

# Humboldt Bay SLR Regional Planning Feasibility Study

## Task 2 Research Memo

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## Purpose and Need:

A regional sea level rise (SLR) regulatory framework, and ultimately a regional sea level rise adaptation plan, would be the best approach to addressing SLR in the Humboldt Bay region. A SLR regional planning feasibility study is the first step toward creating such a framework and plan.

## Task 2. Research

Greenway Partners was directed to conduct and document research in the various areas listed below to inform the feasibility study in alignment with project goals and objectives, including evaluating the below areas with respect to how various approaches/frameworks would be able to support the broad categories of SLR protection, accommodation, and retreat strategies.

- 2.1. Potential regulatory frameworks
- 2.2. Cross-jurisdictional coordination
- 2.3. Funding frameworks and opportunities
- 2.4. Regulatory and feasibility pathways and barriers

## 2.1. Potential regulatory frameworks

### Subtasks:

2.1a Identify various types of regulatory frameworks that could be potentially suitable for a Humboldt Bay regional sea level rise adaptation planning effort, including the pros and cons of each.

### Regulatory Frameworks

The following regulatory frameworks and organizational structures have been employed or considered in California to address regional SLR planning.

1. Local Coastal Programs – (LCPs) are basic planning tools used by local governments to guide development in the coastal zone, in partnership with the California Coastal Commission (Commission). Based on California’s General Planning and Zoning laws local governments adopt a General Plan (GP) and Zoning Ordinances (ZO) to govern land use in its jurisdiction. LCP are developed in compliance with the local GP and ZO to specify appropriate location, type, and scale of new or changed uses of land and water. Each LCP includes a land use plan and measures to implement the plan (such as ZOs). Prepared by local government, these programs govern decisions that determine the short- and long-term conservation and use of coastal resources. While each LCP reflects unique characteristics of individual local coastal communities, regional and statewide interests and concerns must also be addressed in conformity with Coastal Act goals and policies. Following adoption by a city council or county board of supervisors, an LCP is submitted to the Commission for review for consistency with Coastal Act requirements.

After an LCP has been approved, the Commission’s coastal permitting authority over most new development is transferred to the local government, which applies the requirements of the LCP in reviewing proposed new developments. The Commission also acts on appeals from certain local government coastal permit decisions. The Commission reviews and approves any amendments to previously certified LCPs.

However, the Commission retains permanent coastal development permit jurisdiction over development proposed on tidelands, submerged lands, and public trust lands. Unfortunately, around Humboldt Bay public trust lands, which include diked former tidelands, are most of the areas (75-90%) vulnerable to 1.0 to 2.0 meters of SLR this century. Yet, the Commission has funded LCP authorities on Humboldt Bay to prepare SLR vulnerability assessments for their LCP, including public trust lands.

2. Public Works Plans – The Coastal Act allows public agencies to develop Public Works Plans (PWP) (*California Public Resources Code, §30605*). These plans are particularly suited for planning for large scale or multi-part infrastructure projects, a PWP is a land use planning tool that describes one or more public works projects across one or more local government jurisdictions. PWP must be submitted to and certified by the Commission, and they must be consistent with the certified LCP of the jurisdictions

they are in. Once the Commission approves a PWP, no coastal development permit is required for a project described within it; rather, before a project commences, the public agency notifies the Commission of its intent to undertake a Specific PWP Project, and the Commission determines whether it is consistent with the certified PWP or if special conditions are necessary to make it consistent. While they require a great deal of upfront technical analysis and project and mitigation planning, PWPs can be a good alternative to individual project-by-project coastal permit reviews. They can also assist in more regional planning for public works projects that would require multiple coastal development permits in multiple jurisdictions – making them effective and efficient tools for implementing sea level rise adaptation projects in an entire corridor, system, or network of critical infrastructure.

PWPs are applicable in areas with multiple LCP jurisdictions, but not on tidelands, submerged lands, and public trust lands. Authorization of development in public trust areas is retained by the Commission.

3. Special Area Plans and Special Planning Areas – These allow for creative implementation of a GP. Special Planning Areas are more conducive to the use of imaginative planning standards that would not be allowed through the application of standard zoning districts. The flexibility in Special Planning Areas can also be used to protect unique environmental, historic, or architectural and other features that require special consideration. Unlike Specific Plans, Special Planning Areas have a limited focus: the provision of unique standards through a land plan and development standards. Special Planning Areas do not include discussions on financing or timing. They are well-suited to projects that do not have the finances or time required to create a detailed Specific Plan. The local Zoning Ordinance would establish the minimum requirements for Special Planning Areas.

4. Local Hazard Mitigation Plans – FEMA’s mitigation planning process is used by state, tribal, and local leaders to understand risks from natural hazards and develop long-term strategies that will reduce the impacts of future events on people, property, and the environment.

The Disaster Mitigation Act (DMA), passed in 2000, shifted the federal emphasis toward planning for disasters before they occur. The DMA requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. Regulations developed to fulfill the DMA’s requirements are included in Title 44 of the Code of Federal Regulations (44 CFR). The responsibility for hazard mitigation lies with many, including private property owners, commercial interests, and local, state, and federal governments. The DMA encourages cooperation among state and local authorities in pre-disaster planning. The enhanced planning network called for by the DMA helps local governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more cost-effective risk reduction projects.

Humboldt County prepared a hazard mitigation plan in compliance with the DMA in 2007. Cities and special purpose districts with jurisdiction inside the County participated

as planning partners in the plan. That initial plan identified resources, information, and strategies for reducing risk from natural hazards. It called for ongoing updates and the Humboldt County Operational Area Hazard Mitigation Plan 2019 fulfills this ongoing update requirement.

[https://humboldt.gov.org/DocumentCenter/View/78686/2019-08-15\\_HumboldtCountyHMP\\_Vol1\\_InitialReviewDraft?bidId=](https://humboldt.gov.org/DocumentCenter/View/78686/2019-08-15_HumboldtCountyHMP_Vol1_InitialReviewDraft?bidId=)

## Organizational Structures

**1. Joint Powers Authority (JPAs)** are legally created entities that allow two or more public agencies to jointly exercise common powers. JPAs are cooperative arrangements among existing agencies. The Joint Exercise of Powers Act, as codified in California Government Code section 6500, governs JPAs. Under the Act, JPAs are restricted to use by public agencies only.

The Joint Exercise of Powers Act authorizes two kinds of JPA arrangements:

- *Two or more public agencies can contract to jointly exercise common powers.*
- *Two or more public agencies can contract to form a separate entity.*

An Association of Governments is another type of framework often composed of municipalities and counties and is usually organized as a Joint Powers Authority.

