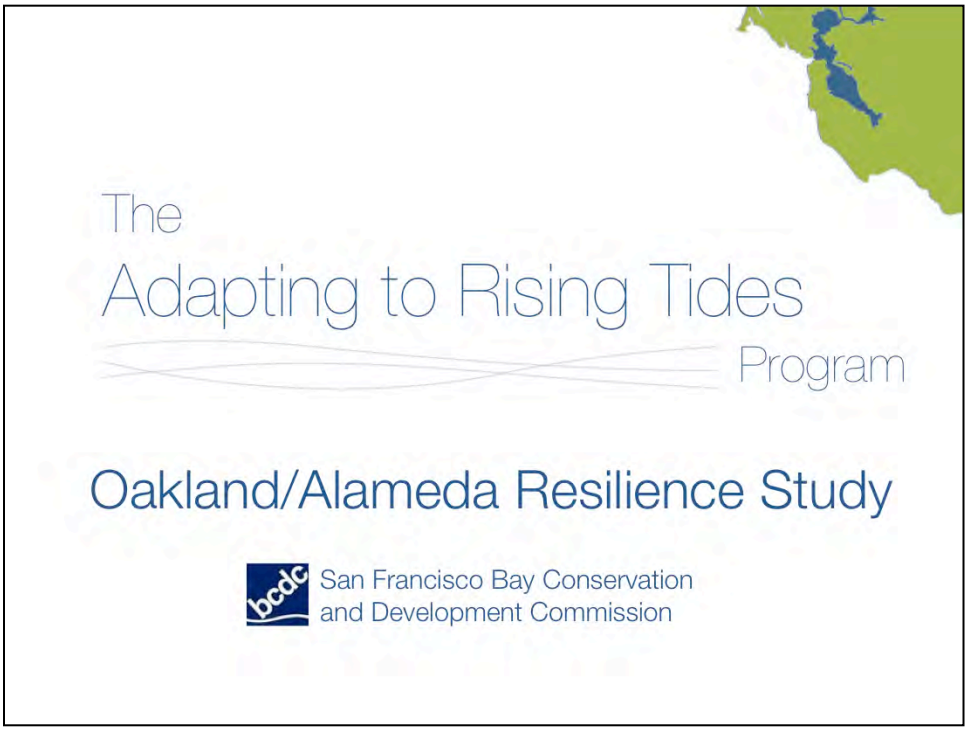


Adapting to Rising Tides project
www.adaptingtorisingtides.org

Agenda

9:30 Welcome and Introductions

9:40 Review ART process and assessment findings

10:00 Introduction to DEFINE step

10:30 Review draft key planning issues

11:15 Wrap up and next steps

Meeting Objectives

- Review and confirm key assessment findings
- Discuss approach to adaptation response development
- Share and refine draft key planning issues

What have we been up to?

We have been in the neighborhood:

- Stronger Housing, Safer Communities: Strategies for Seismic and Flood Risks. ABAG and BCDC study funded by the EPA, FEMA and Strategic Growth Council (March 2015)
  - Two communities–Bay Farm Island and neighborhoods around the Oakland Coliseum–were assessed as part of the project
- Climate Change and Extreme Weather Adaptation Options. MTC, BART, BCDC and Catrans study funded by the FHWA (December 2014)
  - Oakland/Alameda Study Area was a focus area for the transportation study

We have been working in this area, even though this project has been on hold …..

Findings on Community and Housing Risk

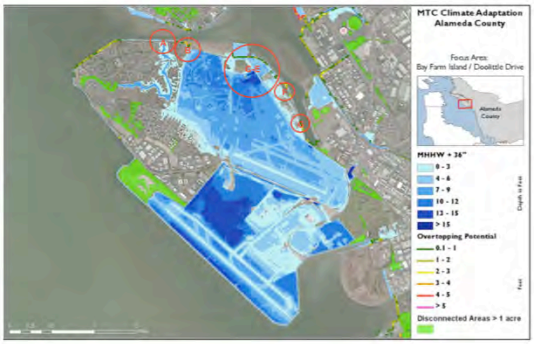
- Housing is generally built to life safety rather than shelter-in-place standards
- Most foundations cannot withstand liquefaction
- Most houses cannot withstand any amount of flooding
- Housing affordability is an existing vulnerability in the region that will make recovery more difficult
- Renters have a limited ability to improve the resilience of the housing they live in
- Many community members have limited or inadequate information about hazards

