

Bothell's Climate Commitment Strategies to Meet Our Goals

December 31, 2008

“If everyone just does a few little things every day at the office or at home, and Bothell can make that easier for them and encourage them, then I think we are going to make a big difference.”

-Michelle Davis,
Bothell Green Team Member



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by Cascadia Consulting Group, Inc



City of Bothell™

Acknowledgements

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Introduction

On June 10, 2008, the Bothell City Council adopted a resolution demonstrating the city's commitment to be a leader in sustainable and responsible climate protection practices and directing city staff to "Develop a Carbon Reduction and Energy Independence Plan." Bothell CO₂OL is Bothell's citywide effort to implement a phased approach to reducing carbon emissions and fostering energy independence throughout the civic and private sectors.

Bothell CO₂OL will move forward priorities and programs to reduce city building energy use, foster new green development, create a more efficient city fleet, preserve Bothell's urban forest, and create a Green Team of department representatives to advance sustainable practices across the city. Bothell CO₂OL represents a core value and ethic that governs the way the city does business - to think about the needs of the next generation and leave a sustainable legacy.

Cascadia Consulting Group was hired by the City of Bothell to document current green practices and develop new ideas to achieve the City's sustainability and carbon reduction goals. This

report highlights green practices already in place, provides an overview of planned

climate and sustainability initiatives, and recommends a number of new green actions the city should consider.

Cascadia interviewed members of the Bothell Green Team and other key department staff in November and December 2008 to document current sustainable practices, major factors for successful initiatives, and green opportunities. In addition, Cascadia reviewed Bothell's current programs and policies to identify sustainable practices in place and planned initiatives. Lastly, the consultant reviewed best practices of city, county and state governments and recommendations from sustainability plans, reports and studies to generate a short list of green actions for the City of Bothell to consider to advance its sustainability and climate goals.

"Bothell is widely recognized as a center of education and of scientific research. It is a natural leap for the [city] to accept the carbon-reduction challenge as a value by which the city will do business."

Bothell City Manager
Bob Stowe



The State of Green in Bothell

To better understand city employee attitudes, awareness and actions surrounding sustainability, the consultant interviewed 12 members of the newly formed Bothell Green Team, as well as additional staff from Public Works and Community Development. These staff interviews and a review of current programs and policies found strong employee support for the City's commitment to sustainability, as well as a variety of sustainable practices already in place across departments.

Staff Support for Going Green

Green Team representatives indicated that there is tremendous support and interest in advancing sustainability and climate programs across the city. Most staff are aware of waste prevention and recycling issues, and actively recycle and try to prevent waste. Staff expressed enthusiasm for doing more.

- Interviewees expressed support for Bothell's sustainability commitment and indicated that their colleagues also support sustainable initiatives. Interviewees expressed a desire for more guidance on what sustainable actions they can take both at work and at home.
- Most interviewees said they had a general understanding of climate change and the ways that the city can address its impact (e.g. reduced energy use).
- The most frequently mentioned green action was recycling. Most interviewees said they felt that their colleagues were similarly aware and supportive of recycling. Interviewees expressed less awareness of energy and water conservation and toxics reduction efforts in the City.
- Most interviewees cited paper use as a key concern and reducing paper use as an important sustainability goal.
- Most interviewees said they were aware of alternative transportation opportunities and programs, but few indicated that they participate in such programs.

Green Team members' goals for the team...

"to share my efforts to cut down on paper use, and learn what else I can do."

"to educate myself about climate change."

"to take things that I learn from the Green Team to my office and to my home."

"to increase education and awareness about reducing waste."

Sustainable Strategies in Place

Bothell currently supports dozens of approaches to advance sustainability and carbon reduction goals. This section highlights green practices already in place that build a more sustainable and climate-friendly community. This list was generated through interviews with the Bothell Green Team and research into current city programs and policies. It includes both internal actions (i.e. actions focused on city assets, infrastructure and operations) as well as external actions (actions that influence behavior of the broader Bothell community). The actions are categorized by five main goal areas:

1. Reduce energy consumption in buildings and homes
2. Reduce energy consumed through transportation
3. Minimize waste
4. Strengthen Bothell's sustainable future through education and outreach
5. Foster other sustainable practices

Although sustainability actions often further multiple goals, each action is listed under the area on which it has the greatest impact.