**2. Special Districts (SD)** are local governments created by the people of a community to deliver specialized services essential to their health, safety, economy, and well-being, that the local city or county do not provide. Independent districts have autonomous boards that are elected by voters or appointed to fixed terms. Dependent districts are governed by other governmental agencies, like cities or counties, and can be for specific geographic areas using County Service Areas (CSAs) (CSDA/CALAFCO 2016).

Creating a SD for regional sea level rise adaptation planning on Humboldt Bay would need to involve Humboldt County's Local Agency Formation Commission (LAFCo). LAFCos are responsible for overseeing the formation of new SD and other public agencies, as well as changes in agency boundaries. LAFCos also adopt a sphere of influence, or a plan for the potential boundaries and service area, for each agency. LAFCos conduct regular municipal service reviews of special districts and other local agencies to capture and analyze information about the governance structures and efficiencies of service providers, and to identify opportunities for greater coordination and cooperation between agencies (CSDA/CALAFCO 2016).

**3. Regional Planning Collaborative** There is a Regional Climate Collaboratives Program (RCC) at the California Strategic Growth Council. RCC support cross-sector collaboration at the regional scale that leads to climate change mitigation, adaptation, and resilience initiatives. In the context of critical infrastructure, regional collaboratives can help bring together relevant stakeholders and provide services like technical assistance and best practices for outreach and coordination.

There are several regional planning collaboratives currently operating in the greater Los Angeles and in the San Francisco Bay areas. The Local Government Commission and Alliance of Regional Collaboratives for Climate Adaptation (ARCCA) and a network of regional collaboratives such as the North Coast Resource Partnership (NCRP) are working with Governor's Office of Planning and Research (OPR).

ARCCA aims to create a robust network of organizations and professionals working to advance climate change adaptation in California to share information and best practices, coordinate activities, and leverage limited resources to conduct joint projects. ARCCA has produced a Regional Adaptation Collaborative Toolkit.

<https://arccacalifornia.org/toolkit/>

The NCRP started in 2005, is an innovative, stakeholder-driven collaboration among Tribes, local government, watershed groups, and interested partners focused on healthy watersheds, safe and healthy communities, and economic vitality for the North Coast Region. The NCRP Region includes all or part of seven North Coast counties (Del Norte, Siskiyou, Modoc, Humboldt, Trinity, Mendocino, and Sonoma) and the homelands of North Coast Tribes. The NCRP is governed by a Policy Review Panel (PRP) comprised of Tribal and county representatives from the North Coast region. The PRP makes all decisions for the NCRP and is supported by the Technical Peer Review Committee (TPRC), an advisory body to the PRP that provides scientific and technical expertise. All NCRP PRP and their member agencies are required to be signatories to the Memorandum of Mutual Understandings and in accordance with the Integrated Regional Watershed Management Program (IRWMP), are required to formally adopt the NCRP Plan by resolution.

<https://northcoastresourcepartnership.org/partnership/>

[https://northcoastresourcepartnership.org/site/assets/uploads/2021/05/NCRP\\_Handbook\\_2021.pdf](https://northcoastresourcepartnership.org/site/assets/uploads/2021/05/NCRP_Handbook_2021.pdf)

IRWMP is a collaborative effort to identify and implement water management solutions on a regional scale that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives. This approach delivers higher value for investments by considering all interests, providing multiple benefits, and working across jurisdictional boundaries. Examples of multiple benefits include improved water quality, better flood management, restored and enhanced ecosystems, and more reliable surface and groundwater supplies.

The IRWM was established in 2002 when the [Regional Water Management Planning Act \(SB 1672\)](#) was passed by the Legislature. Since then, various bond acts approved by California voters have provided over \$1.5 billion in State funding to support and advance integrated, multi-benefit regional projects. The local match on the State resources has been impressive; often on the order of 4:1. Cities, counties, water districts, community/environmental groups, Tribes and others across the State have worked collaboratively to organize and establish 48 regional water management groups (RWMGs), covering over 87% of the State's area and 99% of its population. Over the years, numerous IRWM planning grants have helped RWMGs develop, adopt and update IRWM plans to identify strategies and projects to address the unique needs and conditions of their regions. IRWM implementation grants awarded to date have resulted

in implementation of 800+ IRWM projects providing a wide range of benefits. More recently, grants have been awarded to increase involvement of disadvantaged communities and underrepresented communities (including Tribes) in the regional IRWM planning and decision making processes.

<https://water.ca.gov/programs/integrated-regional-water-management>

4. Memorandum of Understanding (MOU) is an agreement between two or more parties and is a legal document like a contract. Unlike a contract, however, an MOU need not contain legally enforceable promises. In the context of joint use agreements, an MOU is often used to define the expectations and responsibilities of each of the parties. Whereas a memorandum of agreement (MOA) is a cooperative agreement, a document written between parties to cooperatively work together on an agreed upon project or meet an agreed upon objective.

## CONCLUSIONS

For the County and Cities of Eureka and Arcata it would be desirable for a regional sea level rise regulatory framework and organizational structure to reinforce their local land use authorities granted to them by California's General Plan and Zoning laws. The Coastal Act and LCPs do not supersede local government's land use authorities, for example to designate allowable uses and densities. Due to the unique situation on Humboldt Bay where a significant portion of the shoreline and area vulnerable to sea level rise is public trust land retained by the Commission for purposes of authorizing development pursuant to the Coastal Act, it may be important to emphasize local government's land use authority when collaborating with the Commission. The LCP would be the regulatory framework most conducive to regional sea level rise planning collaboration with the Commission. MOUs between the three LCP authorities on Humboldt Bay would provide an organizational structure for regional sea level rise planning on Humboldt Bay. This MOU or another could include non-LCP entities such as the HBHRCD with jurisdiction up to MHHW on the shoreline of Humboldt Bay, or with specific regional asset owners such as Caltrans or PG&E in separate MOUs.

## 2.2 Cross-jurisdictional coordination

### Subtasks:

2.2.a. Identify assets and locations that present a need or opportunity for cross-jurisdictional coordination in consideration of hydrologic unit/subunit and jurisdictional boundaries, other geographic features, asset importance or priority, etc.

2.2.b. Identify how LCP authorities and the Coastal Commission could implement the Coastal Act and their respective LCPs to facilitate cross-jurisdictional coordination.