Findings and Outcomes of Transportation Study

- Refined analysis of joint riverine and coastal flooding to better define flood risks in the Coliseum area
- Adaptation strategies for Damon Slough to improve resilience of Oakland Coliseum and Interstate 880
- Areas within the Oakland/ Alameda Study area have near term flooding vulnerabilities, particularly around Damon Slough
- Strategies developed for transportation assets can and should be developed to provide benefits and resilience to adjacent assets and communities.

Findings and Outcomes of Transportation Study

- Refined shoreline analysis to better understand shoreline elevation on Bay Farm Island.
- Flooding comes from the Bay overtopping the shoreline and from storm water overflows
- Bay Farm Island has extensive flooding caused by overtopping in just a few locations. Improving coastal flood protection at these low points could reduce flood risk for a large area.

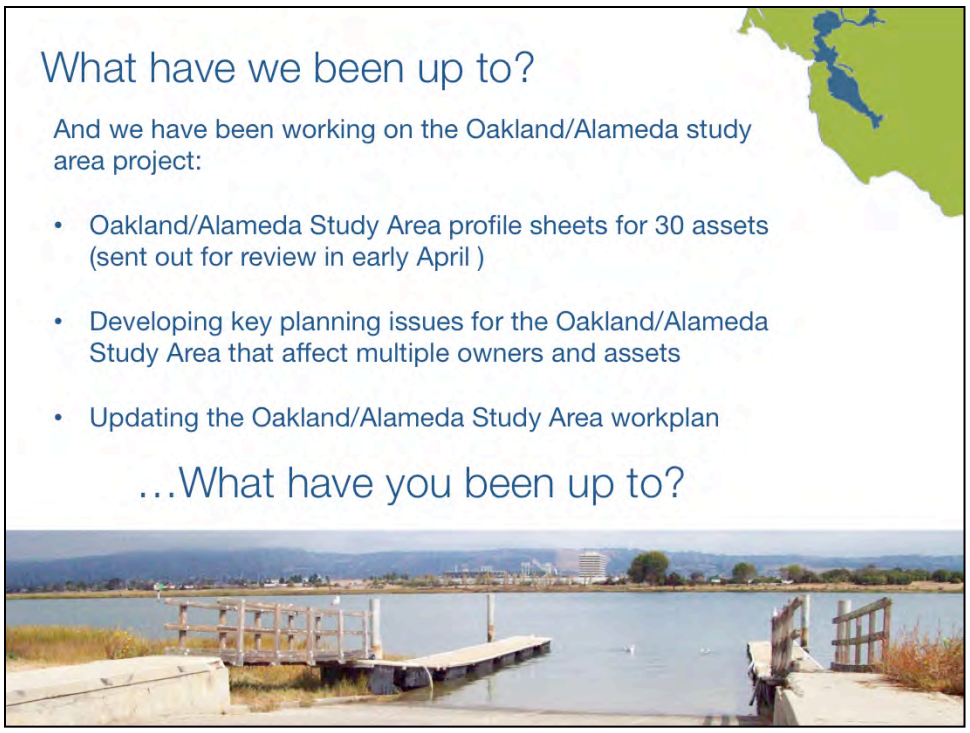


Ongoing ART Program Work

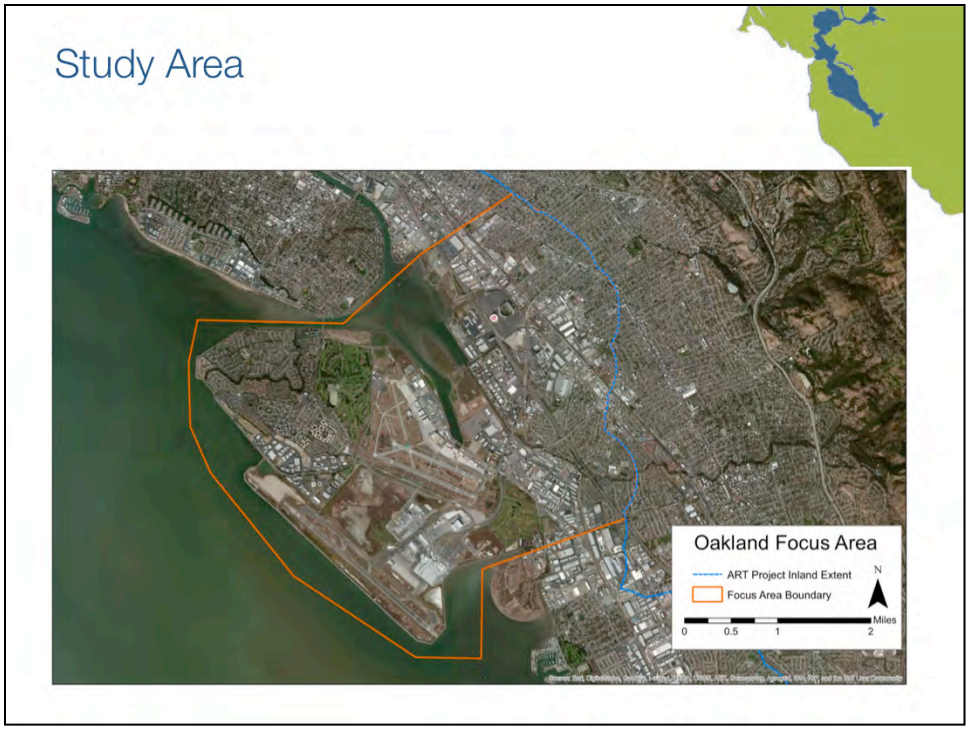
