hidden heater, could easily be left turned on during unoccupancy. If disconnecting the unit is not acceptable, add a timer to the control knob/switch.

5. Put the exhaust fan in the upper restroom on a timer.



Restroom exhaust vent on the right is next to supply air coming into the space from the vent on the ducting.

Funding: Operating budget

Staff: County Facility Operations Supervisor

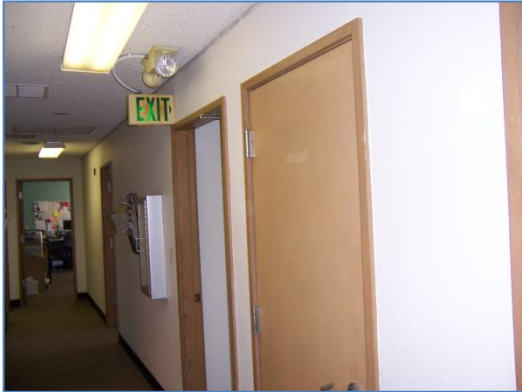
Schedule: Immediate action.

Note:

A timer on the exhaust fan will prevent conditioned supply air from being sucked out of the space more than necessary.

ELECTRICITY AND LIGHTING

1. Retrofit overhead lighting with more efficient T8 fluorescent fixtures and lamps.



Overhead T12 fixtures in the upstairs hallway

Funding: Operating Budget / Capital Budget / PSE Rebate

Staff: County Facility Operations Supervisor / Contractor / RCM can help with paperwork for utility rebate

Schedule: Immediate action

Note: Most of the overhead fluorescent fixtures in this facility have not been upgraded to T8. Save money on monthly electricity bills, provide more lumens, and longer lamp life with replacing older T12 fixtures with energy efficient T8 fixtures.

Considering new fixtures with 'daylighting' ballasts for rooms often light from natural daylight, such as the reception area.

2. Add reminder labels or install controls to offices and rooms prone to the lights being left on when unoccupied.



One of many unoccupied offices with lights left on

Funding: Budget neutral / Operating budget / possible PSE rebates.

Staff: County Facility Operations Supervisor / Sustainability Coordinator / Office Supervisor

Schedule: Immediate action.

Note: This facility has many offices, storage rooms, closets, etc., that have the potential for lighting to be left on. Reminder labels near switches may be enough for 'conservation-minded' staff, but lighting controlled by motion sensors works very well, especially for storage rooms and small closets. (A Motion-Sensor Project is underway by the Sustainability Coordinator.)

3. In conformance with County policy, restrict use of personal space heaters to those that use 250W or less.

Funding: Budget neutral

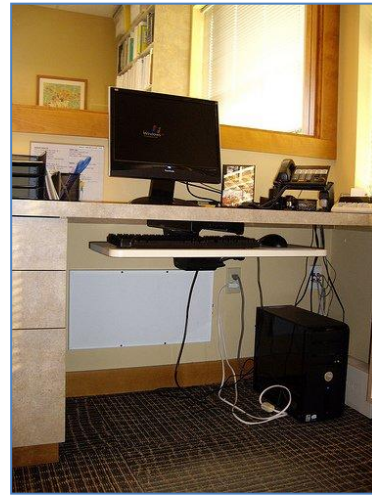
Staff: Office Supervisor

Schedule: Immediate action.

Note: If occupant comfort can't be achieved with thermostat settings, additional clothing, or redirecting supply air paths, try infrared radiant heat panels such as the one shown below. Infrared radiant heat is much more efficient than personal space heaters. It heats surfaces in line with the radiant heat rather than the air.



1500W personal space heater stored under desk



Example of 100W white infrared radiant heat panel mounted under desk to help keep desk user comfortable.

4. Label baseboard heaters that are not yet disconnected to remind staff to not use them without prior permission from the Office Supervisor.



One of several baseboard heaters – some work and some don't.

