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.

Doolittle Drive/State Road 61

O Doolittle Drive serves as shoreline protection along the northeast side of Bay Farm Island.

O In the near future, culverts under Doolittle Drive will need to be improved to reduce flood risk on Port of Oakland property.

O As water levels rise, Doolittle Drive may need to be redesigned in coordination with the Port of Oakland, EBRPD, City of Alameda, and Caltrans.
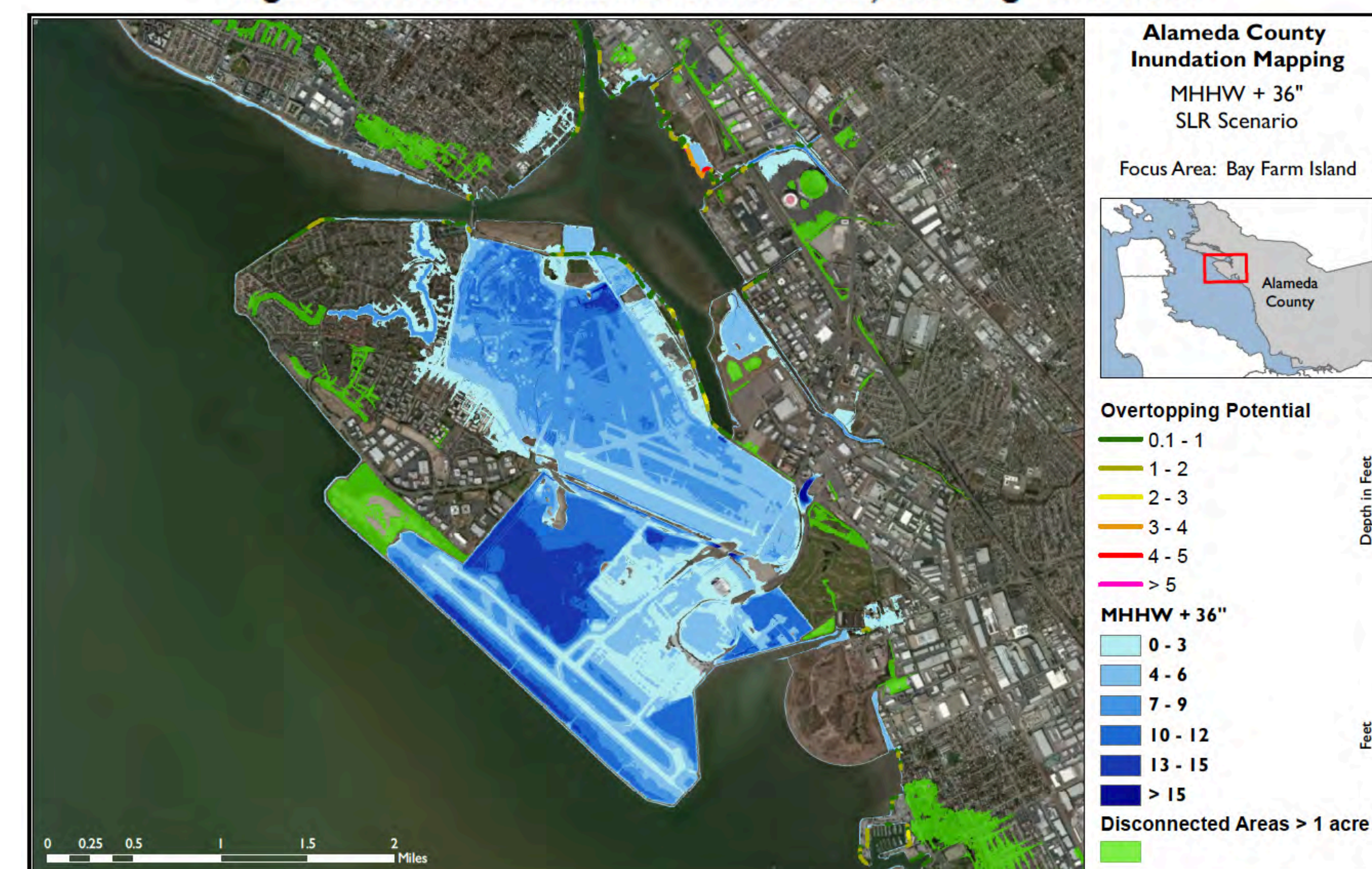
Hegenberger Road, 98th Avenue, OAC, and Airport Drive

