## Adapting to Rising Tides

# Working together to increase the resilience of Bay Area communities to sea level rise and storm events





San Francisco Bay Conservation and Development Commission

#### Contra Costa ART Working Group

#### Working Group Meeting #5 – March 10, 2016

#### **Objectives**

- ✓ Share the project's Key Planning Issues
- $\checkmark$  Consider what adaptation responses would address these issues
- $\checkmark$  Discuss options and recommendations for project communication

#### Agenda

- 9:00 Welcome, Meeting Objectives, and Announcements
- 9:15 Update on the ART Program
- 9:35 Communication Strategy for the Contra Costa ART Project
- 9:55 Update on Contra Costa ART Assessment Resources
- 10:15 Break
- 10:30 Presentation: Key Planning Issues
- 10:50 Discussion Groups: Key Planning Issues + Adaptation Responses
- 11:35 Discussion Group Report Backs
- 11:55 Wrap Up and Next Steps

## **Project Timeline**

Project Initiation - Fall 2014

Project Scoping – Fall/Winter 2015

Conduct Assessment – Winter/Spring 2015

Determine Assessment Outcomes – Summer 2015

Transition to Adaptation - Fall 2015

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Develop Adaptation Responses – Winter 2015-2016

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Evaluate and Select Adaptation Responses + Opportunities for Implementation – Spring 2016







## **ART Planning Process**

#### Adapting to Rising Tides Planning Process

#### **SCOPE & ORGANIZE**

Convene Partners & Stakeholders Choose Project Area Identify Sectors, Services, Assets Select Climate Scenarios & Impacts Set Resilience Goals Society & Equity Environment Economy Governance

#### IMPLEMENT & MONITOR

Integrate Adaptation Responses into Plans

Evaluate & Select Adaptation Responses

**Develop Adaptation Responses** 

Select Evaluation Criteria

**Refine Resilience Goals** 

PLAN

#### ASSESS

Review Existing Conditions

Assess Vulnerability

**Consider Risks** 

#### DEFINE

Characterize Vulnerabilities & Risks

Identify Key Planning Issues

#### Working Group Meeting #4

### **ART Planning Process**

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DEFINE

Identify Key Planning Issues PLAN

Working Group Meeting #5

## The Plan Step

Outcomes of the Plan Step:

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



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Sector



#### **ART Portfolio**

- Keeping the ART Portfolio up to date with new and refined resources, data, tools, information, and findings
- Providing ART Help Desk technical assistance to local jurisdictions, communities and agencies that are working on climate adaptation and hazard mitigation



Welcome to the **ART Portfolio**, a place to find planning guidance, tools and information that have been developed, tested and refined by the Adapting to Rising Tides Program to address the specific challenges of climate change.

ART Help Desk Support:

- Marin County Assessments
- San Mateo County Assessment
- Cities of San Rafael, Oakland,
   Benicia, Hayward, San Francisco
- Caltrans District 4, Congestion Management Agencies and MTC
- East Bay Regional Park District and Hayward Recreation
- Questions from other regions and states



The ART Program continues to work with partners to align planning and to develop regional data, tools, maps and models:

- Regional SLR mapping including shoreline delineation, tidal datums and "One Map Many Futures" approach
- Regional assessments of transportation, shoreline and community assets
- The 2017 update to Plan Bay Area's Sustainable Community Strategy
- Local hazard mitigation planning processes
- Local City, county, and sector-specific hazard and climate vulnerability assessments and planning and implementation efforts



## **Regional Partnerships**

- Bay Area Regional Collaborative Member Agency
  - Cross-agency staff team, 2017 Sustainable Communities Strategy Update, regional resilience logic model/process map, technical assistance
- Partnership with the ABAG Resilience Program
  - Safer Housing, Stronger Communities Project; Safe, Smart Growth Initiative (EPA, FEMA, NOAA); Guidance and support for addressing hazard mitigation and climate adaptation planning



## **Regional Partnerships**

- Continuing to partner with MTC, Caltrans, BART, Capitol Corridor and other transportation agencies on regional transportation vulnerabilities
  - ART regional shoreline mapping and analysis for the rest of the region, presentations to congestion management agencies, Caltrans staff teams, coordinating and assisting with the District 4 assessment that is currently underway







