Northwest Regional Sustainable Building Action Plan

Strategies to Mainstream Sustainable Design and Construction Practices in the Pacific Northwest

March 1999

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Executive Summary

ISSUES & BENEFITS

The design, construction and maintenance of buildings has a tremendous impact on people and nature. Buildings consume 40 percent of the world's total energy, 25 percent of wood harvest, and 16 percent of water used, according to the U.S. Department of Energy's Center of Excellence for Sustainable Development. The building industry is the nation's largest manufacturing activity, representing more than 50 percent of the nation's wealth and 13 percent of the Gross Domestic Product. Energy and material consumption in building construction and operation can contribute significantly to global climate change.

We chose to define sustainable building as designing, constructing and operating buildings and landscapes to incorporate energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials, and indoor environmental quality in all phases of a building's life.

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Designing, constructing, and operating buildings in a more "sustainable" manner not only conserves valuable natural resources, but also provides economic and health benefits to building owners, occupants, and the community at large. Northwest policy makers have a vested interest in ensuring that buildings are designed and constructed sustainably for the following reasons:

1. Reduced demand for resources lessens the environmental impact of providing public infrastructure (such as power plants, drinking water supplies, and landfills) and protecting clean air and water;
2. The longevity of local resources is extended;
3. Numerous studies indicate that sustainably designed buildings can result in increased worker productivity and reduced sick leave, and provide a more comfortable working and living environment; and
4. Demand for sustainable building materials and services creates new local industries and jobs.

In the Northwest, many local government agencies, businesses, and nonprofit organizations recognize the benefits of sustainable building and actively promote these types of activities. A few nationally recognized programs include Seattle's Energy Smart and Water Smart programs, Portland's BEST program, and Kitsap County, Washington's Build a Better Kitsap program. Despite these successful efforts, the region still has a long way to go. In general, sustainable building practices are far from standard practice. The developers, architects, and contractors who design

and build in a sustainable manner are far outnumbered by those who design and build according to traditional practices. One reason is the lack of awareness that alternative ways of building exist which provide environmental, financial, and health benefits.

BACKGROUND

In October 1997, the City of Seattle partnered with Public Technology, Inc. and numerous other organizations to offer the Sustainable Building Northwest Conference. The goal was to generate broad regional awareness and interest about the issue. Nearly 500 people attended the conference, primarily from the Pacific Northwest. The conference showcased a variety of sustainable building programs and projects from this and other regions.

Realizing that the conference would succeed in raising greater awareness, conference organizers wanted to ensure that the momentum continued after the event ended. They wanted to help the region take the next step towards mainstreaming sustainable building.

Sustainable building activities in the region generally take place independently of each other. Coordination between different municipalities and organizations usually occurs at the local level. For example, in Washington state, a consortium of government agencies and businesses called the "CDL Council" offers educational workshops for the building industry. Some coordinated efforts occur across state and provincial lines, primarily through associations. Examples of this include the Northwest Energy Efficiency Alliance and the Northwest EcoBuilding Guild.

Few, if any, municipalities in the region have a strategic plan for sustainable building. Plans developed in other parts of North America are little more than long laundry lists of activities that could promote sustainable building in those communities. The city of Seattle took a different approach when it produced its first Sustainable Building Action Plan in 1997. Seattle's plan identified the main barriers to sustainable building and solutions to overcome the barriers. It also developed strategies to implement the nine most critical solutions.

The city of Seattle decided to take this successful model and apply it to the region. The interest and enthusiasm generated by the conference could be used to develop a regional sustainable building action plan. Like the city plan, it would include the most critical strategies that the region could undertake to catalyze change in the Pacific Northwest. Having a regional set of strategies made sense because building activities cross local boundaries. For example, architects and contractors located in Seattle and Portland work on projects all over the region. Likewise, architects and contractors based in other parts of the region work on projects in Portland and Seattle. Therefore, promoting sustainable building at a regional level would be more far-reaching and effective than at the local

level. Having a regional plan would also enable municipalities and organizations to pool their resources towards a common set of goals. Finally, having a regional plan would focus efforts on a few strategies that would effect the greatest amount of change.

Having a regional plan would focus efforts on a few strategies that would effect the greatest amount of change.

In the fall of 1997, the Urban Consortium Energy Task Force (UCETF) provided a $74,000 grant to the city of Seattle to develop a Northwest Regional Sustainable Building Action Plan (the "Plan"). Soon after, the city invited several public and private sector Partners to join in guiding development of the Plan. Seattle and the Partners invited approximately 200 staff-level architects, engineers, developers, contractors, planners, and consultants to participate in a series of four workshops over six months in 1998. Nearly 100 accepted the invitation. The list of participants eventually grew to 180 as word of the Plan spread. The workshops looked at:

- Barriers to sustainable building in the Pacific Northwest;
- Solutions to the barriers;
- Specific strategies for each solution; and
- Implementation workplans for each strategy.

In addition to the staff-level Work Group, we created a senior-level "Sustainable Building Blue Ribbon Task Force" (the "Task Force"), chaired by Seattle City Council Member Richard Conlin. Twenty-three elected officials, industry executives, and public officials participated on the Task Force. The Task Force met twice, first to provide recommendations after the Work Group had developed 10 "solutions", and later to comment on the feasibility of seven strategic implementation workplans.

Thirty people volunteered to begin developing implementation workplans for each of the seven strategies. Thus, the Plan includes the unexpected bonus of these implementation workplans.

Invitations for both the Work Group and Task Force originally went to people in Washington, Oregon, British Columbia, Montana, and Idaho. Most participants were from Western Washington, a respectable contingent from Portland, and a few from British Columbia. Very few people from other parts of the region participated. Three of the six meetings were held in Seattle, two in Portland, and one in Issaquah (just east of Seattle).

By the time the Action Plan was substantially complete, at the end of the fourth Work Group meeting, there was tremendous enthusiasm from Work Group members to keep going. Thirty people volunteered to begin developing implementation workplans for each of the seven strategies. Thus, the Plan includes the unexpected bonus of these implementation workplans.

GOALS OF THE ACTION PLAN

The Action Plan is intended to serve as a road map for the region - to identify the most critical and practical steps needed to make sustainable

building the standard practice in the Pacific Northwest. Accomplishing this entails an application of economic principles: We need to create a product that people can identify with and whose value is greater than its cost; provide resources for the product; generate demand for it; and ensure a supply of it. Specifically, the Plan's overall goals for the next 2 years are to:

- Create a commonly accepted definition and language for sustainable building for the region;
- Create a vision/message for sustainable building that will motivate people;
- Increase demand for sustainable building services/products/ projects by increasing awareness and understanding, and by providing incentives; and
- Increase the supply of sustainable building services/products/ projects by providing industry professionals with information, tools, resources, incentives, and rewards to enable them to undertake sustainable building practices.

THE SEVEN STRATEGIES

The seven strategies that will enable us to meet these goals are:

1. **Shared Vision.** Develop a vision of sustainable building for the citizens of the Pacific Northwest that includes a definition and goals.
2. **Regional Guidelines.** Develop regional guidelines for sustainable design and construction that will serve as a benchmark and design tool for the marketplace.
3. **Analytical Models.** Identify and promote the use of analytical models that will encourage, guide and assess the financial and performance comparisons of sustainable design and construction.
4. **Financial Incentives.** Research, adopt, and develop financial incentives in the public and private sectors to encourage sustainable building.
5. **Awards Program.** Develop an awards program that focuses on sustainable, holistic approaches to building projects.
6. **Industry Education.** Develop a curriculum and conduct training to educate key sectors of the building industry on sustainable building and the shared vision for the Pacific Northwest.
7. **Public Education.** Develop a comprehensive public education and communication program, based on the shared vision, to build support for sustainable building with the general public.

Implementation workplans for each of the strategies are outlined in the proceeding sections. We believe the entire package of initiatives is critical to effecting real change in the region. Many of the strategies are interrelated and will have a greater impact if implemented alongside each other. For example:

- The shared vision and definition of sustainable building will be used in all other strategies;
- The general guidelines and analytical models will include many or all of the same standards for sustainable building;
- The awards program is a form of an incentive for industry professionals;
- The analytical models could be used to evaluate projects submitted in the awards program;
- The public education and industry education could work together to assess the market and determine the best ways to reach targeted audiences; and
- The regional guidelines, analytical models, financial incentives, and awards program could all be offered as resources when conducting public and industry education efforts.

NEXT STEPS

The Plan is complete; initial implementation steps are now under way. Fortunately, there is still substantial momentum among Work Group participants to move forward. As of February 1999, staff is working to:

- Secure a "home" and two years' of funding for a Plan Coordinator to lead implementation;
- Form a Plan Stewardship Board to work with the Coordinator to guide implementation;

Once the Plan Coordinator and Stewardship Board are established, they will:

- Identify the top priorities for action and funding, and define an overall timeline;
- Generate broader awareness and support of the Plan, and identify potential participants;
- Identify potential organizations to provide leadership on each strategy; and
- Identify resources to raise sufficient funding to implement the Plan.

