GREEN RIBBON COMMISSION

RECOMMENDATIONS

December 2012

Acknowledgments

Green Ribbon Commission

Co-Chair, Denis Hayes, President, Bullitt Foundation*
Co-Chair, Doris Koo, Senior Advisor, Enterprise Community Partners*
Sean Bagsby, Vice President, International Brotherhood of Electrical Workers, Local 46
Jorge Carrasco, Superintendent, Seattle City Light*
Gene Duvernoy, President, Forterra
Dr. David Fleming, Director and Health Officer, Public Health – Seattle & King County
Hilary Franz, Executive Director, Futurewise
Dr. Howard Frumkin, Dean, University of Washington School of Public Health
Brian Geller, Executive Director, Seattle 2030 District
Terri Glaberson, Executive Director, CoolMom
KC Golden, Policy Director, Climate Solutions*
Bert Gregory, CEO, Mithun
Peter Hahn, Director, Seattle Department of Transportation*
Rob Johnson, Executive Director, Transportation Choices Coalition
Craig Kenworthy, Executive Director, Puget Sound Clean Air Agency*
Michael Mann, President, Cyan Strategies
Chris Martin, President, CleanScapes
Brice Maryman, Landscape Architect, SvR Design Company
Megan Owen, Director of Market Development, McKinstry
Ben Packard, Vice President, Global Responsibility, Starbucks Coffee Company*
Kathleen Casey Ridihalgh, Senior Organizing Manager, Sierra Club
Jill Simmons, Director, Seattle Office of Sustainability & Environment*
Diane Sugimura, Director, Seattle Department of Planning & Development
Harold S. Taniguchi, Director, King County Department of Transportation
Jason Twill, Senior Project Manager, Sustainability, Vulcan
Kathy Washienko, National Advisory Board Executive Committee, Union of Concerned Scientists

** Individual or organization that was a member of the 2005 Green Ribbon Commission.*

SEATTLE OFFICE OF
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01 Letter from Co-Chairs

Dear Mayor McGinn,

Thank you for the opportunity to serve on the 2012 Seattle Green Ribbon Commission on Climate Protection. Like you, we also served on the 2005 Green Ribbon Commission. We are pleased to see that the City's commitment has remained steadfast, and we fully expect it to grow even stronger as time passes and as evidence mounts.

Climate change is a challenge of sobering magnitude and urgency. Action is required at all levels of government, and cities have a unique role to play in building low-carbon communities. In adopting the ambitious goal of carbon neutrality, the City has made clear Seattle will be at the forefront of climate action.

The Green Ribbon Commission took Seattle's climate protection goals to heart. We have developed recommendations for short- and long-term actions that will significantly reduce emissions while also providing numerous other economic, social and environmental benefits. The actions proposed in this report are ambitious. Implementing them fully will require bold City leadership and broad support from Seattle residents and businesses.

Given appropriate leadership, we are confident that Seattle is up for the challenge. Unlike what we see at the national level, the people of Seattle welcome the opportunity to be leaders. With this issue squarely in the middle of our new governor's agenda as well, the time is ripe for boldness. We have crafted recommendations to ensure that Seattle will not only lead on climate protection but will also create a prosperous, equitable, and all-around-great place to live.

The Commission is eager to play an ongoing role in helping the City move forward.

Sincerely,

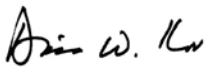
Denis Hayes
Co-Chair

Doris Koo
Co-Chair

The Seattle Green Ribbon Commission was convened to advise the Mayor and City Council on the development of the 2013 Seattle Climate Action Plan with a focus on identifying priorities that advance the City's climate goals while also achieving multiple co-benefits that make Seattle a more environmentally sustainable, economically prosperous and socially just place. After substantial study and debate, the Green Ribbon Commission* has reached an enthusiastic consensus around these recommendations and we strongly support their inclusion in the 2013 City of Seattle Climate Action Plan.

NAMES & SIGNATURES


Denis Hayes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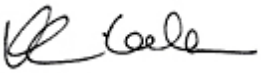
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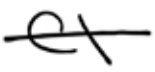
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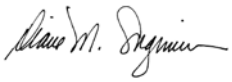
Diane Sugimura


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Harold Taniguchi


Jason Twill


Kathy Washienko

*Approval of these recommendations is solely an expression of support from the individual GRC members and does not constitute an endorsement by the organizations with which members are affiliated.

EXECUTIVE SUMMARY

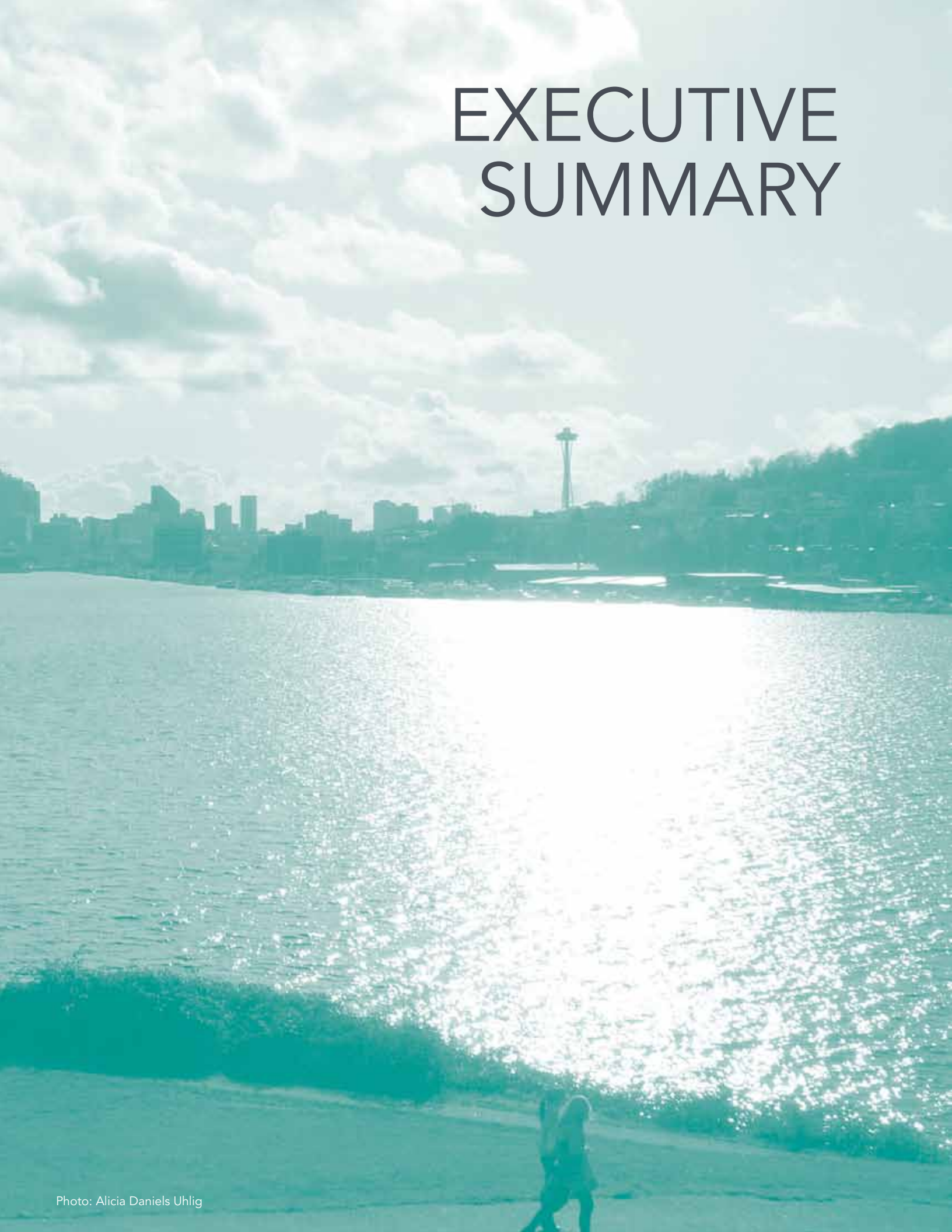


Photo: Alicia Daniels Uhlig

Background

The City of Seattle has adopted a world-leading goal of carbon neutrality by 2050 and is updating the Seattle Climate Action Plan to put the City on the path to achieving that goal while also enhancing Seattle's quality of life. To that end, the Green Ribbon Commission (GRC) was charged with developing climate action recommendations for inclusion in the Climate Action Plan.

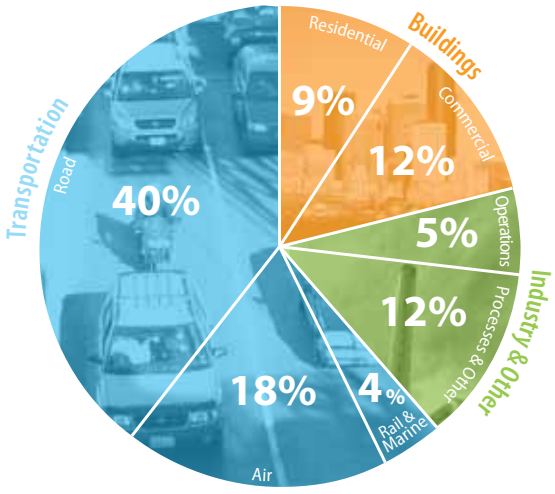
The GRC's recommendations are focused on actions that reduce Seattle's contribution to climate change while also advancing important community goals, including economic opportunity, shared prosperity, healthy communities, and environmental sustainability. The full set of recommendations address both broad-scale, plan-wide actions and sector-specific actions. The recommendations are summarized below.

Plan-Wide Recommendations

1. Take Bold Action
2. Create a Great Place to Live by Taking Climate Action
3. Embed Equity in Every Solution
4. Use Systems Thinking to Design Solutions
5. Build Support for Climate Action
6. Prioritize Implementation of the Climate Action Plan and Related Plans
7. Secure Funding for Implementation
8. Put a Price on Climate Pollution

Sector Recommendations

The sector categories for climate action recommendations represent the city's major greenhouse gas emission sources, road transportation and building energy, as well as those areas that provide opportunities for enhancing the city's resilience to the impacts of climate change, and that will build support for climate action.



Seattle Citywide
Greenhouse Gas Emissions by Sector
(Source: 2008 Seattle Community
Greenhouse Gas Inventory)

Sector Recommendations

The GRC makes a total of 150 recommendations in the sectors outlined below, including 70 Quick Start Actions that can be undertaken in the next 1-3 years to pilot new ideas, test new approaches, and build support for other climate actions.

All of the Quick Start Actions are presented in the tables on pages 7 through 10.

TRANSPORTATION + LAND USE (49 Recommendations)

Where we live, work, and play, and how we access daily services all impact our greenhouse gas emissions. By linking land use policies with transportation policies, Seattle can more effectively reduce its largest source of GHG emissions: road transportation.

The GRC focused its Transportation + Land Use recommendations in the following areas:

- Funding
- Road Pricing
- Policy & Planning
- Transportation Infrastructure
- Transportation Demand Management
- Parking Management
- Vehicle Fuels & Technologies

BUILDING ENERGY (34 Recommendations)

From furnaces to air conditioning units, from stove tops to light fixtures, from computers to clothes dryers, we ask our buildings to perform many energy intensive tasks, which is why it's no surprise that building energy use accounts for over 20% of our city's total greenhouse gas emissions. Relying on energy from clean, low-carbon fuel sources and improving the overall energy efficiency of our buildings, to get the most out of the fuel we do use, are essential to reducing our GHG emissions.

In particular, the GRC focused its Building Energy recommendations in the following areas:

- Pricing & Financing
- Efficient Operations
- Efficient Construction
- Infrastructure for Low-Carbon Fuels

ADAPTATION (42 Recommendations)

Seattle already experiences the types of impacts expected with climate change, such as flooding, heat events, and extreme high tides. However, climate change will affect the frequency, intensity, and timing of these events. In many cases, what we now consider an extreme event will become a more normal event. Absent effective preparation, the impacts and costs associated with these events will increase. Therefore, in addition to working to reduce greenhouse gas emissions, it is imperative that the City assess and prepare for the impacts of climate change.

The GRC's recommendations are intended to help guide City planning to enhance Seattle's resilience to the impacts of a changing climate; they are focused on the following areas:

- Comprehensive Adaptation Assessment & Planning
- Natural Systems
- Utility Systems
- Land Use & the Built Environment
- Community Preparedness

BUILDING SUPPORT FOR CLIMATE ACTION (25 Recommendations)

The actions necessary to move Seattle toward a climate-friendly future require deep and sustained commitment by the community. The connections between climate action and broader community values must be understood and consistently communicated.

The GRC recommends leveraging Seattle's history as a climate action leader and learning more about what is most important to Seattle residents and businesses in order to build support for new climate policies that also align with and support the values expressed by the community.

Next Steps

The City will consider the GRC's recommendations along with other community input received to develop the Climate Action Plan.

