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## Building a Sustainable Future for Portland

City Club of Portland (Portland, Or.)

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City Club of Portland Information Report

## **BUILDING A SUSTAINABLE FUTURE FOR PORTLAND**



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"Humanity has the ability to make development sustainable; to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs."

***Our Common Future***

World Commission on Environment and Development  
(the Brundtland Commission), 1987

## *Executive Summary*

“We do so much to prepare our children for the future, but are we doing enough to prepare the future for our children?”—*Larry Chalfan, executive director, Zero Waste Alliance, former president and CEO of Oki Semiconductor Manufacturing*

Sustainable development, or sustainability, is a school of thought that emerged from the environmental movement of the 1970s and 80s. Similar to environmentalism yet broader in scope, the doctrine of sustainability seeks to go beyond mere environmental protection to create an economy that is ecologically viable for generations to come.

Like many public policy issues, sustainability is broad, complex, and ideologically charged. Yet this particular subject is so sweeping that even its strongest advocates have difficulty defining sustainability, as this committee found in over two years of investigation. A generally accepted working definition of sustainability is the achievement of a harmonious balance between the economy, the environment, and social equity.

For those interested in sustainability, this report is a primer, providing basic information on what sustainability is, where and under what conditions it's being implemented, and how to get involved. Rather than setting the terms for an ideological debate, this report offers a compendium of pragmatic steps for business, government, community groups and individuals on how to begin to create a more sustainable community.

**Business.** The business community is no stranger to environmental issues, but not every business sees the environment in the same way. Most have at some time run into environmental regulations that affect their behavior. Some have been forced to do clean-up work, or even pay fines. But for those companies willing to look beyond basic compliance and remediation, sustainable practices can be financially advantageous. A number of companies have realized savings through the implementation of eco-efficiencies, green

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marketing techniques, or the use of sustainability as a strategic planning tool. A sustainability strategy can also produce product and service innovations, strategic market positioning, improved employee morale and productivity, and reduced legal liability and insurance costs. Yet for many the task can feel overwhelming. However, there are a number of easy ways for any business to get started. Some places to start are energy use, transportation, purchasing, facilities, waste, and manufacturing.

***Government.*** The interdisciplinary nature of sustainability is a challenge for government agencies focused on specific sectors and more narrowly defined issues. Yet government decision-makers and agencies can advance sustainability in a number of ways. First, they can provide clear goals and objectives to steer private sector and community decision-making—such as the Sustainable City Principles adopted by the City of Portland. Second, governments can lead by example, as Oregon Governor John Kitzhaber has done by directing state agencies to incorporate sustainability considerations into purchasing and contracting policies. Third, governments can use policy tools such as incentives, regulations, or taxes, to influence behavior and encourage innovation—recently, Portland created financial incentives for builders to use so-called "green" building practices. Our committee found that a performance based regulatory regime can promote environmental goals while simultaneously allowing organizational flexibility and greater economic efficiency. Fourth, governments can disseminate information about sustainability and offer technical assistance.

***Community Groups.*** Non-governmental organizations are probably the most active educators on sustainability issues. These groups are typically non-profits, and are generally focused on a specific subset of the sustainability equation, such as water quality, resource conservation, or economic diversification for rural communities. Institutions of higher education in Oregon have created cutting-edge, interdisciplinary programs that represent the beginnings of a formal sustainability curriculum.

***Individuals.*** At its heart, sustainability revolves around how societies and the individuals within them experience quality of life. As individuals, most of us influence our surroundings and

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our own quality of life more than we usually believe. Each time an individual decides to take the bus or drive a car, to throw away a used plastic container or wash and recycle it, to shop at a local store or visit the mall at the edge of town, he or she is having an impact on the community. Efforts to build a sustainable future will depend strongly on the values individuals hold, the choices they make, and their actions.

So, how are we doing in Portland? Given the relatively extensive network of community groups in Portland involved in environmental protection, sustainable development, and social equity, you might think it would be easy to gauge how Portland ranks on the sustainability barometer. Unfortunately, this is not the case. Despite wide interest in this subject, no agreed upon set of indicators exists to measure our progress in becoming a sustainable community.

Part of the difficulty lies in the complexity of the subject, and the difficulty in measuring performance. Indeed, if sustainability is to be adopted on a wider basis, it will be necessary to build a public consensus on the indicators that define sustainability. Community value judgments will have to be made, and performance measurement systems implemented.

A handful of local and regional organizations are attempting to do this. While the data is far from complete, the initial results indicate that Portland's sustainability performance is at best mixed. To preserve what is unique about Portland will require community value judgments backed by performance measurement—two areas in which Portland still has much work to do.

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## ***I. Introduction***

### **The Charge to the Committee**

The charge to this committee from the City Club Board of Governors was to prepare an “information report” that would articulate what sustainability means for the Portland Metro Region and highlight local efforts currently taking place to increase the sustainability of the region.

The purpose of this report is to answer several questions:

- What does the term "sustainability" mean as it applies to the Portland Metro region?
- How does this issue affect our region?
- What are the benefits and costs associated with sustainability?
- What approaches have been developed to assess progress toward sustainability goals?
- What roles do government, private business, and the community play in this issue?
- How can education and communication impact this issue?
- What are some examples in the Portland Metro Region of efforts to ensure the sustainability of the economic, social, and environmental quality of life?
- What further City Club actions could help inform the public and move this issue forward?

### **Research Process and Report Structure**

The research process for this report included interviews with a series of witnesses representing business, government, and community organizations and a survey of additional organizations involved in sustainability efforts in the Portland



Metro region. We also reviewed local, national, and international literature on the subject.

This report defines the term "sustainability," discusses the costs and benefits of efforts related to sustainability, and characterizes the debate about the importance of this issue. Local initiatives are highlighted and the roles of government, business, and the community (NGO's, education, and individuals) are explored. The report concludes with a summary of sustainability efforts in the region and a recommendation to City Club for increasing public awareness of this issue.

Our committee's report summarizes the information we gathered in response to these questions. The report does not represent a formal position of the City Club of Portland.

## *II. What is Sustainability?*

"Humanity has the ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." -*World Commission on Environment and Development*

The notion of sustainable development, or sustainability, is an elusive concept, difficult to define. Sustainability means many things to many people. For some, it conjures up images of a utopian paradise; for others, a regulatory morass. In between these two extremes, however, lies a pragmatic set of principles for balancing material prosperity with a clean environment and a high quality of life, for this generation and those yet to come.

To understand what sustainability is, and where this school of thought came from, we must briefly examine the history of the environmental movement.

Throughout most of modern history, discussions of development have focused almost exclusively on economic growth, as defined by the expansion of employment and productive capacity, with little if any regard for environmental

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factors. The last 30 years, however, have witnessed the emergence of a large and growing consensus that unfettered development has a prohibitive ecological cost that cannot be sustained over time.

In 1969, public pressure led to the passage of the landmark National Environmental Policy Act to "create and maintain conditions under which man and nature can exist in productive harmony," making environmental protection an explicit public goal for the first time. By 1970, President Richard Nixon and Congress agreed to create a new federal authority, the Environmental Protection Agency, charged with improving and then preserving the quality of the environment.

The global dimensions of environmental protection came to the forefront in 1972 with the United Nations Conference on the Human Environment in Stockholm, Sweden. Representatives from developed nations stressed concern about the growing environmental cost of additional growth while third world and other lesser-developed countries insisted on their desperate need for continued economic progress. Out of this conundrum—the recognition that humanity requires both a healthy economy and a healthy environment—came the notion of sustainable development.

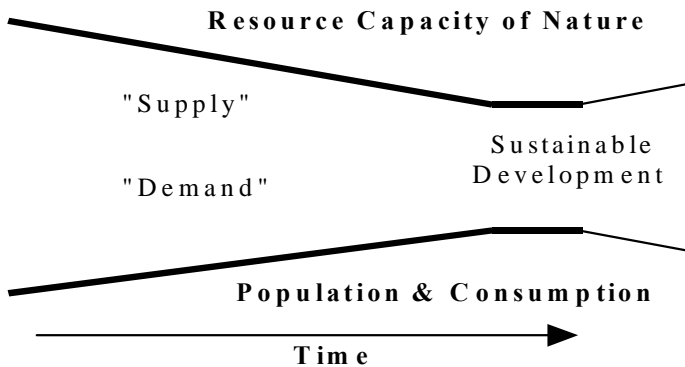
In December 1983, the Secretary-General of the United Nations asked Gro Harlem Brundtland, then-Prime Minister of Norway, to head the newly established World Commission on Environment and Development—a group of leaders from 21 developed and underdeveloped nations. The commission was charged with raising awareness and strengthening international cooperation on critical environmental and economic development issues. Determined to get a broad perspective, the commission conducted public meetings over three years and across five continents. These hearings proved invaluable, allowing input from diverse regions throughout the world, and resulting in more than 10,000 pages of testimony. The commission's work concluded in 1987 with the publication of *Our Common Future* (The Brundtland Report). The report coined the phrase "sustainable development", outlined a realistic set of proposals, and played a key role in bringing sustainability into the public eye worldwide.

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In 1992 the United Nations convened the Earth Summit in Rio de Janeiro, Brazil. This marked the second meeting of world leaders to discuss environmental and development issues and was substantially larger than its predecessor, the Stockholm Conference, held 20 years earlier. Over 100 heads of state and government attended the Earth Summit and 170 nations sent delegations. As part of the summit, national leaders adopted an action plan for sustainable development known as Agenda 21. By signing that convention, each country committed itself to 27 principles designed to educate people about the state of both environment and development, and to assist them to make decisions that lead to sustainability.

But the evolution of sustainable development theory and practice has not been the exclusive province of the United Nations or indeed of the public sector. One of the most notable advances was the development of a sustainability framework called The Natural Step, led by Swedish oncologist Dr. Karl-Henrik Robert.

In 1989, together with 50 Swedish scientists from various disciplines, Dr. Robert produced a document that describes basic knowledge of the biosphere, including the role and function of humanity and society within natural systems. The group concluded that humans are threatening themselves by deteriorating the natural systems of which they are part—but that there is every possibility to change the situation. The environmental conditions are described in the following graphic adapted from The Natural Step:



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According to The Natural Step, there are two major global trends that threaten the biosphere. The bottom dark line in the diagram above represents demands on the earth's resources. Human population has exploded over the last two hundred years. But scientists generally agree that the earth's capacity to provide natural resources to support that trend is declining (see the top dark line). According to scientists, all major ecosystems are being diminished—as measured through such things as declining fish stocks, the disappearance of rainforest acreage, top soil erosion, and the decreasing availability of arable land. Sustainability, then, is about arresting and reversing the current resource consumption trends as depicted above.

Closer to home, we have seen that public dedication to environmental protection ebbs and flows over time. The Willamette River, for example, at once an economic lifeline and natural treasure, has been the environmental equivalent of a yo-yo, riding up and down on the string of public opinion. In the 1920s water in the Willamette was suitable neither for swimming or drinking or fish habitat. Oregonians were outraged and pressured lawmakers to pass the nation's first pollution control laws. As a result, the river was safe once again for swimming and other activities by 1972. Yet today, the portion of the river known as Portland Harbor has been designated a Super Fund clean-up site, while upstream the stretch from Oregon City to Newberg produces high percentages of deformed fish.

Like the saga of the Willamette River, most environmental remediation efforts are episodic and crisis-driven. A specific problem-in-time (sewage, pulp mill effluents, other industrial pollution) is discovered, and the general public becomes outraged. Government focuses on the issue, discusses it, and addresses it, typically by revising public policy and spending money. The outrage wanes. The issue is then forgotten until the next crisis arises.

Sustainability seeks to break this cycle by integrating the environmental concerns with economic and social issues. Many believe that a systemic approach, such as the doctrine of sustainability offers, is the only real hope of enduring success.

To address just this type of situation, Dr. Robert and his colleagues produced a set of four system conditions for achieving sustainable development, all grounded in the laws of thermodynamics and natural cycles. The Natural Step framework is available for use by businesses, communities, educators, and government agencies, providing concrete steps for organizations to move towards sustainability (see Appendix E for more information).

### Defining Sustainability

The doctrine of sustainability has its roots in the environmental movement but seeks to go beyond mere environmental protection to create an economy that is ecologically viable for generations to come. The concept of a need to balance a healthy economy with a healthy environment may sound simple at first blush, but the complexity of the issue is reflected in the variety of different definitions of sustainability:

"Long-term health and vitality—cultural, economic, environmental and social."—*Global Tomorrow Coalition*

"Leave the world better than you found it; take no more than you need, try not to harm life or the environment, make amends if you do."—*Paul Hawken*

"Economic growth that will benefit present and future generations without detrimentally affecting the resources or biological systems of the planet."—*President's Council on Sustainable Development*

"Sustainability is a new way of thinking about an age-old concern: ensuring that our children and grandchildren inherit a tomorrow that is at least as good as today, preferably better. We want to make sure that the way we live our lives is sustainable—that it can continue and keep improving for a long, long time."—*Sustainable Seattle*

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"Growth based on forms and processes of development that do not undermine the integrity of the environment on which they depend."—*World Commission on Environment and Development*

"A healthy and livable community that fosters long-term goals to maintain a strong sense of community, to encourage a stable and balanced economy, and to promote biological diversity and wisely manage our natural resources."—*Sustainable Sherwood (Oregon)*

Different geographic areas tend to emphasize different aspects of sustainability. Here in Oregon, urban residents often focus on quality of life, and livable neighborhoods, while rural communities emphasize a viable economic base to replace or supplement eroding natural resources industries.