Reduce energy consumption in buildings and homes

- **Motion sensors** Bothell has installed motion sensors in key areas of some public buildings such as the Police Department.
- **LED Christmas lighting** Bothell purchased LED decorative Christmas lighting in winter 2008. Based on the extremely reduced electricity needs of these lighting strands, the city expects significant cost savings.
- **Green building incentives** Bothell is in the process of creating specific codes and regulations that will provide incentives or require new buildings to enact low impact development (LID), energy efficiency, or other practices. Some incentives may specifically build on Leadership in Energy and Environmental Design (LEED) certification or similar programs.

Reduce energy consumed through transportation

- **Commuting options** Bothell actively supports reduced commuting through participating in the local Wheel Options campaign, sponsoring bike-to-work events, providing alternative transportation subsidies, and offering flex or alternative schedules where possible.
- **Green fleets** Through this program, Bothell will work to increase the fuel efficiency of the municipal fleet over time through acquisition of hybrid and other fuel efficient models and retirement of less fuel efficient vehicles. This program will be informed by the decisions and recommendations made by the Evergreen Fleets initiative, an advisory group of which Bothell is a member.

Making 'Green Fleets' Cost Effective
According to total 'cost of ownership' studies conducted by the online vehicle information site Edmunds.com, a hybrid vehicle must be driven over 35,000 miles a year to break even in cost with non-hybrid competitors. According to Bothell's vehicle data for 2007, only two vehicles were driven more than 20,000 miles – both were Chevrolet Tahoes which averaged 10 mpg. As Bothell implements the Green Fleets program, these vehicles should be traded out immediately while more fuel efficient vehicles or vehicles driven less often, though older, should be traded in a later rotation.

Minimize Waste

- **Recycling** The City provides recycling bins at all desks in office buildings and has recently piloted providing recycling containers and support staff at community events.
- **Equipment reuse** Surplus computers are used by Cascadia Community College and other community organizations.
- **Paper use reduction** City employees reduce paper use through duplex printing and the use of electronic documents.

Impact of Composting

Bothell plans to increase composting throughout the city in 2009. The multiple benefits of this initiative include climate change; for every ton of mixed organics composted by Bothell, one metric ton of carbon dioxide equivalent (mtCO₂e) is avoided – about the same as the average American home produces from energy and electricity use in one month.

- **Composting** Through a grant from the Washington Department of Ecology, the City of Bothell will begin composting in all municipal buildings. In partnership with Cedar Grove and Waste Management, this program will incorporate signage and training to improve participation.
- **Recycling in parks** Bothell has expanded recycling to the parks system by providing receptacles and support staff at key events this year. Although this system is still being perfected, Bothell is purchasing permanent containers to provide recycling options at Bothell Parks. The purchase is made possible through a Washington Department of Ecology grant.
- **Christmas tree collection** The City runs a program to collect Christmas trees from residents and chip the trees for use as path bedding in parks.

Foster other sustainable practices



- **Water conservation** The city has installed a central system for watering Northfield Sports Complex and uses graywater at local golf courses. Both actions help the city to reduce water use. The Bothell Fire Department has also worked to reduce water use during trainings.
- **Native species** The Bothell Parks Department currently works to plant native species and create rain gardens in parks. Together, these efforts cut down on water use as well as pesticide use.
- **Reduction of pesticide use** The Bothell Parks Department is

conscientious about reducing the use of fertilizers and pesticides in parks close to watersheds. In some areas, the department is making efforts to completely refrain from spraying.

- **Tree protection** Bothell has been certified for a number of years as a 'Tree City' by the National Arbor Day Foundation designation for its commitment to protecting significant trees throughout the city, as laid out in Bothell's tree protection city ordinance. Bothell's city council has made a formal commitment to continue this designation and cause.
- **Recycled content products** Many office specialists across Bothell departments make efforts to purchase recycled content products. From park benches made of recycled lumber to 30% post-consumer recycled content paper, these choices support the market for recycled material.



Strengthen Bothell's sustainable future through commitments and education

- **Water conservation incentives** The City of Bothell is a member of the local Saving Water Partnership which provides incentives to Bothell residents and businesses for water conservation.
- **Commercial recycling** The City encourages sustainable practices in the business community through outreach and education. In 2009, Bothell will provide outreach and education to local businesses, with a focus on recycling and waste prevention, and education on sustainability.
- **US Mayor's Climate Protection Agreement** Following completion of a carbon footprint and a better understanding of what steps will be required to meet the agreement terms of reduced emissions, Bothell plans to sign onto this initiative to show its dedication to addressing climate change through real emission reductions.

