Spring 2009

Sustainable Portland: Implementation Series 2

New England Environmental Finance Center

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A Report by Students from the Muskie School of Public Service

Community Planning and Development Program, Course in "Sustainable Communities"

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This report is the second in a series of efforts by students at the Muskie School of Public Service, Community Planning and Development Master's program, in a core class called "Sustainable Communities." In this course students seek to understand principles of sustainability and how efforts to implement Sustainability programs can become more successful. The report assembles term papers students completed on particular efforts by municipalities, universities, and other groups to achieve sustainability goals. Students worked on each project in a service learning format with real world clients. They were asked to fashion their papers around lessons learned by other organizations that could help their client groups avoid pitfalls when implementing similar sustainability-oriented programs.

Leading Sustainable Portland by Example: Recommendations for a Sustainable Portland City Hall

Melissa A. Boyd and Holli R. Andrews

ABSTRACT: The Portland Municipal Climate Change Working Group prepared a report in March 2008 that outlined several recommendations as a commitment by the City to address greenhouse gas emissions (GHG) produced during daily municipal operations. The ***Municipal Climate Action Plan*** *was written in partnership with Clean Air – Cool Planet and Portland officials, and acknowledges under Recommendation #2 that an employee energy efficiency program would provide significant positive impact on the City's reduction of greenhouse gas emissions. Best practices from three cities show that focus on the greening of City Hall is critical in developing a program that promotes partnerships, community engagement and real cost savings. The cities of Sarasota, Toronto and Burlington offer a wealth of resources which, if adopted by the City of Portland, could surely offer keys to success.*

Introduction

Portland's vision to become a sustainable city requires that many aspects of daily life and culture come under scrutiny in the years ahead for its communities. In an article by Bob Doppelt, ***Leading Change toward Sustainability***, he maintains that a community's success in achieving better standards relies on its members' abilities to change their ways of doing things.

> *"Sustainability-change initiatives that fail to alter unsustainable cultural traits will have little long-term success. Unsuccessful attempts to introduce sustainability measures often produce frustration and cynicism and reduce employee morale… To avoid the boomerang effects of failed change initiatives, sustainability initiatives must explicitly focus on altering the culture of the organization."* [1]

What Doppelt indicates here is that the commitment for Portland to become a sustainable city requires modification not only through programs and legislation; it demands change at the most grassroots level - individual behaviors in the daily operations of the municipality. In order to achieve such personal changes, members of the Portland community would do well to have leadership and members of the City Hall community lead by example.

Mark Roseland discusses the value of role modeling in his book, ***Toward Sustainable Communities: Resources for Citizens and Their Governments***. The author explores the function of city government in reaction to global warming. Roseland explains that there are numerous ways in which municipalities might respond to climate change, such as by implementing ordinances, recycling efforts,

and reforms in transportation. Roseland concludes that the most effective measure is simply leading by example.

> *"Local government is an influential employer and consumer in most communities. A key step toward making our communities sustainable is leadership by example, particularly the 'greening' of city hall."* [2]

What Roseland is saying is that the best way to achieve buy-in among the general population of residents and stakeholders is to provide the paradigm of how to create reform. The first step in realizing true change for the City of Portland in the direction of deliberate living and conscious energy usage should be administered at the core of its municipality. Employees and government officials within City Hall are center stage with the unique ability to showcase how small changes in daily routines can create significant savings and improvements for better health. This report will explore how City Hall can influence reform by modeling these small behavioral changes for the residents and stakeholders of Portland, as well as create a stronger liaison to those who are making amends and highlighting their efforts with the big picture of how they are truly making a difference. Our proposal will help Portland municipal officials meet goals for sustainability through education, outreach, incentives, and carbon emissions reduction.

Background

Former Mayor James Cohen signed the U.S. Mayors Climate Protection Agreement in 2006, and thus made the initial commitment for the City of Portland to address issues of climate change and sustainability.[3] The U.S. Mayors Climate Protection Agreement (USMCPA) is based on the same principles embodied by the Kyoto Protocol. Although leadership for the United States did not sign this treaty, the USMCPA aims to meet or exceed the Kyoto Protocol by creating benchmarks for action in states and municipal communities. One major factor within the agreement is to urge state and local governments to change their practices, and enact legislation and programs to promote energy efficiency. The City of Portland as signatory has pledged for a 7% reduction in greenhouse gas emissions from 1990 levels by 2012.

Best Practices

We initiated this process of analysis by looking for places that had similar challenges and assets in common with Portland. We compared the best practices programming of cities across the country, and particularly those who are engaged in some sort of citywide employee energy efficiency program. We considered the demographics of the cities, and looked at location and climate to relate our ideas for reform with reachable goals and appropriate leverage points.

City of Sarasota Environmental Points of Pride: Your Green City

Our first case study focuses on Sarasota, Florida. We were initially drawn to Sarasota for its program entitled "Your Green City Hall." Further study illuminated some demographic similarities:

- The 2000 Census figures for the City of Portland, Maine indicate a population of 64,249 people with an average household income of $35,650 and an average age of 36.[4]
- The City of Sarasota Florida in 2000 registers a population of 50,584 people, an average age of 39, and an average household income of $39,177.[5]

In 2006, the City of Sarasota's Parks and Recreation Department approached city staff and proposed that the City sign on to the Mayors Climate Protection Agreement, with the intention of becoming a 'green city.' In 2007, the Mayor of Sarasota signed on to the USMCPA and launched the Environmental Management Task Force (EMTF) to meet the challenges outlined by the Agreement. Since 2007, the EMTF has implemented the following measures in regards to employee programs and the city as a whole:

1. City employees ride Sarasota County Area Transit (SCAT) buses free of charge. City employees who ride the bus not only reduce their carbon footprint, save money on gasoline, and take their vehicles off the road – they exhibit personal changes and collectively make a difference.
2. Sarasota city leaders joined the Florida Green Building Coalition and are working to become certified as a Green Local Government. Such leadership employs the green economy and illuminates the possibilities for local developers.
3. Work schedules within the Sarasota Police Department have modified 5 eight-hour shifts to 4 ten-hour shifts, in order to reduce driving and gas consumption. Advantages include more time to spend with family and community, further modeling how change provides benefit.
4. The Sarasota municipality implemented a "No Idling" policy for city vehicles, thereby reducing greenhouse gases (GHG) and creating a simple behavioral change that city employees will most likely implement in their personal lives as well.

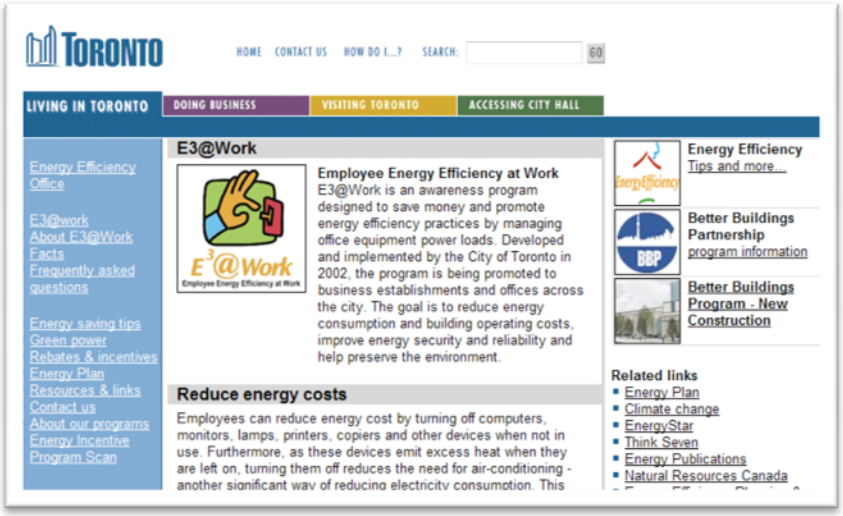
Source: http://www.sarasotagov.com

In 2008, the Environmental Management Task Force made the recommendation to create an Environmental Services Position. In the first six months, the position was able to save over $13,000 in simple steps that include reduction in city hall energy bills (due to the energy efficiency campaign), changing light bulbs and recycling efforts. The Environmental Services Coordinator and Subcommittees were able to branch out from the municipality as liaison to coordinate important efforts and strategic goals that comprise the following: Energy Conservation, Water Conservation, Recycling and Waste Reduction, Urban Forestry and Landscaping, Transportation and Fleet Management,

Transportation Management, Green Jobs, Climate Change, Internal Codes and Regulations/Green Building. [6] An internal employee designed a website and maintains it regularly to showcase Sarasota's best practices and upcoming events; and even includes tools such as a carbon calculator. Under the direction of the Environmental Services Coordinator and Subcommittees, the following activities occurred within the first year of the position:

- Sarasota sponsored an Electric Car show, hosted by the Florida Electric Automobile Association (FLEAA) at City Hall, and provided a forum to encourage the formation of a local Electric Car association.
- The City created the S.A.V.E. program to mentor high school and college age students, and continues to provide opportunities for sustainability internships.
- Speakers from nationally and accredited institutions were invited to educate staff, including members from the Florida Solar Energy Center and the Southern Alliance for Clean Energy.
- Sarasota conducted Environmental Education seminars for the public in partnership with community organizations.
- The City initiated outreach and presentations to schools, educational organizations, and community groups. These include Sierra Club, Mothers of Preschoolers, Boys and Girls Club, and the Local Women's Club of Sarasota.
- Sarasota participated in the 2007 National Conversation on Climate Action and Focus the Nation events.
- City neighborhoods became involved in Keep Sarasota County Beautiful programs. City staff serves on the KSCB board.
- Civic participation efforts and the public relations campaign that were launched through City Hall has expanded into various sectors of the community.

Employee Energy Efficiency at Work: E3@Work.



Source: http://www.toronto.ca

The U.S. Department of Energy predicts that between 1998 and 2020, office equipment will be the fastest growing commercial electrical energy use. When municipal officials from Toronto, Canada determined that the City was managing significant energy inefficiencies associated with office equipment use, they designed a program to address the problem. As

in most administrative offices, there are several devices that are used in daily operations that require a heavy power load - computers, monitors, copiers, printers, and scanners, as well as the less conspicuous suspects such as desk lamps and various appliances. When these electronics are turned off while still plugged into an outlet or extension cord directly into the wall, there is a *phantom load* that continues to draw energy. The phantom load can be thwarted by plugging the electronics into a power strip cord and turning the main switch off at day's end. This simple activity can collectively achieve enormous savings over the span of a year.

In answer to the E3@Work initiative, the Federation of Canadian Municipalities (FCM) conducted a case study for CFB Halifax, a military base that employs approximately 6,000 personnel.[7] The FCM's background research revealed that the phantom load for one computer left on after hours cost $63 per year, while a task light left on each night wasted $34 in electrical costs annually. An employee awareness campaign with an annual cost of $250,000 at the base is estimated to save $600,000 annually in energy costs - and would pay for itself in five months![8]

The developers of this initiative implemented an eight-step plan with goals to reduce their energy load and increase awareness:

1. *Assemble a Team*: Develop a team of diverse stakeholders within the city and nominate a Champion to be the point person in each office and for the program as a whole.
2. *Identify Awareness Program Opportunities*: Access the best energy savings ideas and create awareness surrounding these ideas.
3. *Establish Awareness Program Objectives*: What will the city accomplish? In what period of time?
4. *Develop a Communications Plan*: Who is the target audience? How can the audience be reached? What are the challenges? What are the methods to communicate?
5. *Implement the Plan*: Have a kickoff event and roll out the program. This should include target audiences and the media.
6. *Evaluate and monitor the program*.
7. *Track and report the progress*: Develop a tracking system and share the progress with the city and all interested parties on a quarterly basis.
8. *Follow through*: Celebrate success and continue working on consistency and expansion.

To build on the work of E3@Work, The Office of Energy Efficiency and Natural Resources Canada developed a guide entitled "Energy Planning and Management."[9] The guide was originally developed in 1981, revised in 1993 and reformatted in 2002. This resource guide focuses on billing, design, planning and development within buildings, and covers each area while including a detailed checklist and questionnaire to help apply cost savings and energy efficiency design to business and organizations.

Burlington, Vermont's 10% Challenge: Alliance for Climate Action

In 2002, state, local and regional organizations and businesses in Vermont created the Alliance for Climate Action, with the commitment to achieve a 10% reduction of carbon emissions across the board. The program was launched in the City of Burlington, Vermont and has since expanded to all corners of the state and business sector. The mission of the Alliance is, "To encourage reductions of greenhouse gas emissions by at least 5% per year by households, businesses institutions and communities with the overall goal of 25% reductions by 2012."

Source: http://www.10percentchallenge.org

The Alliance is structured as a roundtable, where a wide range of stakeholders share their ideas, vision, resources and best practices, in order to build momentum for the project. Organizations, cities, businesses and households enlist with the 10% Challenge simply by completing three easy steps:

1. *Sign up*: The interested stakeholder registers at www.10percentchallenge.org.
2. *Calculate emissions*: There is an easy on-line tool to create a baseline measure, which is updated on a monthly or quarterly basis to measure progress.
3. *Pledge to take action*: This step is essential for success. The challenge includes ways in individuals can reform their living habits to reduce their own carbon emissions. Each activity is described in the scope of the big picture, and how collectively these small changes make a significant difference.

The 10% Challenge has been so successful for Vermont that New York, New Hampshire, Colorado and Minnesota are pursuing use of this model for their communities.

One of the key successes of the program is the 10% Challenge Champions. Having sustainability champions helps to motivate people to action. These champions are enthusiastic, bring ideas to the table, listen to others and serve as a catalyst to move people to action.

After the first year, the 10% Challenge created a list of lessons learned:

- Linking to a larger vision of sustainability inspires people to join campaigns like the 10% Challenge.
- Identifying project champions and promoting early success stories encourages participation.
- Messages simple and fun enough to pass the "kid test" work best.
- Emphasizing immediate reasons for acting, including cost savings and health, is crucial.

- Involve key stakeholders (elected officials, municipal decision makers, faith communities) from the start.

Associated costs to implement the 10% Challenge are sufficiently offset – the website design for Burlington held the biggest price tag. Costs for the website detailed $12,000 for design and development, with a yearly maintenance fee of $500 to $1,000 a year. The city staff and the Alliance agree that the payoff is well worth the investment. [10]

Portland City Hall in 2009

Much can be said of the work that has been accomplished within the walls of Portland's municipal government to make the building itself more energy efficient. The grand entrance into the front lobby of City Hall opens widely to a beckoning marble staircase and a period chandelier that powers compact fluorescent light bulbs. The exit signs glow red by LEDs and ballasts have been upgraded in every ceiling fixture. There is recycling in the hallways. Closets are stocked with green cleaning products. Windows are insulated.

To the trained eye, it is pleasingly apparent that Portland's Green Team and powers-that-be have been carefully considering many ways to make City Hall more green. But, if City Hall is going to actively influence the rest of Portland to become a sustainable city, there are many missed opportunities here to educate those who walk through the front door without a 'trained eye.' Would the average citizen think to look up at the lights, or know what businesses in town might sell such goods? Would the person who came in realize the health benefits for taking the stairs, or think to turn out the lights in the bathroom upon leaving? Do people even know in general about Portland's Green Team and City Hall's Walking the Talk?

