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WORKING TOGETHER TO SUPPORT TRANSPORTATION EFFICIENT COMMUNITIES

Washington State Department of Commerce | Washington State Department of Ecology | Washington State Department of Health | Washington State Department of Transportation

WHAT IS A TRANSPORTATION EFFICIENT COMMUNITY?

Transportation efficient communities support health, prosperous economies, energy conservation and a sustainable environment by requiring less driving to meet daily needs.

How can cities and counties plan for climate resiliency?

Across Washington state, communities – large and small, urban and rural – are on the front-lines of climate change. There is already increased damage to Washington's communities from extreme storms, drought, fire, floods, and sea-level rise. Communities and the infrastructure they depend on need to be climate-ready. Each long-term decision and investment in climate resiliency can help Washington's communities avoid disaster, protect personal and business assets, and foster innovation.

What is climate resiliency?

Climate resiliency means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.

Climate resiliency focuses on sustainable land management practices, e.g., crop rotation, green space, solar and wind energy to minimize vulnerability and to maximize the ecosystem's functionality.

How is climate resiliency different from climate change mitigation?

Climate change mitigation refers to efforts to reduce or prevent emission of greenhouse gases. Mitigation can mean using new technologies and renewable energies, making older equipment more energy efficient, or changing management practices or consumer behavior. Efforts underway around the world range from new fuel standards and limiting coal power generation to investing in high-tech subway systems. Local mitigation efforts include energy conservation and increased transit, bike, and pedestrian improvements.

KEY TAKEAWAYS

Climate Resiliency:

- Limits the damage and reduces the costs of climate-related impacts that are expected to grow in number and intensity in the decades to come.
- Protects people and communities most vulnerable to climate impacts by increasing community capacity to monitor, detect, plan, and respond to emerging threats and climate-related emergencies.
- Proactively reduces risks to infrastructure, avoids climate risks when siting new infrastructure and planning for growth, and enhances capacity to prepare for more frequent and severe flooding, rising sea levels, wildfires, and changes in energy supply and demand.
- Helps communities prepare for rising sea levels and storm surge and protect people and property.
- Supports efforts to identify existing and new funding mechanisms to support risk reduction at the local level.

Mitigation also includes investing in clean energy (wind, solar, and geothermal) and improving the energy efficiency of businesses and homes. Businesses like Apple, AT&T, Walmart, Dow Chemical, Procter & Gamble, Google, General Motors, and Microsoft are looking to renewable energy sources like wind, solar, and geothermal to reduce greenhouse gas emissions.

Climate resiliency is a fundamentally different challenge from climate mitigation. In contrast to mitigation, many actions to build climate resiliency occur within local markets where there are private solutions that protect people and assets from climate risks.

The way that private businesses and governments respond to climate risks is part of the process by which people build climate resiliency. Local agencies, public utilities, private businesses, and residents address extreme heat/cold, flooding, and power outages. Climate resiliency actions have increasing benefits today, that help improve an area's resiliency to climate extremes in the longer-term.

Many private and public investments today contribute to climate readiness. For example, insulating buildings against extreme heat, installing back-up generators, and controlling stormwater.

What should the priorities be for climate resiliency?

Two major areas of focus for climate resiliency include:

- Land use planning:
  - Locating properties, infrastructure, and green spaces strategically so that the causes and consequences of climate change are minimized.
- Natural resources:
  - Managing natural resources by using water more efficiently.
  - Setting-up ecological networks and habitat bridges so species can adapt and move.
  - Making space for green infrastructure that protects, restores, or mimics the natural water cycle along rivers and coastlines.

What types of actions should be taken for natural environmental resiliency?

Actions that can be taken now to improve environmental resiliency include:

- Adapting to key water risks, e.g., low water flows and quality.
- Adapting to key biodiversity risks that increase resiliency of landscapes and habitats.
- Adapting to key coastal and marine risks by improving the integration between marine and land management approaches to adaptation.
- Engaging vulnerable populations in community wildfire or flooding evacuation plans.

What are communities and businesses doing for climate resiliency?

Every community and business faces some risk of climate-related disruptions to their operations. Anticipating potential problems and preparing to prevent or respond to them can make it easier to bounce back from disruptions. For example, the Swinomish Tribe was recognized for "addressing climate risks by conducting vulnerability assessments, developing adaptation plans, and implementing on-the-ground adaptation for natural and cultural resources.

Though there is no single approach to climate resiliency, best practice actions include the following:

1. Conducting multi-sector vulnerability assessments to understand risks; determining areas of highest risk and directing new growth away from them; and developing community adaptation plans.
2. Preparing climate change integrated hazard management plans and emergency response plans with neighboring cities, counties, and agencies. These plans should:
   a. Increase local government capacity to prepare for and respond to emergencies.
   b. Ensure people of all cultures, races, and income levels are protected and have a safe retreat in case of emergency (including vulnerable populations).
   c. Outline actions like preparing public safety buildings (police, fire, schools, hospitals) for emergency operations, including retrofits as needed.

3. Maximizing opportunities to take actions that have dual-benefits–increasing community resiliency and reducing greenhouse gas emissions (e.g. urban forestry).
4. Developing short-, mid-, and long-term action plans to reduce impacts of climate change.

Addressing the uncertainties created by a changing climate need not be difficult or expensive to businesses, local governments, and communities, as there are opportunities to increase resiliency through low-risk and low-cost measures. There are already examples of businesses, local governments, and communities embracing such opportunities:

- Local governments are investing in rain gardens and lower cost stormwater flow control techniques.
- Financial leaders are developing innovative climate-insurance products for communities at increased risk of weather-related natural disasters.
- Public agencies are using more resilient construction materials and design standards.