O Hegenberger Road, 98th Avenue, BART's Oakland Airport Connector (OAC) and Airport Drive provide major goods and commuter movement corridors between OAK and the Bay Region.

O The roads and transit line are all vulnerable due to their low elevation and inadequate shoreline protection.

O 98th Avenue and OAC are particularly vulnerable because they travel underneath Hegenberger and could be subject to severe flooding in the underpass.

O The roads and OAC are owned by City of Oakland, Port of Oakland, and BART but the shoreline protection is owned by EBRPD.

Agencies Involved:

- ✧ BART
- ✧ Caltrans
- ✧ City of Alameda
- ✧ City of Oakland
- ✧ East Bay Regional Park District
- ✧ Port of Oakland

Figure 11. Site E – South Doolittle Drive, Looking Northwest

Alameda County Inundation Mapping
MHHW + 36"
SLR Scenario
Focus Area: Bay Farm Island

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.

Housing

○ Multiple studies have shown that even temporary population displacement after a disaster significantly slows recovery time. Keeping people in their homes keeps social networks intact, keeps local businesses from going out of business, and keeps the economy strong.

○ Much of our housing stock is vulnerable to disasters, and many of our residents do not have the resources to stay and rebuild if their homes are significantly damaged, as rebuilding housing can take years. This issue is particularly severe in the Bay Area because of existing housing cost burdens and the lack of available short term or replacement housing.

Communities

○ The Oakland/Alameda study area includes housing-cost burdened residents, very young and elderly community members, low-income residents, medically dependent residents, and others who need special consideration when planning for community resilience.