And while sustainability can mean many things to many people, others believe it has little or no meaning:

"Sustainability is becoming meaningless as a term because it is too broad. What we are really talking about is enhancing air and water quality. Good environment equals a good economy and vice versa. Portland's air quality is better than 15 years ago and water quality is better according to data, because of pollution reduction technologies used in vehicles and industry."—*John Ledger, Associated Oregon Industries*

To some, the rallying cry for sustainability smacks of Chicken Little: an uproar about a calamity that is not going to happen. To others, the very concept of sustainable communities is an affront to individual property rights.

At its core, then, sustainability is a balancing act among a number of important interests and values. Based on our survey of definitions, there appears to be agreement on three general principles:

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- **Environment:** The Earth has finite natural resources and a decreasing ability to maintain sufficient clean water, fertile land, and the other necessary elements to sustain human life amidst a rapidly expanding world population.
- **Economy:** Economic activity provides employment for individuals—and a means to provide basic necessities for themselves and their families—and produces goods and services that augment our quality of life.
- **Equity:** Communities join together to provide social equity; that is, to meet a broad range of human needs, such as health and literacy—within and between generations.

Sustainability is best achieved by optimizing each of these three factors, in concert with the others. Indeed, the sustainability advocate sees these not as separate issues, but as three parts of a system that must be considered as a whole. This balance between the environment and the economy, and between generations, is often called the "triple bottom line" and represents the very essence of sustainability.

While the big picture remains important, some sustainability advocates have developed more specific guidelines for making day-to-day decisions about sustainability. For instance, how do you determine whether a product is "sustainable?" The key is to evaluate the product over its entire life cycle, including the following general stages: Raw Material; Manufacture; Transportation; Use; and Disposal or Reuse. A product that appears environmentally friendly may not be when you consider all of these stages.

At the raw material stage, the impacts of mining, harvesting or other extractive practices can be a cause for concern. Using materials with reused or recycled content reduces resource consumption on one end of the product cycle and waste on the other end. At the same time, a product that may have few negative environmental impacts at the raw material stage may be ecologically destructive during the manufacturing phase—petrochemical-based products, for example, are toxic at various stages of processing. The production of some products may require high amounts of energy. Also, working conditions in

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production facilities can be the source of social equity concerns.

Transportation is also a factor—buying locally reduces the amount of fuel consumed to transport a product and supports the local economy. A product may meet all the other measures of sustainability but become comparatively unsustainable if it has to be shipped across the country. How a product performs when it's used makes a difference. Is it durable, does it use high amounts of energy, does it cause problems as it ages? And finally, what happens when the product reaches the end of its useful life? Materials that can be recycled, minimally processed, or that are biodegradable, reduce waste. Clearly, choosing a sustainable product involves many more issues and requires a lot more information than similar purchasing decisions in the past.

Another important principle of sustainability, as articulated by the The Natural Step, is to learn to mimic nature. In nature, there is no waste. The waste from one organism becomes food for another. Industrial society takes raw materials and turns them into finished products. When the useful life of the product is finished, it becomes garbage, deposited in a landfill. This is a linear process instead of a cyclical one. In an ideal sustainable world, each byproduct of a manufacturing process would become an input for some other productive activity.

As Bob Doppelt articulated in *Crisis or Opportunity: Oregon's Environmental Programs at the Crossroads*, published by PSU's Center for Watershed and Community Health,

“The only possible approach—and one experience shows is achievable—is to institute the policies, programs, practices and technologies needed to dramatically improve the efficiency by which we extract natural resources from the earth's surface, turn them into products and services, and then emit them as waste and pollution. Only by creating a more “environmentally efficient economy” (i.e. squeezing more from nature using dramatically fewer resources and less impact) can we decouple economic development and



population growth from environmental impacts. This is the next great Oregon challenge.”

As you can see, the number and variety of definitions of sustainability suggest just how complex and broad-ranging an issue this is. For the purposes of this report, we use the definition adopted by the City of Portland in its Sustainable City Principles (for more information, see Appendix D):

The city will "promote a sustainable future that meets today's needs without compromising the ability of future generations to meet their needs, and accepts its responsibility to: 1) Support a stable, diverse and equitable economy; 2) Protect the quality of the air, water, land and other natural resources; 3) Conserve native vegetation, fish, wildlife habitat and other ecosystems; and 4) Minimize human impacts on local and worldwide ecosystems."

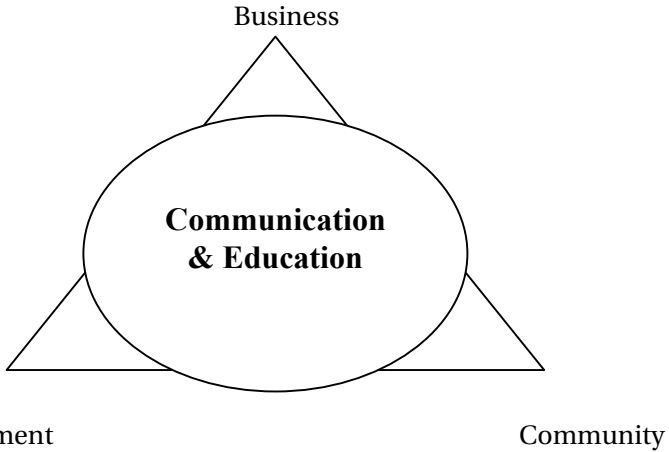
### **The Players**

Throughout Oregon, sustainability is attracting more and more notice and generating active and positive responses.

Governor John Kitzhaber recently called for Oregon government agencies to use their resources in a sustainable way. Portland's Mayor and City Council have developed Sustainable City Principles—a set of general guidelines for how the City's public offices will conduct business in the future (see Appendix D).

Businesses in Oregon such as Nike, Norm Thompson, Nature's Fresh Northwest and Collins Pine Co. are engaged in and talking about sustainable business practices.

Government, business, and the community each have a role to play.



- **Business:** Business can seek balance in meeting customer, societal, employee and shareholder needs, and improve internal efficiencies and create new technologies.
- **Government:** Government can set goals, level the playing field, establish rules, create incentives, create markets, provide information and "protect the commons" (things people depend on, but they don't own).
- **Community:** Within communities, individuals influence the marketplace through purchasing, influence government actions through voting, and assume personal commitment to that which enhances one's quality of life. Non-Government Organizations such as associations or environmental groups educate and influence government leaders, businesses, and individuals within the organization's area of specialization or interest.

In the same way that sustainability balances economic, environmental and equity interests, the road to achieving sustainability will depend on a balanced effort by government, business, and the community.

Fortunately, Oregon has experience in creating the kind of public-private partnerships necessary to elevate the quality of life for all residents of the Portland metro region. We need only look back to the Bottle Bill, the landmark Oregon law that

mandated a five-cent deposit, paid by the consumer to the retailer, and then rebated upon the return of the container.

The success of the bottle bill was celebrated and studied as a model for other states to follow. But one aspect of the legislation that is little known even in Oregon is the business opportunity that arose from the passage of the mandatory deposit. Beverage retailers and distributors, who lobbied against the law, were forced to deal for the first time with a large quantity of used containers. Faced with no effective means of handling the situation, the major distributors in Multnomah, Clackamas, and Washington counties established Container Recovery, Inc. to sort, prepare, and sell glass, plastic, and aluminum containers back to the original resource organizations (i.e. aluminum smelters, glass fabricators, and plastic re-manufacturers). Container Recovery, Inc. became a profitable endeavor and explored the possibility of launching similar companies in California and Washington states. These operations, to be patterned after the Oregon success, were not implemented however because the California and Washington deposits were not a great enough incentive to create a significant source of material.

Thus, all sectors worked together to make beverage retailing more environmentally sustainable. Government created the incentive to motivate the individual, which in turn provided an opportunity for a business to be created that helped to enhance the environment.

In the next three sections, this report will explore the distinct but overlapping roles that business, government, and the community can play in forging a sustainable future.

### *III. The Role of Business*

"There are good reasons to protect the Earth....It's the safest and surest way to long-term profitability."—*Paul Allaire, CEO and Chairman, Xerox*

Business is no stranger to environmental issues. Decades ago the formation of governmental agencies to police the

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environment (the Environmental Protection Agency at the federal level and the Department of Environmental Quality here in Oregon) firmly placed environmental protection on the radar screen of most businesses.

But not every business sees the environment in the same way.

### Levels of Sophistication

The range of perspectives held by business organizations relative to the environment is depicted in the model below as well as the motivation of businesses at each stage of environmental sophistication.

**Restorative (environment = invest in natural capital)**

**Sustainability (environment = competitive advantage)**

**Green Marketing (environment = make money)**

**Eco-efficiencies (environment = save money)**

**Compliance (environment = cost)**

**Remedial (environment = headaches)**

**Environmental Sophistication**

**Prevalence of the Focus**

*Phases of Environmental Sophistication (Courtesy of Axis Performance Advisors)*

**Compliance & Remediation.** Most businesses have at some time run into environmental regulations that impact their behavior. The average company will assess its operations, and (where possible) move into compliance. In some instances, remediation is necessary to meet minimum regulatory standards. Here the motivation is simply to avoid legal penalties and fines. For companies at these stages of sophistication, the environment is at best a nuisance and, at worst, a financial or legal liability.

Some companies endeavor to stay ahead of the regulatory curve, anticipating future environmental rules and regulations. On the subject of global warming, BP (formerly British Petroleum) CEO John Browne recently said, "The time to consider the policy dimension of climate change is not when

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the links between greenhouse gases and climate change is conclusively proven but when the possibility cannot be discounted. We at BP have reached that point."

***Eco-efficiencies.*** Businesses that move past the compliance and remediation stage come to recognize that environmental protection can be financially advantageous. Companies can save money by employing "eco-efficiencies" such as reducing energy use, streamlining packaging materials, and eliminating procedural waste, to name but a few examples.

Dow Chemical's Louisiana division, for example, began an annual energy saving contest among employees in 1982, resulting in capital investments of \$1.7 million with an average return on investment of 173 percent. Skeptics figured they had tapped out their ideas in the first year, but the savings and returns got better and better as time passed. By 1989, the average return for the 64 improvements was 470 percent, saving the company \$37 million a year.

Companies that build or re-model their facilities in an environmentally friendly manner can also reap eco-efficiencies. These include worker productivity increases of 7 to 15 percent, coupled with drops in sick leave and absenteeism.

***Green Marketing.*** After companies employ eco-efficiencies, the next step is green marketing. This stage marks an awareness that environmental protection does not just save money—it can actually make money as well.

By developing new environmentally responsible lines, and promoting their products as "green," some businesses have been able to differentiate themselves from their competitors and open new markets. Studies show that with everything else equal, consumers will choose a green product over its non-green counterpart, and may even pay a premium for it. Some companies have lobbied for tougher environmental restrictions, knowing it will provide them with a marketplace advantage.

The flip side is that companies can lose business if they fail to adequately meet their customers' environmental concerns. For example, Electrolux, which manufactures appliances, did not

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act until it nearly lost a major customer. Protestors picketed McDonalds in Sweden until their grievances were addressed. Home Depot switched lumber procurement procedures after a media campaign against their use of old growth timber.

### *Strategic Sustainability.*

This next level of sophistication moves beyond just products and processes or marketing to a total corporate commitment to sustainability in all phases of the operation.

At this level, sustainability has become a strategic decision, made at the highest levels of the corporate ladder. Such companies seek a competitive advantage in an ever more environmentally sensitive marketplace.

Although no companies have yet become completely sustainable, one example of the benefits of strategic sustainability is the tremendous growth in organic farming in the United States. Locally, Nature's Northwest grew from a small storefront in the 1970s specializing in organic foods to a profitable chain of six "superstores." Rather than hampering their company's development, this single-minded focus on sustainable agriculture established a reputation

### **What's going on in the Region?**

**Who?** Norm Thompson

### **What?**

Built first commercial *PGE Earth Smart* building that reduces energy use by 35 percent annually. Partnered with Alliance for Environmental Innovation to lead change in paper use by the catalogue retailing industry.

**Contact:** Derek Smith

Dsmith@nortom.com

### **What's going on in the Region?**

**Who?** Progressive Investment Management

### **What?**

Created a mutual fund - P21, using sustainability criteria for screening companies. Assists others to design criteria to assess sustainability for investment purposes.

**Contact:** Carston Henningsen  
503-224-7828

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for Nature's Northwest that was directly responsible for their tremendous growth.

Some stockholders are putting "green" pressure on their boards of directors. In an unprecedented move, 13 percent of British Petroleum share holders supported a *Greenpeace* resolution to increase investment in solar energy and to scuttle BP plans to extract oil in the Arctic National Wildlife Refuge in Alaska.

Another indicator of the potentially explosive market for sustainable companies is the rapid growth of socially responsible investing, up 82 percent since 1997 and now a \$2 trillion dollar annual business.

Anthony Burgman, co-chair of Unilever, summed it up well: "Businesses that fail to operate on that principle [sustainability] will increasingly not be tolerated by society."

**Restorative.** A few companies' vision extends even further. They want to go beyond sustainability, to restore the environment, to reinvest in "natural capital."

Exemplifying this, Jim Quinn, CEO of Portland's Collins Pine, remarks: "A sustainable forest manager allows the trees to renew themselves. But that is only one part of it. The other side is that while you're managing the forest, you still have a conscious awareness of, and focus on, biological systems and diversity such that you don't take all the trees out at once and deprive everything that lives there of their habitat. So you do a little bit at a time."