### Locations for cross-jurisdictional coordination

Based on the number of assets that traverse multiple hydrologic units involving multiple jurisdictions, the “Core” regional sea level rise adaptation planning entities on Humboldt Bay could be Humboldt County, Coastal Commission, City of Eureka, as well as the City of Arcata to a limited extent based on the asset. Further, the 102-mile shoreline of Humboldt Bay could be considered the most critical asset/resource, which is exposed to the effects of SLR. The Humboldt Bay Harbor, Recreation and Conservation District’s (HBHRCD) jurisdiction encompasses and is defined by the shoreline, it could also be considered one of the five Core regional SLR adaptation planning entities when the shoreline is involved. Other agencies with property, development, and management responsibilities on Humboldt Bay that should be considered stakeholders in regional adaptation planning are California Department of Fish and Wildlife with multiple Refuges and U.S. Fish and Wildlife Service’s Humboldt Bay National Wildlife Refuge. Other agencies with regulatory jurisdiction on Humboldt Bay who could also be valuable stakeholders are North Coast Regional Water Quality Control Board, State Lands Commission, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Lastly, Humboldt Bay or Wigi is an ancestral and sacred waters and lands of the Wiyot Tribe, they too should be included as a key stakeholder for regional planning.

Assets that traverse the greatest number of hydrologic units (6) involving the maximum number of jurisdictions (5), could be a focus for regional sea level rise adaptation planning on Humboldt Bay:

- Railroad/Bay Trail (6/5),
- Agricultural Lands (6/4),
- Open Space/ Wildlife Refuges/Reserves (6/4),
- Wiyot Cultural Sites (6/4),
- Dike Shorelines (5/5),
- Caltrans Highway 101 (5/4),
- And Pacific Gas and Electric’s Electrical Transmission Lines (5/4).

Other critical utility infrastructure (municipal water and wastewater transmission facilities and gas transmission lines) traverses fewer hydrologic units as the assets listed above, but do share similar exposure to sea level rise, as they are protected by diked shorelines. Below is a list of cross-jurisdictional categories with numbers of jurisdictions (#/5) and/or hydrologic units (#/6) that each category traverses.

1. Land use (development) jurisdictions that traverse multiple hydrologic units.
  - Humboldt County = Mad River Slough, Arcata Bay, Eureka Slough, Entrance Bay, Elk River Slough, and South Bay (6/6 100%)
  - HBHRCD = Mad River Slough, Arcata Bay, Eureka Slough, Entrance Bay, Elk River Slough, and South Bay (6/6 100%)
  - California Coastal Commission = Mad River Slough, Arcata Bay, Eureka Slough, Entrance Bay, Elk River Slough, and South Bay (6/6 100%)

- City of Eureka = Arcata Bay, Eureka Slough, Entrance Bay, and Elk River Slough (4/6 67%)
- City of Arcata = Arcata Bay (1/4 25%)
- 2. Hydrologic units that have multiple jurisdictions.
  - Arcata Bay = California Coastal Commission, Humboldt County, HBHRCD, City of Arcata, and City of Eureka (5/5)
  - Eureka Slough = California Coastal Commission, Humboldt County, HBHRCD, and City of Eureka (4/5)
  - Entrance Bay = California Coastal Commission, Humboldt County, HBHRCD, and City of Eureka (4/5)
  - Elk River Slough = California Coastal Commission, Humboldt County, HBHRCD, and City of Eureka (4/5)
  - Mad River Slough = California Coastal Commission, Humboldt County, and HBHRCD (3/5)
  - South Bay = California Coastal Commission, Humboldt County, and HBHRCD (3/5)
- 3. Utility infrastructure that traverses multiple hydrologic units and regulatory jurisdictions.
  - Pacific Gas and Electric's electrical transmission lines: South Bay, Elk River Slough, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (5/6 – 4/5)
  - Pacific Gas and Electric's gas transmission lines: South Bay, Elk River Slough, Eureka Slough, and Arcata Bay – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (4/6 – 4/5)
  - Humboldt Community Services District's municipal water transmission lines: Eureka Slough, Entrance Bay, Elk River Slough, and South Bay – City of Eureka, Humboldt County, and California Coastal Commission (4/6 – 3/5)
  - City of Eureka and Humboldt Community Services District's wastewater collection lines: Eureka Slough, Entrance Bay, Elk River Slough, and South Bay – City of Eureka, Humboldt County, and California Coastal Commission (4/6 – 3/5)
  - City of Eureka's municipal water transmission lines: Arcata Bay and Eureka Slough – City of Arcata, Humboldt County, and California Coastal Commission (2/6 – 3/5)
  - Humboldt Bay Municipal Water District's municipal water transmission lines: Mad River Slough and Entrance Bay – Humboldt County and California Coastal Commission (2/6 – 2/5)
- 4. Transportation infrastructure that traverses multiple hydrologic units and regulatory jurisdictions.
  - Caltrans Highway 101: South Bay, Elk River Slough, Entrance Bay, Eureka Slough, and Arcata Bay – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (5/6 – 4/5)



- Humboldt Bay Trail: Elk River Slough, Entrance Bay, and Arcata Bay – Humboldt County, California Coastal Commission, HBHRCD, City of Eureka, and City of Arcata (3/6 – 5/5)
  - Caltrans Highway 255: Entrance Bay, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (3/6 – 4/5)
  - Mrytle Avenue/Old Arcata Road: Eureka Slough and Arcata Bay – Humboldt County, California Coastal Commission, and City of Arcata (2/6 – 3/5)
5. Shoreline structures that traverse multiple hydrologic units and regulatory jurisdictions.
- Dikes: South Bay, Elk River Slough, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, HBHRCD, City of Eureka, and City of Arcata (5/6 – 5/5)
  - Railroad/Bay Trail: South Bay, Elk River Slough, Entrance Bay, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (6/6 - 4/5)
6. Land uses that traverse multiple hydrologic units and regulatory jurisdictions.
- Agricultural: South Bay, Elk River Slough, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, HBHRCD, City of Eureka, and City of Arcata (5/6 – 5/5)
  - Open Space/ Wildlife Refuges/Reserves: South Bay, Elk River Slough, Entrance Bay, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (6/6 – 4/5)
  - Coastal Dependent Industrial: South Bay, Entrance Bay, and Eureka Slough – Humboldt County, California Coastal Commission, and City of Eureka (3/6 – 3/5)
7. Coastal resources that traverse multiple hydrologic units and regulatory jurisdictions.
- Cultural Sites: South Bay, Elk River Slough, Entrance Bay, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (6/6 – 4/5)
  - Diked former tidelands (agricultural uses, freshwater wetland, and wildlife habitats): South Bay, Elk River Slough, Eureka Slough, Arcata Bay, and Mad River Slough – Humboldt County, California Coastal Commission, City of Eureka, and City of Arcata (5/6 – 4/5)
  - Spits-Coastal Dunes: South Bay, Entrance Bay, Arcata Bay, and Mad River Slough – Humboldt County and California Coastal Commission (4/6 – 2/5)
8. Contaminated sites occur in all hydrologic units and multiple regulatory jurisdictions (6/6 – 4/5).

