

Engaging a City: the Story of Urban Smart Bellevue

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ABSTRACT

Traditional commercial efficiency programs promote energy efficiency through things like more efficient lighting, boilers, and insulation. These programs generally engage building operators and owners, leaving the building occupants unaware of their impact on energy performance. With the advent of social media, new energy tracking software and a heightened interest in sustainability there is a new opportunity to engage building occupants in conservation efforts.

Puget Sound Energy (PSE)'s Urban Smart Bellevue program uses an Energy Management Information System (EMIS), a proven organizational behavior change approach with Strategic Energy Management (SEM), and community-based social marketing (CBSM) to drive energy savings with 200 businesses in the Bellevue urban core. This program seeks to prove that these combined strategies can produce cost-effective savings, while creating more strategic customer relationships. With this design, PSE aims to take proven program elements to a community scale, thereby making a large difference through many smaller energy-saving actions.

Urban Smart Bellevue success will be a downtown district in which smart people create a movement toward smarter buildings and business practices. Technology, communications, facilities management, - individual and collective actions will work together to cut operating costs while significantly reducing the consumption of energy resources.

This paper describes the program design, stakeholder engagement, and the activities leading into the program's first year. The audience will learn how they may combine program elements into a program that should be compelling, cost-effective, and far-reaching for their metropolitan area.

The Problem

Across North America, utility programs face numerous challenges. Efficiency's "low hanging fruit" has in large part been picked, either through successful program goal attainment, or via codes driving efficient technology propagation. Utility customers and regulators push utilities to broaden programs to impact more customers, particularly those customers found between the mass market residential size and the utilities' very largest energy consumers. These "between sizes" customers have been difficult targets due to numerous business types and energy end uses.

Market developments are offering new utility program options to tap the behavior change savings potential of commercial buildings. These include technologies such as EMIS that provide energy use analytics for building operators, guiding them towards energy efficient choices. In addition, SEM has emerged as a program approach that focuses on organizational

engagement to drive lasting energy savings. And finally, CBSM engages groups through proven behavioral marketing techniques (McKenzie-Mohr Schultz 2012). The most advanced utilities integrate one or more of these approaches into their program portfolios, with promising results.

The Stakeholders

PSE is Washington’s oldest local energy company, providing electric and natural gas service to homes and businesses primarily in the Puget Sound area. PSE provides incentives to encourage its customers to make smart choices about their energy use, investing \$100 million in energy efficiency programs each year to meet customers’ growing needs. Now in its 13th year, the Resource Conservation Management (RCM) Program (Younger, Moen, Brown, & Wilhelm, 2008), an SEM program for commercial customers, provides performance incentives, software, and technical assistance to reduce large customers’ energy consumption through operations and maintenance (O&M) improvements and behavior change efforts.

With Urban Smart, PSE is exploring SEM focused on a defined geographic area rather than specific customers. PSE hopes that this initiative will galvanize the downtown Bellevue core to achieve significant savings while raising awareness of PSE’s other efficiency programs.

The City of Bellevue (the City) has a long-standing history of engaging with PSE’s rebates and incentive programs. In addition, in 2006 the City started its Environmental Stewardship Initiative which contains a strong energy efficiency focus due to its relationship to both carbon emissions and financial cost savings. In 2009, the City signed up for the PSE RCM program and quickly met the early program goals. Through the RCM program, the City saved significant dollars and carbon emissions (cumulatively, this program has now saved over a million dollars and 8,700 MTCO₂e). These savings also assisted PSE with its legislatively mandated energy efficiency savings goals year after year: a win-win-win! During this same period, Bellevue City Hall went from an 89 ENERGY STAR score to a 99 (40% savings), proving that a focused and engaged energy champion can find significant savings even in a moderately well-performing building.