In addition to working in the Oakland/Alameda Study Area, the ART Program has also been working on several other efforts at the regional and county scale:

- Hazard Mitigation/Climate Adaptation Planning led by ABAG's Resilience Program and supported by ART Program staff
- Contra Costa County ART Project Assessment Phase
- ART Portfolio and Help Desk
- Part of a staff team (with ABAG, the Coastal Conservancy and MTC) supporting the Bay Area Regional Collaborative (formerly known as the Joint Policy Committee)
- Hayward Shoreline Resilience Study

ART is working in Contra Costa and with ABAG on regionwide hazard mitigation planning. Some of you are directly involved in these other processes (Caltrans, Bay Trail, EBRPD)



We have been working in this area, even though this project has been on hold …..



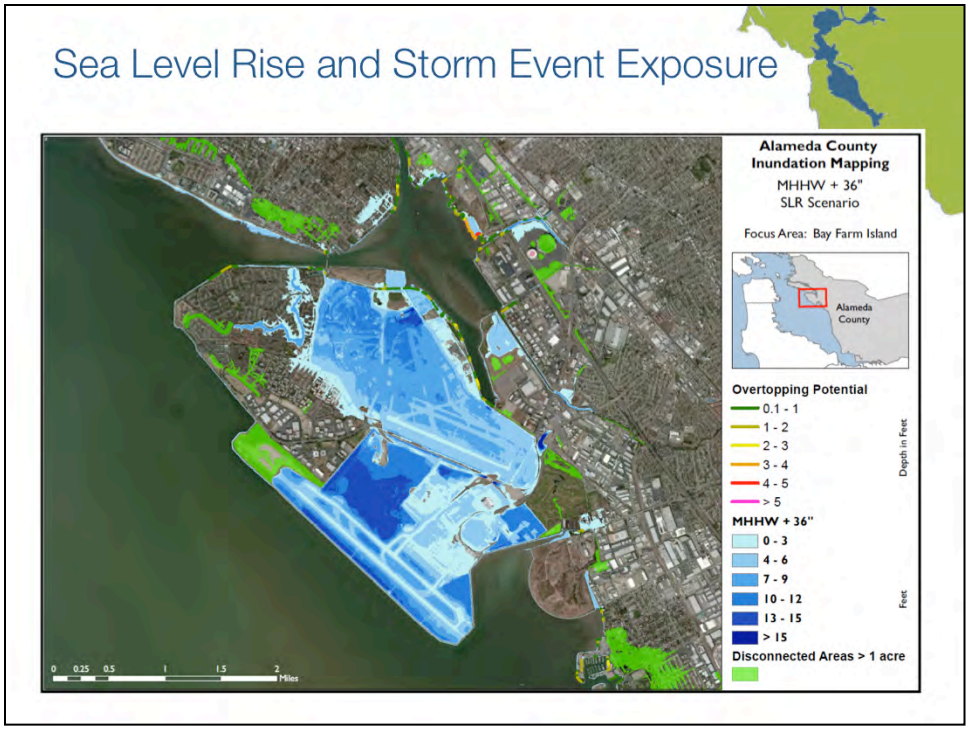
This is our study area. It includes parts of City of Alameda, city of Oakland, the coliseum area including the stadiums and transit systems, and the OAK as well as bay trail, MLK Jr. regional shoreline, and other community assets.