For the company, this means focusing on the quality of what remains after logging rather than only the quality of timber logged. Collins harvests less rapidly than the renewal rate of biomass, keeps trees of all ages, protects river corridors,

### What's going on in the Region?

**Who?** Collins Companies

### What?

Forests independently certified as sustainable by Forest Stewardship Council. Collins works with other forest product companies to promote sustainable forest practices.

**Contact:** Cami Waner

503-417-7755

and builds roads that minimize erosion. This philosophy has left the company with more standing trees now than when they bought their land originally.

Whatever the level of sophistication, there appear to be two primary drivers for businesses to deal with environmental issues: a problem or a passion. While many companies treat the environment in a reactive manner, acting only when faced with a crisis, others have a broader vision.

Businesses that take a pro-active approach to environmental protection and sustainability are typically driven by the passion or values of their leaders. Ray Anderson, president of Interface, and Larry Chalfan, who headed the Oregon Oki Semiconductor plant, both got hooked when they were researching environmental issues in preparation for a presentation. Other CEOs committed to sustainability include Tom Kelly of Neil Kelly Company, Jim Quinn, of Collins Companies, and John and Jane Emrick of Norm Thompson. Their companies represent a cross-section of industry, but what they share is a belief that sustainability is a natural extension of their values and sense of social responsibility.

### Seizing an Opportunity

What benefits could a company expect if they adopt a strategic approach to sustainability?

*Cost savings.* As Dan Danielson, the architect for the environmentally responsible science building on the University of Portland campus said, "There is no bigger incentive than economics. It's better than any plaque on the wall." Collins Pine saved over \$1 million in process changes in their first year of implementing The Natural Step principles (see Appendix E), despite having been focused on sustainable forestry practices for decades. Interface, a carpet manufacturer, saved \$76 million

#### What's going on in the Region?

**Who?** Nike

**What?**

Working to "green" its supply chain: phasing out PVC; reducing inorganic solvents; increased use of organic cotton.

**Contact:**

Website: [Nikebiz.com/social](http://Nikebiz.com/social)



in four years while their net sales increased dramatically in the same period.

***Product/service innovations.*** Electrolux developed washing systems that used a fraction of the water compared to traditional models. Nike is phasing out PVC plastics and hazardous glues in their shoes. Neil Kelly has designed a line of cabinets made from sustainable woods.

***Strategic market positioning.*** Interface, which manufactures a recyclable line of carpeting, has been written up in FastCompany, Fortune and other magazines because of their stated goal of becoming the first sustainable business. Nike has adopted sustainability as a focus, in part because of the controversy surrounding their international labor practices.

***Employee morale & productivity.*** The CEO of Scandic Hotels in Sweden echoes the experience of most organizations. "Nothing has ever been close to creating as much excitement as this environmental campaign...It was incredible that people got so involved in this that they are willing to make some sacrifices and put in some energy and effort to get involved. It brought people together in a way we've never been able to bring our staff together before..."

John Emrick of Norm Thompson said sustainability "triple motivated" his employees, "to take care of themselves, to build a better Norm Thompson, and also to work for the greater good."

***Reduced legal liability and insurance costs.*** Oki Semiconductor negotiated lower insurance rates based on their reduced environmental and health risks.

### Hurdles Along the Way

Pursuing sustainability is not always easy. Here are some of the challenges business leaders have faced and what might be done about them.

***Regulations get in the way.*** In the past, governmental agencies have handed down environmental regulations in a prescriptive manner, generating large expenses for companies by dictating

both the desired outcome and the means to that end. Companies prefer regulations that allow for flexible responses to achieve specified goals and provide so-called "safe harbors" for businesses that make good-faith efforts to meet the standards.

The Green Building initiative, now underway through the City of Portland, would offer builders and developers a streamlined review process when they agree to use specified building practices.

***Who pays and who benefits?*** Mark Hylland of the Home Builders Association of Metropolitan Portland suggested that often the builder/developer (and their clients) foot the bill for benefits that accrue to society as a whole. He believes incentives are more equitable than regulations. "Make what you want the easiest thing for us to build," he says. As an example, if the plans include features like porous driveways (which would allow rainwater to seep back into the ground instead of pouring into the storm sewers), the builder could be offered a discount on the permit.

***Inertia.*** A major challenge for business is inertia. To become sustainable requires a great deal of information gathering, which takes time and money—scarce resources in any company. To make matters worse, information can be hard to come by, since many suppliers do not want to reveal what is in their products and knowledge about sustainable products is not centralized. Architect Dan Danielson said, "what we need is a library with all the available product information so that informed decisions can be made."

Mark Hylland pointed out how difficult it can be to make a seemingly simple change to building practices. A change to steel studs may require the carpenter to use different methods, the electrician to use different tools. How do the sheet rockers attach the wallboard or the

### **What's going on in the Region?**

**Who?** Celilo Group

#### **What?**

Working to create and expand markets for sustainable products and services.

**Contact:** Nik Blosser  
503-226-7798

homeowners hang pictures? Industries with razor-thin profit margins will need a compelling incentive to learn about the issues, change how they do business and work with their subcontractors or suppliers to get them on board.

*Consumer apathy.* Although sustainability may be the "right" thing to do, there is still the possibility of consumer backlash against a company that takes complete environmental responsibility. Consumers may not wish to pay the extra costs or shoulder the extra burdens involved with a company becoming sustainable. As long as it is cheaper to throw away an appliance than to get it fixed (in time, money, and convenience), consumers will likely choose to do just that.

As Mark Hylland said, "If customers were beating down my door, saying, 'I want an environmentally-friendly house,' that's what I'd build." That demand is not always there.

*Environmentally friendly products often cost more.* Cost may be a major factor in the low rates of sustainability adoption by companies. There has not yet been a proven model for achieving profitability through sustainability. Several companies have had minor triumphs through environmental stewardship, but others have not recovered their costs. While there are many environmental improvements that have a great payback, other investments are still more than most businesses can justify.

For example, Dan Danielson admitted that there were many trade-offs made in the design and construction of the University of Portland's science building. By keeping their eye on the bottom line, they were able to come in 3 percent under budget. An extra investment in their energy systems returned a four-year payback, saving \$52,000 annually. But not all the technologies he wanted are cost-effective yet. Danielson feels it was better to do what they could, creating a model to be studied by others, than to shoot for the ideal while risking the whole project.

*Being overwhelmed.* John Klosterman of Rejuvenation, Inc. said, "Do not underestimate the inadequacy an organization will feel when it first compares itself to sustainable principles of living....We need to accept that much is currently unsustainable

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and change is slow, thus striking a balance between thinking too small, resulting in incrementalism, and thinking too big, resulting in paralysis."

Proponents of sustainability may feel that small steps are not enough, but many companies are also realizing that these changes cannot be made overnight.

### Getting Started

If a business wants to contribute to a more sustainable economy, the task can feel overwhelming. One of the best ways to start is to train executives in both the knowledge and motivational techniques necessary to commit an organization to major change. Most of the proactive local companies referred to in this section received coaching from the Oregon Natural Step Network (see Appendix E). Many companies decide to train all employees, thus leading to a common organizational understanding of sustainability and encouraging the flow of ideas for improvement projects from all levels of the company. Below are some of the project ideas an organization could use to get started:

Energy	Replace products with more energy-efficient versions.  Recapture waste heat.  Select "green power" options from your utility.  Design the layout of facilities to minimize energy use.  Investigate more sustainable technologies including fuel cells, solar energy, etc.
Transportation	Find sources closer to your operation or customer.  Switch from more energy-intensive forms of transportation (autos) to lesser ones (rail).

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	<p>Allow employees to telecommute.</p>
Purchasing	<p>Replace more hazardous or scarce materials with less hazardous or scarce materials.</p> <p>Buy from vendors that have a good environmental record or that have an environmental management system (e.g. ISO 14000).</p> <p>Buy locally.</p> <p>Buy products made with recycled materials to create a market for recyclable materials or made with sustainably harvested materials.</p> <p>Find multiple uses for what you buy to get the most value out of it before it is disposed (e.g., gray water systems that cycle water from drinking sources into toilets and for irrigation, copying on the back of used paper, etc.).</p>
Facilities	<p>When you build or remodel, investigate green building practices including passive solar design, solar water heating, low-VOC paints/materials, and superinsulation.</p> <p>Recycle or reuse materials after demolition.</p> <p>Reduce construction materials (e.g., by using existing surfaces such as a concrete floor instead of covering it with vinyl or carpet).</p> <p>In the maintenance and operation of your facility, find more benign substitutes for solvents, cleaners, etc.</p>
Waste	<p>Inventory what you waste (gas, liquid or solid).</p>

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	<p>Improve the efficiency of your operation to reduce waste.</p> <p>Find markets for your waste stream.</p> <p>Find substitutes for hazardous, non-biodegradable, or scarce materials.</p>
Manufacturing	<p>Design products for disassembly, recycling and reuse.</p> <p>Change the relationship with suppliers to encourage resource efficiency (e.g., some car manufacturers are now paying du Pont for painted cars instead of paint).</p> <p>Reduce, take back or eliminate packaging.</p> <p>Make products lighter, more compact, etc.</p> <p>Design your processes to mimic or take advantage of nature (e.g., using mosses and water hyacinths to purify water) (See <i>Biomimicry</i> by Janine Benyus).</p>

## ***IV. The Role of Government***

"Only government can provide the unified mission and overarching framework needed to mobilize, guide and integrate public, private, and community efforts to de-couple growth from impacts and place Oregon on a path toward sustainable development." –*Bob Doppelt, Center for Watershed and Community Health, Portland State University*

For the purposes of a discussion about sustainability, it is necessary to explore not just the institutions of local, state and federal government, but to examine the process of governance itself. The role of leadership within a consensual democracy is as important, and perhaps more so, than the structure of government and the process of policy making and implementation.

There are a variety of ways that government can advance the sustainability and enhance the quality of life experienced by its constituency. These include:

- Providing clear goals and objectives to steer private sector and community decision making toward more sustainable choices;
- Leading by example;
- Using policy tools (incentives, regulations, taxes) to direct attention and encourage innovation toward more sustainable alternatives; and
- Providing information and technical assistance about sustainable options.

### **Goals and Implementation**

Sound governance implies effective and efficient management of public resources and an adequate response to critical societal needs. This definition includes serving as a champion for the common good today, while at the same time promoting

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equity for future generations. Government can most effectively mobilize resources toward sustainability by establishing clear goals and objectives that support environmentally, socially, and economically responsible development.

Because local economic, social, and environmental conditions vary, a "one size fits all" approach is usually not the best way to encourage efficient and effective sustainable practices. Government can best assist by setting standards with the involvement of affected stakeholders, and providing information and incentives to help local communities and businesses reach these standards.

Rather than being prescriptive in how to achieve standards, policies need to allow for flexibility to encourage efficiency and innovation.

### **Leading by Example**

Government agencies can play a powerful role by serving as a model, directing internal government practices toward more sustainable alternatives.

In 1994, the City of Portland adopted Sustainable City Principles (see Appendix D), and in 1995 established the Sustainable Portland Commission (SPC). More recently, Portland has conducted an assessment of government impacts on salmon habitat and, through the Office of Sustainability, has implemented the Green Building Initiative to encourage more sustainable building practices .

At the state level, in 2000, Governor Kitzhaber issued Executive Order No. EO-00-07, directing state agencies to incorporate sustainability considerations into purchasing and contracting policies and to make technical assistance

#### **What's going on in the Region?**

**Who?** State of Oregon

#### **What?**

Gov. Kitzhaber's executive order proclaims, "The State of Oregon shall develop and promote policies and programs that will assist Oregon to meet a goal of sustainability within one generation by 2025."

#### **Contact:**

[www.governor.state.or.us/governor/sustainability](http://www.governor.state.or.us/governor/sustainability)



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programs more environmentally friendly. This order will help create linkages between economic, social, and environmental policies and programs. A resolution on sustainability passed by Eugene City Council similarly recognizes the "cross departmental" nature of environmental, economic, and social issues, and seeks to develop an approach that is integrated throughout city agencies.

This emphasis on integrated, interdisciplinary approaches to sustainability highlights one of the main challenges for government. Public policies usually focus on specific sectors and more narrowly defined issues. This in part reflects the reality that policies are often implemented and laws enforced by specific agencies with discrete jurisdictions. Water departments develop and implement policies related to water use, economic development agencies deal with job creation, health departments focus on public health concerns, and so on.

A sustainability framework recognizes the relationships between economy, ecology, and society. This requires that all agencies (not just those involved in environmental issues) consider these inter-connected issues in their programs and policies. This is usually a challenge for public agencies, both in their willingness to cede bureaucratic "turf," and in their ability to successfully deal with areas outside their normal realm of issue expertise. This is particularly true with respect to Portland's city government structure because each member of the City Council manages a separate portfolio of bureaus.

Portland City Commissioner Dan Saltzman drew attention to Portland's approach to Endangered Species Act (ESA) issues as one model for transcending these bureaucratic "silos." With respect to ESA issues, an inter-bureau team was established, representing many of the city's bureaus, including planning, water, environmental services, the Portland Development Commission, and others. This team works to develop a citywide strategy to address endangered species.