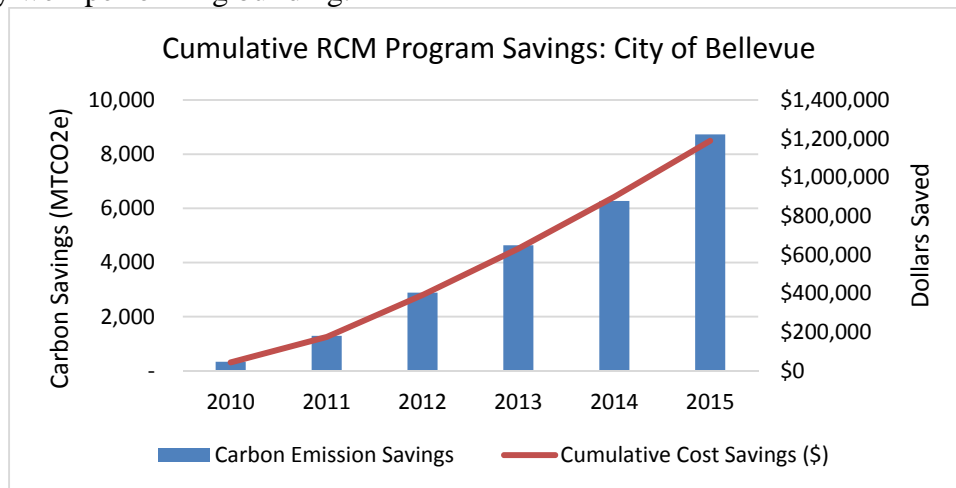


Figure 1. City of Bellevue, Cumulative Resource Conservation Manager Program savings

Program Conception

In 2013, the City was selected to participate in MIT's Green Economic Development Initiative "Energy Efficiency Market Transformation Study," (McEwen, Wang, Johnson, & Anderson, 2013) wherein MIT led an in-depth study with four cities. Bellevue's three primary goals were:

1. Articulate Energy Management's local economic development benefits.
2. Describe energy management market conditions in Bellevue, and the broader Seattle-Bellevue-Tacoma region.
3. Identify how the City & its partners can grow energy management.

Out of the study, the City formalized its understanding of energy efficiency's economic development benefits. These stem from three mechanisms (1) energy efficiency frees up dollars to do other things like hire people or expand programming (2) firms engaging in energy efficiency create worker demand for clean tech and energy efficiency services and (3) energy efficiency keeps engages workforce because environmental stewardship aligns with their values.

Through the MIT project, the City looked at a variety energy management strategies, including programs and policies like the Seattle 2030 District and Envision Charlotte (Alschuler, 2012), benchmarking ordinances, workforce training, and technology solutions such as Microsoft's building analytics software deployment. Envision Charlotte's program felt like the right approach: light-touch, voluntary, business-friendly, data-orientated, and community-minded. The City approached PSE to suggest implementing a similar program. PSE embraced the idea as a model program. Working together, the City and PSE developed a plan to move forward.

Program Design

Urban Smart Bellevue creates a single vision by integrating multiple distinct program concepts:

Energy Management Information System

EnerNOC's Energy Management Information System (EMIS) is designed to help utilities build deeper customer relationships and become trusted energy advisors, with a foundation of state-of-the-art customer segmentation/profiling data analytics. The EMIS integrates with utility systems as well as third party databases to present highly personalized energy information that encourages customers to engage, take action and save energy.

EnerNOC's EMIS is comprised of a suite of tools that are designed to engage a wide range of commercial customers, from small businesses to large portfolios. These tools include:

- Recruitment tools such as personalized invite letters and a PSE-branded registration page
- Energy Check for small and medium businesses, with personalized reports and portal
- Energy Manager portal for larger/sophisticated energy users, with in-depth tools
- Utility Program Manager portal to monitor/manage customer engagement/interactions

Strategic Energy Management

Strategic energy management (SEM) is a process that helps facilities of all types and sizes implement a holistic approach to energy management that reduces energy use and provides a strong foundation for continuous energy improvement. This technique integrates into Urban Smart Bellevue to engage PSE business customers in ways that resonate with their organizational priorities. SEM content such as Energy Management Assessments (EMAs), engagement toolkits, and action plans help businesses drive energy reduction within their organizations.

