



## **INFORMATION ITEM**

### **Delta Adapts: Creating a Climate Resilient Future Draft Adaptation Strategy Approach**

---

**SUMMARY:** Delta Adapts: Creating a Climate Resilient Future (Delta Adapts) is the Council's climate change study consisting of a first-ever climate change vulnerability assessment and adaptation strategy for the Delta and Suisun Marsh. At today's meeting, Council staff will present a preliminary approach to preparing the adaptation strategy for Council consideration and feedback. The preliminary approach may evolve as the development of the adaptation strategy progresses.

---

#### **BACKGROUND**

The Delta Reform Act defines "restoration" as including consideration of "the future impact of climate change and sea level rise" (Water Code [Wat. Code] section 85066) and identifies a timeline horizon of the year 2100 for the restoration of large areas of interconnected habitats within the Delta and its watershed (Wat. Code section 85302(e)(1)). The Delta Reform Act also notes that the Delta Plan may address "the effects of climate change and sea level rise on the three state highways that cross the Delta" (Wat. Code section 85307(c)). Executive Order B-30-15, signed by Governor Brown in April 2015, requires State agencies to incorporate climate change into planning and investment decisions. State agencies are also required to prioritize natural infrastructure and actions for climate preparedness and the protection of the most vulnerable populations.

Climate change is already altering the physical environment of the Sacramento-San Joaquin Delta and Suisun Marsh (Delta). Over the long term, climate change in the Delta is expected to adversely affect human health and safety, lead to economic disruptions, diminish water supply, degrade water quality, shift ecosystem function and habitat qualities, and increase the challenges of providing basic services. Many of these impacts will disproportionately affect disadvantaged communities. Delta Adapts will help the Council assess specific climate risks and vulnerabilities in the Delta and, in coordination with a diverse group of stakeholders, develop potential adaptation strategies to address those vulnerabilities.

The Council endorsed a set of Climate Change Resilience Goals (resilience goals) in early 2019 to provide guidance to staff to explore Delta-specific regional climate values and priorities. The project team used the resilience goals to focus Delta Adapts' methods and recommendations.

Delta Adapts consists of two phases: 1) a **vulnerability assessment** to improve

understanding of regional vulnerabilities due to climate change in order to protect the vital resources the Delta provides to California and beyond with a focus on State interests and investments, followed by 2) an **adaptation strategy** detailing strategies and tools available for state, regional, and local governments to use in helping communities, and ecosystems thrive in the face of climate change.

The Delta Adapts study has an overarching goal of building climate resilience in the Delta, along with several more specific goals to:

- inform future work at the Council;
- provide local governments with a toolkit of information to incorporate into their regulatory and planning documents;
- integrate climate change into the state's prioritization of future Delta actions and investments; and
- serve as a framework to be built upon by the Council and others in years to come.

The Council recently released a draft vulnerability assessment for public review and comment. Council staff is currently reviewing comments received and updating the vulnerability assessment.

#### **ADAPTATION STRATEGY DEVELOPMENT**

With the vulnerability assessment nearing completion, Council staff is turning its focus to the adaptation strategy and has identified a preliminary approach for its development. The preliminary approach consists of three components:

- Overarching Policy Review – review existing Council policies and recommendations to determine if they adequately address the climate vulnerabilities identified in the vulnerability assessment or if future refinements are needed.
- In-Delta Adaptation Strategies – identify a range of adaptation strategies for specific Delta regions that address flood, ecosystems, agriculture, and water supply. Identify approximate costs of strategies and entities responsible for implementing strategies. Discuss trade-offs between the implementation of various adaptation actions.
- Out-of-Delta Strategy – identify a vision and objectives for flood, ecosystem, agriculture, and water supply adaptation actions that occur outside of the Delta, but within the Delta watershed, which significantly affects the Delta.

It should be noted that this preliminary approach is a starting point and may evolve as the development of the adaptation strategy and stakeholder outreach progresses.

### **OVERARCHING POLICY REVIEW**

Staff will review the Delta Plan and other relevant Council documents such as the Delta Science Plan and Science Action Agenda to determine if existing policies, recommendations, objectives, and actions adequately address climate change and the vulnerabilities that have been identified in the assessment. Based on the review, if it is determined new or revised policies and recommendations are needed, staff will develop alternative policy options. At its discretion, the Council may direct staff to prepare future updates to the Delta Plan or other Council documents based on one or more of the alternatives. Any future updates would require separate resources to complete and are considered outside of the scope of this adaptation strategy.

### **IN-DELTA ADAPTATION STRATEGIES**

Given its size, staff will divide the Delta into subregions based on the physical landscape and the climate vulnerabilities each region is exposed to. It is anticipated staff will start with the general areas served by the North, Central, and South Delta water agencies as well as Suisun Marsh; as the adaptation process progresses, staff may further subdivide each region.