The next step for Portland City Hall is to start from the ground up by helping employees and associates begin to incorporate changes within their own lives, and beginning with education and communication. Is everyone able to prevent phantom load in each of the departments? Are the departments held accountable for individual energy usage? Are ideas and discoveries able to be shared? Are there incentives that might encourage small changes?

And once these things begin to take shape, how can the efforts of City Hall associates and employees serve as an example of the possibilities for the rest of Portland?

Recommendations

- Hire a Sustainability Coordinator.
- Develop an Incentive Program.
- Implement Best Practices from Your Green City Hall Sarasota and the 10% Challenge.
- Adopt E3@ Work.

Recommendation 1 – Create a Sustainable Community Liaison position

Educating City employees, providing incentives, and deriving departmental accountability is a coordinated effort that requires organization. Showcasing City Hall efforts, providing outreach and serving as a collaborative liaison requires time and sponsorship. These efforts amount to cost savings for the City, as well as viable stepping-stones to influence sustainable practices throughout the rest of Portland. The SCL coordinator will:

- Connect City Hall to schools, and create local partnerships with neighborhood organizations and small businesses.
- Network with other cities and grants beyond Portland.
- Provide Portland City Hall a point of convergence and communication for smaller efforts, such as restoration projects, economic issues, sustainable design, Portland Landmarks, resource conservation, and traffic calming measures.
- Showcase City Hall greening by developing and maintaining a website as a resource for City Hall employees, Portland residents, stakeholders, and anyone interested.
- Take the successes of City Hall greening and share information with other businesses, organizations and communities.
- Participate on local boards for food safety and neighborhood associations.

The efficacy of City Hall energy usage and interdepartmental communication, as well as departmental accountability on energy usage will cover the cost for the position.

Recommendation 2 – Develop an incentive program

Recognition Professionals International published research that shows how successful incentive programs are to inspire reform. These studies outline the need an employee has to progress beyond his or her paycheck and serve a purpose for the common good. [11] An employee energy incentive program would certainly constitute the common good. Various publications by Recognition Professional International indicate that incentive programs produce a more committed employee and higher retention in the organization, as well as create a culture where more people take the lead in programs that promote a better work environment.

Source: http://www.city-data.com

Educating City Hall employees to make changes and providing incentives will help people get over the initial hump of how and why

to get started. Ideas for incentive programs include:

- Free transit;
- Discount cards to use in local businesses;
- Acknowledgement;
- Breaks or time off.

Recommendation 3 – Implement Best Practices from Your Green City Hall Sarasota and the 10% Challenge

Help City employees calculate their own personal carbon footprint and connect them to tools that can help them do this. Extend education to the public on local resources, opportunities, and partnerships:

- Create a reputation for City Hall that supports sustainability.
- Provide tools for personal calculations and resource access.
- Develop partnerships with community groups and local green business.
- Hold events that showcase local green businesses and resources for conservation and retail goods. Coordinate with local events such as First Friday Art Walks, Green Streets, and select Farmers' markets to encourage people further down Congress to City Hall.
    - Electric auto shows;
    - Organizations and NGOs;
    - Creative economy entrepreneurs;
    - Green builders;
    - Renewable energy experts.

Recommendation 4 – Adopt E3 @ Work

As evidenced by E3@Work, small changes in routine employee behavior amount to cost savings. Ways in which City Hall employees can begin to make a difference might include some simple changes:

- Reduce phantom loads by plugging electronics into power strips provided by the City and turning them off at day's end;
- Taking the stairs instead of the elevator;
- Carpooling or taking public transit. Such bigger picture efforts might be incentivized by the city;
- Sharing ideas amongst other departments;
- Calculating their personal carbon footprint;
- Participating in events within their neighborhood;
- Volunteering;

- Buying locally.

Beyond City Hall

As City Hall employees begin to see how the changes they've made at work have created cost savings and health benefits, they will incorporate these reforms into their daily lives, thus affecting family, partners and their surrounding communities. They will have a new sense for accessing resources that will provide assistance with assessing energy inefficiencies, and will behave differently around energy usage. They will look for opportunities to use renewable energy technology, and have a stronger sense of their own impact on climate change.

Maine Tools for Sustainable Homes and Businesses

Efficiency Maine is a statewide effort to promote efficient use of electricity, help Maine residents and businesses reduce energy costs, and improve Maine's environment. Efficiency Maine is funded by electricity consumers and administered by the Maine Public Utilities Commission.[12] The group encourages Maine citizens to go carbon free by registering at www.carbonfreehomes.org. The idea behind carbon free homes is to encourage Maine citizens to reduce their carbon emissions and invest in green energy. Since its launch in 2007, Maine people have saved approximately 2,157,266 lbs of carbon or 1078.63 metric tons. (The average person produces 19 metric tons of CO_2.) The website and resources at Efficiency Maine have helped businesses, governments, homeowners and organizations switch energy systems while providing rebates and cost incentives for investing in green technologies.

In Conclusion

The commitment made by the City of Portland to become a sustainable municipality is lofty but attainable. The three interdependent aspects that define sustainability – economic, social, and environmental viability – rely on collective reform that begins with culturally influenced behaviors. In order to revolutionize those aspects that relate to public values and norms, there must be leadership that is willing to portray concern for sustainability and modify to meet its standards.

Portland City Hall officials and employees have an opportunity to lead reform for sustainability by instituting an employee energy efficiency program that will inspire and reward personal changes in daily behaviors. As members of the Portland's City Hall community transform ways of doing things at work, it is reasonable to assume that such deliberate activity will be practiced privately. Those who enter City Hall may learn a new way of doing business. Those who know members of the City Hall community may respect personal decisions and modifications, and learn from them. Those who are new to the concept of sustainability may be enriched by City Hall presentations and networking. The possibilities for outreach and public education through partnerships and simple contact are far-reaching.

As it is often said, 'As Maine goes, so goes the nation.' City Hall will lead its greater municipality in such a manner. Portland will achieve its vision for a sustainable future, but first will have to realize the transformation from the inside out.

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The Creative Economy: Inspiration from the Renaissance City

Tom Devine

ABSTRACT: Our economy is transforming into one in which human creativity is the main generator of wealth. Creative workers are those who create new things, such as artists and writers, and those who solve complex problems, like scientists and other skilled professionals. It is thought that a higher concentration of creative workers and creative individuals provides a competitive edge to a region in our evolving economy. Creative workers live where they want and jobs follow them. They are attracted to tolerant areas with a high quality of place. Universities are a necessary but insufficient component of a creative center. Development of Portland's creative economy has been a critical ingredient in the city's revitalization and the Maine College of Art's acquisition of the vacant Porteous building can be seen as a tipping point in this transformation, although New Bedford, Massachusetts failed to achieve similar results with their attempt to implement Portland's strategy as a formula for success. Research suggests that Portland still possesses major untapped creative potential. Providence, Rhode Island has become known too for its revitalization centered on arts and culture, and much can be learned from its experience. However, the best lessons can be drawn from the process in which WaterFire Providence developed from a reluctant artist's good idea into the symbol of Providence's renaissance. To continue to strengthen its creative economy, Portland should be wary of formulas for success, embrace the randomness and spontaneity of good ideas, promote Portland's value of diversity, take steps to better integrate its universities into the city and continue implementing the Creative Economy Steering Committee's recommendations.

What is the creative economy?

Definitions of the creative economy vary. Richard Florida, a Carnegie Mellon professor who helped to popularize the idea of the creative economy, offers one definition. He says that the economy is transforming into one in which the greatest generator of wealth is human creativity.[13] The rising importance of creativity in our economy, he says, is responsible for major cultural and social changes in the world.[14] In particular, creative workers decide where they like to live, and jobs follow them or are created by them.[15] Florida defines this group of creative workers broadly. They include people who create new things, such as artists, writers and musicians as well as people who solve complex problems, including professionals in such fields as finance, law and healthcare. This group, by Florida's measure,

amounts to roughly one third of the American workforce.[16] This definition has been criticized for being so broad that it includes virtually every profession (175 of them) that requires a college degree.[17]

The New England Foundation for the Arts (NEFA) proposed a narrower definition that includes 75 occupations and amounts to less than three percent of the nation's workforce. This group excludes Florida's complex problem solvers, and is limited to occupations traditionally considered part of the arts. It is limited to a "cultural core" that includes "occupations and industries that focus on the production and distribution of cultural goods, services and intellectual property."[18] This, however, does not imply that the creative economy is this small, but that for the sake of measurement focus should be on this core.
The question of whether one definition is better than the other is beyond the scope of this paper. However, any examination of the creative economy must take into account that its definition is unsettled, with a ten-fold difference between the two I mention. It is especially important that studies measuring the creative economy across time or geography use a consistent definition. The New England Foundation for the Arts notes the importance of the creative economy: the hypothesis is that a relatively higher concentration of creative enterprises and creative workers in a geographic area yields a competitive edge by elevating the area's quality of life and improving its ability to attract economic activity.[19]

The Growing Importance of Place

Richard Florida asserts that creative people cluster in "creative centers" and they choose locations on factors other than merely employment. Jobs, he says, follow creative people or are created by the creative people.[20] Therefore, instead of directly following jobs, they locate simply where they want to live. Creative people, he asserts, chose places with a number of qualities.[21] First, they tend to be attracted to places that suit their lifestyle, with local amenities and nightlife. Second, diversity is a major draw because creative people want to live where their creative identity is accepted and affirmed. In this regard, size matters less than cosmopolitanism. Third, creative people value authenticity. That is, a place's history, historic buildings, and local character in the form of such things as a local music style, are considered assets. Local businesses are considered more authentic than chain stores. Florida calls all these factors that play a part in creative people's location decisions *quality of place*.

Fostering the Creative Community

Florida posits that nurturing the creative economy requires an approach that differs greatly from traditional economic development strategy. Places must be people-friendly before business-friendly because businesses no longer call the shots.[22] Places can meet Florida's notion of quality of place by being diverse and welcoming and by attracting young people.[23] Young people, he argues, are economic assets because as recent graduates they often have the most up to date skills, and they tend to be risk-taking workhorses before they start a family.

However, according to Florida, the "presence of a major research university is a basic infrastructure component of the creative economy."[24] It is a necessary, but not sufficient factor that can drive the creative economy by means of what Florida calls the "three T's": Technology, Talent and Tolerance.[25] Universities create innovative new technology through cutting-edge research. They attract talented faculty and students. And they foster a tolerant atmosphere by creating a "progressive, open and tolerant people climate."

Florida asserts that his view of the role of universities explains why some places with great universities, such as his own Pittsburgh, fail to prosper.[26] Knowledge, he says, is created everywhere but is not always absorbed where it is created. It may be created in Pittsburgh but commercialized in creative centers such as Silicon Valley or Boston. He uses the metaphor of a university broadcasting a signal that requires that its region have a receiver to absorb it. Increasing this "absorptive capacity," by Florida's thinking, would do more for a place's economy than the traditional economic tools of tax incentives or subsidizing a new stadium.

The idea of the creative economy is revolutionary in its implications for economic development strategy. If the economy moves the way creative economy advocates predict, then business location decisions are no longer considered a race to the bottom, to the region with the lowest tax rates and highest subsidies. If we must attract talented people to attract and generate economic activity, the goal is to have a people-friendly environment. An improved people-friendly atmosphere can have benefits beyond economic development, in the social and environmental realms.

Portland Has Come a Long Way

As far as having a thriving art and cultural scene, other cities could learn a thing or two from Portland. Downtown Portland had suffered a period of decline in the second half of the twentieth century, as did many American downtowns, Maine College of Art's (MECA) acquisition of the vacant Porteous department store building in the early 1990s is seen as a tipping point from which Portland's downtown came back to life to become the vibrant district it is known as today.[27] This, of course, did not occur in a vacuum. For instance, the city created the Congress Street Arts District in 1996. But MECA's move into the Porteous building was such a tipping point toward downtown vitality that another city has looked to it as a formula for success. New Bedford, Massachusetts, its downtown suffering for decades by the 1990s and containing a vacant, centrally located department store, looked to Portland for inspiration. In the late 1990s, nearby University of Massachusetts Dartmouth relocated its College of Visual and Performing Arts into New Bedford's vacant Star Store Building.[28] Whether downtown New Bedford experiences the same level of transformation downtown Portland did will offer some insight into just how much MECA's acquisition of the Porteous building is responsible for Portland's current vitality. So far, New Bedford's use of Portland's formula has failed to be the same tipping point that it was for Portland.

In the spring of 2006, the City of Portland held a Creative Economy Summit, attended by over 200 members of the region's creative economy. Many powerful ideas came out of the summit that participants condensed into three key recommendations. First, it recommended that the city work to build its identity as an "international creative center" by, among other things, identifying what is unique about Portland and promoting it, as well as by creating a "very special event." Second, noting that high rents were threatening the vitality of downtown Portland, the summit recommended that the city develop "publicly supported and/or affordable public space for artists." Third, it recommended increased collaboration, coordination, and communication by creating an infrastructure, nurturing public-private partnerships, and specifically, creating an office of Arts and Cultural Activities.[29]

Following the ***Creative Economy Summit Report***, the Portland City Council formed the Creative Economy Steering Committee in December, 2006. In October 2008, the steering committee published a number of recommendations to the city council. First, it recommended that the city create an Arts District Tax Increment Financing (TIF) district to fund a new quasi-municipal agency. Second, the committee recommended creation of a Creative Economy Fund to support projects and programs for the creative economy. Third, it recommended promoting the "creative enterprises cluster." Fourth, it suggested that the city address attrition of artists to cheaper locations. Fifth, it recommended creation of a downtown center for the arts that offers such important support for the creative community as incubator and live/work space. Sixth, a creative economy website, it recommended, should be created. Seventh, the city should support tipping points; that is, identify and support small actions with big results that will bring the creative community to a new level of accomplishment. Eighth, the committee recommended that the city should conduct an analysis of its creative economy. Ninth, Portland should create a programming strategy for current events and cultural activities.[30] The city council is beginning to implement these recommendations, starting already with the creation of the TIF district.

Richard Florida and his colleagues have ranked regions based on a battery of creative economy indicators. One indicator that may be of particular interest to Maine as it fights to stem the loss of college graduates is what Florida's research team calls the "drain/brain growth index." It measures the net gain of college-educated residents in a region. They found the Portland, Maine region not only have a net influx of college-educated people, but ranks high at 20 out of over 300 regions measured. Even more striking, Portland ranks third on an index of brain drain/growth and university strength (per capita students and faculty). Its peers on this list include international centers of arts and innovation: Austin, Boston, Raleigh-Durham, San Francisco and San Jose. The researchers note that any region's ranking high on this list but not currently known as a high-tech center may have "unrealized creative potential."

The Not-So-Parallel-Case of Providence

Providence, Rhode Island differs from Portland in a number of important ways. It is nearly three-times as large as Portland. It enjoys greater transportation connectivity than Portland, with a stop on Amtrak's busiest route and inclusion in the Massachusetts Bay Transportation Authority's Commuter Rail Network. Moreover, Providence has nine colleges, with three of them—Rhode Island School of Design, Johnson & Wales University and Brown University—in and around downtown. However, the city's trajectory of revitalization has not been unlike Portland's.