Community-based Social Marketing

Community-based social marketing (CBSM) focuses on fostering community-level behavior change. CBSM draws heavily on social psychology research and uses tools such as social norming (i.e., making it the norm to engage in energy efficient behaviors) and prompts (i.e., targeted reminders to take action). CBSM's emergence can be traced to a growing understanding that programs relying heavily on media effectively drive public awareness of sustainability-related issues, but are limited in their ability to foster behavior change. For Urban Smart, CBSM is used to identify and overcome behavior change barriers related to energy efficiency.

Program Implementation

Target market

The program's geographic focus is Bellevue's urban core. Rich with a variety of business sectors, building types and sizes, and influential businesses, it is also the home of PSE's headquarters and the Bellevue City Hall. The diversity and concentration of potential participants makes it an ideal location for a program such as Urban Smart. The target area includes downtown Bellevue bounded by NE 12th St, 116th Ave NE, Main St., and West 100th Ave NE.

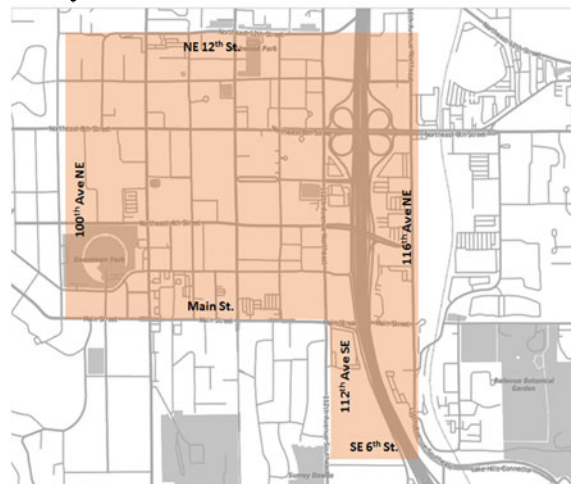


Figure 2. Map of Urban Smart Bellevue geographic focus in downtown Bellevue

Based on Market Characterization work done by CLEAResult during the program design, the program targets all businesses in the area with customized outreach to four target markets: 1) office (private & government); 2) hospitality; 3) retail; and 4) healthcare. This concentration does not minimize the importance of other market sectors or businesses outside the geographic area, but focuses program resources on populations with the greatest energy savings opportunities. All other market sectors fall into an “other” category that includes food service, agriculture, construction, non-tech manufacturing, assembly, and education among others.

Invitations and sign up processes

Split incentives quite common for commercial building energy efficiency, where the decision-makers, account holders, and energy users may be entirely separate. Building owners typically determine capital improvements, while property managers makes maintenance decisions, tenants pays the utility bills, and building occupants drive plug loads and building operating schedules. With these roles, it is a struggle to find a common value proposition that results in lower energy consumption. Rather than try to identify one sweet spot that motivates all parties, Urban Smart Bellevue is presenting engagement opportunities and value propositions targeted at each role.

For building owners and property managers Urban Smart Bellevue identified top participation barriers as a lack of time/capacity to participate and implement actions, and a lack of urgency from the absence of direct financial energy bill impacts. To motivate these parties, Urban Smart:

- Makes joining the effort easy, fast, and free
- Conveys that participation reduces operating costs, risk and makes the buildings more profitable, while contributing to healthy economic development for Bellevue
- Where possible, finds ways to participate that tie into corporate sustainability efforts
- Creates incentives for participation that will lead to happier tenants/employees.

While building owners and property managers are the key target, facility managers and property managers are the primary audience for creating action plans that reduce energy consumption. Similar to program engagement barriers, program implementation is impeded by time and capacity constraints as well as the perception that an energy reduction plan is complicated and costly. In Urban Smart, the following motivators are used to overcome these barriers:

- Program engagement by property manager/owner indicates that this is a priority
- An energy plan will help make the job of facility manager easier and more efficient
- Training provided through the program offers possibilities for career advancement
- The program offers excellent tools and resources to assist with development of the plan.

