

March 2024

# Delta Adapts: Draft Adaptation Plan Overview



Delta  
Stewardship  
Council

A CALIFORNIA STATE AGENCY

SUMMER 2021



Flooding



Extreme Heat

## Vulnerability Assessment Findings



Drought



Wildfire

- More flooding
- Climate change will impact Delta residents disproportionately
- Less reliable Delta water exports
- Periodic decreases in water quality for in-Delta users
- Increased loss and stress on ecosystems
- Decreased agricultural yields



# Partner Input



SUMMER 2024



Water Supply  
Reliability



Ecosystem  
Restoration

## Adaptation Plan



Agriculture



Flooding

- Adaptation strategies
- Responsible entities
- Funding and financing
- Governance best practices

# Equity in Adaptation

- Representational justice
- Prioritize adaptation investments in communities most socially vulnerable to climate impacts
- Culturally appropriate risk communication and education campaigns





# FLOOD RISK REDUCTION

**DELTA  
ADAPTS**



*Focus Area*

## Vulnerabilities

Climate-induced hydrologic variability and sea level rise are expected to **intensify flooding** across the entire Delta region

The Delta's **1,100 miles of levees** are designed to operate under historical conditions that did not consider climate change, which will stress the whole system

## Strategies

Develop climate-informed understanding Delta flood dynamics

Strengthen and upgrade Delta levee system

Restore ecosystems for flood mitigation

Improve emergency preparedness and risk communication

Manage and expand upstream water storage capability

Use adaptive urban planning and farming practices to reduce risk

## Example Actions

- ▶ Integrate climate change into risk assessment models (FL-1-1)
- ▶ Integrate climate risks and equity into the Delta Levees Investment Strategy (FL-2-2)
- ▶ Monitor and evaluate the effectiveness of multi-benefit projects for flood risk reduction (FL-3-2)
- ▶ Raise awareness about the availability and importance of flood insurance (FL-4-6)
- ▶ Use excess floodwater to recharge underground aquifers (FL-9-2)
- ▶ Limit development in flood-prone areas (FL-7-4)



# ECOSYSTEM

## DELTA ADAPTS



### Focus Area

## Vulnerabilities

Land development leaves little room for **habitats and species** to migrate

Heat, sea level rise, and climate extremes impact **ecosystem health and biodiversity**

## Strategies

Improve capacity of ecosystems to adapt and thrive

Build capacity and partnerships for ecosystem resilience

Protect ecosystems by halting and reversing subsidence

Enhance urban ecosystem health

## Example Actions

- ▶ Work with Tribes and Tribal communities to interweave Traditional Knowledge (ECO-1-1)
- ▶ Prioritize multi-benefit projects (ECO-1-4)
- ▶ Prepare program-level environmental documentation to accelerate pace and scale of restoration (ECO-3-1)
- ▶ Prioritize and incentivize land use types that halt or reverse subsidence (ECO-2-1)
- ▶ Increase urban tree canopy cover and other green spaces in areas that have the least (ECO-4-2)



# AGRICULTURE

## DELTA ADAPTS *Focus Area*



### Vulnerabilities

Heat, drought, flooding, reduced chill hours, sea level rise, and decreased water quality can all decreased **crop yield and quality**

The above vulnerabilities and market forces impact the **economic stability of industry**

Subsidence, saline soils, and land use changes impact **land viability for agriculture**

### Strategies

Equitable food system

Climate-smart farming

Diversification of revenue on agricultural land

Strategic land retirement

### Example Actions

- ▶ Improve and expand irrigation efficiency practices (AG-1-1)
- ▶ Support and retain labor and workforce development in agriculture (AG-2-1)
- ▶ Support and fund environmental credits (AG-3-3)
- ▶ Allow for flooding, wetting for subsidence-halting or reversal, or conversion to managed wetland on marginal farm land (AG-4-1)





# WATER SUPPLY RELIABILITY

## DELTA ADAPTS



### Focus Area

### Vulnerabilities

**Water supply** will likely decrease while demand increases due to heat, more variable precipitation, decreased snowpack, and sea level rise

Drought and salinity intrusion will harm **water quality**

Extreme weather could damage the network of **water conveyance** infrastructure and levees that protect water from salinity intrusion