Impact of Recycling

Bothell has made recycling a priority, and it shows. Almost all members of the Green Team cited recycling as something their department did well. For every ton of mixed waste recycled in Bothell, two metric tons of carbon dioxide equivalents (mtCO₂e) are avoided – about the same as the average American driver produces in six months.

Further Recommendations

In addition to the practices and policies already in place, Cascadia recommends Bothell develop a plan for further action to meet the city's climate change commitments and sustainability goals. Cascadia has provided a list of possible additional steps for Bothell to consider. These recommendations were developed based on the information and suggestions provided by members of the Green Team and research on the best practices of other cities around the state and nation.

As Bothell evaluates and prioritizes actions, it should consider the potential of each action to reduce greenhouse gas emissions, promote sustainability, and provide economic benefits. In the near term, Bothell should consider actions which will be easy to implement as these may provide momentum and lead the way for further initiatives. With these criteria in mind, Bothell can develop a plan that provides a roadmap for a sustainable future.

Reduce energy consumption in buildings and homes

- **Explore feasibility of installing motion sensor controlled lighting in more municipal building spaces – focus on bathrooms, kitchens, and conference rooms.** Motion sensors were suggested by many Green Team members as an easy way to conserve energy in city buildings. Motion sensors can be a cost effective way to reduce electricity use, even given Bothell's plan to vacate or demolish several current municipal buildings.
- **Work with utilities to conduct energy audits of all city buildings and identify cost effective updates and retrofits.** Several Bothell Green Team members mentioned that a few city buildings may have HVAC inefficiencies. While cognizant of several planned moves and demolitions, the city should work with energy utilities to conduct an audit of all city buildings to identify necessary updates or retrofits with a short payback period.
- **Enact a residential conservation ordinance.** An energy conservation ordinance, in which a checklist audit is required before the sale of a home, has been successful in encouraging homeowners to improve the energy efficiency of properties in several cities. Checklist audits typically include measures such as weather-stripping doors, wall and ceiling insulation, caulking, and duct sealing. In addition to encouraging energy upgrades, they provide relevant information for a prospective buyer on the conservation features of a property.
- **Require commercial building performance disclosure.** The commercial building performance disclosure is a point of sale (or lease) data point designed to encourage property owners to improve the energy efficiency of their properties. While this type of ordinance requires disclosure of traditionally private information, Bothell should work with local utilities to explore possible options. One successful example of a variation of this program is the real-time energy use disclosure map created by a partnership of the City of Gainesville, Florida and local utilities, available at gainesville-green.com/map-welcome.
- **Enact point-of-sale performance upgrade requirements.** Bothell should consider passing an ordinance requiring building owners to complete certain energy efficiency upgrades at point-of-sale. The prescriptive upgrade requirements would achieve a minimum level of cost-effective energy efficiency in a given building. This policy could be focused on older (less energy efficient) properties and would ensure that the energy efficiency of residential and commercial properties improves with each sale. Such requirements are currently found in the state of Wisconsin and the city of Burlington, Vermont.

Potential impact of residential conservation ordinance

The Department of Energy estimates that home weatherization upgrades such as air sealing, window insulation and adjusting thermostat settings can reduce home energy use by 12-20%. A residential conservation ordinance requiring weatherization can thus reduce emissions from the average Bothell home up to 2 mtCO_{2e} each year.

- **Create a revolving loan fund to help offset the start-up costs of energy efficiency projects for local businesses.** As part of its larger overall strategy to provide outreach and tools to Bothell businesses, Bothell should consider creating a revolving loan fund that would allow businesses to implement energy efficiency projects that would otherwise be cost-prohibitive. Partners and funding for this program may be available through state and federal grant programs, or through utilities such as Puget Sound Energy.