Quick Start Actions

TRANSPORTATION + LAND USE	LEAD AGENCY
Renew and extend the duration of the Bridging the Gap levy and prioritize revenues for multimodal transportation strategies, including investments in transit, pedestrian and cycling improvements and system maintenance.	Transportation
Understand the benefits of pricing policies on climate protection, transportation, and community goals, and their potential social equity impacts and solutions.	Transportation
Look at pricing opportunities on non-highway arterials. Use crowd sourcing to help identify an area of Seattle that has significant traffic congestion and/or vehicle diversion on to city streets from limited access highways. Develop a pilot project.	Transportation
Develop a tool to embed consideration of GHG emissions impacts and reduction opportunities when updating and implementing transportation and land use plans and policies.	Sustainability & Environment
Develop a Freight Master Plan incorporating goals to improve the efficiency and reduce the GHG emissions impact of goods movement.	Transportation
Develop a Public Space Management Strategy to creatively activate the public right-of-way.	Transportation
Reallocate a portion of the public right-of-way to a public/pedestrian space such as a plaza or parklet.	Transportation
Develop and implement a comprehensive land use and multi-modal corridor plan in a high priority transit and bicycle corridor.	Transportation
Build separated bicycle lanes in the Center City.	Transportation
Travel Information: Increase the number of real-time dynamic signage to share up-to-the minute estimates on bus arrivals.	Transportation
Build on the Safe Routes to Schools program and implement Safe Routes projects to improve pedestrian connections to transit and neighborhood business districts.	Transportation
Create a grant program to support mobility projects in business districts with paid parking.	Economic Development
Replace the entire trolleybus fleet with newer, more energy efficient technology.	King County Metro
Pilot test an all-electric battery powered bus.	King County Metro
Expand the City's municipal electric vehicle (EV) fleet.	Fleets & Facilities
Support private adoption of EVs through codes and streamlined permitting, and by assessing and planning for demand, access, and utility impacts.	Sustainability & Environment

Quick Start Actions

BUILDING ENERGY	LEAD AGENCY
Outcome-Based Incentives: Seattle City Light should coordinate with other utilities to pilot a performance-based utility incentive program.	City Light
Innovative Financing Options: Launch a working group of downtown property owners and managers to evaluate financing tools for commercial buildings and identify those which are most likely to promote the deepest energy-efficiency investments. Develop a plan to bring the financing tools to market.	Sustainability & Environment
Public Funding for Additional Incentives: Define the elements of an incentive program that a bond initiative would support.	Sustainability & Environment
Rental Housing Energy Efficiency Property Tax Exemption: Pass legislation for the authority to establish a property tax exemption program for existing rental housing owners who undertake significant energy retrofits.	Sustainability & Environment
If pilot results are positive, identify resources to scale up and expand Seattle City Light's retro-commissioning pilot program.	City Light
Develop a strategy for retro-commissioning City facilities.	Sustainability & Environment
Establish a long-term program to provide assistance, financing and other tools to building owners, which helps them identify and implement more comprehensive energy-efficiency upgrades.	Sustainability & Environment
Support the rapid deployment of advanced metering infrastructure.	City Light
Define and test core program elements for a home energy rating requirement at the point of sale.	Sustainability & Environment
Work with the Seattle School District to create the greenest, healthiest, most energy-efficient portfolio of schools.	Sustainability & Environment
Evaluate the findings of the existing outcome-based energy code pilot between the Preservation Green Lab and the City and develop a strategy for building upon the pilot.	Sustainability & Environment
Work with stakeholders to continue improving the Living Building and Deep Green Pilot Program to promote deep green buildings in Seattle.	Planning & Development
Support development of a district energy pilot and ensure its commitment to low-carbon fuel sources.	Sustainability & Environment
Low Carbon Energy Master Plan: Develop a master plan to guide the establishment of low-carbon energy systems in the City.	Sustainability & Environment
Maintain Seattle City Light commitment to meet load growth with conservation and renewables, as well as to providing zero net emission electricity.	City Light

Quick Start Actions

ADAPTATION	LEAD AGENCY
Conduct a citywide assessment of the impacts of temperature, precipitation, and sea level rise.	Sustainability & Environment
Develop a comprehensive strategy to enhance resilience to changing climate conditions.	Sustainability & Environment
Use thermal imaging to identify areas that are likely to be more heavily impacted by heat events and use data to inform development of urban forest and tree planting priorities and programs.	Public Utilities
Keep on pace to restore all 2500 acres of forested parkland by 2025 through the Green Seattle Partnership.	Parks & Recreation
Implement projects in several urban creeks that connect floodplains, increase stormwater storage capacity and improve culverts to minimize flooding and improve habitat.	Public Utilities
Use applied research and modeling to evaluate climate change impacts on Seattle City Light's electricity resources and future energy demands beyond the 20-year planning horizon.	City Light
Research the impacts of climate change on hydroelectric projects.	City Light
Maximize the City's conservation programs to promote cost-effective energy-efficiency measures.	Public Utilities
Implement Advanced Metering to begin the transition to a "smart grid."	City Light
Work with federal and academic research groups to generate the next generation of climate data downscaled to the watersheds supplying the city's water.	Public Utilities
Continue to invest in water conservation programs reducing regional per capita water use.	Public Utilities
Continue to lead the Water Utility Climate Alliance.	Public Utilities
Adopt a green stormwater infrastructure policy and develop an implementation plan.	Sustainability & Environment
Evaluate the impacts of sea level rise on shoreline development and habitat and consider implications for shoreline management strategies.	Planning & Development
Collaborate with regional partners in addressing the impacts of sea level rise: Evaluate the full range of impacts based on best available science. Prepare a worst case scenario response strategy.	Sustainability & Environment
Assess climate change impacts on transportation infrastructure and operations.	Transportation
Pilot an advanced green building standard, such as the Living Building Challenge, on a City facility.	Sustainability & Environment
Review development codes and incentives, and identify barriers and potential opportunities, to encourage private development to become more resilient.	Planning & Development
Assess the public health impacts of climate change.	Public Health - Seattle & King County
Continue to assess climate change impacts and factor projections into City emergency preparedness planning.	Emergency Management
Consider the impacts of climate change on access to healthy, affordable food.	Sustainability & Environment

Quick Start Actions

BUILDING SUPPORT FOR CLIMATE ACTION	LEAD AGENCY
Conduct local message and values testing. Develop a compelling climate action narrative that is connected to what people care about. Use the narrative consistently and frequently in elected official and City department communication. Build a regional network of organizations and individuals committed to using the narrative. Develop images, info-graphics, and videos to illustrate the outcomes of implementing the Climate Action Plan. Connect climate change to projected local impacts that people relate well to. Explore how new media strategies, such as Facebook, Twitter, and video game technology can tell the compelling story of climate action. Use crowd-sourcing and other emerging technologies to provide opportunities for the public to participate in designing climate policies and actions. Host a bright ideas contest to tap into the community's creativity. Partner with higher education institutions to provide opportunities for students and faculty to apply their knowledge to policy, planning, and technical challenges. Develop neighborhood profile case studies detailing the on-the-ground impact of climate actions in specific neighborhoods. Develop "strategies in action" profiles that highlight the outcomes of individual climate actions. Activate a network of leaders to advise and assist the City in implementing the Climate Action Plan, commit to take action and serve as allies in the community. Identify new and unexpected messengers, including youth to spread the word about the benefits of climate action. Create an ongoing program to support community-initiated climate action projects. Work with a school-focused community organization on a project that increases student engagement in climate action. Create or build on an existing social media tool to provide a venue for people and organizations to share the actions they have taken and offer assistance to others. Create a mechanism to provide feedback on the impact of collective actions to reinforce the value of individual efforts.	Sustainability & Environment is the lead agency for all Quick Start Actions in this sector.

BACKGROUND

Photo: Derek Reeves

Context

A lot has changed on the national landscape since the first Seattle Green Ribbon Commission released their recommendations in 2006: total U.S. greenhouse gas emissions have decreased by 4.7%, renewable energy generation has increased over 37%, and ambitious national fuel economy standards have been adopted. At the same time, not enough has changed: a national agenda for greenhouse gas emissions reductions remains stalled despite scientific consensus. And recently, devastating droughts, mega-storms, and forest fires in the United States have heightened awareness of the potential for climate change to disrupt our way of life, bringing the issue back into the national political conversation.

While concerted national action remains elusive, cities continue to be on the front line of climate action across the country. National action would move the agenda forward more efficiently and more quickly, but cities have an important role to play in reducing emissions. It is local communities that build buildings, develop transportation systems, and create great neighborhoods. Seattle's history of leadership on urban sustainability, as well as climate action, positions it to be a world leader among cities in moving an ambitious climate action agenda forward.

Seattle kicks off Bill McKibben's U.S. tour for a low-carbon future with a packed house at Benaroya Hall, November 2012. (Photo: Paul Anderson for 350.org)

The City of Seattle has adopted a world-leading goal of carbon neutrality by 2050 and is updating the Seattle Climate Action Plan to put the City on the path to realizing that vision while also enhancing Seattle's quality of life. In May 2012, the Mayor convened this Seattle Green Ribbon Commission on Climate Protection, a group of 27 community, business, and environmental leaders to advise the City on the Climate Action Plan update. The GRC was charged with developing climate action recommendations that reduce Seattle's contribution to climate change while also advancing important community goals, including economic opportunity, shared prosperity, healthy communities, and environmental sustainability.

03 Background

Community Benefits

To highlight how climate action can also advance other community goals, the Green Ribbon Commission mapped out the recommendations' connection to community benefits:

Shared Prosperity

Our economy offers local, family–wage jobs; a growing, diverse business base that supports innovation; a place where freight and goods move efficiently; small business opportunities; reduced energy costs and increased energy security.

Vibrant Communities

Our neighborhoods include desired destinations within a walk; a diversity of housing types; plenty of safe and easy ways to get around; open spaces and healthy natural areas; access to healthy food.

Health & Community

People are more physically active; benefitting from improved air and water quality; engaged, connected to each other, and giving back; protected from the effects of disasters; wasting less time and money stuck in traffic.

Social Equity

People have opportunities to engage fully in the community; housing choices for families of all income levels; access to job training and employment; a reduced burden from transportation costs, particularly lower income populations.

Sustainable Environment

Natural systems are preserved and enhanced; helping to meet infrastructure needs; enhancing the livability of our built environment; managed to meet the needs of future generations.

On the following page, the Community Benefits matrix illustrates the greatest opportunities for advancing the community goals in each category of climate action. The Green Ribbon Commission encourages the City to consider these community goals in the design and implementation of the recommended actions in order to maximize and realize community benefits through taking action on climate change.

Transportation + Land Use Climate Actions	
Consider GHG emissions in planning, resource allocation, and right-of-way management decisions	
Increase walking, biking, and transit services and infrastructure	
Provide incentives and information to encourage alternatives to driving alone	
Manage parking for business access and to encourage access by walking, biking and transit	
Create pricing signals that reduce congestion	
Transition to clean fuels and vehicles	
Implement policies and planning to promote diverse travel options	
Plan neighborhoods and regulate zoning to include a mix of housing types, sizes and prices, diverse business and job opportunities, services, schools and activities	
Provide incentives and outreach to encourage businesses to support and leverage the benefits of pedestrian and bike access	
Building Energy Climate Actions	
Use less energy in existing buildings by improving efficiency	
Build highly efficient new buildings	
Expand infrastructure that supports renewable energy	
Create energy pricing and financing mechanisms to increase market demand for energy-efficient buildings	
Adaptation Climate Actions	
Preserve and develop natural systems to enhance resilience	
Increase the resilience of existing and new built infrastructure	
Recognize and plan for the disproportionate impacts of future conditions	
Incorporate consideration of future conditions into City plans, systems, and regulations	
Conduct outreach to help businesses, residents, and organizations understand and plan for impacts	