By what important means?

Both cities have undergone their own revival, though Providence's has been so dramatic as to bring the city notoriety under the nickname, the "Renaissance City." Its revival was indeed more dramatic than Portland's, for it involved a $300 million infrastructure project that relocated railroad tracks and roads and uncovered and moved two rivers. However, the infrastructure project was complemented by good policy. Since the 1990s the city designated an Arts District with tax exemptions for artists living and working within it, and created a single Department of Arts, Culture and Tourism.[31]

This revitalization has centered on arts and has not occurred by deliberate effort alone. When Brown University Graduate Barnaby Evans saw that the centerpiece of Providence's physical transformation—Waterplace Park—was not much utilized, he had an idea to create physical public art that would draw people to this new area of the city. He was given $3,000 by the Providence First Night Board in 1994 to "do something celebratory". He felt that the scale was too small to draw people in, but it was generally considered a success.[32]

In June of 1996, the city asked Evans to again produce the art display during an arts festival. Although he was reluctant – thinking the performance was just a one-time thing – he agreed and produced an even larger display with 36 braziers burning in the river during four nights of live music.

With what effect?

Evans' Waterfire was considered "an unqualified popular and critical success and now occurs throughout each summer as often as funding permits.[33] Waterfire is now seen as a symbol of Providence's renaissance.[34]

Opposition

Barnaby Evans' idea to light 11 fires on braziers in the river basin on New Year's Eve, 1994, ran against skeptical permit-granting agencies. However, bureaucrats used their discretion to let a good idea have its chance. Evans' himself was convinced Waterfire was a one-time success, and had to be cajoled by the city into repeating it.

What Key Lessons for Portland?

Be wary of formulas for success

Relocation of a college arts program into a vacant downtown department store does not appear to have had the same transformative power for downtown New Bedford as it has for downtown Portland. Displaying Barnaby Evans' Waterfire in Portland probably would fail to become the symbol of Portland's renaissance as it became for Providence.

Embrace the randomness and spontaneity of good ideas

Good ideas often come randomly and from a single person. A good idea may be abandoned without others recognizing its potential and offering their support. The city should use its discretion to give good ideas a chance. For example, zoning should be adjusted to accommodate innovative building designs if current regulations do not allow it. When an idea as powerful as WaterFire comes to Portland, the city should be ready for it.

Recommendations

Continue Implementing recommendations from the Creative Economy Steering Committee

Between the 2006 Creative Economy Summit and the recent report from the Creative Economy Steering Committee, much work has already been done and many good ideas have been voiced. The city council should continue implementing these ideas.

Market Portland as a city that values diverse people, lifestyles and ideas

Because Maine is one of the most racially homogenous states in the nation, outsiders may fail to see that Maine and its largest city do indeed embrace diversity. As Richard Florida points out, creative centers develop where creative and talented people decide to live, and this choice depends in large part on how tolerant cities are of different kinds of people. Portland has this quality and should promote it.

Get the most out of the area's colleges

The downtown transformation that followed from Maine College of Art's acquisition of the Porteous building shows that it doesn't take a major research university for a place to be a creative center. And research shows that Portland has untapped creative potential. The city can exploit one of its other colleges, the University of Southern Maine (USM), further. Partly because USM is outside the Peninsula and a highway separates it from downtown, USM has failed to integrate into the city. However, USM does offer many positive benefits to its immediate neighborhood, such as the renovation and reuse of underutilized buildings (the Library and Campus Center) and its support for an eclectic small business community off the peninsula. Steps should be taken to foster integration so that the university can further contribute to the city's creative economy and overall quality of life.

To Do List

1. Indicate on the main page of the city's website that the city welcomes diverse people, lifestyles and ideas.
   Who: The city's webmaster
2. Work with USM to extend the Portland to Gorham shuttle to have a downtown Portland stop.
   Who: University of Southern Maine administration
3. Encourage USM to acquire neighboring vacant buildings.
   Who: University of Southern Maine, Portland Planning Department

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[24] Ibid., 291.
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[27] Barringer et al, p. 47.
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[29] Cohen et al.
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Supporting Local Food in Portland, Maine

Gray Harris and Kristel Sheesley

ABSTRACT: A robust local food system promotes economic, environmental, and social wellbeing. This report suggests ways that the City of Portland can implement the Sustainable Portland Taskforce's recommendation to support local food production and marketing. Based on interviews with local experts and on case studies from other cities, our recommendations cover the four main categories of the food system: production, distribution, acquisition, and consumption. For each recommendation, we include a policy direction, specific action steps, and potential barriers to implementation. We hope these will encourage the Council to build on and support the promising local food initiatives currently happening in Portland.

Introduction

It's not often that vegetables dominate front-page news. But this spring, the Obama family's White House vegetable garden – the first veggie patch on White House property since Eleanor Roosevelt's "victory garden" – made headlines in national papers. This newsworthy story indicates a larger trend going on in the United States: increasing demand for locally-produced food. The trend is indicated by a string of best-selling books that have tapped into a wide audience for local food – including Michael Pollan's 2006 ***Omnivore's Dilemma*** and ***Animal, Vegetable, Miracle*** by Barbara Kingsolver in 2008. Record numbers of American families are joining Community Supported Agriculture farms, planting backyard gardens, and shopping at farmers' markets.

Even in colder climates like Portland, Maine, local foods are a hot item. Seed distributors and garden supply shops have reported a surge in orders, community gardens maintain long waiting lists, and farmers' markets are maxed out with vendors. Perhaps it is no surprise, then, that in 2007, the Sustainable Portland Taskforce suggested that the City of Portland adopt measures to support local food production and marketing. Part of the ***Sustainable Portland Taskforce Report***, this recommendation was one of 50 ideas for Portland to achieve greater environmental, economic, and social sustainability.

The goal of this paper is to suggest practical ways for the City of Portland to implement the Taskforce's recommendation. We begin by reviewing the ways in which a well-functioning local food system promotes environmental, economic, and social well-being, and then we briefly explain the various components of a regional food system. The bulk of our paper contains recommendations for ways in which Portland can support the regional food system; we include broad policy directions, specific action steps, and barriers. Our recommendations are based on interviews with a range of people involved in the

Portland food system, and on the experience of other municipalities of similar size and demographics to Portland.

Why Local food?

Why should the city of Portland support a local food system? There is a large body of research supporting local food initiatives, not the least of which is Maine's own report, ***A Food Policy for the State of Maine***. Developed by a working group and advisory committee convened by the Commissioner of Agriculture in 2006, this report lays out eleven food policy goals for the State of Maine, and specific actions to implement those goals. This report and our research suggest that a local food system contributes to the economic, social and environmental well-being.

Economic reasons pose one of the strongest arguments for local food. Purchasing locally keeps dollars in the local economy. According to ***Food Policy***, Maine consumers spend roughly $3 billion a year on food, only 4% of which is spent on Maine farm and fisheries products. If Maine consumers shifted just 1% of their food expenditures towards local food, farm sales could increase by 5%. Put another way, Russell Libby of the Maine Organic Farmers and Gardeners Association says that if Mainers redirected just $10 of their weekly grocery budget towards local food, it would generate an additional $100 million in state revenue every year. [35] In 2006, gross sales of farm products contributed roughly $553 million to the state's economy; supporting local food would further strengthen the agricultural sector that already contributes significantly to Maine's economy.

A strong local food system brings social benefits as well. Diverse, abundant local food contributes to community food security – which means that people have access to healthy, fresh and culturally appropriate food within their own communities. The USDA has determined that only 1 in every 10 Mainers is food secure, as Maine produces only 20% of the food that its residents consume.[36] Local food initiatives can help close the gap, by supplying local food to underserved communities and by using local food for meals served at institutions like schools and hospitals. Further, strengthening connections between producers and consumers – so that people know who grew or raised their food – creates a more closely-knit social fabric.

A well-functioning local food system benefits the natural environment. Since 2001, residential and commercial development has taken the place of more than 22,000 acres of prime farmland in Maine.[37] Supporting local farms helps ensure they remain viable, making it less profitable for farmers to sell their land to developers. Further, Maine's imported food travels on average over 1,900 miles from field to plate—up 25% from 1980—and uses up to 17 times more fossil fuels than locally sourced foods. Keeping Maine foods in state reduces environmental and economic costs associated with long-distance food transport. Also, small-scale farms are more likely to operate organically, reducing the amount of harmful pesticides and fertilizers applied to agricultural land.

What Does a Food System Encompass?

As Portland considers supporting a local food system, it is important to know what that system entails. Obvious ingredients are food and the people who consume it, but the full picture is broader. The food system includes five main components: production (growing and raising food), distribution (moving food from field to seller), acquisition, consumption, and waste.[38]

Where does Portland fit into this system? Because the City is predominantly urban, with a little more than 60,000 people living in 22 square miles, it may be argued that Portland's principal involvement is in the acquisition and consumption of food. Certainly, Portlanders cannot grow all of the food they consume, but they can purchase and consume food grown in agricultural areas surrounding the city. In fact, Portland also plays a role in the production and distribution of food, as well. In order to move toward a sustainable local food system, Portland must consider all of these interrelated components, and our recommendations span these categories.

Recommendations

Our recommendations are primarily based on interviews with people who are involved in food and farming in greater Portland area, including farmers, policy advocates and municipal officials. Where appropriate, we have also included relevant case studies from other cities, to highlight innovative and replicable initiatives and to identify pitfalls for Portland to avoid. We have attempted to integrate examples of initiatives and programs currently happening in Portland, to get a sense of what is working well and where there is room for improvement.

Recommendations are organized by the following categories: policy & planning, production, acquisition, distribution, and consumption. Each includes a broad policy direction, specific steps for implementing our recommendation, and, in some cases, barriers to implementation. For those recommendations without a list of barriers, it can be assumed that challenges include the usual ones of time, money, and political will. We suggest that these barriers are surmountable, particularly if there is strong leadership in the City Council to support local food and if people are creative about ways to implement solutions.

Policy & Planning: Convene a Food Policy Council

Our first recommendation is the broadest in scope and potentially the most effective in terms of achieving comprehensive, long-lasting policy change toward a local food system. We recommend that the City of Portland convene a "Food Policy Council" made up of diverse stakeholders to provide input and direction for a comprehensive city policy on a local or regional food system.

A Food Policy Council is a group of stakeholders representing various entities with a role in the food system. Convened by a municipality or state, the council meets regularly in a neutral forum to

develop recommendations for a policy to be adopted by the state or city. In addition to providing substantive, effective policy recommendations, the council brings together people who may not normally interact and enables them to share their unique needs and perspectives. In Portland's case, it will be important for the council to include stakeholders from the greater Portland region, because the city's food system depends on the agricultural lands outside city limits.

Municipalities around the country are finding that Food Policy Councils can provide meaningful policy directions. For example, Seattle, Washington recently convened a council comprised of representatives from diverse agencies. After developing recommendations for the City, the council's continued existence was deemed useful in advising the City on food policy issues. Housed under a like-minded nonprofit, the council continues to meet and provide policy advice.

Another case study is that of San Francisco, California, which is in the midst of developing a food policy for the greater Bay Area that will connect the metropolitan region to its "foodshed," the 200- mile radius of farmland surrounding the city. The City has convened a group called the Rural-Urban Roundtable, which includes representatives of widely divergent interests, including farmers, food distributors, public health officials and homeless shelter directors. They are developing a policy that would first put locally-produced food into every public meal (in schools, prisons, and shelters) and expand from there to include "everyone and all types of meals – from the highest-end restaurants to taco trucks, from hospital kitchens to corporate cafeterias."[39] Organizers have encountered some predictable challenges, including the logistical difficulty of convening a diverse group and the tougher challenge of integrating diverse ideas into a comprehensive policy. Formalizing the plan will cost money, though city officials do not yet know how much.[40]

Action step: Adopt a resolution to convene a Food Policy Council that will advise the City on a comprehensive local food policy. This task may best fit under the purview of the City Manager or the Public Services Department. Convening the council will involve identifying stakeholders, including producers, buyers, distributors, consumers, municipal and state officials (see Appendix A for a sample of potential participants), and developing a mandate and process to guide the council. Among the items for the Food Policy Council to identify are:

- Current local food policies & initiatives in greater Portland
- Any existing barriers to producing, distribution, and acquiring local foods (the city Planning Department should be consulted to relevant city ordinances)
- The food policy issues specific to Portland that a local food initiative must address
- How "local" is to be defined (i.e. Cumberland County? A 100-mile radius? The state?)

After the council has made its recommendations, the City may choose to morph it into a citizens' advisory committee that provides ongoing advice to City staff.

Production: Expand Opportunities for Community & Backyard Gardening

One of the simplest ways to access fresh, healthy, local food is to grow it yourself. Community and backyard gardening has experienced a surge in interest in recent years, due in part to rising fuel and grocery costs, a global economic recession, concerns about food safety, and a growing awareness of the health and environmental benefits of locally-produced food.

Roger Doiron, Maine native and founder of Kitchen Gardeners International, says that "economic, environmental, and health concerns have converged" to make gardening more popular now than anytime since World War II, when victory gardens provided more than 40 percent of Americans' diets.[41] According to Doiron, there are "currently 90 millions homes in the United States with yards that could include gardens providing a healthy percentage of what a family eats"[42] – and rooftop and balcony gardens provide an even greater opportunity.

For those urban dwellers who cannot garden on their own property, many municipalities – including Portland – provide community garden plots. Managed by the city's Public Services Department, Portland's program was launched in 1995 when residents in the Valley Street area began gardening on an abandoned parking lot, an indication to the City that there was a demand for public garden space. Since then, the program has expanded to encompass four garden sites with a total of 120 plots covering 18,000 square feet of land. The City provides water, compost, tools, a storage shed, waste removal, and grounds upkeep at each site.[43] The program is extremely popular among Portland residents, with the chief complaint being that the program lacks capacity to meet demand. According to the program's coordinator, Joan Perkins, there is a waiting list for community garden plots every year.

On this point of community garden space, Portland could learn from the experience of Seattle, Washington, which has an innovative community garden policy built into its comprehensive plan. Ever since 1992, the plan has required one community garden for every 2,500 households. This policy "has funneled significant funding, staff, land, and other resources into urban, community-based food production. Seattle now features over 60 gardens with over 2,000 plots that serve approximately 6,000 families."[44] Most of the gardens are on city-owned property, but others are on private land, making more acreage available for urban gardening.

