

# Preparing for Climate Change in the Lower Willamette Valley

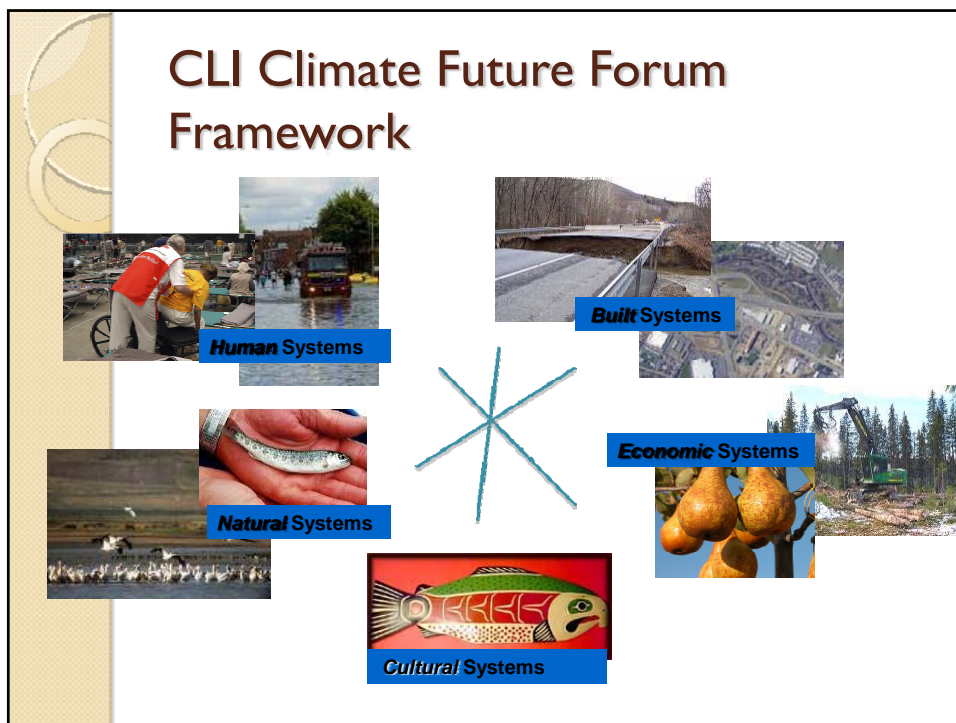
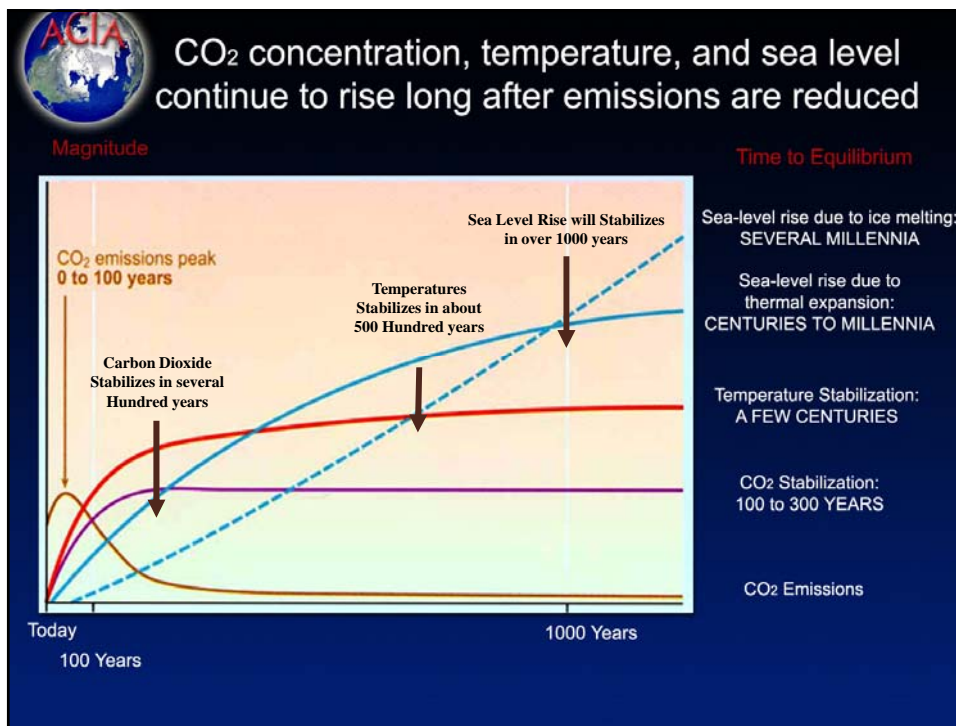
Preview of Findings & Recommendations from the 2010 Lower Willamette Climate Future Forums

