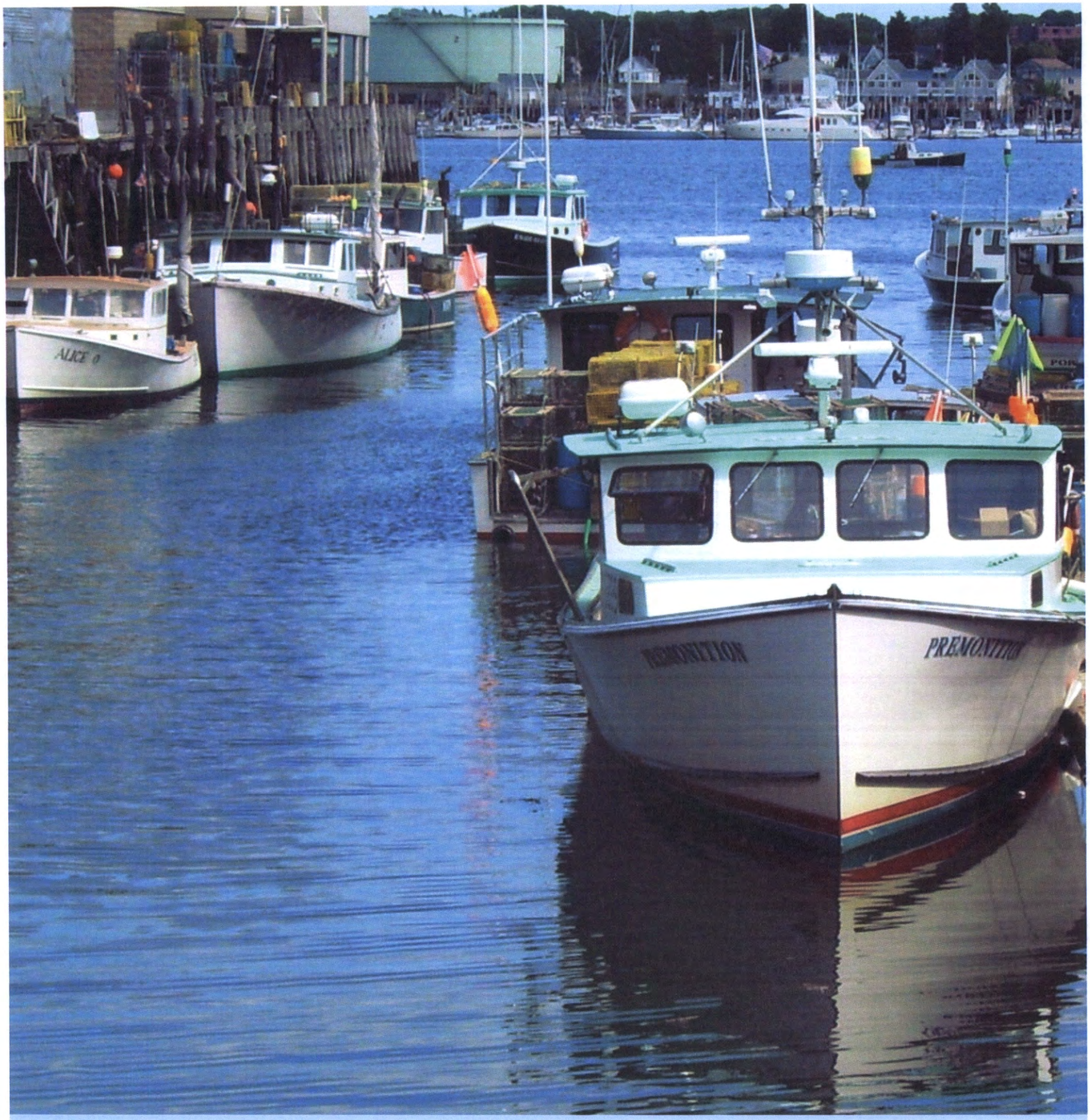

SUSTAINABLE PORTLAND

REPORT O F THE MAYOR'S SUSTAINABLE PORTLAND TASKFORCE

PRESENTED TO:
THE ENERGY AND ENVIRONMENTAL SUSTAINABILITY COMMITTEE
CITY OF PORTLAND, MAINE

SEPTEMBER 2009

Sustainable Portland

Final Report of the Mayor's *Sustainable Portland* Taskforce

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Committee Members

Bret Bridges, *Engineer, Woodard & Curran; Vice President, Portland Trails*
Jon Hinck, *Attorney, Maine House of Representatives, District 118*
Gunnar Hubbard, *Architect, Fore Solutions*
David Littell, *Commissioner, Maine Department of Environmental Protection*
Mac McCabe, *President and Owner, O'Naturals*
Martha Sheils, *Resource Economics and Policy Analyst; Drafting Subcommittee member*
Travis Wagner, *Professor of Environmental Sciences, University of Southern Maine, Drafting Subcommittee member*

City Council Committee Members

Councilor Jill Duson, *Co – Chair*
Former Mayor Nathan Smith, *Co – Chair*
Councilor James Cohen, *Appointing Mayor, Drafting Subcommittee member*

Participants

Peter Cooke, *DEP*
Kevin Donoghue, *Portland City Council*
Doug Greeley,*University of Southern Maine*
Gary Higginbottom, *Mitchell Geographics*
Alice James, *Portland Citizen*
Christa Koehler, *ICLEI*
Craig Lapine, *Cultivating Community*
Steve Linnell, *GPCOG*
David Marshall, *Portland City Council*
Misha Mytar, *Clean Air- Cool Planet Intern*
Francisco Sanfilipo, *Portland Citizen*
Colin Schless, *Fore Solutions Intern*
Suzanne Watson, *MDEP, Office of Innovation*
Allison Zuchman, *Fore Solutions*

City Staff

Joseph E. Gray, *City Manager*
Penny St. Louis Littell, *Planning and Urban Development Director*
Alex Jaegerman, *Planning Division Director*
Bill Needelman, *Senior Planner*
Eric Giles, *Planner*
Jennifer Dorr, *Administrative Support*
Judith Rosen, *Administrative Support*

Sustainable Portland – Final Draft Report, 09-24-09

Foreword

The City of Portland's journey as a sustainable place began far in the past. Colonial occupation of "Falmouth Neck" goes back over 370 years, and Native Americans have called Casco Bay home for thousands of years. Portlanders have learned that change is inevitable. Changing economies, a history of catastrophic fires, and shifting demographics, have bred a City whose residents understand the value of adaptation, self reliance, and resilience. Thinking long-term and holistically are part of our identity as a community and are the basis of *Sustainable Portland*.

Past leaders, such as Mayor James Phinney Baxter (a driving force behind the creation of the Eastern and Western Promenades, Back Cove, and improvements to Deering Oaks) understood the value of taking the long, broad view and worked tirelessly to preserve and enhance this City for future generations.

If the City of Portland's future is to be a sustainable community, the City must commit to a continuous process of self-assessment and adaptation. Achieving sustainability requires a process of evolution to occur while simultaneously retaining the qualities, relationships, and character of place that we value and define us as a community. We must identify what we value and commit to the long term stewardship of these assets. We value our clean environment, our economic well-being, and our vital neighborhoods. If we aspire to be a sustainable community, we must develop and change in keeping with these values.

Our challenge in becoming a sustainable community is to systematically incorporate the *concept of sustainability* into our everyday decision-making. Specifically, when faced with decisions, our City government, residents, institutions, and businesses should ask a series of questions: Is this decision good for the environment, the economy, and the community? Is this good for the long-term? If the answers are "yes," then the decision will move us toward becoming a more sustainable city.

This report is the start of a conscious process of reflection, self-evaluation, and recommended actions toward sustainability. Most importantly, this report frames the discussion of how we answer tough questions over the course of our generation's stewardship of this community. The *Sustainable Portland* Taskforce offers this report as a step in taking realistic actions in the tradition of Mayor Baxter - actions for ourselves and for generations of future Portlanders.

Sustainable Portland – Final Report, 9-24-09

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I. Introduction

A. What's In This Report

This report is an introduction to the practical concepts of "sustainability" and a framework for applying these concepts into our everyday lives and community activities in Portland, Maine. The first part of this report discusses sustainability in academic terms and establishes a framework for evaluating how sustainable practices in Portland, Maine fit within sustainability efforts taking place around the globe. The body of the report discusses each of the three "legs" of the sustainability "stool," namely:

- a sustainable environment,
- a sustainable economy, and
- a sustainable community.

For each component, the report identifies recent *accomplishments*, community *challenges, benchmarks* to track progress, and *recommendations* for future action. The body of the report is followed by an appendix of model programs or initiatives that can make Portland a more sustainable city.

B. The Sustainable Portland Taskforce

The Sustainable Portland Taskforce was established in 2006 by Mayor James Cohen to study and address comprehensively issues related to Portland's environmental, economic, and community sustainability.

Co-Chaired by Former Mayor Jill C. Duson and Former Mayor Nathan Smith and comprised of environmental professionals and regulators, business representatives, academics, public officials, and residents, the Taskforce was charged by the City Council with considering:

- economic development policies
- private business practices
- land use and resource conservation practices
- transportation policies and infrastructure
- green building technology
- energy efficiency of City structures and fleets
- City decision making processes respecting sustainable development, and sustainability education

The City Council also asked that the Taskforce develop benchmarks and indicators to measure Portland's progress toward these sustainability goals.

This report contains the recommendations of the Sustainable Portland Task Force regarding Portland's progress toward sustainability according to the indices noted above, and a set of comprehensive recommendations to further the goal of sustainability within Maine's largest city.

II. Sustainability Defined

Short-term thinking is more expensive than long-term planning: Jack School

In the 1950's, the City of Portland built a new school, Jack Junior High School, on a beautiful site overlooking Back Cove, the western mountains, and the islands of Casco Bay. Located in the densely developed working class neighborhood of Munjoy Hill, the school eventually transitioned into an elementary school, and the *Jack School* facility served its neighborhood faithfully for 50 years. Like all buildings, Jack School aged and a poor design and cutbacks in maintenance budgets led to roof leaks and uncontrolled water infiltration into the school's walls, frame and basement. Unfortunately, by the time the moisture problem was addressed, a serious mold infestation had developed, school employees had been sickened and the school was literally abandoned.