<u>Action step</u>*: Expand and improve Portland's community garden program and encourage backyard gardening. The Public Services Department, working with the community garden coordinator and the City Manager, could take the following specific steps:*

- Advertise and celebrate Portland's community gardening program more effectively. Currently, the City's website contains sparse information, and some of it is outdated.
- Inventory public land and devote marginal or "surplus" plots to community gardens; the City Manager could glean information about suitable sites from neighborhood association representatives during his regular meetings with them.
- Supply basic infrastructure for new sites, including water access and fencing.
- Test soil for contaminants and remediate or supplement soil if necessary.
- To support backyard gardening, continue to supply free soil test kits through cooperative extensive services, and assist with soil remediation.
- Consider planting a City-sponsored garden in a prominent location, such as Lincoln Park, to serve as a demonstration garden and inspiration for Portland residents.[45]

Barriers to implementation

Obvious challenges include the costs associated with providing staffing, material, and services for new community garden sites, as well as the prevalence of heavy metal contamination in Portland soils. A perceived barrier to implementation might be limited city-owned land to devote to gardens. To overcome the costs involved, the City might consider providing fewer services at community plots. While landscaping and tool sheds are undoubtedly appreciated, they are something of a luxury, and if eliminating them means offering more people access to low-cost, healthy foods, we feel it is a sacrifice worth making. Soil testing and remediation are priorities, as much of Portland's soil is contaminated; the City may find some assistance for this from the Cumberland County Cooperative Extension or the Maine Board of Pesticides Control.

While it may be claimed that the City does not own enough land to devote more space to community gardens, a recent example proves that creativity can produce surprising results. This spring, the City agreed to lease an unused portion of the Evergreen Cemetery to the Deering Center Neighborhood Association for $1 a year. The overgrown, six-acre parcel will be cleared, connected to city water lines, and turned into a community garden at little cost to the City. The City is to be commended for supporting this effort, and it should encourage similar community-based solutions.

Distribution: Support Opportunities for Centralized Distribution

In Maine, one of the greatest challenges for a local food system relates to distribution – that is, getting food from producer to buyer. Even when there are willing purchasers for farm products, it can be expensive and logistically complicated to transport products from the farm to consumers, especially when a farmer must make many trips to individual purchasers. Small scale farms may not produce enough to achieve economies of scale that justify pick-up by distributors. Places as diverse as Louisville, KY, Philadelphia, PA, Metro DC, and Marin County, CA and are testing different models to address this

challenge with small "boutique" distribution companies. These companies differ from each other in structure (many are private or public-private partnerships), but share common goals of connecting farmers with consumers, maintaining the integrity of the story of how the food was grown, and creating distribution systems that are appropriate to small scale local food production.[46]

Farm to Fork, a pilot project of the Marin Farmers' Market, is a distribution company that uses a farmers' market as a hub: farmers drop off produce on the way to the market, and Farm to Fork delivers it to restaurants and institutions like schools and hospitals. In Philadelphia, the Common Market received a state grant to begin distributing local commodity items to institutions, which allowed them to reach economies of scale quickly as well as maintain their commitment to equitable access to food in underserved communities.

The Greater Portland Council of Governments is currently considering a way to strengthen the local food distribution system – an innovative concept called the Maine Street Marketplace. The Marketplace would allow Maine farmers to list their products on a central website (coordinated by Cooperative Extension), where retail and wholesale consumers could choose from available products and place orders. A centralized distribution system, paid for by a small fee added to each order, would transport goods to consumers. Some benefits of the Marketplace are that it would:

- Help connect producers and consumers – and perhaps most important, enable producers to sell wholesale to big consumers like restaurants, hospitals, schools, and even large, conventional grocery stores
- Keep Maine products in Maine, rather than being shipped out of state to a central distribution center and then shipped back to stores in Maine, as often happens currently
- Fuel the Maine economy
- Require farmers to pack only what they sell, reducing wasted time and products (making this option superior to the central distribution center, below)

Action step: Continue to participate in discussions about the Maine Street Marketplace, determining what role Portland can play to support this program. It will be important to ensure that farmers/ producers have a central role in discussions, and that the Marketplace is structured so that it actually benefits them. Maine companies that are already operating similar models (such as Crown of Maine and Associated Grocers) should be included in conversations, as should mainstream grocery stores, who may be perceived opponents of this plan but could in fact be supportive of finding cheaper ways to source locally-grown food in their stores.

Another way that the City can support an effective distribution system in Portland is by providing hubs where farmers and distributors of produce, meat, and other products can connect with wholesale and

retail consumers – restaurants, institutions like schools and hospitals, as well as residents of Portland and seasonal tourists. Farmers who run Community Supported Agriculture operations have expressed the need for a public meeting space in Portland to exchange weekly produce shares with shareholders. Similarly, the buying club Food Now, launched by a group of Portland residents in 2006, has seen its membership grow so fast that they have had to "slow things down a bit until they could find a larger space for food pick-ups."[47]

Action step: Study the feasibility of supporting a permanent distribution center within the City of Portland for Maine farm products (which could do double-duty as a winter farmer's market). A location already under consideration for this is the Portland Fish Exchange on Commercial Street.[48] The site has all the practical amenities needed and it would be relatively simple to modify to suit the needs of farmer-vendors. Ways in which the City could support this center include:

- Fund a portion of the start-up costs to secure the deal
- Offset the high rental costs of the space to vendors by funding a portion of the lease

Action step: Support the Food Now buying club and area CSAs by providing City-owned space, such as parking lots, for producers and consumers to collect, sort, and distribute orders.

Acquisition: Create a "Local Food" Resource Page on the City's Website

Anecdotal evidence suggests that there is a robust demand for locally-produced foods in Portland. One of the easiest ways to connect consumers with sources of local food is to publish a local food resource page on the City website with links to food producers and retailers in the greater Portland region. This would be an excellent resource for Portlanders, with little cost or staff time required, as much of the material has already been compiled by other organizations. For example, the Eat Local Foods Coalition of Maine is preparing to launch a searchable online map of the Maine food system, which is designed to help people find local foods. To reach city residents who lack internet access, the City might consider publishing a simple paper version of the resource.

The webpage might include links to the following:

- Retailers in Portland that sell Maine products: Rosemont Market, Public Market House, etc.;
- Eat Local Foods Coalition of Maine's food map (once completed);
- Community Supported Agriculture Farms: Local Harvest and Maine Organic Farmers and Gardeners Association both maintain extensive web-based resources;
- Local food buying clubs, farmers' markets, and community gardens;

- Nonprofit organizations promoting local food consumption (many of which have their own local food directories), including Maine Organic Farmers and Gardeners Association, as well as relevant government agencies such as the Maine Department of Agriculture;
- Cooperative Extensions (which offer soil test kits and free gardening advice).

The city website for Minneapolis, Minnesota, is an excellent example. A page on the site is devoted to "Homegrown Minneapolis," where visitors can access a wealth of information: local food vendors in and around the city (including farms, farm stands, CSAs, and farmers' markets), upcoming events, committees and councils working on local food issues, and even recipes using fresh local foods.

Action step: Create an inventory of local food resources and post links to a special page on the City website. A local resource for this project is Tanya Swain of Western Mountains Alliance in Franklin County, as her organization has developed a similar directory for the western Maine counties.

Acquisition: Expand and Ensure Equitable Access to Farmers' Markets

Many of the food and farming experts we spoke with indicated that there is a robust market for local foods in Portland; the challenge is expanding opportunities to get locally-produced food to the people who want it. Farmers' markets are a time-tested way to connect food producers to consumers, and Portland can be proud of operating two successful markets from spring to fall – one in Deering Oaks Park on Saturdays and the other in Monument Square on Wednesdays.

There is, however, room for improvement. First, regulations around local food should be enforced to ensure that food sold at markets has really been grown at the vendor's farm. Second, both farmers and consumers expressed a need for more – or bigger – farmers' markets in Portland. Sales at the city's two markets are brisk, and farmers in Cumberland County and beyond are on a waiting list to have a booth at the market. There is a particular need for *winter* markets, as this is when Mainers have the poorest access to locally-produced food. A successful winter market currently takes place in Brunswick's Fort Andross mill building, and a similar operation could potentially happen in Portland's Ocean Gateway building or, with the consent of the property owners, the Portland Company Complex.

Action step: Conduct a market study to determine if there is a need for more days, more locations, or a bigger location for farmers' markets in Portland. Poll farmers to determine whether a winter market could be supported. Work with Larry Bruns, coordinator of the Portland Farmers' market, and with farmers in Cumberland County to determine optimal time, location, and day for the market, ensuring that the market is practical and profitable for farmers. Enforce local food rules.

A final major area for improvement is to expand opportunities for low-income and underserved Portland residents to access products sold at farmers' markets. Maine's Electronic Benefits Transfer (EBT) program provides electronic food stamps to low-income families. Of the $252,000,000 worth of EBTs distributed in Maine last year, a mere $2,000 went to farmers at farmer's markets. Most farmers have not found it financially worthwhile to buy and install an EBT machines and pay the monthly user fee. A related opportunity is that the national WIC program will include a fresh fruit and vegetable component to its monthly allotment for women and children beginning October 2009; these coupons can be used at farmers' markets only if the State approves it this fall.

Action step: Coordinate with the Portland farmers' markets to install EBT machines at market sites, using a "central machine" model where one machine serves the entire market by issuing coupons as receipts. In addition, these machines could also be used for debit and credit, which would serve the greater market population. The City may consider helping to offset the costs of these machines.

Action step: Advocate to the Maine legislature to approve the use of WIC coupons at markets.

Consumption: Farm to Institution

Farm to Institution programs link producers with local institutions such as schools, hospitals, nursing homes, and government agencies through local purchasing policies.[49] Farm to School programs include educational elements that teach kids about nutrition, healthy eating, and the role of local agriculture (i.e. where food comes from).

One such institution that the City could work with is The Barron Center. A City-managed long term care facility, the Barron Center cares for both the elderly and those who are ill. Mary McCarthy of the Barron Center is an enthusiastic supporter of local food sourcing, but admits that there are administrative and regulatory hurdles which must be faced if she were to purchase food from local farmers. Farms must be inspected by the FDA, USDA and the Department of Agriculture before they can qualify as certified vendors to the City elderly facility.

Action step: Create a local food purchase preference policy for the Barron Center. A Muskie graduate student could perhaps work with Mary McCarthy to draft guidelines and requirements for local food vendors and distributors for the Barron Center.

Action step: Support ongoing efforts to promote local food in institutions by assembling a delegation of citizens and/or City employees that can represent the City at "local food" conferences in Maine and the greater New England region. Examples of conferences that Council members might attend are the Northeast Farm to School

2nd Annual Regional Meeting in Burlington, Vermont (summer 2009), and the Northeast Network of National Farm to School Conference in Boston. The Council could also conduct field visits to municipalities that are implementing local food initiatives, to glean tips and build relationships.

Action step: Write and promote a resolution in support of the Maine Department of Education's Farm to School Bill, LD 1140 "Maine Food for Maine Schools."

One Page Summary of Recommendations

1. Convene a Food Policy Council

- Adopt a resolution to convene a Portland Food Policy Council, which will advise the City on a comprehensive local food policy. Convening the council will involve identifying stakeholders, developing a mandate to guide the council, and designing a process whereby the council will operate.

2. Expand Opportunities for Community and Backyard Gardening

- Expand and improve Portland's community garden program and encourage backyard gardening. This can be done by advertising the community gardens program more effectively, creating an inventory of public land and devoting marginal or "surplus" plots to community gardens, supplying basic infrastructure for new sites, testing soil for contaminants, and helping backyard gardeners test and remediate their soil.

3. Support Opportunities for Centralized Distribution

- Continue to participate in discussions about the Maine Street Marketplace, determining what role Portland can play to support this program.
- Study the feasibility and profitability of supporting a permanent distribution center within the City of Portland for Maine farm products.
- Support the Food Now buying club and area CSAs by providing City-owned space, such as parking lots, for producers and consumers to collect, sort, and distribute orders.

4. Create a "Local Foods" Resource Page on the City's Website

- Using resources compiled by other organizations, create an inventory of local foods resources and post links to a special page on the City website.

5. Expand, Improve, and Ensure Equitable Access to Farmers' Markets

- Conduct a market study to determine if there is a need for more days, more locations, or a bigger location for farmers' markets in Portland.
- Work with Larry Bruns to enforce regulations around local foods at existing markets.
- Help install Electronic Benefits Transfer (food stamp) machines at market sites.
- Advocate to the Maine legislature to approve the use of WIC coupons at farmers' markets.

6. Support "Farm to Institution" Efforts

- Create a local foods purchase preference policy for the Barron Center.
- Assemble a delegation of citizens and/or City employees to represent the City at local foods conferences in Maine and the greater New England region.
- Write and adopt a resolution in support of the Maine Dept of Education's Farm to School Bill, LD 1140 "Maine Food for Maine Schools.
- Attend the annual fall Maine Harvest Lunch celebrations in Portland Public Schools to support healthy, nutritious locally-produced foods in school cafeterias.

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[47] Goad
[48] Jordan
[49] For more information on instituting a Farm to Institution program, see Bellows, B.C., R. Dufour, and J. Bachmann.

Appendix A: Local Foods Contacts in Portland, ME

Contact Name	Organization	Relevant Recommendation	Phone
Susan Simonson	Barber Foods	Food Policy Council	207-577-2595
Bill Needleman	City of Portland Planning Department	Food Policy Council	207-874-8719
Nelle Hanig	Portland Economic Development Office	Food Policy Council	207-874-8683
Stephanie Gilbert	Maine Department of Agriculture	Food Policy Council	207-287-3871
Roger Doiron	Kitchen Gardeners International	Food Policy Council/Production	207-883-5341
Jim Hanna	Maine Coalition for Food Security	Food Policy Council	
Russell Libby	Maine Organic Farmers and Gardeners Association	Food Policy Council	207-568-4142
Richard Barringer	Muskie School of Public Service, USM	Food Policy Council	207-780-4430
Barbara Gulino	Whole Foods Market	Food Policy Council	207-774-7711
Amy Carrington	New Americans Sustainable Agriculture Program	Food Policy Council/Production	207-772-535
Ted Spitzer	Market Ventures	Food Policy Council	207-321-2016
Lisa Turner	Laughing Stock Farm	Food Policy Council	207-865-3743
Craig Lapine	Cultivating Community	Community Gardens / Food Policy Council	207-761-GROW
Joan Perkins	Portland Community Gardens	Community Gardens	207-874-8872
Penny Jordan	Maine Street Marketplace/Jordan Farms	Food Policy Council/ Distribution	207-767-2740
Stacy Brenner	Broadturn Farm/ Maine Street Marketplace	Distribution / Food Policy Council	207-510-1682
Emily Graham	Portland Food Coop/ Food Now! Buying Club	Distribution	207-332-9370
John Naylor	Rosemont Market	Distribution / Food Policy Council	207-773-7888
Lisa Fernandes	Eat Local Foods Coalition of Maine	Resource Page on Website	
Larry Bruns	Portland Farmers' market	Food Policy Council/ Farmers' markets	207-883-5750
Jeff Edelstein	Connecting Trails, Farmers' markets and Communities	Food Policy Council	
Gray Harris	Farms for the Future/ CEI	Food Policy Council/Production	207-882-7552
Tori Rogers	Maine Medical Center/ Maine Health	Farm to Institution / Food Policy Council	207-871-0111
Ron Adams	Portland Public Schools	Farm to Institution / Food Policy Council	
Mary McCarthy	Barron Center/ City of Portland	Farm to Institution	207-541-6557

A summary of Portland, Oregon's High Performance Green Building Policy

Shelley Hodges

*ABSTRACT**:** This paper is intended to provide an example of one city's approach to encouraging green building, in response to Portland, Maine's Sustainable Portland Task Force Recommendation Item 3: To adopt a requirement that all municipally funded new construction projects receive certification through the US Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system targeting a minimum of silver rating. And to encourage non-city projects to receive LEED certification.*[50]

The first portion of this recommendation has been implemented for City construction, so now focus needs to be placed on extending this trend outside of municipally funded projects. Last year's reports from the Sustainable Communities class at the Muskie School of Public Service aptly demonstrate the importance and benefits of green building. Portland, Maine's government is much energized around the issue of sustainability as evidenced in signing on to the 2030 challenge. As stated on the 2030 challenge website, "Buildings are the major source of demand for energy and materials that produce by-product greenhouse gases (GHG)."[51] *Providing incentives for green building is an important endeavor of the city. A summary of Portland, Oregon's High Performance Green Building Policy, as well as diagrams that outline the specific standards they intend to use, and insight from people directly involved are included in this report as an example of tools that could be utilized here in Portland, Maine.*

Introduction

Portland, Maine and Portland, Oregon have significant characteristics in common, one in particular being enthusiastic energy behind sustainability practices with key local government support. In addition, there is an undeniable name resemblance. However, it is important to consider the difference in size and its implications in the approach that Portland, ME might take in developing a policy similar to Portland, OR. Based on 2000 census data, the estimated 2006 population in Portland, ME was 63,011 and the estimated population in Portland, OR was 537,081 (about 8x that of ME). Similarly, the land area of Portland, ME is 21 square miles, and the land area of Portland, OR is 134 square miles (about 6x that of ME). In addition, there is a slight population density difference, Portland, ME having 3,029.2

persons/square mile and Portland, OR 3,939.3 persons/square mile[52]. It is helpful to see what Portland, OR has done, not as an exact template for Portland, ME but a useful framework that can be tailored and accessorized. Following is a case study into Portland, Oregon's approach to incentives for green building of non-city owned projects and buildings.

