

Vancouver Partnership

Jurisdictions and Geography

The Vancouver RCM partnership consists of the cities of Vancouver, Washougal and Camas, located in southwest Washington bordering the Columbia River. Vancouver is just north of Portland, Oregon, and the other cities are east of Vancouver.

Although Vancouver's utility expenditures are large enough to warrant their own RCM, they needed to team up with at least one other city in order to access the Department of Commerce grant funds.

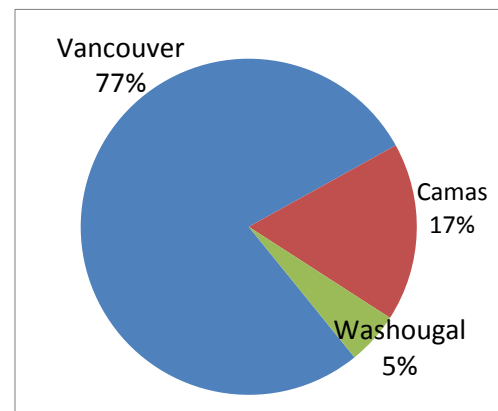
Partnership Details

The sustainability coordinator at the Water Resource Center in Vancouver – the original champion of the program – cultivated interest from Camas and Washougal and filed the application for Phase I of the grant process. A communication breakdown occurred shortly thereafter, due mostly to an extended leave of the sustainability coordinator. To make sure the partnership met Phase II deadlines, the WSU Energy Program asked Vancouver's manager of solid waste services and water resources education center to serve as the temporary contact, although he was unfamiliar with the project.

The sustainability coordinator returned and took over the effort for the grant application. He left his position with the city at about the time the inter-local agreement was signed in May 2010. The facilities superintendent at Vancouver then became the lead contact.

The City of Vancouver entered into an inter-local agreement with Clark Public Utilities District (PUD), giving the PUD responsibility of contracting with and supervising the RCM. Because Clark PUD is a public agency, the inter-local agreement suffices in place of a contract. The Clark PUD senior manager of energy technologies and services was the lead at that agency.

As the partnership lead, the City of Vancouver made the final hiring decision with Camas and Washougal and housed the Shared RCM, although he was an independent contractor through Clark PUD. According to the utility expense distribution shown at right, Vancouver would get 77 percent of the RCM's time, Camas 17 percent and Washougal 5 percent.



Allocation of Shared RCM's Time

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Program Timeline

| Project Milestones | |
|----------------------|--|
| 1/15/2010 | Phase 1 application received |
| 4/30/2010 | Inter-local agreement adopted (same as grant period) |
| 5/19/2010 | Inter-local agreement signed |
| 4/30/2010 | Commerce contract start date |
| 7/23 to 8/8/2010 | RCM position posted and open |
| 8/18/2010 | Interviews held |
| 10/1/2010 | Shared RCM started work |
| 10/15/2010 | Kick-off meeting |
| 12/27 and 12/28/2010 | First site technical visit by WSU Energy Program |
| 6/30/2012 | Commerce contract end date |

Hiring Process

The City of Vancouver had an Energy Efficiency and Conservation Block Grant (EECBG) and needed technical assistance and auditing capability to continue with the grant work and capital projects. They hired the RCM in part because of his experience with the city, and because of his engineering background and technical expertise. He was a good coordinator for the projects. However, this early focus on the EECBG put the RCM program, with no- and low-cost measures, on the back burner for many months.

Clark PUD opted to contract with the RCM after selecting the person. The hired RCM is a professional mechanical engineer with extensive experience in energy systems management and engineering.

RCM Tasks

Facility Assessments

The RCM very quickly was able to conduct walk-throughs of many buildings and assess their status, although usually with an eye toward capital projects. His familiarity with the city's buildings and staff was of great help in this regard.

Data Tracking

The WSU Energy Program supplied the EnergyCAP resource accounting software for the RCM's use because the Vancouver partnership is not in Puget Sound Energy (PSE) territory and, therefore, was not supplied with the Utility Manager database tool. EnergyCAP has a steep learning curve and is not very intuitive. The RCM did not have the time to learn the program, and his willingness to learn was dampened by the difficulty of communicating with an EnergyCAP program manager on the other side of the country. A WSU Energy Program staff member worked with the RCM to gather information and transfer it into the database, but the project took too long and the benefits were not apparent, so work on it dropped off. Thus, energy use and cost data was never completely entered into EnergyCAP.

Because energy accounting was a requirement of the Commerce grant program, the City of Vancouver opted to purchase Utility Manager, which is easier to use than EnergyCAP. The city bought the program

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<http://www.energy.wsu.edu/PublicFacilitiesSupport/ResourceConservation/SharedRCM.aspx>

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in February 2012 and contracted with Utility Manager to upload past electrical, natural gas, water and sewer billing data. A Vancouver staff person was trained to input current data.

