

Washington State & Rising Tides



Shoreline Planners Meeting – April 2014

Bobbak Talebi
Department of Ecology

Brief History

Executive Order 07-02

Basis for creating the Climate Advisory Team to recommend ways to reduce greenhouse gas emissions. It also directed the state to assess steps required to prepare for the impacts of climate change

Executive Order 09-05

Prepare for rising sea levels and the risk to water supplies caused by climate impacts

West Coast Governors Alliance on Ocean Health 2006

Vision for the health of our West Coast coastal and ocean resources

Pacific Coast Action Plan on Climate and Energy 2013

Meaningful linkage between states and provinces across North America to reduce greenhouse gas emissions: California, Oregon, Washington, British Columbia

President's Executive Order Climate Preparedness 2013

Governor Inslee a part of the Task Force on Climate Preparedness and Resilience

Brief History



Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments 2007

University of Washington Climate Impacts Group

Sea Level Rise in the Coastal Waters of Washington 2008

Mote, Petersen, Reeder, Shipman, and Whitely Binder

The Washington Climate Change Impacts Assessment 2009

UW Climate Impacts Group

The Response of the Salish Sea to Rising Sea Level: A Geomorphic Perspective 2009

Shipman; Washington State Department of Ecology

Sea Level Rise on the Coasts of California, Oregon, and Washington 2012

National Academy of Sciences' National Research Council

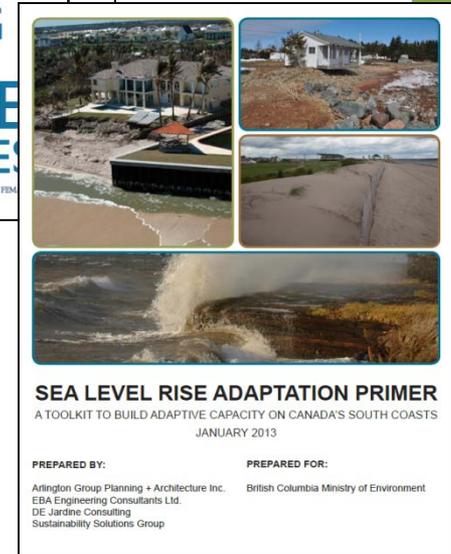
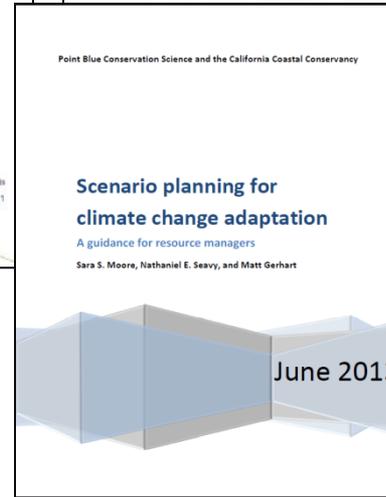
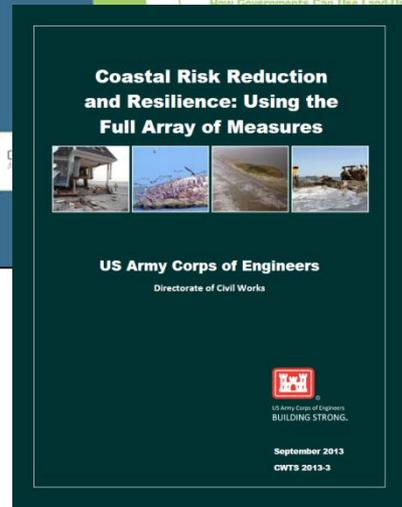
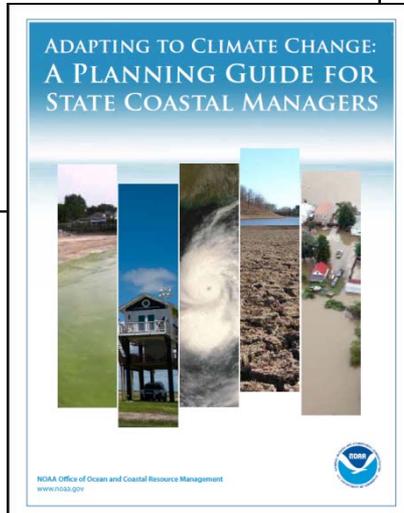
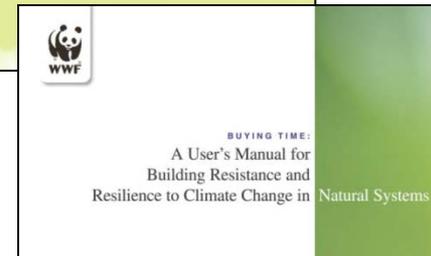
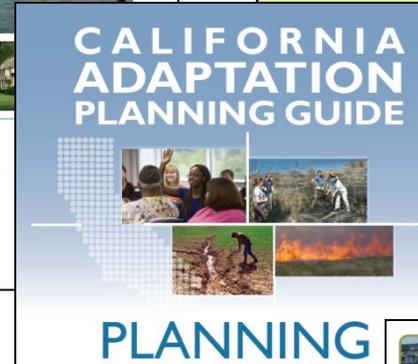
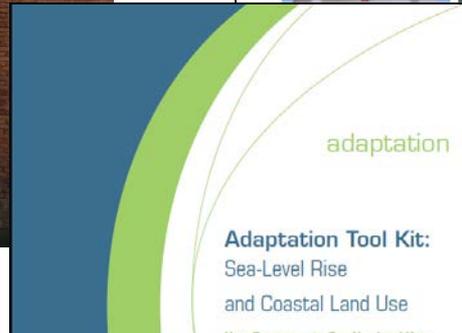
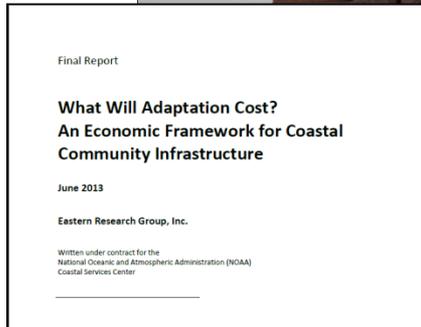
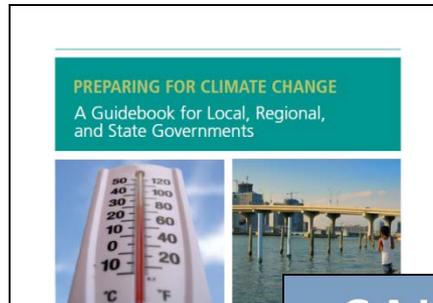
Preparing for a Changing Climate: Washington State's Integrated Climate Response Strategy 2012