Reduce energy consumed through transportation

- **Create a no-idling policy for city fleet (with exception for emergency response vehicles).** The police department has worked to curtail idling through education and the installation of second batteries in police vehicles. Bothell should formalize this effort with an anti-idling policy for all non-emergency response vehicles. Olympia, Washington installed a computer monitoring system in municipal vehicles to enforce a similar policy. The city recovered the entire cost of purchase, installation and monitoring of the system through fuel cost savings in under a year.
- **Create a vehicle use policy to complement the Green Fleets program.** Although the Green Fleets program will improve the fuel efficiency of the Bothell fleet, this program will have a greater impact when paired with a vehicle use policy. A vehicle use policy would ensure that the right vehicle is used for the right purpose (favoring more fuel efficient models wherever possible) and that all vehicles have proper maintenance for optimal fuel efficiency. Furthermore, this policy works without needing to replace vehicles.

What's the impact of idling?

The EPA estimates that idling diesel trucks consume 0.8 gallons of gas an hour. The EPA provides calculators that can help Bothell determine cost savings and greenhouse gas reductions possible through enacting an anti-idling policy. One such calculator is available at

www.epa.gov/region8/ej/dieselcalculator.html



- **Install bike racks in at all city buildings and parks.** Currently, there are bike racks at some but not all city buildings. Making bike parking more widely available would help to encourage more bike commuting by residents and employees.
- **Install bike lanes in downtown Bothell.** Like bike racks, bike lanes are a relatively easy way to encourage biking in the City of Bothell. Bothell should work to ensure that bike lanes

are created during the downtown revitalization, and should explore creating bike lanes on main routes on current roads. Bike lanes make biking safer and show Bothell's commitment to health, sustainability, recreation and mobility.

- **Require all new commercial developments to provide bike racks for certain parking lots.** Bothell should require bike racks for any parking lot with 20 or more car parking spaces to ensure that bike commuting is encouraged by all new development. This would be in addition to buildings which provide bike racks in order to earn points towards LEED certification.
- **Offer a four day work week option for all non-essential departments and personnel.** Bothell departments are already working to accommodate flexible schedules for employees wherever possible, and the Police and Fire departments have been especially innovative in this area. To further reduce commuting miles, Bothell should offer a four day work week for all non-essential departments and personnel.
- **Work to reduce single occupancy vehicle commuting through more aggressive year-round commute trip reduction incentives.** Bothell currently encourages employees using alternative transportation to apply for a \$20 subsidy each month. The City can continue to make alternative commuting a priority year-round through increased subsidies for use of public transportation, an intranet system for coordinating carpools, and use of Bothell vehicles for van-share commuting. Bothell could also consider progressive fees for use of city parking spaces.

Minimize waste

- **Continue Bothell's leadership on recycling education and focus on increasing commercial and multifamily rates.** Recycling was consistently cited as a successful green practice by city employees. Bothell should continue to work to promote recycling and educate citizens and employees on the connection between recycling and climate change. Education efforts should focus on improving waste diversion rates in multifamily and commercial settings, as these sectors both had a 10% recycling rate in 2005 compared with a 61% rate in single family homes.
- **Work with office supplier to report monthly paper use on the intranet.** Reporting data on monthly paper use should help encourage conservation and should be easy to obtain from Bothell's office supplier. By reporting paper use by department, the City can target areas needing improvement. In addition, the City can provide a link to the Environmental Defense Fund Paper Calculator, www.edf.org/papercalculator, for employees to calculate environmental impacts associated with their paper use.

Potential Impact of Recycling Increase

While increasing multifamily and commercial recycling rates is a challenge in every city, it offers the potential for a huge impact in Bothell. If Bothell was able to bring multifamily and commercial recycling rates to the same level as current single family residential rates, an additional 6,700 tons of waste would be diverted each year. This change is associated with a reduction of 20,000 mtCO₂e annually – roughly the same as taking 3,500 American drivers off the road for an entire year.