## **Regional Partnerships**

- $\circ~$  CHARG Steering Committee
  - Providing guidance and support to CHARG and its committees
- Resilience By Design Managing Partner
  - Assisting with framing, research and identifying partners
- Regional research with San Francisco Estuary Institute
  - Head of Tide Project, Regional shoreline delineation, Flood Control 2.0
- Bay Area Ecosystems Climate Change Consortium Steering Committee
  - Collaborative science assessments for Bay ecosystems climate vulnerability and a forum for understanding how resilience in natural systems builds regional resilience

#### **Current BCDC initiatives**

- $\circ$  Policies for a Rising Bay:
  - An assessment of BCDC's laws and policies in relation to potential adaptation actions with an emphasis on affects on equity, environment and economy in the region

#### • BCDC's 2016 Workshop Series on Rising Sea Levels:

- January 21st: Five Year Review of BCDC's Climate Policies
- March 3rd: The Regional Role and Approach, Issues and Actions
- April 7th: Review and discussion of January and March Findings
- May 19th: Commissioner Conversation-Next Steps and Direction



#### Questions on ART Program or other regional efforts?



## **ART Outreach and Engagement**

Communication is a critical component of the ART Program and local outreach is generally led or framed by working group members and agencies who know local audiences

The ART Program has communicated findings and recommendations for a number of projects in a variety of ways. Some recent examples include: Alameda County: Presented to boards, committees, commissions and developed material for use by cities, the county and agencies and organizations to communicate the findings and outcomes of the project

Hayward Shoreline Resilience Study: Presented to the Chamber of Commerce, participated in the Hayward Area Shoreline Planning Agency decision to continue its JPA, input on the East Bay Dischargers Authority project determining options for future operations, participated in public engagement through "Sharks in my Backyard" and EBRPD events Oakland/Alameda Resilience Study Examples:

- Presentations to City of Oakland Mayor's Office, Planning and Sustainability staff
- Presentations to the City of Alameda Planning, Public Works and other department staff
- Participation in the City of Oakland's Resilient Oakland initiative and presentations to community members, community groups, stakeholders and others
- Working sessions with the Port of Oakland staff
- Field trips with working group members to assist with a better understanding of the issues
- Development of material that to be used by the cities and agencies to communicate the project to their constituents

## **ART Outreach and Engagement**

#### Outreach and Engagement tools and components:

- Clear description or story of the project and its findings
- Summary presentations
- Handouts on key issues or topics
- Graphics and slides for partner presentations
- Concise summaries of assessment findings
- Assistance developing customized communication materials or making presentations to working group member agencies, organizations or the public







#### ART Outreach and Engagement Materials





#### Adapting to Rising Tides

#### Structural Shorelines Vulnerability and Risk Profile

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#### Key Issues

Vulnerabilities

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**Transportation Adaptation Response** 

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Vulnerability & Risk Assessment Report September, 2012



## ART Contra Costa Outreach

The team that leads and manages the project, engages the stakeholder working group, and completes work products including the assessment and development of adaptation responses for the project.



Stakeholders from public, non-profit and private sectors, community members and issue experts representing the relevant expertise, local knowledge, regulatory oversight and asset management for the project area and assets.

Working group stakeholders actively participate in the project, attend project meetings, and work with the project team to provide data and information, local knowledge and best professional judgment for the assets, communities and services that they manage and represent in the project area.

The working group also coordinates and communicates about the project with their stakeholders – both internal and external to their organizations – to bring additional expertise, perspectives and concerns to the project.

A wide range of organizations and individuals that have interests and perspectives that are related to the project scope, follow the progress of the project, provide feedback on draft materials, and comment on project components and outcome, but are not responsible for providing data and information. These stakeholders are not participating actively in the project.

## ART Contra Costa Engagement

#### ART Outreach and Engagement Recommendations:

- Establish communication goals and the focus of outreach and engagement (e.g., the assessment, a subset of strategies, the role of community or agency)
- Define the audiences that need to be reached to achieve communication goals
- Determine and identify any concerns regarding communication with different audiences and ensure the outreach is appropriate for the audience
- Identify partners to assist with communication (e.g. community groups, elected officials, business community)





## ART Contra Costa Engagement

#### ART Outreach and Engagement Recommendations:

- Identify working group members Ο who are willing to form a **Communications Subcommittee to** work with the ART team to develop communication goals and objectives, identify audiences and assist with the development of material to reach the audiences and meet the goals and objectives ART team communicates findings  $\bigcirc$ with regional, state and federal agencies with working group
  - agencies with working group support, working group leads local outreach with ART team support



Outreach and Engagement Ideas? Input? Subcommittee volunteers?