## CONCLUSION

Regional sea level rise adaptation planning on Humboldt Bay could start with a focus on the vulnerability of diked shorelines, which are protecting agricultural/open space lands

and critical utility and transportation infrastructure from tidal inundation. Planning to increase diked shoreline resiliency could afford near term protection for these critical assets. Alternatively, regional planning could begin with a critical transportation infrastructure such as Highway 101, or critical utility infrastructure such as municipal water transmission lines, or in the case of a single LCP authority such as County the focus could be on one of the Communities at Risk.

To initiate regional SLR adaptation planning it may be easier to focus on one hydrologic unit on Humboldt Bay. The Eureka Slough hydrologic unit was the subject of a recent focused sea level rise vulnerability assessment by Humboldt County. This unit has extensive diked shorelines (14.8 of 25.3 miles of shoreline) throughout forming several sub-units (11). These shorelines protect critically important regional utility (31.5 miles) and transportation (15.1 miles and an airport) infrastructure, agricultural (1,640 ac.) and wildlife refuge (550 ac.) lands, cultural sites (15), and contaminated sites (18). Two of the three LCP authorities (County and Eureka) have jurisdiction in the Eureka Slough unit, as does the Commission and HBHRCD, Caltrans, and California Department of Fish and Wildlife. The Eureka Slough unit provides an excellent opportunity to initiate regional sea level rise adaptation planning on Humboldt Bay.

#### LCP & Coastal Commission coordination

Local governments (Humboldt County, City of Eureka and Arcata) on Humboldt Bay have prepared LCPs, which include a land use plan for that portion of the coastal zone within their jurisdiction. The LCPs contain policies to govern the conservation and use of coastal resources. These LCPs have been certified by the Commission that they are compliant with the policies of Chapter 3 of the Coastal Act. Once an LCP has been certified, local government becomes the coastal development review authority pursuant to the Coastal Act. However, this authority does not apply on public trust lands, in these areas the State has retained development jurisdiction. On Humboldt Bay, public trust lands, which include diked former tidelands are most of the areas (75-90%) vulnerable to 1.0 to 2.0 meters of SLR this century.

The LCP authorities on Humboldt Bay have prepared SLR vulnerability assessments for their LCPs, including state retained jurisdiction public trust lands. With sufficient funding, these LCP authorities on Humboldt Bay could prepare regional SLR adaptation policies for assets that traverse multi-jurisdictions and/or hydrologic units. The Commission could verify that the regional policies prepared by the LCP authorities conform with the Coastal Act. Then these mutually agreed upon regional policies would provide the Commission with valuable guidance when reviewing coastal development proposals within the LCP on public trust lands. An MOU could memorialize Commission's intent to use these regional SLR policies in the respective LCP as guidance when reviewing coastal development proposals, like the process for consolidating review and approval of cross-jurisdictional proposals (Coastal Act Section 30601.3) or PWWs.

A project that straddles jurisdictions of both the state and the LCP would typically require coastal development permits from both the Commission (regulated by the Coastal Act) and from a local government (regulated by the certified LCP). However,

Coastal Act Section 30601.3 authorizes the Commission to process a consolidated coastal development permit application when the local government, the applicant, and the Commission all agree to do so. As an alternative to separate coastal permits subject to different standards of review in multiple jurisdictions, the consolidated coastal permit is subject to review and approval only by the Commission; the Coastal Act is the regulating mechanism for the entire project, with the LCP providing guidance for review. The consolidated coastal permit process may simplify the coastal permit review process by eliminating the need to prepare and process permit applications through multiple jurisdictions; excluding a potential appeal process associated with the local government action on the permit; and avoiding the need to process an LCP amendment in the event the project results in conflicts with LCP policies—which may be better addressed pursuant to Coastal Act policies.

A PWP is another alternate vehicle for obtaining coastal development approval of complex, multi-pronged, or phased public works projects, which remain under the authority of the Commission irrespective of coastal permit jurisdictional boundaries. In contrast to project-by-project approval through the coastal development process, the PWP process allows for faster and more efficient processing of public works projects by eliminating the need to coordinate individual coastal development permits separately through multiple jurisdictions. The PWP process is intended to provide consistency in review, analysis, processing, and implementation under the authority of the Commission. A PWP must be sufficiently detailed regarding the size, kind, intensity, and location of development to allow the Commission to determine its consistency with the policies in Chapter 3 of the Coastal Act or the certified LCP, as applicable. Once the Commission approves a PWP, no coastal development permit for future project implementation is required if the development remains consistent with the PWP. Instead, the permittee provides a notice of impending development to the Commission and other parties. Unfortunately, a PWP is applicable only for projects residing in LCP jurisdictions not in state retained jurisdiction.

Another mechanism to facilitate cross-jurisdictional coordination between LCP authorities on Humboldt Bay and the Commission is the Public Trust Doctrine (PTD). Locally elected bodies, like state agencies such as the Commission have an affirmative duty to apply the PTD whenever making land use decisions that affect natural resources of Humboldt Bay or the public's use and enjoyment of the bay and its coastal resources. Local Coastal Program authorities on Humboldt Bay, County and Cities of Eureka and Arcata regulate land use pursuant to the state's General Plan and Zoning laws, in addition to their LCPs pursuant to the Coastal Act. Together these local governments and the Commission have a common duty, and opportunity to apply the PTD when rendering their discretionary decisions. This could support an MOU between these entities for regional SLR adaptation planning on Humboldt Bay. The application of the PTD in California has been held back by a lack of understanding of the mandate it imposes on locally elected decision makers.

In 1976, the Legislature granted the Commission authority over coastal development on any tide and submerged lands which are public trust lands, whether filled or unfilled, lying within the coastal zone. Local land use authorities must now submit that portion of their General Plan and Zoning Ordinances in the California Coastal Zone as a LCP, so

the Commission can certify that the Program complies with the Coastal Act. It might appear that the State has usurped local land use jurisdictions on public trust lands, by requiring a CDP from the Commission. Yet, in a Supreme Court case, *California Coastal Commission v. Granite Rock* (1987), the Court held that “land use planning in essence chooses particular uses for the land; environmental regulation, at its core, does not mandate particular uses for the land but requires only that, however the land is used, damage to the environment is kept within prescribed limits.” Therefore, local governments still retain the authority to determine the underlying land uses for public trust lands (diked former tide lands and current tidelands) the Commission is limited to regulating whatever land use is locally approved to prevent or minimize damage to the environment.