Urban Smart targets building owners and property managers as the typical program entry point, but building occupants also play a role. Environmentally-oriented employees and/or green teams can build interest and motivate their employers to participate. For this group the program focuses on environmental benefits from energy efficiency. The climate, environment, and health impacts of energy production are well-known in the Puget Sound area, and with a robust green community these people can spur their fellow employees and employers to action.

Boots on the Ground – A People-centric Approach

Data and energy plans cannot generate energy savings unless people act on the information provided. As shown by many programs, an Energy Champion is the key to translating information into action. Energy Champions are connectors and integrators who can help their organization set goals, identify opportunities, motivate people to take action, and communicate the results. Internal Energy Champions can navigate organizational culture much more easily than outside contractors, and already serve on a “green team”, often as a leader. To tap into this potential, Urban Smart will provide each Energy Champion with professional training and networking opportunities that will increase their skills and visibility within their company.

The program’s on-boarding phase taps into project partners’ networks to identify the right people to become Energy Champions and to register their organizations for the program. Larger customers receive a personalized meeting prior to sign-up, followed by an energy consultation to define energy saving goals and find these champions. The meeting outcome is a strategic energy action plan to guide organizations to short and long-term savings. For smaller organizations and tenants, personalized report cards, events, and outreach staff guide action.

Reporting to the participants and community on progress – the role of technology and art

Urban Smart will show real-time program results through a digital display, a concept that has been successful for other efforts to celebrate success and maintain program visibility. Rather than only utilizing building lobby-based kiosks such as those deployed by Envision Charlotte, Urban Smart will utilize a physical location. To maximize impact, the display is visually engaging, informative, creative, and focused on community engagement. The display is updated regularly to encourage repeat visits. An additional benefit will be fostered dialogue between non-traditional partners (program administrators and artists) during its conceptualization and design.

Tracking Our Progress:

With every action our movement grows, bringing us closer to our goals!

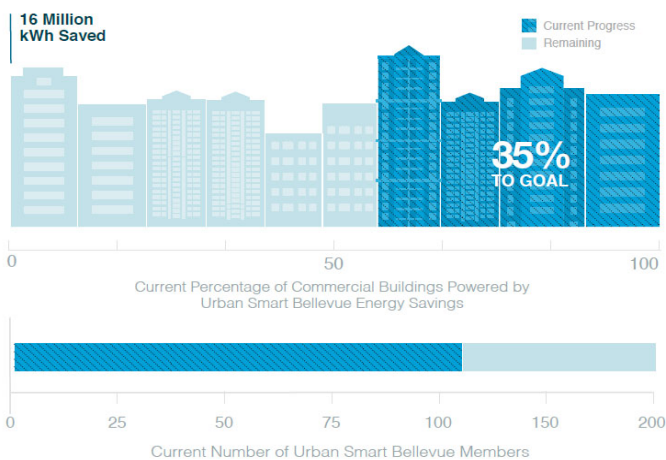


Figure 3. Image to be used in public displays

Program Launch

Data Q/C and start up processes; baseline; savings estimates

The scope and nature of the Urban Smart Bellevue program requires a large amount of varied types of data. Quantitatively, the program utilizes energy data, ideally at daily or more granular intervals, for the entire 200 participant population. In addition, the program uses weather data to create weather-normalized metrics. It is anticipated that some of these weather-normalized metrics may not be statistically adequate to reliably estimate energy savings; in those cases the project team will create statistical regression models using other data such as occupancy or operating hours. For all of these approaches, the baseline is the twelve months immediately preceding program launch. Program savings are estimated based on accumulated facility level savings determined by subtracting actual energy consumption from the expected energy consumption in each facility model; the project team then subtracts any incentivized capital projects to ensure there is no double-counting of savings by PSE.

Qualitatively, the program tracks the activities and attitudes of participants through a series of longitudinal surveys. These surveys query participants regarding topics such as management support for energy efficiency, employee awareness of energy, and utility engagement. Across the 200 participants, these surveys illustrate the program's impact and demonstrate causality between the program and energy savings. In addition, the surveys gather information about behavioral measures implemented at customer sites, as well as any changes that may impact energy savings models. This information supports energy savings estimation.