MAKE A DIFFERENCE - GET INVOLVED

Since starting the Plan, we have generated significant interest in sustainable building methods and materials. You can do your part to make the Pacific Northwest a better place by getting involved with Plan implementation. For more information on how to do so, contact:

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http://www.ci.seattle.wa.us/light/conserve/sustainability/

Overview of the Seven Implementation Workplans

COMMON ISSUES:

Several issues impact the implementation of all seven strategies and are described below:

Leadership. Overall leadership and guidance for the package of strategies will likely come from the "Plan Coordinator" and "Plan Stewardship Board" (referenced on page 9). They will handle big picture issues, such as those described below; ensure coordination among the strategies; and assist with implementation of specific strategies upon request. Leadership for the individual strategies will come from the creation of implementation teams and, possibly, oversight committees for each strategy. The implementation teams will conduct most of the work on the strategies, while the oversight committees could serve in an advisory capacity.

Overall leadership and guidance for the package of strategies will likely come from the "Plan Coordinator" and "Plan Stewardship Board."

Resources. The Plan Coordinator, with assistance from the Plan Stewardship Board and those who participated in creating this Regional Plan, will develop and maintain a resource list. This list will include potential implementation participants and funding sources. (A list has already been started but needs more work and continual updates.)

Funding. The Plan Coordinator and Plan Stewardship Board will take the lead raising funds to implement the strategies, with assistance from individual implementation teams and oversight committees.

Common Image. The Plan Coordinator and Plan Stewardship Board, in conjunction with the individual implementation teams and oversight committees, may want to develop a common look and feel for all strategies, based on Shared Vision. This could include a logo, slogan, theme, and other elements to create a common image.

Program Development. All the strategies entail some research to identify and evaluate similar programs from around the region and continent. This up-front work, conducted by the Plan Coordinator, will enable the implementation teams to learn from and build upon the successful efforts of other organizations, thus saving time and money.

Target Audiences. Several strategies are inter-related and should thus target similar audiences. The Plan Coordinator and Stewardship Board will work with the implementation teams to ensure consistency by coordinating their efforts. For example, the General Guidelines strategy plans to produce two separate guidelines, one commercial and another residential. Because this strategy it is so closely connected with the Analytical Models strategy, the latter should also distinguish between commercial and residential audiences. Both can be used as resources by the Industry Education and Public Education implementation teams.

Strategy #1 - Shared Vision

STRATEGY:

Develop a vision of sustainable building for the citizens of the Pacific Northwest. This vision should inspire people to action, be written in simple, understandable language, and be flexible enough to allow for changes in sustainable building practices. It will contain the following three elements:

- An inspirational vision statement describing a future where sustainable building is mainstream practice throughout the Northwest, and explaining the benefits to citizens of the region.
- A definition of sustainable building based on existing definitions, adapted for our region, and achieved through a consensus-based process.
- Specific goals to help us achieve the vision, particularly goals for the next two years.

Develop a vision of sustainable building for the citizens of the Pacific Northwest. This vision should inspire people to action, be written in simple, understandable language, and be flexible enough to allow for changes in sustainable building practices.

PURPOSE OF STRATEGY:

Despite the numerous definitions of sustainable building that exist, there is no single accepted definition or vision of sustainable building used throughout the entire Pacific Northwest. A common definition is a necessary first step for many other strategies outlined in this document, including the development of regional sustainable building guidelines. A vision statement is critical to convey the benefits of sustainable building to industry professionals and the general public.

TARGET AUDIENCES:

Implementation teams for the other six strategies, industry professionals, and the broad range of citizens who inhabit the Pacific Northwest, including people from business, government, and the general public.

SUCCESS MEASURES:

Creation of a vision statement for sustainable building that includes a definition and goals.

Creation of a vision statement that is based on consensus of the 13 Source List categories involved, as defined on page 14.

Creation of a vision that is inspirational and educational, as measured by feedback from the focus groups.

Approval of the vision, as measured by feedback from the focus groups.

CRITICAL STEPS:

Identify and Recruit Key Players.

- Form an implementation team and an oversight committee.

Research Existing Vision Statements and Definitions.

- Research and compile existing sustainable building vision statements and definitions from the Northwest region and other parts of the world.
- Accomplish this by utilizing information the implementation team already has; searching the web; and asking the oversight committee to provide whatever information they possess.

Develop First Draft

With input from the oversight committee, draft a vision statement and definition of sustainable building based on existing vision statements and definitions, and adapted for the Pacific Northwest.

Review First Draft

Distribute the draft vision statement/definition for review to the oversight committee and all those who participated in the development of the Northwest Sustainable Building Action Plan, asking for comments.

Develop Second Draft

Develop a second draft vision statement/definition, based on comments provided in the first round of review.

Set Up and Conduct First Focus Group

Hire a consultant to conduct a series of focus groups in order to get feedback on the second draft vision statement. Invite individuals from the 13 Source List categories (see next page) to participate on the focus groups, some of whom may have awareness of sustainability and sustainable building. Consider conducting the focus groups in Seattle, Portland, Boise, Bend, and Vancouver, B.C.

Develop Final Version of Vision of Sustainable Building

Finalize the vision statement/definition, based on feedback from the focus groups, and distribute it to the oversight committee and all participants of this Regional Plan.

KEY PLAYERS:

Suggested Implementation Team:

The Plan Coordinator (referenced in the Executive Summary) and the four members of the Shared Vision Planning Team.

Suggested Oversight Committee:

Below is a Source List of 13 categories of organizations (sectors) that could supply assistance on various aspects of the Shared Vision strategy.

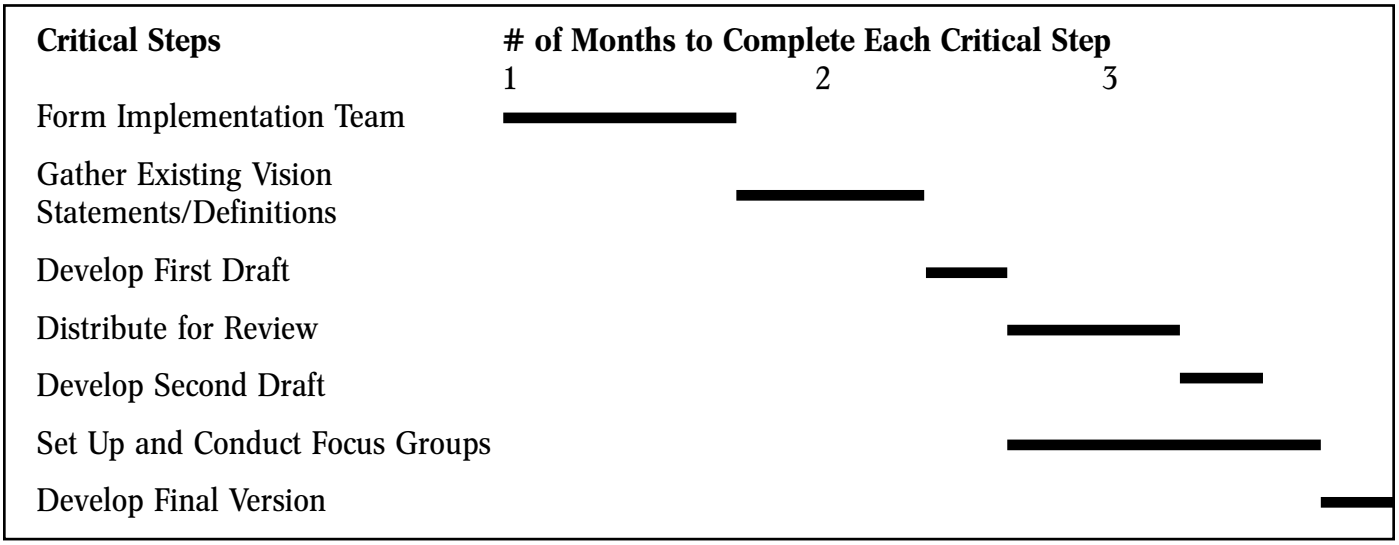
The Planning Team will identify individuals from each sector to serve on the Oversight Committee. This list is not intended to be prescriptive.

Government /Utilities	Architects/Engineers	Writers/Artists
Construction	Media	Trade Associations
Insurance / Lenders	Suppliers	Owner/Developer
Real Estate	"Celebrities"	
Community Groups	NGO & Environmental Groups	

STRATEGY:

Develop regional guidelines for sustainable design and construction that will serve as a benchmark and design tool for the marketplace.

TIMELINE:



RESOURCES NEEDED:

Critical Steps	Types of Resources	Costs
Form Implementation Team	Staff salary, teleconferencing, travel, printing, reproduction, postage	$5,500
Gather Vision Ideas	Printing, telephone, reproduction	$250
Develop First Draft	Printing, reproduction, postage	$500
Focus Group Review 6 locations	Facilities, consultant, printing, postage, food, equipment, travel, $50/person incentive to participate in the focus groups	$16,000
Second Draft	Printing, reproduction, postage	$500
Third Draft	Printing, reproduction, postage	$500
Final Draft	Graphics, printing, postage	$2,500
TOTAL		**$25,750**

Strategy #2 - Regional Guidelines

STRATEGY:

Develop regional guidelines for sustainable design and construction that will serve as a benchmark and design tool for the marketplace.

PURPOSE OF STRATEGY:

The lack of benchmarks or commonly understood standards prevents many professionals from incorporating sustainable design and construction measure on their projects. In addition to an accepted definition that explains "what" sustainable building is (Strategy #1), the industry also needs an accepted set of guidelines that explains "how" to design and build sustainably.

