

# HCC Facilities Department Sustainability Report 2011

## Energy Management

1. Project Illumination (Dedicated Feb 9th, 2011) – The first solar light solution developed and installed on the campus is a Student/HCC Facilities co-project. The RESFA club purchased the solar PV panels, Batteries and mounts and the HCC facilities Department supplied the pole, completed and performed the engineering, and prepped the site work for a supplemental light source over the 166 bus stop in the Horseshoe drive by building #1. The Facilities department to commemorate this first innovative alternative powered solution also purchased the plaque. The result of this project will be a light that not only stays on all night but also provides additional 120v power to a free cell phone/ computer charger that is off of the grid supply system. Here is the Plaques verbiage:

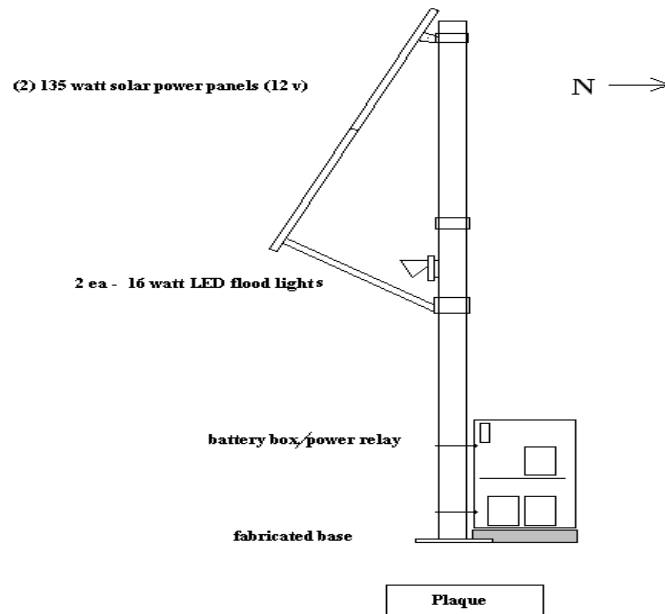
### Project Illumination

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This solar powered light installation is the first of its kind on Highline Community College's main campus. These two 125-watt solar collectors with LED light were installed here to inspire future generations and demonstrate that alternative power is a solution to needless energy consumption practices.

Project Illumination was a collaborative effort between the Renewable Energy Student Faculty Association (RESFA), Facilities department, ASHCC Student Government, and proactive students at Highline Community College.  
Dedicated February 9, 2011

Sketch:



2. As part of the PSE Resource Conservation Management program the Facilities department has conducted an energy audit (walk through) of each building and put an action plan together to address potential energy savings activities. This is a first year requirement of the RCM program. Facilities maintain this Facility Action Plan.
3. Additionally, as part of the PSE RCM program the Facilities department has created and applied stickers over light switches that can be turned off by users in all applicable buildings as a reminder to "shut the lights off" when not in use. This activity was completed on 2/10/11.

4. Barry Holldorf working on the Core 4 Theme "Resource Management" has built in to the accreditation process a lot of good metrics for measuring:
  - Number of classroom relocations due to maintenance related calls (classroom environment)
  - Tonnage and goals for recycling program
  - Kwh/Therms reduction targets for RCM and energy savings activities
  - The call to attempt to do a LEED projects for any remodel/replacement activity on campus.

#### Maintenance

1. The completion of VFD installation on CP-2 and CP-3 is now completed and we are waiting for the PSE rebates estimated at \$8000. Additionally during summer months we plan on running the boiler heating supply water loop at a much more economical efficient level requiring less natural gas usage.
- 2.

#### Purchasing

1. Facilities Department has worked with the Purchasing department to try and ensure that any new appliances purchased and brought on the campus are "Energy Star" compliant. Though this is not a flawless activity we have made great progress in asking for and getting cooperation with other departments (due to decentralized purchasing practices).

