



# BUILDING RESILIENCE TO COASTAL HAZARDS AND CLIMATE CHANGE IN HAWAI'I

Three complementary projects building on the *Hawai'i Sea Level Rise Vulnerability and Adaptation Report* and other recent projects and initiatives:

- Hawai'i Sea Level Rise Viewer ([hawaiisealevelriseviewer.org](http://hawaiisealevelriseviewer.org))
- Guidelines for Integrating Coastal Resilience into Existing Planning Frameworks
- Guidance for Streamlined and Resilient Disaster Reconstruction



Funding from: NOAA FY16  
Regional Coastal Resilience  
Grants Program



# Foundation for this work

**Hawai'i**  
Sea Level Rise  
Vulnerability and  
Adaptation Report

**Logos at the bottom:**  
 - State of Hawaii  
 - Department of Land and Natural Resources  
 - State of Hawaii, Office of Planning  
 - TETRA TECH  
 - SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY  
 - Sea Grant University of Hawaii  
 - PACIFIC ISLANDS CLIMATE SCIENCE CENTER PICSC

**POST-DISASTER  
RECONSTRUCTION GUIDELINES  
AND PROTOCOLS**

for the Conservation of Coastal Resources  
and Protection of Coastal Communities,  
Maui County, Hawaii

*Building Back Safer, Stronger, Smarter!*  
JANUARY 2015

**Logos at the bottom:**  
 - Sea Grant University of Hawaii  
 - NOAA U.S. DEPARTMENT OF COMMERCE  
 - COUNTY OF MAUI STATE OF HAWAII



# Project Team

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- **NOAA:** Paulo Maurin, Adam Stein



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State of Hawaii, Office of Planning



# Presentation Outline

Brief overview of both  
guidance documents

Clarifying Questions

Focus Questions:

- How can disaster events provide opportunities to adapt to sea level rise?
- How can we catalyze plan review and integration to increase resilience?

# Guidance Documents

## Sea Level Rise Planning Guidance

### General Guidance

### Entry Point Guidance:

- SLR Vulnerability Assessment
- SLR-Informed Land Use and Development Alternatives
- SLR Adaptation Strategies and Action

State Priority Guidelines:  
SLR Checklist

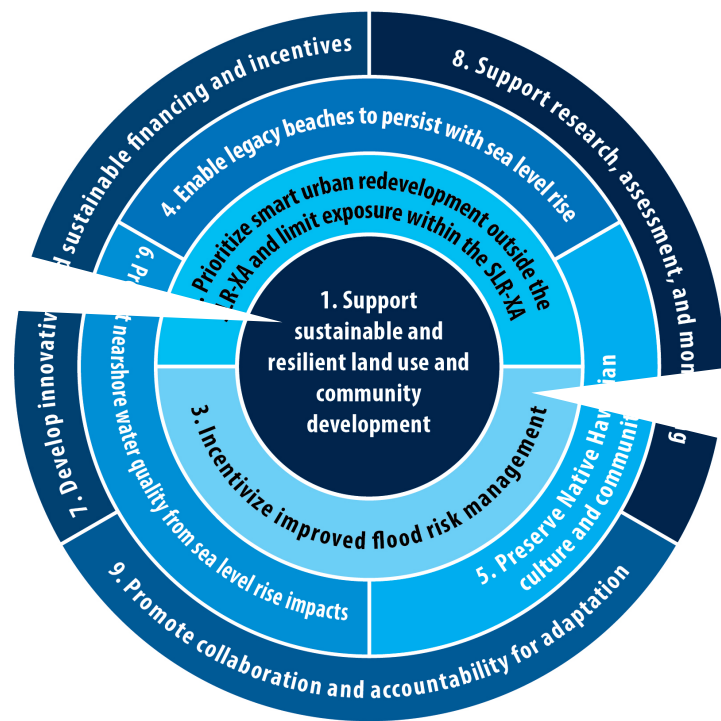
## Disaster Recovery Preparedness Guidance

### Guidance & Model Resources:

- Disaster Recovery Ordinance
- Disaster Recovery Framework
- Disaster Reconstruction Ordinance

Ongoing Disaster Recovery Preparedness Activities

# Alignment with SLR Report Recommendations & ORMP Management Priorities



1.5. Integrate sea level rise adaptation plans and policies into state, county and community plans

3.7. Develop pre-disaster recovery frameworks at the state and county levels that incorporate opportunities to adapt to sea level rise through disaster recovery.