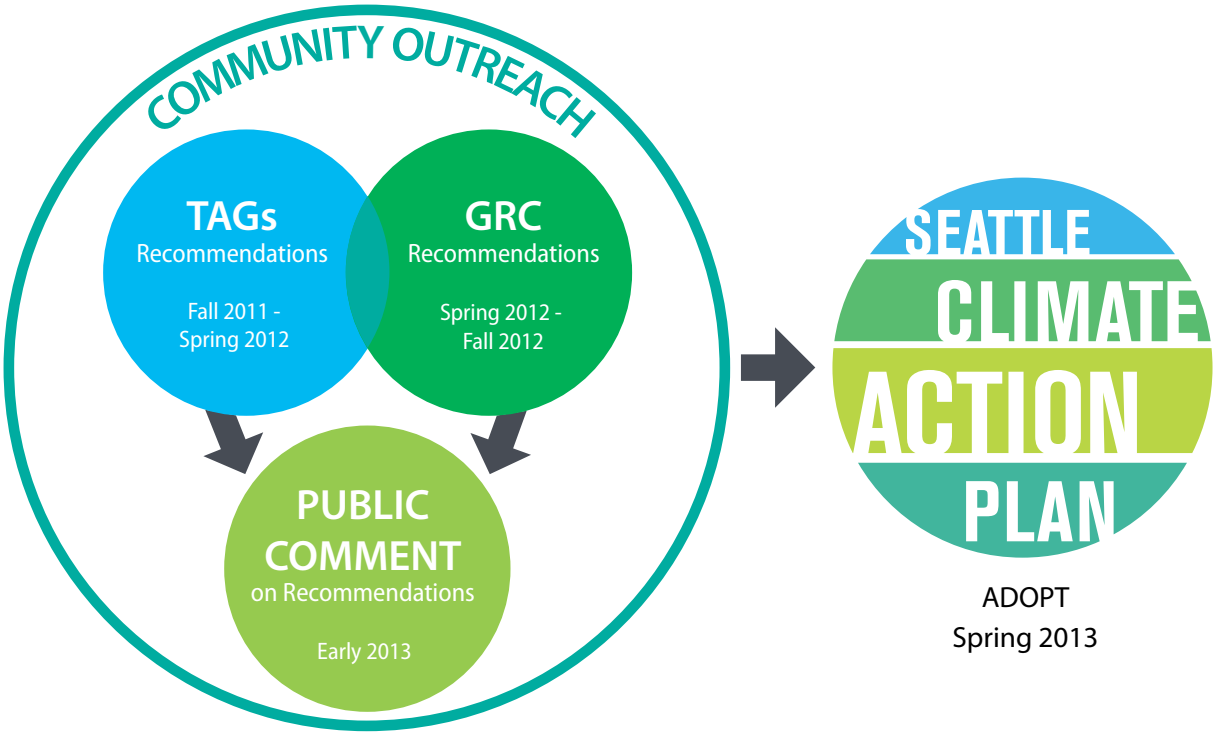
03 Background

Process

The Green Ribbon Commission (GRC) recommendations are built on an extensive foundation developed by Climate Action Technical Advisory Groups (TAGs), a cross section of sector experts that met for eight months in 2011 and 2012. Following detailed analysis, the TAGs identified a range of actions in the building energy, transportation, and land use sectors that would reduce emissions, be cost-effective, and contribute to achieving other community goals.

In seven full Commission meetings and six workgroup meetings between May and October 2012, the GRC considered the TAGs' recommendations, brought their own ideas, and deliberated on the best approaches to reduce Seattle's contribution to climate change. The GRC developed recommendations to guide the Climate Action Plan as a whole (see Chapter 4, Plan-Wide Recommendations), as well as sector-specific recommendations (see Chapter 5).

The City will consider the GRC's recommendations along with other community input received to develop the Climate Action Plan.



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PLAN-WIDE RECOMMENDATIONS

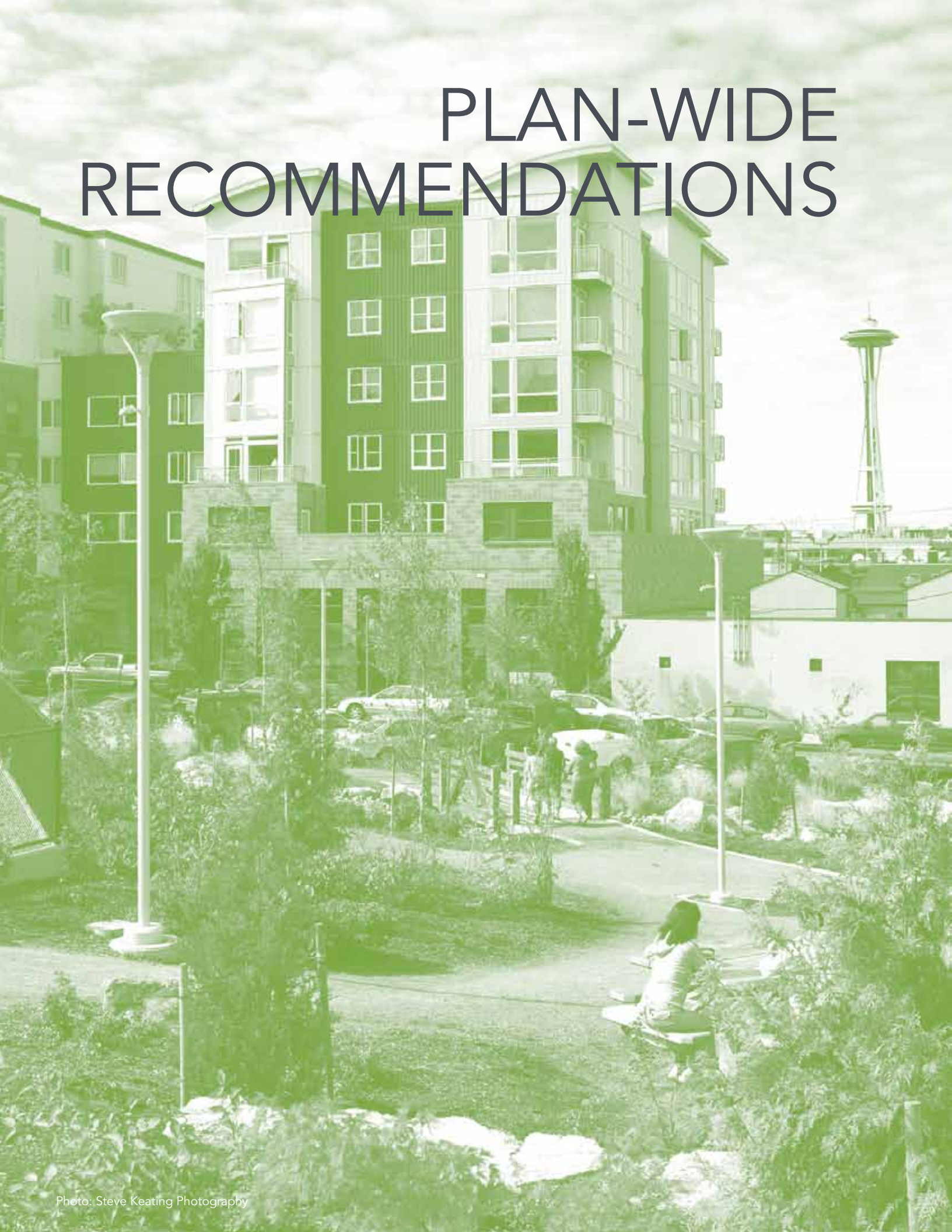


Photo: Steve Keating Photography

Introduction

The Green Ribbon Commission developed plan-wide recommendations that are broad in scale and cut across detailed climate action planning sectors. Successful climate action planning will require integration of the eight plan-wide recommendations detailed below, as well as the sector recommendations detailed in the next chapter.

Recommendations

1. Take Bold Action

Climate change is a global challenge of sobering magnitude and urgency. Inaction has profound implications for future generations who will be living with the consequences of our choices. While this challenge can feel daunting, Seattle more than most cities is well prepared to rise to the challenge. We have the passion, the leadership, and the creative spirit to develop innovative solutions to difficult problems. Seattle's ingenuity and decades of commitment to environmental stewardship can be seen in, among other things, our leading recycling rates, enviable success with water and energy conservation, and carbon-neutral electricity.

Seattle is also a center for innovation that attracts companies committed to creative problem solving and technology-driven solutions. As a thriving center of innovation, Seattle is the ideal place to prove new ideas and scale up technologies to have local and national impact. As a prosperous city with these advantages, Seattle has the opportunity and responsibility to be bold and take risks in charting a path forward that will contribute to a growing body of experience that informs climate actions across the nation and the world.

- Seattle should **be bold in pursuing solutions to climate change**, by embracing its legacy of environmental leadership and taking risks to test new policies and technologies.

- Seattle should **be the national proving ground for important advancements in climate action**, even if the local reductions in greenhouse gas emissions are limited because of our comparatively clean energy.

The Seattle 2030 District is an interdisciplinary public-private collaborative working to create a groundbreaking high-performance building district in downtown Seattle. It seeks to develop realistic, measurable, and innovative strategies to assist district property owners, managers, and tenants in meeting aggressive goals that reduce environmental impacts of facility construction and operations.

2. Create a Great Place to Live by Taking Climate Action

Too often the conversation about climate action has focused narrowly on reducing greenhouse gases or pitted the environment against our economy. Yet a comprehensive look at the benefits of climate action in building energy, transportation, waste and climate preparedness show that the community benefits can be much greater than the number of metric tons of carbon dioxide reduced, and in fact also can provide economic opportunity, promote social equity, and create great neighborhoods. For example, reducing vehicle trips by providing transportation choices reduces air pollution and improves health outcomes; reducing energy use through building upgrades creates economic opportunity and reduces energy costs; and creating complete neighborhoods improves connectedness and enhances our sense of community.

- Design climate actions not only as emissions reduction efforts, but also as actions that **build a vibrant, prosperous and equitable city**.

Westlake Streetcar Plaza/McGraw Square Groundbreaking
(Photo: Seattle Dept. of Transportation)

Rooftop Urban Garden (Photo: GGLO)

3. Embed Equity in Every Solution

No city can be a leader on climate change without advancing social and racial equity. The benefits of climate action must be widely shared in the community. To ensure strategies promote shared prosperity, it is essential that race and social equity goals are fully embedded in climate action design and implementation. No solution should require that the City's climate goals or equity goals be advanced at the expense of the other. All residents should have the opportunity to participate in the planning for and take advantage of the benefits of climate action. Enhancing housing affordability, improving access to a range of transportation choices, reducing the cost of energy-efficiency upgrades and bills, increasing job training and opportunities for all are outcomes that can be realized if we consider equity as fundamental to the design of climate strategies.

- **Embed affordability and equity into all aspects of policy and program design** so that the story of climate action is also one of enhancing equity.

4. Use Systems Thinking to Design Solutions

Often the most effective and innovative solutions to reduce greenhouse gas emissions can be found at the nexus of multiple problems. Land use, transportation and the built environment operate as a complex and interdependent system. By taking an integrated approach across disciples we can better understand the challenges and design more effective climate action strategies that achieve multiple community goals.

- **Take a coordinated and integrative approach** that crosses disciplines and recognizes the interactions between complex urban systems when designing climate actions.

5. Build Support for Climate Action

The actions necessary to move Seattle toward a climate-friendly future that is healthy, safe and prosperous require deep and sustained commitment by the community. The connections between climate action and broader community values must be understood and consistently communicated.

- **Conduct research to better understand residents' values to develop a compelling narrative that captures the imagination** and is used consistently and broadly by our civic leaders and a new cadre of spokespeople.

6. Prioritize Implementation of the Climate Action Plan and Related Plans

The Seattle Climate Action Plan will lay out a bold path forward to becoming a carbon neutral city. In addition, the City has a number of sector-specific plans that include additional actions and important project-level detail, such as the transportation modal plans, utility resource and conservation plans, land use and neighborhood plans, and sustainable building plans. The Climate Action Plan, together with the sector-specific plans, will create a state-of-the art road map (or bike path) for creating a low carbon city. Nevertheless, the City's ambitious goals and impressive plans are only as good as their implementation.

- To support implementation of the Climate Action Plan and foster accountability, the City should **maintain an ongoing community oversight committee** composed of environmental, community, and business leaders.

Installing a Green Bicycle Lane
(Photo: Seattle Dept. of Transportation)

7. Secure Funding for Implementation

While the City can make progress on implementation with existing resources and by realizing increasing efficiencies, the plans cannot be fully implemented without additional investment by the public and private sectors. There are a range of funding options including property taxes, user fees, pollution fees, and innovative public/private partnerships. Elected officials should evaluate the pros and cons of the various funding options, including the equity impacts, and move forward the best options to meet the plan goals.

- **Provide the necessary leadership and funding to fully implement the strategies and actions** outlined in the Climate Action Plan and the related sector plans.

8. Put a Price on Climate Pollution

Five years of a carbon tax in British Columbia has demonstrated that an economy can thrive with a price on climate pollution; emissions have fallen while the province has outperformed the rest of Canada in economic growth. California, too, has taken the lead on carbon pricing by creating create a cap-and-trade program that ramps up next year. Washington should follow the lead of our neighbors by putting a price on climate pollution, which will incentivize emissions reductions, generate revenue to support climate action and other state needs, and support the transition to a clean energy economy.

- **Encourage the State to evaluate what carbon pricing mechanism** (carbon tax, cap-and-trade program, or other) **will work best in Washington**, including how to mitigate the regressive impacts of the selected pricing mechanism.
- **Actively work to build community support for carbon pricing** in Washington State.