While the Jack School site is now occupied by an exciting new LEED certified facility, the East End Community School, the costs have been staggering. The cost savings that the City accrued by not designing for the future and deferring simple maintenance resulted in a public expenditure of over $10 million in new construction costs. These costs do not account for the health impacts to students and employees, the disruption of education services to the Munjoy Hill and adjacent neighborhoods, or the wasteful demolition of what should have been a structurally sound building.

Simply put, short-term thinking and budgeting have costs that Portland citizens cannot afford.

Prior to exploring *how* sustainability can be achieved, it is important to define what sustainability *means*. This is important because sustainability can mean many different things to many different people. One common definition of sustainability recognizes sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* (Brundtland Report, 1987). Another definition of sustainability recognizes it as *"the integration of economic, environmental, and social goals."* (Dower, Ditz, Faeth, Johnson, Kozloff, and MacKenzie, Frontiers of Sustainability, Island Press, 1997).

While many people think about sustainability in terms of the environment, as we can see from the definitions, it is really much broader. It is about thinking long term, and making decisions today that appropriately consider the implications on tomorrow. Portland has thrived as a municipality for 370 years, which is a testament to the foresight and long-term thinking of many prior generations of Portlanders. However, for Portland to thrive and grow for another 370 years, we must think long term, which means incorporating the concepts of "sustainability" into our decision-making. That is what this report is about.

III. Sustainable Portland: The Environment

A. Describing a Sustainable Environment

The Debate Is Over – Climate change needs immediate action.

The City of Portland, its people, neighborhoods and environments, will be directly impacted by increases in the earth's temperature. The scientific community is rapidly coming to the conclusion that, because of climate change, sea levels are rising, weather events are more severe, and our character-defining ecologies are changing. The only real question remaining is how extensive and how rapidly these changes will occur. For Portland, projections suggest that climate change will result in flooding, infrastructure damage, stresses on already stressed fisheries, and a host of other impacts that we have only started to understand. Given that there are hundreds (or thousands) of Portland homes, parks, roads, and commercial properties that are barely elevated above current flood plain elevations, even modest sea level changes may well be catastrophic. Imagine the memorial linden trees of Baxter Boulevard destroyed by salt water intrusion. Consider historic Commercial Street located within the inter-tidal range. Think of a Casco Bay too warm for healthy lobster populations.

The time for action is now.

In the broadest sense, the environment is our physical and biological community -- our life support system. The environment includes everything we rely on during our lifetime: air, water, soil, rock, vegetation, and all living organisms. For many, the environment has become less about our entire eco-system, and more about segmented areas we set aside as green areas, parks, and designated recreation areas. As a City, we have done an admirable job preserving parks, trails, and open spaces, but sustaining our environment cannot end here. Portland also needs to consider the long-term health of its air, its lands, its water, and its surrounding oceans whenever it takes actions. Our long-term survival as a city depends on it.

The activity of Portland residents, businesses, and institutions constantly impacts our environment. Portlanders affect their environment with every item they purchase, mode of transportation they choose, land-use and conservation policy they enact, and building they build. Literally, every action we make as individuals and as a City has some effect on our local environment – positive or negative. For this reason, the *Sustainable Portland Taskforce* has identified a number of key areas where Portlanders can concentrate their efforts in order to remediate and ensure the future of our environment. The Taskforce believes that, by working together and thinking long-term about environment, we can ensure a healthy and productive future for our city.

Increasingly, Portlanders and other citizens throughout the world have become cognizant of the close relationship they have with their environment. Decisions we made decades ago regarding carbon emissions, for example, may be affecting us today in the form of climate change. Activities that take place in Portland may affect remote regions of the world, like the glaciers of Greenland, and the activities of those glaciers thousands of miles away can affect us profoundly in terms of our weather and sea level. Just as New Orleans recognized its vulnerability to hurricanes, a risk sadly realized in 2005 with Hurricane Katrina, so does Portland recognize our close relationship with the ocean and the potentially devastating effects sea level rise. If we and others do not come to grips with these realities, and modify our behaviors accordingly, Portland's

While a comprehensive climate action plan is beyond the scope of this report, our lack of total understanding of the issue can not be an excuse for inaction. If we need data as the basis for decisions, we need to start systematically collecting this data. An important step in this task has been completed with a City-wide energy audit conducted by Clean Air – Cool Planet.

Ultimately, as a community, we must do our part to reduce our net carbon emissions. Additionally, we must begin the conversation of how to adapt our lower lying neighborhoods and districts to rising sea level, and we need to begin the steps necessary to comprehend the magnitude of the financial burden that climate change will place on our City.

Climate change may be the greatest challenge to our City since the re-building after the Great Fire of 1866 and it will require of us an honest, committed, and sustained commitment to change.

future will be placed in grave danger. This is one of the great challenges of our time.

Our environment also affects us greatly when it comes to the air we breathe, or the water we drink. When vehicles idle or commuting traffic becomes congested, the quality of our air goes down and many individuals quite literally are unable to breathe properly. Childhood asthma has been on the rise, and human activities are a contributing factor. The question is, are we willing to modify our behaviors to do something about it.

To address what has become one of the defining challenges of our time, *Sustainable Portland* has established as a key goal the protection and enhancement of public and ecological health through pollution prevention: the elimination or reduction in volume and/or toxicity of toxic and hazardous materials, air emissions, water discharges, solid and hazardous waste, pesticides, and existing environmental contaminants such as lead. In achieving this goal, it is imperative that no sector of Portland's population or area is exposed unfairly to toxic substances and/or pollution.

Pollution prevention is an essential component of achieving environmental sustainability. Pollution prevention means reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream. Pollution prevention means "source reduction," as defined under the federal Pollution Prevention Act, and other practices that reduce or eliminate the creation of pollutants. Pollution prevention methods can help Portland minimize municipal wastes. Emissions and pollution prevention assistance programs can help residents, institutions, and businesses further reduce the amount of solid, liquid, and toxic wastes they generate while increasing profits and decreasing health hazards.

Green Building is an important means for reducing pollution and our "carbon footprint." By building structures that use less energy, and generate less waste, we can reduce the impact on our environment and save money in the long run. Existing buildings can also be updated using environmentally responsible materials and efficient systems. Building green provides obvious environmental benefits, but increasingly, as the price of energy skyrockets, the economic payback of efficiency makes green building a sound investment. For this reason, many cities and organizations around the country are implementing green building policies and codes, and the Sustainable Portland Task Force believes Portland should follow their example. A description of the benefits of Green Building practice is described more fully in the Appendix.

The City of Portland itself has shown strong leadership in the area of sustainable environment. In 2005, through the leadership of Mayor Jill Duson, Portland became the first city to sign the Carbon Challenge issued by Governor John Baldacci, pledging to reduce carbon emissions by 10% below 1990 levels by 2020. In 2006, Mayor James Cohen became the first mayor in Maine to sign onto the Climate Action Plan of the U.S. Conference of Mayors, which plan calls on the city to meet the requirements of the Kyoto Protocol. In both cases, the City has pledged to reduce its carbon footprint, and to meet this goal, *Clean Air – Cool Planet* provided technical support to establish benchmarks and help measure progress of the City toward this goal. A summary of the audit is provided in the Appendix.

Annual Savings from Green Building Strategies

Category	*$/sf*	*50,000 SF Building*
Energy	$0.44	$22,000
Water*	$0.047	$2,350
Cx O&M	$0.68	$34,000
Total		**$58,350**

*Unit value based on $3.50/kgal

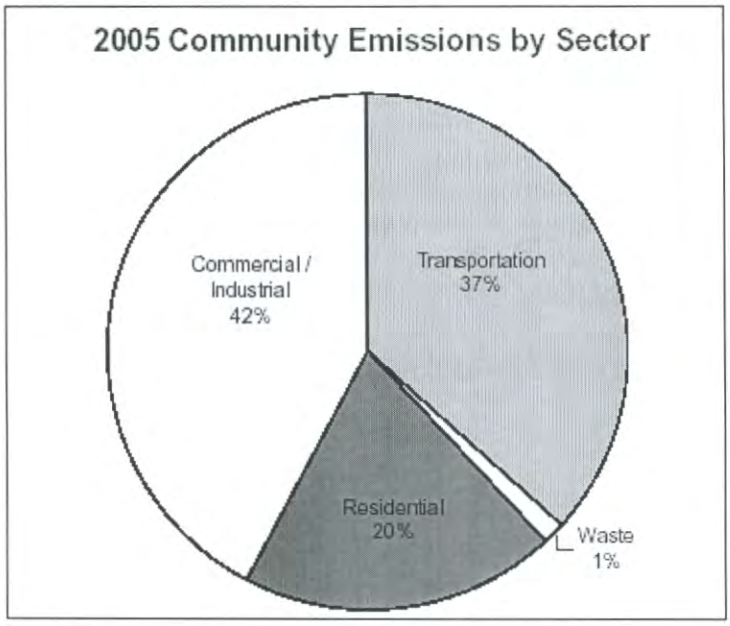
20-Year Net Present Value

Category	*$/sf*	*50,000 SF Building*
Energy Value	$6.09	$304,500
Water Value	$0.51	$25,500
Cx and O&M Value	$8.47	$423,500
Green Cost Premium	($4.00)	-$200,000
Total		**$553,500**

Note: All $/sf values from Kats 2003 - The Costs and Financial Benefits of Green Buildings

Note: NPV assumptions: Discount rate: 7%, Inflation 2%, 20 year term (from Kats 2003)

Transportation and Land Use Decisions are major factors in pollution, green house gas emissions, and habitat loss. As seen in the pie chart graphic, over 1/3 of Portland's greenhouse gas emissions are generated by transportation sources. Not shown here are the costs and impacts related to storm-water pollution, land lost to parking, or the health impacts of car-generated air pollution. As a City, where we grow and how we travel will have an ever increasing impact on our environment and community health.



Fortunately, recent movements in *smart growth, transit oriented development*, and *new urbanism* provide models for linking land use and transportation development in a manner that reduces dependence on single occupancy vehicles. The City has an important role to play in advancing these trends and embracing use of alternative fuels and sensible transportation choices.