The lack of benchmarks or commonly understood standards prevents many professionals from incorporating sustainable design and construction measure on their projects

TARGET AUDIENCES:

Public entities such as municipalities, other government agencies, and universities.

Private entities such as building owners, developers, design professionals, contractors, real estate and financial institutions, and insurance firms.

SUCCESS MEASURES:

Development of comprehensive sustainable building guidelines, one for commercial and one for residential projects, that are tailored to the needs of the Northwest.

Endorsement of the guidelines by the organizations represented on the oversight committee.

The number of agencies, municipalities, and organizations that use and adopt the guidelines meets established goals.

MAJOR PROGRAM COMPONENTS:

Component #1: Develop Regional Guidelines
Develop a set of general, regional guidelines (benchmarks) for sustainable design and construction which includes design goals and strategies. Develop separate guidelines for residential and commercial projects. Develop detailed best management practices in specific areas, if determined appropriate.

Critical Steps:
Form an implementation team and oversight committee and consider hiring a consultant to develop the regional sustainable building guidelines:

Research, compile, and evaluate existing guidelines, such as LEED. Other applicable resources include: Government and corporate guidelines; databases; expertise and materials from trade and professional organizations; local expertise; and stakeholder experience.

Coordinate with the Analytical Models group in developing the guidelines.

Draft the guidelines outline and document, drawing upon existing resources, and tailored to the Northwest.

Solicit review of the guidelines document from the oversight committee and other stakeholders, and develop the second draft.

Consider user tests and focus groups of stakeholders to determine the effectiveness of the guidelines.

Make necessary revisions and finalize the document.

Distribute a hard copy of the guidelines to the oversight committee and stakeholders, and place the information on the www.

Component #2: Implement the Regional Guidelines
Coordinate with the Industry Education, Public Education, and other appropriate groups to enable implementation of the guidelines through a series of workshops targeted at industry professionals, both public and private.

Critical Steps:
Draft a workshop agenda and develop auxiliary workshop materials.
Establish the following goals:

The number of workshops conducted;

The number of participants who attend the workshops; and

The number of agencies, municipalities, and organizations that subsequently use and/or adopt the guidelines as a result of the workshops.

Schedule and plan the workshops. For those targeted at municipalities, include the message that government needs to lead by example by incorporating sustainable design measures on their own capital facilities.

Conduct and evaluate the workshops. These can be repeated when the guidelines are updated, or at annual regional technical conferences.

KEY PLAYERS:

Suggested Implementation Team:
Local government representatives (Seattle, Issaquah, Portland, Bellingham, others), and possibly a consultant group.

Suggested Oversight Committee:
Local, state, and regional municipalities (e.g. Mayors' offices, the cities of

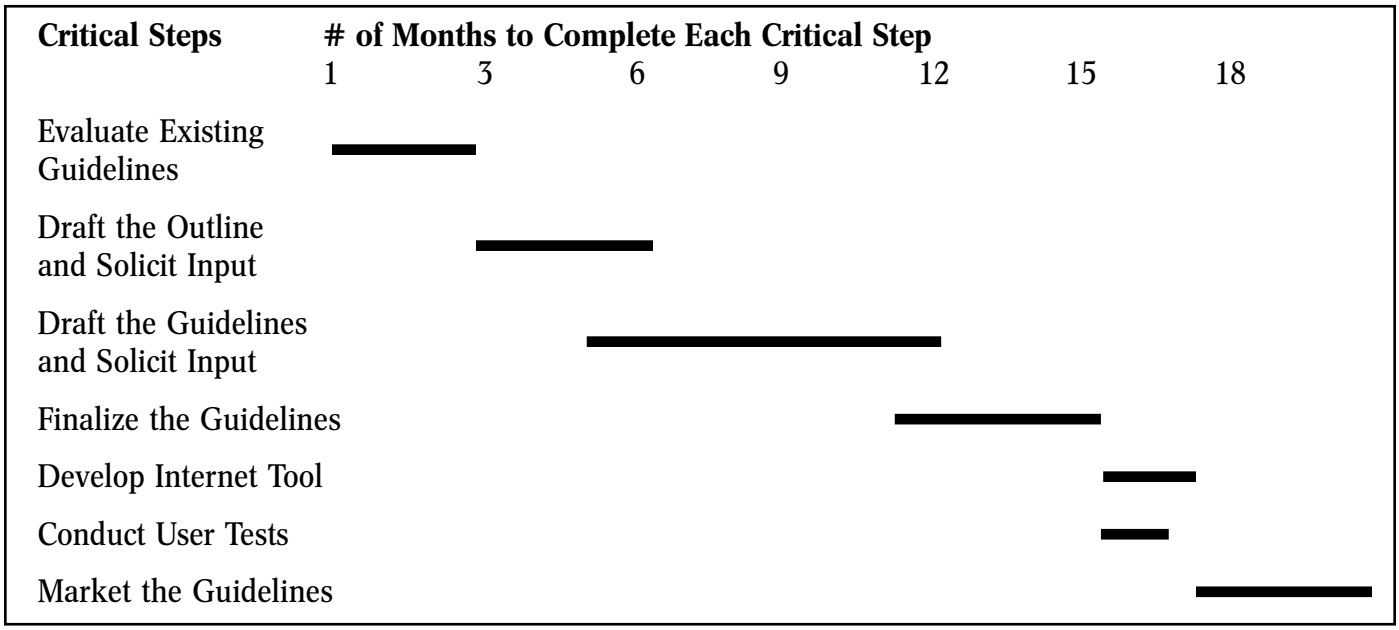
Seattle and Portland, Sustainable Portland Commission, code officials, regulatory agencies, planning officials, utilities, design review boards, etc.)

Sustainable building organizations (e.g. Northwest EcoBuilding Guild, U.S. Green Building Council's LEED Committee, etc.)
Associations (e.g. AGC, HBA/BIAs, AIA, SAVE, ALA, Board of Realtors, Washington Bankers Association, etc.)

Manufacturers (e.g. Boise Cascade, Steel Institute, Plastic Lumber Association, James Hardie, Louisiana Pacific, Interface, Neil Kelley, etc.)

Research institutions (e.g. NAHB Research Center, etc.) Center for Resourceful Building Technology

TIMELINE:



RESOURCES NEEDED:

Critical Steps	Type of Resource	Costs
Develop Guidelines	Consultant Fees	$200,000
Develop Web-Based tool	Consultant Fees	$50,000
Education Program	Consultant fees and in-house Educational Programming	$95,000
Marketing Program	PR Consultant Fees	$150,000
Total		**$495,000**

Strategy #3 - Analytical Models

STRATEGY:

Adopt an existing, adapt, or develop new analytical models that will encourage, guide, and assess sustainable building methods and materials. The models will incorporate up to full costs and benefits or their satisfactory analogs, including external and public costs throughout the life cycle, and will rate the sustainability of buildings, landscapes, or materials. The models will then be used by the development, design, and construction industries as better tools for analyzing the economic, social, and environmental costs and benefits of current and sustainable building.

PURPOSE OF STRATEGY:

There is a lack of common industry-accepted analytical models that include and accurately quantify the internal and external costs, benefits, and risks of a building or material.

Sustainable building strategies must compete with current building practices using the language of commerce (money) in both the public and private sectors. However, there is a lack of common industry-accepted analytical models that include and accurately quantify the internal and external costs, benefits, and risks of a building or material, and to rate the sustainability of a material or building. As a result, decision-makers are unable to effectively evaluate sustainable versus current building strategies. An additional benefit of analytical models is that they can help decision-makers determine which sustainable building practices work. And when developed by industry-respected professionals, models help overcome avoidance of new technologies and methods.

TARGET AUDIENCES:

Commercial and residential building developers, owners and managers; home buyers; home builders; architects; public policy makers; and regulatory agencies.

SUCCESS MEASURES:

Adoption/adaptation/development of analytical models which effectively incorporate up to full costs and benefits, and which rates the sustainability of buildings and materials in a meaningful way.

The number of developers, architecture and construction firms that use the models meets established goals.

CRITICAL STEPS:

Research and Assess Existing Models
Create an implementation team and oversight committee to:

Identify the audiences for the models;

Identify the desired features and output of the models, such as external costs and benefits, public and private costs and benefits, and life-cycle costs and benefits;

Create a baseline of the descriptions and costs of standard building practice versus sustainable practices and materials;

Review and evaluate various analytical models that already exist (e.g. Place 3, DOE, Evergreen, Tellus Institute, BREEAM 98, and the Hennepin County Sustainable Design Development Team); and

Develop decision rationale and determine whether to adapt existing models, develop a new one, or use a mixture of strategies.

Adapt an Existing or Develop New Models
Solicit technical assistance from the oversight committee and others with modeling experience (e.g. academics) for the creation/modification of the proposed models. Adopt/adapt/develop a specific analytical model for each target audience to use as a financial decision-making tool. For example, the model for producers and consumers will incorporate private costs and benefits over the full life-cycle of a building; whereas the model for government decision makers will incorporate public and external costs and benefits, as well as social and private "market" discount rates.