Another example of increasing integration is the City of Portland's Green Building Initiative. This is an integrated effort to promote non-polluting and resource efficient building and site design practices throughout the city. The initiative marries the expertise and resources of six city bureaus (Office of

Sustainable Development, Environmental Services, General Services, Planning and Development Review, Portland Development Commission, and Water) to deliver comprehensive services to the development and building community, home owners, businesses, and the city's own project and facilities managers. The office issues guidelines and rating criteria for construction and building planning and operation, provides expertise and information, conducts training seminars, and printed a resource guide.

Institutionalizing the commitment to sustainability within agencies can also be a challenge, but will be essential to ensure that investments in the future are not lost because of changes in political leadership. The efforts underway in relation to the Governor's Executive Order on sustainability to integrate environmental considerations into the operational policies of government agencies will help to establish a more long-term commitment to sustainability principles.

### Rules, Regulations, and Incentives

Public policy has an undeniable effect on private decision-making. Laws and regulations can support or discourage sustainability depending on how and where they direct attention and resources. There are a number of arrows in the public policy quiver—taxes, incentives, subsidies, and regulations, to name a few—each of which influences decision-making in a different way.

#### What's going on in the Region?

**Who?** Oregon Department of Environmental Quality

**What?** Developed the "Green Permit" program using incentives to reward companies with high levels of environmental performance.

**Contact:** Marianne Fitzgerald  
503-229-5946

### Rules and Regulations

Early environmental regulations, such as the Federal Clean Water Act and the Federal Clean Air Act, set water and air quality standards that industries and governments were required to meet. In many cases these regulations mandated

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the utilization of certain specific technologies to meet the environmental benchmarks. While the regulations resulted in significant improvement in water and air quality, the standards were often met only after great expense.

More recently, a shift toward "performance-based" approaches has made it possible to meet environmental goals while retaining greater economic efficiency. Such regulations provide flexibility for local industries or governments to choose the method of compliance that works best for them, as long as universal standards are upheld.

The City of Portland's Green Building Initiative has drawn attention to the way that regulations—specifically, building codes—can encourage or discourage environmentally sound practices. At the Sustainable Communities conference held in Portland in May 2000, participants identified several ways that building codes influence green development. For example, codes currently promote higher water quality through requiring all new construction to remove pollutants from rain water prior to leaving the building site. This is achieved through the use of swales (shallow vegetated ditches that slow down the water) and landscaped areas that promote the natural water filtration process. This process is replacing the previous practice of sending rain water straight to a storm or sanitary sewer.

On the flip side of the coin, codes that govern operable windows prevent developers from taking advantage of natural air circulation options. Architect Dan Danielson described how various other codes discourage risk-taking or innovation by prescribing specific approaches. By shifting toward a performance-based approach, allowing the individual business the freedom to choose the means to reach a specified end, these codes could be more supportive of sustainable choices and investments.

In other parts of the world, governments are taking an increasingly active role in creating a sustainable society by adopting legislation to change the linear "take-make-waste" process. Known as "Extended producer responsibility" or "extended product responsibility," these statutes require that manufacturers take back their product (along with the packaging) at the end of its useful life. While this legislation

began in Europe, it is spreading to Japan and even parts of South America. In the United States, we are already beginning to see this in the electronics industry. An example of this is the take back of cathode ray tubes (found in television screens and computer monitors) which each contain roughly five pounds of lead.

### Incentives

In addition to regulation, government can use economic and market incentives to help influence private decision-making. According to one report, government incentives can help overcome the lack of market information and under-pricing that otherwise contributes to unsustainable behavior and actions.

Incentives offered under the City of Portland's Green Building program include:

- **Commercial Buildings:** Grants are available for design and consulting services for “green” (as defined by LEED standards) commercial construction.
- **Residential Buildings:** Grants are available for “green” residential construction and remodels.
- **Affordable Housing:** Grants are available for two purposes: 1) to build the capabilities of housing designers, developers, community development corporations, and contractors and/or, 2) to cover incremental additional costs incurred through the use of “green” practices.
- **Building Technologies:** Grants are available to support the development of Eco-roof technology. Eco-roofs create landscaped areas on the tops of buildings to reduce run-off, absorb pollutants, cool roof surfaces, and reduces the “urban heat island” effect in the city.

Government can also encourage technological innovation by developing codes of practice, award programs, and training opportunities. The City of Portland's BEST (Businesses for an Environmentally Sustainable Tomorrow) program rewards

companies for energy efficiency and other aspects of environmental performance.

### **Accounting Systems**

In assessing their progress and making decisions about how to allocate resources, governments often rely on performance indicators gauged by national or state accounting practices. In government as in other sectors, "what gets measured, gets done. Yet, according to Commissioner Dan Saltzman and Bob Doppelt of Portland State University's Center for Watershed and Community Health, current accounting standards and practices may not adequately reflect the true cost of a given decision.

For example, most countries assess progress in economic development based on whether their Gross National Product (GNP) is rising. The GNP is an indicator of economic activity, of the flow of goods and services. This type of accounting system focuses attention and resources on increasing economic activity, without regard for environmental or social impacts. Critics of GNP as a performance indicator point out that the Exxon Valdez oil spill resulted in an increase in GNP because of the additional jobs that the spill created.

Alternative approaches to accounting are being developed that account for social equity and environmental quality issues. If governmental investments are measured using such an approach, society will be more likely to invest its resources in activities that are more socially and environmentally responsible. The Oregon Progress Board is working to develop indicators that can help integrate sustainability principles into the state's benchmarks. Sustainable economic indicators that measure the relationship between the economy and other community health factors can help direct government decision-making toward more sustainable options.

### Tax Policies

Tax policy influences behavior by rewarding or discouraging particular actions. For example, current tax policies encourage home ownership by allowing mortgage interest deductions. Taxes can also have unintended effects: for example, high estate taxes on forested lands create a pressure on heirs to intensively harvest the lands to raise the money to pay these taxes.

In other words, as economists often say, "if you want less of something, tax it." This principle can be used to discourage things that society considers undesirable. So-called "green" taxes would charge companies for the amount of pollutants they produce, thereby discouraging pollution and inefficient resource use. Several initiatives are underway to develop a green tax framework in Oregon.

#### **What's going on in the Region?**

**Who?** Oregon Office of Energy

#### **What?**

Offers tax credits for businesses investing in energy-saving equipment and processes; Offers tax credits for households for renewable energy systems or highly efficient appliances; Offers rebates and loans for energy saving projects.

**Contact:** Charlie Stephens  
503-378-4298

### Disseminating Information

Government also has at hand a wide range of technical assistance and informational programs that can be used to educate the private sector and the general public about developing and adopting more sustainable practices.

### City of Portland

**Office of Sustainable Development.** The Office of Sustainable Development (OSD) was created to serve as a focal point for the City's efforts to increase natural resource conservation and promote sustainable development practices. The OSD offers technical support, creates building guidelines, manages the incentive project, and provides expertise and information to City agencies and the private sector.

**Sustainable Portland Commission.** Made up of 15 citizen volunteers appointed by the Portland City Council, the Commission receives staff support from the Office of Sustainable Development and reports to City Commissioner Dan Saltzman. The Sustainable Portland Commission is responsible for encouraging the adoption of ten Sustainable City Principles that were adopted by the City Council (see Appendix D). Commission members monitor a number of sustainability indicators in Portland, both for the community and for city government operations. They also help direct people to relevant information and people within city government. Current projects include the development of a presentation for interested community groups or visitors, that will acquaint people with sustainability trends and with efforts underway in Portland to create a more sustainable city.

**Bureau of Environmental Services.** Among other efforts, BES is responsible for taking the Sustainable City Principles and

#### What's going on in the Region?

**Who?** Governmental Information Sources

**City of PDX – Office of Sustainable Development:**  
[www.pdxenergy@ci.portland.or.us](http://www.pdxenergy@ci.portland.or.us)

**City of PDX – Bureau of Environmental Services**  
[www.enviro.ci.portland.or.us](http://www.enviro.ci.portland.or.us)

**Oregon Office of Energy:**  
[www.energy.state.or.us](http://www.energy.state.or.us)

**Oregon DEQ:**  
[www.deq.state.or.us](http://www.deq.state.or.us)

**Oregon Housing and Community Services:** [www.hcs.state.or.us](http://www.hcs.state.or.us)

**Metro's Recycling & Waste Prevention Services:**  
[www.multnomah.lib.or.us/metro/rem/rwp/rwp.html](http://www.multnomah.lib.or.us/metro/rem/rwp/rwp.html)

making them part of daily work in protecting public health, water quality, and the environment. They provide information and assistance to businesses and citizens on sustainable practices and monitor city work to ensure that all areas of sustainability (economics, environment, and equity) are addressed.

### Regional Government Agencies

***Metro.*** Metro is an elected regional government responsible for planning that protects the nature and quality of life in Clackamas, Multnomah, and Washington Counties. It functions as a forum for discussing ideas, a clearinghouse of regional information, and manages regional parks and green spaces, including the Portland Zoo. Metro offers educational programs, presentations, public awareness efforts, printed information, an extensive website, and a staffed recycling information line.

***Bonneville Power Administration.*** BPA is an agency of the US Department of Energy. It has broad responsibilities but its mission includes the development and management of green power sources, the promotion of greater energy efficiency, and efforts to improve anadromous fish stocks within the drainages of the Columbia River upstream of Bonneville Dam. BPA has expertise in the energy and energy conservation fields and a wealth of educational material directly related to sustainability.

### State of Oregon

***Oregon Department of Environmental Quality.*** DEQ works to restore, enhance, and maintain the quality of Oregon's air, water, and land. Regional offices provide technical assistance to regulated businesses and local governments. It also offers advice to homeowners and renters—regarding issues such as asbestos in their homes—and provides guidelines for automobile owners on reducing auto emissions.

***Oregon Progress Board.*** In 1989, the Oregon legislature created the Progress Board to steward and implement the state's 20 year strategic plan, *Oregon Shines*. To reach the state's goals, the Progress Board created the Oregon Benchmarks, a broad array of social, economic and environmental indicators that allow for measurable outcomes and targets for improvement.



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Every state and more than a dozen foreign countries have requested information about Oregon's benchmarks.

*Oregon Solutions for a Sustainable Future (Website)*  
([www.OregonSolutions.net](http://www.OregonSolutions.net)): This website was created in response to Governor Kitzhaber's Executive Order on Sustainability. The site features case studies, a calendar of events, links to research and resources, and invites visitors to join in online discussions groups on a variety of topics.

## ***V. The Role of Community***

"There seems to be an assumption that policy change is needed to move us to a sustainable future, and we can do so while globalization continues to determine the dominant values and habits of the citizens. In our view, citizens must take the lead in changing the dominant values and habits of our society. Business and governmental agencies will follow the lead of individuals. In fact businesses and governmental agencies are not capable of the bold leadership required for the fundamental change that must occur if we are to reach our sustainability goals."—*Dick Roy, Northwest Earth Institute*

As we have seen, sustainability is a difficult concept to easily distill. It defies simple categorization. Efforts to build a sustainable future are not limited to the workplace or city council chambers. They also take place at home, and in our communities as well.

Becoming environmentally sustainable can be a life-changing process. Individuals wear different hats at different times—worker, parent, child, student—and make decisions that effect sustainability in each area of their lives. Awareness may begin in a single aspect of one's life—such as the workplace, or the classroom—but if we are to become a truly sustainable community, it will become part of everyday life: at home, at work, at play.

Efforts to educate individuals about sustainability also reach out to different and multiple aspects of people's lives. Such efforts can overlap, but it is important that they reach different segments of society, and serve to reinforce the systemic nature of sustainability.

### **Non-Governmental Organizations**

Non-governmental organizations (NGOs) are probably the most active educators on sustainability issues.

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Mostly non-profit organizations, these groups often focus their efforts on a particular aspect of sustainability. Some, such as the Willamette River Keepers, River Network, and Headwaters to Ocean, target water quality and riparian habitat issues. Organizations like the Northwest Earth Institute and Global Action Plan for Earth (Eco Teams), focus on small groups and individuals, promoting ways to reduce consumption of resources through lifestyle changes. Other groups like SOLV and Friends of Trees promote clean ups and other beautification measures like tree planting.

Still others like Sustainable Northwest, Ecotrust, and the Oregon Natural Step Network point to ways that businesses and rural communities can support and even benefit from environmentally sustainable practices. And even local neighborhood groups like the Friends of Smith and Bybee Lakes, the Friends of the Columbia Gorge, and the Johnson Creek Watershed Group exert a strong educational presence, both in their local neighborhoods and on local government policies.

Sustainability is a multifaceted and complex issue. It is all but impossible for any single organization to focus on the whole and still be effective. Each piece of the whole is important. Still, there is some duplication and lack of coordination between these groups, even though their goals are similar.