Funding: Budget Neutral

Staff: Office Supervisor

Schedule: Immediate Action

Note:

This is especially helpful for new staff to understand baseboard heat should not be considered a primary heat source in the facility.

5. Use only Energy-Star certified appliances when replacing older appliances.



Non-Energy Star refrigerator in the kitchen

Funding: Operating Budget.

Staff: Office Supervisor

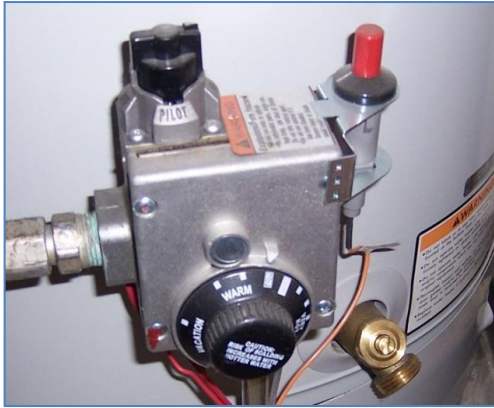
Schedule: When replacement is due.

Note:

Energy Star certified appliances are guaranteed to use less energy than the average of non-certified similar appliances.

WATER & SEWER

1. Kudos for having hot water tank at a reasonable setting!



Tank is set slightly above 'warm'.

Funding: N/A

Staff: County Facility Operations Supervisor / Office Supervisor

Schedule: Ongoing

Note:

Good job Skagit County! Hot water tanks set excessively high is a common area of energy waste. This tank is set about right, to not exceed 120 degrees.

2. Remove the hot/cold water dispenser and use only a non-energized dispenser.



Hot/cold water dispenser in the kitchen is on the left

Funding: Budget neutral

Staff: Office Supervisor

Schedule: Immediate Action

Note:

For cold water, keep a pitcher of water in the fridge. For hot water, heat a cup of water in the microwave.

Metered results: For week ending 11am on October 20, 2010, the hot/cold water dispenser used 15.75 kWh of electricity. If that rate of use remains constant it costs the County about \$78/year to pay for the electricity for this dispenser. Most of the electricity it uses goes towards its refrigeration system to dispense cold water.

SOLID WASTE & RECYCLING

1. Post attractive poster or informational sheet describing what and how to recycle.

Funding: Budget neutral.