What they have undertaken

While the proposed High Performance Green Building Policy lends itself as an example and has been carefully constructed, it has not yet been adopted in Portland, OR. Development was initiated in 2007 and the soonest any new requirement might take effect is July 1, 2010[53]. Portland, OR does currently have a green building policy for its own facilities, similar to the Green Building Resolution that was adopted here in Portland, ME in April 2009, suggesting that this is a good step in the direction of encouraging this type of policy.[54] Vinh Mason, Policy Analyst for the City of Portland Bureau of Planning and Sustainability in Oregon, outlined the following steps in the process of how the policy has been developed so far. "First, the Bureau of Planning and Sustainability developed an initial framework. Second, they held a general public meeting to get feedback and reactions. Next, they held 8 facilitated stakeholder meetings, and incorporated this input into a refined policy that was released for a public comment period of 30-60 days. These responses and other further amendments are now being woven into a final version that will be considered by the City Council later this summer."[55]

Following is a description of the main structure of Portland Oregon's High Performance Green Building Policy, summarized from the most recent policy document. The policy divides non-city projects into four categories and assigns standards/incentives for each one. The categories are:

1. New Commercial Construction
2. New Residential Construction
3. Existing Commercial Buildings
4. Existing Residential Buildings

New Commercial Construction can be further described and broken into two sub-categories: multifamily buildings that are greater than or equal to 5,000 square feet and commercial buildings that are greater than or equal to 20,000 square feet.[56] New Commercial Construction is subject to a reward, a waiver, or a fee (See tables 2 and 3 below for specifics).

Feebate Option	Green Building Standards[1]	Minimum Requirements	Feebate[2]
Reward[3]	Living Building Challenge	Net-zero energy and water documentation (1 year)	$2.58 – $5.15 per sf
	LEED New Construction 2.2 Or, for projects <50,000 square feet, Earth Advantage[4]	**Platinum certification, PLUS:** EAc1 + EAc2: 10 points WEc1 + WEc3: 4 points	$1.03 – $2.06 per sf
	LEED New Construction 2.2 Or, for projects <50,000 square feet, Earth Advantage[4]	**Gold certification, PLUS:** EAc1 + EAc2: 8 points WEc1 + WEc3: 3 points	$0.51 – $1.03 per sf
Waiver	**LEED** New Construction 2.2 Or, for projects <50,000 square feet, Earth Advantage[4]	**Silver certification, PLUS:** EAc1 + EAc2: 5 points WEc1 + WEc3: 2 points	Not Applicable
Fee	None		(-) $0.51 – $1.03 per sf

Table 2. Proposed multifamily residential new construction green building standards and feebate specifications.

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Feebate Option	Green Building Standards[5]	Minimum Requirements	Feebate[6]
Reward	Living Building Challenge	Net-zero energy and water documentation (1 year)	$8.65 – $17.30 per sf
	LEED New Construction 2.2 Core and Shell 2.0 Schools Retail	**Platinum certification, PLUS:** EAc1 + EAc2 : 10 points WEc1 + WEc3: 4 points	$3.46 – $6.92 per sf
	LEED New Construction 2.2 Core and Shell 2.0 Schools Retail	**Gold certification, PLUS:** EAc1 + EAc2: 8 points WEc1 + WEc3: 3 points	$1.73 – $3.46 per sf
Waiver	**LEED** New Construction 2.2 Core and Shell 2.0 Schools Retail	**Silver certification, PLUS:** EAc1 + EAc2: 5 points WEc1 + WEc3: 2 points	Not Applicable
Fee	None		(-) $1.73 – $3.46 per sf

Table 3. Proposed commercial new construction green building standards and feebate specifications.

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- Reward: “Projects receive a one-time reward payment from the City based on high performance green building standards and significantly improved energy performance beyond the current minimum Oregon requirements. The amount varies based on the level of environmental performance and the gross square footage of the building.

- Waiver: A fee is waived for projects that build to a green building standard and improved energy performance beyond minimum Oregon code.

- Fee: Projects are charged a one-time fee to mitigate greenhouse gas emissions and other environmental impacts for projects that are built to the minimum Oregon code. This fee based on the gross square footage of the building.”[59]

Similarly, New Residential construction is also subject to a Reward, Waiver or Fee, but by slightly different standards (see table 4 below for specifics).

- Reward: “Projects receive a one-time reward payment from the City to the homeowner by meeting high performance green building standards and significantly improved energy performance beyond minimum Oregon requirements. Homes smaller than 1,200 square feet are also eligible for rewards. The amount varies based on the level of environmental performance and is a fixed dollar figure per home (i.e., it does not vary with the size of the home).

- Waiver: A fee is waived for projects that build to a green building standard and improve energy performance beyond the minimum Oregon code.

- Fee: Projects are charged a one-time fee to mitigate the environmental impacts for projects that build to the minimum Oregon code. The amount of the fee varies based on the square footage of the home and only applies to new construction greater than or equal to 1,200 square feet.”[60]

Feebate Option	Green Building Standards	Minimum Requirements	Feebate[8]
Reward[9]	LEED for Homes Platinum, or Living Building Challenge	HERS 0, or Net-zero energy documentation (1 year)	$10,000 per home
	EA Platinum, or LEED for Homes Gold	HERS 60, or Oregon HPH	$2,570 – 5,140 per home
	EA Gold, or LEED for Homes Silver	HERS 70	$1,285 – 2,570 per home
Waiver	EA Silver	HERS 75, or NW Energy Star Homes	Not Applicable
Fee	None		(-) $0.51 – 1.03 per sf

Table 4. Proposed residential new construction green building feebate specifications. [61]

Existing Commercial Buildings do not have the reward, waiver, fee set up but instead are encouraged to meet higher standards by requiring disclosure of performance measures. The intention is to “encourage green renovations and on-site storm water management for existing commercial and multifamily buildings by requiring disclosure of environmental performance measures using the U.S.

Environmental Protection Agency (EPA) Energy Star Portfolio Manager tool. Owners or managers of commercial buildings greater than or equal to 20,000 gross square feet must report:

1. Building Performance. Accuracy of the information provided about the building must be verified by a professional engineer in accordance with EPA requirements for Energy Star certification.
2. Stormwater Management

In addition, building owners or managers may choose to voluntarily disclose building performance measures through a public online resource. Public disclosure of building performance could help prospective buyers and tenants make informed decisions."[62] The proposed policy does not include new requirements for existing residential buildings at this time, however, "policy creators recognize that improving the environmental performance of existing homes is essential. They are currently developing financing options that make energy and environmental upgrades easy and affordable to homeowners. Financing options will consider the needs of low-income homeowner to help mitigate the effects of future energy cost increases."[63]

Funds generated from the fees are intended to be used in the following ways: "Incentives (rewards), Technical Assistance, Training, and Monitoring Progress. Disbursement of the funds is to be reviewed by a citizen advisory committee. Third-party verification is a required application of the fee-bate rewards, waivers and fees."[64]

With what effects

The effects of the policy after implementation are still to be seen. Here are the expected effects, mostly in economic terms.

Cost to City

In Portland, OR, half a million dollars has been assumed for technical assistance and administration for the fee.[65] In correspondence with Vinh Mason of the Bureau of Planning and Sustainability, he explained that "$500,000 is a rough annual estimate for technical assistance to residential and commercial building projects as well as fee administration."[66]

Cost to the Developer

The intention of the policy is to offset all of the added costs. For those projects that do not comply, the fees are intended to represent a small, but noteworthy, percent of total project cost.[67] It is very important that research go into this particular stakeholder impact. Portland, OR has done studies and made projections but having these figures investigated in Portland Maine is vital to the success of this endeavor. Administrative cost: The Bureau of Planning and Sustainability has five members of staff, two of whom will oversee aspects of the Green Building Fee-bate policy.[68]

Job Growth

Analysis of the new construction component of the High Performance Green Building Policy by ECONorthwest found that the policy would result in an additional 100 jobs in Oregon for every year the policy is in place.[69] This is a great asset of the proposed policy.

Key Lessons

In the process of developing the High Performance Green Building Policy, challenges have been met that have led to important lessons. Vinh Mason explained that "the policy found challenges mainly when public and stakeholder involvement was more limited (early on in the policy process), and also in overcoming political positions that are opposed philosophically."[70] Conversely, the policy found key success and support in its innovative approach, specifically in that "it offers market-based incentives to encourage green building and energy performance improvements rather than prescriptive requirements. The process also ran more smoothly and effectively when it involved high community engagement in deliberative governance through stakeholder involvement and public comments. Another important ingredient that Mason pointed to was an adaptive policy design to allow for flexibility as existing green building programs evolve and new technologies and practices emerge. In addition, he mentioned the value of intercity communication to share policy development experiences."[71]

If Portland, ME were interested in instituting a policy similar to these, it would need to put the specifics of costs and benefits in context and in the scale of Portland, ME. It would be important to assess what green building resources exist already and what would need to be created. Study into and then education about the policy and what it could mean and create for Portland, ME would also be crucial.

To do list/implementation recommendations

1. Have conversations with developers who will be affected by this. Most likely, there will be resistance and real complication from this group in particular, and it is important to see what their concerns are and try to address them. Developers are a key resource in this effort and should be appreciated as that because they have direct experience and could offer a lot in terms of how to apply these goals effectively. Talking to developers who are already green building friendly would be equally as important as they can consult on feasibility and current real life application that could be enhanced by a fee-bate program.

2. Involve the public, keep stakeholder and community involvement as a priority from the start. Portland, ME has a great structure for public involvement and utilizing it right from the beginning can only help. Be aware of potential philosophical opposition and try to develop approaches to reaching understanding and common ground.

3. Keep the process flexible and open to review

4. Develop a website for green building, a forum for resources, forms and standards as well as a place where existing building owners can publicize performance measures. This would act as a tool for other building owners as well as for prospective tenants.

5. Develop a policy or some kind of fee-bate system that utilizes Portland Oregon's High Performance Green Building Policy as a framework/guide adapted to Maine's business climate (however, I would not recommend this without heavy emphasis on #1 and #2).

6. If a policy is developed, consider higher standards along the waterfront to extend protection efforts in that particularly challenged area.

7. Hire someone to the city staff whose specific job description is sustainability coordinator

8. The Bureau has a fantastic website and Vinh Mason is an efficient and helpful contact for further inquiries.

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Creating a Workable Plan for Wind Power in Urban Areas: Recommendations to the Sustainable Portland Committee

Randy Lautz

Portland has yet to develop a comprehensive plan for wind energy generation. There are currently two projects within Portland that are in the earliest stages of planning. The first was a proposed anemometer and wind turbine that was to be located at the East End Community School, while the other is the installation of a wind turbine on Peaks Island. Both projects would have been recognized as commercial or community scale sized turbines. They are identified as such because they are larger than the average turbine one may see at someone's home while smaller than what is found at wind farms. Community turbines are capable of producing enough energy to offset entire energy consumption costs for municipal departments like schools and other public buildings. However, there are multiple factors that must be addressed prior to deciding if such a project will fit within the needs of the community and the surrounding environment.[72]

Without a wind generating permitting process, both projects have encountered obstacles. Developing a plan for the permitting process of siting wind turbines will establish the framework needed if Portland is to attempt to integrate wind generation into any sort of comprehensive energy plan. Furthermore, any plan that outlines wind's role within an urban setting must not just consider community-sized turbines, but smaller residential turbines as well. Despite our enthusiasm to start installing turbines as they are proposed, establishing a framework first will save the city time and money. The proper siting of turbines now will ensure that wind projects in the future will have stronger community support. The city of Saco, Maine will be used as a learning tool for Portland in its approach to wind generation implementation with regards to community wind power projects as well as smaller residential turbines. The city of Saco, Maine provides an example of how other areas interested in promoting wind generation within their communities have approached some of the various issues that can arise.