### Strategies

Reduce reliance on the Delta through conservation local water supply development

Increase storage of surface and groundwater supplies

Modify reservoir operations

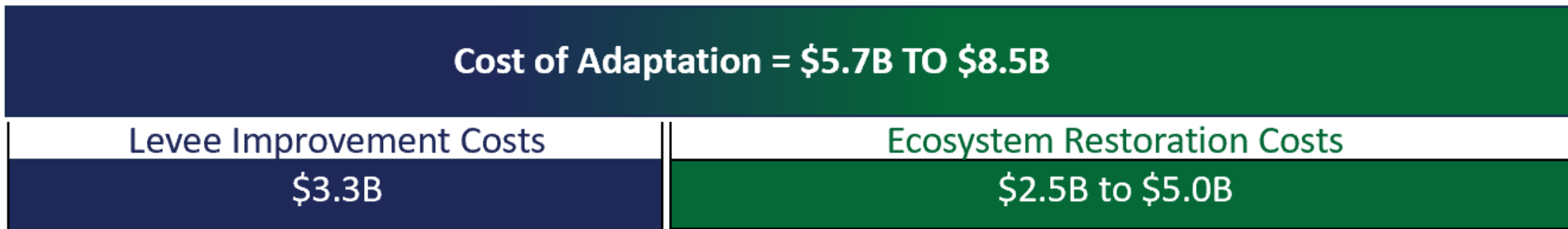
Modify water quality standards

Modify water infrastructure

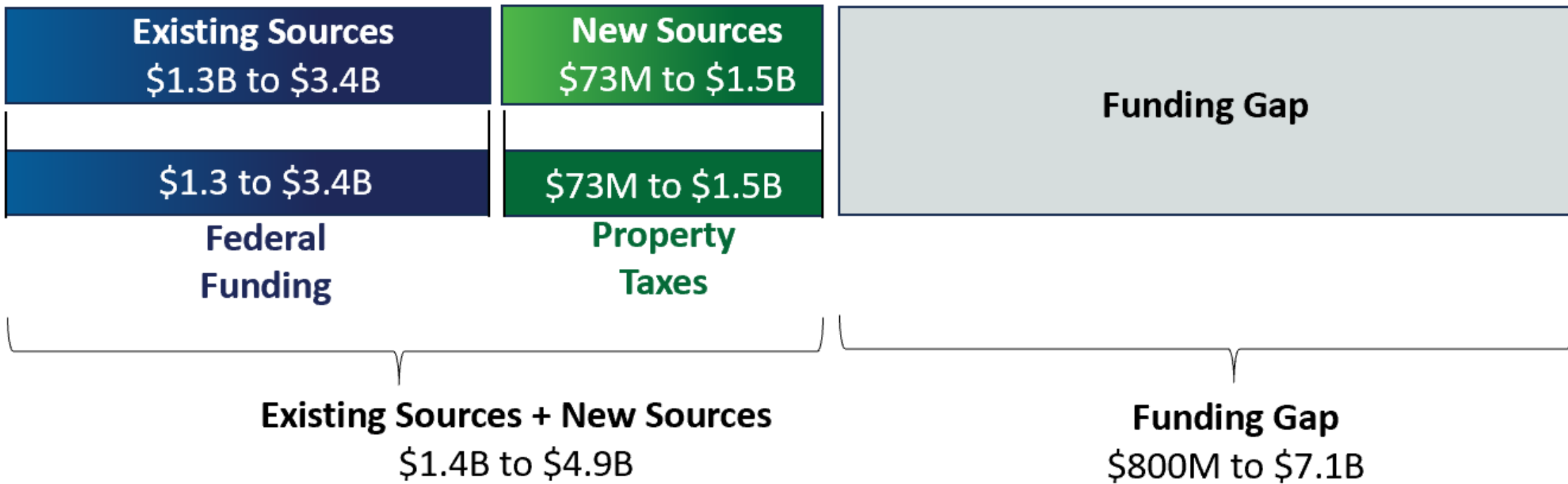
### Example Actions

- ▶ Pilot projects promoting urban and agricultural water conservation (WSR-1-2)
- ▶ Invest in flood-managed aquifer recharge (WSR-2-4)
- ▶ Improve water supply and demand forecasting models for decision-making (WSR-4-1 through WSR-4-5)
- ▶ Develop comprehensive monitoring programs to detect HABs (WSR-5-7)
- ▶ Improve Delta levees (WSR-3-1)