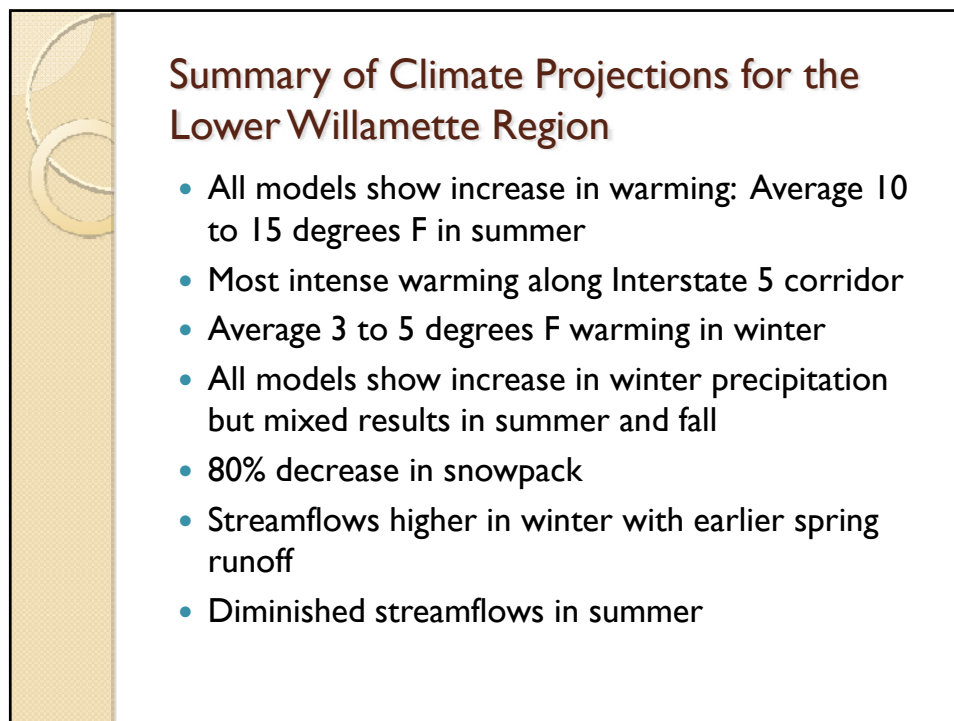
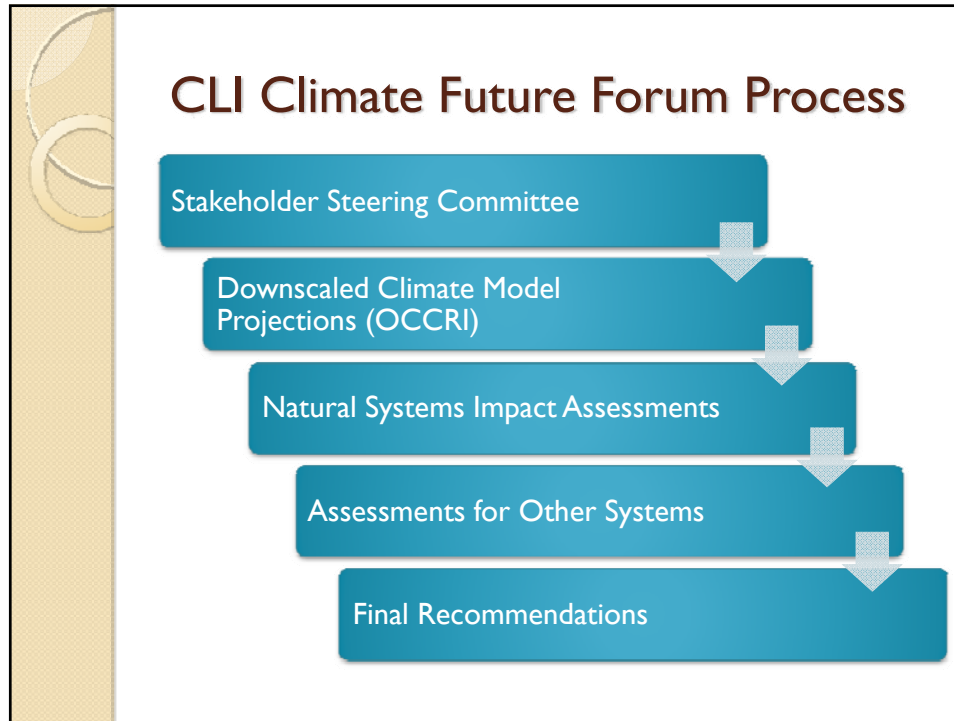
Steve Adams  
Managing Director | Climate Leadership Initiative