SECTOR RECOMMENDATIONS

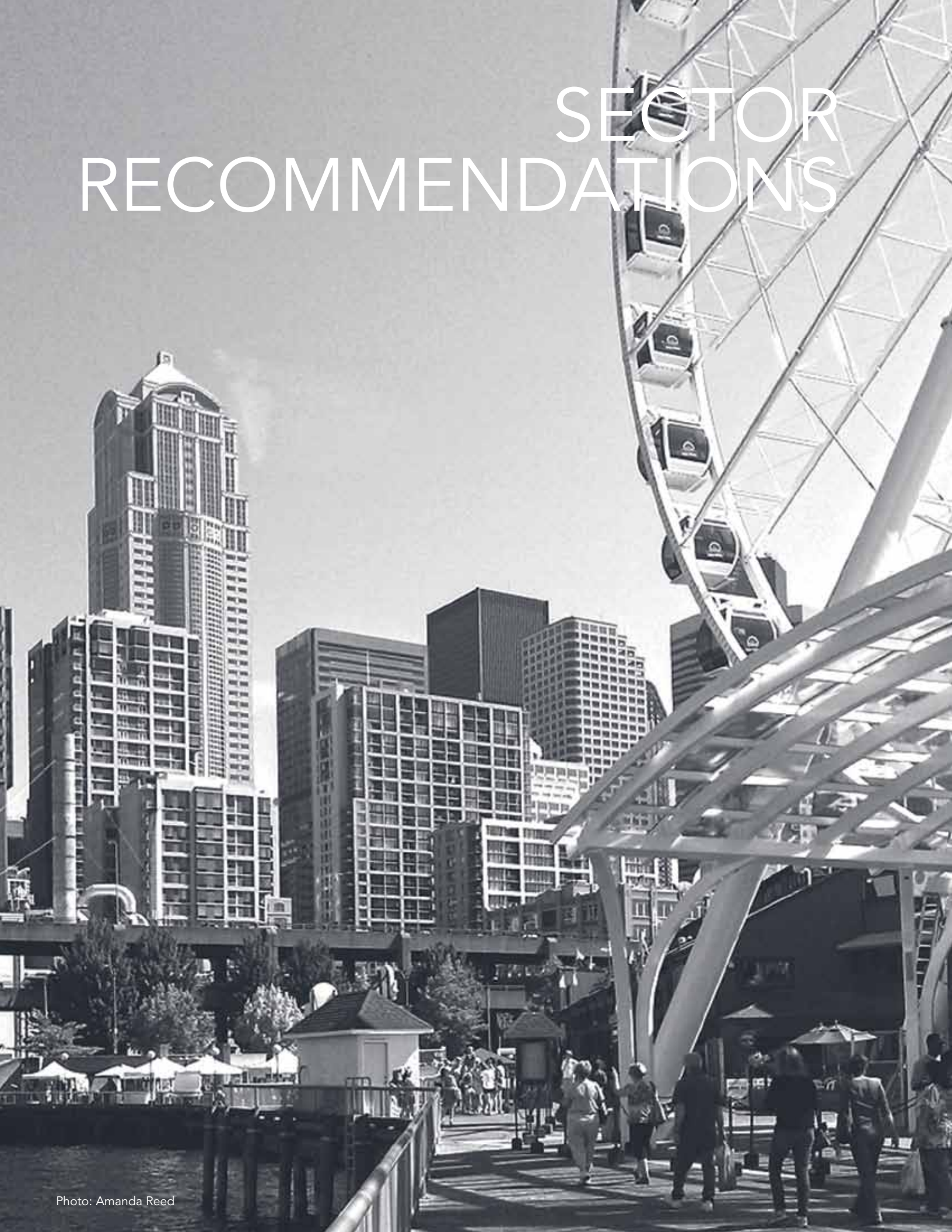


Photo: Amanda Reed

Introduction to Sector Categories

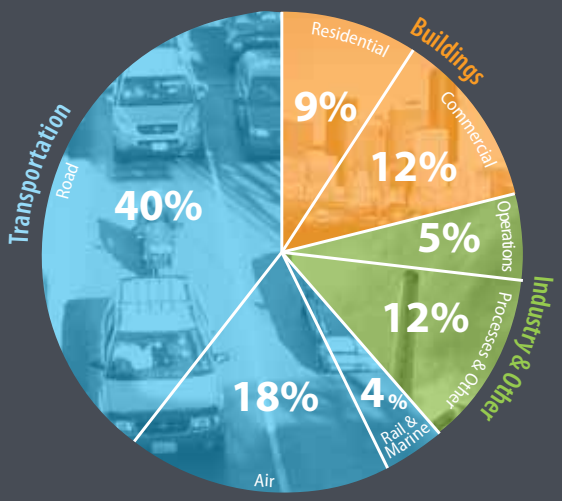
The update of the Seattle Climate Action Plan will include actions to reduce greenhouse gas (GHG) emissions in sectors over which the City has significant influence – such as transportation, land use, and building energy – as well as look at adaptation strategies for enhancing the city's resilience to the impacts of climate change, and building support for climate action. To support the development of the Climate Action Plan, the Green Ribbon Commission (GRC) has organized its recommendations in the following sectors:

- Transportation + Land Use
- Building Energy
- Adaptation
- Building Support for Climate Action

Seattle's GHG Emissions Sectors

Seattle is measuring progress towards its climate goals through periodic greenhouse gas emissions inventories.

In 2008 the Office of Sustainability and Environment (OSE) inventoried Seattle's Community Greenhouse Gas Emissions from transportation, building energy, industry, and waste. The inventory provided data for gauging progress toward near-term and long-term carbon reduction goals, as well as information on where to focus climate action for the greatest impact. The 2008 inventory revealed that transportation sector emissions were responsible for 62% of emissions, while energy use by residential and commercial buildings made up 21%, and industrial operations accounted for 17% of all emissions.



Seattle Citywide Greenhouse Gas Emissions by Sector (Source: 2008 Seattle Community Greenhouse Gas Inventory)

Seattle's GHG emissions are scheduled for inventory every three years and in 2013 the City will conduct an inventory of 2012 emissions. If 2012 emissions have stayed at the same level as the 2008 citywide emissions, then Seattle will achieve its goal to reduce GHG emissions by 7% from 1990 levels by the year 2012 (per the 2005 U.S. Mayors' Climate Protection Agreement, which adopted the stringent emissions goals of the Kyoto Protocol).

05 Sector Recommendations

Format of Recommendations by Sector

The GRC's recommendations for Transportation + Land Use, Building Energy, Adaptation, and Building Support for Climate Action are organized in the following way:

OVERARCHING RECOMMENDATIONS

Recommendations that cut across sector subsections and apply broadly to the sector.

SECTOR SUBSECTION

Leadership Action: Recommendations that are subsector specific, and include actions that are essential to advancing the city's climate goals and require significant leadership to fully implement.

Quick Start Actions: Actions that can be accomplished within the next 1-3 years to pilot new ideas, test new approaches, and build support for leadership actions.

GUIDING PRINCIPLES

Principles that should guide how sector recommendations and actions are implemented.

The GRC's recommendations forward Seattle's climate goals, incorporate the TAGs' and community's recommendations, consider funding, feasibility, and other city policies, and advance our city's economic vitality and social equity. The GRC's recommendations are intended to build upon one another to maximize their benefits.

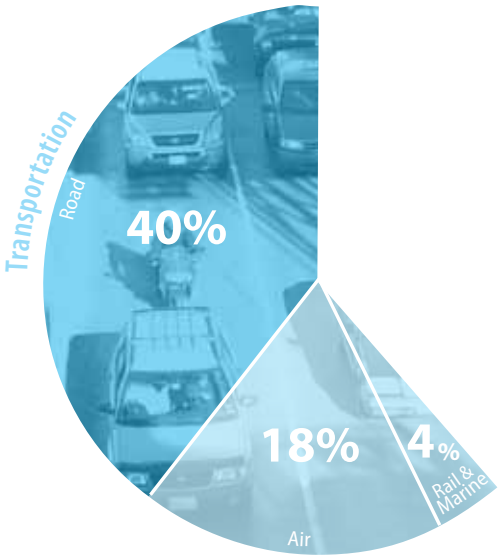
TRANSPORTATION + LAND USE

Where we live, work, and play, and how we access daily services all impact our greenhouse gas emissions. By linking land use policies with transportation policies, Seattle can more effectively address its largest source of GHG emissions: road transportation.

Coordinated transportation and land use policies can facilitate the growth of transit-oriented communities, increase mobility for our growing population, improve access and safety to multiple modes of transportation, and create or support appealing destinations. Together, all of these results can reduce vehicle miles traveled by shortening travel distances and better connecting all the places we live, work and play.

The GRC focused its Transportation + Land Use recommendations in the following areas:

- Funding
- Road Pricing
- Policy & Planning
- Transportation Infrastructure
- Transportation Demand Management
- Parking Management
- Vehicle Fuels & Technologies



City policies and programs can best impact "Road" Transportation Sector emissions. (Source: 2008 Seattle Community Greenhouse Gas Inventory)

Multimodal infrastructure accommodates transit, bicyclists, pedestrians and other vehicles. (Photo: City of Seattle)

05 Sector Recommendations

Transportation + Land Use

OVERARCHING RECOMMENDATIONS

1. Attract a significant portion of the region's growth to the city by focusing on increasing mobility options and creating complete communities that cut travel distances.

Seattle anticipates more than 100,000 new residents and 100,000 jobs over the next 20 years creating opportunities to foster smart growth in an urban setting where residents have lower carbon footprints than suburban residents.

2. Use transportation and land use planning to support diverse, thriving and walkable neighborhoods centered around transit, with convenient services and recreation.

Well coordinated public investment centered on transit service can support lively diverse neighborhoods where residents can meet many of their daily needs by walking, biking, or riding transit. Benefits of these transit-oriented neighborhoods include lower overall household costs, improved public health, thriving local business districts, increased opportunities for housing and jobs, as well as reduced GHG emissions.

3. Reduce the city's reliance on oil and transition our transportation system to clean, low-carbon solutions that are good for our economy.

In 2011, Washington's petroleum consumption drained nearly $15 billion out of the state economy, more than $2,000 per person. Money spent on cars and gasoline creates less than half as many local jobs as money spent on other goods and services. This is not sustainable for our economic or environmental health.

4. **Invest in existing and future transportation infrastructure.**

Over the next few years already inadequate funding levels at the County and City will sharply decline if new or renewed funding sources are not put in place. The result will be significant reductions in existing service levels. At the same time, we have a bold vision for a future where transit service and pedestrian and bicycle infrastructure meet the majority of our passenger transportation needs.

FUNDING

Leadership Actions

1. **Continue to increase the efficiency and equity of transportation investments** and develop funding sources to **sustain existing service levels.**
2. **Identify and prioritize funding to meet the bold vision** of a city crisscrossed with efficient, effective, accessible and well-maintained transit, bicycling, and pedestrian infrastructure and services.
3. **Create a city development authority*,** or similar mechanism, to form public private partnerships in order to use district-based funding mechanisms (e.g. tax increment financing*, tax abatement, simplified local improvement districts) to promote and shape transit communities, and support existing residents and businesses.
4. **Secure local or transit agency authority to levy a motor vehicle excise tax (MVET) with variable rates*** based on the GHG emissions intensity of vehicles. Use revenues for enhanced transit service, speed and reliability improvements or to benefit other transportation choices. Implement an MVET at the City, County or regional level.
5. **Levy a tax on off-street parking***, to supplement the current commercial parking tax authority.

*Actions require legislative changes to implement.

Quick Start Actions

1. **Renew and extend the duration of the Bridging the Gap levy** and prioritize revenues for multimodal transportation strategies, including investments in transit, pedestrian and cycling improvements and system maintenance.

05 Sector Recommendations

Transportation + Land Use

ROAD PRICING

Transportation models and on-the-ground experience in other communities have shown that pricing is a very effective way to advance climate protection and transportation system goals, including reducing greenhouse gas emissions, reducing congestion, increasing system efficiency, and generating revenue to fund the transportation system. These goals can only be fully achieved with a comprehensive pricing system, one that includes all limited access highways, and potentially extends to non-highway arterials.

The Puget Sound region is already implementing road pricing on limited access highways, but is doing so through an incremental approach. As observed with the SR 520 tolling program and as predicted with the SR 99 Tunnel, tolling individual facilities can result in traffic diversion impacts that limit road pricing's effectiveness at achieving climate protection and transportation system goals, and may also create congestion on nearby city roadways.

Leadership Actions

1. **Work with regional partners including PSRC to advocate for state and federal authorization and regional implementation of a comprehensive system of road pricing* on all limited access highways** in Central Puget Sound.
2. **Work to ensure the region has the authority to set transit rates and multimodal transportation planning objectives, and to dedicate revenues to multimodal transportation,** including transit, bicycle, and pedestrian operations, maintenance and improvement projects.

*Actions require legislative changes to implement.

Quick Start Actions

1. **Understand the benefits of pricing policies on climate protection, transportation, and community goals** (such as decreased emissions, reduced congestion, increased system efficiency, revenue generation for transportation choices, and improved air quality), and their potential social equity impacts and solutions, by examining the experience of other communities that have implemented system-wide road pricing.
2. **Evaluate road pricing opportunities on non-highway arterials. Use crowd sourcing** to help identify an area of Seattle that has significant traffic congestion and/or vehicle diversion on to city streets from limited access highways. **Develop a pilot project** to test whether road pricing can help reduce congestion while also reducing emissions and providing funding for transportation choices. The pilot project should explore the impacts of pricing on emission reductions, driver behavior, traffic displacement, congestion, and transportation funding, and to test solutions for mitigating social equity impacts.