Costs

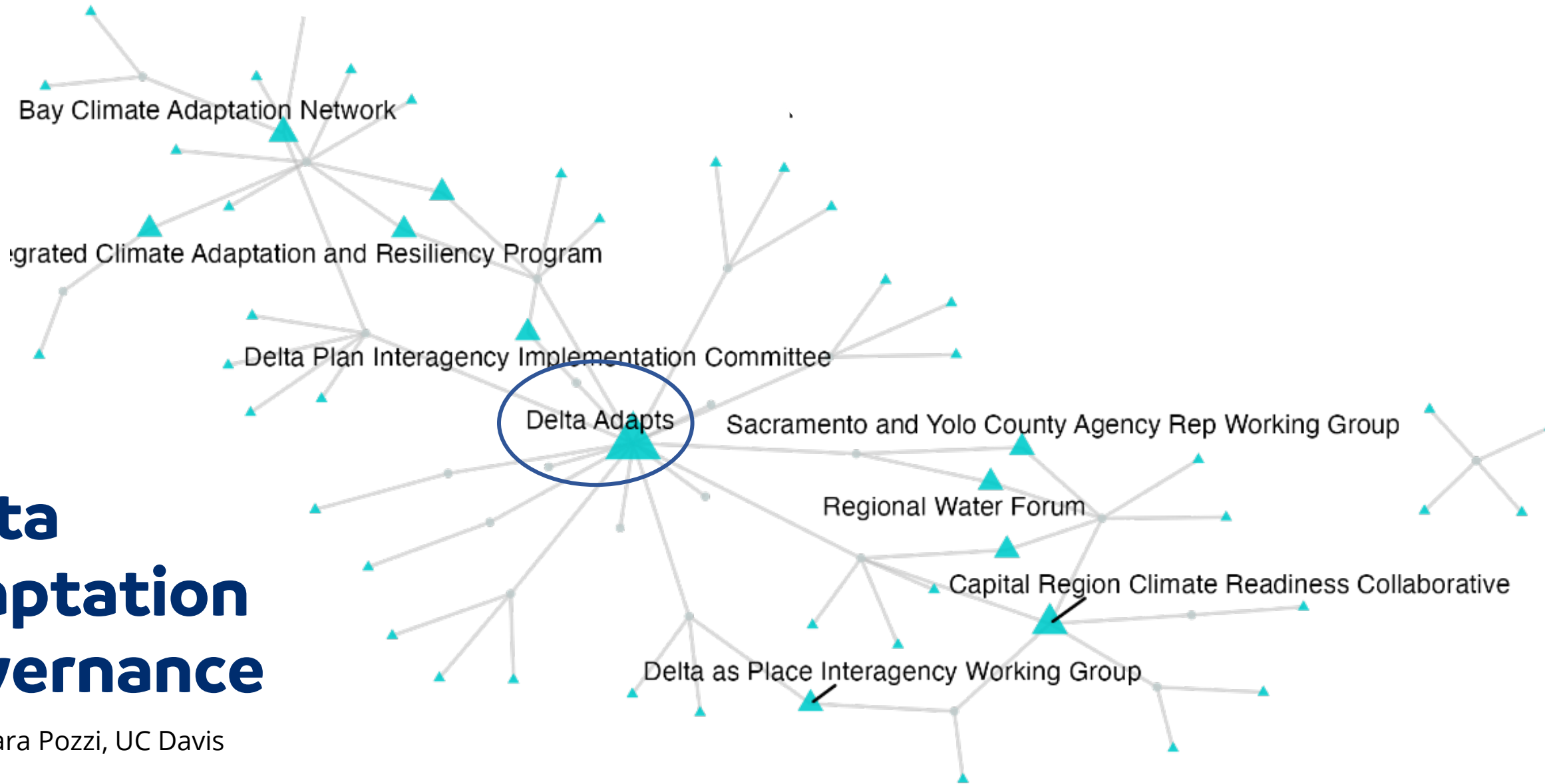


Funding



# Delta Adaptation Governance

Credit: Tara Pozzi, UC Davis



# Governance recommendations

- Procedural justice: incorporate best practices for participatory governance
- Adopt adaptive management framework
- Explore inroads for the application of Traditional Knowledge in Delta science and decision-making