○ In addition, many community facilities such as child care facilities and senior housing are privately operated and may not be adequately protected by local or state ordinances.
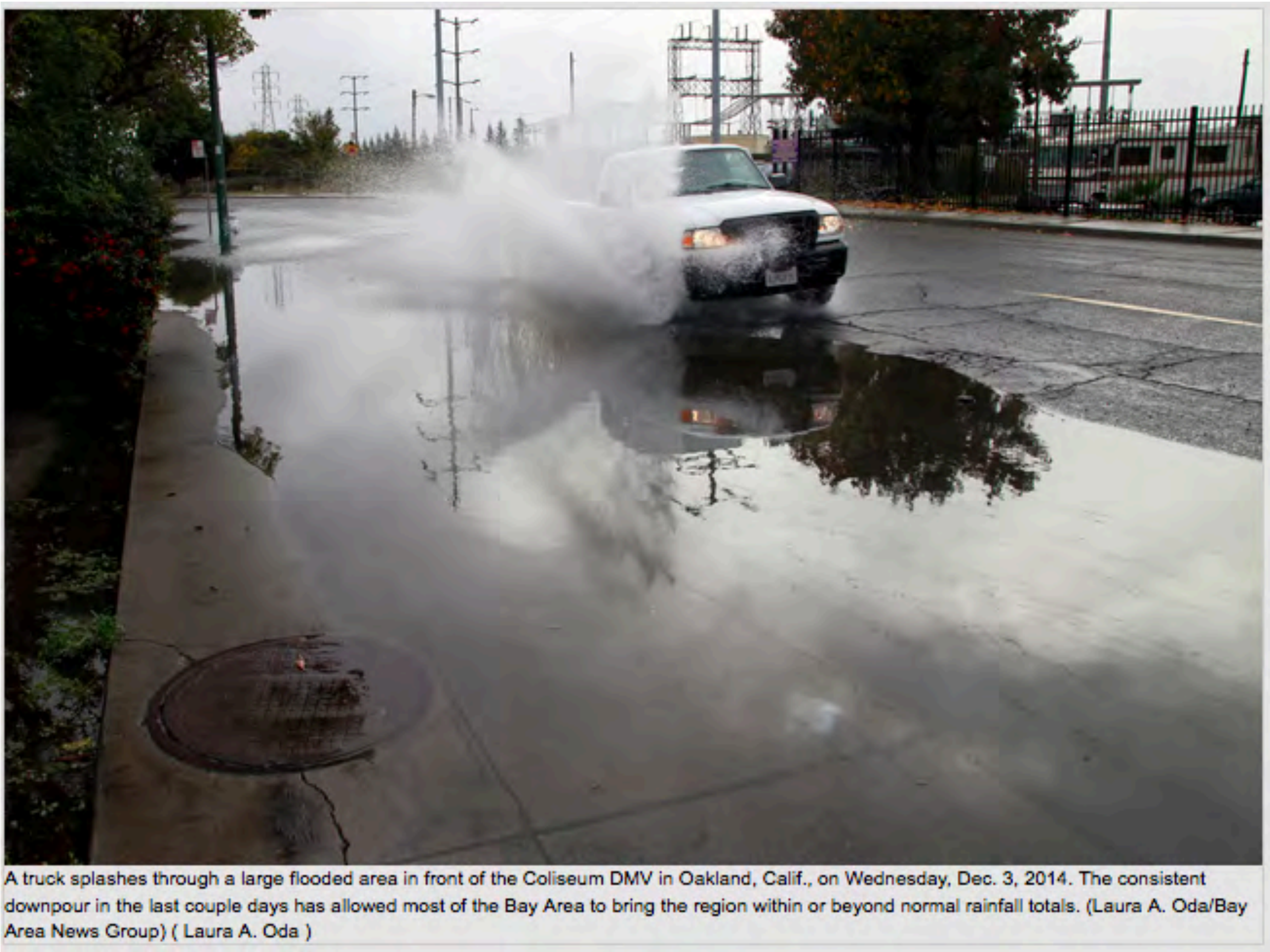
A truck splashes through a large flooded area in front of the Coliseum DMV in Oakland, Calif., on Wednesday, Dec. 3, 2014. The consistent downpour in the last couple days has allowed most of the Bay Area to bring the region within or beyond normal rainfall totals. (Laura A. Oda/Bay Area News Group) (Laura A. Oda)

LEGEND
- Fragile Housing
- Communities at Risk
- Communities at Risk in Fragile Housing

Indicator	Measure
Housing cost burden	% household monthly housing >50% of gross monthly income
Transportation cost burden	% household monthly transportation costs >5% of gross monthly income
Home ownership	% not owner occupied housing
Household income	% households with income less than 50% AMI
Education	% persons without a high school diploma >18 years
Racial/Cultural Composition	% non-white
Transit dependence	% households without a vehicle
Non-English speakers	% households where no one ≥ 15 speaks English well
Age – Young children	% young children under 5 years
Age – Elderly	% elderly, over 75 years

Agencies Involved:

- ✧ Alameda Unified School District
- ✧ Association of Bay Area Governments
- ✧ City of Alameda
- ✧ City of Oakland
- ✧ East Bay Regional Park District
- ✧ Oakland Fire Department
- ✧ Office of Emergency Services
- ✧ Oakland Unified School District

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.


Coliseum Facilities

O The Oakland Coliseum Complex provides economic value to the city of Oakland and the region through sports and entertainment events year round.

O Stormwater and wastewater drainage are insufficient and have caused disruptions to Coliseum facilities in the past.

O The complex also relies on roads, transit systems, utilities, and shoreline protection it does not own or maintain. Improving the resilience of the complex will require extensive coordination between private landowners and the Oakland Alameda Coliseum Authority, which governs the site.