Review and Test the Models
Conduct a professional review of the proposed models and sample results by involving experts from academia, industry and government ("Review and Test Committee"). Apply the models to sample projects; compare the results with those of a "standard financial analysis"; and assess the application both technically and as a design guide. Finally, modify the draft models based on input from the professional review process.

Produce, Distribute, Promote, and Apply the Models
Build the final models on a user-friendly format, such as CD-ROM, with clear instructions, and for a variety of potential users. Produce associated publications in a usable form for a variety of users. In conjunction with the Industry Education and Regional Guidelines groups, develop a marketing plan and promote the models to key players, including industry professionals and technical societies. Publish "cut sheets" of comparative results from the models (case studies).

Track the Application of the Models
Track the on-going dissemination of the models, and survey users to determine its functionality.

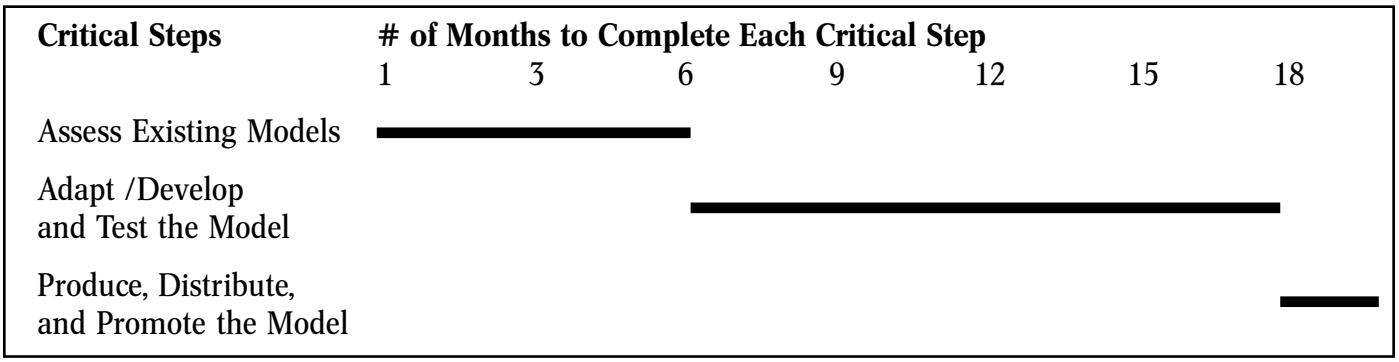
KEY PLAYERS:

Suggested Implementation Team:
Modeling experts from academic and professional organizations (e.g. university faculty) to conduct implementation and ensure acceptance and use of the finished models.

Suggested Oversight Committee:
Industry experts (e.g. architects, engineers, building officials, building scientists, planners, and economists) who will use the models or their outputs.

Suggested Review and Test Committee:
A university or learning center, such as a business school working with schools of Architecture and Engineering.

TIMELINE:



* The timeline will could be shortened considerably if a wholesale model or two is adapted.

RESOURCES NEEDED:

The amount of funding needed depends on the level of complexity of the selected models and whether or not a wholesale models is adapted. Therefore, accurate cost estimates cannot be made until the implementation team selects a models. Rough estimates put costs at $2,500-$5,000 per month for the first 1 1/2 years, for a total of $50,000-$150,000.

Strategy #4 - Financial Incentives

STRATEGY:

Research, adopt, and develop financial incentives to encourage sustainable building. Target public sector agencies to provide incentives that redress market failures. Target financial, insurance, and real estate appraisal businesses to capture financial incentives that exist in the market place but that are not recognized by the current, institutionalized private system. Communicate the benefits of these incentives and develop demonstration projects or tools to facilitate their adoption.

PURPOSE OF STRATEGY:

Sustainable building can incur higher up-front costs. However, in the long run, sustainably designed buildings reduce operating costs and environmental damage. This in turn reduces the cost of protecting the public good (such as clean air and water), and providing public infrastructure (such as power plants and drinking water reservoirs). Because these savings are not reflected in the current market system, public sector agencies have a motivation to provide financial incentives that will move the market to cost-effectively capture public benefits through sustainable building. At the same time, market mechanisms currently exist that yield financial benefits to the private sector from sustainable building. Private sector businesses could better capture these benefits if the institutional structures around lending, insurance, and real estate appraisal would modify current practices to recognize sustainable building benefits.

Because these savings are not reflected in the current market system, public sector agencies have a motivation to provide financial incentives that will move the market to cost-effectively capture public benefits through sustainable building.

PROGRAM COMPONENTS:

Component #1: Publicly Financed Incentives for Sustainable Building
Inventory and evaluate existing public sector programs that provide financial incentives for sustainable building. Identify which incentive programs might work for the Northwest, and develop information as to how public agencies can adopt these programs.

Target Audiences:
Public sector agencies that can influence the building industry, such as utilities, permit offices, and economic development agencies.

Success Measures:
Development of a complete inventory of existing public incentive programs.

Number of public agencies that adopt some form of incentives program meets established goals.

Critical Steps:
Collect consistent information from North American public agencies that

currently provide or have provided financial incentives for sustainable building. Determine how they worked; their size and scope; how/why they were discontinued; motivating factors; quantitative results with respect to the public good; quantitative results with respect to market activity; types of outreach/marketing materials used; etc.

Compile the results and analyze them to determine which kinds of programs are effective, appropriate to the Northwest, and feasible for Northwest public agencies.

Develop toolkits that demonstrate the most effective and applicable incentive programs, and include information such as: how they work; what the quantitative benefits and results are; how sustainable building impacts other environmental issues, such as the Endangered Species Act; how public agencies can adopt them; how to promote them; and how to evaluate them.

Suggested Implementation Team:
Representatives from public agencies (e.g. utilities, permit offices, and economic development offices), with advice from potential recipients (e.g. developers and builders).

Component #2: Sustainable Mortgages
Build on energy-efficient mortgage programs within the lending industry to help lenders recognize how sustainable building enhances long-term affordability and can increase the number and size of overall loans. Leverage existing frameworks for energy-efficient mortgages including Home Energy Rating Systems, that credibly quantify cost/benefit expectations for energy-efficient homes so that buyers and lenders are confident about savings and payback.

Target Audience:
Lenders, financial institutions, realtors, and possibly large-scale home builders.

Success Measures:
Establishment of an infrastructure for sustainable mortgages that includes:

Agreed-upon measurement protocols for savings from energy efficiency, water efficiency, and other sustainable practices;

Documents that show how to do loan calculations; and

Techniques for promoting these mortgages to borrowers and large-scale builders.

Critical Steps:
Evaluate market demand for sustainable mortgages through conversations with representatives from target audience organizations. Establish an operating Home Energy Rating System (HERS) for Washington (perhaps by adopting EPA's HERS). Work with Washington and Oregon HERS and the U.S. Green Building Council's LEED to build upon energy-efficient mortgages and begin adding in other sustainable features such

as water efficiency (supported by the International Measurement and Verification Protocol) and low toxicity.

Get Northwest cities on EPA's EnergyStar Homes agenda. EPA currently has aggressive goals for energy-efficient mortgages to be achieved largely in fast-growing markets that are identified by a number of 1998 "target cities" and "future target cities". No Northwest cities are currently included as a target area. By making a connection between water, energy, salmon, and our fast growth rate, we should be able to access some of EPA's resources to set up and encourage sustainable mortgage lending.

Once the program is established, conduct outreach to lenders and large-scale builders so that they promote sustainable mortgages to their customers.

Suggested Implementation Team:
Representatives from the Northwest Energy Efficiency Alliance, EPA, U.S. Green Building Council (regional chapter), Oregon HERS, NW EcoBuilding Guild.

Component #3: Real Estate Appraisal Process
Develop original information regarding how the benefits of sustainable building are translated into real estate appraisals.

Target Audiences:
Real estate appraisers and possibly lenders, mortgage and insurance companies.

Success Measure:
Development of a proposal to modify the current computer model used to create appraised values that do not reflect the value of "smart" square footage.

Critical Steps:
Work with organizations, such as the Washington Center for Real Estate Research, the Washington Association of Realtors, and local chapters of the Appraisal Institute, to secure funding and conduct a research project that answers two questions:

- Why dumb square footage is valued as highly as smart square footage; and
- How to get smart (energy efficient, healthy, well lit, water efficient, adaptable, etc.) square footage valued more highly.

Compile the results from this research project and work with real estate, appraisal, and lending organizations to incorporate the benefits of sustainable building into the appraisal process.

Suggested Implementation Team:
Representatives from the Washington Center for Real Estate Research, the U.S. Green Building Council, Building and Owners Management Association, appraisers' associations and lenders.

Component #4: Sustainable Insurance Policies
Identify how sustainable building practices reduce insured losses and how to reflect those benefits in insurance policies.

Target Audience:
Insurance companies.