Source
2005 Greenhouse Gas Inventory and Energy Audit: *A Report on Portland's Progress Towards its Emissions Reduction Goals*
Clean Air-Cool Planet, 2007 Draft Report

Environmental Management **-** While there are many facets to sustaining Portland's environment, they all can come together through an **Environmental Management System** that embodies pollution prevention and sustainable practices. An Environmental Management System (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts institutionally while increasing efficiency and reducing costs. For Portland, an EMS is a continual cycle of planning, implementing, reviewing, and improving the processes and actions we can take to meet our governmental and environmental goals. An EMS provides us with a structure and process to:

- Develop an environmental policy that is linked with the City's goals.
- Evaluate all activities and the associated environmental impacts, including lifecycle costs of decisions and integration of environmental decisions with social and economic goals.
- Prioritize what activities and impacts should be addressed.
- Create a systematic plan for making changes that improve performance.
- Periodically review how changes have improved environmental performance.

- Revise the approach based on a review of results and other new information.
- Communicate successes and shortcomings to community stakeholders.

In short, an EMS within the City of Portland can provide our local government with an effective and systematic approach to coordinate across departments in order to achieve sustainability goals.

B. Progress Towards a Sustainable Environment

As noted above, the City of Portland has a long history of positive environmental stewardship. From sensible land use planning, to leadership in the area of solid waste disposal, to preservation of trails and open space, the City of Portland has demonstrated leadership in environmental sustainability. The following accomplishments are important to note because of the daunting tasks ahead of us as a City and society. Our future success in confronting the enormous issues of global warming, habitat loss and sprawl, and toxic pollution will depend on building on our successes and learning from our mistakes. While there remains much more to do, the Sustainable Portland Task Force believed it was important to highlight many of the City's achievements to date.

1. *Climate Protection* –The City of Portland has committed to become a leader in climate protection by becoming an ICLEI (*Local Governments for Sustainability*) member and Clean Air-Cool Planet partner. This strategic partnership has resulted in a greenhouse gas inventory, and has enabled the city to move forward in the creation of a local action plan for reducing energy use and greenhouse gas emissions.

   The City has made further commitments to address climate change through participation in the *Governor's Carbon Challenge* and the US Conference of Mayor's *Climate Action Plan*.

2. *Clean Water* – Following the construction of a wastewater treatment facility on Portland's East End in the early 1970's, the practice of routinely dumping raw sewage into Portland Harbor ceased and water quality in Portland Harbor has improved dramatically.

Sustainability is a National Movement

- ***More than four out of five of the survey cities now use renewable energy, or are considering beginning by next year.***

- ***All but four of the survey cities (97 percent) are using more energy-efficient lighting technologies in public buildings, streetlights, parks, traffic signals, and other applications, or expect to by next year.***

- ***Seventy-two percent of the responding mayors stated that their city fleets now run on alternative fuels and/or use hybrid-electric technology.***

- ***Nearly nine in ten of the cities require, or anticipate requiring in the next year, that new city government building be more energy efficient and environmentally sustainable.***

- ***More than three out of four of the cities are undertaking efforts to encourage the private sector to construct buildings that are energy efficient and use sustainable building techniques.***

- ***More than nine out of ten cities consider efforts to reduce greenhouse gas emissions to be part of their broader efforts to address public health concerns, such as improving air quality or encouraging active living.***

- ***In nearly three in four of the cities, mayors have reached out to other mayors, elected county officials, or other leaders in the region to encourage them to sign on to the U.S. Conference of Mayors Climate Protection Agreement and/or take action on climate protection.***

From www.usmayors.org (2007)

3. *Waste Reduction* -- In the late 1990's, Portland implemented a city-wide recycling program that has reduced waste disposal by approximately 40 percent.

4. *Land Use* – Through master planning, the City has established proactive changes to its land use ordinances to promote quality urban living and limit sprawl. The *Bayside Vision* and *Eastern Waterfront Master Plan* are two positive examples.

5. *Trails* – In the early 1990's, building on the adoption of the City's *Shoreway Access Plan* the City of Portland and numerous other groups partnered to form Portland Trails. A private non-profit land trust, Portland Trails has since preserved substantial tracts of key open space and established over 30 miles of hiking, biking, and walking trails throughout the City.

6. *Land Preservation* – With the creation of a Land Bank Commission in the late 1990's, the City has been able to preserve Portland's open spaces and identify others that are unique and worthy of preservation.

7. *Clean Transportation* -- In 2006, with the assistance of the Greater Portland Council of Governments and the *Maine Clean Communities* program, the Metro bus system began

to use clean burning natural gas in its fleet. At the same time, the City of Portland began using bio-diesel fuels in its vehicle fleet. The City has also made a commitment to establishing bicycle routes and new bike racks to promote human-powered transportation.

8. *Inter-modal Transportation* –Reintroduction of passenger train service to Boston, the Ocean Gateway marine passenger terminal, enhancements to the Metro bus "Pulse" as a local bus transit hub all promote transit use and efficiency.

9. *Ecological Health* – Several decades ago, the Presumpscot River was heavily polluted and all but dead. Substantial reductions in upstream pollution and dam removal, however, have helped restore this river which is now an active recreational boating, recreational fishing, and walking corridor for the City.

10. *Casco Bay Stewardship* – With the creation of activist and science-based organizations like Friends of Casco Bay and the Casco Bay Estuary Partnership, the water quality of Portland Harbor and Casco Bay continues to improve.

11. *Urban Forestry* – The City, through the efforts of the Parks and Recreation Department, has systematically inventoried and expanded Portland's urban forest and street tree collection. Partnerships with private groups and individuals have helped to increase tree plantings and stewardship in keeping with the City's reputation as the "Forest City."

C. Challenges to a Sustainable Environment

While Portland has made significant strides toward the goal of environmental sustainability, there remain significant challenges. Here are some notable challenges highlighted by the Sustainable Portland Task Force:

1. *Transportation and Parking* - The City's transportation policies place traffic and parking above alternative transportation even though vehicular transportation paces a far greater stress on our environment – and neighborhoods. Developing a public transit system that becomes the first choice for citizens, students, and visitors to Portland is a critical challenge to our environmental – and community -- sustainability.

2. *Energy Consumption* - Our increasing, per capita energy demand threatens the long-term ecological and economic viability of the city. It is increasingly apparent that the era of cheap petroleum is over. Both energy conservation and local generation of environmentally acceptable alternative energy sources need to be promoted to and for individuals, organizations, and the City.

3. *Sewer Overflow* - Combined sewer overflows continue to periodically discharge untreated sewage into our rivers, streams, and harbor during large rain storms. Despite the City's continuing commitment to separate sewers and reduce storm related overflows, construction delays and cost increases continue to challenge the City in achieving overflow reduction goals.

4. *Climate Change* – The stress of climate change on both the natural and built environment have only begun to be understood. Rising sea levels and changing ecological conditions may become the signature environmental challenge of this and future generations of Portlanders.

5. *Air Quality* – The air that Portlanders breathe continues to pose health risks. Improving local air quality requires local action as well as the involvement of regional and national *stakeholders.*

6. *Household Lead Exposure* - As one of the nation's oldest cities, nearly 84% of the housing stock on the Portland peninsula was built before 1950 when interior lead paint was prevalent.

7. *Lack of Regionalism* – Environmental issues rarely respect geopolitical boundaries and the City alone can do little to make significant progress on many issues without a ***regional*** response to issues such as storm water management, auto dependency/sprawl, toxic release and accumulation, and others. Clearly, Portland's actions on climate change need to be a local increment within a coordinated regional and global effort.

CSO Side Bar

"Cleaning up Casco Bay, one raindrop at a time"
Portland's Combined Sewer Overflow Abatement Program

In keeping with the State of Maine's proud connection to the development of the Clean Water Act of 1972, which Act was written and championed by longtime Maine Senator Edmund Muskie, we Portlanders hold ourselves to a high standard of water resource protection. Moreover, we can take pride in the fact that the Casco Bay of today is far cleaner than the Casco Bay of 1972. However, we also recognize that there is still much work to be done to improve the water quality of our Bay. One of the greatest challenges stems from the age of our City and our antiquated sewer system.

Unfortunately for Portland, when our original sewer system was developed, storm water, domestic sanitary flows, and industrial waste were all connected to a single pipe in the street. These "combined sewers" were the common practice of most cities until recent history, and during larger storms resulted in too little rain water reaching natural streams and wetlands, and too much flow for our single-pipe systems to handle. Too much water causes 'combined sewer overflows' (CSO's) into various water bodies throughout the City, and this remains a serious problem today.

In 1991 the City of Portland and Portland Water District entered into a Consent and Enforcement Agreement with the Maine Board of Environmental Protection, with the approval of the US EPA, to abate CSO's. In 1993, a three-tiered Master Plan was developed to control wet weather flows and prevent sewage from degrading the quality of our ponds, streams, rivers, and coastal waters. Numerical goals of the current version of the plan included eliminating 33 of a total of 42 CSO's, reducing overflow volumes by 88%, and reducing the number of annual CSO events by 85%. The focus of this plan is on improving the water quality of receiving waters while also addressing flooding and sewer system overflow problems in the context of the City's long-term goals for open space, recreational benefits, and community enhancement.

Progress on the plan has been substantial, but unfortunately the work has taken far longer and cost far more than predicted in 1993. To date, the City has in eliminated nine (9) CSO's and separated storm water from sanitary sewers in large

portions of the City. While the Master Plan originally proposed completion by 2008, we now propose completing our Tier II implementation plan in 2013 while concurrently developing the final Tier III plan.

In addition to time delays, costs have risen substantially – we now project a total cost of $102 million to complete our Tier II program, of which over $41 million has been spent to date. By comparison, the original Master Plan estimated total Tier II costs at $34 million. Moreover, the City still must develop and implement a Tier III plan, originally estimated to cost about $20 million.