## Contra Costa Assessment Update



#### People Exposure Analysis Process

- Developing process to use in ART analysis throughout the region and in partnerships
- People not evenly distributed at any geography, so important to use smallest available

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- Used census blocks intersected with 100-year floodplain and up to 6 feet sea level rise
- Demographic data released early 2016 from ACS 2014 5-yr estimates, available at block group level

#### People Exposure Analysis

#### **100-Year Floodplain**

	Households	People
Place	Exposed	Exposed
Bay Point	94	282
Bayview	13	34
Crockett	22	43
El Cerrito	473	938
Hercules	31	88
Martinez	1519	2992
North Richmond	16	56
Pinole	15	38
Pittsburg	16	21
Port Costa	44	76
Richmond	112	240
Rodeo	294	704
San Pablo	1066	3013
Vine Hill	65	179
Total in Project Area	3796	8753

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**Costa Project** 

Clyde, Concord, Montalvin Manor, Mountain View, Tara Hills < 10 households exposed

#### People Exposure Analysis

#### ART Contra Costa Project

#### Six Feet Sea Level Rise

	Households	People
Place	Exposed	Exposed
Bayview	20	53
Hercules	56	145
Martinez	33	70
North Richmond	57	166
Pinole	30	82
Richmond	323	757
Rodeo	208	506
Vine Hill	12	37
Total in Project Area	741	1821

Bay Point, Clyde, Concord, Crockett, El Cerrito, Montalvin Manor, Mountain View, Pittsburgh, Port Costa, San Pablo, Tara Hills < 10 households exposed

#### **Shoreline Mapping Report**

This report presents a broad assessment of Contra Costa's shoreline exposure to flooding or inundation from sea level rise scenarios, from 0 to 66 inches, and extreme tide events from the 1-year to the 500-year extreme tide event

- 10 new county-scale sea level rise and extreme tide inundation maps
- Shoreline overtopping and normalized shoreline analysis
- The One Map = Many Futures approach also used in Alameda, San Francisco and San Mateo County, which will be extended to the rest of the region this year



#### Adapting to Rising Tides

Contra Costa County Sea Level Rise Vulnerability Assessment Final Report + February 2016



## Inundation and Shoreline Mapping



Regional (5 panel):

Shoreline & Open Space

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**Costa Project** 

Transportation & Energy

Neighborhood (11 panel):

- Business
- Housing & Public Services
- o Industry

#### Shoreline & Open Space Mapbook

#### ART Contra Costa Project



#### Industry Mapbook

#### ART Contra Costa Project



Available now:

- 15 asset-specific profile sheets
- 10 revised asset category chapters (images and graphics to be added)
- $\circ~$  Final inundation and shoreline maps
- Shoreline vulnerability technical memo
- Inundation and shoreline Geodatabase
- o 5 mapbooks

Coming soon:

- The People Chapter
- 6<sup>th</sup> mapbook (People)
- Flood exposure chapter



The West County Wastewater District's Water Pollution Control Plant is in the process of upgrading aging infrastructure, which may delay sea level rise planning even though the berms that protect the tacility may need to be improved to protect the plant beyond 2030. Storm events as sea levels rise have the potential to reduce outfail and diffuser capacity, and will have consequences on how the wet weather



Consequentiates on now nerve weareer from are handle and could threaten coveral system performanc. In addition, in the event of flooding, the treatment plant may not be accessible to workers due to flooded roadwaye, and if electrical power supply a compromised of these an interruption of the natural gas analytic to the equalization basin pumps there may not be adequate backup deset fuel supply to operate the 2 megawate emergency generators for the duration of the disruption.

#### Asset Description

West County Westewater District (WCWD) was formed in 1921 and cummity provides wastewater disposal service to 16 al guare mices of Contro Costa County, Including unincorporate anse (3% of District), portions of the class of Richmond (40% of District), San Pable (15% of District), and Panlo (2% of District), Westewater from these areas is conveyed though a system of pipes and pumps to the Vater Poliution Control Plant (WPCP) for discharge or rease. Currently, most of VCMO's 8 million galors per day (MGD) average day weather flow isocondary tested effliant is sen to EBMLD's North Richmond Water Redemation Plant (NWRP) part the Richmond Abaceade Blacking Deparations (IN46) for rease by Cherron's Richmond Relnter, Phone in excess of 12.5 MGD and mose that does not meet the quality required by EBMLD for morporing and reuse are declorionated and discharged to the By through the Wester County Agency deep water outful. WCWD serves a population of approximately 62.378 residents, as well as induitrial, commercial and public customers. WCMO owas and manages the treatment plant and entred in this pipel powers authority, the West County Agency, with the Cly of Richmond's Municipal Santary Sever District to construct and maintain the outfall and diffuser.