Staff: Office Supervisor / Sustainability Coordinator

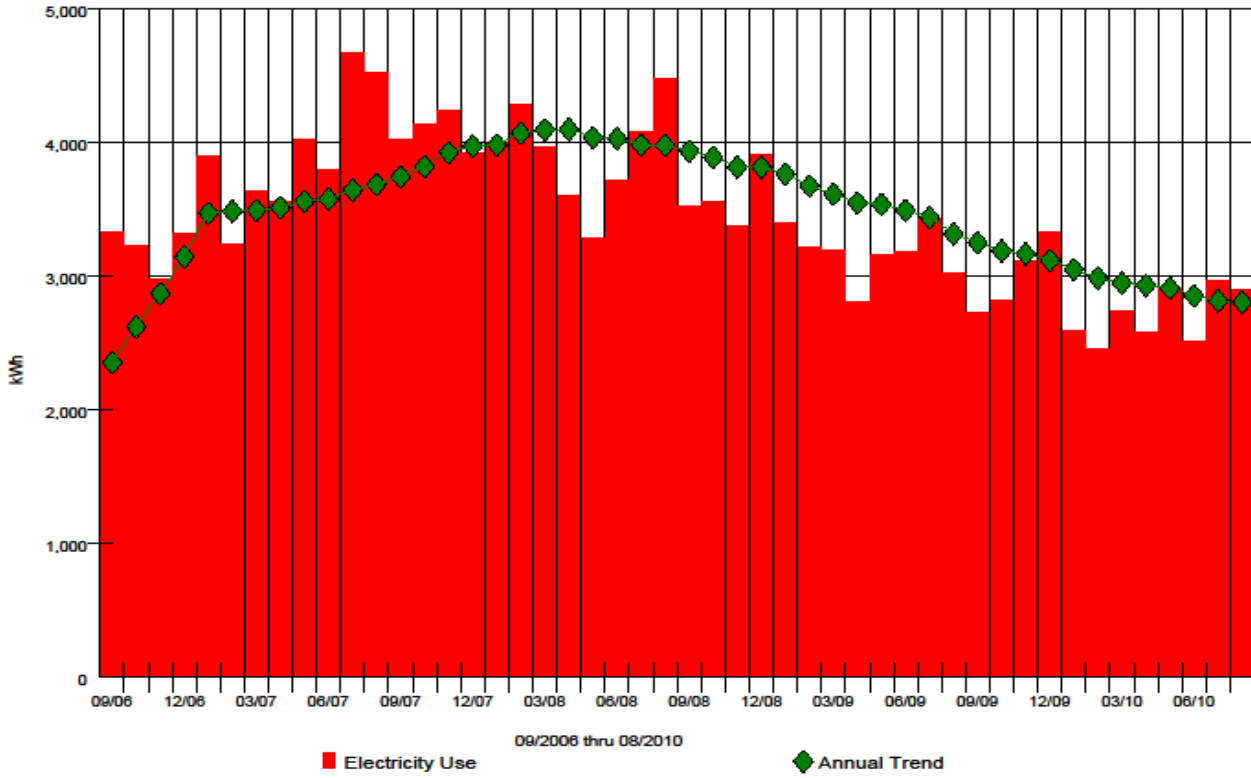
Schedule: Immediate Action

Note: This is especially helpful for new staff.

<p>2. Practice double-sided printing and copying, and waste reduction such as using both sides of paper before recycling.</p>	<p>Funding: Budget neutral.</p> <p>Staff: all Staff</p> <p>Schedule: Ongoing.</p>
	<p>Note:</p>