## What is Adaptation?

- **Adaptation** - Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. (IPCC 2007)
- Various types of adaptation can be distinguished, including
  - anticipatory and reactive adaptation
  - private and public adaptation
  - autonomous and planned adaptation





## Results of the CLI Lower Willamette Workshops (2010)

- Likely impacts for terrestrial and aquatic species and ecosystems
- Likely impacts to community systems (human, built, economic, cultural)
- New opportunities
- New challenges
- Recommendations for resilience

## Consequences for Natural Systems



### Aquatic Areas & Species:

Reproduction and survival of many native fish and amphibians will be threatened  
Compromised water quality



### Terrestrial Areas & Species:

Diseases, insect pests, invasive species, reduced suitable habitat



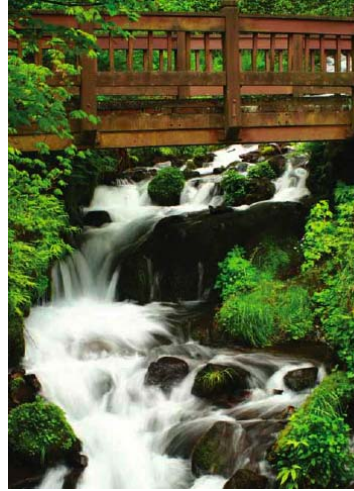
Loss of ecosystem processes



Low mobility, cold water species at higher risk  
Warm and generalist species will thrive

## Natural Systems Recommendations

- Protect floodplains and cool water
- Increase complexity of streams
- Protect genetic diversity of fish
- Restore natural fire regime
- Use landscape scale approach to conservation
- Expand carbon sequestration efforts
- Protect high quality habitat, restore where possible (urban and wild)
- Revise species management (TES, Invasives)



## Consequences for Community Systems

- Loss of viability in **sensitive crops**
- Increase in **energy prices**
- Increase costs of **public water** supply treatment
- Threatened **food security** from transportation disruptions
- Floods and fires pose risk to **buildings, transportation systems, public infrastructure**
- **Public health** at risk (ground-level ozone, allergens, asthma, respiratory diseases, vector and water-borne disease, heat illness)
- Diminished **water supplies and hydroelectric generation**

## Community Systems Recommendations

- Reduce the building of homes in fire prone and flood prone areas
- Develop and update programs to monitor and respond to disease outbreaks, heat illness, and respiratory diseases
- Increase water storage, conservation and protect water and sewer infrastructure
- Incorporate crops more tolerant to changing climate
- Encourage a local food economy
- Provide incentives for culturally important species recovery
- Increase public transportation and improve resiliency of transportation infrastructure
- Promote compact housing, protect the UGB
- Plan for Climate Refugees