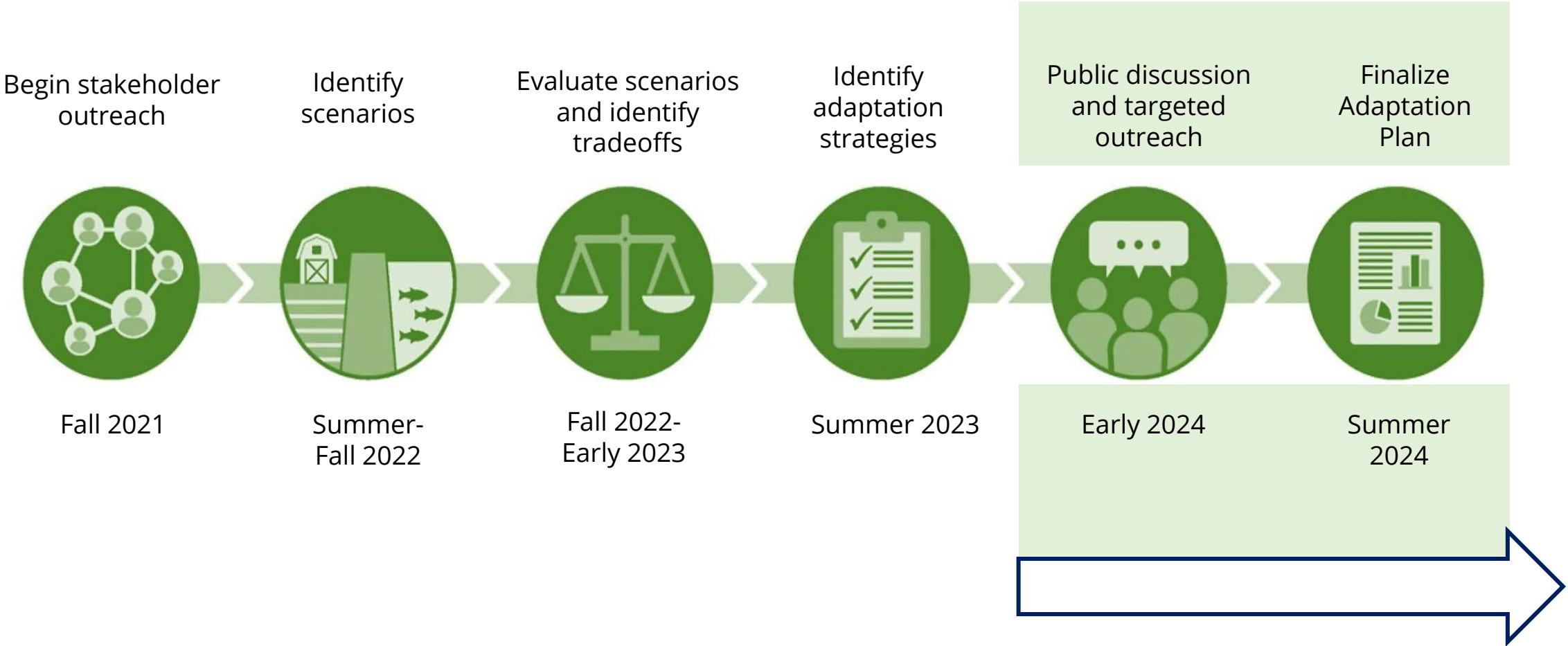
# Council's Role

- Advance representational justice in adaptation
- Create regionwide communication strategies on risk, restoration benefits, adaptation options
- Help fill research gaps through Delta Science Program
- Embrace other ways of knowing and Traditional Knowledge
- Work through DPIIC to create a regional funding strategy for adaptation
- Advance adaptation through Council's covered action authority



*Photo: The Council's Tribal Listening Session 2023*

# Next Steps



# QUESTIONS AND DISCUSSION

# Thank you

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