Some examples of the type of education that these groups are presently engaged in include the following:

***Northwest Earth Institute:*** Northwest Earth Institute has two primary initiatives. First, it broadly reaches out to the public by taking programs directly into workplaces, homes, centers of faith, and neighborhoods. These include a series of courses and practical follow-up programs on sustainable living practices, discovering a sense of place, environmental ethics, and the practice of simplicity. Second, the Institute, through the Oregon Natural Step Network, promotes The Natural Step (see Appendix E), a sustainability tool developed in Sweden. The tool consists of four principles that define a sustainable society and provide a framework and direction for organizations wanting to adopt sustainable practices. ([www.nei.org](http://www.nei.org); 503-227-2807)

***Oregon Environmental Council (OEC):*** OEC is Oregon's oldest statewide environmental advocacy group and is currently focusing on three major areas: clean air, clean water, and building a sustainable economy. The OEC has educational initiatives directed at individuals, the business community, and governmental agencies. They educate through lobbying, hosting regular business breakfasts, and workshops and forums. ([www.orcouncil.org](http://www.orcouncil.org), 503-222-1963)

***International Sustainable Development Foundation (ISDF):*** The ISDF was formed in 1997 to accelerate the use of practices that lead to sustainable development. The organization currently manages three programs that advance this mission, both locally and internationally. One is the Asia Pacific Economic Cooperation Center for Sustainable Development (APEC Center). This involves the twenty-one members of the Asia Pacific Economic Cooperation forum. A second program is the China-U.S. Center for Sustainable Development. The ISDF is the U.S. Secretariat for the Center. The third program, which is active locally, is the Zero Waste Alliance (ZWA). The ZWA fosters the development and implementation of practices that improve resource efficiency and lead to the reduction and elimination of waste and toxins in business and government operations. ([www.zerowaste.org](http://www.zerowaste.org), 503-279-9382)

***Northwest Environment Watch:*** Based in Seattle, this highly respected and influential organization has published several books on environmental issues such as *Green Taxes*, *The State of the Northwest*, and *The Car in the City*. Each of these books clearly explains an issue or states a problem and points to solutions. Directed at individuals, governments, and businesses, these books are great educational tools. ([www.northwestwatch.org](http://www.northwestwatch.org), 206-447-1880)

***OMSI:*** The Oregon Museum of Science and Industry (OMSI) has been providing interactive science education for the region for more than 50 years through exhibits, classes, theaters, camps, outreach programs, and teacher training. Many programs focus on the environment and natural resources in the context of the broader ecosystem. OMSI makes the scientific information accessible to a broad audience and with more than 1,000,000 users annually, provides a key venue for

public education about sustainability. ([www.omsi.edu](http://www.omsi.edu), 1-800-955-OMSI)

## **Sustainability and Schools**

All students in Portland Public Schools are required to attend the Outdoor School exposing them to a natural experience that includes learning about the environmental history of this region. Many teachers find creative ways to connect disciplines like science, social studies, or math with environmental issues in the world outside the classroom, promoting recycling efforts and monitoring local urban environments. In K-12 public schools in Oregon, however, there are currently no provisions for instruction in the principles of sustainability. However, private schools such as Oregon Episcopal, Catlin Gable, and the Portland Waldorf School have included environmental education in their curricula.

The lack of a sustainability curriculum stems in large part from the broad, cross-disciplinary nature of the subject. One way to bring these issues into K-12 education would be the insertion of basic sustainability principles into the curriculum of teacher education programs. Portland State University is tentatively planning to offer a graduate cohort in the spring of 2001 with a strong focus on ecological literacy and issues of sustainability. But this is the only program of its kind in the area, and even that remains in the planning stages.

At the post-secondary level, there are many programs that focus on environmental science, ecology, public policy and planning, and other issues of sustainability. Some of these

**What's going on in the Region?**

**Who?** Educational Programs

**Portland State University:**

[www.pdx.edu](http://www.pdx.edu)

**University of Portland:**

[www.up.edu](http://www.up.edu)

**Lewis and Clark College:**

[www.lclark.edu](http://www.lclark.edu)

**Oregon State University:**

[www.orst.edu](http://www.orst.edu)

**University of Oregon:**

[www.uoregon.edu](http://www.uoregon.edu)

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programs actively promote the interdisciplinary connections that are part of the broad, systems approach required for understanding sustainability. There are also programs that connect different universities and departments, and even include government and businesses. The following list represents a few examples of local post-secondary educational programs with an emphasis on subjects related to sustainability.

**Portland State University (PSU)** has multiple programs dealing with issues of environmental sustainability. Through partnerships with government, NGOs, and community organizations, PSU has built a reputation as a leader in environmental sustainability, hosting numerous conferences and educational forums on sustainability issues. Within the university, there are cross-disciplinary programs in several schools and departments. The Hatfield School of Government in the School of Urban and Public Affairs, houses the nonprofit Center for Watershed and Community Health (<http://www.upa.pdx.edu/CWCH/>), as well as the Environmental Stewardship Committee, responsible for the *Oregon State of the Environment Report* that came out in July, 2000 (available from the Oregon Progress Board, [www.econ.state.or.us/opb/](http://www.econ.state.or.us/opb/), or 503-986-0039). PSU also offers the Environmental Science and Resources program, which has an undergraduate program focused on sustainability. Professor Craig Shinn points out: "Departments throughout the university have partnerships with the City of Portland Bureau of Environmental Services and other local community organizations that deal with sustainability issues. It's part of PSU's primary mission of serving the community through research, education and outreach."

**The University of Portland Environmental Studies Program** is an interdisciplinary course of study that includes courses in environmental ethics, environmental science, and environmental engineering. The business school ties into this with courses in sustainable entrepreneurship.

**Lewis and Clark College's Environmental Studies Program** is an undergraduate program that deals with sustainability issues based upon a three-pronged approach that looks at all issues

through the disciplines of social science, humanities and science.

*Oregon State University's College of Engineering* is currently involved in several sustainable technologies, including: microenergy, hazardous material reduction, old bridge rehabilitation, intelligent transportation systems, green engineering, efficient energy production and usage, natural disaster mitigation, and high performance materials.

*University of Oregon, Institute for a Sustainable Environment* studies the ways in which the biophysical world is being transformed by human actions; the cultural, social, political, and economic forces causing these transitions; and the ways in which the biophysical world can be sustained. ISE is particularly concerned with encouraging cross-disciplinary environmental research, education, and public service. It offers faculty engaged in outreach activities; responses to agency, corporate, and citizen inquiries; outreach activities incorporated into research and teaching; public forums; encouragement of collaborative relationships outside the university; and a web page with international links.

*Reed College* has undertaken a project called the Reed Canyon Enhancement Strategy. Reed Canyon is a 60-acre watershed that includes Reed Lake (located on the college campus), Crystal Springs, which issue forth from the East end of the lake, and surrounding wetland and upland areas. Reed Lake is identified in the Johnson Creek Basin Protection Plan as "the only naturally occurring pod (or lake) remaining in the inner-city area." Crystal Springs is a critical, high quality, ground water resource in the Johnson Creek system. The Reed Canyon Enhancement Strategy includes a thorough site assessment and recommendations for enhancement. The college is in the design process of daylighting the outfall from Reed Lake, providing for effective fish passage and reestablishing the original stream channel. The completed plan will include realignment of trails, removal of non-native plant species, and establishment and encouragement of preferred native plant communities. This project has been the subject of Reed senior theses and serves as an open classroom for several K-12 classes throughout the Portland area. Reed students, neighbors and friends access this environment for academically related

projects as well as passive, recreational enjoyment of the aesthetic of a healthy, working watershed. The issues of clean water, habitat enhancement and appropriate access for observation are the main focus of Reed's ongoing management plan.

### Individuals

"Heroes are people who say this is my community, and it is my responsibility to make it better." – *former Oregon Governor Tom McCall*

At its heart, the issue of sustainability revolves around how societies and the individuals within them experience the quality of life. There are many factors that contribute to or influence this experience. Institutions—such as government, business, education, and religious organizations—have a significant impact on the communities and neighborhoods they serve. But as individuals, most of us influence our surroundings—and our own quality of life—more than we usually believe.

All individuals have multiple and often simultaneous roles to play. In a democratic society, individuals participate in the political process through informed voting and vigilant oversight. At work, individuals are the boss, the employee, or sometimes both. In their communities, individuals have other roles to play, such as consumer, resident, leader, husband, wife, parent, child, and neighbor. In each of these roles, individuals shape the living environment for themselves and those around them.

Efforts to build a sustainable future will be highly dependent on the values held, choices made and actions taken by individuals.

### The Impact of Individual Choices

Each time an individual decides to take the bus or drive a car, to throw away a used plastic container or wash and recycle it, to shop at a local store or visit the mall at the edge of town, he or she is creating an impact on the community. Yet because the impact of each independent decision is generally small and often goes unnoticed by others, many individuals feel that the sustainability of their community is beyond their influence.



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Nevertheless, the data are compelling. Individual actions can add up.

For example, in 1995, 81 percent of Portland's eligible households recycled, up from just 39 percent in 1991. By 1999, programs administered by the City of Portland and Metro recycled 54 percent of the city's waste. Individual household decisions contribute mightily to overall recycling efforts and have significantly decreased garbage hauled and lessened the need for additional land fills in the metropolitan area.

Statistics also show more people are taking societal impacts into account in individual decision-making even if it means a greater personal financial burden. Three thousand people chose to buy Green Power from their local electricity suppliers, during the first six months it was available in Oregon. Though Green Power costs customers more than regular electricity, the proceeds go to the development of environmentally friendly power supplies. These individuals are using their pocket books to vote for cleaner forms of generating electricity.

Although a single choice to buy one product over another does not feel as though it has a far reaching effect, consumer preference literally creates markets and establishes the incentives to develop new products, processes, and technologies. For example, in Portland, customer demand for organic foods helped stores like Natures Northwest grow and forced large grocery store chains to offer similar products to a wider range of customers. This bottom-up demand literally built the organic foods industry.

The effect of individual choices begins to be noticeable when many people decide to make a difference through the way in which they conduct their daily activities. Bicycle commuting is a good example of this. In 1999, 5,550 bicyclists rode across three downtown Portland bridges each day. These bicycle commuters help reduce the number of cars on the road, the air pollution the cars would have produced, and the demand for maintenance and expansion of the infrastructure needed to support car travel. Importantly, the numbers of bike commuters are on the rise. According to a City of Portland report, "The number of bicycle riders daily crossing the three main bicycle bridges in Portland increased 111 percent."

### **Personal Environmental Assessment**

How sustainable are you and is your household? You can use the following self-assessment to find out where you are doing very well and where you might have opportunities to improve. You can take the assessment by yourself, but it's most effective if you involve your whole family in the process.

Read through the assessment and circle the answers that most accurately reflect your household's situation. A couple of the items may require that you track things for a week (e.g., garbage) or do a little figuring (e.g., living space.) It's best to gather real data, but use estimates if you need to.

Look at the items, which you circled that are further to the right. These represent opportunities to become more sustainable. Some items might be easy to do right away (e.g., replace lights with compact fluorescent bulbs or walk to the store more often) and others might factor into future decisions (e.g., how much living space you really need or the efficiency of your appliances.) Find one item that you're willing to improve and make a commitment.

Review the assessment in another month, acknowledge your progress, and see if there's another improvement that you might be able to build into your habits.

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<b>Transportation</b> Do you most often...			
Bike/walk	Take public transportation	Carpool	Drive alone
<b>Diet</b> Do you most often eat meals that...			
Are vegetarian	Include fish or chicken	Include pork	Include beef
<b>Household waste</b> Do you...			
Recycle and compost everything possible	Recycle most things	Recycle only what you get paid for	Put everything in the garbage
<b>Weigh your garbage</b> after one week. Is it...			
less than 1 lb	1-5 lbs	6-10 lbs	>10 lbs
<b>Living Space</b> Divide the living space in your house (in square feet) by the number in your household. Is your square feet per person ....			
Less than 600	600-1000	1000-1500	Over 1500
<b>Appliances</b> How many of your appliances are energy and water efficient? (refrigerator, washing machine, dish washer, furnace, etc.)			
All	75%	50%	25% or less
<b>Lighting:</b> How many of the lights you use for more than 2 hours a day are energy-efficient fluorescents?			
All	75%	50%	25% or less
<b>Heat/cooling:</b> Do you set your thermostat to...			

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65 degrees or less; don't use air conditioning	68 degrees or less; don't use air conditioning	70 degrees or less; don't use air conditioning	71 degrees or more; use air conditioning
<b>Bathing:</b> Do you ...			
Take showers that last less than 5 min. with low-flow shower head	Take showers that last less than 10 min. with low-flow shower head	Take showers that last more than 10 min.	Take baths instead of showers most of the time
<b>Weatherization:</b> How well insulated is your house? (Consider windows, caulking, insulation, etc.). Is your house ...			
Tight as a drum	Pretty tight	Has a few noticeable drafts	Is well below current codes
<b>Landscaping:</b> When you landscape your yard, do you...			
Choose all native plants and minimize lawn	Choose plants that attract wildlife (not all native plants)	Have a lot of lawn; most shrubs and trees are non-native	Have mostly lawn and some invasive non-native plants (e.g. English ivy)
<b>Yard maintenance:</b> Do you ....			
Never use synthetic pesticides/herbicides	Rarely use pesticides/herbicides	Sometimes use pesticides/herbicides	Frequently use pesticides/herbicides
<b>Watering:</b> Do you ...			
Never water lawn; plant drought-resistant plants	Water shrubs and flowers only after a long dry spell	Water shrubs and flowers regularly	Water lawn regularly

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<b>Consumption:</b> Do you ....			
Use everything until you wear it out, repair it, or give it away to others; buy in bulk; consider the packaging in purchase decisions	Repair what is cost-effective; donate what you don't need		Buy the latest version or remodel even though your existing possessions are still in good shape

*Courtesy of Axis Performance Advisors*

### Getting Involved

Awareness of the issues involved in sustaining and improving the quality of life in our region is only the beginning. Action is a vital component to building the kind of community that can sustain a healthy environment, a vibrant economy, and an equitable social system.

