

EcoAdapt™
Meeting the challenges of climate change

Introduction to Adaptation Strategies

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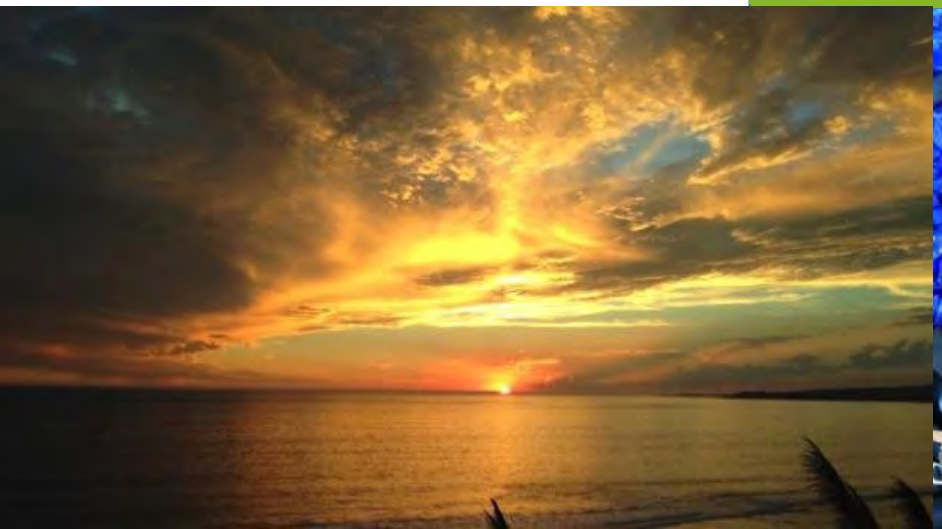
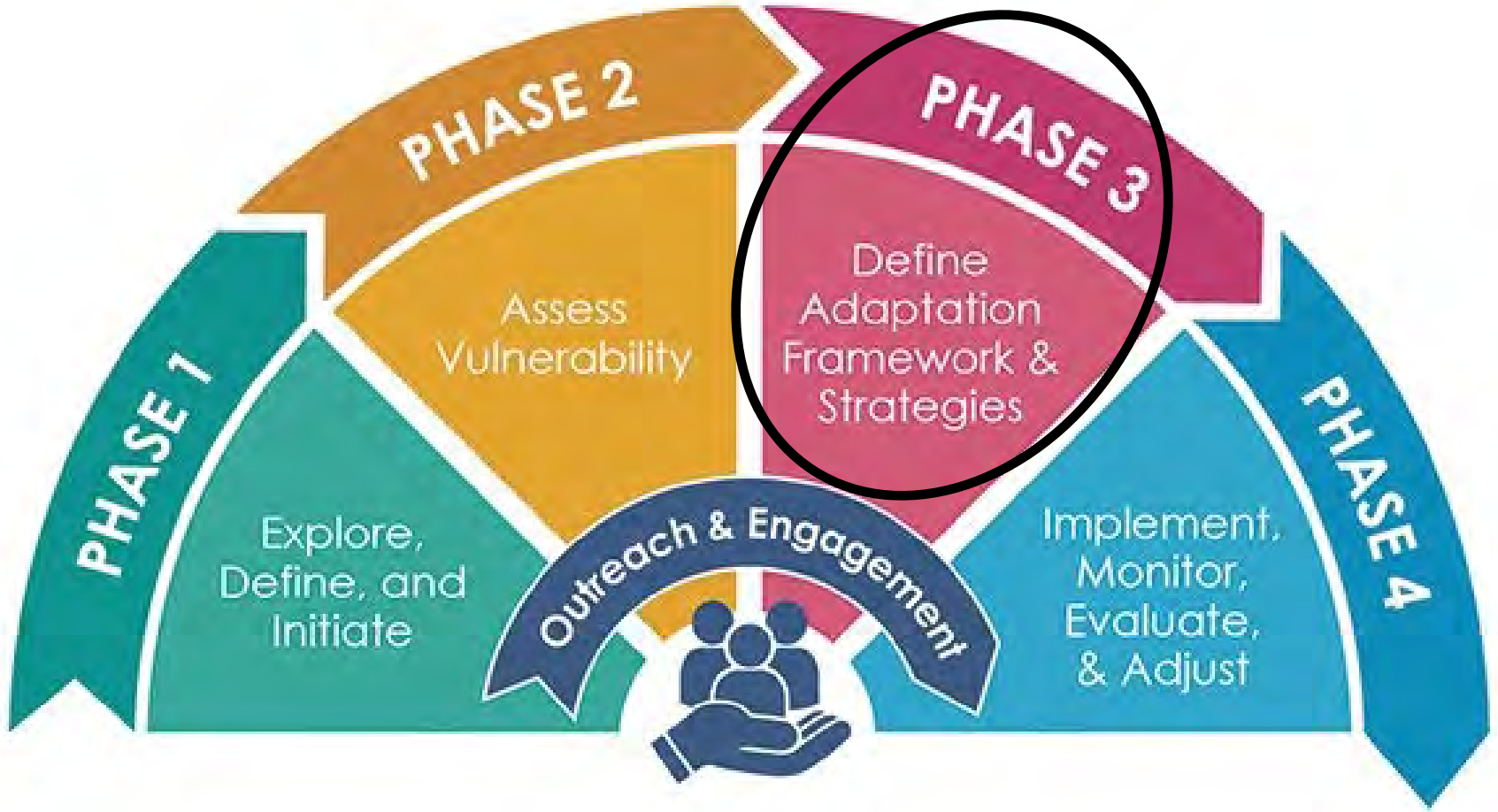