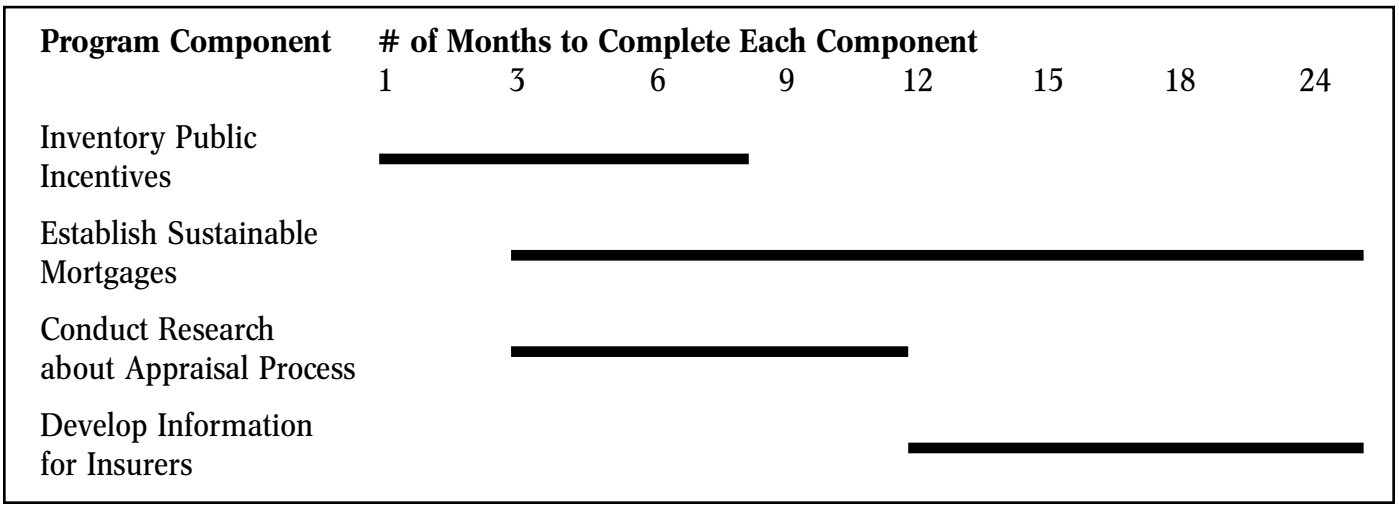
Success Measure:
Development of a toolkit for insurers that helps them capture the benefits of sustainable building in insurance policies.

Critical Steps:
Collaborate with the Lawrence Berkeley National Laboratory (LBNL) Center for Building Science and other national organizations/individuals to identify and quantify how energy efficiency and other sustainability measures reduce insured losses.

Compile the results from this effort and work with insurance companies to incorporate the benefits of sustainable building into the insurance underwriting process. For example, establish a "demonstration" policy akin to the "how to write an energy efficient mortgage" piece from EPA's toolkit.

Suggested Implementation Team:
Representatives from LBNL Center for Building Science, Washington Insurance Council and Insurance Fund Foundation, Insurance Information Institute, U.S. Green Building Council, organizations in the Seattle area, and Washington and Oregon Insurance Commissioner's offices.

TIMELINE:



RESOURCES NEEDED:

To be determined by the implementation teams.

Strategy #5 - Awards Program

STRATEGY:

Develop an awards program that focuses on sustainable, holistic approaches to building projects; recognizes the importance of designing with consideration of the natural environment; and addresses issues such as energy and resource conservation, waste management, location, transportation, air, water and soil quality, durability, beauty and occupant health and productivity.

PURPOSE OF STRATEGY:

Public recognition and rewards offer publicity and a competitive edge to participants. This creates a market pull for other companies to be as successful as those who have been recognized and helps transform the marketplace. In addition, the awards exhibit provides an opportunity for in-depth public education about the meaning of resource conservation, sustainable design and its benefits.

Develop an awards program that focuses on sustainable, holistic approaches to building projects.

TARGET AUDIENCES:

Developers, architects, engineers, energy managers, energy consultants, lighting designers, suppliers, owners/tenants, contractors, landscape architects, lenders, realtors, utilities, other government agencies, educational institutions and students, industrial designers, and manufacturing and marketing concerns.

SUCCESS MEASURES:

Development of criteria and categories of awards that effectively recognize excellent sustainably designed projects.

Number of organizations/projects that participate in the awards program meets established goals.

CRITICAL STEPS:

Inventory Existing Awards Programs
Create an implementation team to inventory and assess existing relevant awards programs from this region by evaluating the following:

The criteria, categories, and parameters used (e.g. buildings, practices, policies, products, etc.);

The factors that were critical to success or failure for each awards program;

The type of administration or organization that runs it;
The resources needed;

The frequency of the program (e.g. annually, biennially, etc.); and

The number and type of participants.

Compile the Results of the Inventory
Once the inventory and assessment of existing programs is completed, identify key decision junctures (e.g. Can/should we partner with an existing program(s) whose focus and philosophy are in line w/this effort? What can be done without funding? Do we need additional programs? How can existing programs be supported regionally?). Prepare a briefing presentation to key decision makers, such as funders.

Plan, Promote and Conduct An Awards Program
If warranted after the above evaluation, convene an awards planning group to:

Develop a budget, identify and solicit funding and sponsorships, particularly long-term funding commitments;

Develop the awards criteria, rationale, and benchmarks (finance, design, siting, resource efficiency, etc.); develop the award categories (including a category of projects that have proven to be sustainable over the long run); identify the geographic boundaries for the awards; identify and recruit a panel of reviewers; set goals for the number of participants and projects; and identify benchmarks to measure the impact of the program;

Coordinate with other regional events, conferences, and exhibits; and select the venue and affiliated event opportunities; and

Plan and implement the marketing and promotional efforts.

KEY PLAYERS:

Suggested Implementation Team:
Representatives from the City of Portland Council, NEAA, Seattle City Light and Public Utilities; Lighting Design Lab; Seattle and Portland AIA, International Design Institute; and professional associations.

Suggested Awards Planning Group:
To be determined by the implementation team.

TIMELINE:

Critical Step	# of Months to Complete Each Critical Step 1 3 6 9 12 15 18 21
Inventory and assess existing programs	▬▬▬▬
Plan and promote awards program	▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

RESOURCES NEEDED:

Critical Steps	Types of Resources	Costs
Inventory Existing Programs and Compile Results	Staff, design consultants, management, office expenses, and indirect costs	$10-15,000
Plan and Promote Awards Program	Staff, design consultants, management, office expenses (phone, copies, supplies, postage, etc.), indirect costs, graphics, production costs, venue and catering, audio-visual, photographs, computer equipment, website, mailing lists, advertisements, postage, speaker and reviewer fees and expenses, award item costs (based upon existing programs' operating costs)	$300,000
TOTAL		**$315,000**

Strategy #6 - Industry Education

STRATEGY:

Develop a curriculum to educate targeted sectors of the building industry about sustainable building benefits, issues and resources. Work with key industry sectors to tailor this curriculum for, and offer training to, their members.

PURPOSE OF STRATEGY:

Most building industry professionals fail to incorporate sustainable building practices into their projects, in part, because so many are unfamiliar with the principles, benefits and resources. This strategy will increase that awareness and understanding to targeted sectors of the industry.

Most building industry professionals fail to incorporate sustainable building practices into their projects, in part, because so many are unfamiliar with the principles, benefits and resources. This strategy will increase that awareness and understanding to targeted sectors of the industry.

SUCCESS MEASURES:

Development of a general curriculum about sustainable building and its benefits, and four curricula that are customized for key industry sectors.

Number of training sessions conducted meets established goals.

Number of participants that attend the training sessions meets established goals.

Number of participants that take actions meets established goals (e.g., seeking further education on a particular issue, or implementing sustainable building practices on a project).

TARGET AUDIENCES:

The strategy will target four major sectors of the building industry, both public and private:

Owners and developers;

Real estate and financing organizations;

Design firms; and

Builders, contractors, and suppliers.

CRITICAL STEPS:

Recruit an Implementation Team
The planning team members will recruit an implementation team who will administer the industry education plan over the next two years. This group should consist of representatives across the industry and, ideally, be headed by a organization involved in industry education on sustain-

able building, such as the U.S. Green Building Council.

Develop A List of Resources and Recruitment Materials
The implementation team will develop a budget, identify funding sources and in-kind support, and develop a short presentation on sustainable building and the industry education plan.

Recruit Curriculum Development Teams
The implementation team will use the presentation developed above to seek funding and recruit curriculum development teams from each targeted sector: Owners and developers; builders, contractors, and suppliers; government project managers; the real estate and financing community; and the design community. The curriculum development teams should consist of the individuals, businesses or organizations within each sector that are most likely to affect change within the industry and have "drawing" power (industry leaders).

Develop a General Sustainable Building Curriculum
The implementation team could work with a consultant to develop a general curriculum on sustainable building and its benefits. During this process, they will also seek input from curriculum development teams. This general curriculum should be based on the work of the Shared Vision and Regional Guidelines groups, altered for a more technical audience. The first step will be to gather existing information about similar programs, such as the LEED program.

Develop Customized Curricula
The curriculum development teams, with assistance from a consultant, will customize the curriculum for their industries. This step involves identifying the benefits of sustainable building for each sector, incorporating the appropriate industry terms, determining how to integrate sustainability into each sector's processes and practices, etc.

Set Up Training Sessions for Each Targeted Sector
The implementation team, consultant, and curriculum development teams will work together to set up a series of training sessions using both the general and customized curricula. The training sessions could include workshops sponsored by a trade association or special training for one company. The target audience for this training is industry professionals who are NOT already, or are minimally, familiar with sustainable building. The training is meant to introduce them to sustainable building, sell them on the benefits, and inspire them to take substantive action.

