

Bremerton Partnership

Jurisdictions and Geography

The Bremerton Shared RCM Partnership consisted of the cities of Bremerton, Poulsbo and Bainbridge Island and the Port of Bremerton. They are all located in Kitsap County, a peninsula in the Puget Sound. Inlets and bays of Puget Sound characterize this region, extending travel distances to get around the water features. Still, the longest distance – from the City of Bainbridge Island to Bremerton – is approximately 30 miles and less than an hour travel time.

As Puget Sound Energy (PSE) customers, the partners could take advantage of the support provided by the PSE RCM program.

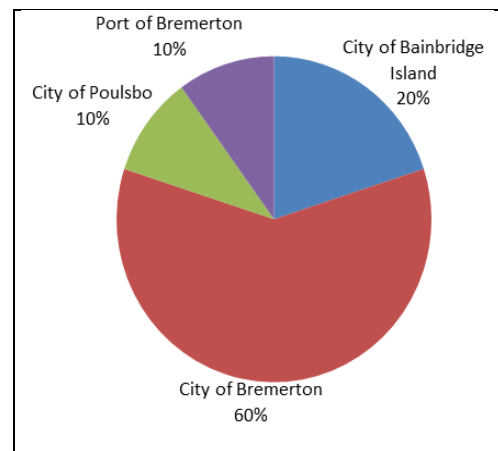
Partnership Details

The City of Bremerton as the lead partner provided office space for the RCM and facilitated the initial process of organizing meetings, drafting and adopting an inter-local agreement among all the parties, and initiating the contracting process. The partnership decided to contract for RCM services instead of hiring staff directly, reasoning that making a hire – even one supported by grant monies – would look bad, considering that employees were losing their jobs due to budget constraints.

The champion and lead, Bremerton’s Public Works Director, was let go from his position when a new mayor took office in March 2010. This occurred just as the four agencies entered into the Inter-local agreement. The contract with Commerce was signed and started one month later, in April 2010.

For about three months after the initial champion left, the lead for the program at Bremerton was the wastewater manager, and then the lead role was transferred to the Engineering Department lead, who was less familiar with the Shared RCM program than those involved in earlier meetings and who was also faced with making significant staff reductions. It appeared that support for the program began to wane after the first lead left, and the Shared RCM effort never regained the level of support that might have helped the program continue past the contract end date.

Decision makers at the Port of Bremerton committed to greenhouse gas reductions and a sustainability program prior to the beginning of the Shared RCM program. They saw the RCM program as a way to implement that policy. However, the main contact at the Port left during the program.



Allocation of Shared RCM's Time

The RCM spent her time with each partner according to the percentages of utility expenditures per the partnership’s 2009 application shown here. The need for Shared RCMs to divide their time among

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partners according to the utility use allocation can be complicated. As a case in point, the Port of Bremerton had the least amount of time allocated from the Shared RCM, yet the Port lead communicated the most with the RCM in the beginning, wanting to start assessments and get advice right away.

Program Timeline

Project Milestones	
12/30/2009	Phase 1 application received
3/1/2010	Inter-local agreement adopted
4/1/2010	Commerce contract start date
3/29/2010	RFP advertised
4/27/2010 and 5/6/2010	Interviews with contracting companies
June 2010	Contracting company selected
7/19/2010	Contractor publicized job opening
9/2/2010	Interviews held for RCM
9/8/2010	Katherine Morgan started work
9/9/2010	Kick-off meeting – Bremerton (each agency had a separate meeting)
2/7/2011	First technical site visit by WSU Energy Program
4/30/2012	Commerce contract end date

Hiring Process

Bremerton conducted interviews for the companies responding to the Request for Proposals (RFP) for RCM services. The interview group consisted of representatives from all partners plus staff from the WSU Energy Program. Three RFP responses were received from companies that were on the Washington Department of General Administration (now called the Department of Enterprise Services) qualified list. Cascade Power Group (CPG) was chosen for the contract because of their experience providing RCM services for other public agencies. When CPG conducted final interviews of their top candidates for the RCM position, they included the partners in the process. This provided the opportunity for the partners to participate in choosing the candidate with the best fit for their organizations' needs.