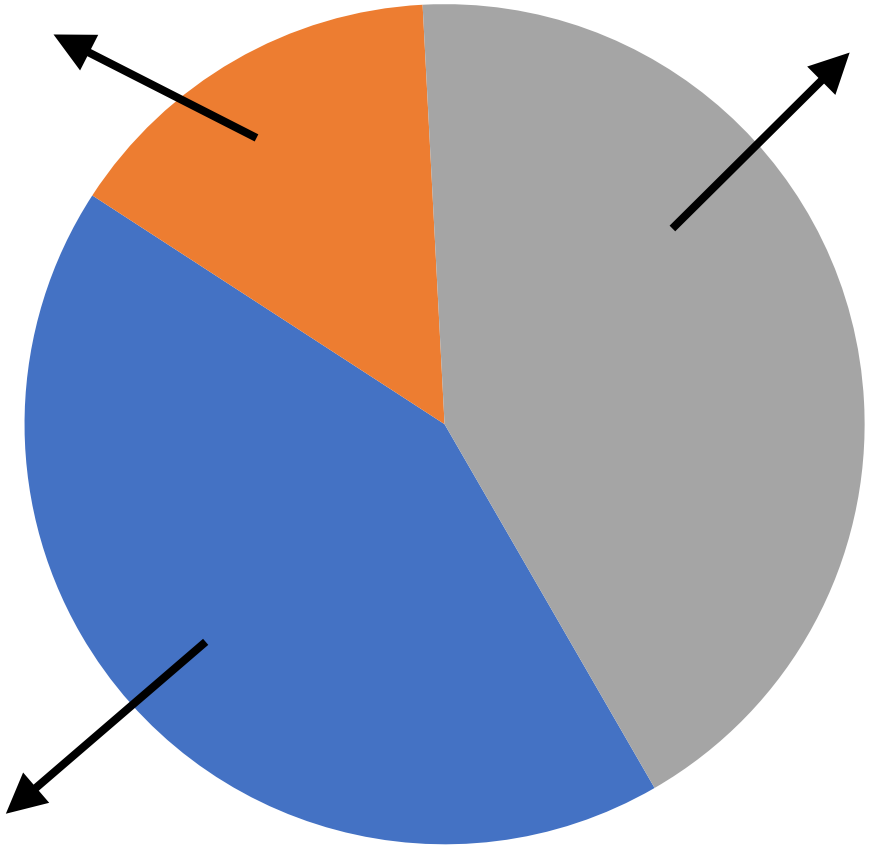
Adaptation Planning Process



Making Decisions in a Changing Climate

New/different activities

Assess potential climate change-induced population migration within and to the county



Current/same activities

Educate public on water conservation

Modifications to current activities

Plant drought-tolerant vegetation around municipal buildings

Adaptation reflects the **intentional** consideration of climate change… **but activities are not always different.**

Modified from Swanston et al. 2017

Defining Adaptation

Adaptation strategies aim to reduce the negative effects or take advantage of the opportunities provided by climate change.