Our next steps include generating a *Watershed Management Plan* that will allow the City to address these topics on a comprehensive basis in a truly sustainable way. Major tasks remain to be completed, including elimination of a single, large CSO scheduled for the end of Tier II, which CSO alone will remove about 12% of the annual CSO volume. Even with major infrastructure changes, it is clear that Clean Water Act compliance cannot be achieved through engineering alone; it requires changing behavior as well. Citizens, developers, and property owners will all have a role to play as we move forward toward sustainable storm water management. Infrastructure systems, land use patterns, development regulations, and preservation of sensitive habitat and floodplains will all play a role in reaching the successful end to this massive initiative.

Although addressing the CSO problem has created a strain on the City's resources, disrupted our neighborhoods during construction, and significantly burdened our sewer ratepayers, the CSO issue must nonetheless be completed. Portlanders depend on our natural assets to make this a livable and thriving community and workplace. Improving water quality is a goal that will reap rewards in many ways, both in the short and long term. As a commercial fishing port, as a community of coastal neighborhoods, and as a tourism destination, Portland depends on clean water, and for a *Sustainable Portland,* we believe the benefits of clean water outweigh the costs.

End Side Bar

Creating Partnerships and Building on Success

The Casco Bay Estuary Partnership has conducted significant scientific inquiry into the state of toxins in the Casco Bay region. Likewise, the City of Portland, through its Department of Public Works, has worked to reduce combined sewer overflow and better manage the City's stormwater system. The continuing Sustainable Portland Taskforce process will provide an organizational framework to utilize the scientific knowledge of regional not-for-profit advocacy groups within the day to day operations and capital budgeting of existing City programs. By identifying and prioritizing potential projects through collaborative process and shared knowledge, the greatest potential results and efficient use of public funds will result.

Casco Bay Estuary PARTNERSHIP

D. Recommendations for a Sustainable Environment:

It is one thing to recognize the importance of a sustainable environment, but taking the necessary steps to achieve this goal requires more than recognition. It requires leadership, and commitment. Climate change and energy cost issues have become the defining issues of our time, and increasingly, the citizens of Portland are demanding action. Dozens of major cities around this country have begun to take leadership roles with regard to environmental sustainability, and the Sustainable Portland Task Force believes that Portland needs to continue and expand its efforts in this area. The following goals, policies, and implementation strategies are recommendations for achieving a sustainable environment in Portland:

Goal

G.1 Pollution prevention and source reduction.

Policies

P.1.1 Explore development of and implementation of an Environmental Management System (EMS) with a goal of certification under ISO 14000.

P.1.2 Under the EMS, adopt a policy of pollution prevention as a guiding principle in all city decision making.

P.1.3 Under the EMS, adopt a citywide net zero waste goal for solid and hazardous waste.

P.1.4 Develop a comprehensive storm water management and pollution prevention program to eliminate toxics and excess nutrient run-off from entering Portland's surface waters and sediments.

P.1.5 Continue the work of the Casco Bay Estuary partnerships to identify and reduce toxic pollution.

P.1.6 Coordinate City efforts within a regional framework and develop stronger relationships with other communities to achieve common environmental sustainability goals.

Implementation

I.1.1 Adopt a reasonable and enforceable no-idling policy throughout the city – including maritime and aviation uses.

I.1.2 Continue to upgrade and separate our combined sewer/water system to minimize release of untreated sewage.

I.1.3 Encourage households and business properties to reduce storm water runoff volume and increase storm water quality through use of improved site design, decreased impervious surfaces, use of rain barrels and other best management practices.

I.1.4 Reduce the incidence of lead poisoning among children by expanding the dissemination of information regarding lead poisoning and lead safe work practices, particularly targeted to Portland homeowners with pre-1950's housing and children under the age of six.

I.1.5 Use City purchasing to support cost-effective local and green products using recycled products where possible.

Goal

G.2 Environmentally responsible and energy efficient buildings.

Policies

P.2.1 Establish as a priority, all new construction and renovation projects to focus on energy conservation.

Implementation

I.2.1 Adopt a requirement that all municipally funded new construction projects receive certification through the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system, targeting a minimum of a Silver Rating. Encourage non-City projects to receive LEED certification as well.

I.2.2 Continue to conduct energy audits of City Buildings and use the results to prioritize energy conservation efforts.

Goal

G.3 Environmental stewardship through effective transportation and land use decision-making.

Policies

P.3.1 Promote public bus transportation and other transit opportunities through infrastructure improvements, sidewalk clearance, expanded funding and operations for METRO, expanded use of METRO for public school transportation, and facilitating regional bus transit efforts.

P.3.2 Plan for sea level rise through land use regulations, education, and infrastructure planning.

P.3.3 Coordinate City efforts within a regional framework and develop stronger relationships with other communities to achieve common environmental sustainability goals.

Implementation

I.3.1 Draft and implement site plan/land use standards for environmental goals, including transit and bicycle use, energy efficiency, decreased impervious surface, improved stormwater quality, and increased wetlands protection.

Goal

G.4 Climate change and energy cost reduction.

Policies

P.4.1 Create a private/public smart energy management program.

P.4.2 Promote the use of alternative sources of energy supply.

Implementation

I.4.1 Work with Clean Air-Cool Planet to create greenhouse emissions reduction action plan for the entire Portland community.

I.4.2 Change out municipal lights and traffic lights to energy efficient fixtures.

I.4.3 Undertake an on-site renewable energy generation demonstration project.

I.4.4 Review existing codes and identify and remove barriers to energy conservation where appropriate.

I.4.5 Adopt new codes for all new municipal building projects to focus on energy conservation.

I.4.6 Create a public/private cooperative to train energy auditors in an effort to assist current building and home owners in reducing their energy consumption.

A Key Challenge: Reducing Household Lead Exposure

Lead poisoning remains a significant problem for families and children living in Portland's extensive older housing stock. Lead paint and lead contaminated soils threaten children of every scocio-economic demographic, but poor families in rental housing are disproportionably at risk. A 1997-2000 survey revealed that 37% of parents with lead poisoned children had undertaken home renovations within 6 months of the poisoning, and soil testing at various locations on the peninsula has revealed lead levels up to 25,000 ppm, dramatically above Maine DEP guidelines. At the same time, only 21% of age-eligible Portland children were screened in 2003.

While current City and State efforts have made strides to address these issues, much more can be done. To implement recommendation14 below, *Reduce the incidence of lead poisoning among children*, the City should consider the following:

a. Require the Inspections Division to provide lead hazard information when a building/renovation permit is requested for housing stock in designated areas of the City, and consider adoption of expanded code requirements promoting lead safe rental units modeled on City of Boston standards.

b. Encourage Portland Housing Authority to test all PHA managed units and vouchers financed units.

c. Expand home visits by public health nurses and minority health team, and promote lead screening of age-eligible children, including in daycares.

d. Work with state and federal agencies to obtain funding to contain and stabilize lead paint in designated homes in Portland.

Progress toward a Sustainable Portland needs to be measurable. Tracking a sustainable environment requires careful measurements and benchmarks, and Sustainable Portland has identified several key indicators below. If Portland can make progress in these key areas, we will be making progress toward achieving a sustainable environment.

1. Greenhouse gas emissions – maintaining the *Clean Air – Cool Planet* energy audit.
2. Number of and percentage of certified "green building" projects city-wide.
3. Percentage of locally consumed energy produced locally.
4. Municipal Solid Waste generation and percentage of recycled waste.
5. Number and condition of "Impaired urban streams" as identified by Maine DEP .
6. Impervious surface, percentage of City and gross area, and Volume Stormwater run-off.
7. Air Quality Index.
8. Number of bike racks and miles of bike lanes.
9. Combined Sewer overflow events and percentage of separated sewers within the City.
10. Single Occupancy Vehicle trips/Transit trips.
11. Mapped extent and severity of shore land flooding and infrastructure damage due to sea level rise.
12. Toxic Chemical Releases and Accumulation – using the *Casco Bay Estuary Partnership*'s report on Toxins in Casco Bay as a basis.
13. Number of and condition of street trees and acreage of urban forest.
14. Percentage of Portland children who are identified with BLLs ≥10ug/dl.(Baseline: 4.7% for children < 6yrs from 2001-2003). % of children who are screened for lead.

IV. Sustainable Portland: The Economy

A. Describing a Sustainable Economy

The second leg of the Sustainable Portland "stool" is a sustainable economy. A sustainable economy means an economy that is built for long-term growth in Portland.

An important characteristic of a sustainable economy is diversity. It cannot be a monoculture, one that heavily depends on one business sector, one crop, or one natural resource. From past experiences in Portland and elsewhere, we know that such a system is too susceptible to market downturns. By contrast, we know that a diverse economy is more resilient and less

susceptible to shifting markets. The more diverse the economy, the more adaptable it is to changing trends, external forces, and to emerging needs and opportunities.

A sustainable economy also requires dependable transportation, telecommunications, and general public infrastructure. These infrastructures enable our diversified workforce to move efficiently, and they enable raw materials and goods to get where they need to go. Effective infrastructure ensures that Portland does not suffer from being at "the end of the line."

A sustainable economy operates at local, regional, national, and global levels. The economic base must include export industries, products, and services to bring wealth into the local market where it will circulate and multiply – increasing prosperity within the Portland community. Growth sectors in the national and global economy provide opportunities and markets for Portland entrepreneurs that are supported by trade missions and strategic marketing of Portland's export industries.

A strong economy also requires a stock of adequate and affordable housing within a reasonable distance of the workplace. If workers cannot afford to live where they work, businesses won't be able to grow and prosper.

Finally, a sustainable economy depends on a well-trained, adaptable work force and solid entrepreneurial skills. A strong K-12 and higher educational system in and around Portland is crucial to producing adaptive and educated workers who can meet the demands of a dynamic economy. Both private and academic research also helps to broaden the City's economic base and to spur entrepreneurial offshoots within business clusters.

In order to be truly sustainable, the Portland economy must also incorporate the other two tiers of sustainability: the community and the environment. A sustainable economy must be done in harmony with and not in exploitation or degradation of its own nest. Thus, a City that strives to be economically sustainable will seek businesses which pollute less or not at all, support and actively encourage locally owned businesses, and will work continuously to strike a balance between building on existing synergies and seeking out new and untested market opportunities. Some of the existing synergies include a strong tourist industry, higher education institutions, medical services, a viable fishing industry, creative economy, and bioscience research and development.

