Adapting to Rising Tides East Contra Costa County

Working Group Meeting #3 Big Break Regional Shoreline September 25, 2019





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If you DO NOT want your photo to be used, please let any ART staff know.

Objectives and Agenda



Objectives

- Share and receive feedback on Issue Statements for each asset or asset category
- Share and receive feedback on the Key Planning Issues for the overall project
- Introduce the Plan Step and the approach to developing adaptation responses for the project area

Agenda

- 1:10 Welcome, Meeting Objectives, and Announcements
- 1:15 Presentation: Issue Statements
- 1:30 Discussion: Review and Edit Issue Statements
- 2:00 Presentation: Key Planning Issues
- 2:20 Discussion: Review and Edit Key Planning Issues
- 2:50 The Plan Step: Developing Adaptation Responses
- 3:00 Wrap Up and Next Steps

Working Group Ground Rules

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- 1. Everyone's input is equally valued
- 2. Respect differences, and appreciate other points of view
- 3. Ask genuine questions
- 4. Stay engaged
- 5. Everyone contributes to our success
- 6. Expect and accept that this work is ongoing





- East Contra Costa Flood Explorer public launch!
 - We will be sending out a public launch announcement to distribute to your community
 - Made changes from feedback
 - ECCexplorer.adaptingtorisingtides.org



Project Objectives

- Modeling and mapping of current and future flooding
- 2. Assessments of vulnerability of multiple assets at various scales
 - **3. Consequences** of the failure or disruption of the assets and systems assessed
 - 4. Adaptation responses that include specific actions, actors, possible funding sources
 - 5. Approach to integrate findings into existing and future county and city plans (e.g. LHMPs, Safety Elements, Northern Waterfront Initiative)
 - 6. Pathways for **implementing adaptation** actions
 - Strong collaboration among working group members throughout the area







Project Timeline





Project Timeline





Understand And Define Vulnerability Assessments

Working Group Meeting #3

What is the Define Step?

- Serves as the bridge between Assess and Plan
- Organizes and communicates the assessment findings to support adaptation response development
- Avoids the challenges of ranking, scoring, or prioritizing, improving transparency
- Helps make sure important vulnerabilities are not left behind









Two Components of Define

- **1. Summarize Findings by Asset**
- Develop outcome-oriented <u>vulnerability</u> and <u>consequence</u> <u>statements</u> that summarize the issues for each asset or asset category.
 - Develop <u>Issue Statements</u> for each asset or asset category that <u>summarize the</u> <u>vulnerabilities and</u> consequences.

& Define Guiding

Re-engage Comm Partners & Stakeho

DEFINE

PLAN

Characterize Vulnerabilities & Risks

Identify Key Planning Issues

Two Components of Define

2. Summarize Project Findings with Key Planning Issues and Shift to Adaption

Determine the Key Planning Issues that will be advanced for adaptation response development

Key Planning Issues are often underpinned by vulnerabilities that:

- Cut across multiple assets, jurisdictions or geographies
- Have significant or early consequences
- Require collaborative decision-making or funding
- Require regulatory changes to solve
- May need similar or shared solutions



PLAN

DEFINE

Characterize Vulnerabilities & Risks

Identify Key Planning Issues & Define Guiding



Project Key Planning Issues

- Eleven Sectors were Evaluated
- People
- Critical Facilities and Services
- Business and Industry
- Parks and Recreation Facilities
- Water Supply
- Wastewater Treatment
- Transportation
- Energy and Fuel Supply
- Agriculture and Natural Areas
- Community Feedback
- Flood Control

Issue Statements

Each asset (e.g. roads) in each sector (e.g. transportation) has an Issue Statement



Water Supply

Water Supply

KEY ISSUE STATEMENT

 The greatest potential impact of sea level rise will not be vulnerable infrastructure assets in the ART project area; rather it is the impact of salinity on Delta water quality, with impacts to CCWD, local water suppliers in the Delta, the State Water Project and the Central Valley Project.

Salinity Barrier Islands

KEY ISSUE STATEMENT

- These Delta islands are important for protecting the state's water supply
- Prevent tidally influenced saltwater from going further up the Delta.
- Levees protect the islands and would experience increasing hydrostatic pressure from sea level rise.
- Failure of the levees means these islands can no longer function as salinity barriers, putting a large majority of the state's water supply at risk



Wetland Habitats

- Vital wildlife and ecosystem services, including flood abatement
- Sea level rise alters the hydrology and salinity conditions, impacting wetland habitats.
- Higher elevation migration space is needed
- Restoration projects need sufficient lead time to overcome regulatory hurdles.