POLICY & PLANNING

Leadership Actions

1. **Prioritize transit, walking, and biking over auto travel** while accommodating freight movement and recognizing that specific corridors have different priorities (identified in the Transit, Bicycle, and Pedestrian Master Plans).
2. **Implement land use strategies that provide residents' daily needs within a convenient walk and that create nodes well served by transit and non-motorized transportation options**, in order to attract new residents and jobs.
3. The City, County, PSRC, and State should more strongly **focus transportation and land use planning, and funding decisions, on achieving adopted climate goals**. Integrate climate goals into local and state agency planning efforts.
4. **Consider health outcomes in transportation and land use planning**.
5. **Provide for the retention and creation of affordable commercial space and family-sized housing** in transit communities. Options could include expanded density and height bonuses, tax exemptions, joint development projects*, or code amendments.

*Actions require legislative changes to implement.

The Seattle Streetcar connects downtown Seattle to South Lake Union. Plans for expansion of the streetcar network are in the works, with the next Streetcar line under development now to First Hill. (Photo: Seattle Streetcar)

05 Sector Recommendations

Transportation + Land Use

POLICY & PLANNING

Quick Start Actions

1. **Develop a tool** to embed consideration of GHG emissions impacts and reduction opportunities when updating and implementing transportation and land use plans and policies. The tool should include criteria for evaluating and balancing modal priorities in various corridors to meet mobility goals.

2. **Develop a Freight Master Plan** incorporating goals to improve the efficiency and reduce the GHG emissions impact of goods movement. The efficient movement of freight and goods is vital to our local economy. Seattle is a port city, which must accommodate freight while working to reduce auto-dependent passenger transportation.

The Port of Seattle (Photo: Alicia Daniels Uhlig)

3. **Create a Public Space Management Strategy** to creatively activate the public right-of-way and enliven public spaces, support vibrant streets and neighborhoods, and promote economic activity.

Creative crosswalk pilot project using DuraTherm heat-transfer plastic. (Photo: Seattle Dept. of Transportation)

4. **Seek opportunities to reallocate a portion of the public right-of-way to a public/pedestrian space such as a plaza or parklet.** Portions of the right-of-way can be converted to public uses to enhance public spaces and encourage pedestrian use of the space. A successful example of such a project includes the McGraw Square plaza, which serves as a waiting area for the Streetcar Line.

5. **Develop and implement a comprehensive land use and multimodal corridor plan in a high priority transit and bicycle corridor** with the goal of shifting more trips to travel modes that generate fewer, or no, greenhouse gases. The City has myriad modal and land use plans that are complementary. A corridor approach would allow more effective land use and transportation planning integration; help identify corridor-specific priorities and location-specific opportunities; and reveal barriers to maximizing transportation outcomes.

TRANSPORTATION INFRASTRUCTURE & SERVICE

Enhancing mobility, access and safety through a range of transportation choices is key to reducing auto dependence. Transit is a critical foundational strategy for meeting our land use and transportation goals and supports the viability of walking and bicycling for many trips.

Leadership Actions

1. **Expand transit, pedestrian, and bicycle infrastructure and service consistent** with the modal plan priorities.
2. **Develop a comprehensive, connected network of separated bicycle facilities** in the Center City and Urban Villages.
3. **Develop a citywide network of neighborhood greenways** on traffic calmed residential streets.
4. **Provide fast, frequent and reliable transit** to those who live, work and play in Seattle: Implement the Seattle Transit Master Plan's vision for **high capacity transit.**
5. **Enhance sidewalks, crossings and public places** in Urban Centers and Urban Villages.
6. **Employ green construction practices,** including use of green stormwater infrastructure and low carbon materials, when designing and constructing infrastructure.

Pilot Project:
Fremont Bridge Bicycle Counter
(Photo: Seattle Dept. of Transportation)

Quick Start Actions

1. **Build separated bicycle lanes in the Center City.** Increasing bicycle use through the Center City is an essential step to manage future travel demand and also encourage more people to commute to work via alternate modes. The Bicycle Master Plan update is underway and will identify preferred routes for cycle track and other separated bicycle facilities.

05 Sector Recommendations

Transportation + Land Use

TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management is about improving the efficiency of the transportation system by impacting how, when, and where people travel.

Leadership Actions

1. **Provide incentives, marketing, and imaginative facility enhancements to make transit, walking, and biking more fun and appealing.** Think of basic infrastructure and service as opportunities for creating enriching experiences (e.g. fun station stops, music, interactive features such as musical stairs and touch screens, etc.).

Quick Start Actions

1. **Increase real-time dynamic signage to share up-to-the minute estimates on bus arrivals.** The popularity of the mobile information application, One Bus Away, highlights the value of real time travel information.
2. **Build on the Safe Routes to Schools program and implement Safe Routes projects to improve pedestrian connections to transit and neighborhood business districts.** The Safe Routes to School program is an effective means of encouraging students to walk or bike to school, which helps students choose a healthy alternative to being driven to school.

Children learning in the Safe Routes to School Program.
(Photo: Seattle Dept. of Transportation)

PARKING MANAGEMENT

Leadership Actions

1. **Expand parking policies** to incorporate goals beyond customer access. Consider policies that would allow spending of new revenue to support improvements that further neighborhood livability as well as transit, bicycle, and pedestrian infrastructure and services.
2. **Develop a parking benefit district*** or similar model, in collaboration with area stakeholders, **in an area with high demand for on-street parking. Dedicate a portion of new revenues* to enhance the streetscape and walking, bicycling, and transit access within the district.** Expanding parking policies to meet goals beyond business access requires local community support. Investing a portion of additional revenue generated from increased parking rates or expanded hours in local improvements can help build business support and further land use and transportation goals.

*Actions require legislative changes to implement.

Quick Start Actions

1. **Create a new grant program to support mobility projects** in business districts with paid parking.

05 Sector Recommendations

Transportation + Land Use

VEHICLE FUELS & TECHNOLOGIES

While the recommended actions for land use planning and transit, bicycling and walking facilities and services will reduce the need for auto travel, cars will remain a portion of our transportation portfolio. In addition, the number of transit vehicles and trips on our roads will grow. Therefore, it is important that we reduce the climate impacts of the remaining cars and transit operations.

Leadership Actions

1. **Make Seattle a leader in transitioning from fossil fuel based transportation to electricity-based transportation.** The city is well positioned to lead this transition with its carbon-neutral electricity.
2. **Develop and implement strategies to help make electric vehicles a viable and desired option for all residents** by reducing barriers, including access to charging infrastructure for households without off-street parking.
3. **Pursue grant funding and partners to develop a network of fast charging stations** that will allow vehicles to charge in under 30-minutes increasing vehicle range, expanding opportunities for charging, and providing commercial opportunities to business owners.
4. **Increase the number of bus route miles planned for conversion to electric bus.**
5. **Upgrade Metro's entire 1,500 bus fleet with hybrid or electric buses by 2018.** King County Metro operates more than 600 diesel-electric buses that are up to 30% more fuel efficient and have saved over 2 million gallons of fuel since 2007.

Quick Start Actions

1. **Replace the entire trolleybus fleet with newer, more energy efficient technology.** Electric trolley buses are remarkably energy-efficient mode of public transport, serving 20% of King County Metro riders on 14 routes.
2. **Pilot test an all-electric battery powered bus.**
3. **Expand the City's electric vehicle (EV) fleet.**
4. **Support private adoption of EVs** through codes, streamlined permitting to facilitate installation of charging stations, and by assessing and planning for demand, access, and utility impacts.

GUIDING PRINCIPLES

1. **Consider the needs of families, an aging population, and lower income residents** in land use and transportation planning in order to make transit-oriented communities work for the full range of current and future Seattle households.

2. **Adopt policies to assist existing residents and businesses to remain and thrive in areas targeted for transit-oriented development** to address the negative effects that gentrification can have on neighborhoods. Investing in transit communities can improve the physical environment and function of these areas but also increase the cost of living and doing business thereby displacing existing residents and businesses.

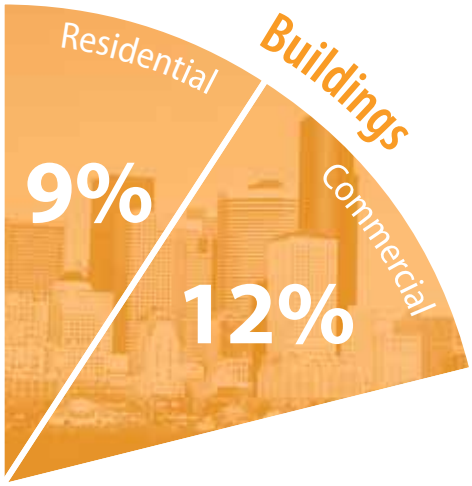
3. **Design pricing strategies to mitigate direct impacts on lower income residents** (e.g. discounts) to meet social equity and mobility goals. Additionally, **expand the transportation options that people need to get around as new pricing strategies are implemented**, investing revenue from new pricing strategies to enhance travel options.

First tests of a two-car train operating under electrical power.
(Photo: Sound Transit)

BUILDING ENERGY

From heaters to air conditioning units, from stove tops to light fixtures, we ask our buildings to perform many energy intensive tasks for us, which is why it's no surprise that building energy use accounts for over 20% of our city's total greenhouse gas emissions. Making sure our energy comes from clean, low-carbon fuel sources and improving the overall energy efficiency of our buildings to get the most out of the fuel we do use, are essential to reducing our GHG emissions.

The GRC's recommended strategies for the Building Energy sector highlight how the energy efficiency of both existing buildings and new construction can be dramatically increased through a careful building up and combination of market-based incentives and government regulations. Further, their recommendations focus on the importance of measuring and sharing building energy use as methods for increasing awareness and supporting market change. And finally, the GRC recommends increased infrastructure for low-carbon fuels, in order to diversify our fuel stock and supplement our carbon-neutral electricity supply, which is particularly important as our city grows and energy demands grow with it.



Seattle Citywide Buildings GHG Emissions (Source: 2008 Seattle Community Greenhouse Gas Inventory)

GGLO collaborated with Capitol Hill Housing to design Broadway Crossing (LEED Silver), and measure the building's performance after building occupancy. Lessons learned allowed the team to fine tune building operations. (Photo: William P. Wright)

The GRC focused its Building Energy recommendations in the following areas:

- Pricing & Financing
- Efficient Operations
- Efficient Construction
- Infrastructure for Low-Carbon Fuels

OVERARCHING RECOMMENDATIONS

1. **Market-Based Emphasis:** Make the business case for energy-efficiency investment in the private sector. Focus on improving the business case through a number of mechanisms including financing tools, new financial incentives, energy price structures that incentivize conservation, and increasing market value for energy efficiency.

2. **Integrated Recommendations:** The recommendations function as a package. Many of the recommendations build upon and strengthen each other. The success of some individual measures is diminished if implemented in isolation and careful staging and sequencing is important. For example, building owners should have the benefit of the numerous incentives and assistance programs before being subject to energy-efficiency mandates.

PRICING & FINANCING

The recommendations in this report strive to strike a balance between the call for deep energy reductions and the practical reality that retrofit decisions are often made based on cost-effectiveness. Energy pricing and efficiency incentive structures that make a strong business case are key to widespread investments in energy efficiency. In fact, some important strategies only become cost-effective if pricing, incentive, and financing programs are also implemented.

Leadership Actions

1. **Make the economics of energy-efficiency investments compelling for all.** Find the right package of pricing, financing, and incentives to make energy efficiency upgrades obvious economic wins. With a diverse building stock and mix of ownership structures, there is no "one-size-fits-all" solution.

2. **Outcome-Based Incentives: Pilot (and if successful establish) an outcome-based incentive structure at Seattle City Light. Also investigate what incentive levels and structures most effectively promote deep energy retrofits and move toward establishing those systems.** Outcome-based incentives are utility incentive structures based on the actual energy savings of an energy upgrade rather than the projected savings of individual measures. This model could allow higher incentive payments because there is no risk that energy savings may not be realized (and therefore no need to discount the incentive level).