## ORMP Management Priority # 1 Appropriate Coastal Development

- *Increase in number of counties implementing planning practices that include adaptation strategies when planning for coastal areas*

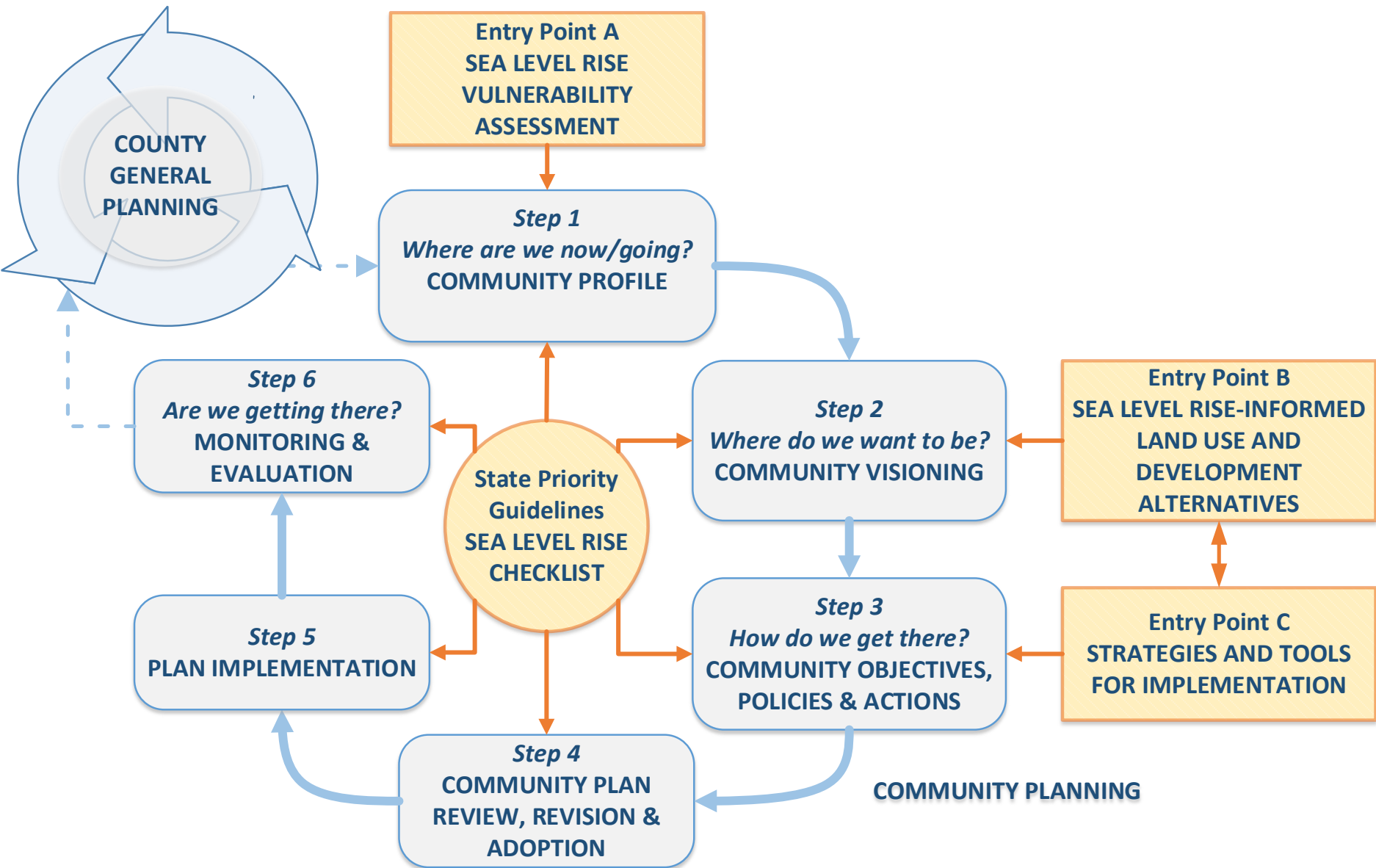
## ORMP Management Priority # 2 Management of Coastal Hazards