Coliseum Community and Transit

O This area is part of an ongoing specific plan process led by the City of Oakland aimed at economic development with no explicit flood risk reduction benefits. Special coordination between the City of Oakland and other public and private partners will be necessary to plan for future water levels while meeting other local needs for housing and economic investment.

O BART, Capitol Corridor and AC Transit service in the area is vulnerable to future flooding and serves the transit-dependent Coliseum community and the region at-large.

O I-880 is vulnerable to flooding at its stream crossings in this area and is critical to goods movement and the regional economy.

Agencies Involved:

✧ AC Transit

✧ Association of Bay Area Governments

✧ BART

✧ Caltrans

✧ Capitol Corridor/Amtrak

✧ City of Oakland

✧ East Bay Regional Park District

✧ Oakland Fire Department

✧ Oakland Unified School District
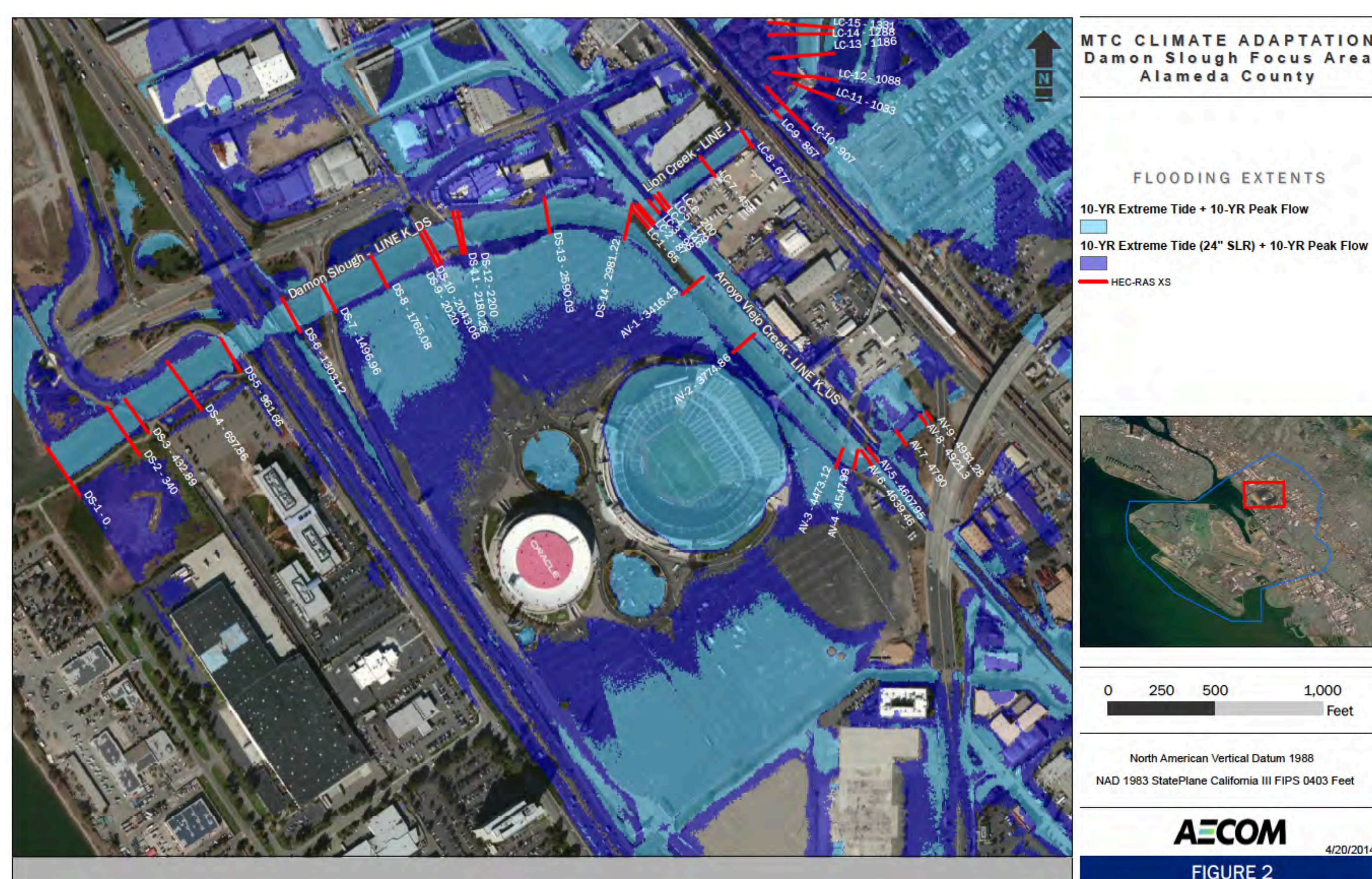
✧ Oakland Alameda Coliseum Authority