Wastewater treatment plants are permitted to discharge a specific ancount of wastewater based on a capachy allowance. The WCMD WPCP has a rated capachy of 12.5 MCD ancenge dry wasther frow and a rated peak wet weather capacity of 21 MCD. The Weat Country Agency outfill has a design capacity of 55.94 MCD. The outfill extends approximately 4,200 feet through Country Agency outfill has a design capacity of the last portion being a diffuser section designed to ensure maximum diution and mixing with deep Bay waters. As part of WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the country Agency and mixing and the water and and an and or WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and or WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the instead of the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the agency, the asseer and laters) and the WCMD<sup>5</sup> Capatial Improvement Pina (Cliph, the agency, the asseer and laters) and the asseer and laters and the asseer and laters and the asseer and laters of the asseer and laters and the agency asseer and laters and the asseer and laters and the asseer and laters and laters and the asseer and laters and the assee

DECEMBER 2015

#### **Questions?**



http://www.adaptingtorisingtides.org/ contra-costa-county-working-group-page

password: cccwg

## Key Planning Issues

• Project-scale, cross-cutting issues revealed in the assessment

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- Are typically more complex issues that require the collective focus of the working group and potentially other stakeholders
- Contributing vulnerabilities require collaborative problemsolving, and cannot or should not be solved separately by individual asset managers or owners



#### Contra Costa Key Planning Issues

 Water-dependent Industries Employment Sites Creek-side Communities Access to Services Ad-hoc Flood Protection Parks and Open Spaces

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Contra Costa County's seaport, marine oil terminals, and shoreline refineries rely on transportation and utility networks that are vulnerable to sea level rise and storm events



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Costa Project

Flooding of critical roads, rail lines or pipelines within the county and beyond could hinder critical goods export and import, as well petroleum and chemical processing operations, negatively impacting the local and regional economy

## Water-dependent Industries

- The seaport, marine oil terminals and refineries are large facilities that sit at fairly fixed locations on the shoreline
- They rely on both waterside and landside connections to move goods on and off-site
- Their continued operation depends on a functioning regional network of pipelines, rail lines, roadways and interstates
- Local access roads are critical to ensuring necessary materials and supplies as well as workers can reach the facilities, and that goods and products can be shipped to other locations in the region and beyond



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Employment sites in the project area, including commercial and industrial industries, are currently clustered in Richmond and Martinez but are expected to expand into other shoreline areas

Vulnerabilities in the shoreline roadway system and key interstate exchanges could disrupt these employment sites, resulting in local and regional economic consequences



### **Employment Sites**

 Employment sites rely on local and regional roads for employee and customers access, as well as for shipping and receiving goods and materials

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- Disruption of transit services and reduced roadway access can increase the economic burden on workers unable to reach work, and may result in necessary goods and services becoming unavailable locally or regionally
- Employment sites rely upon power, water, and wastewater utilities to maintain function, and disruption of these services could impact sites in areas not expected to flood
- Even temporary closure or disrupted access to employment sites can have significant social and economic impacts on neighborhoods and communities, and can impede a speedy recovery after a flood event

Most shoreline communities in the project area are located in or near the floodplain of a tidal creeks and channels, and are likely to experience flooding as sea levels rise



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Creeks and channels managed for flood protection can have deferred maintenance due to a lack of funding and a resource intensive regulatory process

This has led to a reduced capacity to convey storm flows, placing adjacent communities at risk of flooding from smaller and potentially more frequent events

### **Creek-side Communities**

 Contra Costa County is the fastest growing county in the Bay Area, with increasing urbanization contributing to denser development adjacent to creeks and channels

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- Rising sea levels will push tides higher into creeks and potentially raise water levels to near channel capacity, increasing the risk of stronger and more frequent flooding of creek-adjacent roads and communities
- Aging infrastructure and accumulation of sediments in channels originally designed for a 100-year level of protection has more than halved many creek's capacity, placing adjacent communities at risk of flooding
- Restrictions in funding due to Proposition 13 and 218 has limited the ability of management agencies to perform necessary creek improvements and maintenance