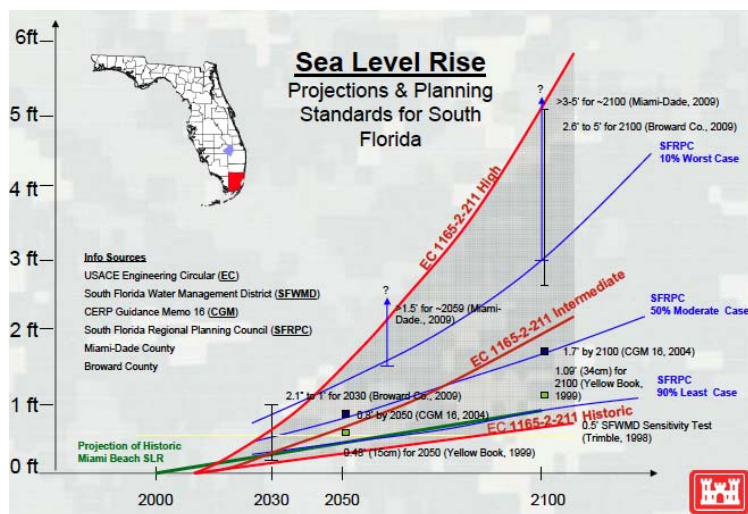
## Critical Management Issues

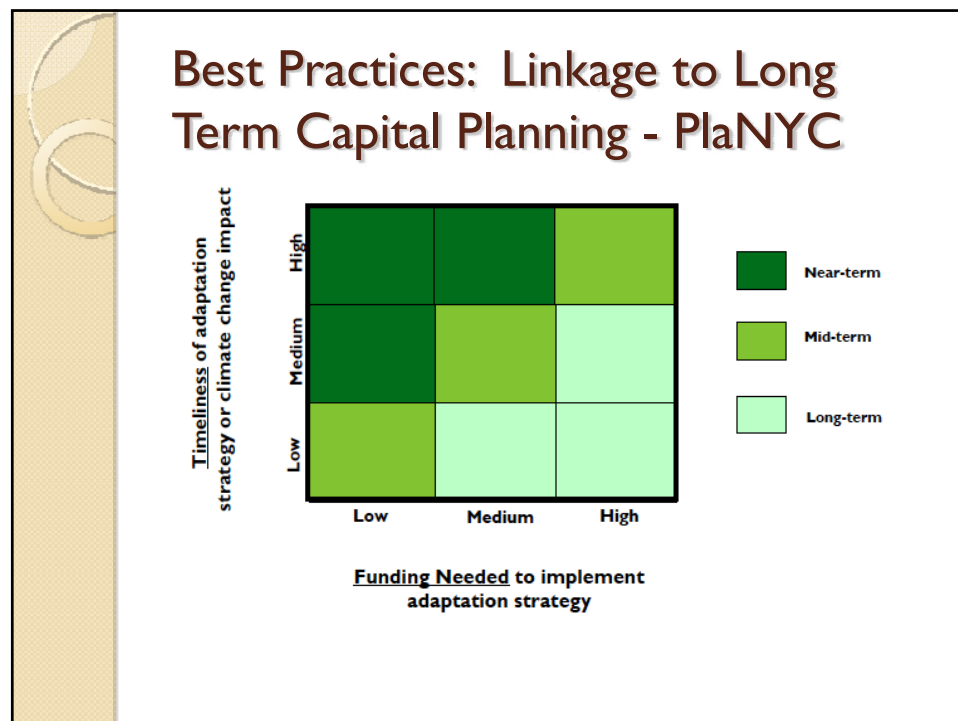
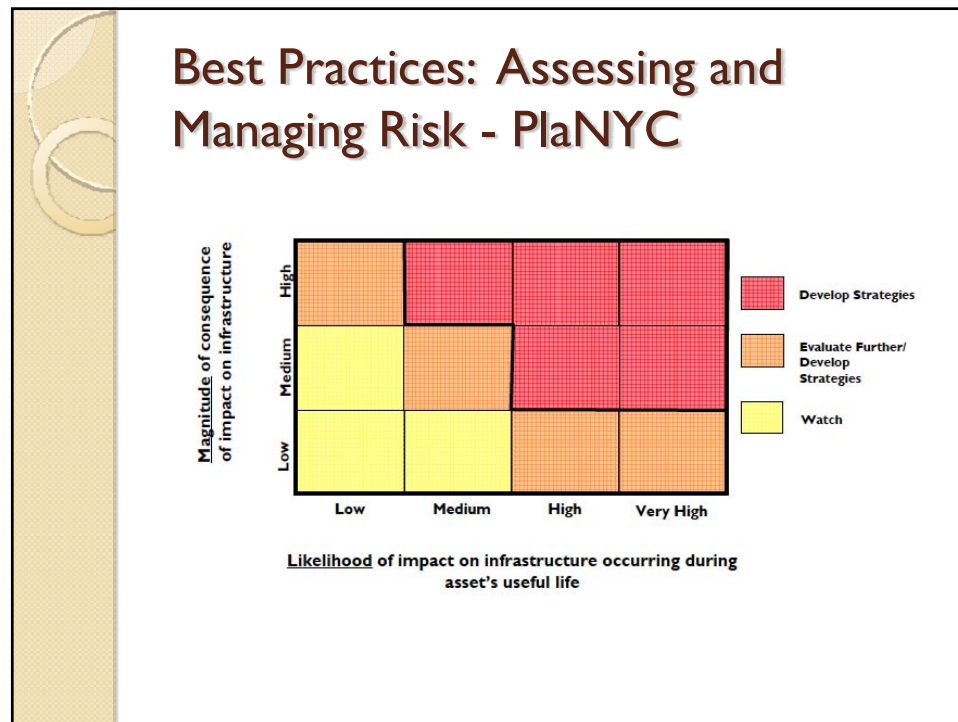
- Whole systems assessment and planning  
– including integrated climate planning
- Decision-making under uncertainty
- Risk management
- Intergovernmental and stakeholder coordination