Selecting a delivery team

When the City approached PSE with the idea for Urban Smart Bellevue, PSE embraced the idea and decided to incorporate the effort into its RCM program. To fully explore the potential to achieve savings, PSE hired a consulting firm to do a market characterization study and develop a plan for implementation. The City and key players in similar efforts, such as an advisor from Envision Charlotte, also informed the program design. In addition to developing an implementation plan, the design phase served to define the program's target market, identify key stakeholders, and develop a set of criteria for a successful implementation team. With PSE and the City as partners, a request for proposals was developed for program implementation. The team of EnerNOC and C+C was chosen to provide technical and outreach solutions. With the team chosen, contracts were developed and implementation began.

Developing program plans and processes

During the program launch phase, team members created thorough plans based on their experiences in other large utility program implementation. This series of plans includes:

- Overall project plan – this plan includes tasks, timelines, milestones, and dependencies to ensure that the project is managed on time and budget
- Risk mitigation plan – this plan outlines potential program challenges along with strategies to mitigate each of these challenges

- Measurement and verification (M&V) plan – this plan describes efforts to quantify the energy savings impact along with estimations of the qualitative program impacts

Team members refined these plans based on input from PSE and the City, creating final versions to use for ongoing program management. The team holds regular meetings at the weekly and quarterly intervals to ensure alignment and also to enable early identification of resources which PSE or others could address.

Engaging stakeholders throughout the Program

While the initial program design was born as a result of the market characterization, the project team has approached the Urban Smart program through a community-based social marketing lens. Planning for implementation involved the following steps:

1. Identify Goals and Objectives
2. Select Desired Behavior Change
3. Define Research Needs
4. Identify and Create a Profile of Your Target Audiences
5. Identify Barriers and Benefits to the Desired Behavior Change
6. Create an Effective Message Strategy
7. Identify and Enlist Partners
8. Develop a Communications Plan
9. Implement Plan

To kick-off the program the project team took the time to further identify specific goals and objectives of the key program partners through a series of initial kickoff meetings.

The project implementation team focused on identifying desired participant behaviors, as well as barriers and motivations of the target audiences. The team gathered initial information through the available resources and literature on the many commercial behavior change pilots across the country. Some of this initial research was also supported by a summer internship with EDF's Climate Corps Fellowship. The *social marketing plan* developed from that research and includes program messaging, specific target audience messaging, as well as strategies and tactics to overcome barriers and capitalize on motivations of each.

With the social marketing plan drafted, the project team presented the plan to several community stakeholders to gather feedback on the proposed strategies. The responses helped focus the remaining planning efforts on a smaller group of strategies for recruitment and engagement.

This work also helped inform an authentic personality and *brand* for the Urban Smart program, to ensure that everything from the name, to the program’s look and feel resonates with the Bellevue business community, and underscores the spirit of the program. The three main brand attributes that were identified in the social marketing plan include:

- Business Community – shared goals, economic growth, collaboration
- Intelligence – professional, simple, credible, innovative
- Sustainability – energy savings, healthy, efficient

The program logo, for example, represents these points uniquely in a succinct visual. The image in the thought bubble is part of a living logo concept where different icons can be rotated in to depict different actions or subjects of collateral or individual efforts within the campaign.



Figure 4. Urban Smart Bellevue logo with tagline

The *recruitment plan* focuses on developing relationships through one-on-one engagement and a boots-on-the-ground presence. Key components of this approach include grassroots outreach and a social norming process that leverages early participants to increase program enrollment and encourage attendance at a signature launch event. The recruitment plan is illustrated in the following diagram.



Figure 5. Urban Smart recruitment plan diagram

While recruitment continues throughout the program, early customer relationships built in-person and online are key to continued participant involvement, building momentum and changing energy efficiency norms. Working together with program sponsors and stakeholders, these tactics activate and inspire participants to become energy champions.