The implementation team and curriculum development teams will set the following goals:

The number of training sessions conducted in each sector;

The number of participants in each sector;

The number of participants that take some action as a result of the training.

Conduct Training
The implementation team will take the lead in conducting training for each targeted sector. Some suggestions on format and structure include: Offering free admittance to the training and food/beverages since the target audiences are the unconverted; including a "hands on" portion where the participants take what they have learned an discuss how they could apply it in their work; and providing resources to help the participant enact their ideas (e.g. the regional guidelines, analytical models and financial incentives).

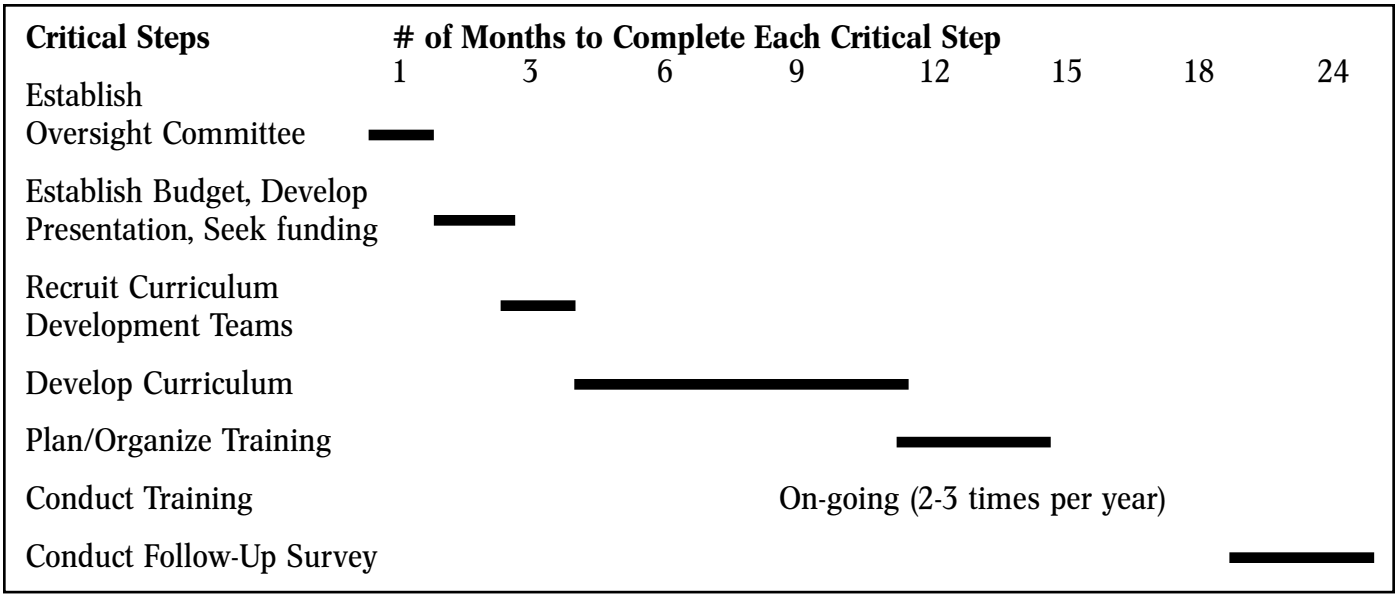
Another possibility is a “train the trainers” structure in which the implementation team would recruit a group of industry representatives and train them to use the curricula and conduct training sessions to their peers. In return, the trainers would receive continuing education credits or the like.

Survey the Participants
The consultant will conduct follow-up surveys of the participants to determine the effectiveness of the training. The survey results will be used to modify the curricula as needed to continue to meet industry needs.

KEY PLAYERS:

The planning team will identify potential participants for both the implementation team and curriculum development teams from existing resources lists. Once the implementation team is established, they will do further work to identify and recruit the participants for the curriculum development teams.

TIMELINE:



RESOURCES NEEDED:

To be determined by the implementation team.

Strategy #7 - Public Education

STRATEGY:

Develop and implement a comprehensive public education/communication program, based on the shared vision developed in Strategy #1, to build support for sustainable building with the general public and to create demand for sustainable building services, products, and projects.

PURPOSE OF STRATEGY:

Sustainable building will become mainstream practice only when there is sufficient consumer demand for sustainable building services, products, and projects. Demand can be generated by raising awareness en masse or among specific consumer groups. The ideas outlined in this strategy recognize that both a general and targeted educational program are needed. The ideas under Component #2 take a macro, general approach to increase the understanding and benefits of sustainable building among the population at large. The idea under Component #3 takes a more narrow approach to raise awareness among those who are likely to make purchasing decisions today.

PROGRAM COMPONENTS:

Component #1: Market Assessment
Identify target audiences for the general outreach and point-of-purchase outreach programs (described in Components #2&3), and determine the best ways to reach these audiences.

Success Measures:
Completion of a pre- and post-program market research.

Identification of target audiences and recommended courses of action to approach these audiences.

Critical Steps:
Identify and recruit an implementation team to acquire and assign staff to act as primary communication and promotion person, coordinate efforts such as workplan updates, materials development and review, integration with other plan elements, etc.

Hire a marketing expert to identify target audiences, provide direction on effective approaches to reach the audiences, gain media attention, and develop other tools needed for effective outreach. Ideas of other tools include brochures, speaking points, press releases, articles, a slide presentation, public service announcements, etc. Collaborate with an artist to depict the vision in written or visual form.

Conduct a pre- and post-program survey to establish the target audiences'

attitudes, knowledge, and behavior. Use this information to further define the target audience(s) and to guide the development of other aspects of this workplan.

Coordinate with the Industry Education group to develop (use or adapt from the Shared Vision) a campaign identity that includes a logo, a theme, or other means to tie all components together and make them recognizable as a comprehensive program.

Component #2: General Outreach

The following ideas are ones which will raise general awareness about sustainable building among broad populations. Specific audiences and outreach approaches will be determined after the market assessment in Component #1 concludes. In addition, implementation teams will be formed and success measures developed once the target audiences and approaches are defined.

Grassroots Outreach

Purpose: Conduct outreach to targeted groups of civic-minded citizens in the Pacific Northwest, those likely to be receptive to the sustainable building message.

Target Audiences: Individuals with a sense of civic responsibility and a personal desire to use environmentally sound practices, such as members of People of Puget Sound, Smart Growth, Concern Inc., and Rural Communities Network.

Potential Approaches: Identify where and how the civic-minded public gets its information (e.g. from attending neighborhood group meetings from environmental newsletters).

Hire professionals to help develop a script and train individuals to make presentations about the vision and benefits of sustainable building to their respective organizations; and solicit support from civic-minded groups.

Submit articles to relevant organizations' newsletters.

Participate in related sustainable building events (e.g. set up booths, give presentations).

Promote the vision through "Brown Bag" lunches at government and private places of businesses.

Develop a web site with links to other sustainable building sites.

Marketing Campaign

Purpose: Conduct a more formal outreach campaign using mass marketing, such as media outlets, to: Reach a broader population; stimulate discussion and debate of sustainable building within the media; build the reach, frequency, and immediacy of the sustainable building discussion by strengthening linkages to related "hot" and relevant issues (e.g. construction and development, Endangered Species Act, proliferation of sports stadiums, transportation).

Target Audience: A broader target audience than that of the grassroots component but not necessarily "everyone".

Potential Approaches: Identify key organizations (and industries) which may be attempting to reach these target audiences. Look for opportunities for collaboration and the furthering of the discussion about sustainable building.

Coordinate with grassroots, educational, and public official activities. Work with those organizations making significant strides in the area of sustainable building and develop linkages with these efforts.

Coordinate with the Industry Education and other groups to enable/facilitate discussions among these distinct populations by encouraging and supporting the sharing of information, partnerships, and verification of information.

Develop a media "toolbox" for other key components of Public Education, including sample newsletter articles, press release tips and information, media contact tips and information, local contacts, sample presentations/outlines, artwork, and resources for more information.

Identify key opinion leaders who already have a disposition favoring "green building" including, at a minimum, media, public sector, non-profit environmental, and industry representatives. Work with these persons to give presentations, work with media, give interviews, etc.

Facilitate discussion and awareness of high-visibility projects (e.g. Sound Transit, MAX expansion, etc.) and high-profile issues (e.g. ESA). For example, ask the question, "How does this [high profile, likely taxpayer financed] project meet the shared vision of sustainable building in the Northwest?"

Education System

Purpose: Conduct an outreach program to those receptive to new ideas - students and participants at all levels of the formal and informal educational systems.

Target Audiences: Community/technical colleges and universities; K-12; continuing education programs; experimental colleges; community and non-profit workshops; and other informal educational outlets.

Potential Approaches: Develop a variety of educational tools, tailored to each target audience, such as: Supplements for existing courses (lesson plans, hands-on activities, computer simulation, research projects, prepared outlines and lectures, etc.); an archive of sample course syllabi which integrate sustainability with existing course material; an archive of references, publications, websites, etc. for information gathering purposes; a list of qualified speakers ("speakers bureau") interested in being guest speakers; a list of sites for field trips and class visitations.