In June of 2008, a wind turbine site survey application was submitted on behalf of the City of Portland/Portland Public Schools. The original application was submitted to the city seeking a variance to erect an anemometer tower of an approximately 100ft, which is used to measure wind speeds. Once a years' worth of wind speed data had been collected, and assuming that the data supported the installation of a wind turbine on the site, the application sought a variance allowing the installation of a permanent turbine that would be large enough to offset the energy costs of the school. After discussing this topic with members of City Hall and the school department, it was concluded that theoretically, this would have been a turbine capable of producing approximately 250kw. While the project initially seemed to have strong support from both the local neighborhood association as well as in city hall, it eventually became

clear that more research and evaluation would be necessary before a decision could be made. Perhaps most importantly, it became clear that treating such projects as though they where cell phone towers would not suffice. [73]

The most obvious example that more evaluation and outreach was required came from the Promenade Towers Condominium Association. The Promenade Towers' is located 1127.9' from the proposed tower location. The Board of Directors of the association became directly involved in educating their members in the possible downside to having a turbine located so close to their homes. Concerns that were cited specifically were health risks related to noise, the possibility of flicker and the effect of real estate values if these concerns turned out to be true. While these issues may seem trivial at first, there is supporting evidence, discussed below, that these are in fact genuine concerns for those interested in developing community wind energy.[74]

The original application submitted for the allowance of a temporary anemometer tower and a wind turbine was officially withdrawn by the school. Portland School Department's Facilities Director Doug Sherwood stated that this was done in order to modify the original application into two – one application for the anemometer; and if good wind speeds are recorded, then a second application for the turbine itself would eventually be submitted. He hopes to reapply for the anemometer variance during the fall of 2009. The residents within the Promenade Towers do not feel that this will result in a different outcome than what the original application would have granted. In the end, they still feel it will end in the addition of a large, unwelcomed turbine within their community.[75]

One of the main justifications proposed by Doug Sherwood was that if the school has a unique opportunity to take advantage of installing a turbine that will significantly affect its energy consumption bill, the department has a responsibility to do so. However, if after further consideration, the placement of such a large turbine at the East End Community School site is deemed impractical, another possibility for the city would be to pursue the placement of a turbine in an area outside of the city. Similar projects have found funding through the U.S. Department of Energy's Supplemental Environmental Project (SEP) settlements. SEP's are policy vehicles established by the U.S. Environmental Protection Agency (EPA) that gives violators the option of funding environmentally friendly projects instead of the full fine. In the past, these environmentally friendly projects have included various school wind projects including the addition of an onsite turbine on school properties in the Midwest, adding a turbine to a wind farm and having the school collect the revenue, or installing a turbine on available state/public lands. Again, because the concept of community wind projects in urban areas is a relatively new topic in comparison to community wind in rural settings, SEP's may currently be better suited for those particular school districts. However, a great place to start would be to call the EPA's Boston Regional Office at (617) 565-9700.[76]

The other wind turbine project proposed for Portland is on Peaks Island, where island residents in the Conservation Committee have proposed placing an anemometer tower. It is hoped that if the wind survey provides positive results, they will eventually be able to place a <100KW wind turbine on the island. This will be used to offset municipal power use through net metering; income gained will be reinvested into the island with a focus on conservation. The Conservation Committee is being assisted by Dr. Mick Wormsley of Unity College, who is heading a program to develop a process by which sites may be assessed. The project is going well, mainly because of good community relations. People are being well educated about the project, and because they are taking it one-step at a time, there has been little opposition to an anemometer tower. However, this may change if a wind turbine is finally proposed. Also, up to this point, it is somewhat unclear how the seasonal population may respond to such a change in the environment. Furthermore, the project has run into some obstacles from the planning standpoint, as it requires a height variance, just as the East End Community School did. The lack of experience in permitting anemometer siting has held up progress. It is the hope of Sam Saltonstall, head of the Conservation Committee, that if Portland drafts an ordinance covering the permitting process for anemometer studies and for wind turbines that this will ease the process.[77]

Case Studies in Saco and Thorndike

The best way for Portland to tackle these obstacles is to look to other projects in the state and assess how they could apply to Portland. Two great examples are Mt. View High School in Thorndike and Saco.

The project at Mt. View High School has just completed its initial wind assessment phase, with Dr. Wormsley doing the assessment. Initial wind speed assessment indicates the site is suitable for a medium sized turbine in the 100KW range. In general, there has been little opposition to the proposed wind turbine; there is strong community support, most likely due to a consented effort to involve the community and to provide them with all the facts regarding wind turbines. Given that the turbine will directly benefit the community by offsetting some of the schools power use, community members seem comfortable with the potential amount of noise the turbine would generate.[78]

Saco is another excellent example from which Portland can draw lessons. Saco has two wind turbines. The largest is located next to the Amtrak station and is a EW50 wind turbine capable of 50KW. However, because there was never a wind assessment done for this site, soon after its installation, it became clear to the city that they could expect to generate about half of what the turbine is capable of producing. This downside has been offset by an agreement with the installation company, who agreed that for the first 12 years of the turbine's life, they would pay the city the difference in any year that the turbine does not generate as expected. While the city was fortunate to have entered into this form of agreement with the turbine company, pursing wind generation for community use in this way should not

be viewed as sustainable, especially when the lifespan of a EW50 is between 25 and 30 years. Such agreements, while beneficial at first, are essentially sales gimmicks for the turbine companies.[79]

After the first turbine was installed, the city of Saco decided to experiment with a smaller 1.8KW Skystream located next to the wastewater treatment plant, near the Saco River. In addition to installing a significantly smaller turbine, they integrated this wind energy system with various other energy saving technologies, including solar panels for heating and natural sunlight fixtures. It was the opinion of Councilmen Eric Cote and Howard Carter of Saco's Waste Water Treatment Plant that approaching energy reduction and efficiency in this multi-dimensional fashion was more effective in lowering overall costs than relying on one large single technology.[80]

Saco presents an excellent opportunity to see two different sized turbines in action, and for a subjective assessment of any possible nuisance a wind turbine might cause neighbors, as Portland considers how it will approach siting and permitting wind turbines. Subjective assessments of the two sites were that both turbines generated noise. The smaller unit generated a high-pitched whirring sound that dropped off noticeably about 60' away; and by 300', the sound merged with the background. Sited as it was next to a waste treatment facility, the noise was not an issue, in comparison with the background noise of the plant itself and its distance from residential areas.

The larger EW50 created a 'whooshing' sound when you stood close by. The manufacturers rate it as producing 64dB at 100', which is considered as loud as traffic 300' away. However, standing 300' from Route 1, and 100' from the turbine, Route 1 appeared to be the louder of the two, but the wind turbine definitely adds to the overall noise level. Crossing the river and standing on the other side of a building, you could still distinctly hear the blades moving, but it was part of the urban background noise at that point.[81]

The Challenges

One of the more serious concerns expressed by community members when the topic of wind turbines are presented is that of noise. One study that is regularly cited by concerned parties called by Dr. Amanda Harry approaches the issue from an interesting angle. The study first admits that it is true that not all or even a majority of persons living next to turbines have developed health related issues. However, she argues that of those that have experienced health issues suffer from a variety of mental and physical health changes since the introduction of the turbine(s), including anxiety, hearing problems, migraines, and palpitations among other issues. The discussion then turns away from turbines specifically and looks at the negative effect certain levels of noise have been shown play on our auditory and cerebral systems. High levels of low frequency noise, for example, have been linked to vibroacoustic disease. The report goes on to hypothesize that prolonged exposure to lower levels of low frequency noise, like the noise produced from turbines, industrial turbines specifically, could cause similar problems.

While it is important to keep information like this in mind, it should not discourage us as a community from pursuing a comprehensive energy plan that includes wind power. It is true that several European nations and U.S. states have officially supported the idea is that large turbines should not be sited closer than approximately a mile to homes; these guidelines have dealt specifically with larger industrial turbines similar to those found on wind farms. The same may be necessary for community-sized turbines, but there is less data and consensus regarding this expanding topic. Therefore, the task of establishing a Community Wind Ordinance within an urban environment has in most examples relied on specific siting as the projects are proposed.[82]

Community Support

Wind development, according to Wormsley, is "90% community organizing and 10% science." Any wind project, especially those located in urban settings, must include community input at all stages of the planning process. This can be accomplished through public hearings, outreach, education and taking serious consideration for the concerns of all residents and their input. A plan for community wind in Portland should include some very specific language outlining the process for building strong public support. This could include multiple community discussions attended by project developers, educated turbine specialists from the area, a healthy cross section of the affected community, and members from the City staff, including a representative from the sustainability committee. There should be several of these meetings over the course of a few months prior to the submission of any proposal to the city, to ensure that anyone who wishes to contribute or air grievances has the opportunity.[83]

Also, prior to any approval, a sample noise assessment should be conducted. Such an assessment, according to a report released by the Dept. of Mechanical and Industrial Engineering's Renewable Energy Research Laboratory Department at UMass Amherst, should include four different parts of information. First, a survey of the current background noise in and around the proposed area must be conducted. Then an estimate of the noise levels that are expected to be produced from the turbine at and near the site in question should be established, followed by identification of a model for sound propagation to help gain a better understanding of how this sound will spread through the particular area. The final part is to compare the background sound pressure levels of concerns as they are with the calculated sound pressure levels from the proposed wind turbines. Following these steps will help ease concerned neighbors, giving them data instead of the guarantee of a developer or other beneficiary, perhaps demonstrating that the proposed turbine would be producing far too much noise for the zone in question.[84]

Conclusions

Despite the fact that smaller turbines, designed for homes and small businesses, are less efficient than the larger community turbines, it is in Portland's best interest to encourage those who are willing and

able to invest in these units to do so. Any potential ordinance, however, should cover what the city would desire to see in a permitting application for a residential turbine. Specific consideration must be given to proper setbacks, which are usually established by at least the height of the proposed tower. Another key issue is that of noise. It would make sense that with for any residential application, the applicant provide average decibel levels as made available by the manufacture of the turbine. Identifying acceptable decibel levels per zone will also be necessary with higher levels permitted in the industrial and some commercial zones and lower or none allowed in the remaining commercial and appropriate residential zones. Saco, for example, has identified acceptable decibel levels from small turbines in their residential zones to be 55 decibels during the day and 45 decibels during the night.

Specific language that outlines how abutters and neighbors will be notified of the proposed project and the public hearings that will occur as part of the permitting process must also be included. For example, the town of Damariscotta, in their small wind energy ordinance, states that once neighbors and abutters have been notified by the person who intends to install a residential unit, a hearing will be called only if 2 or more abutters or 5 neighbors request one. Portland would need to cover other topics in their wind energy ordinance, but we feel these are the most critical points to address. Doing so will help establish the framework that will begin the learning process that the city must go through in order to establish a long term, well-planned wind energy plan.

Both the Peaks Island and the East End Community School projects first struck issues when they zoned their temporary anemometers. Because of this, the city should consider collaborating with area colleges and universities, as well as working with Maine's PUC Efficiency Maine program, which has access to a few anemometers and has recently ordered 5 more to be used through the state's University to create a map of the cities wind speeds. Integrating the public schools for data entry and analysis would also prove helpful to the process, as it would contribute to the local contribution and help by engaging younger, non-professional individuals on the specifications and merits of the plan itself. Making the data readily accessible to the public would show where the science suggests the best turbine locations. From there, it becomes more an issue of what the public is willing to tolerate. Furthermore, there is a stigma on anemometers that they automatically lead to a turbine. Doing it this way with the intent of charting wind speeds to share with the citizens, may encounter less resistance.

Summary of Final Recommendations

1. Map the City's wind speeds. This would be a multi-year project, drawing on various sources of funding and collaboration. The city may want to consider investment in wind speed equipment to ensure progress during years when anemometer grants are slow coming.

2. Research the possibility of Portland's School Department qualifying for SEP funds which could help fund a turbine in an area outside of the city but with the School Department still collecting the economic benefit.

3. The City needs to create a Small Wind Turbine Ordinance that will encourage homeowners and small businesses that are willing and able to invest in their own residential units to do so in a more streamlined and encouraging fashion.

4. Establish a framework for a Community Wind Application Process. The public process that would be followed for those wishing to pursue a community wind project should be consistent from project to project. While the specifics of each site may end up varying, what should not is the amount of public support and the input that is received.

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Adaptation Planning for Sea Level Rise and Coastal Storm Surges

Anne Lewis

ABSTRACT: The city of Portland must evaluate the vulnerability of its economic, environmental, and community assets to sea level rise and increases in coastal storm surge. As its first step in the adaptation planning process, Portland recently partnered with the New England Environmental Finance Center to identify at-risk assets in a range of sea level rise scenarios. Next steps should include research into the interaction of Portland's land and infrastructure with sea level rise, a broad public education initiative, and renewed collaboration with resource-rich organizations such as ICLEI.

The ***Sustainable Portland Report*** was released in November of 2007 by Mayor James Cohen's Sustainable Portland Taskforce, as a comprehensive and benchmarking assessment of Portland's progress towards sustainability, and as a framework to guide and inform further decision-making regarding sustainability initiatives. Although the majority of environmental recommendations focused on the reduction of greenhouse gas emissions and overall energy usage, the taskforce also recognized the importance of climate change adaptation to creating a sustainable Portland. The taskforce's environmental considerations called for planning, "for sea level rise through land use regulation, education, and infrastructure planning."[85] Regardless of current or future greenhouse gas emissions, the sum of past emissions have started the wheels of climate change rolling, and Portland will see the effects in rising sea levels and increased coastal storm surges over the course of the next century and beyond.[86] The city must begin to plan for adaptation. This evolving process will demand access to the most current scientific information, broad public education and engagement efforts, and continued collaboration with the International Council for Local Environmental Initiatives (ICLEI).

Over the course of the past decade, the City of Portland has taken an active role in understanding and addressing its impact on the earth's climate. The heritage and health of Portland – from the tourist activity to the fishing industry – is inextricably linked to the health of its surrounding environmental resources, and the city has a strong interest in pursuing policies that protect these resources. In recognition of the critical role that local government can play in protecting the climate, Portland joined the ICLEI in 2001 as a member of the Cities for Climate Protection campaign. Since joining the campaign, Portland has completed two inventories of its greenhouse gas emissions, in 2001 and 2005, and committed to reduce its carbon dioxide emissions by 10% below 1990 levels by 2020, through the signing of the Governor's Carbon Challenge in 2005. These actions were followed by the establishment of the

Sustainable Portland Taskforce and the Municipal Climate Change Working Group, which provided concrete steps for emissions reductions in the ***Municipal Climate Action Plan***, published in March 2008.[87] The language of climate change, greenhouse gas emissions, and carbon footprints is now well imprinted in the minds of the greater public.

In September of 2006, the Natural Resource Council of Maine (NRCM) released a series of passive flooding maps depicting the impact of 1-meter and 6-meters of sea level rise along selected areas of the Maine coastline, including Portland. At the time, the NRCM stated that its analysis, done in conjunction with Colby College and the Climate Change Institute at the University of Maine, was the most comprehensive to date, reflecting both conservative and aggressive sea level rise scenarios.[88] The maps showed significant swaths of natural and developed lands under water, and the accompanying press release outlined potential impacts to protected lands, transportation infrastructure, and the built environment, including residences and commercial buildings. Under the 6-meter rise scenario, one map showed several of Portland's neighborhoods underwater, including Bayside, Back Cove, and the Commercial St. district.[89]

The stated purpose of this analysis was not, however, to encourage adaptive actions in preparation for the possibility of such severe inundation, but to spur support for and adoption of mitigation efforts amongst Mainers and their local governments. In a news conference held in the Portland City Council Chambers on September 19, 2006, Dylan Voorhees, then Clean Energy Director at the NRCM, stated, "As these maps make clear, the cost of inaction is enormous. But global warming is not like an earthquake – we can prevent it with the tools we already have at our fingertips."[90] Voorhees called for both private and public action to reduce carbon emissions, using the organization's maps as evidence of the dangers of inaction.