Washington State Department of Ecology

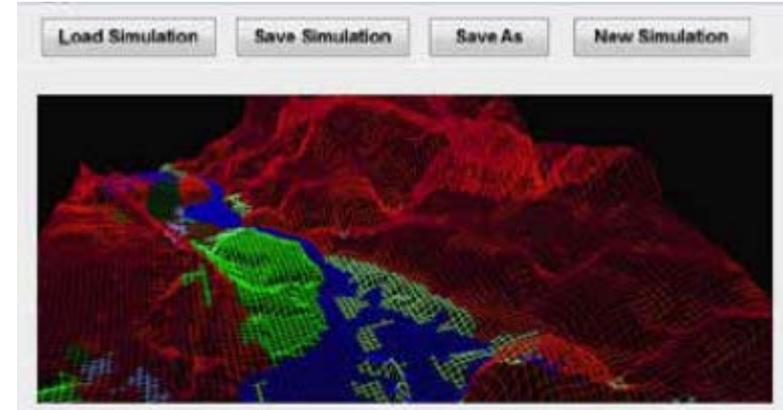
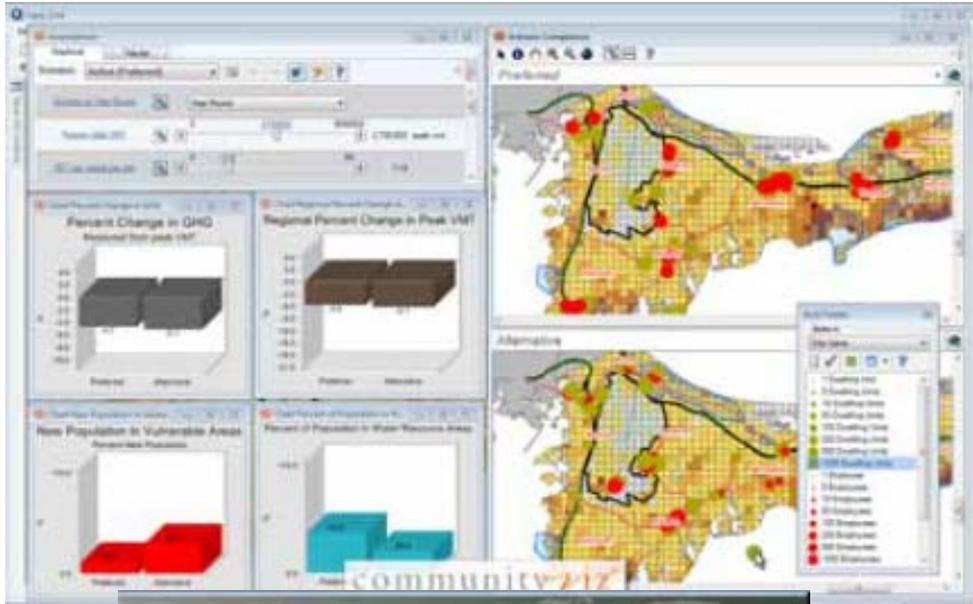
Climate Change Impacts and Adaptation in Washington State: State of Knowledge Report 2014

University of Washington Climate Impacts Group

What You Face: Guidebooks



What You Face: Analysis Tools



Sea Level Rise and Coastal Flooding Impacts



Legend

- Water Depth
- Low-lying Areas
- Area Not Mapped
- Visualization Location

Overview

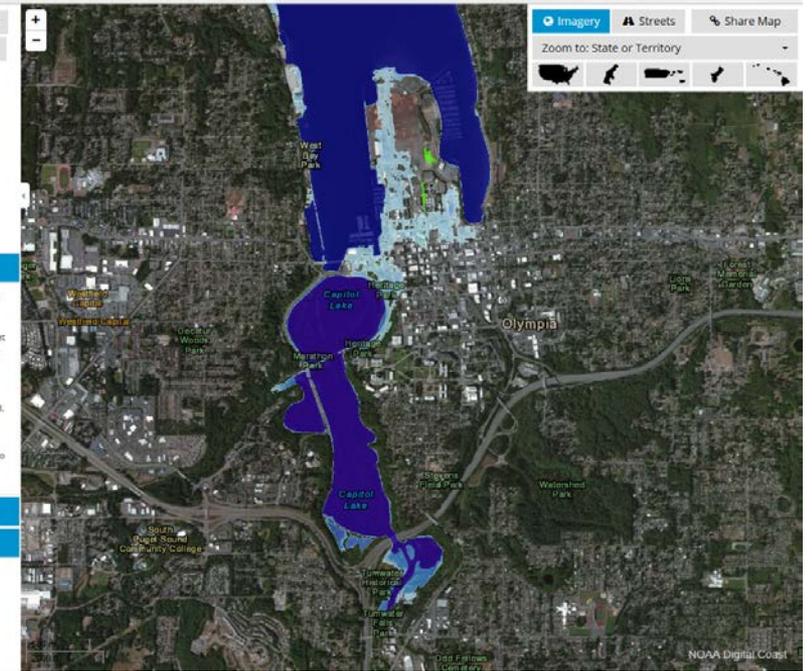
Use the slider bar above to see how various levels of sea level rise will impact this area.

Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth).

Low-lying areas, displayed in green, are hydrologically "unconnected" areas that may flood. They are determined solely by how well the elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Understanding The Map

Additional Information



What You Face: Planning Tools

Comprehensive Plans

Critical Areas Ordinance

Flood Management Plan

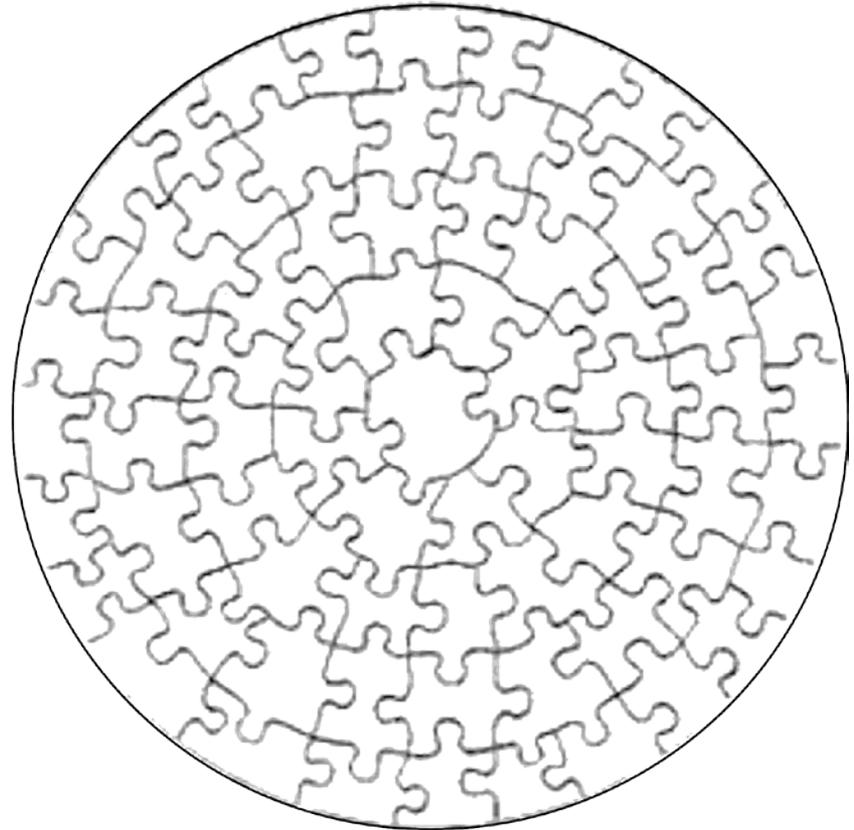
Hazard Mitigation Plan

Climate Action Plan

Shoreline Master Program

Zoning Codes

Tax Incentive Programs



Core Questions

How vulnerable are our communities and systems to climate change?