Local governments must consider the public trust when developing regional plans for SLR that affect Humboldt Bay’s resources. In the 1983 Mono Lake case, the Supreme Court expanded the public trust doctrine in a significant way. It held that the State has an “affirmative duty to take the public trust into account” in making decisions affecting public trust resources. Therefore, by implication, because local governments are subdivisions of the State, they must also consider the public trust in planning whenever feasible (able) to protect the public’s trust uses and resources; further, these local governments must exercise continual supervision over these resources. For these reasons collaboration between the LCP authorities and the Commission is necessary for regional SLR planning on Humboldt Bay.

## CONCLUSION

Collaboration between the LCP authorities and the Commission is possible because LCP authorities land use planning responsibilities compliment the Commission’s environmental resource protection responsibilities on public trust lands on Humboldt Bay. Regional SLR adaptation planning on Humboldt Bay will involve critical assets that traverse multiple jurisdictions on both public trust lands and non-public trust lands. Regional planning can build on local land use designations and state environmental protection policies to guide planning decisions and issuance of development permits. An MOU between the LCP authorities on Humboldt Bay and the Commission could memorialize Commission’s intent to use locally developed regional SLR polices as guidance when reviewing coastal development proposals on public trust lands in the LCPs on Humboldt Bay.

## 2.3. Funding frameworks and opportunities

### Subtasks:

2.3.a. Identify ways in which sea level rise adaptation strategies and measures could be funded, including funding avenues or sources, and the pros and cons of various approaches.

2.3b. Identify how funding could be received (i.e. what entity could apply for and receive funding).

### Funding for Regional Regulatory Framework/Regional Coordination Efforts

Funding for regional planning could come from State & Federal programs (e.g., grants), fees (e.g., stormwater fees), and/or taxes (e.g., parcel tax). The following ideas were evaluated in the San Mateo OneShoreline feasibility study and could be researched more thoroughly once potential regional SLR regulatory frameworks are narrowed down.

- Federal funding
- State funding
- Property tax increase
- General tax increase
- Special assessment district
- Community facilities district
- Special parcel tax (district or voter initiated)
- Replace NFIP with lower-cost flood insurance
- Gas tax
- Climate resilience citizens' initiative
- Green bonds
- Development impact fees
- Insurance surcharge
- Geologic hazard abatement district
- Stormwater credit trading market
- Stormwater in-lieu fee program
- Stormwater utility rate increase
- Utility rate increase
- Enhanced infrastructure financing district
- Community infrastructure resilience authority
- Resilience bonds
- Nonprofit
- Private philanthropy or investors
- Corporate sustainability

### *Other considerations & example funding strategies*

Other important considerations when choosing a regional framework include identifying where the startup funds come from and how to develop a stable long-term funding strategy. An effort will need to be communicated to potential partners and beneficiaries about the benefits of this collaboration for each entity's involvement. If the benefit seems great enough, there may be existing resources that can be tapped into for startup funds from partners who would see a direct benefit more quickly than others, such as asset owners and managers. The considerations for long-term funding strategy are partially dependent on the scope of the regional framework. For example, if there are current funding streams available to existing agencies, can revising that agency's authority to include SLR efforts provide a steady startup funding source? Or can aspects of SLR planning efforts be coupled with compatible planning processes, such as the Humboldt County Hazard Mitigation Plan updated every five years? Ideally, a

long-term effort should not rely only on funding by grants in order to maintain consistency and continual involvement.

The scope of the regional framework can vary, as discussed in other Task 2 memo sections, which impacts the level of funding needed. Some examples of regional frameworks include the Humboldt Bay SLR Adaptation Planning Working Group (2013-2015), the Climate Action Plan (2019-current), Humboldt County Association of Governments, Humboldt Waste Management Authority (1999-current), Reclamation District #768, and the San Mateo OneShoreline SLR District. Overviews of each of example funding strategies are outlined below:

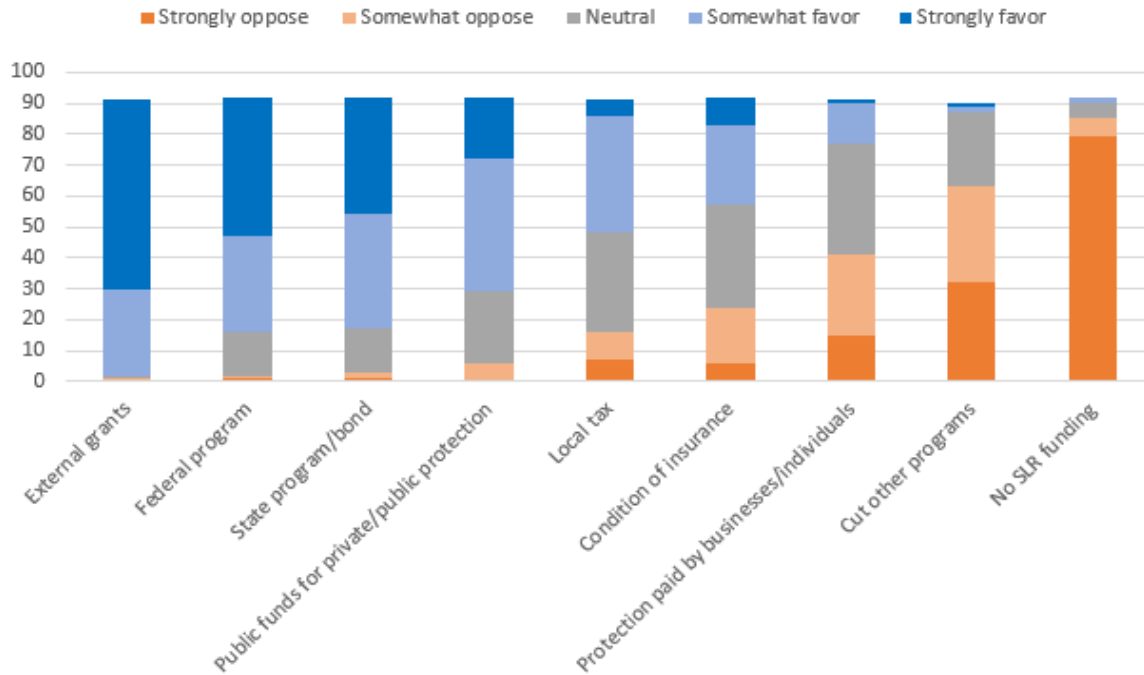
- Humboldt Bay Sea Level Rise Adaptation Planning Project
  - This regional SLR effort was funded by a State Coastal Conservancy grant. The grant applicant was a local non-profit, the Coastal Ecosystems Institute of Northern California, and it paid for the involvement of consultants to conduct a shoreline inventory, mapping, and SLR vulnerability assessment (2010-2013) and to lead Adaptation Planning Working Group (APWG) meetings (2013-2015) along with additional technical work. The APWG consisted of 22 regional stakeholders and attendees were not paid through the grant to participate. Humboldt County and the Harbor District were project co-chairs. This effort concluded in 2015 after the funding expired.
- Regional Climate Action Plan Partnership (CAP)
  - The CAP partnership includes Redwood Coast Energy Authority (RCEA), the County of Humboldt and the cities of Arcata, Eureka, Blue Lake, Ferndale, Fortuna, Rio Dell, and Trinidad. The County and cities signed an MOU to facilitate the partnership. The County has generally taken the lead and contracted with RCEA for technical consulting. This planning effort has been paid with general funds from the participating agencies and with assistance from RCEA through small grants for participating agencies. RCEA's small grants are from a PG&E strategic energy planning initiative grant. RCEA is also providing ongoing coordination support through their general funds.
  - Initial effort for the CAP was supported by the Civic Spark program which helps build local government capacity by placing a dedicated Civic Spark Fellow with a host entity at a relatively low cost. Civic Spark Fellows have been utilized by Humboldt County for the CAP as well as this Regional SLR Planning Feasibility Study. The Climate Corps is a similar program that could be used to enhance regional capacity and provide a dedicated focus on SLR.
  - A funding strategy has not yet been identified for project implementation or to fund a dedicated coordinator; however, the planning process is researching potential sources of funds that could be pursued as a region or by individual partners.
- Humboldt County Association of Governments (HCAOG) Joint powers agreement.