In consideration of the Council's authority, the coequal goals, the resilience goals, and other agencies' authorities, the adaptation strategy will focus on flooding, ecosystems, agriculture, and water supply. Council staff will continue to work with stakeholders representing these topics in each region to identify a range of adaptation strategies for consideration. To identify adaptation trade-offs, Council staff will develop a limited set of scenarios and use the Delta Landscape Scenario Planning Tool created by the San Francisco Estuary Institute to estimate adaptation outcomes across a variety of metrics related to ecosystem function and economics, among others.

For example, the flood analysis conducted for the vulnerability assessment assumed the physical condition of levees as they are today with no additional investments. This would be considered a "No Action Scenario." Other scenarios could include one that considers the continuation of historical levee investments in terms of geographic location, and/or an average annual level of investments that have been allocated to the region. Other scenarios may include: maximizing flood improvements to address projected changes in water elevations; maximizing cultivation of all current agricultural areas; maximizing ecosystem restoration at

appropriate elevations; minimizing impacts to vulnerable communities; and/or derivatives of these scenarios that seek to achieve balances among these outcomes.

Using the Delta Landscape Scenario Planning Tool can help identify adaptation trade-offs based on a set of identified metrics. For example, the tool can help identify the amount of agricultural land to be conserved and the amount and type of ecosystem restoration that would occur based on the number of miles of levees that are improved. Council staff will also estimate the costs to implement each scenario.

Understanding the trade-offs will allow staff to define and prioritize specific adaptation strategies by region and location, including vulnerable communities. Some strategies may be applicable Delta-wide. Each adaptation strategy will include the entity or entities responsible for implementation, potential timing of implementation, and the estimated cost. It is envisioned that the adaptation strategy will ultimately include a prioritized list of actions by region that advance the coequal goals and protects the State's interests.

#### **OUT-OF-DELTA STRATEGY**

Adaptation actions that occur *outside* of the Delta can impact natural functions and human activities *in* the Delta. The adaptation strategy will identify an overall vision and objectives for adaptation activities that would occur outside of the Delta to be implemented by other entities. The vision and objectives may address flooding, ecosystems, agriculture, and water supply in a manner that advances the coequal goals and promote consistency with the Delta Plan and other Council activities.

#### **STAKEHOLDER ENGAGEMENT**

Building on and expanding from the stakeholder engagement approach used for the vulnerability assessment, Council staff will identify stakeholders for each Delta region related to flooding, ecosystems, agriculture, and water supply and determine an appropriate number of times to meet. Stakeholders will include local cities and counties, regional planning agencies, other State agencies, levee engineers, flood control agencies, water districts, environmental interests, agriculture information networks (e.g., resource conservation districts, farm bureaus, County agricultural commissions, etc.), agricultural labor, and community-based organizations/service providers, and others. Some of these stakeholders may represent multiple or all regions of the Delta. Staff will meet with stakeholders by region to help:

- Identify values and priorities;

- Based on values and priorities, identify a range of adaptation strategies that address climate vulnerabilities;
- Help define scenarios to visualize trade-offs;
- Review trade-offs among adaptation strategies, including timing and costs;
- Prioritize adaptation strategies; and
- Identify vision and objectives for adaptation outside of the Delta.

#### **ANTICIPATED SCHEDULE**

Given existing Council priorities, it is anticipated that the development of the adaptation strategy will begin in early summer with stakeholder outreach, and a draft strategy will be available for public review in late spring/early summer of 2022. The final adaptation strategy would be completed in late 2022.

#### **CONSULTANT ROLE**

Council staff's efforts on the Delta Adapts adaptation strategy will continue to be supported by a consultant team led by AECOM. The AECOM team will support the preparation of the adaptation strategy and stakeholder outreach efforts and provide technical expertise on specific topics (e.g., economic analyses, subsidence). AECOM's role is similar to the support they have provided on the vulnerability assessment. AECOM's scope of work will be determined after the Council provides input and direction on the proposed adaptation approach.

#### **TODAY'S MEETING**

At today's meeting, Council staff will present the preliminary approach to the adaptation strategy for discussion. Staff is seeking councilmember and public input on the proposed process. Staff will keep councilmembers apprised of progress on the adaptation strategy through updates at future Council meetings.

#### **FISCAL INFORMATION**

A separate contract amendment for AECOM services is also presented for Council consideration this month, requesting an additional \$180,000 of fiscal year 2020-21 funds to increase the contract total from \$650,000 to \$830,000. The contract end date is also proposed to be extended from June 30, 2022, to June 30, 2023.

#### **LIST OF ATTACHMENTS**

No attachments.

**CONTACT**

Harriet Lai Ross  
Assistant Planning Director  
Phone: (916) 838-9731