Resilience Goals

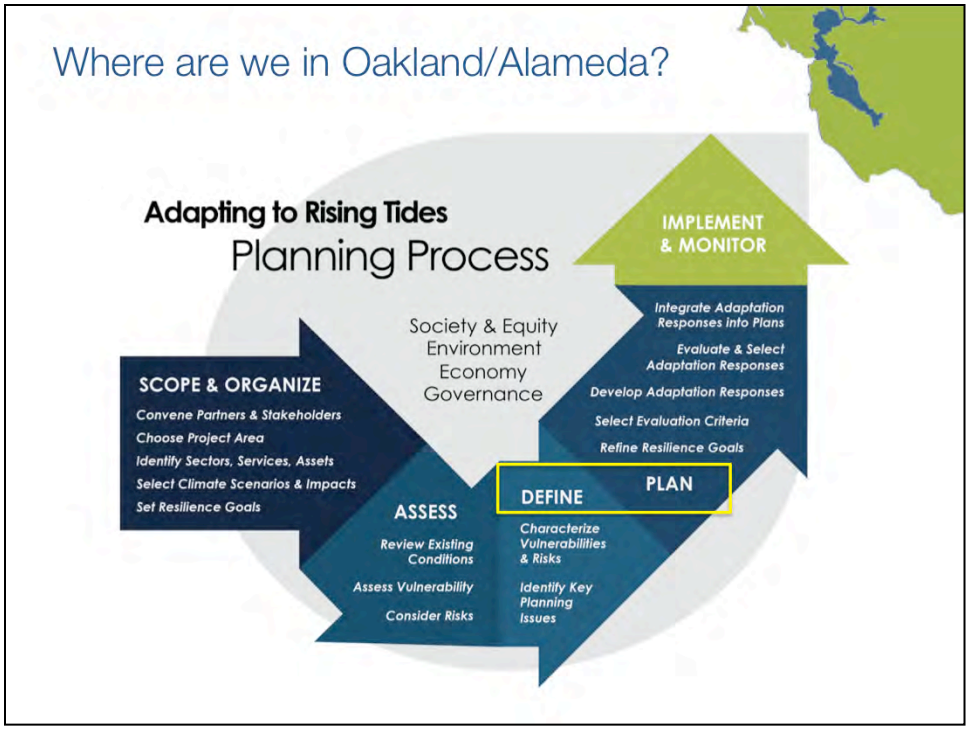
- Maintain neighborhood function by preserving access to roads and transit, goods and services, safe and affordable housing, and outdoor recreational opportunities
- Maintain the function of the airport as a regionally significant passenger, cargo, and employment hub
- Build resilience in all phases of the disaster lifecycle-from mitigation and preparedness to response and recovery-by protecting critical community facilities, supporting community awareness, ensuring assistance through mutual aid agreements, and building capacity for effective recovery
- Preserve environmental quality by protecting endangered species, ensuring good water quality, and providing appropriate wildlife habitat
- Protect local and regional economy by preserving major employment centers, airport services, regionally significant transportation, and local infrastructure investments

These were the resilience goals set for the study, recall the multi-objective focus. We want to build resilience to flood and seismic impacts, for the environment, the economy, society and equity, and governance.

As you heard from lindy, when you bring in riverine flooding analaysis, the Coliseum area is vulnerable to severe storm event flooding today.