The RCM kept track of his work, the facilities and measurements on his own in Microsoft Excel. Staff with the WSU Energy Program were not provided with these spreadsheets.

Reports

The RCM's reports were succinct, providing minimal but sufficient information. The City of Vancouver sustainability plan, which sufficed as the Resource Conservation Management Plan, provides guidelines for reducing energy and water use in buildings owned and operated by the city.

Required monthly summary reports were always submitted early.

Resource Conservation Projects

The RCM's history with the City of Vancouver meant that he already had relationships with some of the facilities staff, which allowed him to begin working on assessments and projects right away.

Until June 2011, most of the RCM's work was on technical bids for capital projects for the EECBG grant. These bids were for projects such as lighting retrofits, a heat recovery chiller, heat pumps, central control systems, insulation and a condensing boiler. Work focused on the main facilities in Vancouver, including fire stations the RCM was familiar with. Some of these projects had been part of the 20-year capital plan.

The installation of a small interim chiller that operates as a heat pump in the new city hall has been highlighted as a notable success. The city hall is not a new building, but the city consolidated space by having several agencies relocate there. It is a mission-critical building, and now the life of the new (smaller) and old (larger) chillers will be extended.

The RCM was unconvinced that low-cost and no-cost measures would make any difference in energy use until after the EECBG grant was completed and his time was freed up to make other observations. He eschewed behavior-based measures, but embraced no-cost measures such as adjusting setpoints and optimizing control systems. The RCM did not consider these no-cost, however, because of the cost of staff time involved in implementation.

In July 2011, when most of the EECBG grant deadlines had passed, the RCM starting working more with Camas and Washougal.

At Camas, the RCM assisted in decisions regarding energy efficient lights for a grant and the best choice for improving the police building's HVAC system. He reviewed building plans and noted that available plans did not always match what he found in the actual facility. He prepared documents with an estimated return on investment of measures, drafted bid specifications and evaluated three levels of measures at one of the buildings: operational and control changes, retrofit of components and total replacement of equipment. Operational and control changes can be considered "no-cost."

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Because Washougal is the smallest of the three agencies and has the most limited budget, limited work was done there. The RCM developed an action plan and did assessments with WSU Energy Program staff. As with Camas, the RCM identified three levels of measures: negligible cost items requiring only staff time, low capital cost items that can be handled within existing budget and measures for future budget years.

The RCM worked with Clark PUD to provide real-time tracking of building energy use with the Energy Smart tool. This is similar to PSE's energy interval service, which tracks demand data every 15 minutes.

In December 2011, the RCM noted that he was doing research for "incremental innovations that are economically viable for local governments with limited funds to invest in conservation." These can be construed as no- or low-cost measures.

Communication Activities

Communication activities consisted of meetings and informal facility staff training.

Challenges

The RCM's focus was on facility assessments and recommendations for the EECBG grant; he believed that technological fixes and upgrades were the only ways to gain noticeable energy savings. This view may be attributable to the RCM's background in mechanical engineering and the impetus supplied by the EECBG grant.

Washougal was primarily interested in having the RCM track resources, which fit with the amount of time allocated to them.

Results

Without adequate data, it is difficult to assess the amount of energy and dollars saved in the Vancouver partnership. From the projects carried out in Vancouver, it can be assumed that savings and energy reductions did occur. The limited data available in Utility Manager corroborates this. Twelve City of Vancouver buildings had sufficient data entered from January 1, 2010 through December 31, 2011 to compare those two years. Approximately 438,000 fewer kWh hours were used during the calendar year 2011 compared to 2010, accounting for over \$20,220 in savings.

Because many measures were incorporated during 2011, their full impact would not be reflected in those numbers. With major retrofits such as a heat recovery chiller, heat pumps and many lighting projects, actual energy reductions are assumed to be greater.

The Vancouver partnership closeout report required by the Commerce grant compiled data for only five months, due to the late start of the program and projects not yet being completed. From January 1, 2012 through May 31, 2012, Vancouver reduced electricity use by 208,987 kWh and saved \$17,361

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compared to the same months in 2011. Camas reduced electricity use by 30,800 kWh and natural gas by 4,180 therms, although no dollar figures were provided for these energy savings.

The RCM helped the partners' managers and council members gain a better understanding of energy and how it can impact a city budget. Staff learned about the concept of paying more up front to save in the long term – useful for the future, when budgets may allow purchase of capital equipment.

Another benefit resulting from the RCM's work is the crossover communication among departments at Vancouver. Working relationships and communication between city departments improved, which was very useful when staff from six separate locations moved into the city hall building.

Looking Ahead

Although the RCM program is not continuing with Vancouver, Camas or Washougal, the partners acknowledge the benefits of a program like this. Cities may look for an energy services company to implement energy-saving measures and assess their impact over time. They might also consider consulting with an RCM when needed.

A staff person is continuing to track bills in Utility Manager for the City of Vancouver.

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