Furthermore, it is beyond dispute that sustainable economies are those that retain and re-invest a significant portion of their wealth. Greater Portland needs to work towards a sustainable economy by creating and maintaining an infrastructure that supports fledgling, growing, and mature businesses. Portland's Buy Local campaign is a model of how our "creative economy" can profitably incorporate all three legs of our sustainability framework. The Buy Local campaign provides a strong grassroots example of initiatives Portland could employ on a macro level, and is described in greater detail in the Appendix.

B. Progress Toward a Sustainable Economy

Portland is the economic center of Maine and a key economic driver of northern New England. Portland's economy has also reflected boom and bust cycles over its long history. At one time, Portland was a center for manufacturing, fishing, and ocean-going trade. In the middle part of the 1800's, Portland rivaled Boston as an economic center. However, the Great Fire of 1866

and changes in economic development patterns sent Portland into an economic decline from which it did not recover, despite a temporary recovery during World War Two, until the mid 1970's. Fortunately, that recovery commenced a period of economic growth that continues to sustain Portland through today.

Recent growth is physically evident by the spread of the formerly narrow downtown business center into dozens of blocks in the Old Port, Commercial Street, Munjoy Hill, and increasingly into Bayside and the Eastern Waterfront. The health of Portland's current economy has also been touted by many national magazines, including consistently high ratings by *Inc.* Magazine and others listing Portland as one of the strongest metropolitan economies and places to start a business. In May 2007, *Kiplinger's Personal Finance* Magazine listed Portland as a top city for creative individuals, and in 2006, *Frommer's* listed Portland as a Top 12 destination to visit.

How Does This Picture Relate to Portland's Sustainability?

While lobster boats reflected in the calm waters of Portland Harbor make nice images for post cards, the scene here captures many of the sustainability issues described in this report.

Firstly, the boats and piers shown support a critical part of Portland's traditional fishing economy. Given fish stock shortages and regulatory constraints experienced by Maine's ground fishing fleet, lobstering, from boats like those seen above, provides continuity of access and fishing effort that sustains Portland's identity as a coastal community and a City of seafarers. Secondly, the boats themselves, here shown with a combination of regionally built wooden boats and commercially constructed fiberglass boats from "Down East" Maine, represent an important sector of Maine's manufacturing and export economy. Thirdly, the product supplied, the American lobster (Homerus Americanus,) is almost synonymous with the State of Maine and is critical to Maine's coastal and island communities and the state-wide tourism economy. Ensuring a quality environment – which also looks good in a post card – is more than just a pretty picture. A quality environment sustains a way of life for Portland, Casco Bay, and the State of Maine.

The difference between Portland's moribund economy of the first half of the 20th Century, and Portland's vibrant economy of today, is investment and diversity. In the 1970's and early 1980's, the City of Portland and area businesses invested in new streetscapes for Congress Street and Commercial Street, new bank buildings, a new Civic Center, a new downtown library, a new art museum, a new and larger airport, new university buildings, and retail activity in the Old Port. At the same time, as commodity manufacturing and traditional banking declined as an employment base in Portland, new businesses emerged in the technology, insurance and financial services, creative economy, and specialty manufacturing sectors that have diversified and strengthened Portland's economic base.

Presently, Portland's economy continues to be strong, but it remains challenged by a soft retail market, a perception that it is at "the end of the line" for transportation, and few large employers. However, strong small businesses, improved tourism, and a high quality of life have helped fuel steady growth in our local economy. The Sustainable Portland Task Force identified several achievements that characterize the progress of Portland's economy, including:

1. *Diversified Economy* - Portland has successfully transformed its economic base, weathering a decline in manufacturing and downtown retail and surviving suburban competition. A Business Diversity Task Force appointed by Mayor Nicholas Mavodones is now exploring opportunities to further diversify the downtown retail sector.

2. *Buy Local* - An active grass roots "Buy Local" movement is encouraging the reinvestment of dollars in the local economy to support a diverse and sustainable economy while promoting civic pride.

3. *Waterfront development*: Portland has taken an innovative approach to encourage its fishing economy by establishing the Portland Fish Pier and the operation of the Portland Fish Exchange auction. The City has also modified its zoning along the waterfront to promote economic development and diversity while preserving its working waterfront. Investments in infrastructure like Ocean Gateway, the Maine State Pier, and the International Marine Terminal offer further opportunities for diversified economic growth along Portland's waterfront.

4. *Creative Economy Summit*: In May 2006, Portland Mayor James Cohen convened a gathering of over 200 participants of the "creative economy" to identify opportunities and prioritize actions to support growth and vitality of the arts, intellectual industries, and design fields as a positive economic force for the community.

5. *Nationally Recognized Restaurant Cluster*: Portland is nationally known for its outstanding restaurants serving local produce, meats and seafood supporting regional agriculture and fisheries. Moreover, a growing number of Portland restaurants have been granted *green* certification by Maine Department of Environmental Protection for environmental leadership.

6. *Biotechnology*. In 2005, the City of Portland adopted a resolution to promote biotechnology in Portland. Subsequently, Portland has worked to develop a biotechnology business park on Rand Road, promote marine science by working with USM and the Gulf of Maine Research Institute, and work with the University of New England to Develop a new School of Pharmacy in Portland.

7. *Bayside Development*. To grow the City, the City of Portland has undertaken a multi-year effort to grow the footprint of the downtown into Bayside. This effort will unlock dozens of acres of post-industrial *brownfield* sites for potential office, retail, and residential activity at the base of the Portland peninsula.

8. *Quality Education*. Portland has a strong reputation as center of education, and a quality workforce. By investing in K-12 schools, and enabling the growth of institutions of higher education, Portland has worked to promote the type of skilled labor and creativity that fuels economic growth.

Through these activities, and many more, Portland continues to invest in its economy. In fact, a recent white paper released by the Portland Regional Chamber of Commerce, *Looking Out for Portland and the Region* (October 2007) confirms that the Portland Economy ranks highly in many of these areas as compared to peer cities around the country. While much more remains to be done, these ongoing investments continue to pay us back in terms of a growing tax base, a stronger and diverse jobs base, and a foundation for synergies for future economic growth.

C. Challenges to a Sustainable Economy

Even as Portland's economy grows and diversifies, we must be ever vigilant. As any region or business understands, without growth and investment, there is decline as other regions and economies move ahead. As a result, the Sustainable Portland Task Force recognizes that long-term economic success means a process of continual investment and efforts to improve. Some of the key challenges identified include:

1. *Short-term Thinking* - As a society, our perception of economic costs is that of short-term direct costs that fails to incorporate long-term and indirect costs "short term thinking vs. long term planning."

2. *Barriers to Re-use of Existing Buildings* - There are too many direct and indirect barriers to reusing and rehabilitating existing buildings and industrial land.

3. *Loss of Retail Diversity* – With the closure of downtown retail anchors such as Porteous, Levinsky's, Tommy's Hardware, and the Surplus Store, the downtown retail base no longer can support the everyday needs of all our citizens.

4. *Stress on the Marine Economy* - Access to and support for a viable working waterfront is under threat from a declining commercial fishing industry and non-marine development pressures.

D. Recommendations for a Sustainable Economy

To grow, Portland must acknowledge the challenges to its economy, and work to overcome them. The Sustainable Portland Task Force recognized the following goals, policies, and implementation strategies as recommendations Portland could take to move our economy in the right direction:

Goal

G.5 A diverse economy resilient to shifting market trends and adaptable to emerging needs and opportunities.

Policies

P.5.1 Support and enhance a citywide system of neighborhood business districts that are neighborhood-oriented, provide local services within a walkable distance from neighborhood population centers, and are linked by transit.

P.5.2 Promote and nurture the creative economy for the City.

P.5.3 Protect and promote the waterfront and marine-related businesses.

P.5.4 Promote emerging innovation economy, including biotechnology and other research based commerce.

P.5.5 Promote and encourage green business practices and businesses specializing in environmental and green-focused products and services.

P.5.6 Maintain regular relationships with local business groups.

Implementation

I.5.1 Adopt a Buy Local purchasing preference in the city's purchasing program.

I.5.2 Continue work with Portland Community Chamber to develop and track benchmarks measuring Portland's economic growth relative to Maine and national peer group cities.

Goal

G.6 Dependable infrastructure which enables efficient workforce mobility and transfer of commerce.

Policies

P.6.1 Enhance transportation infrastructure that promotes convenient and attractive multimodal transit linkages for both local and regional transportation.

P.6.2 Continue to invest in public transportation centers including rail, bus, ferry, and the Portland International Jetport to promote efficient and affordable linkages to Portland both as a destination and a gateway to northern New England and the Canadian Maritimes.

P.6.3 Identify and correct any City and State codes that impede recycling and rehabilitation of existing buildings and land.

Goal

G.7 Economic prosperity with Portland entrepreneurs and industries operating in local, regional, national, and global markets.

Policies

P.7.1 Promote regional business linkage throughout New England and Atlantic Canada.

P.7.2 Promote local food production and marketing that coordinates with the "Buy Local" campaign and expands both local and regional markets for Southern Maine farm and fisheries products.

P.7.3 Promote exportation local products and services, capitalizing on the Portland "brand" as a recognizable embodiment of quality products and the Maine work ethic.

Goal

G.8 A well-trained educated workforce able to meet the demands of a dynamic economy.

Policies

P.8.1 Continue to promote mixed-use housing, including the promotion of affordable and student housing, and aggressively implement Portland's housing plan, *Housing: Sustaining Portland's Future* (2002).

P.8.2 Commit to uphold our high quality K-12 and adult educational system through continued innovation and investment in effective programs, facilities, and enrichment activities.

P.8.3 Enhance ties with local universities, to ensure a skilled and adaptable workforce, encourage research and development, and spin-off business activity.

These are important steps Portland can take to maintain and grow its economy. There are also steps we can take to measure the success of our efforts, including the following benchmarks:

1. Employment levels and concentration.
2. Farmer's Market Days and volume.
3. Distribution of personal income.
4. Availability and affordability of "workforce housing".
5. Fish landings at the Portland Fish Pier and local lobster pounds.