Building Energy

PRICING & FINANCING

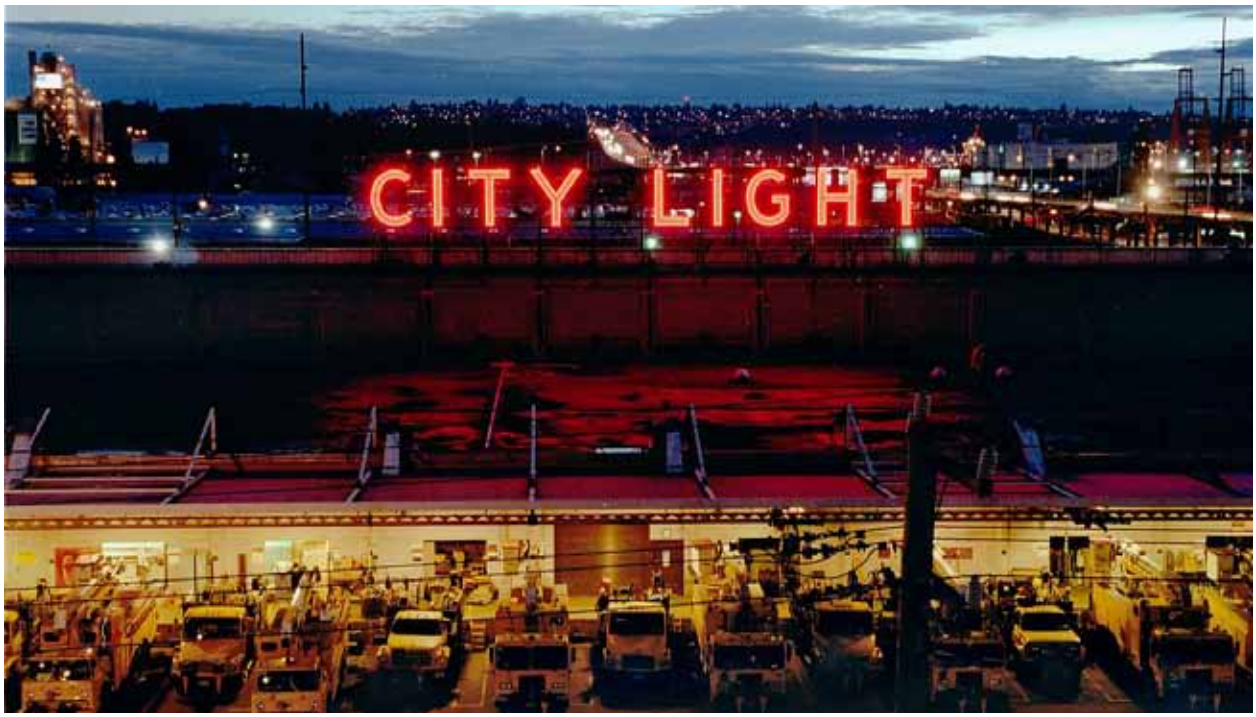
Leadership Actions (continued)

3. **Innovative Financing Options: Ensure broad access to financing with alternative repayment structures** by exploring meter-based financing programs and, potentially, PACE (Property Assessed Clean Energy) financing or a similar model. These tools are attractive for a number of reasons, such as:
   - For business, they provide financing that allows them to side-step the capital budgeting process, and they can be characterized as an operating expense instead of a debt.
   - For residents, they link long-term repayment to a meter instead of an occupant so that repayment can be amortized over longer periods of time despite changes in ownership/tenants.
4. **Public Funding for Additional Energy-Efficiency Incentives: Identify new sources of funding for incentives to encourage deeper energy retrofits.** Seattle's mild climate and inexpensive energy create a challenge for realizing near-term paybacks for energy-efficiency measures. Because climate protection and energy conservation results provide long-term community benefits, a property tax levy is one option to generate incentive funding. Public funding through a tax levy has the benefit of being fuel source neutral (utility incentives are fuel specific), which means the incentives have considerably more flexibility to promote deep energy efficiency than utility incentives with restrictions. In addition, levy resources can be invested back into the building stock, preserving assets and potentially increasing property values. The benefits to the public include improved communities, local job creation, improved energy performance, and reduced carbon emissions.
5. **Rental Housing Energy Efficiency Property Tax Exemption: Establish a property tax exemption program for existing rental housing for owners who undertake energy retrofits**. In situations where the tenant pays utility bills, there is little financial incentive for landlords/building owners to undergo an energy retrofit. This program would provide a financial incentive for landlords/building owners to take action and lower utility bills for tenants.

PRICING & FINANCING

Quick Start Actions

1. **Outcome-Based Incentives:** Seattle City Light should **coordinate with other utilities to pilot a performance-based utility incentive program** that would pay incentive dollars over time as actual energy savings are verified, rather than paying an up-front incentive based on the projected savings of individual measures.
2. **Innovative Financing Options: Launch a working group of downtown property owners and managers to evaluate financing tools** for commercial buildings and identify those which are most likely to promote the deepest energy-efficiency investments. **Develop a plan to bring the financing tools to market,** including a legislative strategy if one is required.
3. **Public Funding for Additional Incentives: Define the elements of an incentive program that a bond initiative would support. Link the message of public funding to tax exemption programs and rebates** to make it clear that the public is collectively investing in their own building stock.
4. **Rental Housing Energy Efficiency Property Tax Exemption: Pass legislation** for the authority to establish a property tax exemption program for existing rental housing owners who undertake significant energy retrofits.



Seattle City Light South Service Center is lit by carbon-neutral electricity.
(Photo: Seattle Municipal Archives)

Building Energy

EFFICIENT OPERATIONS

Most of the buildings we will see in Seattle in 2050 have already been built. Making deep efficiency gains in our existing building stock is imperative to meeting the City's climate protection goals. Seattle is a conservation leader thanks to robust programs from Seattle City Light and an aggressive Seattle energy code. But the City has much less experience, and few programs or tools, for reaching existing buildings outside those contexts (Community Power Works and the City's Energy Benchmarking requirements are notable exceptions).

The recommendations for existing buildings are found both in this section and in the Pricing & Financing section. While the recommendations focus on building an economically compelling case for energy efficiency investments, there is also a role for mandates to ensure widespread action. Implementing the incentives, financing and regulatory recommendations should be staged to reflect their interactions, maximize synergies, and avoid unintended consequences. The key is to enable the financial capacity for voluntary action before expanding to mandates, by focusing first on the Pricing & Financing strategies in the previous section.

Leadership Actions

1. **Make energy use visible** to make gains in energy efficiency. This requires real-time, easy to understand information about energy use, and building energy ratings that are easily accessible to the public.
2. **Benchmarking, Disclosure, and Rating: Establish programs to increase the visibility and awareness of energy performance in buildings.** The right program design varies by building type:
   - For large multifamily and commercial buildings, expand the existing Benchmarking and Reporting program to make benchmarked information more publicly available, with an ultimate goal of having highly visible energy performance (e.g. place energy ratings or real-time meters in building lobbies). This recommendation should be enacted after incentive and assistance programs to improve building performance and promote voluntary disclosure.
   - For single family homes, establish a requirement for disclosing a home energy use or energy-efficiency rating at the point of sale.

EFFICIENT OPERATIONS

Leadership Actions (continued)

3. **Energy-Efficiency Standard: Create an energy-efficiency standard to ensure widespread improvement to our entire building stock.** Even with attractive incentives and near-term paybacks, many buildings will continue to operate without even the most cost-effective energy-efficiency upgrades. A standard can be strategically implemented to ensure required improvements are cost-effective, and can ramp up over time after tools and incentives are available to assist building owners. The right overall strategy should define a clear and easy path for voluntary compliance before such requirements are introduced. The Energy-Efficiency Standard itself should:
   - Expand inspections and enforcement for energy code compliance.
   - Require large multifamily and commercial building owners to improve the energy performance of buildings at established intervals (e.g. once per decade). Examples include a mandatory building "tune-up" (retro-commissioning), or a change-out of the most inefficient lighting systems.
   - Require cost-effective home energy upgrades for single family homes at the point of sale. This should be a longer-term strategy, enacted only after information, financing tools, and rebate programs are in place to incentivize voluntary action.
4. **City Leadership: Use City buildings as role models, test cases, and case studies for new policies.** The City should show leadership in its municipal buildings.

Building Energy

EFFICIENT OPERATIONS

Quick Start Actions

1. **Retro-Commissioning Incentives:** If pilot results are positive, **identify resources to scale up and expand Seattle City Light's retro-commissioning pilot program**, which will provide an audit to help building managers identify and implement operational and maintenance improvements.
2. **Retro-Commissioning City Buildings: Develop a strategy for retro-commissioning City facilities** as part of the Resource Conservation Management Plan under development.
3. **Community Power Works:** Build on the lessons of the Community Power Works pilot program to **establish a long-term program to provide assistance, financing and other tools to building owners** that will drive deeper energy-efficiency upgrades.
4. **Rapid Deployment of Smart Meters: Support the rapid deployment of advanced metering infrastructure** by implementing Seattle City Light's Strategic Plan, to better support residents with energy management. Smart meters help educate users by providing them with real-time information about their energy use and the impacts of conserving.
5. **Benchmarking, Disclosure, and Rating: Define and test core program elements for a home energy rating requirement at the point of sale.** For example, a near-term pilot could explore how a program would use home inspectors, appraisers, home energy assessors and/or previous utility bills in evaluating home energy performance.

Community Power Works delivers energy efficiency solutions to Seattle's residential and business communities, while working to create economic growth.

Building energy use displays at the University of Washington Bothell campus. (Photo: Marc Studer)

EFFICIENT CONSTRUCTION

The strategic point at which a City can most easily influence energy use in buildings is through the regulations placed on new construction and major renovations. Seattle has a history of doing so through its energy code and green building incentives. The energy code should continue to be at the core of the City's strategy to reduce energy use and carbon emissions in new buildings. The State of Washington is already planning to incrementally increase the efficiency of the state energy code, and the City should continue to achieve an even higher bar with its own energy code. Until energy codes require deep energy efficiency, incentive programs should encourage new construction to voluntarily achieve those standards.

Leadership Actions

1. **Outcome-Based Energy Code: Move toward an outcome-based approach to managing energy code compliance** to ensure buildings are attaining their modeled performance. Ultimately the energy code should include a combination of prescriptive elements, performance requirements, and outcome-tracking.
2. **Energy Upgrades with Substantial Alterations: Require that the energy performance of buildings undergoing substantial alterations come close to (e.g. within 20%) the energy performance requirements for new buildings.** A substantial alteration is a building code term for a major change to a building or its use, like replacing the interior after a major fire, or restoring a vacant building. Such extensive remodeling typically occurs once every 30-50 years in a building's life, and provides a rare opportunity to economically upgrade a building's energy performance.
3. **Land Use Policy and Building Codes: Think creatively about how land use policies and building energy strategies can integrate to create highly efficient new construction.** For example, land use codes could strategically drive building designers to better capture passive heating, cooling, and daylighting opportunities. Infrastructure funding related to transportation and land use could also support district energy infrastructure. Integrating energy consideration into land use and zoning discussions could capture additional opportunities for multiple wins.

Building Energy

EFFICIENT CONSTRUCTION

Quick Start Actions

1. **Green Schools: Work with the Seattle School District to create the greenest, healthiest, most energy efficient portfolio of schools in the United States** by using proceeds from the proposed school levy (BEX IV) as well as state funds. New schools should aspire for Living Building Challenge certification, and retrofitted schools should aspire to LEED Platinum Existing Building certification. New schools should last for at least 100 years. All schools should be designed to maximize the opportunities for students to learn from their facilities and to minimize the cost of ongoing operations and maintenance.
2. **Outcome-Based Energy Code:** Evaluate the findings of the existing outcome-based energy code pilot between the Preservation Green Lab and the City and develop a strategy for building upon the pilot.
3. **Living Building Pilot:** Work with stakeholders to continue improving the Living Building and Deep Green Pilot Program to promote deep green buildings in Seattle. As part of this work, consider additional protections for solar access to ensure that investments in solar energy can continue to be realized in the long-term.

Students in the Bertschi School Living Building Science Wing by the Restorative Design Collective. The classroom is on target to be the first certified Living Building Challenge project in Washington state. (Photo: Benjamin Benschneider)

INFRASTRUCTURE FOR LOW-CARBON FUELS

Energy efficiency can only take us so far: carbon neutrality requires the city to further adopt low- or no-carbon energy sources. Seattle is fortunate to benefit from carbon-neutral electricity through Seattle City Light, but there are many buildings that use fossil fuels—natural gas and oil—to heat and cool their buildings. On-site renewable energy systems and district energy systems are part of the solution. District energy systems provide a platform for using waste heat and renewable energy sources, and moving these resources around in a system to where and when they are most needed. Given the high cost of infrastructure, the load requirements needed to make district energy cost-effective, and Seattle's carbon-neutral electricity, district energy is not a universal solution, but does have a valuable role in targeted locations.

Leadership Actions

1. **Create a diversity of low-to-no carbon energy sources.** Hydronic heating infrastructure and a connected network of district energy systems can bring versatility to the city's low-carbon energy resources. On-site renewable energy systems help supplement the City's carbon-neutral electricity, create diversity in supply, and contribute to the market growth of renewable energy systems.
2. **Waste Heat Recovery: Develop district energy systems and incentive programs to capture and utilize waste heat** (e.g. from industrial operations, data centers, or sewage lines). In the longer-term, and where appropriate, mandate waste heat recovery. Heat recovery not only makes use of a waste product, but in some cases can reduce other energy needed to cool the excess heat.
3. **Use of Public Space for Alternative Energy: Allow public space, including the public right-of-way, to be used for alternative energy where appropriate.** Potential uses include solar panel encroachment, and inserting ground source heat wells to provide heating and cooling to nearby buildings. This alternate siting of ground source heating can provide benefits to construction schedules and budgets, because construction would not need to cease on the building site while the wells are being installed.