CPG hired a Shared RCM who had experience working on sustainability programs and lighting programs. She is a sustainable building advisor, certified for ENERGY STAR verification, experienced with performance testing and a recycling coordinator.

RCM Tasks

Facility Assessments

Counting the precise number of sites or facilities for assessments is not simple. While the number of sites tracked in Utility Manager is 94, the RCM grouped facilities by site and use for a total of 83. Many of these were further grouped in the same facility action plan (FAP). The total square footage for all sites in the partnership is over 578,000.

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Because the Bremerton RCM worked for a company that provides RCM services to other organizations, she received program assistance from staff at CPG, primarily with data entry, who had RCM experience as well as templates and tools for some of her work.

Data Tracking

As a PSE customer, the RCM used Utility Manager as the resource accounting software. Before the program started, the Port of Bremerton was already tracking water and solid waste.

The Bremerton Westside Wastewater Treatment Plant (WWTP) – a sewer plant that serves much of Bremerton – implemented many efficiency measures in 2009 and 2010 (the program’s base year), such as LED wall packs, occupancy sensors and major equipment upgrades.

Reports

The RCM created very detailed and well-organized reports, aided by staff at CPG. To keep track of all elements of the program, the RCM created an extensive program tracker in Microsoft Excel that enabled her to see at a glance what walkthroughs, actions plans and other work had been completed. This spreadsheet also included facility lists, meters, program budgets and savings calculations. This information was then used to generate work plans and facility action plans (FAPs).

The RCM focused significant effort on the sites that pump water, such as wells and WWTPs. She developed benchmarking tools for water and wastewater facilities based on daily production volume or pump cycles and run time.

Monthly Summary Reports

Monthly summary reports were arranged by FAP development, which included site visits, resource account/benchmarking, recommended conservation measures, reviewed conservation measures, implementation and follow-up activities, and resource management plan (RMP) development.

Resource Management Plans

RMPs were created for each partner organization. Some of these plans were still in draft form awaiting formal review and comment from the partners when the program ended. Each plan summarizes the same goals – culture, leadership and tools for continuous improvement, and objectives with strategies to achieve these objectives. Strategies include actions such as adopting a sustainability policy, publicizing commitment, monitoring and measuring performance, creating resource stewardship guidelines, implementing opportunities at facilities, and reporting. A timeline is attached to the objectives.

The appendices in each partner’s RMP includes the partner’s resolution to adopt the plan, information about how to incorporate a resource conservation shared savings plan, location of accounts and baseline data, reporting tools and protocols, building operating standards, and an outline of what will be found in the FAP.

Facility Action Plans

The RCM wrote 36 FAPs, accounting for close to 90 sites. The RCM grouped sites according to their purpose: water pump stations and wells were grouped, as were sewer lift stations. The remaining buildings were grouped as deemed appropriate, such as when they shared a single electric meter.

The FAPs averaged 16 pages in length and included a facility overview with site plans and utility accounts; graphs and charts such as annual and monthly utility cost breakdowns, energy use intensity (EUI) benchmarks, monthly energy use graphs, weekly trend graphs, and daily load profiles; greenhouse gas emissions; a walk-through summary with photos; and an action plan of conservation measures. These documents are assembled in an Excel workbook, which can be printed to PDF for a given dated report. The plan components can be updated and separate sections can be printed as needed to serve the double purpose of a report and a management/tracking tool.

Building Operation Standards

Building operation standards are used to review specifications and practices at each site and serve as an ongoing reference for staff. These can be used beyond the life of the RCM program. They are in checklist format and can be edited to fit each facility.

Systematic review is complemented by the Building Operating Standards checklist. Public works, utilities and parks maintenance teams have already been addressing issues and projects. Guidelines are organized into five sections: building operating standards, municipal water supply and wastewater collection equipment, fleets and transport, construction, and comprehensive resource management planning and leadership.