A lack of redundant transportation options and the limited number of public facilities in and near the project area may result in shoreline communities becoming isolated from emergency responders, healthcare providers, jobs, schools, and other necessary services during flood events

This could have significant consequences on public health and safety, local economies, and community capacity to maintain function, particularly communities with characteristics that make them less able to respond or recover from flood event



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- Crucial medical and emergency services may become inaccessible or harder to reach during heavy flooding
- Flooding of local streets and roads, critical intersections, and major routes and thoroughfares could delay or prevent fire, police or ambulance emergency services from reaching neighborhoods and communities

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- Flooding of roads and transit routes may impact community members' ability to access necessary services
- Disruption of solid waste collection services would result in pickup delays, higher costs, and possibly increased illegal dumping

Some communities are protected from coastal flooding by rail lines, shoreline parks, and tidal wetlands that were not intended to be, or maintained specifically for, flood protection

Some of these communities have characteristics that place them at greater risk, in particular those with residents with limited resources, that are living in mobile homes, have mobility challenges, or lack access to transportation and public services



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### **Ad-hoc Flood Protection**

- ART Contra Costa Project
- There are miles of rail track that lay between the Bay and Contra Costa communities such as Bay Point, Montalvin Manor, Rodeo, Port Costa and Parchester Village that serves as de-facto flood protection even though it is not designed nor maintained to do so
- Where communities or rail track is protected by tidal wetlands, downshifting of these habitats could lead to increase risk of shoreline overtopping, shoreline erosion and inland flooding
- Local and regional shoreline parks serve as the first line of defense against flooding from rising sea levels, and failure of these shorelines could increase the flood risk of residential, commercial and industrial areas near them
- Increased flooding could disproportionately impact communities that are least prepared or need the most assistance, including seniors, mobile home residents, and low-income or non-English speakers without adequate public services

## Parks and Open Space

Shoreline parks and open spaces are not only the first line of defense against inland flooding; they are also 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 in the project area, many which could not be replaced



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#### Parks and Open Space

 There seven regional shoreline parks in the project area with structural and natural shorelines that are vulnerable to sea level rise and storm events, and if they experience flooding and erosion they may lose recreational, educational and aesthetic value

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- Shoreline habitats in parks, including extensive marsh restorations, are vulnerable to sea level rise and may experience downshifting and eventual habitat loss, which will diminish the flood risk reduction benefits they provide to adjacent inland areas
- There is 80 miles of Bay Trail in the project area, much of which is vulnerable to storm event flooding and erosion, all of which is owned/managed by dozens of public and private entities
- Because neighborhood parks are very small, often just a few acres, they cannot easily adapt to future flooding, which would result in a loss of accessible recreation for nearby residents

#### Objective:

- ✓ Review and discuss two Key Planning Issues
- Brainstorm adaptation actions and implementation options

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**Costa Project** 

#### Three Groups:

- Water-dependent Industries & Employment Sites (Sara + Isaac)
- 2 Creek-side Communities & Access to Services (Wendy + Elizabeth)
- ③ Ad-hoc Flood Protection + Parks and Open Space (Lindy + Maggie)

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 issue or vulnerability 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

## **Different Action Types**

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#### **Evaluation**

- Research and analysis
- Data collection and sharing
- Vulnerability assessments
- **Program/ Operation** 
  - Physical strategies
  - Guidance and support
- **Policy Development** 
  - Regulations
  - Plans and policies
  - Funding and incentives
- Coordination
  - Collaborations
  - Institutional arrangements
- **Education/Outreach** 
  - Public education
  - Advocacy and influence





#### RESILIENCE PROGRAM











### **Evaluation Actions**

 Conduct watershed-specific hydraulic modeling to understand the impacts of sea level rise on tidally influenced creeks and channels

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- Participate in and support research to test new, innovative and multi-benefit nature-based or green infrastructure solutions that improve shoreline protection, flood management and stormwater system resilience
- Support and participate in a regional evaluation of transportation and utility networks to understand and prioritize vulnerabilities that if not addressed would cause significant disruption to the regional economy and local communities
- Research critical gaps in information needed to understand and respond to the needs of all community members, including the level of financial and technical assistance needed to minimize impacts from job loss, displacement, and potential relocation