- A Regional Transportation Planning Agency created by legislative statute and funded by the State transportation funds (gas/diesel taxes and DMV user fees). It consists of the City of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad, and the County of Humboldt. Local jurisdictions don't pay into HCAOG. Consistent State funding provides basic administrative functions and if available, remaining funds can be spent on local projects. Some additional discretionary funds are used for State-specified purposes.
- Recently, HCAOG received one time funding (REAP) from governor's budget for housing planning. It will be used to fund a regional CEQA VMT study and hire a dedicated CAP coordinator for the two-year funding cycle. HCAOG qualified for this funding due to its status as a regional entity (COG).
- Reclamation District #768
  - District #768 is a special district overseen by Humboldt LAFCo and funded by a special tax on the properties in the District.
  - The District was awarded \$10million in Public Assistance funds from CalEMA/FEMA in 2005 to repair approximately 5-miles of its dike system.
- San Mateo OneShoreline (formerly the San Mateo County Flood Control District; information below was collected from the OneShoreline website and San Mateo County Civil Grand Jury 2020-21 Report:  
[http://www.sanmateocourt.org/documents/grand\\_jury/2020/Sea%20Level%20Rise.pdf](http://www.sanmateocourt.org/documents/grand_jury/2020/Sea%20Level%20Rise.pdf))
  - Initial funding contribution was allocated by population (broken into 3 tiers) of participating cities and County. Its operational funding is \$1.5M annually for the first 3 years.
  - One of their goals within the first 3 years is to pursue a sustainable long term revenue source. One source they are evaluating is a parcel tax that would support SLR and wildfire mitigation efforts.

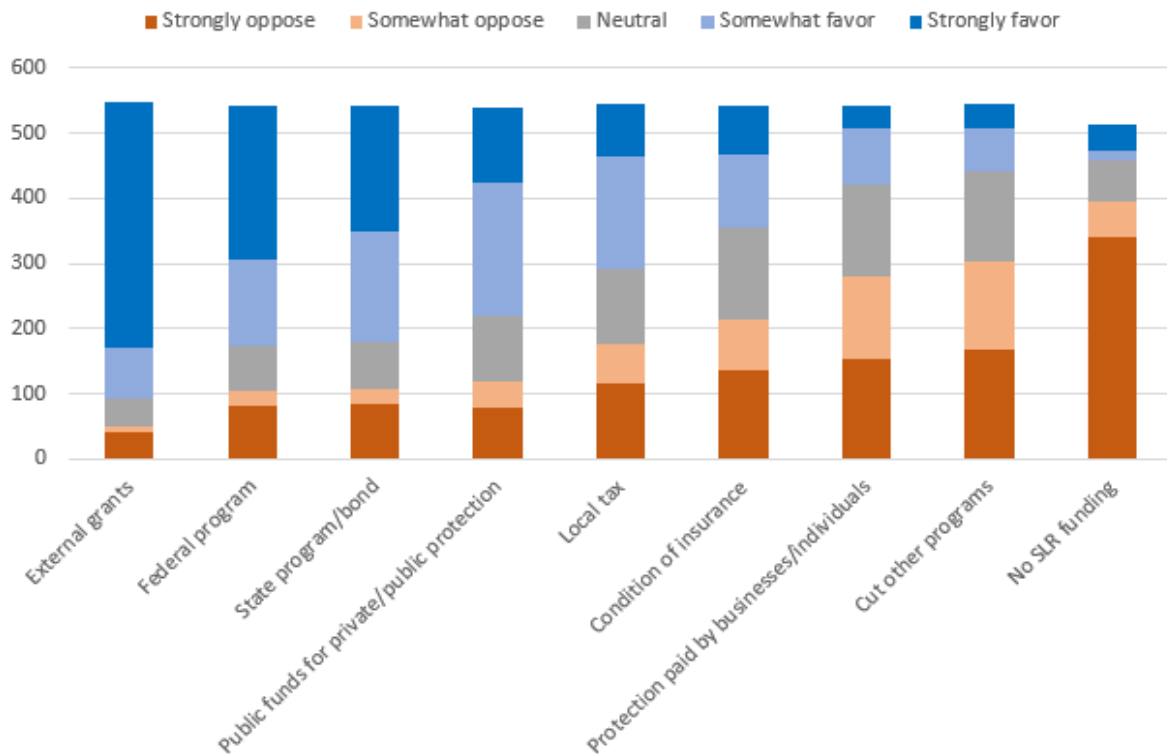
### *Public perception of funding options*

Based on results from a survey conducted by HSU and Humboldt County of the general public and coastal professionals regarding SLR, the vast majority of public and professional survey supported spending funds on SLR-related activities (see 2021 Survey Results Figures, full survey reports in progress). The most support was shown for the use of external grant funds when available, to pass state or federal laws or programs with mechanisms to fund SLR work, and to use of public funds for SLR adaptation projects on private lands that will protect both public and private assets. A slight majority supported passing a local tax measure to address SLR (public survey: 44% support and 31% oppose; coastal professional survey: 47% support and 18% oppose). Less support was shown for encouraging insurance companies to require upgrades on homes/businesses to reduce SLR risks as a condition of insurance. The least desirable options were to require individuals/businesses to pay for their own SLR protection to minimize local government costs or to increase funding for SLR protection by cutting other local programs and services.