## Best Practices: Integrated Climate Planning - California

Complementary and Conflicting Adaptation and Mitigation Actions			
Favorable Actions		Unfavorable Actions	
<b>Favorable for Adaptation and Mitigation Efforts</b> <ul style="list-style-type: none"> <li>Energy Demand Management</li> <li>Energy Efficient Buildings</li> <li>Water Conservation</li> <li>Biodiversity-Oriented Forestry</li> <li>"Smart Growth"</li> <li>Development in Cooler Regions</li> </ul>	<b>Favorable for Mitigation, but Unfavorable for Adaptation Efforts</b> <ul style="list-style-type: none"> <li>Forestry with Non-Native Species</li> <li>Urban Forestry (shade trees) with High Water Demand</li> <li>Some Biofuels Production</li> </ul>	<b>Favorable for Adaptation, but Unfavorable for Mitigation Efforts</b> <ul style="list-style-type: none"> <li>Meeting Peak Energy Demand with Fossil Fuels</li> <li>Wastewater Recycling and Desalination</li> <li>Groundwater Banking</li> <li>Increased Air Conditioner Use</li> <li>Use of Drainage Pumps in Low Lying Areas</li> </ul>	<b>Unfavorable for Adaptation and Mitigation Efforts</b> <ul style="list-style-type: none"> <li>Development in Floodplains</li> <li>Traditional "Sprawl" Development</li> <li>Development in Hotter Regions</li> </ul>
Source: Bedworth and Hanak (2008) - Reprinted with Permission by Authors			

## Best Practices: Scenario Development – CERP







## **Best Practices – Intergovernmental & Stakeholder Coordination**

- Oregon Basin Planning: Klamath, Rogue and Upper Willamette Projects
- PlaNYC
- State Adaptation Planning: California, New York and Oregon
- Southeast Florida Regional Climate Compact