Freight and Passenger Rail

- Interconnected nature of rail
- Lack of redundancy
- Critical to moving goods and passengers
- In many locations, the rail serves as the first line of defense against flooding

Transportation



<u>Roadways</u>

- Isolated from critical services
- Blocked evacuation routes
- Blocked access to homes or businesses
- Limited redundancy for car or bus
- Residents without a vehicle may be most vulnerable



- Contaminants could be released
- Higher water tables could threaten containment vessels by exerting additional hydrostatic pressure
- Saltwater can permeate clay liners, causing wastes to leach through the liners





Hazardous Materials Sites

- Could result in a release of materials stored onsite
- Significant impacts to public health and the environment.
- Managers and owners of sites not currently in the floodplain may not be aware of the flood risks



- Through community feedback, received assets that were not in municipal or county datasets.
- Vulnerability for planning
- Not a complete and up-to-date data set of important community assets





- 1. We will break up into smaller groups
- 2. Organize yourself around sectors.
- 3. We will spend 15 minutes going over the Issue Statements for each sector.
- Switch, and spend another 15 minutes doing a 2nd sector.

What are your major areas of concern and are they captured within these Issue Statements for the asset?

- You will receive a packet of draft Issue Statements for the project area, organized by sector.
- In the time allotted, review the sectors that you are most interested in and knowledgeable about. Determine if you think these are the biggest risks each asset faces. In the space below each Issue Statement, provide comments or edits. At the end of each section, we have also provided space for new Issue Statements you think may be missing for the asset sector.



QUESTIONS?



For more information contact: Samantha.cohen@bcdc.ca.gov

Project Key Planning Issues

Two Components of Define

2. Summarize Findings with Key Planning Issues and Shift to Adaption

Determine the Key Planning Issues that will be advanced for adaptation response development



& Define Guidina

Key planning issues are often underpinned by vulnerabilities that:

- Cut across multiple assets, jurisdictions or geographies
- Have significant or early consequences
- Require collaborative decision-making or funding
- Require regulatory changes to solve
- May need similar or shared solutions

West Contra Costa Key Planning Issues:

- 1. Water-Dependent Industries
- 2. Employment Sites
- 3. Creek-Side Communities
- 4. Access to Services
- 5. Ad-Hoc Flood Protection
- 6. Parks and Open Space

New Planning Issues:

- 1. Agriculture, Subsidence, and Levees
- 2. Worsening Water Quality
- 3. Development Pressure





What? The County's <u>seaport, marine oil terminals, and shoreline</u> <u>refineries (replace with SHORELINE INDUSTRY</u>) is at risk from current and future flooding.

They rely on transportation and utility networks that are vulnerable to sea level rise and storm events.

Flooding of critical roads, rail lines, or pipelines both within the county and beyond could hinder critical goods export and import, negatively impacting the local and regional economy.

- East County doesn't have a seaport, marine oil terminals, and shoreline refineries but does have shoreline industry.
- Include contamination mobilization risks

Employment Sites

What? Commercial and industrial businesses in the project area that provide locally and regionally significant employment opportunities are clustered in Richmond and Martinez.

Workers from within and outside of the county commute to employment sites, and vulnerabilities in the local and regional transportation system could impact their ability to reach their jobs.

Flooding that disrupts the transportation system could also disrupt critical supply chains that employment sites rely on, resulting in lost employee wages and reduced output and profit.

East County doesn't have as many major employment sites (marine oil terminals and shoreline refineries) but does have shoreline industry

Creek-Side Communities

What? Shoreline communities in the project area located in or near the floodplain of a tidal creek or channel are likely to experience flooding as sea levels rise.

Members of creek-side communities have limited control over the maintenance and management of the creeks and channels they rely on, and those that are linguistically or socially isolated, elderly, very young, disabled or mobility-challenged, are less able to prepare for, respond to or recover from flood events. Community members with these specific characteristics can face difficulties evacuating and finding temporary shelter during a flood event as they depend on others for mobility, personal care and support, rely on universally accessible transportation and shelter-in-place facilities, and may require special care or equipment.

Access to Services

What? A lack of redundant transportation options and the limited number of public facilities in this part of the County may result in shoreline communities becoming isolated from emergency services, public and private healthcare providers, jobs, schools, and other critical services during flood events.

This could have significant consequences on public health and safety, local economies, and community function, and will be a particular challenge for communities with characteristics that place them at greater risk of flooding.

Ad-Hoc Flood Protection

What? Some communities are protected from coastal flooding by rail lines, shoreline parks, and tidal wetlands.