6. High value-added products and services.
7. Value of exported goods and services.
8. Tourism visitation and spending.
9. Jetport, Amtrak Downeaster, cruise ship, and international ferry ridership.
10. Cost of Living.

If we make the right investments, and commit ourselves to a sustainable economy, Portland can look forward to long-term growth, job opportunities, and a consistently high quality of life. Portland has seen the results of chronic underinvestment in terms of nearly a century of weak economic activity, and Portland has seen the benefits of economic growth over the last three decades. The Sustainable Portland Task Force encourages us to learn from both experiences, and commit ourselves to the hard work of long-term economic success.

V. Sustainable Portland: The Community

A. Describing a Sustainable Community

As a City, we recognize the elements of our social system – our community – as the organizations, events and places that bring us together and give us a common identity as Portlanders. If we are to sustain our City, we must recognize and foster the essential *social infrastructure* that builds relationships, cultivates diversity, and reinforces a positive sense of place. Social infrastructure is as real as the environment in which it operates, and as important as the economic systems on which it relies.

The geography, natural systems, and built environment of the City provide the physical backdrop where social interactions occur. A healthy community, in turn, contributes positively to a strong economy and strong environment. In this way, a sustainable community is inextricably linked to a sustainable economy and environment. Below are some of the components that comprise a sustainable community.

Institutions. Through our schools, places of worship, civic organizations, arts organizations, and government, we learn, make decisions, and take collective action. Some institutions operate mostly within their buildings, while others exist largely as a self perpetuating set of relationships with a common purpose. Organized social institutions of all types are required in a community for its people to live fully and well.

Social Places. City boundaries set the parameters of the *Sustainable Portland* process, and for local decision-making, geopolitical limits are important. However, beyond "lines on a map," there are natural and built places that allow us to gather, conduct business, play, protest, and celebrate. Our public social places that require protection and consideration for sustainability include neighborhoods, school grounds, community centers, markets, public streets and sidewalks, parks, plazas, beaches, trails, theaters, stadiums and assembly halls. Privately, restaurants, pubs, and dance halls provide invaluable venues for community building that

contribute to our economy and sense of place. Additionally, there is a strong relationship between the institutions listed above and the structures they support. Public and private schools, fraternal organizations, community centers, and places of worship provide benefits beyond their membership by maintaining landmark buildings and supporting community activity. A *Sustainable Portland* is a place where organizations and their buildings mutually support the identity of the City.

Social and Civic Events. In addition to organizations and places, there are events in time. These include the holiday traditions, elections, festivals, and once in a lifetime happenings that define the Portland community as unique. These events bring us together and allow us to share experiences across boundaries of age, race, and culture. These events require civic places as venues and, while some are predictable (e.g. a Sea Dogs game at Hadlock Field), others occur as pure chance (e.g. a gathering of neighbors watching an eclipse in North Deering). Our built environment should be designed to bring the City together for both important and frivolous events.

Role of City Government. The City of Portland needs to continue its work to promote a sustainable community through promotion of public and private initiatives. Virtually all of the City's departments work daily on activities that promote the sustainability of our community. This report highlights particular activities and emphasizes the need for continued work between City departments to achieve community sustainability goals. A few recent City efforts are provided below as highlights to Portland's proactive approach toward sustainable community practices.

Fundamentally, a *Sustainable Portland* must address the basic needs of all members of the community – particularly those most at risk. The community must address head-on problems associated with mental illness, homelessness, drug addiction, education and vocational deficiencies, and racism. Sustainable communities must be compassionate and provide services to break patterns of social injustice, systemic poverty, and disempowerment of minorities. When everyone succeeds, the community succeeds. This is what a Sustainable Community is all about.

Landlords, Tenants, and Developers as Partners in Sustainability

More than half of all Portland's household units, and most of Portland's businesses, are located in rental properties. Among other recommendations, this report calls for increased building efficiency, increased recycling, and reduction in lead hazards. Given that the cost of these problems are often borne by tenants rather than property owners, the City has a role to play in working with landlords and tenants to improve the quality and efficiency of rental properties.

The City also needs to ensure that there are adequate opportunities for the sustainable development of new housing and business spaces that support transit use and walkability while promoting and preserving neighborhood viability and integrity. City action must involve both incentives for responsible development – such as increased density where appropriate - and regulations to protect sensitive natural areas and neighborhood livability.

Private investment in existing buildings and new development is crucial to community sustainability. The City will need to partner with landlords, tenants, and developers to achieve gains in housing quality, building efficiency, transit use, and other Sustainable Portland goals.

B. Progress Toward a Sustainable Community

Portland has a high quality of life, and has been nationally recognized as such. Portland is consistently recognized as a top place to raise kids, as a walkable and bikable city, and as a city with a strong cultural core. The Sustainable Portland Task Force noted several actions by the City of Portland that have particularly contributed to this success.

1. *Housing Vision:* The City adopted a new comprehensive housing plan in 2002, *Housing: Sustaining Portland's Future,* to encourage increased housing density – and affordable housing -- in the urban core.
2. *Public Health*: The City's Health and Human Service Department works with direct delivery of health and social services to help citizens in need and at risk.
3. *Healthy Portland Program*: Healthy Portland is a community coalition working to improve the health of our city by promoting healthy, active ways of life. The Portland City Council has recently enhanced its support for Healthy Portland by establishing a Health and Recreation Committee, the Mayor's Healthy Portland Task Force established by Mayor James Cohen, and the Health and Wellness Committee established by Mayor Nicholas Mavodones.
4. *Investment in Schools:* Over the last 25 years, the City has systematically updated its high schools, middle schools, and is in the midst of major elementary school investment program.

5. *Investment in Parks:* With the 1994 adoption of a comprehensive parks plan for the city, *Green Spaces–Blue Edges* (updated 2004), and specific master plans for individual parks, the City has an investment strategy for on-going park maintenance and improvement.

6. *Arts District Planning:* With the adoption of *Celebrating Community: A Cultural Plan for Portland, Maine* into the Comprehensive Plan, and creation of a funded Public Art Program (1998), the city actively integrates arts planning, cultural promotion, and promotion of the Creative Economy.

7. *Farmers Market Support*: The City actively supports area agriculture with weekly, seasonal farmer's markets in Deering Oaks and Monument Square.

8. *Historic Preservation Program created and expanded:* Starting in 1991 (expanded in 1997), the City created a Historic Preservation program by adopting a historic preservation ordinance protecting designated, districts, buildings, landscapes and sites. *See the appendix for more complete program description and its relationship to community sustainability.*

9. *Cultural Diversity*: The City Manager's Office includes staff for Equal Opportunity and Multicultural Affairs working to embrace the deepening cultural diversity of the City.

10. *Neighborhoods Livability*: The City has developed a model for Neighborhood Planning to address current and future challenges, but has yet to allocate dedicated resources to initiate a systematic program for implementation.

11. *Recreational Opportunities:* Despite challenging economic conditions and restrictive budgets, the City remains committed to offering a wide range of recreational programs for both youth and adult residents. The Parks and Recreation Department, working with City schools, provides safe, organized and affordable opportunities for aquatics, sports, arts, and life-long learning to the full range of Portland area residents.

C. Challenges to a Sustainable Community

Portland has a deserved reputation for a high quality of life, but sustaining this quality requires constant vigilance given the numerous challenges facing our community. The Sustainable Portland Task Force highlighted several of these challenges:

1. *Traffic* - Existing neighborhood traffic conditions with high traffic volumes and excessive speeding on neighborhood streets result in excessive energy consumption and undermine neighborhood livability and "sense of place."

2. *Housing Affordability and Safety* – The City struggles to balance the desirability of living in Portland with the need for a sufficient stock of affordable and workforce housing for a diverse community. Additionally, much of the City's

rental housing stock is aging and is contaminated with lead paint putting many children at continuing risk of poisoning.

3. *Walkability to Portland's Schools* – Development patterns and traffic safety concerns discourage walking and biking to schools, resulting in lowered physical activity for children, increased vehicle miles traveled, and higher school transportation costs.

4. *Perception of Urban Density* - If the City of Portland is to achieve a density that competes with sprawling suburbs and provides viable transit alternatives to single occupancy vehicles, the City must promote and protect the image and reality of urban living that attracts a wide range of current and future residents – especially families with children.

5. *Development Review* – There is insufficient focus and a lack of integration of all three components of sustainability during review of new community development.

6. *Lack of Regional Decision-Making* – Maine's tradition of home rule and local decision making provides structural barriers to cooperative relationships between neighboring communities. Portland and surrounding communities need to overcome parochial differences to tackle regional challenges regarding transportation, land use, pollution control, and efficient delivery of services.

7. *State Policies* – Given the rural nature of the State of Maine, many of the policies generated in Augusta are understandably oriented away from urban centers. Unfortunately state actions on school funding, infrastructure spending, and legislative priorities, often have inadvertent negative impacts on cities and promote sprawling development patterns.

D. Recommendations for a Sustainable Community:

Portland is fortunate. It has strong neighborhoods and strong community institutions. But there are serious challenges to Portland's continued vitality as a community, prompting the Sustainable Portland Task Force to recommend several action steps the City can take. The following goals, policies, and implementation strategies are recommendations which include:

Goal

G.9 Organized social institutions of all types supporting the collective well-being of the community.

Policies

P.9.1 Support an integrated, citywide community volunteer program such as *Volunteer Portland* as a mechanism to link interested citizens with volunteer opportunities.

P.9.2 Encourage arts and cultural institutions through support for public arts, the creative economy, and the Portland Arts and Cultural Alliance.

P.9.3 Promote growth of universities and educational/cultural opportunities within the City.

Goal

G.10 Public and private places where organizations and their buildings mutually support the identity of the City.

Policies

P.10.1 Enhance recreational opportunities and promote active lifestyles through schools, public recreational facilities, and park venues.

P.10.2 Continue support for public infrastructure that promotes positive recreation and social activities, including Merrill Auditorium, Hadlock Field, the Cumberland County Civic Center, public recreational facilities, and trails and bicycle trails and amenities.

Goal

G.11 Social and Civic Events promoting shared experiences for all people of the Portland community.