What can we do to limit or reduce vulnerability and make our communities and systems more resilient?



SMP State Guidance

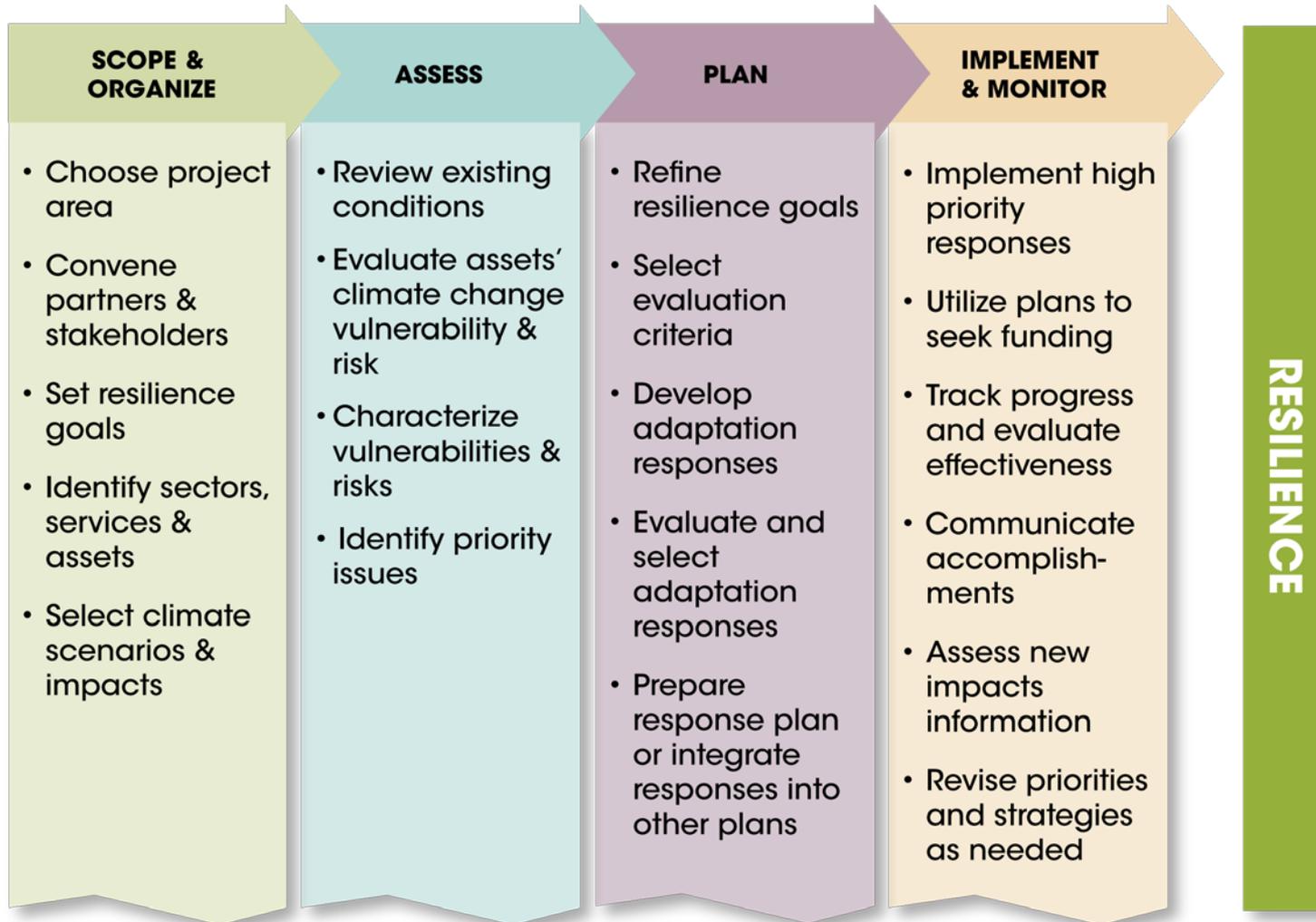
No explicit references to climate change or sea level rise.

The most current, accurate and complete scientific and technical information available (WAC 173-26-201(2)(a))

Consider all plans, studies, surveys, inventories, and systems of classification made or being made by federal, state, regional, or local agencies, by private individuals, or by organizations dealing with pertinent shorelines of the state RCW 90.58.100 (1)(c):



SLR Adaptation Planning Process



Scope &
Organize

Assess

Plan

Implement &
Monitor

Resilience

Public Participation Plan

POTENTIAL PARTICIPANTS IN A CLIMATE CHANGE PREPAREDNESS TEAM

Planning Areas

Agriculture	Planning and zoning
Economic development	Public health
Emergency management	Stormwater management
Fire	Transportation
Flood control	Wastewater treatment
Natural resources / environmental protection	Water supply
Parks and recreation	Coastal zone management and port and harbor management
Forestry and forest resources	

Other Potential Team Members

Business community	Non-profit organizations
Consultants	Science advisor(s)
Native American Tribes	State and federal agencies
Neighboring governments	Metropolitan planning organizations

Characterizing the Planning Questions

The level of assessment and planning depends on the scale, specificity, and measurability of the questions you are trying to answer

Considerations

1. What issues (e.g., at risk human populations, critical habitats, critical species) do you need to address?
2. Are your questions broad in scope or fairly specific?
3. What geographic scale(s) are you concerned with?
4. What temporal scale(s) are you concerned with?
5. Are your questions primarily at a “planning scale” (e.g., need to indentify general areas that may be impacted, are suitable for activities, etc.) or do you need results that help determine optimal actions at specific sites?