While these built and natural areas reduce the flood risks of adjacent communities, assets and infrastructure, they have not been specifically designed or maintained for this function and therefore provide only "ad-hoc" flood protection. Increased wind, wave and tidal energy, higher extreme high tides, and more frequent exposure to the tides as sea levels rise can decrease the ability of these ad-hoc systems to maintain the flood protection benefits they currently provide.

Parks and Open Space

What? Shoreline parks and open spaces are not only the first line of defense against inland flooding, they are also themselves vulnerable to the early impacts of sea level rise and therefore are key early adaptation opportunity sites.

Damage or loss of these parks and open spaces would have significant impacts on recreational uses and health of the communities in the project area, many of which could not be replaced. Reduction in access to parks and open spaces would affect some individuals and communities more adversely than others, depending on their unique needs and capacity.



What are the differences between East and West Contra Costa County?

- Delta islands and low-lying lands
 - Levees
 - Subsided land
 - Agriculture and recreation
- State water intakes
- More rural land uses
 - More development pressure
- No refineries



Agriculture, Subsidence, and Levees

Agricultural practices and land reclamation on the Delta Islands have caused significant **land subsidence**, causing communities to rely on **levees and pumps** to stay dry. Sea level rise could worsen flood risks by increasing hydrostatic pressure on levees, by increasing the liquefaction potential during seismic events due to rising groundwater, and by increasing reliance on pumps, which are sensitive to flooding and power outages.

Worsening Water Quality

Sea level rise is likely to cause a worsening of water quality due to salinity increases from the tidallyinfluenced Bay. This would affect small, local communities in the Delta, as well as East Bay residents and users of the Central Valley Project and State Water Project (millions of users in total). Both surface water and groundwater could experience increasing salinity, effecting not just water supplies from surface water intakes and groundwater wells, but also habitats. Additionally, increasingly saline water could cause **corrosion of infrastructure** that was not originally protected against saltwater.

Development pressure

Development pressure in East Contra Costa County could create conditions that exacerbate affordable housing issues and incite displacement. Across the region, in cases where displacement occurs, marginalized populations are often at the greatest risk. Similarly, coastal development that is not sensitive to shoreline dynamics may limit the options communities have for protecting housing and critical services from flooding. Where possible, development should consider both issues and seek to ameliorate, rather than deepen, preexisting social and economic vulnerabilities as well as flooding.



What issues will we be developing adaptation responses for in the Contra Costa project area?

Suggestions...issues that:

- Need to be addressed collectively
- Have broad or significant consequences
- Need to be addressed by actions that to implement will take a long time, or the time to accrue benefits will be long
- Affect multiple assets or sectors due to inter-dependencies
- Are focused in specific geographies

Worksheet



Instructions:

- First, review Key Planning Issues adapted from ART's West Contra Costa County project. In the space below each Key Planning Issue, provide comments or edits.
 - Are these Key Planning Issues relevant to East County?
 - How should they be changed to be more relevant to East County?
- Next, review new Key Planning Issues. In the space below each key planning issue, provide comments or edits.
- Determine if you think these cover the biggest vulnerabilities and consequences East County faces across asset categories. If not, provide additional issues or themes that should be captured.

Questions?

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Adapting to Rising Tides East Contra Costa County

The Plan Step: Shift into Adaptation



Outcomes of The Plan Step

- Adaptation responses for individual assets, agencies, organizations
- Cross-cutting adaptation responses for the key planning issues
- Implementation options
- Evaluation criteria based on resilience goals

Adapting to Rising Tides Planning Process

SCOPE & ORGANIZE

Choose Project Area

Set Resilience Goals

Convene Partners & Stakeholders

Identify Sectors, Services, Assets

Select Climate Scenarios & Impacts

Society & Equity Environment Economy Governance

ASSESS

Review Existing

Consider Risks

Assess Vulnerability

Conditions

IMPLEMENT & MONITOR

Integrate Adaptation Responses into Plans

Evaluate & Select Adaptation Responses

Develop Adaptation Responses

Select Evaluation Criteria

Refine Resilience Goals

PLAN

Characterize Vulnerabilities & Risks

DEFINE

ldentify Key Planning Issues







An **adaptation response** is an action or series of actions to address identified vulnerabilities (governance, information, physical, or functional) for individual or multiple assets

Adaptation responses include:

- The vulnerability being addressed, which provides a direct link to the outcomes of the assessment
- One or more actions, some that can be taken at the same time and others are sequential and incrementally build towards resilience
- Implementation options that serve as a guide for those that want to initiate action, including leads, partners, possible funding sources, and ways to mainstream into existing processes