- *Develop guidance on how to integrate climate change policy into county plans and regulatory permits*
- *Increase in number of county general and community/development plans that include a climate change adaptation component*

# Community planning as a cycle for learning and adaptive management

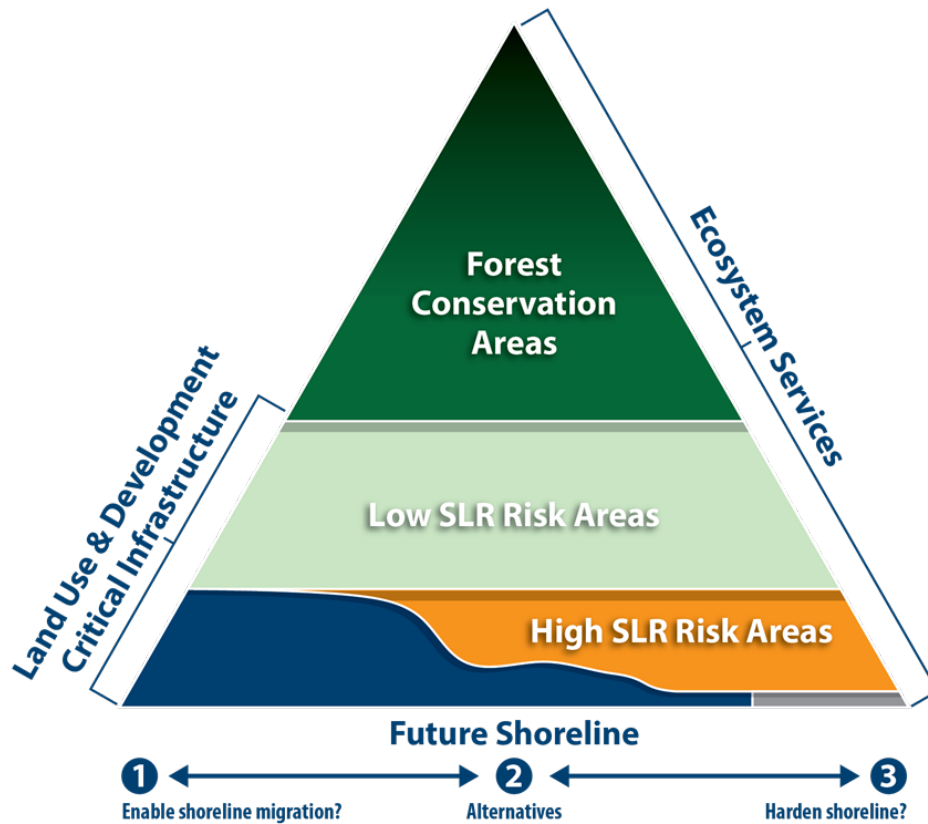


# Entry Points for Addressing SLR



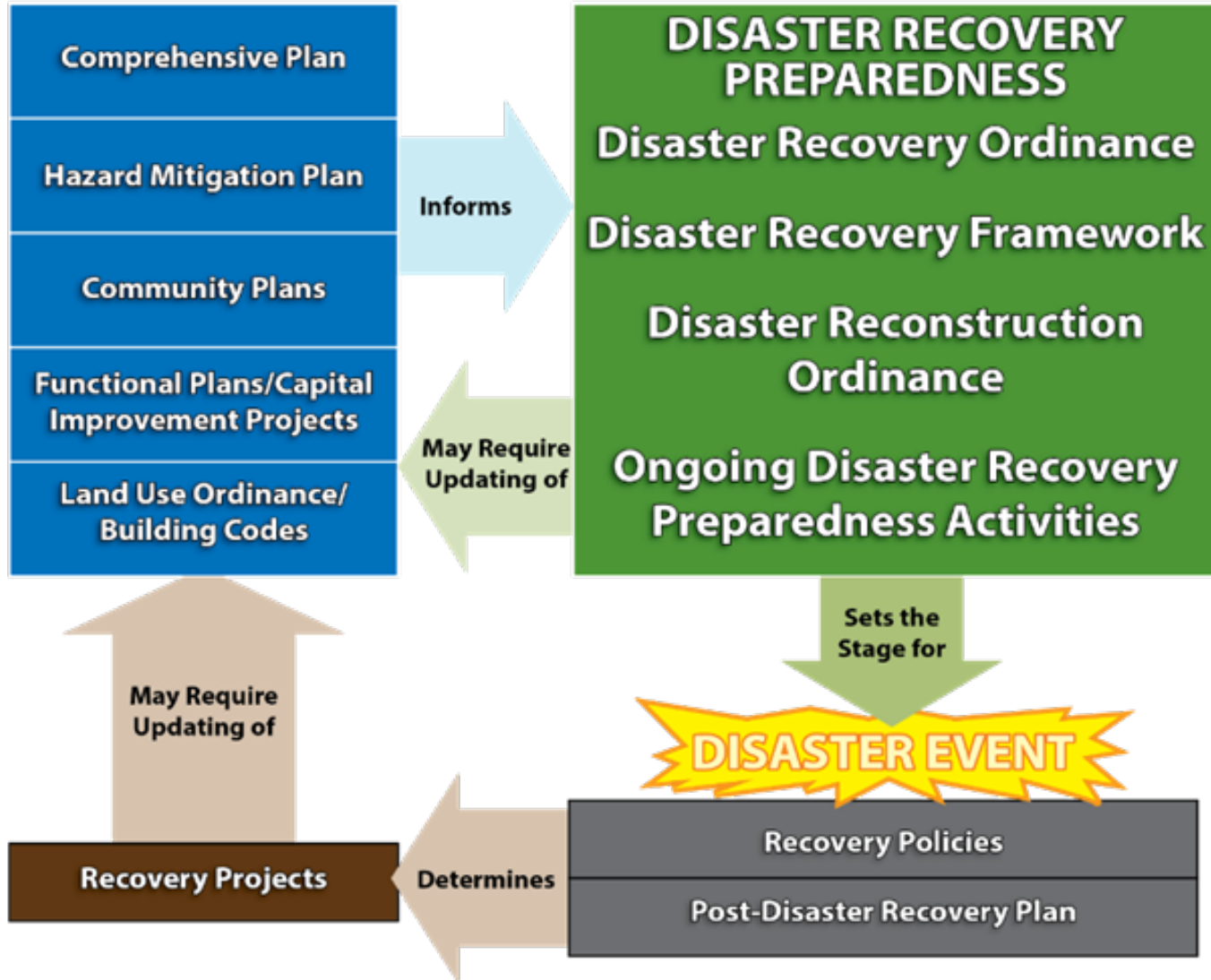


# SLR-Informed Land Use and Development Alternatives

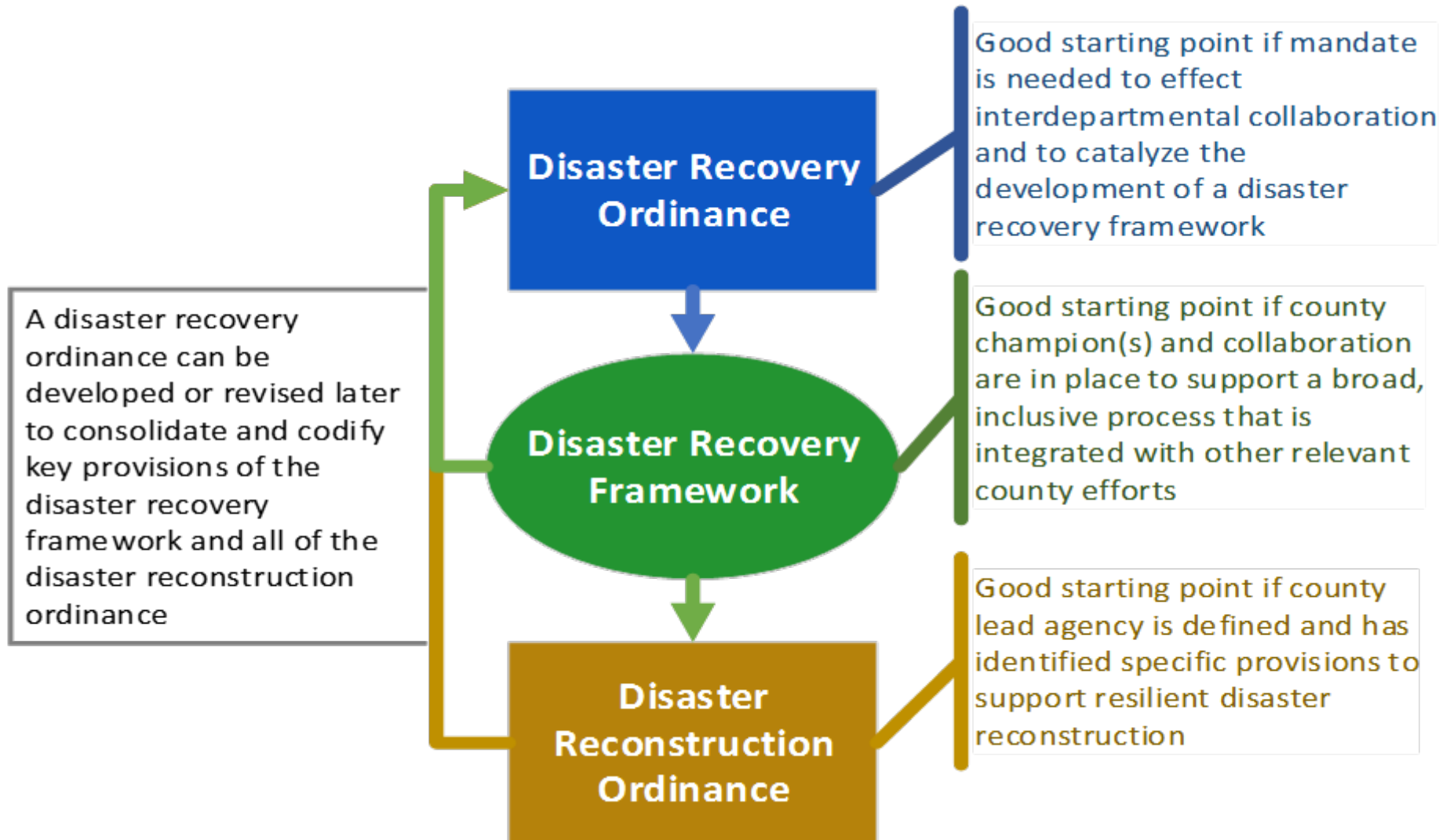


- Ecosystem services mauka-makai
- Shoreline/beaches first
- Growth projections that account for population displaced by SLR
- Alternatives that direct growth away from hazard areas
- Disaster reconstruction scenarios