## HCC Facilities Department Sustainability Report 2009-2010

#### Energy Management

1. Re-evaluating campus wide energy systems and making recommendations or long term plan for improvements.
  - Metering of energy and water systems is no longer just a desirable feature for buildings (new and existing) it is a necessity. E2SSB 5854 requires that operators of buildings over 10,000 SF track energy use in the Energy Star program. This effects State Agencies and Higher Education facilities and impacts owned and leased facilities. E2SSB 5560 requires energy reductions and reporting on emissions. Energy Star reporting to be in compliance with Washington State RCW 39.35D requires metering of energy and water systems for all State LEED projects (new and major renovation projects over 5,000 SF) plus annual reporting to GA required until 2016. – PLAN is to use the PSE RCM module to deliver this report and review LEED requirements based on the scope of work with remodels or new construction.
  - Identify and put plan together for metering buildings in order to meet requirements of benchmarking compliance
    - – Installed 18 Emon electrical meters in all buildings with 10k sq, ft, or more to begin meeting compliance with the Energy Star mandate (Actual cost of project = \$90k). Completed 7/2010
    - Installing another Emon meter in Bldg. 9 as part of the Sound abatement project. 12/12/2010
  - Recommend a campus wide energy audit to develop a long range plan for equipment energy conservation projects.
  - Installing 1 Emon electrical meter in Bldg. 9 as part of the sound abatement project 12/2010
2. Entered into 3 year contract with PSE for their Resource Conservation Management (RCM) Program:
  - Grant program for internal programs for changing the operational or behavioral uses of energy
    - Planned deliverables and Grants are located in Attachment A
  - Formation of a campus Green Team

3. Reviewing lighting technologies in order to provide better illumination while at the same time install or retrofit more energy efficient fixtures/bulbs and reduce maintenance hours required to operate.
  - Identify and replace/new installations of LED wall pack fixtures where feasible/applicable.
  - Reviewing seasonality time changes for parking lot and interior campus lighting to minimize energy usage.

#### Recycling and waste management:

- Co-mingled recycle program - recycle mixed paper/cans/plastics and glass reducing the amount of material being sent to the landfill.
- Have created a benchmark measurement and report for recyclable tonnage (See Attachment B for specifics of tonnage diverted and recyclable environmental impact statement).
- Added 28 additional 22-gallon receptacles to classrooms and lecture halls to increase the convenience with the co-mingled recycle program.
- Re-distributed recyclable pick-up responsibilities shifting occasional pick-up responsibilities from what used to be the sole responsibility of the Grounds team to be picked up nightly by the custodial crew (buildings affected by this are 1-5, 7-15, 17-22, 24 and 26).
- Completed fix of recyclable dumpster steel rail receiver and ramp. Requested and placed a new 40 yard dumpster with lid to improve look and to limit unauthorized dumping.
- Completed a ROI to move forward with recommendation of eliminating two each 8 yard waste containers and purchasing a trash compactor – payback period of 36 months. Consolidation to one waste dumpster will allow us to get tonnage reports which are not provided with the 8 yard containers we were presently using to supplement our existing 30 yard dumpster. Compactor purchased 1/2010.
- Enhanced the Fac/Staff battery recycling program with placement and contact/instruction information printed on newly placed recycled milk containers in buildings 1, 5, 8 Student Program area only, 11, 15, 18, 24, 25 Circ Desk, 26 AT, 26 Maint., 29 CWU program secretary, 29 HCC program secretary, 30 (rm. 320) and 99 first floor Carolyn Sinay. The Facilities Dept. is offering the opportunity of recycling AA, AAA, C, D & 9V batteries. Rolled out 8/10/10
- Set up and implemented the college's first Organic Recycling program with Cedar Grove Recycling. This program is only for the back kitchen food prep areas and will work in cooperation with the staff of the 3<sup>rd</sup> party food vendor "Chartwells". The college will carry the cost and see the savings as a result of less food waste going into the compactor. The rate is \$53/ton to dispose versus \$100/ton in the landfill. Plus the recycled material will be re-used aiding the push for sustainable programs. Tonnage to be tracked for reporting purposes. 10/2010

#### Maintenance Practices:

- Light tube recycling.
- Temperature checks of space each morning (where possible using limited energy mgmt system).
- Establish a preventive-maintenance strategy in the work order system to address the frequency of replacing air filters in building systems.
- Installation of a 3 each Variable Speed Drive (VSD) equipment in front of the hot water supply motors (water supplied to campus via the boilers) in building 24 which will reduce electrical consumption (mainly during summer operations) and have taken advantage of a PSE rebate of \$5000 for each install. Two other motors have been identified and are in need of this same upgrade when funds are made available.
- Have parking lot and interior campus lights on time clock and photocells to maximize energy efficiency.
- Cooling tower chemicals, using the CS 777A product for Bldg Biocide injection – twice weekly recommended 5/2010

#### Custodial "Green" Cleaning Practices:

- Recent purchase and use of micro-fiber rags (Annual savings estimated at 450/year).
- Launder/reuse micro-fiber cleaning cloths to reduce waste, money and environmental impact.
- Use environmentally "Green Seal" certified friendly foam hand soap rather than liquid pink soap.