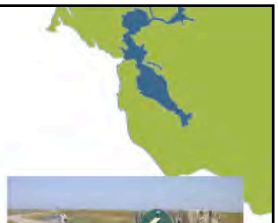
On Bay Farm Island, The area has extensive low lying areas. With 36” of sea level rise (most likely project for 2100), OAK is flooded as is much of the Bay Farm Island commmunity. This flooding comes from the northeast side of the island, along doolittle drive. Not the perimeter dike along the runways.

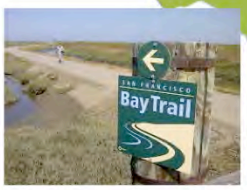


Since the project started, we have scoped and organized, completed the assessment (remember those profile sheets we sent you?) and today we are right at the DEFINE step. You have been able to review your asset or sector profile sheets (there is still time if you haven't-get them in!)

What is the Define Step?

- Serves as the bridge between the Assess and Plan Steps
- Organizes and communicates the assessment findings to support adaptation response development
- The ART approach to ranking and prioritizing that avoids the challenge of ranking, scoring or prioritizing, improving transparency
- Helps make sure important vulnerabilities are not left behind





The "Define" step is an important part of this transition process and helps bridge between the identification of vulnerabilities and the development of adaptation responses. We developed the define step in response to our working groups reaction to ranking, scoring, prioritizing and the more standard approach for organizing vulnerabilities and selecting which vulnerabilities to develop responses for. We need to agree on and understand the real problems before jumping to solutions. Going through the "define" step ensures we don't end with an unmanageably long list of actions to take (e.g. one or more actions for every vulnerability of every asset) but ensures that we don't leave any important vulnerabilities are not left behind. It also helps result in adaptation responses that provide a strong case for taking action based on the priorities and key issues for this area.

Components of the Define Step

CALPINE RUSSELL CITY ENERGY CENTER

Asset Description: The Russell City Energy Center (Energy Center) is a natural gas-fueled power plant that provides 619 megawatts (MW) of electricity to the Bay Area. The plant went online in August 2013 and has an expected lifespan of 40 years. The plant is owned and operated by CalPine, which sells the majority of its power to PG&E through operating agreements. The plant generates enough electricity for 600,000 residents and pays $5 million in taxes to the City of Hayward annually.

Key Issue Statement: The Energy Center is vulnerable to sea level rise impacts because of its reliance on water, access roads, and other utilities that are vulnerable to storm surge and sea level rise. Information about plant operations are not publicly available, which makes it difficult to adequately consider the plant in sea level rise adaptation planning. While the plant may not be vulnerable to more serious flooding impacts since it has an expected lifespan of only 40 years, the site will need to be cleaned up and/or protected as sea level rises.

Vulnerabilities

INFO: CalPine, a private entity, owns and operates the Energy Center, and management and operations plans are not publicly available, making it difficult to adequately assess the plant's vulnerability and risk.

FUNC: The Russell City Energy Center requires 2 million gallons per day of cooling water from Hayward Water Pollution Control Facility (HWPCF) and also discharges wastewater to the HWPCF. In addition, it relies on streets, roads, and highways for employee access. The dependence of the plant on potentially vulnerable utilities may cause the plant to be vulnerable before the plant itself is exposed to flooding, since the plant requires the cooling water and the road access to operate.