Example Adaptation Response

Overarce Information Vulnerabe mudflats.	Vulnerability					
adaptatio	n responses (e.g., structural so Establish and support a regional	lutions such as leve	es) that may change	EBRPD, HARD,	nt conditions.	
04.1	research agenda to advance the understanding of how baylands will respond to accelerating sea level rise in light of declining sediment supply and limited space to migrate inland	Evaluation, Coordination	New Initiative	DFW, BCDC, RWQCB, Port, USACE, USFWS, FEMA, City, County, CBOs, Private Sector, SFBRA	Unlocking_Reg ional, High Priority	Actions
04.2	Research and test restoration and management actions that will improve baylands resilience	Evaluation	Project Planning and Design	EBRPD, HARD, ACFCWCD, SCC, DFW, BCDC, RWQCB, Port, USACE, USFWS, FEMA, City, County, CBOs, Private Sector, SFBRA	Unlocking, Regional, High Priority	nplementation
O4.3	Develop and implement a Regional Sediment Management Plan for the Bay	Coordination, Policy Development	Long-range Planning, New Initiative	CSMW, BCDC, USEPA, USACE, RWQCB, LTMS stakeholders, USFWS, NOAA, City DPW, Flood Control Agencies, Private Sector	Unlocking, Multi- benefit, Regional, High Priority	Options

Contra Costa Example: Housing

KEY ISSUE

Retaining housing is crucial to expediting and ensuring an effective disaster recovery

Limiting catastrophic housing damage and keeping residents in their homes not only helps people who may lack the resources to effectively recover from a disaster, but also keeps communities intact.





Community resilience-building actions:

- Require hazard disclosure for renters
- Advocate for changes to post-disaster federal and state multifamily housing rebuilding programs
- Create a community capacity inventory
- Disseminate best available hazard and climate risk information through community-based organizations and non-traditional partners

Stronger Housing, Safer Communities



www.adaptingtorisingtides.org/pr oject-location/regional/

Housing resilience-building actions:

- Increase standards in local floodplain management ordinances beyond the minimum requirements of FEMA's NFIP program
- Require flood-proof construction methods and techniques within and adjacent to special flood hazard zones
- Revise minimum building elevation standards and maximum building height-limits for new development

Adaptation Response

Community Land Use, Facilities and Services Adaptation Response

Adapting to Rising Tides

Management Control Vulnerability

Vulnerability C4: Neighborhoods are informal networks whose function depends on the relationship among the individuals and services within them. These informal connections are easily severed during disasters and are often difficult to rebuild once disrupted. Neighborhoods without a strong social network, where residents do not know each other, or are not invested in the overall community good, are especially vulnerable to sea level rise and storm events.

Action Number	Action	Action Type	Process	Possible Actors	Action Characterization
C4.1	Provide expanded Community Emergency Response Team (CERT) trainings, refresher classes, and annual exercises that include flooding preparedness and response	Education/outreach	Emergency and Hazard Planning	ABAG, CalOES, FEMA, Cities, County, ACPHD, CBOs, NPOs	Multi-benefit, Local, Regional
C4.2	Coordinate with non-profit, community, and faith-based organizations to build strong social networks in neighborhoods, in particular those with certain characteristics such as less mobile or medically dependent residents	Coordination	Emergency and Hazard Planning, New Initiative	CalOES, FEMA, Cities, County, ACPHD, CBOs, NPOs, Private Sector	Multi-benefit, Local
C4.3	Provide technical assistance to neighborhoods to support the development and maintenance of disaster plans, including storm evacuation procedures and shelter-in-place guidelines	Education/outreach, Program/operation	Emergency and Hazard Planning	ABAG, CalOES, FEMA, Cities, County, ACPHD	Multi-benefit, Local





QUESTIONS?



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Wrap Up and Next Steps



Wrap Up and Next Steps

- Launch the ECC Flood Explorer
- Email out Flood Explorer public announcement
- Finalize Vulnerability Assessment chapters
 based on feedback
- Develop adaptation responses
- Working Group Meeting #4 in November
 - Invite coming soon
- Final Working Group Meeting #5 in December
- Recommendations on different locations?

Next Meeting

Adaptation Response "open house"

- A relatively rapid way for you to gain familiarity with content of the adaptation responses
- An interactive yet self-paced format where you will be able to spend time with the information you are most interested in
- The ART team will document your feedback and explore any of your questions or ideas in greater depth