- Use environmentally “Green Seal” certified toilet paper products.
- Use environmentally “ECO Green” certified paper towels – effective Nov. 1, 2010
- Use environmentally friendly cleaning equipment includes scrubbers that employ foam cleaning, which use up to 70% less water and 100-90% less chemical than traditional equipment (i.e., Tennant ECH<sub>2</sub>O floor scrubber).



- Use semi- environmentally friendly floor stripper and carpet cleaner, etc.
- Vendors required to provide certified staff training on proper use of Green Seal products.
- Ensure proper training for use and proper mixing of cleaning chemicals to meet green cleaning specifications/standards.
- Custodial supervisor makes random inspections of all areas to ensure green chemicals & procedures are being followed. The supervisor also performs unannounced inspections during the day & night shifts, and compiles the results in a “campus visit reports”, which is distributed to the Facilities Services Manager.
- Purchased and installed eight chemical proportioning systems and all new employees receive 40 hours of training on chemicals, policies & procedures.
- Use backpack or upright vacuums that have high-filtration, quiet operation, and exceed HEPA requirements.
- Policy and practice in place to replace old equipment with new that has a low or no impact on the environment.
- Policy and practice of choosing cleaning products based on their ability to reduce water consumption, eliminate harsher cleaning chemicals, and remove contaminants without re-introducing them into the air.
- In high traffic areas we installed walk-off mats at most entrances to reduce labor by retaining debris within 15 feet of entrances.
- Assisting with enforcing a “smoke-free” building policy to assist with better indoor air quality.
- Reduce office waste collection to an as-needed basis - change wastebasket liner bags only when soiled.
- Vacuum private offices on an as-needed basis.
- Change floor stripping to top scrub where recoating requires removal of the top layer only.
- Reduce use of aerosol products or explore alternative products.
- Stop use of Phenol-based disinfectants.
- Cleaned-up and regularly inspect custodial closets to prevent unnecessary odors or leaking chemicals to aid in indoor air quality.
- Created and implemented a “Green Housekeeping” Manual for green cleaning practices (VP for Administration signed the document to endorse the new practice 11/22/2010).

Purchasing recommendations:

- Require and purchase only Energy Star labeled equipment
- Prefer/require primary packaging for Facilities department products to be recyclable and bought in bulk dispensing quantities

- Cradle to grave considerations considered
- Purchase “Green Certified” (as called out by GS-37 Revised 2008 standards) cleaning detergents/strippers/waxes
- RFP for Green Chemicals was conducted for a two year period (Walter E Nelson products are the primary products) E.Logical (Chemblend) line was selected and meet the newer Green Certified Standard mentioned above.
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<b>PURCHASING</b>	Purchase energy-efficient products for my organization	<ul style="list-style-type: none"> <li>• Online <i>ENERGY STAR Purchasing Tools</i> </li> </ul>	Purchasing Manager, Facilities Manager	ENERGY STAR helps cut your utility bill by assisting in the purchase of ENERGY STAR qualified products, including computers, printers and exit signs. < <a href="http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing">www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing</a> >
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Campus wide initiatives & Volunteer programs supported:

- Developed and provide lay down space (ship/rec. area) and logistics for the FAC/Staff Socially Responsible Produce program (specifically the goal is to work with an area farm, CLEAN GREENS FARM, to offer this program that is both environmentally and socially responsible). Start up 6/2010
- Use of volunteer groups (student, faculty or staff) to beautify the retention pond area (invasive shrubs and weed removal). 5/2010
- Student volunteers clean up organized for Earth Week- identified and cut back with Grounds department supervision the invasive Ivy on trees along the north road. 4/2010
- Student volunteers clean up organized for Green Week- Campus clean up 10/2010.

# ATTACHMENT A

## SCOPE OF WORK

for

### Highline Community College

#### *Resource Conservation Manager Services*

#### **Project Intent:**

Highline Community College (CUST) agrees to establish a Resource Conservation Manager (RCM) program which will provide coordination and leadership for effective and efficient management of all utility resources used in their organization including electricity, natural gas, water, wastewater, refuse, and recycling. The RCM program will focus on the development and implementation of a Resource Management Plan to achieve savings by coordinating efficient operations and quality maintenance with low-cost actions and behavior changes by the users at the facilities. The RCM program will use a resource accounting software package to allow trained staff to monitor resource use and to report on savings.