Scope & Organize

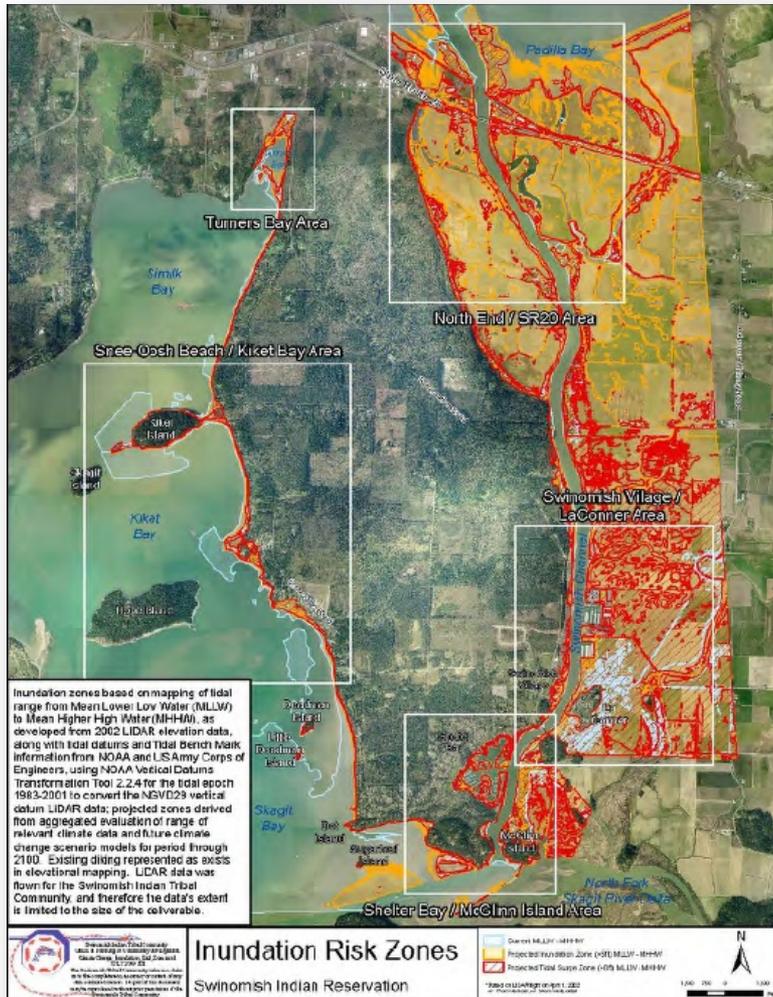
Assess

Plan

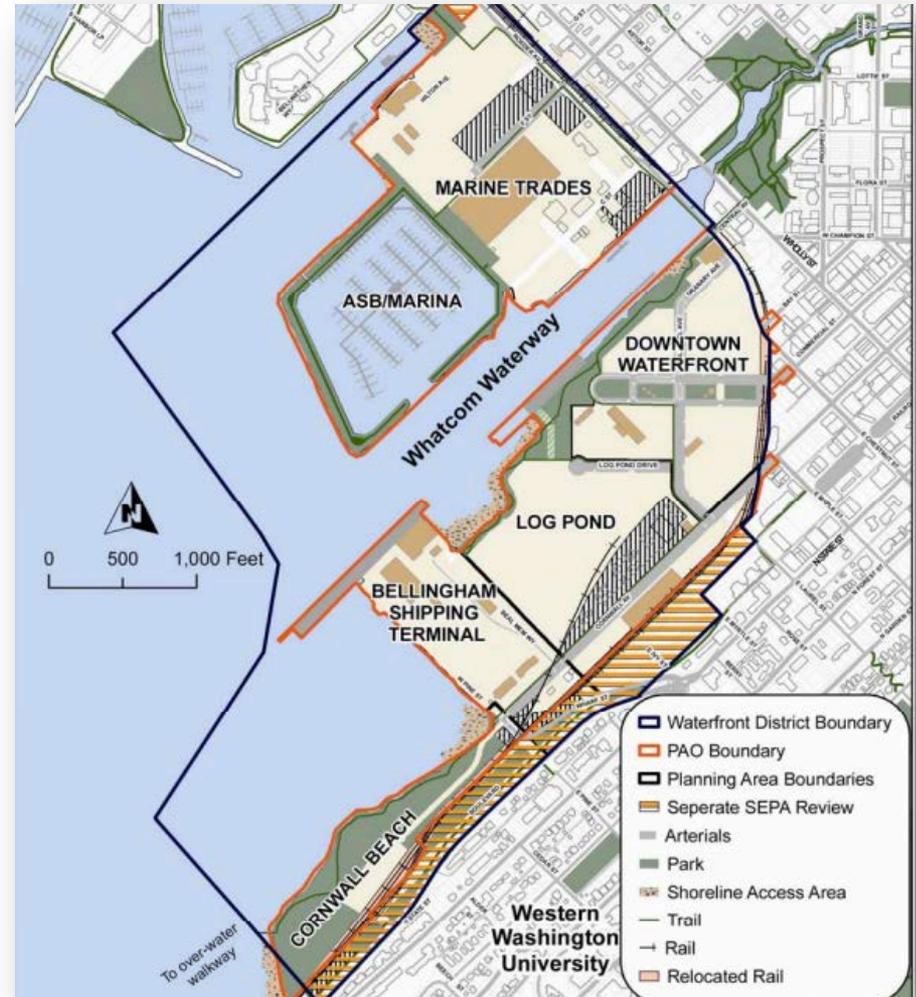
Implement & Monitor

Resilience

Planning Area & Information Needs

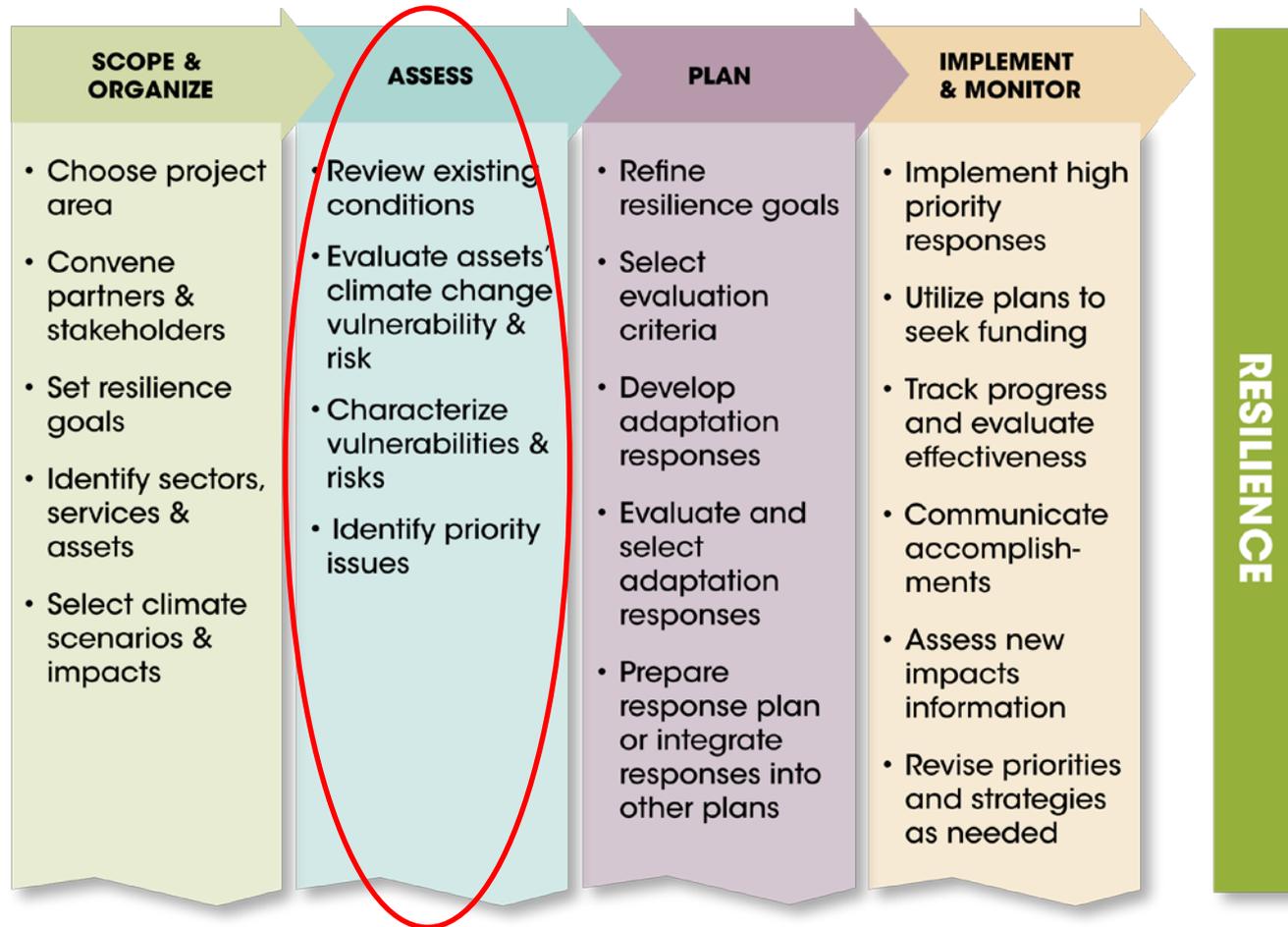


Swinomish Indian Reservation



Port of Bellingham

SLR Adaptation Planning Process



Scope & Organize

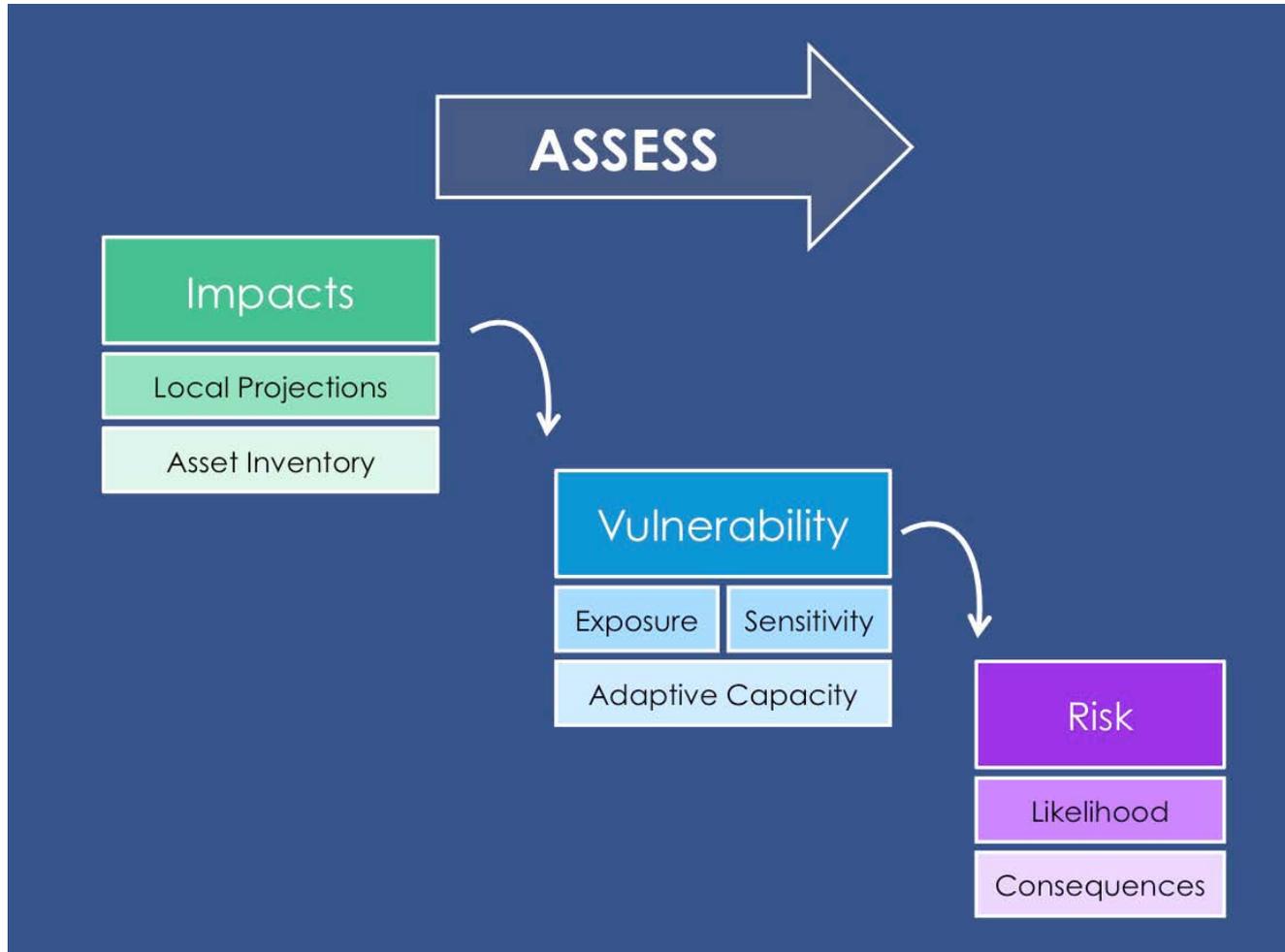