Consequences

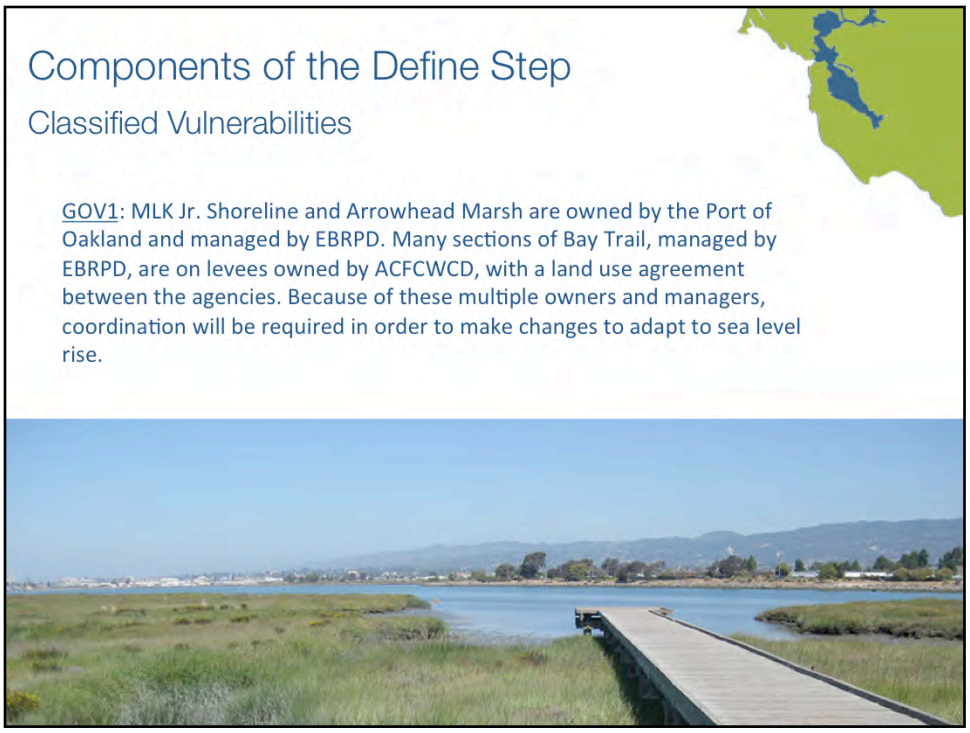
Society and Equity: If the plant is shut down or moved due to sea level rise, 30 jobs may leave the area or disappear entirely.

Classified vulnerabilities (information, governance, physical and functional) for each asset/sector to understand where the real problems are and what kinds of actions would fix them

Issue statements for each asset/sector to begin synthesizing the most important issues

Based on the results of the assessment, we classified vulnerabilities for each asset or sector into four categories: information, governance, functional, and physical challenges. This helps identify what the real problems are and actions that may be needed to solve them.

We then developed overarching issue statements to begin synthesizing the most important issues for each asset or sector. You have received profile sheets for the assets you manage, so are likely familiar with these types of classified vulnerabilities and issue statements. These profile sheets serve as communication materials for you within your agency, with partners, and for this study area.



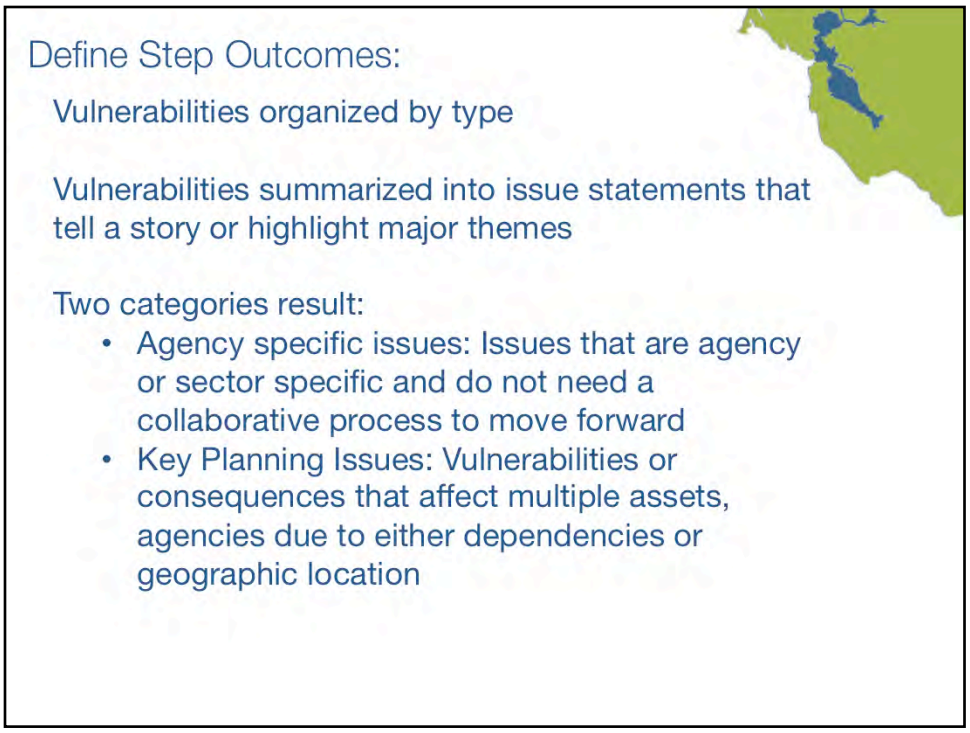
This is an example of a classified vulnerability for the MLK Jr. Shoreline and Arrowhead Marsh. In this case, it's a governance vulnerability: EBRPD doesn't OWN all of the trails and land they manage. They cannot independently build resilience.