Annual Reports

Written for each partner, the annual reports address the status of goals and objectives described in the RMP, provide highlights from the year, and various use and cost graphs that show trends and successes in aggregate. The bulk of the report consists of energy profiles for each facility, actions taken and proposed actions for the coming year. Annual reports written for year two (July 2011 through June 2012) include EUIs and graphs for each facility.

"It is the ongoing work and diligence of the staff both this year and last, that produced the savings results in this first RCM program analysis year."

Katherine Morgan
Shared RCM – Bremerton Partnership
Annual Report

Resource Conservation Projects

The RCM paid attention to the many water and wastewater facilities in the partnership in addition to occupied buildings.

Most of the savings at the City of Bremerton came from paying more attention to managing equipment schedules and temperature set points, and turning lights and equipment off.

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Program activity at the City of Bainbridge Island focused on monitoring energy trends, reviewing facility assessments, identifying low-cost energy upgrade priorities, setting up building operating guidelines, evaluating utility-oriented energy management systems and reviewing specifications for construction in the west section of the Senior Center.

City of Poulsbo staff turnover and the move into the new City Hall limited the time available for staff to focus on RCM program implementation. Despite this, the RCM was able to assess and implement efficiency measures such as adjusting schedules and settings at the library, the Parks and Recreation building and City Hall; cleaning blocked air intakes at the library; repairing a malfunctioning thermostat at the library; and evaluating energy performance score assessments at Nelson Farm House, including a lighting retrofit. The city also passed a resolution on greenhouse gas reduction policies. The new City Hall, fully occupied, qualifies for ENERGY STAR certification with score of 85 (scores above 75 qualify for certification).

Communication Activities

Outreach activities included presentations to the Kitsap Clean Technology Working Group, the Poulsbo library staff meeting and articles for the Bremerton staff newsletter. The RCM also developed the Kitsap Shared RCM web site and the “Resource Rangers,” a conservation outreach and staff engagement program. It was hoped that Resource Rangers could be used to brand the Shared RCM program efforts, such as on signage, outreach materials and events, and for staff recognition. The ResourceRanger.com domain name was purchased in September 2011. The RCM put a lot of work into developing content for the website but at the program end, the website project had not been implemented.

Challenges

The greatest challenges were lack of time and support available from staff at the partner organizations due to staff reductions, turnover and budget constraints. Other challenges included data delivery delays from PSE for Utility Manager, disruptions in scheduling due to holidays and weather, and delay in contract signing because of key personnel turnover at the City of Bremerton. Other personnel changes elsewhere delayed reviews of annual reports and RMPs.

The complexity of data made comparisons and evaluation difficult. Some facilities used square footage as a way to measure energy use (energy use per square foot is a common way to compare energy use across buildings). For some of the Port buildings, however, energy use per time used is more appropriate when a building is used by a guest boater for a limited period of time. These figures needed to be calculated when charging others for building use.

A similar type of problem occurs at water facilities because different amounts of energy are used depending on combinations of pump capacity, motor size, head and discharge pipe.

Utility Manager caused difficulties because of inherent problems in the avoided cost module. Those reports could only be exported to PDF and not to Excel, limiting data manipulation. Limitation of the complexity of other reports meant that it was necessary to export to Excel in order to manipulate data.

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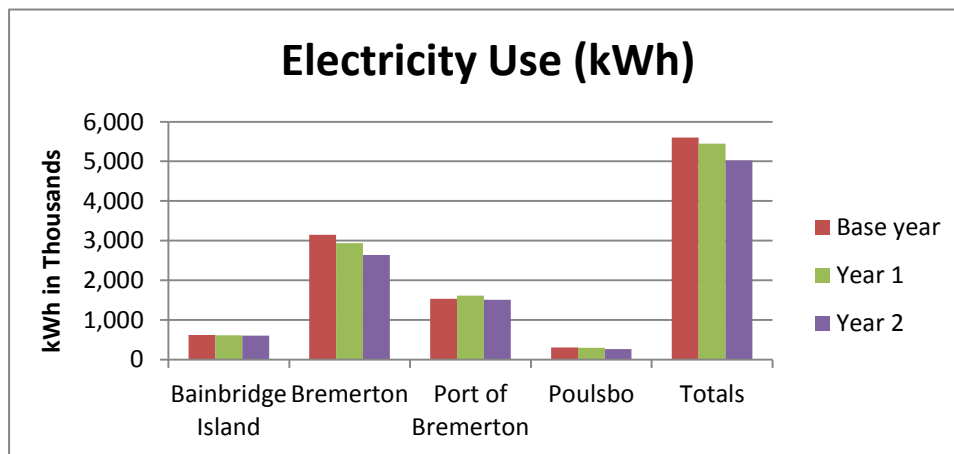
Further, savings reports that one of the partner's managers found useful might not be useful for another manager. Managers and operators from different partners– and sometimes within the same partner organization – requested different subsets of reports, such as different timeframes or different sets of buildings.