What extreme weather risks affect the future of Washington state due to climate change?

Climate impacts to Washington state include risks from the following events:

- Hotter and drier landscapes have caused nearly a fourfold increase in large wildfires, leading to respiratory illnesses and other harm from fire-related air pollution.
- Increased insect outbreaks and changing species composition present additional challenges for forest products industries.
- Declining snow pack, by as much as 40 percent, in the Cascades over the next 30 years.
- Decreasing summer stream flows reduce hydroelectric generation capacity, which currently accounts for 70 percent of the region's electricity supply.
- One third of current streams may be too warm to support salmon by the end of the century.
- Sea-level rise will increase coastal erosion, thereby increasing the vulnerability of property, tourism, and livelihoods along our coasts.

Tools and Resources:

General

- Washington Tracking Network, A Source for Environmental Public Health Data
- Access Water Utility Climate Risks with the Climate Resilience Evaluation and Awareness Tool
- New Climate Resilience Toolkit Helps Communities Prepare for a Changing World
- President Obama's Climate Action Plan
- Department of Ecology Climate Change in Washington
- WSDOT Climate Change – Adapting and Preparing
- UW Together we will Increase Climate Resilience
- Why is Washington Department of Fish & Wildlife Concerned about Climate Change?
- Climate Migrants and Refugees Project

Performance Indicators

- Sizing Up Climate Resilience in the Bay Area

Maps and Data

- WSDOT Community Planning Portal – Climate Impact Vulnerability
- Creating a Climate-Resilient Planet with Maps, Apps, and Data
- Open Data Resources for Climate Change
- UW Climate Impacts Group
- UW State of Knowledge Report - Climate Change in Puget Sound

Identifying and Analyzing Strategies

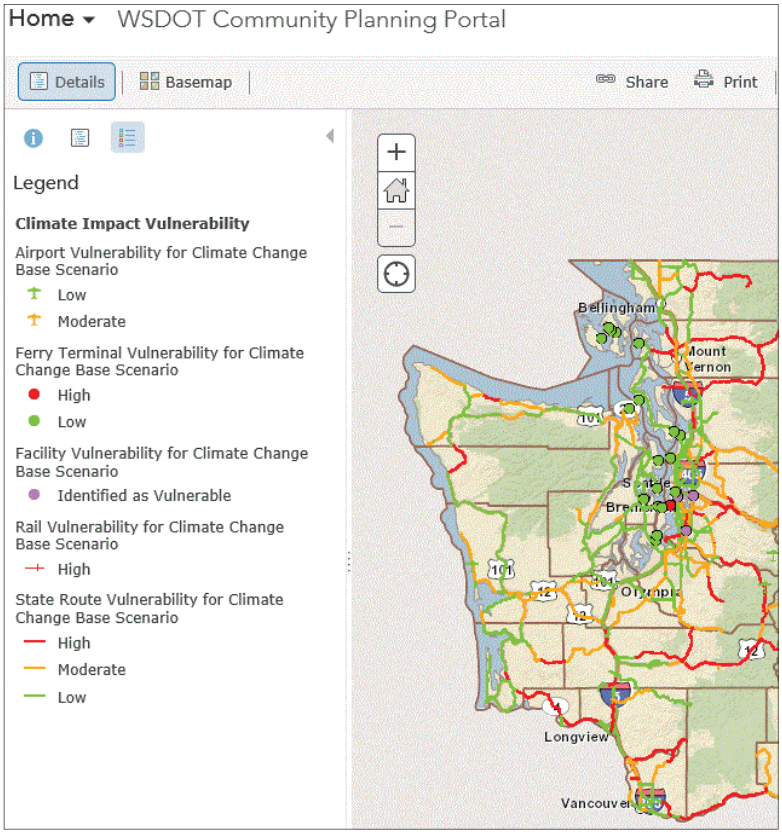
- FHWA Climate Change & Extreme Weather Vulnerability Assessment Framework
- Swinomish Tribe and Climate Change
- WSDOT Guidance for NEPA and SEPA Project-Level Climate Change Evaluations
- Climate Change and your Insurance
- Sound Transit Climate Risk Reduction Project
- City of Olympia Sea-Level Rise Assessment

How do governments, people, and businesses move toward climate resiliency?

Increased risk of climate-related threats should be considered in public and private investments, land use decisions, and asset management plans. Climate resiliency means looking at the complete interdisciplinary picture including policies, governance, and management structures on a national, state, and community level.

Though climate change is a long-term problem, substantial progress toward climate resiliency can happen through a series of steady and responsible actions by the state, local communities, the private sector, and individuals. This includes developing and implementing climate resiliency plans and partnerships with others.

How can the WSDOT Community Planning Portal help assess climate vulnerabilities?



Washington state agencies are committed to working with communities on their climate vulnerabilities. A tool available for this effort is the WSDOT Community Planning Portal. Using the Portal, local planners and the general public can see where identified climate change threats on the state transportation network, according to WSDOT's 2011 statewide climate vulnerability assessment.

WSDOT rates all state highways, ferry terminals, state-managed railroads and airports. WSDOT found that highly vulnerable areas are generally in the mountains, along rivers that have melting glaciers at their headwaters, in low lying areas/floodplains, and near sea level.

The Portal gives transportation planning organizations and local agencies access to these ratings. Users can call WSDOT for more information about transportation assets in their communities. This information can help kick-start similar assessments of local roads or other public facilities.

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