Assess

Plan

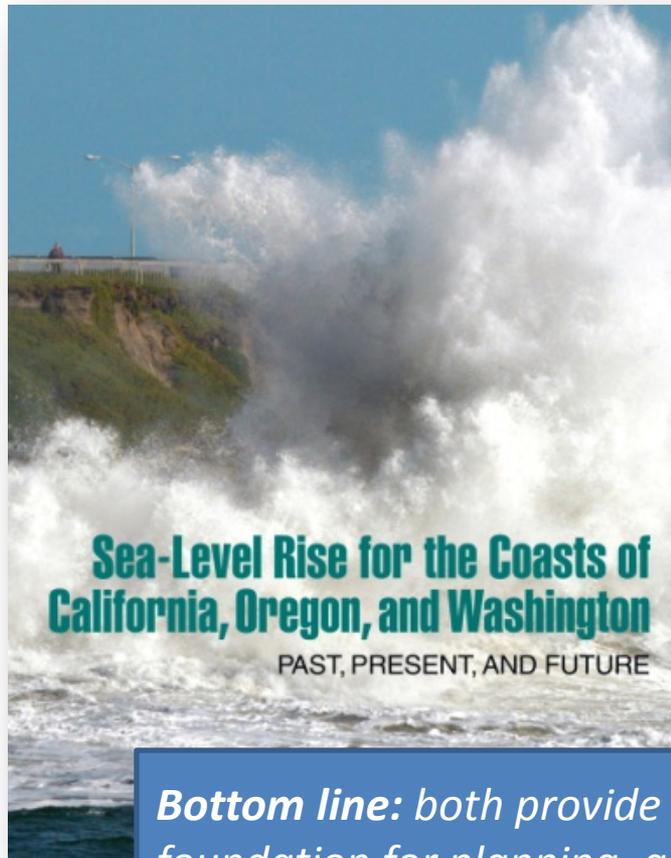
Implement & Monitor

Resilience

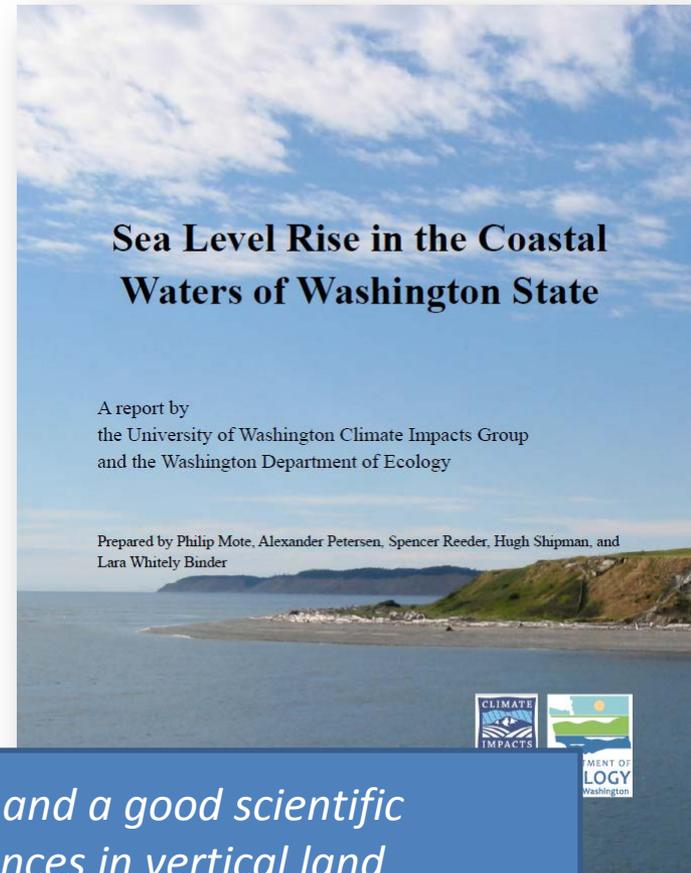
Vulnerability



SLR Projections



VS.



Bottom line: both provide similar ranges and a good scientific foundation for planning, although differences in vertical land movement may be important in other locations.

Local Projections: Olympia

Established areas of flooding and flooding depths corresponding to 10-, 50-, 100-, and 500-year return periods for increments of sea level rise up to 50 inches.

City of Olympia: Land use categories and essential transportation corridors with inundation limits of 100-year total water level, existing sea level