# Disaster recovery preparedness cycle for learning and adaptive management



# Starting Points for Disaster Recovery Preparedness

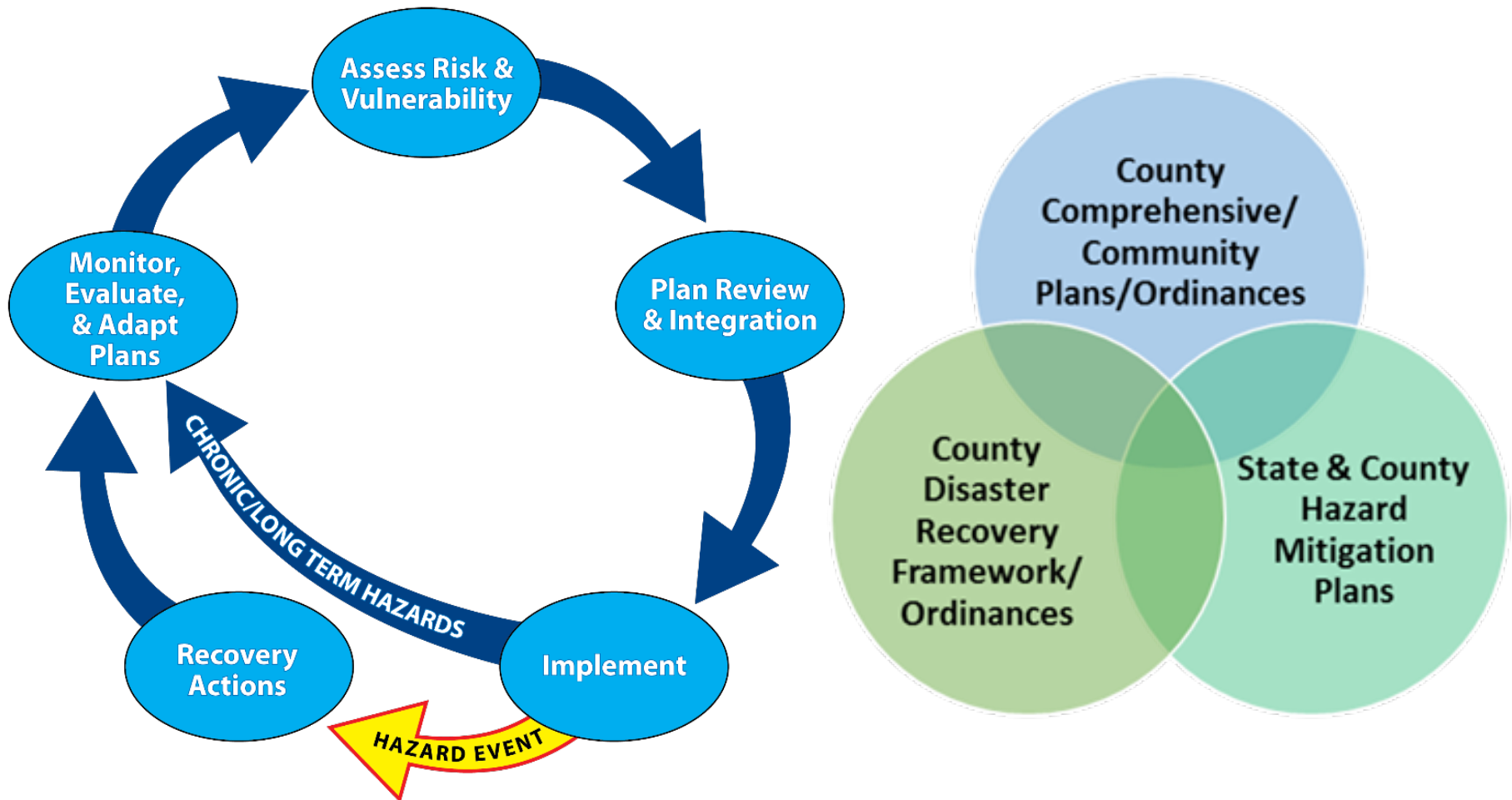


# Ongoing Disaster Recovery Preparedness Activities

- Developing a two-way communication and public messaging strategy
- Exercising the disaster recovery framework and ordinances with partners and the public
- Updating plans, policies, and ordinances to support more resilient disaster recovery and reconstruction
- Updating and maintaining the county's geographic information system database and permitting system with key information needed for disaster recovery
- Integrating plans to improve resilience
- Working with state partners to support county disaster recovery preparedness efforts

# Plan Integration for Resilience

*a crosscutting theme in both guidance documents*



# Questions

Clarifying  
Questions?

Focus Questions:

- How can disaster events provide opportunities to adapt to sea level rise?
- How can we catalyze plan review and integration to increase resilience?

# Next Steps

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Draft Disaster Recovery Preparedness  
Guidance available November 1

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Comments due November 21

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Final guidance available December 31

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Draft Sea Level Rise Planning  
Guidance Version 1.0 available April  
31, 2019

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Case study research ongoing to  
inform final SLR Guidance