Create multi-disciplinary course materials for classes in academic fields other than those related to design and construction. While the specifics of sustainable construction may not be applicable to other academic fields

of study, the general concepts and principles of sustainability are so universal that they permeate almost every field of study: Sciences (environmental science); social sciences (economics); humanities (art); business ("green business"); health (healthy buildings, air quality).

Work with educational institutions to develop a curriculum based on the shared vision and using the tools developed above. For the purposes of getting the vision communicated in the beginning, this is likely to be a unit or presentation that could be part of one class period, say, an introductory freshman seminar. Ultimately, sustainable building principles could be part of whole classes on sustainability.

Create tailored seminars for teachers, professors, trainers, community outreach workers, and industry professionals that enable them to create a variety of educational offerings on the general concepts of sustainability and on the specifics of sustainable building. These seminars could be marketed to the various target audiences with the goal of achieving a broad participation across academic disciplines, community interest groups, and building industry customers.

Public Official Outreach

Purpose: Educate policy makers about sustainable building and its benefits in order to influence change in public policies and programs.

Target Audiences: City, county and state decision makers, such as mayors, county executives, councils, advisers to elected officials, etc.

Potential Approaches: Develop materials for targeted public officials.

Identify avenues to reach a large number of these officials and/or their staff (e.g. U.S. Conference of Mayors' events) and present the shared vision; explain the environmental, social and financial benefits; and provide supporting materials.

Find like-minded officials who are willing to work together, and provide them with resources as needed.

Component #3: Point-Of-Purchase Outreach

Purpose: Target consumers who are likely to make purchasing decisions in the immediate- or near-term.

Target Audiences: Home buyers; homeowners in the market for remodeling services; do-it-yourself remodelers; etc.

Potential Approaches: Work with the Financial Incentives group to encourage real estate agencies to provide their clients with information about sustainable homes and mortgages.

Work with permitting offices to provide information about sustainable building practices and products to homeowners applying for a permit.
Work with retailers and manufacturers to provide information about sustainable building products via shelf talkers, posters, special advertised discounts, etc.

Work with retailers and industry professionals to conduct workshops at hardware stores that demonstrate sustainable building practices and products.

TIMELINE:

Program Components	**# of Months to Complete Each Component**					
	1	3	6	9	12	15
Market Assessment	━━━	━━━	━━━			
General Outreach Programs	TBD					
Point-Of-Purchase Outreach	TBD					

RESOURCES NEEDED:

Resources for the market assessment will be determined by implementation team. If market assessments are needed for other strategies, all these efforts should be coordinated. Resources for the general outreach and point-of-purchase outreach program components will be determined upon completion of the market assessment.

APPENDIX A

Barriers

Proceedings from the First Work Group Workshop

Shared Vision Barriers

Leadership
Lack of political will or direction.
Significant public people are opposing sustainability.
Lack of knowledge of decision makers.

Industry
Lack of priority.

General Public
No major paradigm shift in public consciousness.
Lack of shared mental model.
Lack of public awareness and acceptance of sustainability.
Lack of urgency.
Lack of demand.
Necessary drastic lifestyle changes.
Lack of personal sense of responsibility and empowerment.
Lack of avenues available for personal empowerment.
Lack of demand for sustainable building but great demand for cosmetic improvements.
Lack of clear definition of what "sustainable building" means.
There is no public consciousness about the need to build sustainably.
Too much jargon used (e.g. "Sustainability").
The image of sustainability is not positive.
Changing our lifestyles will be painful.
Not learning from others' experiences.
Lack of institutional/cultural ethic (vs. Germany and other European countries).
Lack of government support (e.g. via policies, codes, incentives).
Lack of support from the medical community regarding healthy homes and buildings.
Sustainable building is a low priority for government and its constituents.
Urban sprawl results in lack of amenities in suburban areas.
Lack of shared vision or definition of sustainable building.
Lack of political/high profile leadership and vision.
Cultural resistance to change in the way buildings are done.
Current economic system does not have a way to value sustainable buildings.
Affluenzia.
Fragmented approach to building in this country (specialization).
Risk adverse industry.
Lack of will to change codes and other building practices.

Conflicting goals on a government level.
General public & architects have concerns re: how sustainable building impacts aesthetics.
Sustainable building not easily available to marginal populations or lower income/minority groups.

There is a perception among the public of unlimited, low-cost resources. Not all costs are included in the resource analysis; particularly costs whose impacts are delayed (similar concern to those surrounding integrated resource utility planning).

Perception that sustainable development is more complex; therefore is more risky.
There is a perception that "new" is better than "recycled."
There really is no shared vision in the development process/community.
There is no shared definition of sustainable development
Need a clear definition of sustainable. Sustainability indicators are incomplete & poorly defined.
There is a need for simple, appropriate tools for consumers and designers by which they can specify and/or request sustainable buildings/practices.

Information, Education, Communication Barriers

Lack of information.
Limited professional education.
No information clearing house.
Limited and inadequate marketing.
Lack of media attention.
Lack of education (government staff, contractors, clients, etc.)
Lack of information about some issues, such as recycled content materials

How to define education?
Lack of education about performance.
Some ideas aren't concrete.
Courses in sustainable design offered in architecture school, but not regarded as important.
Can't sell homes/buildings as "green"; instead sell them as "bright", "airy".

How to rank the importance of various sustainable building issues and products?
Lack of client demand; need client agreement to design sustainably.
No regional sustainability resource center.
General public uneducated - not aware of sustainable building.
Fuzzy definition of sustainable building.
Lack of standards for green products.
There is a lot of hype of over sustainable building practices of little substance. Example: Use of oversized recycled-content product.
Need for contractor education to assure buildings designed green are

built green.
Little monitoring of the implementation of sustainable building measures.
Not a system for linking up knowledgeable architects and clients.
Lack of data to evaluating the economic benefits of sustainable building practices.
The mortgage and lending industry does not know the value of sustainable buildings.
Lack of incentives on the cultural side (e.g. S.U.Vs). General public doesn't see sustainable building as valuable.
Appearance of a building or development is considered the first (sometimes only) priority. There is a perception that sustainable buildings must be less attractive than common practice.
Lack of available performance data to validate existing projects and systems, and how (well) people interact with these. We do not know what is and is not working.
There appears to be no effort to educate the next generation of consumers, our children, about the benefits of sustainable development.
There is insufficient consumer awareness about the benefits of sustainability.
There is a perception that sustainable buildings are "very different."
There is insufficient consumer demand. There has been little or no effort to bring a coordinated marketing message about sustainability to the market.

Industry Practices Barriers

Building industry inertia.
Lack of good independent data for sustainable materials and practice.
Lack of good models.
Lack of test data on sustainable products.
Lack of integration of buildings and community planning (infrastructure, roads, etc.)
No infrastructure to allow action.
Appraisal process doesn't give credit to sustainable building. Thus some sustainable building elements are not measurable; lack of comparable buildings; lack of performance guidelines for appraisal; no incentives to reward people.
Old Boy network promotes traditional way of doing things.
Low bid process/mentality driven by client and contractor.
Some banks encourage a high turnover rate to make more profits from providing more loans. Thus life of buildings is shorter than necessary.
Lack of supply of qualified contractors, especially for rehabs.
Lack of industry-based inspections/quality control.
Rehabs are a low priority for businesses.
No holistic approach to designing facilities.
Pressure to keep first costs low.
There is a perceived or real impact on schedules.
The availability of sustainable products is limited.
The industry is extremely fragmented.

Fragmentation exists even on a project level; lack of coordination.
There is a long lead time for new products to gain market share.
No generalized approach for incorporating sustainable building into current industry practice.
There is not a context within the development industry for research and design related to sustainability.
"We've always done it this way," and this way is not the sustainable way.
Construction and development projects follow the "Law of Least Effort" which in the minds of some precludes sustainability.
Sustainable development requires more preplanning and preparation and commensurately more costs. There is insufficient knowledge that these costs can be balanced with other savings.

Costs, Benefits, Risks Barriers

No cost/benefit analysis model.
No spreadsheet for environmental costs.
Low refuse disposal costs do not encourage recycling.
Disconnect between capital costs and operation & maintenance costs.
Low energy costs.
Lack of ability to assign full community costs.
Creators of community risk and costs are not accountable.
Victims of environmental risk have no way to maintain accountability.
No relationship between transport costs and building/material costs.
Lack of affordable, locally available, green products.
Lack of enough available consumer choice.
Petro-chemical industry is barrier.
Risk of change: time & money risk in building industry.
Public benefits hard to quantify.
Lower cost of energy in the Northwest region.
Lack of flexibility with use of public funds.
Perceived risk of using new materials due to lack of standards and perception of inferiority.
New materials can cost more (e.g. from testing); high costs prevent vendors from advertising.
Lack of understanding about the benefits of sustainable building, and nothing to compare to.
Architects have no research money; need to cut margins.
How to pay for higher first costs?
Utilities deregulation results in cuts in conservation; conservation no longer cost-effective.
Lack of access to financing.
Design process: not integrated; no incentive for A/E; could require higher first costs; lack of life-cycle analysis.
Incentives are not passed on to architects, engineers and contractors.
In government projects, pre-development costs are not provided.
Industry priorities on keeping first cost low.
Perceived or real impact of sustainable building on schedules.
Lack of infrastructure and economies of scale in rural areas.

Building community (architects, builders, owners, developers) is very risk adverse.