Individuals can contribute to the sustainability of the region on three levels: as leaders, as doers, and by building sustainable institutions that continue to work through time.

In 1984, Judy Hanson (then Judy Nielsen) while working at the Oregon Department of Fish and Wildlife became alarmed at the amount of trash, and particularly plastic trash, on the Oregon beaches. Coastal wildlife was being injured and killed, the coastal environment was being degraded, and the once pristine Oregon beaches had lost their natural luster. Judy got people involved, found sponsors, attracted 2,100 like-minded individuals and the first Oregon Beach cleanup removed 26.3 tons of trash from Oregon's beaches. Now, after 16 years, SOLV and the twice-yearly beach cleanup are Oregon institutions. During the spring 2000 cleanup, 5,600 volunteers collected 28 tons of trash.

In 1989, Richard Seidman read about community tree planting activities in other cities. He asked around and when he discovered that Portlanders shared his desire for more trees in

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the urban environment, Friends of Trees was born. Thanks to Richard's efforts, neighbors come together for tree planting and tree care projects along city streets, in urban natural areas and on school grounds. Friends of Trees also educates the public, and helps individuals plant trees and bushes in their yards. In the last 11 years 20,000 volunteers have planted 165,000 trees in the five-county metropolitan Portland/Vancouver area. Friends of Trees is funded by 1,200 individuals, foundations, and government agencies, and provides a model for what individuals can do to affect their immediate environment and benefit the livability of those around them.

Individuals can have an impact on the sustainability of the Portland Metro Region in many ways. As mentioned in the previous section, many sources of education about sustainability principles and practices are available in our community. Also many organizations are actively involved in improving the quality of life in our region. Below is a list of some of the organizations that offer opportunities for individuals to get involved and make a difference in Portland.

<b>Organization</b>	<b>Focus</b>	<b>Contact</b>
Bicycle Transportation Alliance	Promotes bicycle commuting within the city.	503-226-0676
Carsharing Portland	Manages a fleet of vehicles located around the city for members who pay per use.	503-872-9882
Community Alliance of Tenants	Organizes for safe, stable, and affordable rental housing in Portland.	503-460-9702
Friends of Trees	Plants, cares for, and preserves urban trees.	503-282-8846

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Hands on Portland	Organizes daylong community service projects.	503-234-3581
Jobs with Justice: Portland Chapter	Supports worker's rights on an individual and community basis.	503-236-5573
Northwest Coalition for Alternatives to Pesticides	Promotes non-toxic pest control.	541-344-5044
Northwest Earth Institute	Educates individuals to protect the earth through personal lifestyle choices.	503-227-2807
Oregon Environmental Council	Advocates for socially just & economically sound environmental policies.	503-222-1963
Reclaim the Streets	Promotes car-free streets, public transport, street gardening & livable neighborhoods.	541-343-8548
Recycling Advocates	Citizen organization with the goal of maximizing waste reduction & recycling.	503-777-0909
River Network	Supports community-based groups in the preservation of rivers and watersheds.	503-241-3506

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Sisters of the Road Cafe	Non-profit restaurant that exists to alleviate hunger in Portland.	503-222-5694
The Wetlands Conservancy	Preserves, protects, & restores Oregon wetlands through acquisition & education.	503-691-1394
Willamette River-Keeper	Advocates to protect fish/wildlife & make the Willamette safe for swimming.	503-223-6418



## VI. *The Status of Sustainability Efforts*

"I think we tend to assume that all Oregonians share this ethic of community responsibility and of civic action and of environmental stewardship. I am not sure we can make that assumption. For people who moved into it, or for many people who were born into it, I think it is very easy to take for granted the gifts that we have in this state. For people who didn't have to struggle and fight for these things, I think it is easy to undervalue what we have here." —Governor John Kitzhaber (from the *"Founders of the New Northwest" Speech*)

It is difficult at best to judge the progress metropolitan Portland is making towards sustainability. Many of the groups and individuals involved in sustainable development focus on specific aspects of the issue. While incremental progress on discrete subcategories contributes to overall sustainability, it is equally vital to bring the big picture into focus. To date, that picture is largely missing.

Across the state and around the region, a handful of organizations—most notably the Oregon Progress Board, the Portland Multnomah Progress Board, and the Sustainable Portland Commission—are working individually and in concert to develop systems to measure community progress.

Part of the problem in trying to measure sustainability is the broad sweep of the subject matter. Remember the triple bottom line? If we are to balance the environment, the economy and social equity, we must devise a set of indicators that measure not only environmental and economic progress, but progress in areas like education, health, civic participation, and public safety. Therefore, the number of indicators could be almost endless; communities must choose from among things like air quality, commute times, baccalaureate degrees, business failures, voter registration and turnout, childhood immunizations, and violent crime rates, to name just a few.

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Another part of the problem is determining where a community wants to put its effort and reconciling competing community values. Can a community do it all—enhance education, encourage business development, provide social services, protect the environment? Each community needs to decide how far it wants to go toward achieving each of these goals. What happens when goals conflict? For example, some strategies to increase the supply of affordable housing or to encourage business development may conflict with a community's efforts to protect environmental resources.

Today there is no agreed upon set of indicators that represent a sustainable Portland. Indeed, if sustainability is to be adopted on a wider basis, it will be necessary to build a broad public consensus on how to measure sustainability, i.e., which indicators reflect the values of a particular community. Once the value judgments have been made, the next step is to implement consistent systems of performance measurement to determine how we're doing and what needs improvement.

To preserve what is unique about Portland will require community value judgments backed by performance measurement—two areas in which Portland still has much work to do.

### **Performance Measurement**

In most business organizations and municipal governments, performance is measured primarily through use of financial indicators. Benefit is usually measured subjectively in comparison to what can be achieved for the least cost. Quality and long term considerations are often sacrificed to achieve the lowest cost. A growing consensus among members of the scientific, government, and business communities is that this system of performance measurement is inadequate. For example, a simple cost/benefit analysis fails to consider such vital sustainability indicators as bio-diversity, soil fertility, and climate regulation.

Performance measurement for sustainability seeks to improve decision making by incorporating the more subjective "quality" and "quantity" information associated with social and environmental issues into the decision model along with short-

term financial criteria. This approach is value based. It assumes there is value in, for instance, ethnic diversity, community dialogue, or environmentally friendly buildings, beyond what can be measured financially by means of profit and loss, net margin, or net present value. And while there is no "right" way to do this, it would be wrong to assume these factors have no value at all.

(See Appendix F for a more detailed discussion of sustainability performance measurement, including: visioning, developing the value model, establishing indicators, setting targets and milestones, benchmarking performance, and measuring trends in performance.)

### Status of Sustainability in Metropolitan Portland

So how are we doing? We have identified three main components of sustainability as the economy, social equity, and the environment. While our report focuses primarily on the environment, the other two elements are equally important. In this section, we present some general observations about the state of the economy and social justice, followed by a more detailed look at indicators of environmental sustainability in the metropolitan region.

#### Economic and Social Equity

Our community's track record on the economy and social justice is mixed. The Portland Multnomah County Progress Board tracks about 76 indicators, 45 of which are shared at the state level by the Oregon Progress Board. These indicators show that:

**Economically, the region is doing well, but the rewards are increasingly divided.** Job growth is high, unemployment low, and per capita income is increasing. Average annual pay, however, has remained about the same over the last ten years (adjusted for inflation). A larger percentage of the population (around 13 percent) live in poverty now than in 1980. This poverty is concentrated among women and children: in 1996, one-quarter of all children under five lived in poverty and 57 percent of those that lived in a female-headed household lived in poverty.

**Urban vitality is good, but housing is unaffordable for an increasing percentage of the population.** About 16 percent of the region's growth occurs in the City of Portland. Residents enjoy a wide diversity of parks and open space. Also, 85 percent of Multnomah County residents rate their neighborhood livability as good or very good. The rate of homelessness, however, has increased in recent years. Shelter counts indicate that about 2,500 people seek shelter nightly, and 25 percent of those are turned away, including 200 children. Further, the housing affordability gap appears to be widening and is most pronounced in households at very low income and poverty levels.

**More metro area residents have high school diplomas, but many current students have inadequate skill levels and the drop rate has increased.** The percentage of those with a high school diploma has risen from 83 percent in 1990 to 87 percent in 1998. However, only half of our students meet desired reading and math skills by eighth grade, and teachers deem only 60 percent of the Multnomah County's kindergarten students "ready to learn." The ratio of Oregon 18 to 24-year-olds who failed to complete high school climbed in the past decade from one in 10 to one in four—the worst completion rate in the United States, according to the National Center for Education Statistics.

**Overall crime rates are down but domestic violence is up.** Crime rates, following a national trend, are down. Since 1993, citizens in Multnomah County have felt increasingly safe on neighborhood and downtown streets. Drug-related deaths in the county, however, have almost tripled in the last eight years. Child abuse has increased over the last four years and some 21,000 victims of domestic violence were turned away from shelters in 1998.

### The Environment

"We are doing better than most urbanized parts of the world, but...we have a long way to go to reach a sustainable balance with our natural resources." That's the conclusion of Langdon Marsh, former head of the Oregon Department of Environmental Quality. Marsh reviewed progress toward

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sustainability in the Portland metropolitan area in a January 2001 address to the City Club of Portland.

Marsh reviewed indicators in four key areas of environmental sustainability: (1) air, (2) water, (3) wastes and (4) the general ecosystem health. We summarize some of his findings below.

### AIR:

**“Generally, the Metro area’s air quality is better than it was 10 years ago. The air is healthier and the views are clearer.”**

Stringent controls on industry and autos have reduced emissions and the metropolitan area currently meets all the federal air quality standards.

**Increases in population and our use of the automobile are the region’s primary air quality challenges.** “Population continues to grow in the metropolitan area. At the same time we are driving a lot more.” Carbon dioxide emissions in the Portland region have increased since 1990, in part because vehicle miles traveled is increasing. While metro area population increased 17 percent from 1990 to 1999, the total number of daily vehicle miles traveled increased by 33 percent.

**Toxics and small particles from combustion continue to pose problems.** “Toxics—such as metals and organic compounds from factories, from gasoline and diesel engines, from small businesses like print and paint shops and even from household cleaning products—have largely unknown but potentially damaging health effects and need to be minimized to assure our neighborhoods that they are healthy places to live.” Small particles from combustion may also prove to be a significant concern.

### WATER:

“Water quality has improved over the last generation but is still not as high as it should be.”

**“Sewage and industrial pollution is largely, although not completely, under control.** Massive investments that started in the McCall era—and have been driven since then by the Federal Clean Water Act—have resulted in the Willamette being

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restored to boating, fishing and swimming, except after storm events which flush raw sewage along with contaminated storm water into the river through the City's combined sewer overflow." The City of Portland has eliminated these overflows in the Columbia Slough and plans to eliminate overflows into the Willamette by 2011.

"As a result of all the work so far, there have been dramatic improvements in the dissolved oxygen content of the water, improvements that continue to this day. Prior to the 1960s the Willamette was fairly lethal to most species of fish. As a result of the improvements made, fish populations have rebounded and continue to improve."

**"Violations of state water quality standards for bacteria, temperature and toxics in the Willamette, continue from a variety of sources."** "Among the sources, although not the primary ones in all cases, are facilities that have permits to discharge pollutants." Permittees "are facing higher levels of scrutiny by EPA and DEQ as well as by environmental groups," and "will have greater burdens in showing compliance with both clean water and endangered species laws."

**"Toxics will continue to be a major concern for the Willamette and its tributaries."** Good historical data are not available, but we know "the toxic sediments that caused the recent Federal Superfund listing for the Portland Harbor stretch of the Willamette have largely been accumulating there for most of the last century. There has not been a massive recontamination of the river since the McCall era, as many think, but there has undoubtedly been an increase in toxic runoff as the result of growth and attendant urbanization and the increasing use of chemicals. Petroleum products and toxics still make their way into the river from hundreds of outfalls carrying runoff from streets, industrial and commercial lots and lawns and landscapes."

**Water supply continues to be abundant in the region but global warming could reduce the snow pack dramatically over the next 50 years.** That would lead to substantial shortages of water over the summer and fall.

### WASTES:

#### **Solid waste recycling has improved greatly since 1991:**

Recycling in the Metro area is at 43 percent recovery rate for solid waste, compared to 37 percent for the state as a whole. “Aggressive action by the City of Portland and Metro has helped make Portland first in the West and one of the most aggressive in the nation to require recycling of office paper and other materials by the commercial sector.”

**The volume of waste disposed at landfills continues to increase.** Despite this good work, disposal of garbage at the big landfill in Arlington and other sites around the state keeps going up, increasing by over 1.1 million tons since 1994 to almost 4.8 million tons in 1999. “The reason that more stuff is finding its way into landfills despite the good work we all do on recycling is that we are buying and using more things.”

**The contamination of new very large sites is unlikely, but toxic contamination is still a threat from thousands of small spills and improper disposal.** Portland has more contaminated sites than any other part of the state. Over half of the 250 sites on DEQ’s inventory of contaminated sites are in Multnomah, Washington and Clackamas Counties. “The good news is that a large number of them are being cleaned up. DEQ estimates that most sites with the worst contamination will be cleaned up over the next generation.” While “laws controlling the release of hazardous and toxic material make it unlikely that we will ever see again the very large contaminated sites...toxic contamination is still a threat from thousands of small spills and improper disposal of paints, oils, solvents and pesticides in streets, backyards and lots.”