Adaptation strategies can reduce the vulnerability and/or increase the resilience of human, built, and natural systems to climate change.

General types of adaptation activities:

- ★ **Programmatic activities**
- ★ **Plans, regulations, policies**
- ★ **Capital improvement/infrastructure projects**
- ★ **Knowledge/evaluation activities**
- ★ **Coordination/collaboration activities**

Programmatic Activities

Strategies aimed at creating new or expanding existing programs, activities, or initiatives

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Examples:

- Integrate climate into health programs and create a website that details health risks exacerbated by climate change and provides information that helps residents prepare for and respond to impacts
- Develop low-income energy programs
- Establish a shuttle system to cooling centers

Plans, Regulations, & Policies

Strategies aimed at developing or revising policies, plans, regulations, or guidelines

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Examples:

- Increase parks in underserved areas
- Create hazard recovery plans and prioritize restoration of vital facilities and assets
- Take regular inventory of emergency facility needs (e.g., cooling centers, temporary shelters)

Capital Improvement/Infrastructure Projects

Strategies designed to address physical and functional deficiencies or needs in the built and natural environment

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Examples:

- Construct water storage facilities and install efficient plumbing fixtures and equipment in buildings to conserve water
- Use green infrastructure for stormwater management
- Install heat-reducing roof
- Update emergency services communications equipment

Knowledge/Evaluation Activities

Strategies that aim to gather information about climate changes, impacts, and/or management effectiveness

- *May be a precursor to implementing another type of strategy*

Photo by Bill Butcher/USFWS (Public Domain)

Examples:

- Assess and improve the adaptive capacity of people who are most vulnerable to climate change-exacerbated hazards (e.g., homeless, elderly)
- Explore feasibility of supply side diversification and resilient electrical distribution infrastructure to facilitate access to local, decentralized renewable energy

Collaboration/Coordination Activities

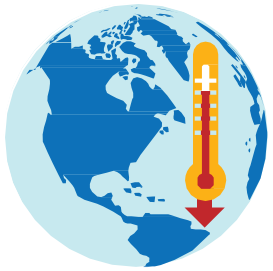
Strategies that focus on strengthening partnerships and relationships, communicating information, expanding awareness, or coordinating across organizational, jurisdictional, or political boundaries

Photo by Shannon Arledge (Public Domain)

Examples:

- Encourage neighborhoods to become familiar with residents who have skills and tools to assist others with special needs (e.g., develop maps and inventories of neighborhood assets)
- Work with local medical providers and hospitals to ensure that medical facilities are prepared to meet periods of increased demand