Building Energy

INFRASTRUCTURE FOR LOW-CARBON FUELS

Quick Start Actions

1. **District Energy Pilot:** The City is currently undertaking a study to test the feasibility of developing a district energy system with a private utility partner. If the feasibility analysis results are positive, **support development of the system and ensure its commitment to low-carbon fuel sources.**
2. **Low Carbon Energy Master Plan: Develop a master plan to guide the establishment of low-carbon energy systems in the City.** Successfully establishing low-carbon energy infrastructure requires a long-term strategy and careful coordination. The plan should identify priority locations, priority energy sources, and policies on utility coordination, as well as consider the advantages of hydronic heating in future code evolutions and identify associated land use impacts or other policies, requirements, and incentives. The plan should recognize and build upon existing district energy successes in Seattle, and focus growth of district energy in ways that minimize carbon and other emissions that impair air quality.
3. **Carbon-Neutral Electricity: Maintain SCL commitment to meet load growth with conservation and renewables, as well as to providing zero net emission electricity.** SCL should also facilitate the adoption of electric vehicles in Seattle to help reduce our dependence on oil.

GUIDING PRINCIPLES

1. **Take a broad view of policy design to enable building energy strategies to achieve additional community outcomes.** For example, expanding some incentive programs beyond a focus on energy to also consider green building and health goals can help Seattle achieve greater energy and water conservation, healthier indoor environmental quality, more use of recycled materials, and improved housing and business affordability. The City should explore options for capturing broader environmental, health, and equity goals into the implementation of the recommendations.

2. Recognize and **enhance shared prosperity among Seattle residents and businesses when implementing recommendations.** Investments in energy efficiency support local job growth, keep utility bills low, and improve the quality of our community's building stock.

An artistic rendering of what the future of Broadway could look like in the planned Capitol Hill EcoDistrict, which aims to balance broad environmental, health and equity goals in neighborhood projects. (Image: Courtney Hathaway, GGLO)

ADAPTATION

While concerted efforts to reduce climate pollution are critical, historic emissions will disrupt the global climate for many years. Additionally, the lack of progress on reducing future global emissions means that additional climate change will exacerbate the impacts communities are already experiencing. Projected changes in Pacific Northwest precipitation, temperature, and sea level will affect health, property, and the economy.

Snoqualmie River Flooding, 2010
(Photo: King County)

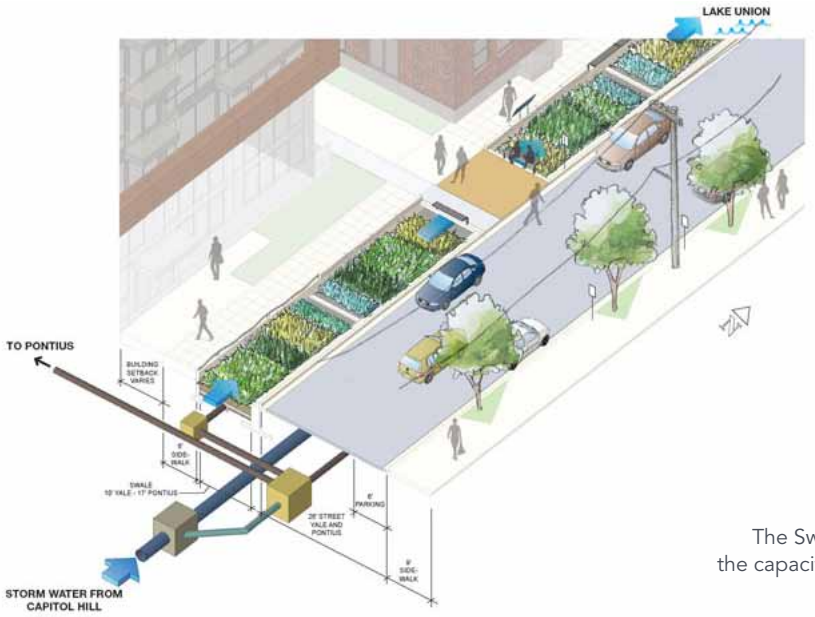
Seattle already experiences, and therefore has strategies for responding to, the types of impacts expected with climate change, such as flooding, heat events, and extreme high tides. However, climate change will shift the frequency, intensity, and timing of these events. In many cases, what we now consider an extreme event will become a more normal event. Absent effective preparation, the impacts and costs associated with these events will increase. Therefore, **in addition to working to reduce greenhouse gas emissions, it is imperative that the City assess and prepare for the impacts of climate change.**

Smoke haze from the Taylor Bridge Fire obscures the sun in Yakima,WA. (Photo: Nate Gilbert)

Adaptation planning is a complex challenge. The science of projecting impacts is evolving and complicated by the uncertainty of future global emissions reduction efforts. The result is a planning environment where past experience is not predictive of future conditions. The systems and plans put in place to enhance resilience to climate impacts must be frequently re-evaluated based on best available science. Adaptation planning can be informed by, and is best executed in coordination with, other related planning efforts designed to foster the city's resilience, such as earthquake preparedness, emergency response, and public health.

The GRC's recommendations are intended to help guide City planning to enhance Seattle's resilience to the impacts of a changing climate; they are focused on the following areas:

- Comprehensive Adaptation Assessment & Planning
- Natural Systems
- Utility Systems
- Land Use & the Built Environment
- Community Preparedness



KEY DESIGN ELEMENTS

Swale replaces on-street parking lane
Swale: 10.5′ to 16.5′ wide, 14″ to 23″ deep
Roadway for driving/parking: 26′ wide
Sidewalks: 6′ wide minimum
Mid-block pedestrian crossing: ~17′ wide

The Swale on Yale project contributes to enhancing the capacity and flexibility of our urban systems. Image shows the key design elements. (Image: Seattle Public Utilities)

OVERARCHING RECOMMENDATIONS

1. **Monitor the projected impacts of climate change to better understand the projected changes** in precipitation, temperature, and sea level **and the resulting impacts** on our environment, economy, and community.

2. **Enhance the capacity and flexibility of our urban systems** to better meet current needs and thereby build our ability to be resilient to the impacts of climate change. Many of these systems are not adequate to meet our current needs (e.g. public health services are inadequate compared to the scale of today's needs). As climate conditions change, pressures on these systems will increase.

05 Sector Recommendations

Adaptation

COMPREHENSIVE ADAPTATION ASSESSMENT & PLANNING

The City of Seattle has been working on climate change adaptation planning for a number of years; most notable are the leadership efforts of Seattle Public Utilities and Seattle City Light. However, the City does not have a comprehensive Climate Change Adaptation Strategy.

Leadership Actions

1. **The Office of Sustainability & Environment should lead the effort to develop a comprehensive adaptation strategy that employs an integrated and interdisciplinary approach**, and which maximizes co-benefits such as fostering healthy communities, natural systems, social equity, and shared prosperity.

2. **Integrate the City's planning efforts across all relevant departments** and consider the potential cost of inaction in addition to the cost of implementing actions to enhance resilience.

Quick Start Actions

1. **Conduct a citywide assessment of the impacts of temperature, precipitation, and sea level rise** on City infrastructure, operations, facilities and services, and on human impacts such as health and social services, with special attention to vulnerable communities.
2. **Develop a comprehensive strategy to enhance resilience to changing climate conditions** that builds on work already completed and underway.

The balance of our recommendations provides more detail and suggests priorities for the City's adaptation planning efforts. The elements outlined below reflect our recommendation that the City focus on those actions where the City government has the greatest potential influence either directly through its operational role, or indirectly through its leadership, outreach or engagement roles.

NATURAL SYSTEMS

Leadership Actions

1. **Protect and Enhance Natural Systems.**

   Seattle's natural systems including our urban forest and creeks could be impacted by the changes in our climate. Fish in our urban and rural watersheds are at risk from changes in temperatures and flows. Trees and other vegetation are at risk from emerging disease and insect pests and may be weakened by changes in growing conditions which further increases their susceptibility to pests. These natural systems support wildlife and enhance the livability of developed urban areas. The health of these systems also is important in a changing climate as they help keep our city cooler by mitigating the heat island effect and reducing stormwater runoff both of which will be exacerbated by climate change.

Tree planting party. (Photo: GGLO)
The Green Seattle Partnership is working to restore 2,500 acres of forested parkland by 2025.

A raccoon discovers a chum salmon on the banks of Piper's Creek in Carkeek Park. (Photo: Catherine Anstett, Seattle Public Utilities)

Quick Start Actions

1. Use **thermal imaging** to identify areas that are likely to be more heavily impacted by heat events and use data to inform development of urban forest and tree planting priorities and programs.
2. Keep on pace to restore all 2500 acres of forested parkland by 2025 through the **Green Seattle Partnership**.
3. Implement projects in several urban creeks that **connect floodplains, increase stormwater storage capacity and improve culverts to minimize flooding and improve habitat**.

Adaptation

UTILITY SYSTEMS

The city's utility systems are highly weather dependent. Our water supply and the majority of our electricity supply rely on precipitation in the form of rain and snow. Our drainage system which manages stormwater runoff is highly sensitive to changes in the volume of runoff from precipitation. Changes in the amount and timing of precipitation and runoff and the frequency, duration, and intensity of storms have the potential to significantly impact these systems.

Leadership Actions

1. **Enhance the Resilience of Seattle's Electricity System.**

   Reducing demand for weather dependent hydro-electricity and increasing the efficiency of system operations will increase the ability of the system to meet the needs of a growing population and our obligations for natural resource stewardship under changing climate conditions.

2. **Enhance the resilience of Seattle's Water Supply System.**

   By better understanding the impacts of future climate conditions on the city's water supply system such as changes to snowpack levels and the timing of runoff, Seattle can develop management strategies for meeting customer needs under future conditions.

3. **Enhance the Resilience of the Drainage System.**

   Green stormwater infrastructure (GSI) enhances flexibility of the drainage system in managing the uncertainty of future precipitations changes caused by climate change. GSI also helps prevent pollution and support wildlife habitat by mimicking the way natural water systems slow, clean and infiltrate stormwater. In developed areas, GSI augments the finite capacity of our existing "gray" (pipe and pump) stormwater facilities and manages increasing amounts of rainwater with a reduced reliance on the construction and operation of greenhouse gas intensive built infrastructure. GSI can be sited and designed in ways that advance multiple urban sustainability goals simultaneously, including: urban water quality, walkability and pedestrian safety, tree canopy recovery, neighborhood greenway development, and open space development.

UTILITY SYSTEMS

Quick Start Actions

1. **Use applied research and modeling to evaluate climate change impacts on SCL's electricity resources and future energy demands beyond the 20-year planning horizon** currently used in the Integrated Resource Plan.
2. **Research the impacts of climate change on operations of hydroelectric projects**, including impacts on generating facilities and salmon survival. **Collaborate with external partners** on state-of-the-art climate research.
3. **Maximize the City's conservation programs to promote cost-effective energy-efficiency measures** that will help meet much of the city's future electricity needs, reduce the need for new energy sources as Seattle grows, and reduce energy costs to residents and businesses.
4. **Implement Advanced Metering** to begin the transition to a "smart grid." Smart Grid technology will increase our ability to meet customer demand, detect system overloads that could be caused by heat events or other issues, and reroute power, thus preventing or minimizing outages and improving system reliability. Advanced metering will also facilitate the integration of distributed electricity generation (e.g. solar) and storage.
5. Work with federal and academic research groups to **generate the next generation of climate data downscaled to the watersheds** supplying the city's water. Use this information to update the water supply impacts assessment and explore impacts on the intensity of forest fires, turbidity, the timing of fall rains, and precipitation within the city.
6. Continue to **invest in water conservation programs** reducing regional per capita water use.
7. Continue to **lead the Water Utility Climate Alliance**, a group of ten large urban water utilities providing leadership in assessing and adapting to the potential effects of climate change through collaborative action.
8. **Adopt a Green Stormwater Infrastructure (GSI) Policy** and develop an implementation plan that recognizes the climate adaptation benefits of GSI (GSI stores, drains, and cleans rain naturally; systems can be designed or informal; the urban forest acts as GSI). The policy should affirm GSI as the preferred stormwater management tool, and develop strategic pathways for multi-agency implementation including expanded asset management programs, operations and maintenance programs, and funding support.