The RCM indicated that she found duplication and inconsistencies in the information-gathering and analysis tools she was given to work with. Some forms could be used in place of others, and as a new and inexperienced RCM, it was difficult to identify the most appropriate ones to use.

Results

In the 34 main occupied facilities in the partnership, over 13 percent kWh were saved over the two years of the program. This accounts for over 736,500 kWh. The City of Bremerton had the greatest savings, while the Port of Bremerton increased usage by 3.6 percent. Dollar savings over two years for all utilities were over \$105,500. (Because this is raw data, actual savings may not be represented here due to changes such as occupancy or hours of use.)

According to PSE's analysis, which is calculated using the cost avoidance method and backs out savings from measures that were funded with a PSE incentive, total electrical savings for the two years for the whole partnership is 8.9 percent. This differs from the 13.1 percent electricity use reduction shown in the charts below, attributable primarily to the incentive measures (responsible for more than 1 percent of the savings), and because PSE analyzed wastewater and well facilities.



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Changes in Energy Consumption for the Bremerton Partnership					
	Bainbridge Island	Bremerton	Port of Bremerton	Poulsbo	Totals
Electricity Use (kWh)					
Base year	620,891	3,147,919	1,533,297	303,378	5,605,485
Year 1	609,830	2,933,299	1,611,412	296,699	5,451,240
Year 2	604,594	2,641,541	1,510,368	266,556	5,023,059
<i>Cumulative change</i>	-27,358	-720,998	55,186	-43,501	-736,671
% Change Year 1	-1.8%	-6.8%	5.1%	-2.2%	-2.8%
% Change Year 2	-2.6%	-16.1%	-1.5%	-12.1%	-10.4%
<i>Cumulative 2-yr % change</i>	-4.4%	-22.9%	3.6%	-14.3%	-13.1%
Natural Gas Use (therms)					
Base year		26,574	25,753	5,091	57,418
Year 1		29,171	25,197	5,144	59,512
Year 2		27,136	25,409	5,096	57,641
<i>Cumulative change</i>		3,159	-900	58	2,317
% Change Year 1		9.8%	-2.2%	1.0%	3.6%
% Change Year 2		2.1%	-1.3%	0.1%	0.4%
<i>Cumulative 2-yr % change</i>		11.9%	-3.5%	1.1%	4.0%
Energy Use (Mbtu)					
Base year	2,118	13,398	7,806	1,634	24,956
Year 1	2,081	12,925	8,017	1,580	24,603
Year 2	2,064	11,726	7,696	1,431	22,917
<i>Cumulative change</i>	-91	-2,145	101	-257	-2,392
% Change Year 1	-1.7%	-3.5%	2.7%	-3.3%	-1.4%
% Change Year 2	-2.5%	-12.5%	-1.4%	-12.4%	-8.2%
<i>Cumulative 2-yr % change</i>	-4.3%	-16.0%	1.3%	-15.7%	-9.6%
# of facilities included	4	9	15	6	34

These numbers are from the Utility Manager database, comparing the baseline year, 7/1/2009 through 6/30/2010, with the following two years. The difference in use or cost of year one compared to the baseline plus the difference in use or cost of year two compared to the baseline. Facilities included are the primary non-water utility sites with complete data.