#### **Services:**

The following list of Resource Conservation Manager Services has been developed to support CUST. Tasks and deliverables associated with the successful completion and payment of grant amounts are described for each measure. All of the tasks must be completed in order to receive payment of the grant amount associated with each service. The expectation of this contract is that the RCM program will exist for a minimum of three-years from signing date. Contract renewals may be evaluated after the initial three-year period.

**Table 1: RCM Services**

Resource Conservation Manager Services		Grant #	Term	Measure Cost	Grant Amount
1.	Resource Accounting Software	N/A	3-Years	Retail value is \$3,600, costs paid by PSE direct to vendor.	
2.	RCM Program Start-up Incentive	C-07871	1 Year	\$ 40,000	\$ 14,000
3.	RCM Performance Incentive – 1	C-07873	1 Year	\$ 40,000	\$ 14,000
4.	RCM Performance Incentive – 2	C-07874	1 Year	\$ 40,000	\$ 14,000
5.	RCM Training Stipend	C-07870	3 Years	\$ 1,000	\$ 1,000
<b>TOTAL (includes sales tax)</b>				<b>\$ 121,000</b>	<b>\$ 43,000</b>

#### **1. Resource Accounting Software**

PSE will provide the customer with resource tracking software and annual software maintenance support for the term of this contract. In return, the customer is expected to complete the software setup including input of organization structure, building information, utility companies, and account numbers for all electricity, gas, water, wastewater, and solid waste accounts.

#### **Highline Community College agrees to:**

- Assign a dedicated person to compile facility information and work with other internal resources as needed to complete software setup process;
- Be available for on-site and off-site software training as needed;
- Work directly with PSE and other utilities to identify all accounts and meters for input into the software program;
- Work with CUST accounting department or others to obtain copies of the past 13 months (minimum) of utility and resource bills;
- Input cost and consumption information into the software program and update on a regular basis.
- Develop a process to receive copies of all monthly utility bills going forward;
- Submit a copy of initial Database to PSE annual for review;

- h. Work with PSE to resolve any issues identified during review of CUST’s resource tracking database;
- i. Provide a dedicated person to maintain the database after the data review is complete;
- j. Submit an updated copy of the resource tracking database to PSE annually; and
- k. Allow PSE to use building data in calculation of PSE benchmarks and building efficiency ranking reports to be included with other facility databases and shared with RCM community.

**2. RCM Program Start-up Incentive**

PSE will provide task-specific incentives to assist CUST with development of their RCM program. This one-time incentive will pay for 35% of the time spent on establishing the RCM program during the first year provided CUST completes the following deliverables.

- 2.1 Hire an RCM or dedicate staff time to RCM activities;
- 2.2 Populate and maintain a Resource Accounting Database (see item 1);
- 2.3 Complete a Resource Management Plan. The Resource Management Plan provides an organizational guideline for effective and efficient management of all utility resources including electricity, natural gas, water, wastewater, refuse, and recycling;
- 2.4 Complete Facility Action Plans for the Organization’s Buildings as outlined in Attachment B. Facility Action Plans outline specific action item to be implemented that will reduce resource use in each facility. These items are identified through building walk-through audits and interviews with staff and occupants. The RCM Support Services *Three for Free* facility audits should be used to jump-start this process.

**Highline Community College agrees to:**

- a. Complete deliverables (2.1) through (2.4) as outlined above.
- b. Submit a copy of the Resource Management Plan and Facility Action Plans to PSE for review and comment;
- c. Work with PSE on recommended revisions and additions to the plans; and
- d. Provide annual reports to PSE to document action items taken as identified in the plans and results achieved for the duration of the contract.

PSE will provide guidelines and assistance in the development of the plans and progress reports.

**RCM Incentive Payment**

CUST proposes to use the assistance of the Facilities Services Manager to provide the centralized energy accounting, monitoring and reporting functions, and technical on-site implementation of operational recommendations.

The start-up incentive is based on the following staffing breakdown:

FTE – % RCM	RCM Hours	Name	Position	Total Annual Salary	PSE Share
.50	1040	Barry Holldorf, Facilities Services Manager	RCM	\$~80,000	\$ 14,000

The tasks outlined in the scope of work for this incentive are estimated to be completed in the first six to nine months of the agreement. The start-up incentive can be paid at the end of the first six-month period provided the Scope of Work has been completed.