Policies

P.11.1 Support efforts like the Creative Economy Steering Committee to enhance opportunities for public events and festivals throughout the year.

Goal

G.12 Public and private initiatives promoted and implemented by the City of Portland.

Policies

P.12.1 Maintain and enhance the tradition of involving citizens from the inception to implementation of the City's policymaking process. Provide a proactive tracking mechanism to allow interested parties to meaningfully participate in policymaking.

P.12.2 Promote City Diversity through hiring practices, initiatives like the Freedom Trail, support for childhood and adult English Language Learner programs.

P.12.3 Integrate sustainability into adult and school age education through increased cooperation between City government and school administrations at elementary, high school, and collegiate levels.

P.12.4 Continue support for social service programming for homelessness, adult education, at-risk youth, public health, and drug addition.

Implementation

I.12.1 Implement Neighborhood Planning program.

If we follow these recommendations, Portland will continue to remain a vital and diverse community with a high quality of life. To measure our success, the Sustainable Portland Task Force suggests tracking the following benchmarks:

1. Outreach to Community on Sustainability issues (number of hits on Website, use of Sustainability logo)
2. Voter turnout
3. Kindergarten and middle school "capture" rate (i.e. the percentage of children born in Portland who enroll and stay in Portland Public Schools)
4. High School Graduation Rate
5. College enrolment at USM, UNE, Andover College, SMCC, MECA, etc. . .
6. Library and community center participation
7. Volunteer involvement and charitable giving in schools and in the community at-large
8. Adult literacy
9. Historic preservation (number of buildings, percentage of City)
10. Attendance at civic events and festivals
11. Number of cultural and arts venues
12. Homelessness
13. Crime rate
14. Participation in City sponsored recreational activities and programs

What Can I Do?

Top Twelve everyday actions we can take as individuais to foster a Sustainable Portland.

1. **Buy at least $10 dollars worth of locally produced food a week.** Always ask, "Where did this food come from? Was this fish landed at the Portland Fish Exchange? Do you have any local produce?" Foster a personal connection with food production. You'll be amazed by the quality and value of food produced and available right here at home.

2. **Build a compost pile**. By composting vegetable and yard waste, you save money on trash bags, produce usable mulch and potting soil, and if you do it with your neighbors, you'll always have something to talk about. For Composting advice, go to: http://www.nrcs.usda.gov/FEATURE/backyard/compost.html

3. **Park once**. Run errands and shop in an area where you can park once, then walk between destinations. You'll get exercise, save energy, support multiple small local businesses, and meet people on the sidewalks. If this type of lifestyle appeals to you, consider moving to a neighborhood where walking to everyday destinations is the norm.

4. **Turn off your vehicle**. Engines are for moving! When you're out of traffic, turn it off. As a rule of thumb, your car uses more fuel in 10 seconds of idling than it does to restart your engine, so if you're out of traffic you save money by shutting down. Even in cold weather, only 30 seconds of warm up is needed to fully circulate oil for safe engine function, and a moving car warms up faster than a still car.

VI. Sustaining a Sustainable Portland

The recommendations found in the sections above reflect important investments we can make to promote a *Sustainable Portland*. This list is an extensive inventory of potential actions that will be addressed by private individuals, non-profit and profit entities, and the City over the course of many years.

However, listing action steps is not enough. Both action and accountability are required, and for this reason, the Taskforce recommends that the Portland City Council designate the Sustainable Portland Taskforce as a standing committee of the community to prioritize sustainability projects, track sustainability benchmarks, and manage sustainability initiatives. This prioritization should occur at every level of the community – individual actions, organizational and business actions, and City actions.

Recognizing the depth and complexity entailed in tracking the benchmarks and implementing the recommendations of this report, there needs to be a dedicated and *sustained* body responsible for the coordination of effort between a broad range of community stakeholders. The *Sustainable Portland Taskforce*, as such a body, would then be in position to do the following:

1. Convene, facilitate, and provide information to community stakeholders in order to make them aware of each other's activities and to build consensus on a combined action plan.

2. Work with what are already identified as risks and opportunities by the various groups to put the pieces together into a better understanding of appropriate activities to promote and plan for implementation. The Sustainable Portland Taskforce provides the opportunity to prioritize actions based on shared knowledge;

3. Analyze existing environmental risks to determine what is of highest priority to address and how to address them most effectively;

4. Identify local, state, and federal resources and programs that can aid the stakeholder groups in ultimately implementing their sustainability recommendations;

5. **Walk in your Neighborhood**. Many people drive to a place to walk for exercise. By walking where we live, we meet our neighbors and gain an intimate connection to the neighborhood. If your neighborhood is "un-walkable" (without sidewalks and or isolated by arterial traffic), lobby decision makers to provide minimum pedestrian accommodations everywhere.

6. **Take the bus**. Try it once. Try it again. Keep trying. If it doesn't work for you, question yourself "why?" If the answer lies with your lifestyle, consider what that means. If the problem is the bus route/schedule, then write the METRO Board with suggestions for improving service.

7. **Slow down!!** Driving the speed limit promotes safety, saves energy, and reduces noise and air pollution. Excessive vehicle speed decreases neighborhood livability, results in accidents, and sets a bad example for our children.

8. **Mow Less**. Maximize amount of plant-diverse yard areas around your home with gardens, tall grass field and naturalized areas. Mowed lawns require irrigation, loud and polluting machines to maintain, and often chemical fertilizers and pesticides. Naturalized yard areas support beneficial insects and birds that eat pests and can be less expensive to maintain. For the traditional lawn that you do maintain, mow once every two to four weeks instead of every week. Longer grass needs less water and fewer (or no) chemicals. Remember – dandelions are pretty.

5. Provide regular communication updates (website, newsletters, brochures, and newspapers) to the stakeholder groups and to the Greater Portland population;

6. Actively engage surrounding communities in the ongoing effort to address regional social, economic and environmental risks to encourage a coordinated effort.

7. Develop and maintain an active web site to promote Sustainable Portland and actions individuals and businesses can take to implement the recommendations of this report, and any future recommendations of the Sustainable Portland Task Force.

In addition to maintaining and producing specific sustainability documents and programs, *Sustainable Portland* provides a vested stakeholder group to participate at all levels of civic engagement to speak, advocate, and educate on sustainability issues. Engagement – the sharing of knowledge, ideas and values – is the source of action. *Sustainable Portland* can help to foster a sustainability ethic into individual and collective decision making – and actions in support of such an ethic are our best hope for our community's future.

9. **Turn off the lights.** Turning off unneeded lighting and unused electrical appliances (TV's, stereos, computers) is a simple and effective way to save money and energy. The use of timers and motion detectors can allow for security lighting when needed while allowing lights to remain off for the majority of time.

10. **Buy energy efficient lights and appliances** . When updating lighting and appliances, choose efficient alternatives. Compact fluorescent lighting is 2/3 more energy efficient than incandescent bulbs and lasts up to 10,000 hours of use (4 hours a day for 7 years!) *Energy Star* rated appliances are worth the investment and will pay for themselves over time (A current *Energy Star* rated refrigerator uses 40% less energy than a comparable conventional model sold in 2001).

11. **Recycle more.** Get to know the City's single stream recycling program and maximize use of this effective and convenient way to reduce your cost for solid waste disposal. Additionally, create a system in your home for storing and responsibly disposing electronics, batteries, florescent light bulbs, and household hazards such as paints, fuels and pesticides. The City's waste management system will help you and if you don't know how it works, always check before throwing usable or hazardous material into the waste stream. Great information is available at: http://publicworks.portlandmaine.gov/deptTrash2.asp

12. **Make a personal commitment.** Community sustainability requires our personal commitment to change. Discuss sustainability with your family, your place of employment, your neighborhood, and your place of worship. Organize "green teams" to encourage energy savings and recycling. Choose locally produced and "green" products for your home and business purchases. Make sustainability part of your personal thought process when making decisions: "Is this good for the environment? Does this make good long-term economic sense? Is this good for my neighbors? Will my children and grandchildren be proud of this decision?" If the answers are *yes,* you are moving toward a *Sustainable Portland.*

Immediate City Actions:

- **Utilize Energy Audit Data and Adopt Climate Change Local Action Plan**
  Building on the City's partnership with Clean Air - Cool Planet and ICLEI, and an existing commitment to reduce greenhouse gas emissions, continue to maintain a community and government energy audit and use this data to develop a Local Action Plan for energy conservation and emissions reductions.

- **Green Buildings and Development** – Require minimum environmental performance standards for civic construction projects encouraging lower pollution, energy consumption, and transportation costs through facility life. Consider expansion to other projects.

- **Buy Local** – Continue to support local business through City procurement policies.

- **Ban on Vehicle Idling -** Create a city-wide enforceable ordinance to ban un-necessary vehicle idling for both public and private vehicles.

Move to front

Appendix

A. Sustainable Portland – Model Program Examples

1. Sustaining the Environment: Green Buildings

2. Sustaining the Community: Historic Preservation

3 Sustaining the Economy: Buy Local

By reference only:

B. Clean Air, Cool Planet Energy Audit, Summary
C. Creative Economy Summit Report, Summary
D. 2002 Housing Plan, Summary
E. Casco Bay Estuary Partnership Report on Toxins in Casco Bay

A.2.b. Green Buildings

Model Example: Adoption of green building standards and encouragement of environmentally conscious reconstruction of existing building stock can significantly limit the environmental effects of city growth.

The five basic points of green building support the integration of the three pillars of sustainability: environment, economy, and community. Underlined words represent linkages to other portions of the Taskforce report.

Green Buildings – Issues and Advantages

Site Selection: Development of land can have significant impacts on consumption, ecosystems, natural resources, and energy use. Carefully selected sites are intrinsic to Green Building. More sustainable practice include the selection of sites that are infill, previously developed, or urban locations; Ideal locations have proximity to public transportation and allow for alternate means of transportation such as bicycling and carpooling. Ideal designs maximize and restore open space, reduce storm water runoff, decrease the impact of the heat island effect, and use outdoor lighting that does not display to the night sky.