Components of the Define Step

Issue Statements

North Field provides critical goods movement functions to OAK and the region. North Field is directly vulnerable to flooding impacts due to its low elevation and insufficient shoreline protection. It is also vulnerable to secondary impacts such as disrupted ground transportation networks and power outages. As OAK plans for resilience, they will need to consider the onsite structures and operations of North Field as well as its place in the transportation and utility systems.

This is an example of an asset issue statement, which outlines key issues for North Field at the Oakland Airport, including vulnerability to flooding and secondary impacts based on its reliance on transportation and utility systems.



The define step has several important outcomes that help move the project forward towards action.

1) Classified vulnerabilities help you prepare for different kinds of actions-so information gathering, financing, built solutions
2) Major themes for assets and agencies help agencies communicate about their most important vulnerabilities and start the process of developing adaptation responses. Agency decision makers may want to know, "what's our biggest problem?" Issue statements for your assets or agency can help you tell the connected story of vulnerabilities, consequences, and relevant context for your assets.
3) We will continue to work with you on you asset or agency specific issues and develop adaptation responses at this scale as appropriate.
4) There is also a higher level set of issues we need to address together. These are vulnerabilities that affect multiple assets and create broad consequences and CANNOT be addressed by any one agency or landowner. These "Key Planning Issues" are our next order of business today

What are Key Planning Issues?

- Key Planning Issues need to be addressed collectively, have consequences that are high or broad, the flood risk is current or within a few decades, the needed response will be lengthy or the benefits may be lengthy, multiple assets or sectors will be affected due to dependencies or geographic location
- Key planning issues should include the primary themes or story of the study area
- Agency specific issues will also be addressed and advanced, but not collaboratively by the working group

Key Planning Issues are cross-cutting, interconnected, have significant vulnerabilities with broad consequences – they apply to multiple assets or sectors, are often interconnected, and identify significant vulnerabilities with broad consequences for this area

The ART program staff team has developed preliminary key planning issues for the study area that we will discuss in more detail today.

Key Planning Issues

Access on and off Bay Farm Island and to and from Oakland International Airport (OAK) is already limited due to the island's geography, is vulnerable to future flooding and seismic events, and will affect the economy, public health and safety, and community function if disrupted.

Key Planning Issues

Housing, community members, and community facilities are vulnerable to current and future flooding as well as seismic events. Impacts to these facilities could result in major consequences for people where they live, work, and recreate.

Key Planning Issues

The Oakland Coliseum facilities, transportation assets, and neighborhood are vulnerable to both current and future flooding due to at-capacity flood control channels and rising Bay water levels.

Key Planning Issues

Oakland International Airport (OAK) is vulnerable to future flooding and seismic events both within its facilities and through its dependence on other assets.

Key Planning Issues

The Oakland/Alameda study area contains shoreline habitat, including habitat for the endangered California Ridgeway's Rail. However, much of this habitat exists in the form of fringing marshes, which are not predicted to persist given sea level rise, sediment projections and surrounding land uses.

Key Planning Issues

Overarching: Permitting and regulatory issues along shoreline and with multiple owners and jurisdictions may delay or impede adaptation.

Key Planning Issues

- Is everybody represented in at least one of them?
- If we fix these, do we meet our resilience goals?
- Does this guide us to adaptation responses?
- Does everyone need to work on all of them? Do we need more specialization?

Next Steps

1. June meeting on asset and agency-specific adaptation responses

2. July/August meeting on key planning issue adaptation responses

3. Fall meeting to share study findings and develop next steps for agencies and the study area

Oakland/Alameda Resilience Study

For more information:

http://www.adaptingtorisingtides.org/working-group/oakala/

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