There is general agreement among the scientific community that global sea level rise is currently occurring and projected to continue for several centuries. The Intergovernmental Panel on Climate Change (IPCC) released a report in 2001, which indicated that sea levels would rise well after the peak of carbon dioxide emissions and the stabilization of carbon dioxide concentrations in the atmosphere, as prolonged increases in surface air temperatures result in ice melting and thermal expansion of the seas.[91] In October of 2006, the Northeast Climate Impacts Assessment (NECIA), a partnership of the Union of Concerned Scientists and independent scientific experts, published its report on the effects of climate change in the northeast United States. The report projected sea level rises of 4-21 inches under a scenario of low emissions, and rises of 8-33 under a higher emissions scenario, all within the 21st century. These projections were deemed conservative by the NECIA, given the uncertainty in both the high and low emissions scenarios, and the questionable stability of ice sheets in Greenland and West Antarctica.[92] Closer to home, Charles Colgan and Samuel Merrill, of the University of Southern Maine's Muskie

School of Public Service, published a report highlighting the potentially devastating impact of climate change on the economic health of York County, ME. The authors suggested that the coupling of increasingly severe coastal storms and rising sea levels could negatively impact many establishments and employment opportunities within the region, whose economy centers around shoreline activity.[93]

Case Study: Olympia, Washington

As Portland embarks on its adaptation planning for sea level rise and increased coastal storm surge, the first step must be to identify the geographical areas and corresponding economic, environmental, and community assets that are vulnerable. The city has initiated this step in its recent partnership with the New England Environmental Finance Center (NE/EFC), a joint center of the Environmental Protection Agency and the Muskie School of Public Service at USM. The NE/EFC is piloting a program called the Coastal Area Sea Level Rise Tool (COAST), which provides municipalities with scenario-based risk assessments for sea level rise and a quantifiable inventory of vulnerable assets. On April 16, 2009, members of the City staff and City Councilor David Marshall met with COAST team members, Paul Kirshen of Tufts University, Peter Slovinsky of the Maine Geological Survey, and Brett Richardson of the Muskie School, to discuss the partnership formation and next steps.[94] By merging elevation data acquired by FEMA in 2006 with a parcel layer of census data that includes tax value and land use, the COAST team will model the effects of 2-6 feet of sea level rise, combined with storm surge of increasing strength (10, 50, 100, and 500 year events).[95] This relationship with the NE/EFC provides Portland with access to experts in coastal marine geology and climate change adaptation, as well as access to vetted scientific data, both of which will be extremely valuable to the city.

A limited number of cities in the United States have begun the adaptation planning process for sea level rise. One of these cities is Olympia, Washington, a mid-sized city located on South Puget Sound in the Pacific Northwest. Olympia was an early adopter of policies promoting climate change mitigation, and was quick to identify sea level rise as the most significant impact of climate change for the city. Over the past 20 years, the city has conducted numerous studies detailing the risks related to sea level rise, engaged in public education efforts, and developed work plans for adaptation planning. Olympia's progress in addressing sea level rise can help to inform planning in Portland, as the two cities shares many of the same characteristics. Olympia, the state capital of Washington, has a population of approximately 46,000 people, with a median age of 36, spread over 16.7 square miles of land. The city is considered an arts and cultural hub in the region, with several institutions of higher learning. Leading industries include educational services, health care, social assistance, and public administration.[96] Like Portland, Olympia has a council-manager model of governance. Most importantly, many of Olympia's most valuable assets, including the downtown commercial district, government buildings, residential areas, and a wastewater

treatment plant, are similarly situated in low-lying areas subject to flooding in severe weather and extreme tides.[97]

In 1990, a local citizen-based group in Olympia called the Greenhouse Action Group pressed the Olympia City Council to direct its attention to global warming and the reduction of greenhouse gas emissions. Reflecting the public will and acknowledging the receptiveness of the greater Olympia community to issues of global warming, the city council made global warming a prioritized issue for the following year, convening a Global Warming Task Force with members across multiple city departments. This task force produced a report similar in nature to the ***Sustainable Portland Report*** that outlined the major implications of climate change for Olympia and available courses of action. In February of 1991, the city council passed a resolution expressing the city's commitment to greenhouse gas reductions and climate change preparations.[98] Since then, Olympia's actions with respect to climate change mitigation have been similar to Portland's, with ongoing efforts to reduce carbon emissions, energy use, and waste generation.

In June of 1993, the Olympia Public Works Department, with assistance from the National Oceanic and Atmospheric Administration (NOAA) and the Washington State Department of Ecology, published its first report on the implications of sea level rise for the city. The report identified the geographical areas of Olympia that would be affected by sea level rise, including the downtown district and the Port of Olympia, much of which has been constructed on land established through dredge and fill projects undertaken 1909-1911 and again from 1968-1982.[99] These areas of the city were also those receiving significant investments in the decade preceding the 1993 report. These investments, designed to reinvent the downtown as an inviting economic and cultural district, had included a waterfront boardwalk, buildings for public gatherings, upgraded Port facilities, and a regional wastewater treatment plant. The city gave no indication that the threat of sea level rise would halt the progress of these investment strategies, highlighting the dilemma that cities such as Olympia and Portland face in balancing their plans for economic growth with the long-term impacts of climate change.

The Olympia Public Works Department identified increased flooding in downtown Olympia as the most significant impact of sea level rise, resulting from a combination of higher water levels during storm events and a rising water table. In many areas of the downtown, the water table was measured at 1 foot below ground, increasing the risk that rising sea levels would reduce capacity for surface and subsurface drainage. Another area of concern was the ability of the wastewater treatment to function with rising sea levels. Although the mechanism for sewage collection would most likely remain intact, higher water levels would require additional pumping capacity to discharge the treated wastewater into the body of water surrounding Olympia. Higher water levels might also worsen problems already present in the aging infrastructure, taxing the capacity of the system to handle both storm and wastewater flows and

increasing the possibility of saltwater intrusion. The Public Works Department also expressed concern regarding the long-term viability of the city's drinking water supply. At the time of the report's publication in 1993, the supply was drawn from a spring source, at an elevation of 3 feet above the average low tide and protected from saltwater intrusion by groundwater pressure. The exposed surface pool, however, could be at risk for intrusion with a minimum 1-foot rise in sea level.[100]

With these impacts in mind, the city adopted a long-term vision for its response to climate change impacts and specifically to sea level rise. In the 1993 report and in subsequent publications, the city has relied upon the framework initially developed by James Titus, Project Manager for Sea Level Rise at the U.S. EPA. Titus, who has written extensively on the implications of sea level rise on U.S. coastal communities, outlined four different ways to respond to climate change:[101]

1. *Deferred Action*: Solutions are known and not required until the problem arises.
   Example: Levee construction.

2. *Anticipatory Action*: The costs of immediate action are outweighed by the short- and long-term benefits, with or without the impact of climate change.
   Example: Upgrade of aging storm water infrastructure.

3. *Planning*: The rules of the game are changed in the present in order to reflect potential future conditions and avoid future costs.
   Example: Adoption of structure setback requirements that reflect accelerated sea level rise and erosion.

4. *Education and Research*: Scientific research on climate change is ongoing, and a broad coalition of professionals and citizens are engaged the decision-making process.
   Example: Vulnerability assessment.

In the decade following the 1993 report, adaptation efforts in Olympia have primarily taken the form of anticipatory action. These are strategies of no regrets, where the actions are justified by motivations that exist outside of considerations of sea level rise. From a short-term financial perspective, these types of actions make the most sense: projects under this category hit two birds with one stone and do not require governments to make infrastructure investments above and beyond what would be expected or budgeted. These actions also do not require the mobilization of public support for climate change initiatives, yet the threat of climate change impacts may be a critical component in getting an already desired initiative off the ground.

One example of anticipatory action involves Olympia's drinking water. Olympia currently draws 84% of its water supply from a spring source, with an exposed surface pool. Although sea level rise was identified as a potential threat to the surface pool in the 1993 report, more immediate impacts also threatened the safety of this water supply, including chemical spills and other sources of contamination. In 2004, the city drinking water utility initiated work on replacing the spring source with more protected

well-field source, farther up-gradient from the shoreline to ensure safety from encroaching sea levels. This replacement is intended to be completed by 2012 and falls within the larger vision of the utility to meet long-term community needs.[102] Regardless of future findings regarding the risks of saltwater intrusion and sea level rise on the current spring source, the improved water supply source offers independent benefits to the city.

In late 2006, Olympia city staff, led by the Public Works department, decided to formally revisit climate change impacts. At this point in time, the greater American public was generally conversant in the language of climate change mitigation, and the scientific community was largely in agreement about the certainty of climate change impacts within the 21st century. In September of 2007, the Public Works department released ***Olympia's Response to the Challenge of Climate Change: Background Report and Preliminary Recommendations***. This report was a truly comprehensive look, written in easily understood language, at the science of climate change, the risks faced by Olympia, mitigation and adaptation actions currently being pursued, and proposed next steps for the city.[103] Without placing blame or sounding the alarms, the report communicated the pressing need for education, planning, behavioral change, and adaptation actions. The document grounded the reader in the issues at hand, including the great risk posed by sea level rise to the downtown district, but also reassured the reader that the city was committed to research and action.

On October 2, 2007, the Olympia City Council hosted a public event, "Climate Change: Olympia's Call to Action," at the Washington Center for the Performing Arts. This evening event featured an address by the Olympia Mayor, speeches by Andrew Revkin, author and New York Times reporter on the environment, and Terry Tempest Williams, a naturalist and writer, as well as a discussion moderated by a local National Public Radio reporter. Attendees were able to view a presentation of the Public Works report published in September, pledge their own support for emission reductions, and learn about future educational events, sponsored both by the city and outside organizations.[104]

The forum was widely viewed as a success, drawing and engaging a large audience. Reactions were largely positive, although the information presented at the forum spurred questions regarding steps the city was taking to address climate change impacts. To city staff, these questions reinforced the need to accompany information to the public with a plan for action.[105] For 2008, the city council voted to dedicate $250,000 in Capital Facility Plan funds to pursue strategies that will address the impact of climate change. Sea level rise adaptation was prioritized. These funds were accompanied by $30,000 in discretionary funds for community education and involvement. Without the prior engagement of the public through educational efforts such as the October event, it is doubtful that these funds would have been approved.[106]

The Storm and Surface Water Utility has assumed primary responsibility for sea level rise adaptation efforts. In 2008, these efforts centered around the acquisition and analysis of data on local geological and hydrologic characteristics to gain a more complete understanding of the city's vulnerability. With the help of the State of Washington and the regional wastewater treatment plant, located in downtown Olympia, the city has installed two GPS stations to continuously monitor shifts in vertical land elevation. Olympia's location in the Pacific Northwest could expose it to movement in deep layers of the earth, while its history of dredge and fill presents the possibility of compaction or sinking. Both factors could influence the impact of sea level rise relative to land elevation. The city has also acquired Light Detection and Ranging (LiDAR) technology, a method of elevation modeling that produces significantly greater accuracy than standard aerial photography. Maps produced with this LiDAR technology will enable the city to more accurately pinpoint areas of the downtown that will be vulnerable under a range of sea level rise scenarios. Lastly, the Storm and Surface Water utility has developed a computer model that simulates the flow of streams and storm water in different weather and sea level rise conditions. The 2008 costs for these efforts are estimated to be $150,000. Data collection and analysis will be ongoing, and in 2009 will include structural assessments of storm and waste water systems, tidal and flood flow monitoring, and continued research into the safety of the drinking water supply.[107]

Throughout its adaptation planning process, Olympia has partnered with the Climate Impacts Group at the University of Washington. This research group examines natural climate variability in the Pacific Northwest as well as global climate change, and works alongside regional organizations and governments to implement informed policy and decision-making processes. In 2007, the Climate Impacts Group worked with ICLEI and King County, WA to produce a guidebook for ICLEI's Climate Resilient Communities (CRC) program. The CRC program, a follow-up to ICLEI's Cities for Climate Protection Campaign, is designed to lead municipalities through an adaptation planning process that increases their resiliency to climate impacts.[108] Olympia's 2007 climate change report was written at the same time as the CRC guidebook, and the experiences and findings of the city informed the development of the guidebook. Olympia plans to continue its partnership with the Climate Impacts Group and ICLEI, which have proven to be an invaluable and trusted source for scientific information and guidance.

One of the biggest challenges facing Olympia in its adaptation efforts is the lack of clearly identified staffing to undertake projects. Although the Storm and Surface Water utility has absorbed many of the recent tasks into its work plan, adaptation planning has not been formally integrated into its mission, and other areas of the city government lack the internal expertise to investigate sea level rise impacts.[109] Future adaptation actions will likely involve discussions with the city planning office. As the local governing body, the city is obligated to protect not only city-owned infrastructure and lands, but the

community as a whole, including people and private buildings. In 2009, the city is embarking on a major, state-mandated update to its comprehensive plan. Building codes and zoning governing future development will be updated to reflect risks, such as flooding and erosion, associated with sea level rise. These revisions will allow the city to drive change down through established and trusted channels and will provide the basis for future adaptation funding.[110] In the long term, Olympia might be forced to consider the actions now deferred, such as the construction of barriers or pumping systems.

Recommendations for Portland

Collect and analyze geographic and hydrologic data on an ongoing basis

The best planning decisions will be made when the most accurate and up-to-date information is used to inform the process. Critical information includes elevation data, the extent of vertical land movement, characteristics of storm and stream water flows, and capacities of water management systems. Lessons from Olympia suggest that much of this data collection and analysis can be done internally, perhaps by Portland's own Public Services Department.

The highest resolution topographic data for the greater Portland area is currently available through LiDAR technology, produced by FEMA in 2006. The error associated with this data is considered to be somewhat large, at +/- 18.5 cm.[111] The Maine Office of GIS and USGS, in conjunction with a number of other state offices and the University of New Hampshire, is currently circulating a proposal to establish regional LiDAR collection for the New England coastline.[112] The accuracy of the proposed data would be significantly improved over the existing data. The data has valuable applications beyond sea level rise studies, and members of the Portland city council should support this proposal.

Inform and engage the public

Sea level rise can be frightening, especially when the impacts directly affect land areas where people live and work. The city must assume the responsibility of educating the public about the causes and implications of sea level rise, communicating scientific data in clear and easily understood terminology. Reports or maps that demonstrate potential climate change impacts should always be accompanied by information about what the city is doing to protect its citizens and assets.

The city should consider hosting a major public forum to educate and mobilize the community around issues of adaptation planning. On a smaller scale, Portland could enhance its website offerings to include materials on climate change impacts and current steps being taken, possibly as part of a new "Sustainable Portland" website. Portland's mitigation efforts were launched with significant fanfare, and adaptation efforts will likewise require a commitment to public outreach. The success of Olympia's Call to Action event suggests that investment in public outreach can pay off in funding approval for adaptation projects.

Join ICLEI's Climate Resilient Communities program.

The Climate Resilient Communities program is designed to help local governments develop tools to protect their communities from the impacts and costs of climate change, including sea level rise. The program is relatively new, and pilot communities include Keene, NH, Fort Collins, CO, Anchorage, AK, and Miami-Dade County, FL. Similar to ICLEI's Cities for Climate Protection campaign, the program leads governments through a milestone process, with locally relevant adaptation strategies and timelines.[113] The city of Keene recently reported on its progress within the program, having conducted a climate resiliency study and developed an action plan for adaptation efforts.[114] Keene's experience and documentation of its progress may be a helpful reference for Portland.

Planning for sea level rise will most likely prove to be a difficult proposition for a local government like Portland, given the scientific uncertainties of climate change, the long timescale under consideration, and the physical and financial magnitude of the more significant infrastructure adaptations that may be required. A partnership with ICLEI will help Portland navigate these issues and will connect the city with a network of other local governments that are facing similar problems.