Site concerns include increasing the demand for shared-use vehicles by making public transportation accessible, or better, eliminating their need with greater pedestrian access. By rearranging their downtown and orienting new construction towards pedestrian access, Vancouver, B.C. claims to have eliminated the need for 70,000 car trips a day, and a new $100 million bridge.[4]

Water Efficiency: An important aspect of green buildings to both owners and local infrastructure is reduction in potable water usage. Buildings use 15 trillion gallons of water per year annually in the U.S., or 12.2% of U.S. potable water. Green buildings reduce the amount of potable water that will be consumed both in the building and for the site by as much as 50%.[5] This can be accomplished with low impact landscape design, including drought-resistant plantings, the use of alternatives to conventional sewage treatment, rainwater harvesting, and the selection of water saving fixtures in the building.

Toxic Reduction: Improved filtering technology can improve the quality and quantity of wastewater and storm water entering into our public water sources. Green roofs, pervious pavement, and gray water recycling all improve the quality of water leaving our buildings, entering into our environment. Green building's mechanical systems also help reduce toxins and pollutants, minimizing release of CFCs, HCFCs, and CO2 emissions. Excess nutrient run-off can also be reduced.

Energy: Energy efficiency is another aspect of green building that benefits both the owner and local infrastructure. Buildings consume 39% of U.S. primary energy use Green buildings can reduce energy demands by over 40% from baseline standards. Good insulation decreases the required size of mechanical systems, reducing greenhouse gas emissions, while reducing

overall building costs. Energy efficient buildings are essential to reducing Portland's CO2 footprint.

Materials: Buildings use 40% of global raw materials (3 billions tons annually). Green building projects give preference to the best materials and the handling and installation of those materials to ensure the least environmental impact. Materials should be salvaged, reused, made with recycled content, come from a local source, be from rapidly renewable stock (i.e. cork, linoleum), or harvested from sustainably managed forests. Well planned construction processes can divert as much as 90% of construction waste and demolition debris from landfills. Good green design practices also facilitate a building occupant recycling program.

The incorporation of locally harvested, produced, and manufactured materials is a key component to green construction practices. While regionally purchased materials lessen transportation pollution, they also work to support the local economy. Construction waste is diverted from the waste stream either by re-use or by recycling, and raw material use is reduced by smarter design. Public health is also a key component in the material selection process.

Indoor Environmental Quality: People spend 90% of their time indoors. It is therefore imperative to make the interior environment of our buildings as high quality and as healthy as possible. Designers are steered toward strategies, technologies and materials that enhance air quality and comfort, and provide a positive connection to the outdoors. Careful attention is paid to good air quality throughout the construction process, materials selection, and the volume and quality of air delivered. Superior day-lighting and a connection to the outdoors are achieved through good building design, layout, glazing and room configuration.

Close attention to the indoor air quality of a building includes a reduction in toxin/pollutant exposure to occupants. Many seemingly benign building materials actually contain toxins that will off-gas, or leach into both indoor and outdoor environments. Green buildings first try to eliminate usage of these materials, but also strive to best control any toxins used with increased ventilation and building flush-outs prior to occupancy.

Green Building/LEED Finances

It is a common assumption that green buildings cost more. In fact, green buildings may actually cost less to own and operate for the following reasons:

1. **There is often no increase in a building's first costs.** If an integrated design approach is adopted early on in the design process, improved design features can allow the downsizing of major more costly mechanical, electrical, and structural systems. Frontloading—or spending more time in the conceptual areas of the design process--can help further uncover synchronicities between normally isolated systems that can allow for significant savings. This can eliminate additional first design costs, if there are any. Typically these downsizings will bring first costs lower than conventional alternatives.
2. **High-performance buildings are cost-effective operationally.** If any additional first-costs exist, the United States Green Building Council estimates that they are "often recovered within three to five years though lower operating expenses and utility rebates for energy-saving equipment."[1] Seattle, WA adopted LEED standards before constructing 7 new city-owned facilities in 2000. They estimated an initial investment of

$7.5 Million for their LEED efforts. The net present value of the investment at a 3% discount rate is currently estimated at $15 Million.[2]

3. **In tough markets, green buildings often capture lease premiums or present more competitive properties.** Potential tenants are drawn to lower operating costs and high occupant comfort.
4. **Green buildings tend to boost employee productivity**. Design features that capture energy efficiency and facilitate better indoor air quality result in higher yields from employees. "An increase of 1 percent in productivity (measured by production rate, production quality, or absenteeism) can provide savings to a facility that exceeds its entire energy bill."[3]
5. **Establishing a LEED program doesn't cost a city any extra money.** By using the established LEED certification program, the city avoids the need to establish local certification bodies, and reduces technical and administrative uncertainties because it has been produced by the nation's leading coalition of leaders from across the building industry.

Green Building Costs

One of the most comprehensive cost analysis of green buildings released in 2003, entitled "The Costs and Financial Benefits of Green Buildings"[4] reports that with that with an initial investment of less than two percent of construction costs yields life cycle savings of over ten times the initial investment. For example an initial investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of at least $1 million over the life of building, assumed conservatively to be 20 years.

Green high performance buildings offer several quantifiable financial benefits over conventional buildings including improved energy efficiency, reduced water consumption and reductions in operations and maintenance. A comprehensive cost analysis of over 30 LEED buildings in California found that on average green buildings consistently produce a 25-30% savings in energy costs, reduce indoor water consumption by a minimum of 30%, and eliminate half of the landscape irrigation demand. Additionally a stringent commissioning process ensures the building's systems operate as intended in the most efficient manner possible. This process, combined with other low maintenance measures, will conservatively reduce operations and maintenance costs by approximately 5% per year. While many green buildings are completed at no additional costs, historical data shows that on average the cost premium for LEED rated buildings is less than 2% (or $3-4/sf)[4].

The table below provides a rough estimate of the anticipated 20-year net present value worth for implementing green building principles on a 50,000 sf office building.

Annual Savings from Green Building Strategies

Category	*$/sf*	*50,000 SF Building*
Energy	$0.44	$22,000
Water*	$0.047	$2,350
Cx O&M	$0.68	$34,000
Total		**$58,350**

*Unit value based on $3.50/kgal

20-Year Net Present Value

Category	*$/sf*	*50,000 SF Building*
Energy Value	$6.09	$304,500
Water Value	$0.51	$25,500
Cx and O&M Value	$8.47	$423,500
Green Cost Premium	($4.00)	-$200,000
Total		**$553,500**

Note: All $/sf values from Kats 2003 - The Costs and Financial Benefits of Green Buildings

Note: NPV assumptions: Discount rate: 7%, Inflation 2%, 20 year term (from Kats 2003)

Green buildings also have several benefits that are more challenging to quantify, such as improved health and productivity due to less pollutants in the air, creating a connection to the outdoors, added daylight, and greater individual control over thermal comfort and lighting. This is especially important in office buildings where a 1% increase in productivity, (equal to saving 5 minutes per working day) can result in an estimated $2.96/sf savings per year (a 20 year NPV of $36.89/sf).

A.3. Sustaining the Community: Historic Preservation

Model Example: Portland's Historic Preservation Program

In 1991, after decades of community debate and activism, the City of Portland created a Historic Preservation program. While generally accepted today, at the time, Historic Preservation in Maine was highly controversial, and the City Council's action in creating the program was a groundbreaking accomplishment.

The foundation of the Historic Preservation program is a regulatory ordinance that provides protection for designated districts, buildings, landscapes and sites. The ordinance is enforced by a citizen oversight board and administered by professional staff housed in the City Planning Division.

By committing both City resources to preservation and requiring private Citizens to become stewards of community historic resources, the Historic Preservation program promotes community sustainability according to the definitions found in the introduction of this report.

Long-term thinking: Historic preservation encourages responsible stewardship of essential places and community resources – retaining a continuity of Portland's identity in its built environment from generation to generation.

Environmental Considerations: Historic preservation encourages reuse of buildings and the maintenance (rather than the replacement) of materials. This *recycling* of buildings saves energy and other external costs of new construction. Additionally, by redeveloping structures in traditional neighborhoods and commercial districts, historic preservation of neighborhoods and buildings provides competition for "sprawl" alternatives and helps to reduce the demand for undeveloped land within and outside of the City.

Economic Considerations: Historic preservation promotes stability within neighborhoods by regulating change within an established and consistent review process. While individual projects may cost marginally more, the promotion of traditional building maintenance and moderation of change generally results in an increases in property values district wide. Retention of and investment in historic business districts (especially the Old Port and waterfront) promotes tourism and creates a signature "brand" for Portland supporting small business in a vital retail environment.

Community Considerations: As stated in the economic section above, historic preservation tends to stabilize neighborhoods, but the rationale for preservation flows from the public value generated from historic structures and development patterns. Portland's identity as a unique and vital city is expressed through its built heritage. By preserving the best of our past, the City reinforces community pride of place and shows how future structures and neighborhood cans develop sustainably.

A.4. Sustaining the Economy: *Portland Buy Local* Campaign

Model Example

The Portland Buy Local campaign kicked off on July 3, 2006 with more than 150 locally owned, independent businesses as participants. The group is continuing to recruit and develop a directory of participating businesses, work on customer incentives, and create materials to educate the general public, media, government, and other local businesses about the benefits of purchasing from locally owned, independent businesses.

The Portland Buy Local campaign is an effort to raise awareness of the benefits of supporting locally owned, independent businesses. These benefits support the city's effort to enhance Portland's economic, environmental, and social fabric. Purchases from locally owned, independent businesses leave about three times as much money in the community as purchases from chain businesses, and locally owned businesses create more jobs locally and, in some sectors, provide better wages and benefits than national chains. Local business owners tend to set up shop downtown and in walkable neighborhood business districts, rather than in malls primarily accessible only by automobile. This reduces the amount of driving Portland residents must do to shop for goods and services, and helps to conserve land, rein in sprawl, lessen traffic, and reduce air pollution. Other benefits include: keeping our unique identity, conserving tax dollars, offering more choices, nurturing community, accessing local owners' expertise, preserving entrepreneurship, and ensuring Portland stands out from the crowd. These are key components of the city's own goals for enhanced sustainability.

For more information, visit portlandbuylocal.org for links to studies, general information, and ways in which you can support your local economy.