### Professionals Survey: Support for potential funding strategies



### Public Survey: Support for potential funding strategies



2021 Survey Results Figures: Indicate your level of support for various potential funding mechanisms for SLR planning and adaptation (either a stand-alone project or within other projects).



## Funding opportunities for planning, project development, and adaptation implementation projects

### Grants

If a regional coordination effort does not have the ability to generate stable funds, it is likely local stakeholders will pursue grants to pay for planning, project development, and adaptation implementation projects. Eligible entities to apply for state or federal grants generally include cities, counties, special districts, Tribes, universities, non-profits, or community-based organizations. Key components for competitive grants usually include cost estimates and a feasibility study or other local or regional plans that supports the project. Generally, the funding of regional SLR projects through grants would benefit from the following:

- Development of priority regional projects (such as through a regional SLR resiliency investment plan, CAP, Local Hazard Mitigation Program, or Public Works Plan).
- Development multi-benefit projects to provide a wider range of funding opportunities (e.g., flood control, habitat restoration, public access).
- Development of a common strategy that is shared among regional partners.
- Pre-identification and development of trusted partnerships. A co-benefit of regional forum is that if partnerships are already established, applicants can respond quickly to funding opportunities. Additionally, to help with equity practices, establish relationships with community-based organizations (CBOs) to partner with for mutually beneficial funding applications.
- Pre-identification of leveraged funding for state and federal grants.

Two key grant opportunities are the State California Coastal Commission Grant Programs and the CalOES/FEMA Building Resilient Infrastructure & Communities (BRIC) Program. The Commission Local Assistant and Coastal Grant Programs seem like a great prospect because likely many of the SLR adaptation regional planning projects on Humboldt Bay will occur on areas of the Coastal Commission’s state retained jurisdiction. The BRIC Program could be a good resource due to its focus on proactive planning rather than reactive disaster spending. Other potential sources could include owners and managers of local vulnerable assets such as Caltrans or PG&E.

Table of State and Federal grant opportunities:

State Agencies	State Grant Opportunities*
CA Coastal Commission	Local Assistance Grant Programs Local Coastal Program Grant
CA State Coastal Conservancy	Prop 68 Climate Ready Program **Governor Newsom’s Sept 23, 2021 budget bill appropriates \$500 million for coastal resilience in the Fiscal Years 2022-23 and 2023-24.
CA Parks & Recreation	California Department of Boating and Waterways: Public Beach Restoration and Shoreline Erosion Control

	Regional Park Program
CA Dept. of Fish & Wildlife	Environmental Enhancement Fund Proposition 1 Restoration Grant Programs
CA Dept. of Water Resources	Integrated Regional Water Management Grants Prop 1 Coastal Watershed Flood Risk Reduction Grant Program Prop 68 Floodplain Management, Protection and Risk Awareness (FMPRA) Grant Program Flood Corridor Program Sustainable Groundwater Planning Grant Program Prop 84 Local Levee Assistance Program (LLAP)
CA Wildlife Conservation Board	Prop 1 Stream Flow Enhancement Program Prop 68 Wildlife Corridor and Fish Passage Program
Caltrans	Sustainable Transportation Planning Grant Program
CalOES	Hazard Mitigation Grant Program Flood Mitigation Assistance Program Building Resilient Infrastructure and Communities (BRIC) Grant Program Pre-Disaster Mitigation Program **Local Hazard Mitigation Program is an eligibility requirement **Application through CalOES and approval by FEMA
Ocean Protection Council	Proposition 1 Protecting Rivers, Lakes, Streams, Coastal Waters, and Watersheds Grant Coastal Environmental Justice Grant Proposition 68 Coastal Resilience Grant
State Water Resources Control Board	Prop 1 Water Recycling, Stormwater, Groundwater Grant Program Prop 68 Groundwater Treatment - Remediation Grant Program Seawater Intrusion Control Loan Program Clean Water Act Section 319 Nonpoint Source Pollution Grant **Climate Action Plan will gain more points on applications
<b>Federal Agencies</b>	<b>Federal Grant Opportunities</b>
Dept. of Housing and Urban Development	Community Development Block Grant – Disaster Recovery Program
Dept. of Homeland Security	Regional Resilience Assessment Program (RRAP)
Dept. of Interior Bureau of Reclamation	WaterSMART Environmental Water Resources Projects
FEMA	Hazard Mitigation Grant (HMGP) Program Flood Mitigation Assistance (FMA) Grant Pre-Disaster Mitigation (PDM) Grant Building Resilient Infrastructure and Communities (BRIC) Grant Program (see CalOES above)

NOAA	National Coastal Resiliency Grants Program
US Fish & Wildlife Service	National Coastal Wetlands Conservation Grant Program Farm Bill Conservation Programs
US Army Corps of Engineers	Planning Assistance Continuing Authorities Program (CAP) Floodplain Management Services

\*Additional State grant opportunities can be searched for at California Grants Portal ([https://www.grants.ca.gov/?mc\\_cid=5a1d172a14&mc\\_eid=79451f60a7](https://www.grants.ca.gov/?mc_cid=5a1d172a14&mc_eid=79451f60a7)).

### Legislation

Various legislation, recently approved or in process, could provide additional funding opportunities. Based on these bills, it seems highly important and urgent that the Humboldt Bay region create some sort of regional group that can access funding targeted towards regional entities. If the region can organize quicker, it is possible there will be slightly less competition from other areas. ARCCA provides an online Legislative Tracker to follow bills related to climate change and adaptation, open the link for more information: [https://arccacalifornia.org/2021-legislative-tracker/?mc\\_cid=5a1d172a14&mc\\_eid=79451f60a7](https://arccacalifornia.org/2021-legislative-tracker/?mc_cid=5a1d172a14&mc_eid=79451f60a7)