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Engaging the Community to Plan for Portland's Future: Creating a Sustainable Master Plan

Emily Reinholt

ABSTRACT: Communities and municipalities across the country are recognizing the benefits of public participation as an integral part of decision and policymaking. As Portland continues to make steps towards sustainability, its success will depend on the support of the Portland community at large. The model used by Burlington, Vermont in developing the Legacy Project Action Plan has received huge praise for its inclusive process of public participation and has served as a model for other cities across the country.

Introduction

Public participation is one of the founding components of a democratic system, and has been identified as a trademark of the Sustainable Community.[115] While there are numerous strategies used by city governments across the country for encouraging public participation, many of these strategies tend to fall short in their outcome. Current methods of public participation are frequently criticized for under representation or inclusion of certain populations such as those of low-income or ethnic minorities.[116] In addition, some argue that efforts to foster public participation are ridden with conflict and opposition among participants as a result of differing values, perspectives and life-style. Meanwhile, substantial research concludes that public participation is an essential component to a successful and sustainable city.[117]

For this reason, I am recommending that the City of Portland engage the public in development of a Sustainable Master Plan. This paper will review the theoretical basis of my recommendation from a systems perspective, describe the process used by Burlington, Vermont as a working model in development of their Legacy Project, and explore the potential for a similar model to be used in creation of a sustainable master plan for Portland. Finally, I will make a few 'first step' recommendations that the City of Portland could use in initiating this process.

The process involved in developing a sustainable master plan holds as much value as the finished product, as it fosters recognition of a community as a working system whose success is dependent on fluid communication, collaboration and integration of its components as a single unit. As new relationships develop, common interests are acknowledged, new perspectives are brought to light and participants are inclined to find ways to reconcile differences and merge competing interests into a shared goal.[118]

There is no disputing the fact that the current American way of life is not sustainable. As a system, it can be determined that something is just not working. There is a significant disconnect between necessary components and a disruption in feedback flows. The process described in this paper is meant to repair broken connections, create new ones, identify gaps and determine corrective actions that will help the system function in its entirety. The process also provides opportunity to assess the system's purpose and goals. In order to identify ways in which a system can become more sustainable, it is essential to consider and appreciate the full scope of its components, and more importantly, the relationships and feedback flows between those components.

In order for the city of Portland to make significant progress toward its goal of sustainability, this goal must have the support of the Portland community at large. Without public support and inclusion, whatever government efforts are made to help Portland become more sustainable will be met with controversy, apathy or disregard by the various sectors within the community. This is not to say that progress will not be made; certainly, many successful steps have already been taken to make Portland more sustainable. Nonetheless, with the threat of global warming, an energy crisis and further derailment of the economy, whatever progress has been made up to this point is miniscule in comparison to how far we have to go.

One of the complexities involved in building a sustainable community is that progress is highly dependent on the behaviors and commitment of community members.[119] Take littering for example. Despite years of effort, it continues to be a problem. In a survey I conducted on businesses in Portland's East End, the top concern among business owners was littering. It is clear that littering is not helpful to anybody and causes significant harm to the environment, not to mention its effect on the basic aesthetics and cleanliness of a city. Why then, do people continue to do it? Of course, the reasons why people litter are countless, but it seems that things such as apathy, lack of awareness and a general disregard are on the forefront of the list.

The same concept applies to a whole host of behaviors, ranging from turning off lights and electronics in order to save on electricity, buying from local businesses to improve the local economy, or saying hello to people as you pass them on the street. The journey toward sustainability requires more than changes in government policy or efforts of local organizations. It entails a major shift in behavior and awareness of the community at large. Unlike crime control, the war on drugs or equal rights across gender and ethnicity, the behavior changes involved in efforts toward sustainability are, for the most part, not ones that can be enforced through legal action or government control. Instead, they require an awareness, appreciation and empowerment of community members around the concepts of sustainability and the implications of their actions on the overall well being of the community. The process I am

recommending for developing a sustainable master plan for Portland provides the benefit in increasing public awareness, civic engagement, and empathy of the community at large.

The Process: Benefits and Principles

In 2008, the National Research Council released a report on the value of public participation in environmental assessment and decision-making at the request of the U.S. Environmental Protection Agency, Food and Drug Administration, and departments of Energy and Agriculture.[120] In essence, the report concluded, "When done correctly, public participation improves the quality of federal agencies decisions about the environment."

Principles of the Public Participation Process

The National Research Council provides a thorough analysis of policy principles around public participation. Among these principles, they identify four key guidelines to be used in all aspects of public participation.[121]

1. **Inclusiveness of Participation** – Extensive efforts should be made to include members from all areas within a community, with special interest paid to those populations that may be underrepresented. By ensuring participation and inclusion that covers the full spectrum of a community, the scope of perspectives is expanded, adding to the validity and overall quality of the final product. In addition, the level of inclusion across a community in creating a plan helps determine the level of support in its implementation.

2. **Collaborative Problem Formulation & Process** – Identify and engage participants as early in the process as possible. Initial participants should be influential in identifying focus areas and future design for public outreach. As the process continues, participants should help in facilitation and public outreach including identification of underrepresented populations and potential barriers to participation.

3. **Transparency of Process** – The public should be made aware of all aspects of the process and information should be available to all, whether they are participating in the process or not. All aspects of the process, including its goals, design and progress, should be accessible to the public throughout the duration of the process.

4. **Good Faith Communication** – The process should include guidelines and procedures for "communication to and from decision makers or other constituencies in organizations involved in the process, including agency sponsors and interest groups as well as the public." Those representing various community groups must "commit to act in good faith and to maintain communication with those they represent."[122]

Benefits

Education and awareness

Participants should be provided with the tools and information needed in order to participate in a meaningful way.[123] The city of Portland successfully demonstrated this point in the process designed for public participation regarding the Maine State Pier. By encouraging participants to attend educational lectures on the Maine State Pier prior to participating in the community workshop, participants were able to make educated recommendations and decisions regarding future development of the pier.

The process of deliberation also raises participant's awareness of differing perspectives and points of view. A study conducted by Public Agenda for the Kettering Foundation on citizen deliberation found that 53% of participants changed their mind through the deliberation process and 78% found validity in viewpoints different from their own.[124]

Community ownership and commitment

Portland's success in becoming more sustainable is dependent on commitment of its residents, leaders and city officials alike. In his discussion of ***The Competent Community***, Leonard S. Cottrell, Jr. identifies three factors that foster a sense of community commitment within an individual. These include "(1) they see that what it does and what happens to it has a vital impact on their own lives and values they cherish; (2) they find that they have a recognized significant role in it; and (3) they see positive results from their efforts to participate in its life."[125] The process I am recommending for developing a sustainable master plan for Portland encourages all three of these factors, as it encourages participants to identify what they value about Portland, recognizes the important role of all members of Portland's community, and builds a positive vision based on participation of community members. People are asked to come together and through deliberation and consensus building, formulate a vision, goals and action steps for Portland to use in moving forward toward sustainability. By seeking support and collaboration of the general public in developing a plan for Portland's future, people are able to recognize their role in helping Portland to become more sustainable.

Resilience through a diversity of perspectives

Diversity has long been recognized as a fundamental component to sustainability because it promotes resilience within a system.[126] In regards to public participation and decision-making, a diversity of perspectives and values promotes legitimacy and resilience of the end product. The National Research Council noted that public participation in the decision making process "should enhance the ability to implement decisions once they are made both by producing better decisions and by producing legitimate, credible, and well-understood decisions."[127] Diversity of participants allows for ideas and perspectives to

be brought to light that may not have been otherwise considered, thereby reducing controversy that may arise during implementation of the plan.

Networking, Alliances and New Relationships

The process cultivates new relationships and builds alliances across all sectors of the community. At the same time, deliberation has been found to "link people to one another, creating a public, which is a body of people joined together to deal with common problems."[128]

Improves the quality of future public participation and civic engagement

Public education and awareness rising carries the additional benefit of improving the quality of future participation and increasing civic engagement. The process I am suggesting lays the framework for future public participation in policy and decision-making. It provides people with the tools needed to participate in a valuable way and builds trust between the general public and the city government.

Burlington, Vermont: The Legacy Project

The city of Burlington, Vermont is a small city with a population of about 40,000. Despite Burlington's small size, it is the largest city in the State of Vermont. Burlington is known for its progressive steps toward becoming a sustainable community. It is rich in local arts and music and the home of Champlain College, the University of Vermont and Community College of Vermont. Burlington's character holds many similarities to Portland, Maine. In addition to those listed above, Burlington is a small New England city with a rich heritage and history of civic engagement and community activism.

What Have They Undertaken?

> *"Thousands of people from all age groups and all parts of the city participated to build a common vision of Burlington's future. Citizens were asked to identify what they value most about Burlington and what they hope future generations will not have to experience. Numerous open meetings, focus groups, and discussions were conducted resulting in an action plan that was shaped and prioritized by Burlington residents."*[129]

The city of Burlington, Vermont is an exemplary model of how a community can be brought together and, "working collaboratively with unity of purpose" create a plan for the city based on a common vision and goal. In 1999, the Legacy Project Action Plan, described as "a blueprint for change for the economic, environmental, social, and cultural health of our community for generations to come,"[130] was initiated by Burlington's mayor, Peter Clavelle. The city was supported in their process through grant funds from the U.S. Environmental Protection Agency and the 1992 Jane B. Cook Charitable Trust.[131]

Burlington's Process

1. **Steering Committee** – Burlington's first step was in Appointment of the Legacy Project Steering Committee, whose purpose was to over the public outreach campaign and compile results to create the Legacy Project Action Plan. Members of the steering committee included leaders from a variety of community groups including business, low-income, environment, academic, youth, and social services in order to represent a diversity of public interests. In reference to the National Research Council's policy guideline of inclusiveness of participation, Burlington took significant steps to ensure representation of a wide spectrum of the community in appointment of the Legacy Steering Committee.
2. **Surveys** – The next stage of the process involved engaging the community in creating a shared vision of Burlington's future. The first step involved distribution of thousands of surveys asking Burlington residents to share their hopes and concerns for Burlington's future. The Legacy Project Steering Committee was then responsible for reviewing the surveys and compiling information to create a shared vision for Burlington's sustainable future that would be the foundation for development of the Legacy Project Action Plan.
3. **Focus Groups** – The steering committee then organized focus groups in the following areas: economy, environment, energy, transportation, health care, and education. The steering committee collaborated with Burlington's Neighborhood Assemblies in order to engage the public in holding the focus groups.
4. **General Outreach** – In addition to structured dialogue of the focus groups, the Legacy Project Steering Committee engaged in informal dialogue and outreach within the community, in order to ensure the engagement and perspectives of populations that may not have been represented in the focus groups. Members of the steering committee visited and engaged in communication with individuals from more than 60 community-based organizations, including local food pantries, homeless shelters and senior centers. This type of outreach serves the general purpose of overcoming the barrier of under representation of populations such as low-income and ethnic minorities.
5. **Youth** – Special outreach was conducted in Burlington Schools in order to engage the youth. In addition to discussion, youth were encouraged to share their thoughts and visions through art including storytelling, printmaking, essay contests, etc.
6. **Public Hearings** – After development of the first draft of the Legacy Project Action plan the city of Burlington held four public hearings to provide residents with the opportunity to share additional comments, concerns and feedback on the draft.
7. **Summit on the City's Future** – A final public meeting was held to review the final draft of the Legacy Project Action Plan. Over 300 people attended the meeting to participate in finalizing the

Legacy Project Action Plan. Since development of the Legacy Project the Legacy Project Steering Committee – which continues to be active – holds an annual town meeting celebrating its success and assessing the year's progress. The town meeting also provides opportunity for the Burlington communities to identify new action steps, goals and priorities for the following year.

With What Effect?

Burlington has received great praise and recognition for its steps toward sustainability. In recognition of Burlington's Legacy Project, the city was awarded the "Core Value" award from the International Association of Public Participation for the Legacy Project. In 2007, Burlington was ranked as the country's "greenest city," based on a survey that looked at air and watershed quality, mass transit use, power use, and number of organic producers and farmers' markets in 379 metropolitan areas nationwide. In 2008 Burlington was one of two members of Local Governments of Sustainability (ICLEI) to receive a level 5 award (highest possible level) for efforts to reduce greenhouse gas emissions.[132]

Creating a Sustainable Master plan for Portland, Maine

Like many New England communities, Portland, Maine is rich in civic engagement and community activism. The growing population of local non-profits, environmental groups, neighborhood organizations, initiatives and green groups demonstrates a growing desire among Portland residents to be part of Portland's progress as a healthy and sustainable city. In addition, such a high level of public involvement indicates a common respect and compassion for the Portland's community and its future.

Recommendations for Initiating the Process

1. *Utilize neighborhood organizations* – The city of Portland has several active neighborhood organizations. Similar to the way in which Burlington used its strong structure of Neighborhood Assemblies in engaging the public in focus groups, Portland's neighborhood organizations are valuable assets and can be influential players in the process of developing Portland's sustainable master plan. Neighborhood organizations can serve as a link between the steering committee and the public.
2. *Seek support from local organizations* – In addition to Portland's neighborhood organizations; there is an ever-growing population of local organizations, initiatives and community organizations working in a diversity of areas to increase the quality of life in Portland. Through assessment of these various groups, the city can identify leaders and experts in a variety of areas. These individuals could become key players in the process, as they are able to provide expertise on specific topics necessary in planning for Portland's sustainable future.

3. *Look to outside resources for support* – I recommend that the city of Portland turn to outside resources for support in designing and implementing the process involved in creating a sustainable master plan for Portland. The city of Newburg, New York was very successful in their partnership with Global Communities and Planning Partnership.[133] The city should explore a variety of avenues and resources for funding support and process design.

Helpful Resources

The Kettering Foundation

The Kettering Foundation Works provides support and educational tools to communities, institutions and local governments to develop strategies to strengthen the democratic process through organizing citizen dialogues. The foundation studies the nature of public choice as it relates to deliberative decision-making and "factors that affect the willingness of individuals and organizations to engage in it."[134]

Planning Partnership

The Planning Partnership is an alliance of government leaders, planning commissioners and members of local voluntary and private organizations. When Hamilton County, Ohio began its process of developing a comprehensive master plan, it received support from the Planning Partnership in initiating a Countywide Town Meeting as part of the visioning process. Thirteen hundred county residents participated in deliberation over the question of "What can we do to make Hamilton County the best it can be in the coming years?"[135]

Global Communities

The Global Community Initiative is an international organization whose mission is to "help communities move forward with confidence and enthusiasm to achieve their vision for a healthy environment, a vibrant economy, good governance, and a sense of connection to their neighbors and the world."[136] The Global Community Initiative worked with the city of Newburgh, New York to engage citizens in developing the city's Sustainable Master Plan. They provide resources and tools to assist communities in developing a shared vision for the future.

Public Conversations Project

The Public Conversations Project is based out of Massachusetts and provides support to communities around the world to "constructively address conflicts relating to values and worldviews."[137] Services provided include workshops, consultations, dialogues and meeting design based on facilitating

successful methods for discussion of controversial issues. The Public Conversations Project also provides a variety of publications aimed at teaching methods for successful communication and conflict resolution.

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