### HABITAT:

“The [Oregon] *State of the Environment Report* documents the significant loss of wetlands in the Willamette Valley over time. Riparian or streamside areas are also in far from ideal condition.” Further, total salmon counts (including native and hatchery-bred) in most area rivers are dramatically down since the late 80s and early 90s (varies by species and location).

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The City of “Portland, the Unified Sewerage Agency in Washington County and Metro are doing some very good things to bring some of the healthy functions of riparian areas back. But there are great opportunities for restoring much of the value of our creeks and rivers and letting nature do as much of the work of reducing flooding, cleaning runoff and recreating habitat as possible.”

### SUMMARY:

Marsh emphasized that the problems in our region are “no worse here than in most other places on the globe and in some respects we are better positioned to remedy them.” However, today’s problems may be harder to solve than those in the past. Marsh drew attention to the *Oregon State of the Environment Report* conclusion that our current environmental problems reflect the cumulative effects of many small, diffuse, individual decisions and actions. Moving toward sustainability will require affecting these decisions and actions

Marsh closed by noting that a recent report by Northwest Environment Watch offered both hope and a challenge in its finding that the "Pacific Northwest is still a global test case: less degraded than the rest of the industrial world, it has a better chance at sustainability than perhaps anywhere else."



## *VII. Observations*

“Sustainability is best understood as a context for decision-making rather than an end state or a body of techniques.” – *Gary Lawrence, Sustainable Strategies and Solutions*

The key themes that emerged during the creation of this report are:

- There is an increasing societal awareness of the interdependency between the natural world and the human communities we have built. We all have a part to play in creating a sustainable way of life.
- Creating a sustainable society requires effective leadership, a common vision, and institutionalized mechanisms that make it easier for individuals and organizations to take sustainable actions.
- Building a sustainable future will require collaboration between business, government, and the community. These efforts are increasing in our region.
- There are a growing number of examples of successful businesses that are realizing a business advantage through adopting sustainable practices.

There was much agreement among the individuals who contributed to this report that sustainability is a critical issue in our region and there is much to do. The following is a summary of the recommended actions expressed by those involved in this arena.

- **Agree on a Vision:** There are many public and private organizations who have a vision and goals related to maintaining and improving the quality of life in the region. What is missing is community-wide agreement on the goals to be pursued and measured for this purpose. We need to envision how the “three E's” (economy, environment and social equity/livability) can be jointly optimized instead of traded-off against each other.

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- **Refine and Communicate Measures:** The Portland Metro region and Oregon as a whole does not have enough accessible data or the right measures to know how it is doing. Although various measures exist they need to be synthesized, refined and communicated more widely to the public.
- **Align Public Policy:** At present, local public policy has a mixed effect on the sustainability of the region. Improving our long-term quality of life will be dependent on aligning policy mechanisms with community sustainability goals. Since achieving sustainability will be a long-term effort, it will be important to have mechanisms in place to maintain continuity and accountability across terms of office.
- **Increase Education:** An increased emphasis on education is needed in all arenas, from the curriculum of the Portland Public School system to employee training in business organizations to citizen education through public agencies and NGOs.
- **Change Organizational and Individual Behavior:** Individuals and organizations are becoming increasingly active in efforts to affect the future health and quality of life in the Portland Metro region, but expanded actions are still needed from a broader segment of society.

### *VIII. Recommendation to the City Club*

The long-term health of the environment and quality of life enjoyed in the region is an issue of great importance to individuals living and working in the Portland metropolitan region. This committee recommends that the City Club of Portland continue to educate citizens about the importance of issues related to sustainability and conduct further research into the methods for building a sustainable future for Portland.

Respectfully submitted by,

Jennifer Allen  
Victor Allen  
Scott Dethloff

## **BUILDING A SUSTAINABLE FUTURE FOR PORTLAND**

Tim Dittmer  
Holly Drago  
Ron Ennis  
Katherine Giacchino  
Darcy Hitchcock  
Kurt Krause  
Tim Kringen  
Tom LaBerge  
Clemens Laufenberg  
Blake Rohrbacher  
Don Smith  
Nancy Steuber  
Sue Thomas

## ***IX. Appendices***

### **Appendix A : Witness List**

Janet Bechtold, Sherwood Sustainable Community Education Initiative

Paul Burnet, manager of special projects, Oregon Department of Environmental Quality

Duke Castle, The Oregon Natural Step Network

Jane Cease, chair, City Club of Portland Endangered Fish Species Report

Richard Conlon, city council member, City of Seattle

Dan Danielson, Soderstrom Architects, designers of the University of Portland science building

Bob Doppelt, Portland State University's Center for Watershed and Community Health

Matt Emlen, Office of Sustainable Development, City of Portland

John Emrick, chief executive officer, Norm Thompson Outfitters

Thor Hinkley, Sustainable Portland Commission

Dr. Stephen Kolmes, director of environmental studies, University of Portland

John Ledger, Director of Environmental Affairs, Associated Oregon Industries

Don McClave, executive director, Portland Chamber of Commerce

Ron Paul, Business for Social Responsibility

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Craig Pridemore, commissioner, Clark County, Washington

Dick Roy, executive director, Northwest Earth Institute

Dan Saltzman, city commissioner, City of Portland

Ethan Seltzer, Portland State University Metropolitan Studies Center

Bob Wise, chair, Sustainable Portland Commission

## **Appendix B: Survey Participants**

**Ashforth Pacific:** Hank Ashforth, president, 825 NE Multnomah, Suite 1275, Portland, Oregon, 503-233-4048, hank@ashforthpacific.com

**Bonneville Power Administration:** John Taves, public interest group liaison, 503-230-4995, jmtaves@bpa.gov

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**University of Oregon—Institute for a Sustainable Environment (ISE):**  
<http://gladstone.uoregon.edu/~enviro/mission1.htm>

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## **Appendix C: Resource Materials**

### **Articles**

"Growth through Global Sustainability," by Joan Magretta (an interview with Robert Shapiro, CEO of Monsanto), *Harvard Business Review*, Jan-Feb 1997

"Beyond Greening: Strategies for a Sustainable World," by Stuart Hart, *Harvard Business Review*, Jan-Feb 1997

"I Want to Pioneer the Company of the Next Industrial Revolution," (article about Interface), *FastCompany*, April/May 1998.

"Natural Capitalism: We can create jobs, reduce taxes, shrink government, increase social spending and restore our environment," by Paul Hawken, *Mother Jones*, March/April 1997.

"What It Means to Be Green," by Nadav Malin, *Architectural Record*, September 1999.

### **Books**

*Biomimicry: Innovation inspired by Nature* (Janine Benyus)

*Choosing a Sustainable Future* (National Commission on the Environment)

*Competitive & Green: Sustainable Performance in the Environmental Age* (Dennis Kinlaw)

*Cool Companies* (Joseph Romm)

*Ecology of Commerce* (Paul Hawken)

*Ending the Explosion: Population policies and ethics for a humane future* (William Hollingsworth)

*Enviro-Management: How smart companies turn environmental costs into profits* (Keith Denton)

*How Many People Can the Earth Support* (Joel Cohen)

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*Lean and Clean Management* (Joseph J. Romm)

*Living Downstream* (Sandra Steingraber)

*Mapping the Journey* (Rowledge, Barton and Brady)

*Natural Capitalism* (Lovins & Hawken)

*Profit Beyond Measure* (H. Thomas Johnson)

*Regenerative Design for Sustainable Development* (John Tillman Lyle)

*Reinventing the Future: Global Goals for the 21st Century*  
(Rushworth Kidder)

*Oregon State of the Environment Report 2000* (Oregon Progress Board)

*Building to Last: The Challenge for Business Leaders* (Colin Hutchinson)

*The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation* (Brian Nattrass & Mary Altomare)

### **Presentation**

Marsh, Langdon. Presentation to City Club of Portland on January 19, 2001, "In Our Backyards: Portland's Environmental Challenges."

### **Websites**

U.S. Environmental Protection Agency, Region 10:  
[www.epa.gov/r10earth/sustainability/actionframe.html](http://www.epa.gov/r10earth/sustainability/actionframe.html)

U.S. Dept. of Energy, Center of Excellence for Sustainable Development: [www.sustainable.doe.gov](http://www.sustainable.doe.gov)

Joint Center for Sustainable Communities (a project of the U.S. Conference of Mayors and the National Association of Counties): [www.usmayors.org/USCM/sustainable](http://www.usmayors.org/USCM/sustainable)

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U.S. General Services Administration, Real Property Sustainable Development Guide:

<http://policyworks.gov/org/main/mp/gsa/home.html>

The Center for Environment and Business on the Web:

[www.sustainablebusiness.com](http://www.sustainablebusiness.com)

State of Oregon, Governor's Office, Sustainable Oregon:

[www.governor.state.or.us/governor/sustainability/index.html](http://www.governor.state.or.us/governor/sustainability/index.html)

International Institute for Sustainable Development:

<http://iisd.ca>

The Network for Creative Change:

[www.chebucto.ns.ca/CommunitySupport/NCC/NCCHPAGE.html](http://www.chebucto.ns.ca/CommunitySupport/NCC/NCCHPAGE.html)

The Natural Step, U.S. Headquarters: [www.naturalstep.org](http://www.naturalstep.org)

Oregon Natural Step Network: [www.ortns.org](http://www.ortns.org)

Green Building, A Primer for Builders, Consumers, and Realtors: [www.nrg-builder.com/greenbld.html](http://www.nrg-builder.com/greenbld.html)

Businesses for an Environmentally Sustainable Tomorrow (BEST) program: [www.ci.portland.or.us/energy/bestmain.html](http://www.ci.portland.or.us/energy/bestmain.html)

Metro's Recycling and Waste Prevention Services:

[www.multnomah.lib.or.us/metro/rem/rwp/rwp.html](http://www.multnomah.lib.or.us/metro/rem/rwp/rwp.html)

American Planning Association Policy Guide on Sustainability:

[www.planning.org/govt/sustdvp.html](http://www.planning.org/govt/sustdvp.html)

Ecotrust; Patterns of a Conservation Economy (framework for sustainability): [www.conservationeconomy.org](http://www.conservationeconomy.org)

Sustainable Portland Commission:

[www.ci.portland.or.us/energy/spc.htm](http://www.ci.portland.or.us/energy/spc.htm)

Oregon Progress Board: [www.environment.nacse.org](http://www.environment.nacse.org)

## **Appendix D: Sustainable City Principles**

Goal: City of Portland will promote a sustainable future that meets today's needs without compromising the ability of future generations to meet their needs, and accepts its responsibility to:

- Support a stable, diverse and equitable economy
- Protect the quality of the air, water, land and other natural resources
- Conserve native vegetation, fish, wildlife habitat and other ecosystems
- Minimize human impacts on local and worldwide ecosystems

City elected officials and staff will:

1. Encourage and develop connections between environmental quality and economic vitality. Promote development that reduces adverse effects on ecology and the natural resource capital base and supports employment opportunities for our citizens.
2. Include cumulative and long-term impacts in decision making and work to protect the natural beauty and diversity of Portland for future generations.
3. Ensure commitment to equity so environmental impacts and the costs of protecting the environment do not unfairly burden any one geographic or socioeconomic sector of the City.
4. Ensure environmental quality and understand environmental linkages when decisions are made and regarding growth management, land use, transportation, energy, water, affordable housing, indoor and outdoor air quality and economic development.

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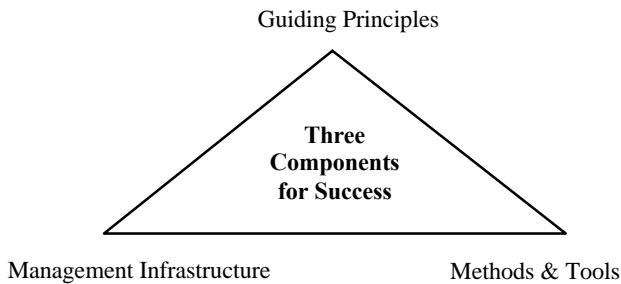
5. Use resources efficiently and reduce demand for natural resources, like energy, land, and water, rather than expanding supply.
6. Prevent additional pollution through planned, proactive measures rather than only corrective action. Enlist the community to focus on solutions rather than symptoms.
7. Act locally to reduce adverse global impacts of rapid growth population and consumption, such as ozone depletion and global warming, and support and implement innovative programs that maintain and promote Portland's leadership as a sustainable city.
8. Purchase products based on long term environmental and operating costs and find ways to include environmental and social costs in short term prices. Purchase products that are durable, reusable, made of recycled materials, and non-toxic.
9. Educate citizens and businesses about Portland's Sustainable City Principles and take advantage of community resources. Facilitate citizen participation in City policy decisions and encourage everyone to take responsibility for their actions that otherwise adversely impact the environment.
10. Report annually on the health and quality of Portland's environment and economy.

## **Appendix E: Implementing Sustainability— Principles, Process, and Tools**

As we have seen, taking the initial steps towards sustainability within a business or a governmental agency can be intimidating. Fortunately, there are a number of resources available to help an organization in the planning stages. Several groups have published frameworks for implementing sustainability. It is not necessary to reinvent the wheel.