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Sample of Electricity Savings for the Bremerton Partnership with Energy Efficiency Measures						
Facility	Baseline 7/1/09 – 6/30/10	Year One 7/1/10 – 6/30/11	Year Two 7/1/11 – 6/30/12	Year One % Kwh Savings	Year Two % Kwh Savings	Energy Efficiency Measures
Bainbridge Court House	14,138	16,041	6,641	13.5%	-53.0%	Electric heaters replaced with ductless heat pumps
Bainbridge Police Station	106,048	97,584	95,727	-8.0%	-9.7%	Ventilation upgraded, hot water heater replaced, HVAC maintenance improved
Bremerton Police Station	577,549	546,364	509,304	-5.4%	-11.8%	Replaced roofing, added insulation, tightened setpoints and scheduling, added reflective window coating, fixed fresh air actuator, lighting upgrade
Kitsap (Bremerton) Conference Center & Waterfront Park	1,675,200	1,540,920	1,294,889	-8.0%	-22.7%	Control system updated, green team launched, longer winter shutdown of fountains, VAV boxes serviced, some parking garage lights upgraded to bi-level LED and induction
Bremerton Pendergast Park	159,060	150,200	139,055	-5.6%	-12.6%	Earlier game times reduced lighting use and demand charges
Bremerton Public Works & Utility Warehouse	334,080	339,680	323,185	1.7%	-3.3%	Tightened setpoints, lighting upgrades, general awareness and efforts by staff
Port of Bremerton Airport Maintenance Shop	32,870	32,516	29,015	-1.1%	-11.7%	Attention to electric heaters, equipment and lighting
Port of Bremerton Hangar 3 & 4	14,344	13,628	9,908	-5.0%	-30.9%	Port emphasized conservation values, encouraging all hangar tenants to turn off equipment and lights
Poulsbo Nelson House	39,215	37,041	26,453	-5.5%	-32.5%	Lighting upgrade
Poulsbo Raab Park	43,468	48,013	38,781	10.5%	-10.8%	Caretaker trained to more effectively manage forced air, space heaters and lighting

Note: percentage savings calculated from the baseline

Avoided Use/Cost					
Agency	Electricity (kWh)	Electricity \$ Saved	Natural Gas (therms)	Natural Gas \$ Saved	Totals
Bainbridge Island	85,284	\$ 11,657			\$ 11,657
Bremerton	700,586	\$ 66,424	3,523	\$ 3,057	\$ 69,481
Poulsbo	100,714	\$ 9,875	1,382	\$ 1,444	\$ 11,319
Port of Bremerton	48,040	\$ 1,912	4,986	\$ 4,767	\$ 6,679
Total Avoided Use/Cost	934,624	\$ 89,868	9,891	\$ 9,268	\$ 99,136

Note: Figures are for 22 months, from July 2010 through April 2012. Baseline is from July 2009 through June 2010.

Highlights from the City of Bremerton include:

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- Kitsap Conference Center cut energy use by 15 percent, saving over \$15,000 in year two.
- The Police Station cut energy use for the third year in a row, for a total decrease in energy use intensity of 16 percent.
- The fire stations cut their collective energy use by 11 percent, saving over \$5,000.
- All non-utility sites except the museum and Memorial Plaza reduced their electricity use.
- The wastewater division cut energy use by 3.5 percent, saving \$19,000, with a flow volume comparable to the prior period.

For all energy accounts (buildings and utilities), costs dropped by over \$67,000. Overall energy use decreased 6.5 percent with no weather adjustment. For the PSE incentive grant, total savings were 8 percent because it excluded a few sites.

Over the two years of the program, the City of Bainbridge Island saved over \$13,000 in avoided electricity costs. The greatest savings were at the Municipal Courts and Operations and Maintenance complex (9,400 kWh and 14,561 kWh, respectively).

Looking Ahead

The City of Bremerton opted out of the third year of the PSE program. This effectively closed the RCM program shortly after completion of the Commerce grant.

The position no longer exists. When the RCM left her position, she left behind detailed agency reports, facility profiles, operator guidelines and other documents. These can be used to continue improvements in energy efficiency. The baselines and tracking tools she established are still useful.

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