Adaptation

LAND USE & THE BUILT ENVIRONMENT

Leadership Actions

1. **Evaluate and Prepare for Sea Level Rise Impacts on Shorelines.**

   An increase in sea level rise is anticipated to inundate low-lying areas and increase storm surge resulting in infrastructure and property damage, as well as loss of near shore habitat. While the timing of these impacts is uncertain, we should begin to consider the implications for land use planning and shoreline protection measures. Strategies and regulations are in place now to manage development and maximize the habitat value of shorelines; however, future conditions may require a reevaluation of these strategies as sea levels rise.

   Preparing for climate change will require both local and regional-scale actions given that climate change impacts, and the natural systems and infrastructure affected by climate change, cross jurisdictional boundaries. Preparing for sea level rise (e.g. through shoreline management, built infrastructure solutions, and flood management) can best be managed by working in collaboration with the State, County and neighboring cities to create a coordinated approach that enhances preparedness and increases the cost effectiveness of solutions.

2. **Enhance the Resilience of the Transportation System.**

   Our transportation system is fundamental to the health of the city. It is through this system that we travel to our jobs, school, shops and parks; that goods move to and through the city; and that emergency vehicles respond in times of crisis. The transportation system was built to withstand local weather and climate based on past data for this region. Increased temperatures, storms, and flooding resulting from climate change could result in delays, disruptions, and damage to transportation infrastructure.

LAND USE & THE BUILT ENVIRONMENT

Leadership Actions (continued)

3. **Foster Sustainable Building.**
   Buildings need to meet not only current conditions, but also perform well over time in a range of climate conditions, such as greater temperature extremes. Buildings that use advanced green building standards can be more resilient, relying less on centralized mechanical systems and more on decentralized passive and self-generated heating, cooling and water systems. The vast majority of existing and planned buildings are under private ownership, highlighting the importance of outreach, collaboration, incentives and codes in enhancing the city's resilience.

   The City should consider future climate conditions when designing buildings and identify current or future opportunities to include elements such as on site stormwater management, distributed power generation, and passive solar that will foster the ability of the built environment to function and enhance our resilience under future conditions.

The Bullitt Center, a project of the Bullitt Foundation, aims to be the greenest commercial building in the world. It is designed to meet the ambitious green building standards of the Living Building Challenge. When complete, it will be a useful case study on how to design, build and use a high-performing modern office building in Seattle. (Image: The Miller Hull Partnership)

Adaptation

LAND USE & THE BUILT ENVIRONMENT

Quick Start Actions

1. **Evaluate the impacts of sea level rise on shoreline development and habitat** and consider implications for shoreline management strategies.
2. **Collaborate with regional partners in addressing the impacts of sea level rise: Evaluate the full range of impacts based on best available science. Prepare a worst case scenario response strategy.**
3. **Assess climate change impacts on transportation infrastructure and operations. Identify critical transportation needs** for emergency response, goods and services movement, and community access. **Evaluate risk and sensitivity to impacts** and **adopt strategies** for enhancing the resilience of the system under future conditions, including needed retrofits of current infrastructure and design considerations for future projects.
4. **Pilot an advanced green building standard,** such as the Living Building Challenge, **on a City facility** to understand the feasibility of such an approach on a larger scale, to assess its appropriateness for resilient design, and to promote similar levels of green building in the private market.
5. **Review development codes and incentives,** and identify barriers and potential opportunities, to encourage private development to become more resilient. Build on the High Performance Building Code, which incorporates sustainability elements into the building code effective in 2013.

COMMUNITY PREPAREDNESS

Leadership Actions

1. **Support Public Health.**

   Anticipated climate change impacts to human health and wellbeing include increased heat stress, respiratory diseases, vector-borne diseases, floods, and storms which stress not only our physical health but our mental health as well. Our public health system, nationally and locally, is not adequate to meet current public health needs and will be further stressed under future climate conditions.

   Our most vulnerable populations, including lower income, recent immigrant, older and very young residents, are at greater risk of these health impacts and often have fewer resources to respond. As our population ages and income inequities become even more pronounced, fostering the resilience of our more vulnerable residents and supporting their recovery after extreme events becomes increasingly critical.

2. **Consider Climate Impacts in Emergency Planning.**

   The City coordinates internal resources and partners with other agencies, support organizations, and the community to prepare for, respond to, and recover from disasters. The Seattle Disaster Readiness and Response Plan is the city's primary guiding document for these efforts. Climate change will exacerbate several impacts considered including heat, flooding, storms, and disease. The City should continue to consider the likely impacts of climate change in emergency planning.

3. **Consider Climate Impacts in Food Systems Planning.**

   The crops, livestock, and fisheries that supply our food as well as the global food distribution system could be significantly impacted by changes in temperature, amount of carbon dioxide (CO2), and the frequency and intensity of extreme weather including floods and drought. While the 2012 drought in the US and Europe represents one year of data, such conditions are expected to become more common in the coming decades. Impacts on food supply affect price creating issues of access to affordable healthy food particularly for lower income residents. The City is developing its first food systems plan. The first goal of the plan is that: All Seattle residents should have enough to eat and access to affordable, local, healthy, sustainable, and culturally appropriate food. To meet this goal, the impacts of climate change should be considered.

05 Sector Recommendations

Adaptation

COMMUNITY PREPAREDNESS

Quick Start Actions

1. **Assess the public health impacts of climate change** on residents including the disproportionate impacts on the most vulnerable residents and make support of vulnerable populations a priority in climate adaptation planning and strategy implementation.
2. **Continue to assess climate change impacts and factor projections into City emergency preparedness planning**, including future updates to the Seattle Disaster Readiness and Response Plan.
3. **Consider the impacts of climate change on access to healthy, affordable food** in future updates to the Seattle Food Action Plan.

The Seattle Community Farm, a project of Lettuce Link, a program of Solid Ground, educates, inspires, and increases food security for residents of Southeast Seattle. In September of 2012 the farm had harvested over 6,000 pounds of organic produce, all of which went to the Rainier Valley Food Bank and residents of the Rainier Vista community and wider Rainier Valley neighborhood. (Photo: John Bolivar Photography, used by permission of Solid Ground)

GUIDING PRINCIPLES

1. **Maximize Co-Benefits.** Pursue no/low regrets and "win-win" strategies that address current issues in addition to anticipated climate change impacts.

2. **Use Best Available Science.** Ground the City's adaptation planning in best-available scientific understanding of climate change risks, impacts, vulnerabilities, and adaptation strategies to help ensure that adaptation efforts are effective; build in flexibility to accommodate evolving scientific understanding of climate impacts.

3. **Adaptation Should Be Equitable**. Proactively address disproportionate climate impacts on disadvantaged populations and do not take actions that compromise the ability of future generations to adapt to a changing climate.

4. **Mainstream Adaptation**. Integrate climate adaptation into existing and future City policies, planning, practices, and programs.

5. **Start with Existing Climate-Related Risks.** Climate change is projected to exacerbate many of the existing stresses associated with present-day climate variability and extremes. Strategies that reduce these present-day risks provide a good starting point for reducing long-term climate change risks and maximizing opportunities.

6. **Incorporate Flexibility.** Adaptation policies and infrastructure design should be flexible and incorporate adaptive management strategies so they can be adjusted in response to updated projections, changing risks, and other needs.

7. **Increase Technical Capacity.** Increase the City's technical capacity for adapting to climate change by promoting access to training, decision support tools, and expertise that help staff better understand climate, climate impacts, risks, and adaptation.

BUILDING SUPPORT FOR CLIMATE ACTION

The actions necessary to move Seattle toward a climate-friendly future that is healthy, safe and prosperous require deep and sustained commitment by the community. The connections between climate action and broader community values must be understood and consistently communicated.

OVERARCHING RECOMMENDATIONS

1. Leverage Seattle's history and build the community commitment necessary to support the policies that will help Seattle become a world leader in climate action.

Community Tree Planting in the Magnolia Neighborhood
(Photo: 350.org)

Building Support for Climate Action

FIRST STEPS

Leadership Actions

1. **Understand what is most important to Seattle residents and businesses and how climate policies may align with and support the values expressed by the community.**

   Building support can be challenging because climate change goals are sometimes seen as competing with other community goals, and often times get drowned out by events that seem more immediate. But in fact, Seattle's climate goals are very well aligned with the goals of shared prosperity, social equity, and environmental sustainability. Furthermore, there is a tremendous opportunity to link climate action with a healthy, just and prosperous future for all Seattle residents.

Quick Start Actions

1. **Conduct local message and values testing** to identify what is most important to Seattle residents and businesses, what climate narrative is most compelling, and what communications methods will be most successful.
2. **Develop a compelling climate action narrative that is connected to what people care about.** Use existing networks, organization, and community engagement efforts to communicate the narrative.
3. **Use the narrative consistently and frequently in elected official and City department communications.** Emphasize that our decisions on this issue are among the most important we will make as a community. In other words, addressing this issue is not an extra duty but a core duty which directly aligns with residents' aspirations. Also, make connections between the impacts we are experiencing and climate change.
4. **Build a regional network of organizations and individuals committed to using the same proven narrative and messages when talking about climate action.**

Once these "first steps" are in hand, the City should move ahead in parallel with a series of "second steps" in building support for climate action.

05 Sector Recommendations

Building Support for Climate Action

SECOND STEPS

Leadership Actions

1. **Help people see the future through images that make clear the connections between the impact of our individual decisions and actions on a daily basis and policies that would encourage a more sustainable, healthy lifestyle for Seattle residents in the in the short- and long-term.**

   Seattle's climate protection goals must be achieved over time, as the outcome of many discrete policies and programs that are implemented as individual efforts. The community dialogue over these policies often focuses solely on immediate impacts while the effort's contribution to our long-term climate protection and community goals is lost. In addition, policy discussions can feel abstract and disconnected from people's daily lives leading them to disengage.

2. **Provide opportunities for the community to be involved in policy and program design and implementation.**

   Seattle's residents are a vast resource of bright ideas that could bring fresh thinking to long-standing challenges, help identify unintended consequences of actions, and highlight barriers to implementation.

3. **Provide local examples of on-the-ground implementation of climate actions that illustrate how climate actions – when effectively integrated – work together to further community goals.**

   Thanks to several decades of focus on creating livable communities, Seattle already has many examples of climate strategies in action. Telling these stories through case studies can powerfully demonstrate the tangible outcomes from real world implementation of the Climate Action Plan.

4. **Create an alliance of unusual champions to serve as the new faces of climate change who are committed to helping the City implement the Climate Action Plan and to being early adopters of climate strategies.**

   Widespread support for climate actions should be cultivated through local leaders serving as champions for action. Leaders should represent a broad cross section of interests and be recognizable to the public and role models to youth.

5. **Significantly help enhance community organization's climate action efforts through modest investments in training, funding and project support.**

   Support for bold actions on the community scale often is built by encouraging action at the individual level. Community organizations are trusted messengers for calls to action, and have the energy and desire to work with their networks to help residents and businesses reduce their impact on the climate.

SECOND STEPS

Quick Start Actions

1. **Develop images, info-graphics, and videos** to illustrate the outcomes of implementing the Climate Action Plan and the alternative potential future if we do not move forward with the recommendations.
2. **Connect climate change to projected local impacts that people relate well to** such as the potential impact of rising seas on Seafair activities, declining snowpack impact on skiing in December, storm water quality/ocean acidification impact on Salmon and job/economic loss impact of this etc.
3. **Explore how new media strategies, such as Facebook, Twitter, and video game technology can tell the compelling story of climate action.**
4. **Use crowd-sourcing tools and other emerging technologies** to provide opportunities for the general public to participate in designing climate policies and actions.
5. **Host a bright ideas contest** to tap into the community's creativity to solve a pressing policy or program design challenge.
6. **Partner with higher education institutions** to provide opportunities for students and faculty to apply their knowledge to policy, planning, and technical challenges.
7. **Develop neighborhood profile case studies** detailing the on-the-ground impact of climate action policies, programs and investments in specific neighborhoods.
8. **Develop "strategies in action" profiles** that highlight the outcomes of individual climate action strategies, such as the City's parking demand management and energy benchmarking programs.
9. **Activate a network of leaders** from a wide range of backgrounds (artists, athletes, teachers, chefs, writers, entertainers, business leaders etc.) and communities to advise and assist the City in implementing the Climate Action Plan, make climate action commitments, and serve as allies in the community.

Building Support for Climate Action

SECOND STEPS

Quick Start Actions (continued)

10. **Identify new and unexpected messengers,** including youth, to spread the word about the benefits of climate action.
11. Create an ongoing program to **support community-initiated climate action projects** (e.g. neighborhood barter fairs, programs that support new bicycle riders, etc).
12. Work with an existing **school-focused community organization** (e.g. Washington Green Schools) on a project that increases student engagement in climate action.
13. Create or build on an existing **social media tool** to provide a venue for people and organizations to share the actions they have taken and offer assistance to others.
14. Create mechanism to **provide feedback** on the impact of collective actions to reinforce the value of individual efforts.

Seattleites spell out "350" as part of a 350.org Community Day of Action at Seattle's South Lake Union Park, 2011
(Photo: Elise Koncsek for 350.org)

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