The frameworks fall into three complementary areas:

*(Courtesy of Rifer Environmental)*



### **Guiding Principles**

Rather than prescribing specific courses of action, these sets of principles seek to provide a common basis of understanding, or a shared mental model, to point the way. Each framework takes a systems point of view, 1) offering principles grounded in science, 2) looking at the earth as a whole, and 3) enabling numerous, systematic, continuous improvement projects. All support movement toward sustainability. The most well known frameworks are summarized below:

***The Natural Step:*** Provides a planning framework in the form of four principles based on science that guide decision-makers of an organization or governmental body systematically toward sustainability. The Natural Step advises that our society should avoid a systematic build-up in nature of: (1) substances extracted from the earth's crust (particularly heavy metals and fossil fuels); and (2) substances made by man (especially toxic

synthetic materials that do not biodegrade.) The third principle recommends that we preserve natural systems and nature's bio-diversity and avoid over-harvesting. The fourth principle counsels us to use resources efficiently and fairly with respect to meeting basic human needs. (See *The Natural Step*, [www.naturalstep.org](http://www.naturalstep.org) and the Oregon Natural Step Network, [www.ortns.org](http://www.ortns.org))

***The American Planning Association—Policy Guide on Planning for Sustainability (APA)***: The APA has identified four basic objectives or principles that can be used as a framework for policy development and decision-making at the local, state, regional, and federal levels, in matters with which planners are concerned, such as land use, housing, transportation, and economic development. The four objectives are based on the same laws of science that underlie *The Natural Step* and are similar to the four principles outlined in that framework. With the basic objectives as a guide, the APA identifies thirteen specific planning policies that can be used in a systematic way to create a comprehensive set of planning actions that all lead in the direction of sustainability. An appendix illustrates this process and spells out specific action plans that could be developed. (See the APA website at <http://www.planning.org/govt/sustdvp.htm> )

***The CERES Principles***: Created in response to the Exxon Valdez disaster, CERES offers a code of conduct and a credo for organizations to adopt. They address issues such as energy conservation, waste reduction and disposal, and management commitment. (<http://www.ceres.org/>).

***Natural Capitalism***: Paul Hawken's book of the same title, authored with Amory and Hunter Lovins, lays out a set of principles for a sustainable economic system. The main principles involve dramatically improving the productivity of natural resources, redesigning production around biological models, rethinking business as a service, and reinvesting in natural capital. (See the website for the book that identifies the principles in detail: <http://www.naturalcapitalism.org/>).

***The Hannover Principles***: Developed by William McDonough Architects for EXPO 2000, held in Hannover, Germany. Nine principles focus on the design of "green" buildings, or the "built

environment," and stress the interdependent relationship human society has with nature. (For a complete listing of the principles, see [http://www.virginia.edu/~arch/pub/hannover\\_list.html](http://www.virginia.edu/~arch/pub/hannover_list.html)).

### Processes & Management Infrastructure

Guiding principles, like the ones discussed above, provide a vision without being prescriptive that an organization can use to work towards sustainability. The management infrastructure provides the internal management systems and processes that help people in the organization work together systematically as a team to achieve their goals.

**ISO 14000:** An international standard for environmental management systems, which includes environmental policy, planning, implementation, checking and corrective action, as well as a management review. It also addresses eco-labeling, life cycle assessment, and environmental auditing. (<http://web.ansi.org/>).

#### What's going on in the Region?

##### Who?

Rejuvenation, Inc.

##### What?

Implemented ISO 14001 in conjunction with Oregon DEQ, City of Portland, and Oregon Natural Step Network. This included supply-chain qualification, conservation, material substitutions, and development of fair pay policy.

**Contact:** John Klosterman

503-231-1900

**Total Quality Environmental Management:** A set of disciplines that evolved out of the quality management movement that emphasize the continuous improvement cycle of Plan/Do/Check/Act.

### Methods and Tools

There are a variety of methods and tools that can be used to tackle specific challenges. Each can be used alone but are far more effective when used together as a coherent system.



**Industrial Ecology:** A paradigm, and a set of disciplines from the fields of engineering, business management and environmental science, that link organizations with each other and with natural systems so that the waste of one becomes a resource for another. (See the *Journal of Industrial Ecology* published by MIT Press. <http://mitpress.mit.edu/journal-home.tcl?issn=10881980>).

**Life Cycle Analysis:** One of the industrial ecology methods for analyzing the environmental impacts of a product through its entire life cycle. (One contact is the Center for Life Cycle Analysis at the Oak Ridge National Laboratory <http://ats.ornl.gov/lca/>). (Another contact is <http://www.incpen.org/html/lca.HTM>).

**Backcasting:** A method for planning that looks first at where you want to get to in the long term, and then helps you build platforms and develop action plans for moving toward that state. It is the opposite of forecasting that looks first at where you are and projects trends into the future. Backcasting is framing goals with regard to a future desired outcome, and determining short-term decisions and investments needed to achieve that future. ([http://www.naturalstep.org/what/what\\_science.html](http://www.naturalstep.org/what/what_science.html)). and (<http://crab.rutgers.edu/~goertzel/futuristmethods.htm>).

**Design for the Environment:** A design tool for incorporating environmental concerns into the product design process. (<http://www.epa.gov/dfe/>).

**Environmental Accounting:** An accounting system for placing a value on environmental impacts, which are normally external to business and management accounting, and normally are not taken into account in most financial statements. (See the EPA Environmental Accounting Project website <http://www.epa.gov/opptintr/acctg/>).

**Supply Chain Environmental Management:** A set of tools to assure that your suppliers of raw materials and supplies meet the same environmental standards that you have set for yourself. A number of websites address this issue. One is the Environmentally Preferable Purchasing Program sponsored by

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EPA. (<http://www.epa.gov/opptintr/dfe/epp/index.html>) The website immediately above also relates to the subject.)

### Governmental Programs

Recently both state and federal governments have initiated reforms to provide positive, rather than the traditional negative, reinforcement for businesses.

***EPA Project XL:*** A Federal government program for offering businesses regulatory flexibility in return for implementing specific improvements in environmental performance. (<http://www.epa.gov/projectxl/> )

***Oregon DEQ's Green Permits Program:*** A state government initiative to provide regulatory flexibility for companies that demonstrate superior environmental performance, implement environmental management systems, and engage stakeholders. (<http://www.deq.state.or.us/programs/greenpermits/greenpermits.htm>).

***City of Portland's Green Building Program:*** A local program that is leading toward the development of an ordinance to encourage and facilitate construction/renovation of more environmentally friendly buildings. (<http://www.ci.portland.or.us/energy/greenbuilding.htm>).

***WasteWise:*** A free, voluntary, EPA program that helps organizations eliminate costly solid waste, benefiting their finances & the environment. (<http://www.epa.gov/wastewise/>.)

## **Appendix F: Performance Measurement**

In most business organizations and municipal governments, performance is measured primarily through use of financial indicators. Benefit is usually measured subjectively in comparison to what can be achieved for the least cost. Quality and long term considerations are often sacrificed to achieve the lowest cost. A growing consensus among members of the scientific, government, and business communities is that this system of performance measurement is inadequate. For example, a simple cost/benefit analysis fails to consider such vital sustainability indicators as bio-diversity, soil fertility, and climate regulation.

Performance measurement for sustainability seeks to improve decision making by incorporating the more subjective "quality" and "quantity" information associated with social and environmental issues into the decision model along with short-term financial criteria. This approach is value based. It assumes there is value in, for instance, ethnic diversity, community dialogue, or environmentally friendly buildings, beyond what can be measured financially by means of profit and loss, net margin, or net present value. And while there is no "right" way to do this, it would be wrong to assume these factors have no value at all.

### **Performance Measurement Approaches**

There are six key components to performance measurement:

- Visioning
- Developing the value model
- Establishing indicators
- Setting targets and milestones
- Benchmarking performance
- Measuring trends in performance

### **Visioning**

The long-term vision for a business or community is critical to successful performance measurement. The values an organization has depend on its vision of itself, where it wants to be, and how it wants to get there. Since performance measurement is value based, having a long-term vision is vital for the selection of the indicators by which performance will be measured.

Karl Henrik Robert, director of The Natural Step, states that "for sustainable development, metrics (for performance measurement) need to be developed that are relevant for the journey towards sustainability, and will vary from specific application to application." According to Robert, appropriate metrics are developed using a process called "backcasting" (see Appendix E). In this exercise, the group describes a desirable future and then plans what actions must be taken to move towards that point.

The vision most commonly associated with sustainability is the achievement of the "triple bottom line" of social, economic and environmental excellence. The point of visioning for sustainability, therefore, is to illuminate the qualities of a future that achieves the highest possible triple bottom line. Understanding these qualities helps establish a framework around decision making.

### **Developing the Value Model**

Measurement of sustainability is about values. The American Planners Association suggests that "sustainability requires a new and holistic value system for the community -- a value system that decision makers will stand behind. This value system is reflected through specific criteria, usually in the form of principles, that serve as a checklist to ensure that future activities are consistent with the vision and definition the community has established."

The value model provides the structure, or backbone, to performance measurement. A value model must be organized by the categories for which performance measurement data will be compiled. Value statements are usually written to

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describe the goals or principles attached to each category. These value statements provide the basis for indicator selection.

Categories developed by the Oregon Progress Board (see [www.econ.state.or.us/opb](http://www.econ.state.or.us/opb)) and the Portland Multnomah Progress Board (see [www.p-m-benchmarks.org](http://www.p-m-benchmarks.org)) provide sample value model structures:

<b>Oregon Progress Board</b>	<b>Portland Multnomah Progress Board</b>
Civic Engagement Community Development Economy Education Environment Public Safety Social Support	Economy Environment Education Family Governance Health Participation Safety Special Needs Urban Vitality

These value model categories reflect various elements of the triple bottom line goal of sustainability. They were prepared using a significant public involvement processes and represent high level values that Oregonians can embrace.

### **Establishing Indicators**

Indicators are the measures that will be tracked for each category in the value model. The indicators are used to monitor progress towards specific goals. In a value model, indicators are sometimes referred to as contributing criteria and are often further categorized into subcriteria. In performance measurement, the number and relevance of indicators is carefully managed because data must be gathered for each and the data gathering process can be arduous.

There are many possible indicators for measuring sustainability. Indicators must be measurable and represent

the values of a community. For instance, environmental indicators could include river flow rate, water quality, and numbers of endangered salmon returning each year to spawn. Flow rate and water quality are examples of leading indicators expected by analysts to have significant effect on salmon counts, making salmon counts an indicator that lags (or follows from) the leading indicators.

Use of leading and lagging indicators for performance measurement is described in the "Balanced Scorecard Approach" developed by Harvard Business School professors Dr. Robert Kaplan and Dr. David Norton. In short, Kaplan and Norton recommend use of leading indicators that can be expected to affect the lagging measures for which future performance improvements are most desired. In business, the key lagging measurement is often profit or return on investment. For the environment, salmon counts (again, depending on the community values chosen) represent a similarly critical lagging indicator.

### **Setting Targets and Milestones**

Targets are specific measurable goals, such as percent unemployment or adult literacy, and can be defined relative to a baseline year, such as 1990. Targets are usually set high to provide a challenging goal to achieve. Targets are currently available for many of the indicators established by the Oregon Progress Board, and provide an excellent starting point for consideration by businesses and municipalities throughout Oregon.

Milestones are intermediate points or goals along the way to the target. Milestones represent realistic, but challenging, goals to be reached en route to the target end point. Progress toward targets and milestones is measured for each indicator on an as needed basis, but should usually be done at least once a year. Data is compiled and evaluated to reflect past and current performance.

### **Benchmarking Performance**

Benchmarking performance involves the compilation of data on selected indicators and comparing results to other similar municipalities or businesses. An additional important element of benchmarking involves comparison of current performance against "best in class" performance being achieved by others.

### **Measuring Trends in Performance**

Trend measurement can be as simple as recording indicator results each year and keeping a notebook of the data. This method is simple but effective and is essentially the approach currently in use by the Oregon Progress Board.

A common problem in performance measurement is too much data from too many indicators. One method of resolving this problem is to combine, or aggregate, similar indicators mathematically to create an "index." Familiar examples of indexes include the Dow Jones Industrial Average (which tracks stock values of 30 blue chip companies traded on the New York Stock Exchange) and the consumer price index (which combines the prices of commonly purchased goods and services). Often, multiple indices (such as in the case of the stock market) are created when a single index is deemed insufficient for the breadth of available data.

Various sustainability indices created by organizations worldwide are summarized on the International Institute for Sustainable Development (IISD) web site (<http://www.iisd.ca/measure>). These indices include:

- Human development
- Sustainable process
- Ecological footprint
- Social progress
- Sustainable economic welfare

- Material input per service unit
- Dow Jones sustainability

A tool increasingly used by the business community for aggregating indicators is multi-attribute utility analysis (MUA). MUA processes offer unique advantages in that they allow a large number of indicator results to be weighted (based on importance or value) and rolled into a single score. In addition, MUA models can be forward looking (in contrast to indicators which look back over time) to evaluate the impacts that changing community priorities can have on current decision making. This type of information can be useful in defining which "battles" need to be fought.

### **Implementation**

Implementation of a sustainability performance measurement system for the metropolitan Portland region, complete with "backcasting" the steps needed to achieve the future vision, would be time consuming. But the benefits, especially in regard to community dialogue, would be great.

The process can be simplified by building off the excellent work already completed by the Oregon Progress Board and the PMPB. The work these organizations have completed to identify indicators and compile measurement data would greatly reduce the required level of effort. Further, the PMPB has budget and staff dedicated to collecting indicator data, and these staff would likely be available to assist with sustainability performance measurement.



The City Club of Portland Mission  
To inform its members and the community in public matters and  
to arouse in them a realization of the obligations of citizenship.

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