Little time or fees provided the architect to provide vision, develop ideas and gather ideas on sustainable building.

Lack of funds for demonstration of sustainable building practices.

There is an incentive to build the norm, a disincentive to build sustainably.

Sustainable building not easily available to marginal/lower income/ minority populations.

Sustainable practice remains a difficult sell for the consumer or customer.

There is a general (incorrect) assumption that sustainable development is more expensive than the alternative.

The market does not adequately value sustainability.

In certain sectors, it can be difficult to identify and reach the consumer or decision-maker.

Regulatory Barriers

Codes, policies, and guidelines are established & difficult to change.

Non integrated development process.

Lack of sustainability regulations.

The energy code is focused on the wrong thing; it focuses on a prescriptive rather than performance-based approach.

Neighborhood design: not focused on quality; some resistance to higher density.

Permitting process: lengthy, inflexible; code officials won't do research on alternative practices and products.

Some sustainable ideas are allowed (e.g. green roofs).

It is slow to change and codify new ideas.

Inspection process: focus on health and safety; lack of tools to evaluate sustainable building performance.

Lack of integration within municipalities/ no facilitator for sustainable building.

Lack of standards for green materials/not approved by building departments.

Building codes don't set the standard for green building.

Lack of will to change codes.

Lack of integration among regional codes.

Existing codes inconsistently enforced (e.g. Energy Code).

Low bid requirements.

Often, government processes inhibit the execution of their vision. There are conflicting goals. E.g. 6% design fees in the Park Service is not enough to pay for the sustainable design they want.

It is difficult to write codes that allow for growth or innovation in sustainable building practices. Codes are generally prescriptive.

Developing a community is a decentralized process. Many persons participate who do not necessarily communicate. Therefore, although sustainability benefits may accrue at the level of individual participants, they are not necessarily observed or valued at the community level.

Regulatory practice increases the perceived and actual risk. That is, unenlightened regulation increases the perception that advanced design and building practice places risk on the homeowner. Inclusion of advanced practices can lengthen or prohibit the approval process, adding costs in time and money.

APPENDIX B

Solutions

Proceedings from the Second Work Group Workshop

Shared Vision: List of Initial Solutions

Begin by identifying or synthesizing a regional understanding of sustainable development. Work with existing definitions and seek a regional consensus. Use this "definition" as the basis for all other activities.

Identify the societal, economic, and ecological benefits of sustainable building as it is defined above.

Establish a regional forum(s) for promoting #1 and #2. This regional forum(s) or groups or individuals within it could do the following:

Develop a regional vision statement and action plan.

Develop/adopt a list of common points of health within the region and track their progress towards sustainability.

Identify existing and create new demonstrations of sustainable building. Visual, hands-on examples.

Work with the educational system to develop an ethic among the younger generation that will support the principles of sustainable development.

Develop a system to acknowledge and support grassroots individual, community, and business activities in sustainable building.

Glamorize and promote grassroots sustainable building activities to create a positive image. Use celebrity endorsement.

Proactively use media to promote sustainable building ideas/accomplishments. (Media campaign, as well as taking advantage of existing media activities.)

Develop neighborhood forums where neighbors can create their own neighborhood approach to sustainability.

Create “incubators” for small businesses and nonprofits in the field of sustainable development.

Promote employee sponsored, employer driven workshops on sustainable building as it applies to their company.

To address the need for political leadership, we said, “who needs them - if the people lead, the people will follow.”

Additionally, we could identify potential or existing champions in sustainable building and bring them into the “forums.”

Information, Education, Communication List of Initial Solutions

Education

Create a Sustainable Building Resource Center that would house:
- A synopsis of available resources on sustainable building
- A Database
- Speakers Bureau
- Information Guilds
- Various Information Systems

Curriculum Development

School curriculum on Sustainable Building

Continuing Education

For Professionals
Conferences
For Lenders

Create a Sustainable Street of Dreams

Information

Define "Sustainable Building" and Levels of Sustainable Buildings

Produce standards

Fund Research that will:

Show economic benefits
Show health benefits
Provide information on necessary technologies for sustainable buildings

Communication

Develop a Certification Process for sustainable building products and projects. This Certification would encompass content as well as process.
Lobby Decision Makers & Select "Ambassadors" to carry the Sustainable Building message.
Facilitate Media/Public Dialogues on Sustainable Building.
Fund a Regional Marketing Campaign.

Costs, Benefits, Risks: List of Initial Solutions

Search for existing solutions (avoid duplication).
Access and/or Develop a comprehensive cost benefit & evaluation tool integrating externalities [to include all cost variables].
Develop innovative strategies for risk management in an effort to be able to assess the full environmental responsibility and costs associated with all new building and development.
Access and/or develop common standards & definitions for sustainable building methods and products.

Access and/or develop regulatory agency incentives to encourage and subsidize the use of sustainable building methods and materials.

Target infrastructure costs [Apply full societal costs to development, including the costs of all new infrastructure required to support that development, and including a full life cycle costs].

Access and/or develop financing incentives (construction and long term) to recognize the life cycle cost benefits of sustainable construction methods and buildings.

Develop a regional clearing house for coordination and integration of Sustainable Building practice Costs/Benefits/Risks.

Caveat: A Regional Solution may need to be modified to take into account:
1. Urban vs. Rural 2. Large vs. Small 3. Rich vs. Poor

Industry Practices: List of Initial Solutions

Awards and Recognition (Private Sector Lead)

a) Award Sponsors - should be professional and well respected in the building industry.
   - Bio-regional
   - Diverse
   - School sponsorship of awards to student projects.

b) Recipients
   - Targeted by industry areas (i.e. bankers, developers)
   - Awards should be highly publicized among recipient's peers.
   - Consumers

c) Crucial Issues for Awards
   - What awards? Develop the award an recognition as appropriate to each group.
   - Identify early adopters in each area and target.

Good Models (Education Institution Lead)

a) Highlight model features to target groups.
   - Identify innovative approaches in each sector. (i.e. finance, design, supply and materials)
   - Identify values of target groups and define cost/ benefits in terms of all values, not just dollar value.

b) Use both "Push" and "Pull" models.
   - Push - More standard and accepted incentive programs.
   - Pull - Highlight optimum goals and targets entice participation through perceived benefits (not cash incentives).

c) Demonstrate effective models in professional "trade shows" and consumer events.

d) Get models out and visible.

Coordinating Entity or Organization (Government Lead)

a) Identify lead organization(s) or entity to focus policy objectives.
   - Maintain standards
   - Link industry segments - establish connections and work as a clearinghouse

b) Long-term commitment to market involvement

Government's Roles: List of Initial Solutions

Establish benchmark standards.

Develop a set of comprehensive "best management practices" guidelines that serves as an addendum to existing codes and can be codified by local jurisdictions. The BMP must complement existing codes and be able to work within state procedures. The BMP would be offered as an alternative to the traditional way of building, and would include the following information: incentives, case studies, success stories (e.g. how Santa Monica effectively expedited the permitting process for builders who incorporate sustainable measures).

A series of progressive steps are required to fully develop the BMP:

Collect information about green building practices, techniques, and success stories;

Educate the building industry, code officials, and other government staff about these;

Provide incentives to build green;

Codify the best management practices as an addendum to existing codes.

Optional: Create an Allied Board which serves in an advisory capacity to builders. On a voluntary basis, builders can consult the Allied board regarding interpretation and implementation of codes.

Mainstream products or techniques which are not broadly utilized and/or not allowed.

Collect anecdotal information about problem products along with success stories (e.g. How a community managed to build straw-bale homes).

Conduct pilot projects.

Allow manufacturers to use alternative test methods.

Share information about approved testing among jurisdictions.

Educate regulators about sustainable building to ensure consistent enforcement.

Work with professional organizations, such as WABO, to provide education.

Require that regulators who enforce or oversee green building codes and programs are themselves "experts" by offering certification, such as the Earthwise Certification Program.

In large cities, designate certain inspectors to be the expert "green building inspector", all green building projects would be assigned to these inspectors.

Collect information from other jurisdictions about education, certification and other successful programs.

Have the government lead by example.

Develop a model green building ordinance that other jurisdictions can adopt for public-funded buildings.

Create networking opportunities.

Go on the road and conduct outreach to professional groups, regulators, and other government departments regarding this project (Regional Sustainable Building Plan) and its recommendations.

APPENDIX C

Planning Team Members for the Seven Strategies

Planning Team Members

The following individuals developed the workplans for the seven sustainable building strategies.

Shared Vision

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Regional Guidelines

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Andrea Volkmann, CH2M Hill (co-lead)
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Jennifer Hing, LMN Architects
Lynne King, Sellen Construction
Loren Lutzenhiser, Washington State University
Aninditra Mitra, LMN Architects
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Cathy Higgins, OMECA
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Financial Incentives

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Shelley Lawson, Seattle Public Utilities
Richard Putnam, U.S. Department of Energy

Awards

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International Resource Design Awards (co-lead)
Dorothy Payton, Architecture + Energy Design Awards, Portland
Chapter of the American Institute of Architects (co-lead)
Marya Castillano, Seattle City Light
Diana Campbell, Lighting Design Lab, Seattle City Light
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Mary Collette Wallace, The Wallace Research Group

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Nancy Bond - Oregon Office of Energy
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Gail Watson - Sustainable Design Council

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