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

Oakland International Airport

O OAK provides regionally significant goods movement, commuter movement, air passenger travel for business and personal purposes, and emergency response functions. It also operates under many regulations and partnerships with public and private organizations.

O The airport is protected by shoreline protection it owns (the perimeter dike) and by shoreline protection it does not own (Doolittle Drive).

O Significant airport facilities include major runways, large structures like the terminals and air traffic control tower, and smaller but very important assets like the tank farm for fuel supply and Fire Station #22 with specialized equipment for airplane emergencies.

O Most airport facilities are not resilient to flood impacts and the airport cannot function if its runways, terminals, control tower, and other assets are disrupted.

O In order to maintain operations at OAK, the Port of Oakland will need to coordinate with utilities, tenant businesses, neighboring landowners, and transportation agencies in the area as well as relevant regulatory agencies.

Agencies Involved:

✧ Caltrans

✧ Federal Aviation Administration

✧ City of Oakland

✧ Port of Oakland

✧ City of Alameda

✧ East Bay Regional Park District

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.
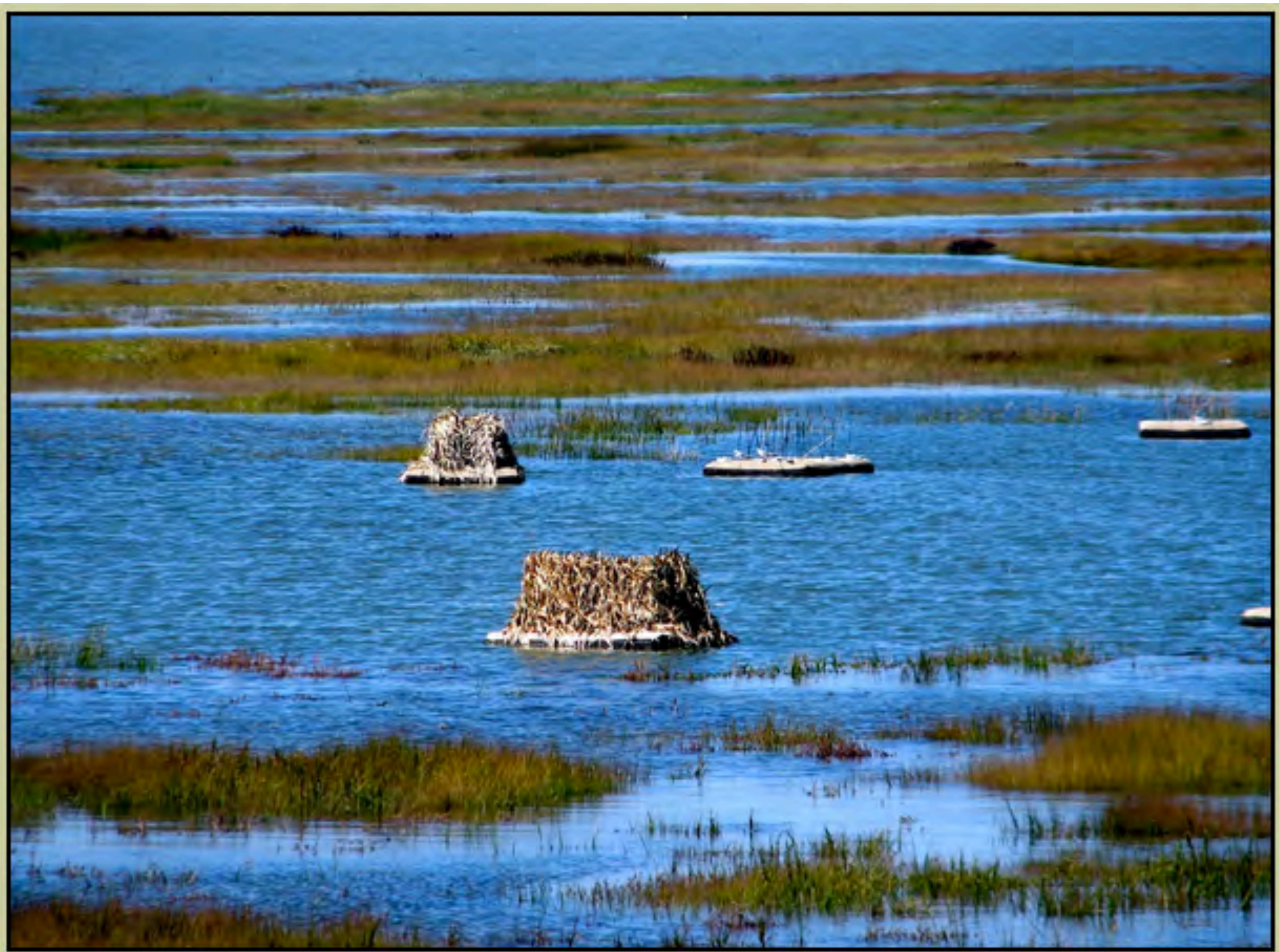
MLK Jr. Regional Shoreline