Once enrolled, customers from each market segment have a tailored experience. The onboarding process varies based on business size and engagement target (e.g. facility manager, business owner, and employee). For larger businesses and facilities, a more in depth one-on-one energy assessment consultation produces a set of actions and investments from which they can choose.

The engagement during this process is in-line with the program's top-down approach; the largest and target customers receive the most personalized attention. For more technical assessments and complex scenarios, building energy experts provide services needed to gain participation. For small and medium businesses, participants that need assistance above and beyond the digital engagement are contacted at regular intervals to address questions or concerns.

Once participants identify the specific actions and investments to which they will commit, all participants will track their energy actions. Small and medium businesses have a unique set of actions they can choose from and larger customers can create custom actions to track based on their energy assessment. Program management staff can access participant profiles through our online energy management portal and help them personally manage their plan and succeed whether in person, by email or by phone.

As participants complete actions they are eligible to receive rewards and recognition through the program. For example, the program will host parties to celebrate successful campaigns, and will provide opportunities for participants to share their progress and stories with their community peers. At the quarterly Urban Smart Bellevue "Wake up with Energy" events, participants will share successes and learn about ways to integrate energy management into the fabric of their facility or business through occupant engagement.

When participants meet and exceed their goals, the team congratulates them with events or other forms of public recognition including advertisements that profile their successes. At the very end of the campaign, there will be a celebration event that reflects their desired format for recognition.

Configuring Energy Management Information System platform and program materials/tools

The EMIS platform supports customer outreach and engagement to drive both ongoing program participation and energy efficiency savings. SEM tools and resources such as EMAs, customized action plans for larger organizations, engagement tools such as communication templates, suggestion programs and night-walk audits are provided to help integrate the EMIS into existing business structures. The combination of a strong data component to help direct participants towards actions with the largest possible energy impacts, in conjunction with tools and resources that are proven to integrate energy management into existing business structures, provides a personalized and unique technology experience to each participant in a way they haven't had before. This unique technology experience drives greater energy management

interest, increasing implementation of behavioral energy conservation measures and drive interest in participation in other PSE programs and incentives.

Initial results

The program is currently in the first stage of launching – engaging cornerstone participants and launching the EMIS. As a result of the CBSM planning process, the program is currently developing focused recruitment and engagement assets, a local media/ad plan, as well as integrated online components.. The program website is close to completion and has received positive feedback from stakeholders. The team is finalizing participant onboarding processes, program toolkits, and recruitment strategies, while building the contact database. Phase one occurs April through June 2016 and includes a goal to recruit and onboard at least 10 of the major PSE customers in downtown Bellevue. Phase two commences in late June and will include a targeted direct mailing to all potential participants and a public launch event hosted by Bellevue’s Mayor and some of the inaugural participants.

Conclusion

By combining leading edge program concepts such as CBSM and SEM into a single program, Urban Smart Bellevue is creating a powerful yet accessible package to change behavior. At a high level, what makes the program compelling may be a challenge – the program team will have to manage the various program components in concert to ensure overall success. In addition, the program must be attuned to what is unique to Bellevue, and the impact the local green culture and business environment will have on the program. Part of the success of other similar programs has been their ability to tap into the local culture to personalize the program. There are nuances in the property relationships that may drive how campaigns play out, especially in the retail space and with building occupants. For example, Bellevue has a lot of non-Bellevue resident employees who may not have PSE as their utility at home. There is also foreign ownership of some buildings, as well as substantial new multi-family construction with mixed use. Using on-the-ground expertise and local knowledge through partnerships and regular conversations with stakeholders Urban Smart Bellevue will create the program that meets the needs of the community, and build a community that generates energy savings. Leveraging the success of previous efforts in Bellevue buildings, whether it has been achieving an ENERGY STAR rating, completing a small lighting project, or undertaking a major HVAC retrofit, Urban Smart will continue to build momentum towards Bellevue’s sustainable and economically prosperous future. Urban Smart Bellevue success to PSE will not only be goal attainment within the program, but also the creation of a foundation for future customer engagement in Bellevue as well as PSE’s other urban centers.

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