Scope & Organize

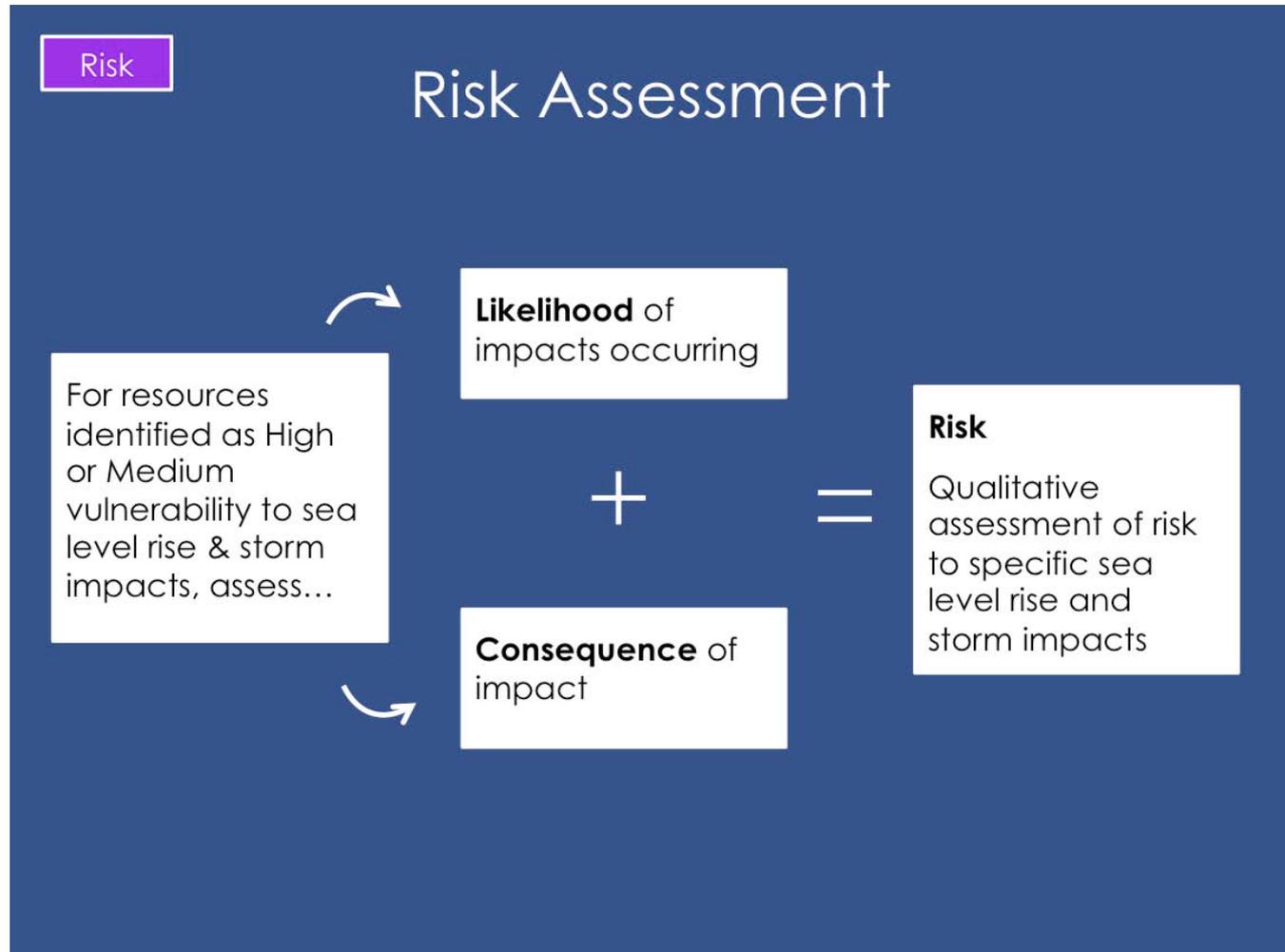
Assess

Plan

Implement & Monitor

Resilience

Risk Assessment



Scope &
Organize

Assess

Plan

Implement &
Monitor

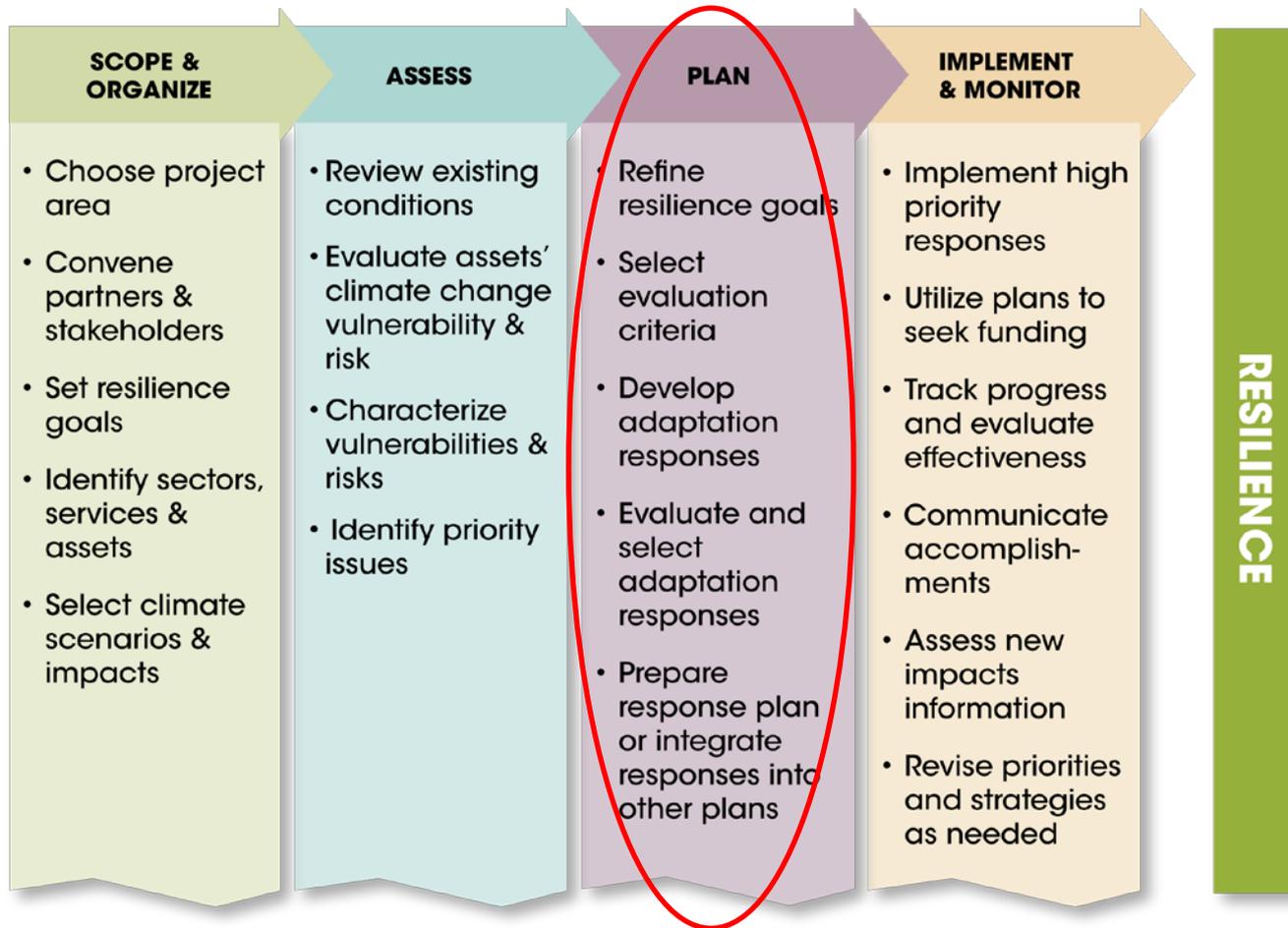
Resilience

Vulnerability and Risk Analysis

Why do these types of Assessments?