Strengthen Bothell's sustainable future through commitments and education

- **Create environmentally preferable purchasing guidelines.** Interviewees cited sustainable purchasing resources and guidance as a key green opportunity. Bothell should develop a useful product-by-product guide in cooperation with suppliers. Overall recommendations should specify materials to be avoided (e.g., polystyrene foam) and priority products, considering cost and environmental impact (e.g., recycled content paper). The guide can be made available on the intranet.
- **Set up a Green Guide page for employees on intranet.** Employees want more information on what they can do to be more sustainable both in the office and at home. A regularly updated, interactive and informative page on the intranet will help municipal employees make sustainable choices with respect to paper use reduction, energy use, commuting, recycling, and more.
- **Work with utility and energy providers to report municipal building energy and water use on the intranet.** Bothell should collaborate with utility providers to create an intranet page with monthly updates of energy and water usage in city buildings. Providing this information along with a link to tips on how to conserve will give employees feedback on performance and methods to improve. As utility and energy providers already maintain this information, this page can likely be created at little or no cost to the city.
- **Integrate sustainability into new employee orientation and training.** Work with all Bothell departments to integrate a short sustainability training section into new employee orientation. The training should cover Bothell's commitments to energy independence, in-office sustainable practices (e.g., recycling, paper reduction measures), commuting options, and internal and external resources for more information.
- **Create guidelines for professional development in sustainability for Bothell employees.** Craft formal policies encouraging Bothell employees to attend trainings and seek professional certifications in areas of sustainability relevant to their jobs such as LEED accreditation for city planners and permit staff or Integrated Pest Management (IPM) training for parks department employees.
- **Provide guidance for Bothell residents and businesses on using utility incentives.** A number of rebates are available to Bothell residents and businesses through Puget Sound Energy and Snohomish PUD. Bothell should work to educate residents and businesses on how to take advantage of these opportunities through a clear and helpful page on the Bothell website with explanations, links, and other information.

Foster other sustainable practices

Potential impact of tree protection ordinance

The EPA estimates that a tree sapling planted in an urban setting and allowed to grow for 10 years will sequester 0.04 mtCO₂e. The more trees Bothell requires developers to save or replant, the more the emissions of new buildings and transportation will be mitigated.

regulation currently in place to protect significant trees and ensure that Bothell's green cover is not lost. As climate change becomes a key priority in Bothell, this regulation can be strengthened to require further remedial planting, either onsite or offsite, and to compensate for trees lost to development. Furthermore, Bothell should work to develop one consistent policy integrating care for native vegetation and tree conservation, as well as an invasive species removal and control plan.

- **Continue involvement and interest in Sustainable Sites Initiative. When certification guidelines are released, work to be among the first places with certified parks.** Adam Fletcher, a parks employee and member of the Green Team, has been keeping up with the progress of a new set of certifications called Sustainable Sites. Bothell should continue to support this interest, and work to ensure that certification of Bothell parks will be possible when the final requirements are released. Bothell can be a leader by having parks that are among the first to earn this certification. More information about Sustainable Sites is available at www.sustainablesites.org.



- **Commit to sharing Bothell's progress and plans for sustainability in an annual report.** Bothell's signing of the US Mayor's Climate Agreement, the City Council Resolution and other commitments will help keep the city moving forward to a more sustainable Bothell. Bothell should consider drafting an annual report to share the progress of initiatives with employees and citizens and educate them on new plans.

Getting Started

This is an exciting time for Bothell as it builds on a foundation and commitment to sustainability and positions itself as a leader in the region. Lessons and suggestions from interviewees and the experience of other cities may help Bothell secure the support, involvement, and innovation necessary to bring about a more sustainable city with healthy inhabitants and greater energy independence.

Education is key.

To garner continued support for new initiatives, Bothell should continue to educate employees and citizens about sustainability and climate change. Staff interviews revealed a somewhat limited understanding of climate change and Bothell's commitment. A review of best practices throughout the region shows that campaigns that integrate educational elements into new initiatives often have higher success rates than programs that do not incorporate an effort to explain the importance or the wider context of a given action.

One size does not fit all: give options.

While most interviewees support Bothell's commitments to sustainability and addressing climate change, many were concerned that new initiatives would bring mandates that do not allow for the special circumstances of their jobs. Wherever possible, Bothell must continue to be sensitive to the many functions of employees and departments and provide the flexibility to reach sustainability goals in ways that makes the most sense.



Don't recreate the wheel.

Bothell will be able to benefit from the many programs already in place in the Northwest – both by directly tapping into available opportunities and by learning from what others are doing. From the review of current policies it is apparent that Bothell is already taking advantage of many county and state-wide programs, but that there are more opportunities to benefit from available funds and resources. In particular, Bothell's utility and waste services providers offer many programs which will further Bothell's goals.

Share Bothell's story.

Lastly, share Bothell's efforts with the larger community. Employees, citizens, and neighbors want to know what Bothell is doing to reduce its climate change impacts. Other cities across the nation are looking to Washington cities for climate and sustainability leadership, and Bothell can help inspire these cities and provide useful lessons on the types of programs that work. Sustainability is a community effort, and Bothell's leadership is a valuable asset.