### **Program / Operations Actions**

 Review and update Local Hazard Mitigation Plans to address both current and future hazards, including sea level rise and storm event flooding and secondary impacts such as power outages and transportation disruptions

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- Provide public funds to community groups so they can participate in climate resilience building efforts and help educate a diverse public about local climate impacts and responses
- Work with city and county flood managers, planners, public service providers, emergency responders, transportation agencies and community members to consider future flood risks in emergency response plans and ensure neighborhoods do not become isolated from the services they need after a flood event

#### **Policy Development Actions**

 Participate in regional discussions to explore where policy or regulatory changes are needed to advance adaptation

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- Develop policies or incentives to require or encourage the consideration of sea level rise and storm events in developing, planning, and funding capital investments
- Review and update standards, codes, and regulations for the construction and placement of new infrastructure to avoid or address sea level rise, storm events, and elevated groundwater
- Develop incentives for clustered development in low-risk areas using density bonuses, reduced impact fees, tax incentives and streamlined permitting
- Create a voluntary transfer of development rights program to allow property owners to sell development rights in high-risk areas in exchange for rights in a low-risk areas

## **Coordination Actions**

 Expand or form partnerships among shoreline landowners to improve communication and coordination, facilitate shared planning, and obtain dedicated funding for maintenance

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- Join adjacent counties, local communities, regional agencies, and affected industries in a regional process to develop and implement actions to address goods movement vulnerabilities
- Work with non-profit, community, and faith-based organizations to build strong social networks in neighborhoods where communities have characteristics that place them at greater risk during and after flood events
- Expand or form partnerships among public agencies and private entities to collectively address areas where shoreline erosion, bluff collapse and tidal wetlands loss are increasing the risk to shoreline rail line and inland communities

## **Education Actions**

 Develop and implement an outreach program to educate a broad audience including facility owners, asset managers, private business owners, and the general public on the risks, costs, and benefits of hazard mitigation and adaptation

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- Conduct public outreach to educate property owners about the importance of flood and stormwater management programs so they support bond initiatives and increased assessments for infrastructure repair and improvement
- Develop a public outreach and education campaign to inform and engage the public in protecting the functions and values of shoreline parks and open spaces

#### Objective:

- ✓ Review and discuss two Key Planning Issues
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ART Contra

**Costa Project** 

#### Three Groups:

- Water-dependent Industries & Employment Sites (Sara + Isaac)
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 What was the most interesting or discussed adaptation response?

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- Who needs to support implementation of this response, and what would that entail, e.g., guidance, information gathering, funding, political support, or?
- Were there any unexpected benefits or consequences of certain actions?
- What surprising implementation opportunities were revealed?

#### **Next Meeting**

#### Adaptation Response "open house"

- A relatively rapid way for you to provide feedback on proposed adaptation responses
- An interactive yet self-paced format where you can 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



**ART** Contra

**Costa Project** 

Adaptation Response Open House Purpose

Participants gain familiarity with the components of an adaptation response and provide feedback on the draft adaptation responses that have been developed for the project area.

#### hree Components of an ART Adaptation Response

e vulnerability being addressed by the adaptation response. Including this provides a direct k to the outcomes of the assessment and ensures that the most critical issues identified are dressed. Identifying the key vulnerability that is addressed is a transparent way to ensure
at each adaptation action is connected to a planning issue.
Suptation actions (one or more). While some vulnerabilities can be addressed by a single tion, most require multiple, othen coordinated actions. Some beinan at the me time, while others require a series of sequential steps that incrementally build towards allience. A response should dearbie key characteristics of the action that relevant to its dependentiation, for example if it is an action requiring a long lead time to implement.
plementation options for each action. These provide alternatives for initiating adaptation filons such as incorporating them into existing planning or processes or creating new lathers. The options also should identify the agencies and organizations – public and private hat have a role in implementing the actions.

Approach

Using an open house format, project participants visit multiple stations, each of which has a large format poster of draft adaptation responses prepared by statif for each sector (e.g., transportation, utilities, natural areas), set of assets or issues. With a project team member at each adaptation response station,

#### Next Steps

- Visit the password protected webpage to download and view assessment and mapping products
- Consider a communications subcommittee
- Invite us to speak to your colleagues, agency, partners, decision makers, or stakeholders



Project web page: http://www.adaptingtorisingtides.org/ project/contra-costa-countyadapting-to-rising-tides-project//

> Working Group Password: cccwg