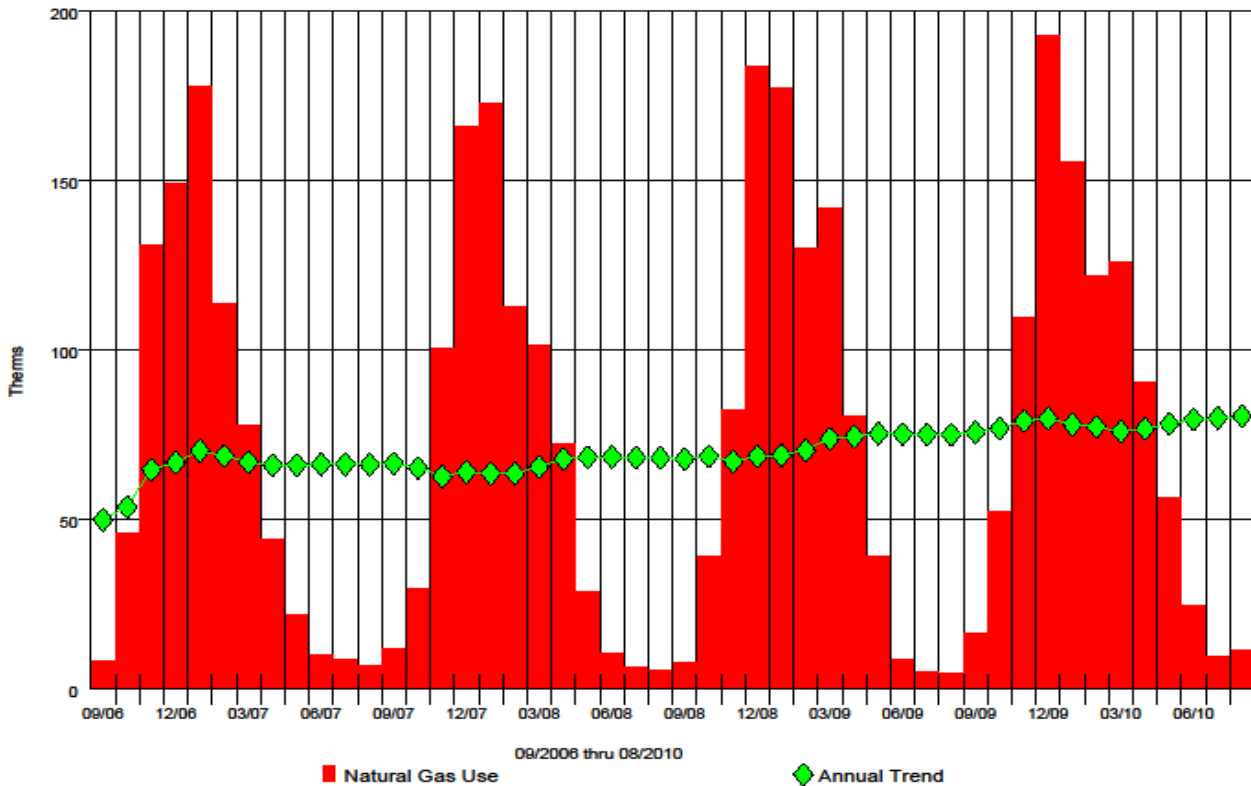
RESOURCES REQUIRED FOR IMPLEMENTATION OF CONSERVATION MEASURES <small>OCCUPANT/EMPLOYEE TRAINING, DETAILED ENERGY USE ANALYSIS, CAPITAL IMPROVEMENTS, HVAC ADJUSTMENTS, ETC.</small>	
RESOURCE	FOLLOW UP BY
<p>1. <u>Education and Communication</u></p> <ul style="list-style-type: none"> • Frequent communication with staff on viability of these conservation measures to secure and maintain 'buy-in' and to make minor changes as needed. • Periodically, post energy usage and cost reports for the Center for occupants to see any impacts from the conservation measures • Seek feedback from staff regarding the implementation of action plan initiatives. • Include County Facilities Operations Supervisor and SCOG RCM in review of any renovation or new construction projects to ensure conservation measures are built in from the get-go. • Reward success and good conservation-at-work behavior with awards or formal recognition by the Board of County Commissioners. 	<p>1. County Facilities Operations Supervisor, Office Supervisor, Sustainability Coordinator, SCOG RCM assistance as appropriate.</p>
<p>2. <u>Funding</u></p> <ul style="list-style-type: none"> • Interact with utility companies to determine applicability of custom grant or prescriptive rebate funding for specific energy efficiency upgrades. • Track savings from conservation and efficiency measures. • Propose to the Board of County Commissioners that a portion of savings from conservation and efficiency measures be credited back to the Public Defender's budget for use towards other unmet needs. 	<p>2. County Facilities Operations Supervisor, Office Supervisor, Sustainability Coordinator, SCOG RCM assistance as appropriate.</p>
<p>3. <u>Utility Use Data</u> – such as the electricity propane usage graphs shown below to communicate energy usage and costs to staff. <i>For example: current electricity usage has a nice downward trend, but natural gas usage is actually trending upward. What can be done to reverse the trend for natural gas?</i></p>	<p>4. Additional and detailed usage data for energy and other utilities is available from the SCOG RCM (Ric Boge).</p>

SC Public Defender Bldg 4-Years Ending 8-2010 Monthly Electricity Use



Individual Utility Graph - Retrieved by Utility Manager Pro Tuesday, October 19, 2010 at 2:44 pm
 Data prorated into calendar month according to billing from and thru dates - N/A indicates missing data

SC Public Def Bldg 4-Years Ending 8-2010 Monthly Natural Gas Use



Individual Utility Graph - Retrieved by Utility Manager Pro Tuesday, October 19, 2010 at 2:47 pm
 Data prorated into calendar month according to billing from and thru dates - N/A indicates missing data