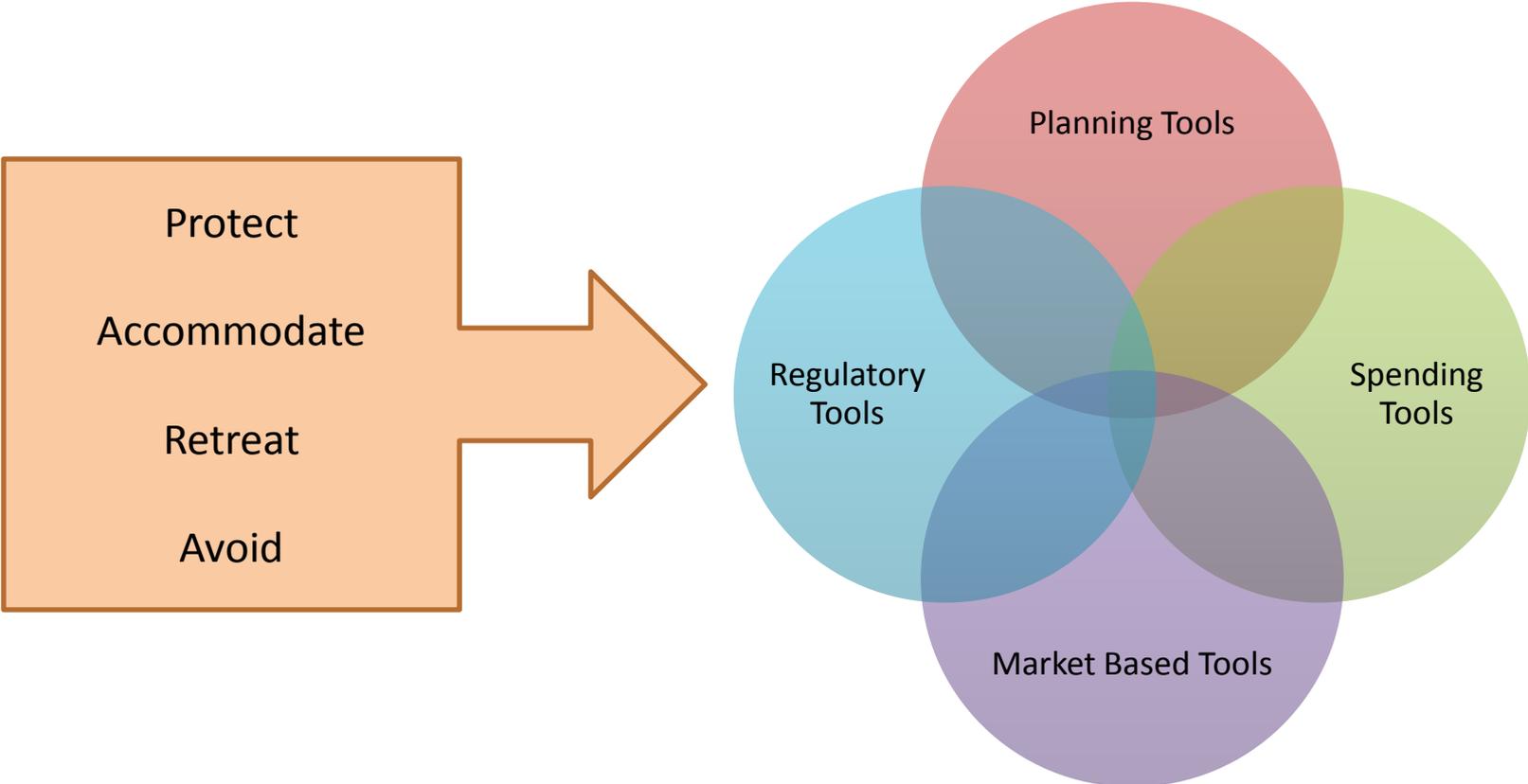
	Low Vulnerability	High Vulnerability
High Risk	May be <i>priority planning areas</i>	Should be <i>priority planning areas</i>
Low Risk	Are unlikely to be <i>priority planning areas</i>	May be <i>priority planning areas</i>

SLR Adaptation Planning Process



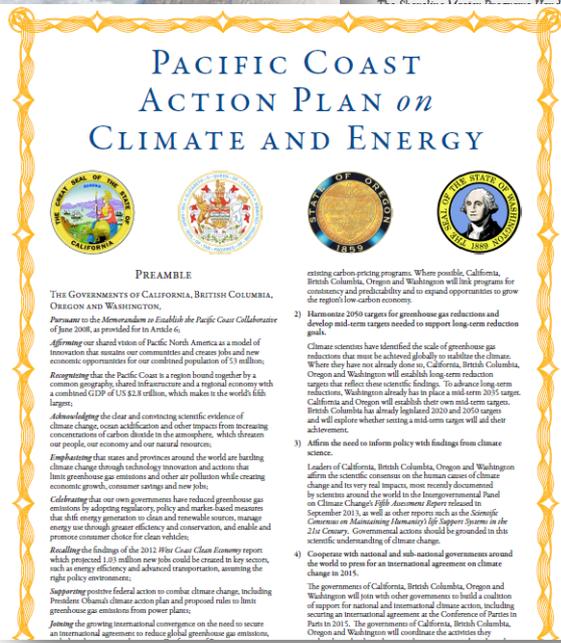
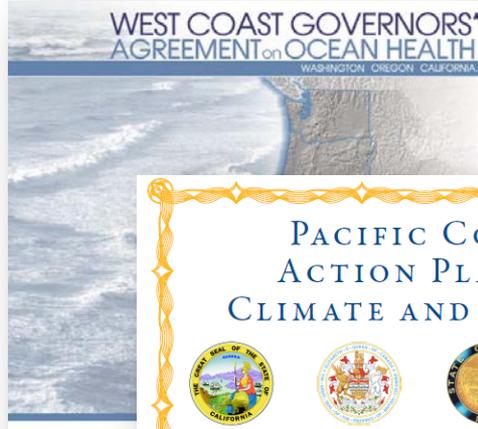
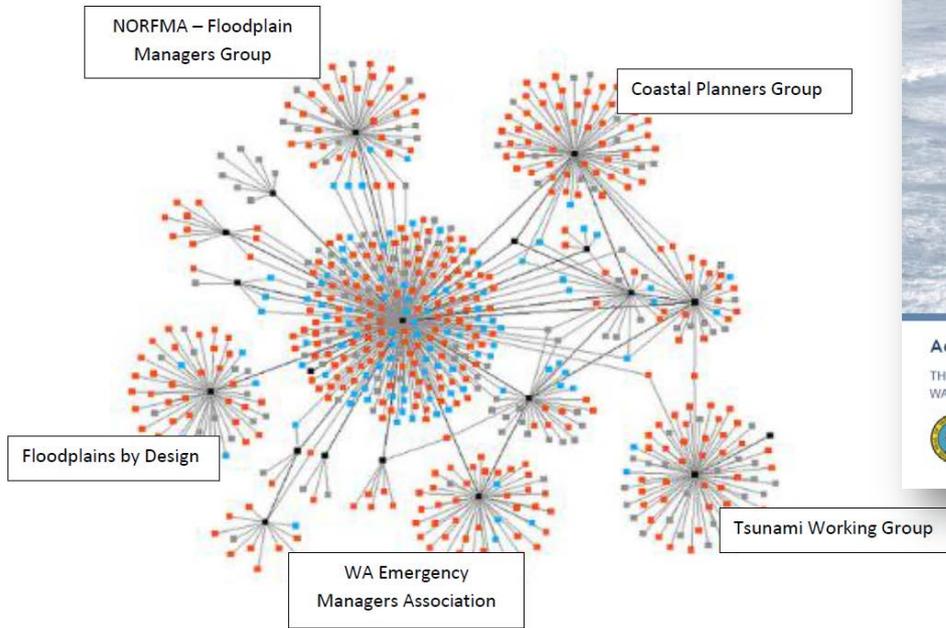


Preparedness Strategies to Implementation



SEA Program Assistance

Coastal Hazard Resilience Network



The *Shoreline Master Programs Handbook* (SMP Handbook or Handbook) is a guide for local shoreline Master Programs (SMP) in Washington State setting the requirements of the Shoreline Management Act (SMA) and the Shoreline Management Act Program Guidelines (WAC 173-26, Part III) and Parts I and II. The Handbook also provides information on making decisions on SMP environment designations, materials of Ecology for updates of information available to the public, and ecology and our future. The Handbook also provides information on how to acquire and upland resources that are available to the Ecology Department and section 173-26-010. The Handbook also provides information on SMP sections are available to the public.

Figure 1-1: Kayak Point in Snohomish County, the Kirkland waterfront, and the Columbia River (shown at Grand Coulee Dam), are all shorelines of the state under the Shoreline Management Act.



Questions?



Shipman, November 2011

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