**3. Performance Grant 1**

Once the customer has completed the start-up deliverables outlined in item 4, and has achieved their year-one targeted PSE energy savings as outlined below in Table 2, they will be eligible to receive additional cash incentives for achieving further energy savings. The energy savings target for the first performance grant is a 5 percent reduction over the customer’s first year or last 12-month period. The target will be established using actual data at the time of eligibility. Puget Sound Energy will provide a cash incentive equal to the Start-up Incentive once the customer achieves this pre-established PSE gas and electric target. Only savings achieved relative to occupant and behavioral practices and improvements in operation and maintenance (O&M) practices will be considered for the performance grant. To determine performance

grant savings, energy usage will be adjusted for facility upgrades (ECMs), weather, and other major facility changes. The performance incentive will not be prorated for achieving lower or higher energy savings targets.

Performance Grant 1 can be paid at the end of a twelve-month period following the completion of the Start-up scope of work provided that the customer completes the deliverables outlined at the end of item 5.

#### 4. Performance Grant 2

The second performance incentive will operate under the same conditions as the first except that the target will be the projected savings for year three, determined at the time of eligibility.

**Table 2: Customer Baseline and PSE Projected Savings Targets**

<b>PSE Energy Only</b>	<b>Electricity (kWh)</b>	<b>Natural Gas (Therms)</b>	<b>EUI (kBtu / SqFt)</b>
Baseline	10,094,063	420,878	132.2
Year 1 Savings - Target 3%	302,822	12,626	128.2
Year 2 Savings - Target 5%	489,562	20,413	121.8
Year 3 Savings - Target 5%	465,084	19,392	115.7
<b>TOTAL PSE SAVINGS</b>	<b>1,257,468</b>	<b>52,431</b>	<b>16.5</b>

#### Savings Projection

The following table is an estimate of the savings potential from implementing .50 FTE of resource management activities at CUST facilities.

**Table 3: Customer Savings Projections**

<b>Fixed Baseline is Customer Profile</b>	<b>Resource Cost Savings</b>	<b>kWh</b>	<b>Therms</b>
Year 1	\$ 41,752	302,822	12,626
Year 2	\$ 109,251	792,384	33,039
Year 3	\$ 173,375	1,257,468	52,431
Gross Savings	\$ 325,378		
<i>RCM Program Costs (minus Incentives)</i>	\$ 78,000		
<b>NET PROGRAM SAVINGS</b>	<b>\$ 246,378</b>	<b>2,352,674</b>	<b>98,096</b>

#### To qualify for Performance Incentives

##### Highline Community College agrees to:

- a. Provide adequate staffing and management to support full-time RCM functions through the period of the agreement;
- b. Use a resource accounting tool to routinely monitor and track billing, use and expenditures;
- c. Establish year prior to agreement as baseline of use and expenditures, with provisions to modify for weather-adjustments, changes in square feet and changes in functionality;
- d. Develop and endorse an organization-wide resource conservation policy;
- e. Develop and implement individual facility resource plans;
- f. Implement resource conservation activities per plans;
- g. Conduct quarterly meetings to update management and participants with savings reports and develop plans for the upcoming quarter; and
- h. Have RCM regularly attend PSE RCM network and training meetings;
- i. Provide annual reports to PSE with resource consumption and dollar savings attributed to the program.
- j. Allow PSE to promote CUST's success and program efforts via case-studies and other materials to help educate and advance the RCM community.



## **Attachment B**

Recycling Landfill Diversion and Environmental Impact Statement for Highline Community College

**Attachment C**



1845 Howard Way, Woodland, WA 98674 Phone 360 225 0488 FAX 360 225 0478



**Eco Green® Product Specifications**



Recycled Natural White Roll Towel  
**Product Code: ENR9012**

Roll Length	Core Size	Rolls per Case	# Ply	Case Weight (pounds)	Color
900"	1.31"	6	1	27 lbs	Natural White
		Cases per layer	Cases per pallet	Pallets per truck	
		5	60	26	

**Eco Green® Towel contains 100% recovered paper fiber and a minimum of 50% post-consumer materials by fiber weight. It contains no added fragrances.**

**Eco Green® Certification status details, and logo usage requirements, please contact your sales representative.**