O Arrowhead has current adaptation measures (habitat mounds) but cannot survive future water levels.

O Due to adjacent land uses and limited ownership, EBRPD does not have adequate space to restore upland transition zone for marshes on its property

O EBRPD does not own all of its parkland and will need to coordinate with the Port of Oakland, Alameda County Flood Control and Water Conservation District, and neighboring landowners.

Bay Trail

O Bay Trail in this area does not have redundancy around San Leandro Bay and does not have simple alternative locations for re-routing the trail.

O The Coliseum area does not have adequate green space or bicycle/pedestrian corridors. Proposed Bay Trail along Damon Slough should be considered in adaptation responses for this area.

Agencies Involved:

✧ Bay Trail

✧ Caltrans

✧ City of Alameda

✧ City of Oakland

✧ Coastal Conservancy

✧ East Bay Regional Park District

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

Shoreline Jurisdiction and Regulatory Agencies

○ Most agencies were designed to address the conditions and issues that existed when they were created, with some amendments and updates along the way that allow them to address current issues with static solutions.

○ Sea level rise will require asset managers to plan and implement more iterative projects and ask regulatory agencies to acknowledge shifting baselines for habitat and other resources.

○ The Oakland/Alameda study area has special Federal Aviation Administration requirements and funding arrangements for improvement in and around Oakland International Airport.

Financing Adaptation

○ Securing funding for these projects may also require new collaboration between recreation, restoration, and infrastructure funding sources to implement multi-objective projects. E.g., Port of Oakland cannot fix Doolittle Drive without cooperation from Caltrans and EBRPD but the final project could benefit the airport, recreation, and ground transportation.

Agencies Involved:

✧ Caltrans

✧ City of Alameda

✧ City of Oakland

✧ Coastal Conservancy

✧ East Bay Regional Park District

✧ Federal Aviation Administration

✧ Metropolitan Transportation Commission

✧ Port of Oakland

✧ Regulatory agencies including BCDC, CADFW, RWQCB, Army Corps of Engineers, and FEMA