- AB 691 - State lands: granted trust lands: sea level rise – approved 2013 - requires Public Land Trustees to provide the State Lands Commission with a SLR Impact Assessment (IA) of their Granted Lands. The Harbor District and City of Eureka are Land Trustees and have not completed/submitted their IAs. This could affect funding and assistance coming to HB to address SLR if State-level evaluations are supported by these IAs or if future funding opportunities require completed IAs.
- SB-1 (Atkins and Petrie-Norris) Sea Level Rise Mitigation and Adaptation Act of 2021 – approved – will require the Coastal Commission to establish guidelines for the identification, assessment, minimization, and mitigation of sea level rise each local coastal program. It will create the California SLR State and Regional Support Collaborative within the OPC which will provide \$100,000,000 annually for grants to local and regional governments to update local and regional land use plans with SLR updates and fund plan implementation. It will authorize the Secretary for Environmental Protection to expend \$2million in grants in which \$500,000 is earmarked for SLR in disadvantaged communities.
- AB 72 (Petrie-Norris) Coastal Adaptation Permitting Act of 2021 – approved – will require the Natural Resources Agency to explore and implement efforts to create a more coordinated and efficient regulatory review and permitting process for coastal adaptation projects that use natural infrastructure.
- SB 83 (Allen) SLR revolving loan program – pending, vetoed by Governor – would require OPC and SCC to develop a SLR revolving loan program to provide low-interest loans to local jurisdictions to purchase properties vulnerable to SLR.
- AB 11 (Ward) Regional Climate Change Authority – pending – would require SGC to establish and administer a regional climate collaborative program for under-resourced communities to access climate change mitigation and

adaptation grants. SGC would establish regional climate change authorities to receive annual grants and to coordinate among the region's stakeholders.

- AB 50 (Boerner Horvath) Climate Adaptation Center and Regional Support Network - pending - would establish the OPC Climate Adaptation Center and Regional Support Network to provide information and a state technical expert "point person" to support local governments in planning for SLR.
- AB 51 (Quirk) Regional Climate Adaptation Planning groups – pending – would require the SGC to develop guidelines for the creation of regional climate adaptation planning groups and criteria for regional climate adaptation plans. This would include grant funding to SGC certified regional adaptation planning groups.
- AB 897 (Mullin) Office of Planning and Research: regional climate networks: regional climate adaptation and resilience action plans – pending – would require OPR to provide technical assistance to regions interested in creating a regional climate network and regional climate adaptation and resilience action plans, and OPR would be required to make recommendations of state funding sources for regional networks and plans, especially for vulnerable and under-resourced communities.

## CONCLUSION

The feasibility of a funding strategy will be one important consideration in choosing a regional framework. When potentially feasible frameworks are chosen, additional funding strategy research should occur for each framework. Regional partners should provide feedback on what may be feasible or acceptable for their jurisdiction.

Overall, while grants reduce strain on local resources, they are not ideal for ongoing regional coordination and could cause inconsistencies in efforts. Grants are available short term and projects will often need multiple grants for phased work and may lack adequate planning & monitoring funding. Grants are likely better for discrete adaptation projects. Grant applicants for adaptation projects may need to have the capacity and expertise to manage complex multi-million-dollar projects. Based on the significant amount of Coastal Commission's retained jurisdiction on Humboldt Bay, they are likely a good source for planning funds.

Many locations along the coast of California and the U.S. will be competing for similar pots of money for climate change resilience planning and adaptation implementation projects. It would be advantageous for the Humboldt Bay region to create a regional group (can be formal or informal) to be more competitive for State funds that will be available in the next couple of years for regional planning. Partnerships with community-based organizations (CBOs) and considerations of environmental justice will also make the region more competitive and promote more equitable local planning. Creating a regional collaborative group and developing partnerships with CBOs are initial tasks that can be started now to position the regional favorably for upcoming funding opportunities.

## 2.4. Regulatory and feasibility pathways and barriers

### Subtasks:

2.4.a/b. Identify regulatory and feasibility pathways and barriers to forming, adopting, and implementing a regional sea level rise planning framework, and a Humboldt Bay regional sea level rise adaptation plan.

On Humboldt Bay the primary regulatory barrier to regional sea level rise planning and implementation is jurisdictional (see Task 2.2.b). Pursuant to the Coastal Act, the state retains permanent jurisdiction on public trust lands and LCP authorities have jurisdiction in the remainder of the Coastal Zone. Only the Commission could approve regional SLR adaptation projects on public trust lands, which is most of the area vulnerable to SLR on Humboldt Bay.

Regional planning on Humboldt Bay for SLR to be most effective should include the LCP authorities (County, Eureka, and Arcata), Commission, and the HBHRCD. However, it is not known if these agencies would want to form a regional SLR authority or enter an MOU for regional SLR planning.

Given that the Commission's jurisdiction covers most of the area vulnerable to one and two meters of SLR, it may be difficult for the County and other LCP authorities to secure funding for regional SLR planning on Humboldt Bay, other than from the Commission.

On Humboldt Bay, regionally critical utility assets (energy and communications) are privately owned and managed. Developing and implementing regional SLR strategies and projects with private utilities may be more complicated than with public utility agencies.

At a minimum, the County can pursue regional SLR planning in collaboration with the Commission across all six hydrologic units on Humboldt Bay. The County's Humboldt Bay Area Plan encompasses a significant portion of the areas vulnerable to SLR as well as critical utility and transportation infrastructure, agricultural lands, vulnerable shorelines, and three Communities at Risk. The City of Eureka would be an important regional SLR planning partner as its LCP effects three hydrologic units (Eureka Slough, Entrance Bay, and Elk River Slough) on Humboldt Bay. The City of Arcata could be interested in joining the County's regional SLR planning efforts on Humboldt Bay.

## CONCLUSION

Coastal Act policies have created a regulatory conflict on Humboldt Bay. The Act contains policies that enable LCP authorities to regulate development, but these same policies retain development/resource protection jurisdiction on public trust lands with the state. This conflict is significant on Humboldt Bay as a major portion of the area that is vulnerable to SLR in LCPs are public trust lands. The Act provides guidance from the Legislature that it is necessary to rely heavily on local government and local land use planning procedures and enforcement. The Legislature also recognized that conflicts may occur between one or more policies of the Act and recommended that such conflicts be resolved in a manner which on the balance is the most protective of

significant coastal resources. Regional SLR planning by the LCP authorities on Humboldt Bay in collaboration with the Commission would be the most protective of coastal resources, land uses, utility and transportation infrastructure, cultural resources, and remediation of contaminated sites. A balance between LCP authorities and Commission's state retained jurisdiction authority could be achieved pursuant to Section 30601 to enable regional SLR adaptation planning on Humboldt Bay.

There is a need for regional SLR planning on HB, particularly for artificial shoreline structures like dikes. For regional SLR planning to succeed the County must provide the leadership in collaboration with the Commission. There are critical linear assets that traverse multiple hydrologic units that would benefit greatly from a regional approach to SLR planning. The assets at risk in Cities of Eureka and Arcata jurisdictions would benefit greatly by joining the County and Commission to pursue regional SLR planning on Humboldt Bay. The communities around Humboldt Bay and those who depend on the utility and transportation infrastructure vulnerable to SLR need regional planning for SLR to begin now.