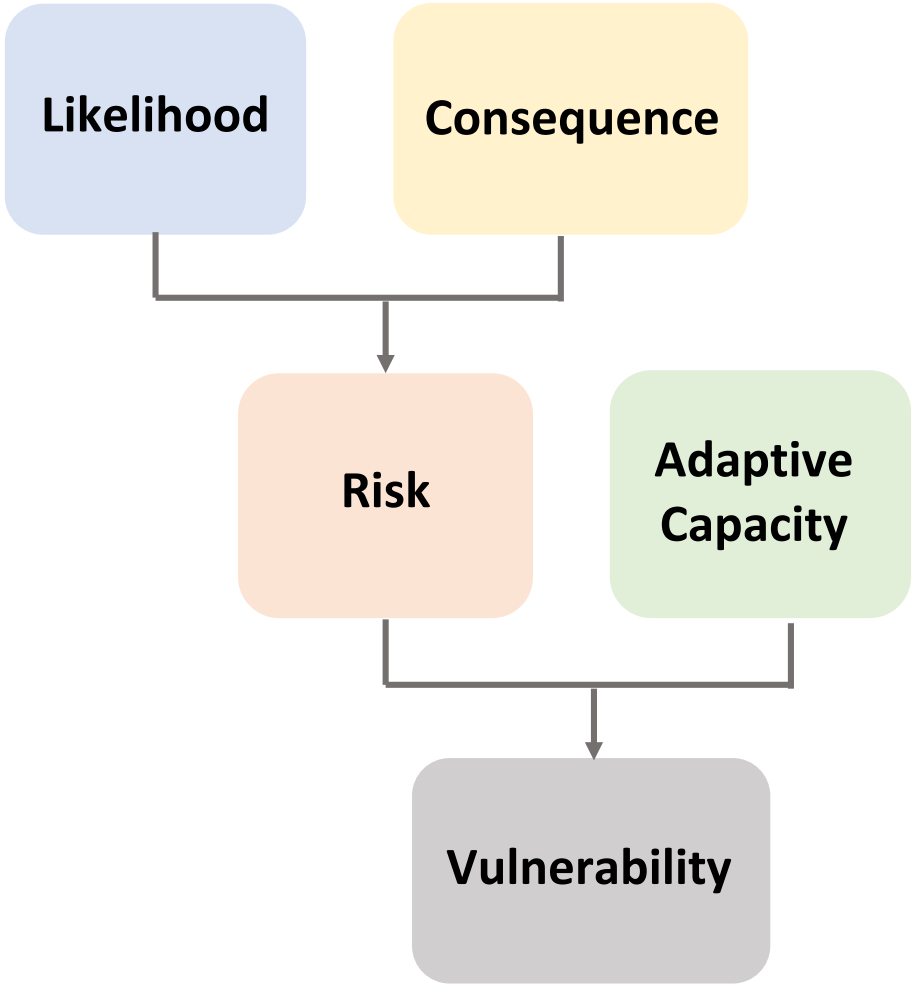
Using Vulnerability Results in Adaptation



Reduce climate impacts
(likelihood & consequence)

Increase climate resilience
(adaptive capacity)

Reduce climate change vulnerability



Using Vulnerability Results in Adaptation

⬇ Likelihood *(limit change)*

- Increase shading on pedestrian walkways, transit stops, and around county facilities
- Reduce stormwater runoff within residential neighborhoods that flood frequently
- Increase organic matter content and water retention in soils within urban and agricultural settings

Using Vulnerability Results in Adaptation

⬇ **Consequence** *(minimize effects)*

- Site outside the floodplain and/or require that new or renovated buildings utilize flood-protection measures
- Retrofit or reroute pedestrian/bicycle trails and bridges in areas that are subject to repetitive flooding

Using Vulnerability Results in Adaptation

⬆ Adaptive Capacity *(improve ability to cope)*

- Offer professional development opportunities for staff to develop their technical expertise and skills to prepare for and respond to climate change impacts
- Create policies that encourage solar and other renewable energy generation
- Build partnerships between public, private, and nonprofit sectors to provide critical services to vulnerable populations

Case Study: Trabuco Creek Restoration

Existing restoration project focused on improving stream and riparian habitat quality, sustainability, and function

Primary project activities included removing barriers to fish passage (e.g., non-functioning fords and dams), adding channel complexity, and removing invasive vegetation

Purpose was to **re-evaluate project goals and activities** in light of climate impacts and vulnerabilities to determine if **planned activities help reduce impacts** and **identify additional activities** that could also help minimize vulnerabilities

Case Study: Trabuco Creek Restoration

STEP 1. IDENTIFY CLIMATE + NON-CLIMATE IMPACTS

- Flooding, drought, invasive plants, recreation

STEP 2. DETERMINE WHETHER/HOW PLANNED ACTIVITIES REDUCE IMPACTS

- ACTION: Add channel complexity
  - ✓ Slows floodwaters to minimize erosion/scour
  - ✓ Increases water availability by creating pools
- ACTION: Remove invasive vegetation
  - ✓ Increases habitat quality and functioning
  - ✓ Reduces erosion risk

Case Study: Trabuco Creek Restoration

STEP 3. IDENTIFY ADDITIONAL ACTIVITIES

- ACTION: Manage recreation in sensitive areas

  ✓ Maintains habitat quality and functioning

  ✓ Reduces erosion risk

- ACTION: Build a system water budget to better manage water and multiple uses

  ✓ Increases habitat availability and connectivity and maintains water availability

Questions?

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