



Adapting to Rising Tides Adaptation Guidance

Developing tools to link vulnerability to reduced risk

BARC Governing Board

1/24/2019

ART Bay Area Systems and Scales

SYSTEMS

TRANSPORTATION NETWORKS



- Highways and Bridges
- Commuter Rail
- Freight Rail
- Airports
- Seaports
- Ferries
- Buses
- San Francisco Bay Trail

VULNERABLE COMMUNITIES



- Social Vulnerability Characteristics
- Contamination Burdens

FUTURE GROWTH AREAS



- Existing Priority Development Areas (PDAs)
- "Eligible" PDAs

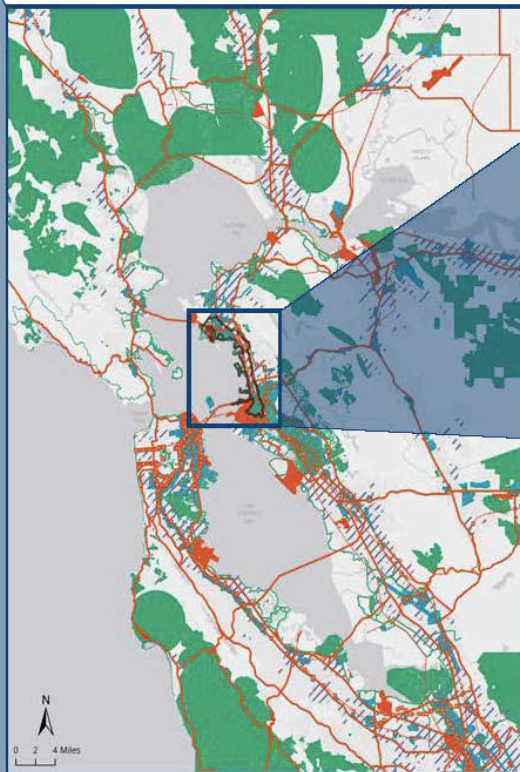
NATURAL LANDS



- Priority Conservation Areas (PCAs)
- Bay Area Protected Areas Database
- Other Natural Lands

SCALES

REGIONAL



ANALYSES METHODS

- ▲ **Regional Quantitative**
Regionally available data layers intersected with flooding maps



LOCAL (OLU)

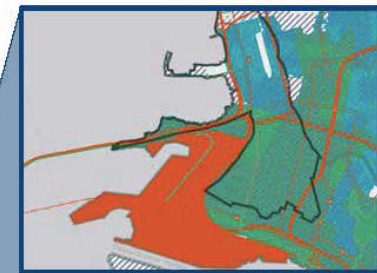


- ▲ **Local Organization**
Operational Landscape Units (OLUs) were used as geographic boundaries for identifying case studies of individual assets for assessment



- ▶ **Individual Qualitative**
Assessment questionnaires, online research and interviews were used to gather data to understand asset-scale vulnerabilities to flooding

LOCAL (Focus Area)



- ▲ **Local Shared Stories**
Areas within OLU were identified to communicate shared vulnerabilities and consequences to flooding



I-80 San Francisco-Oakland Bay Bridge Touchdown



West Oakland Community



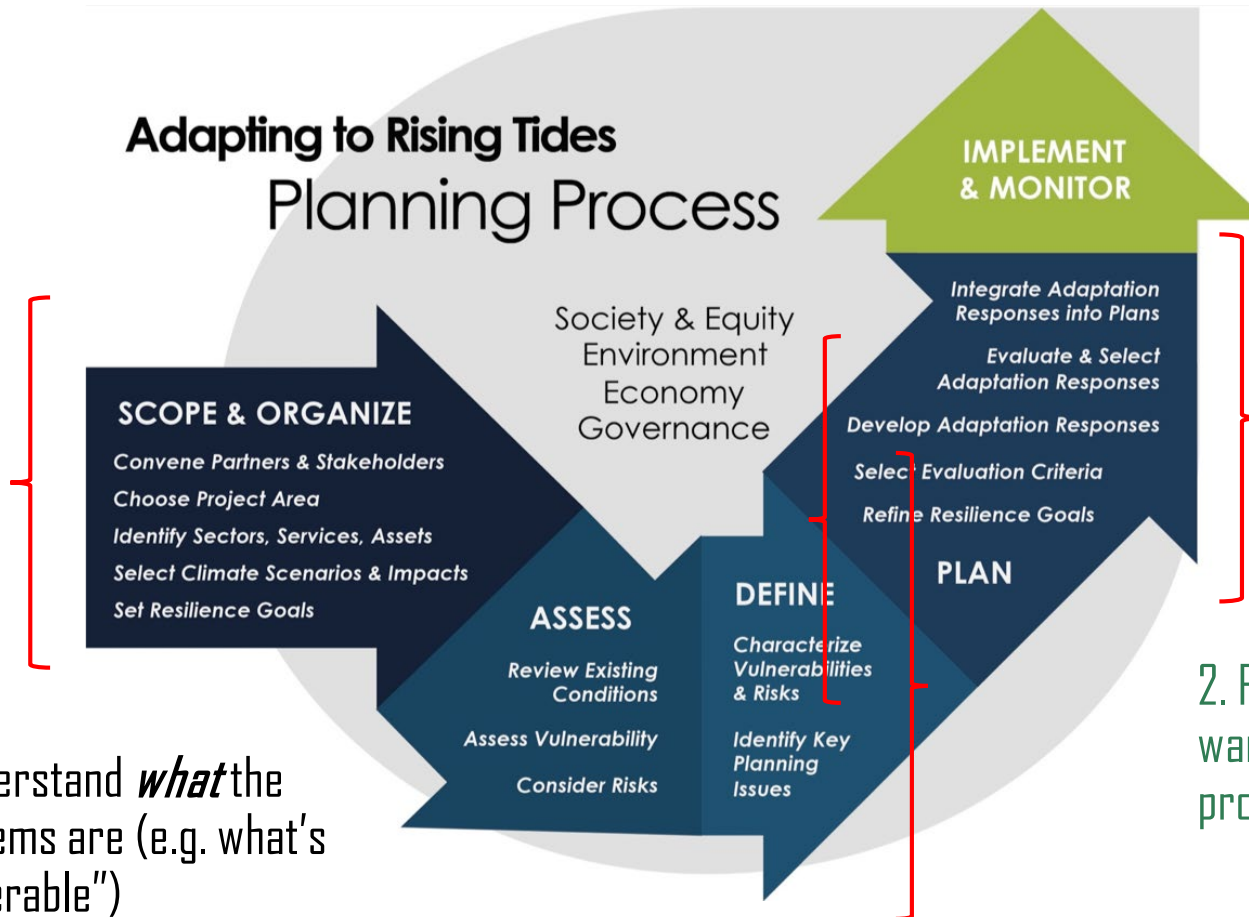
Mixed-Use Core (Emeryville) PDA



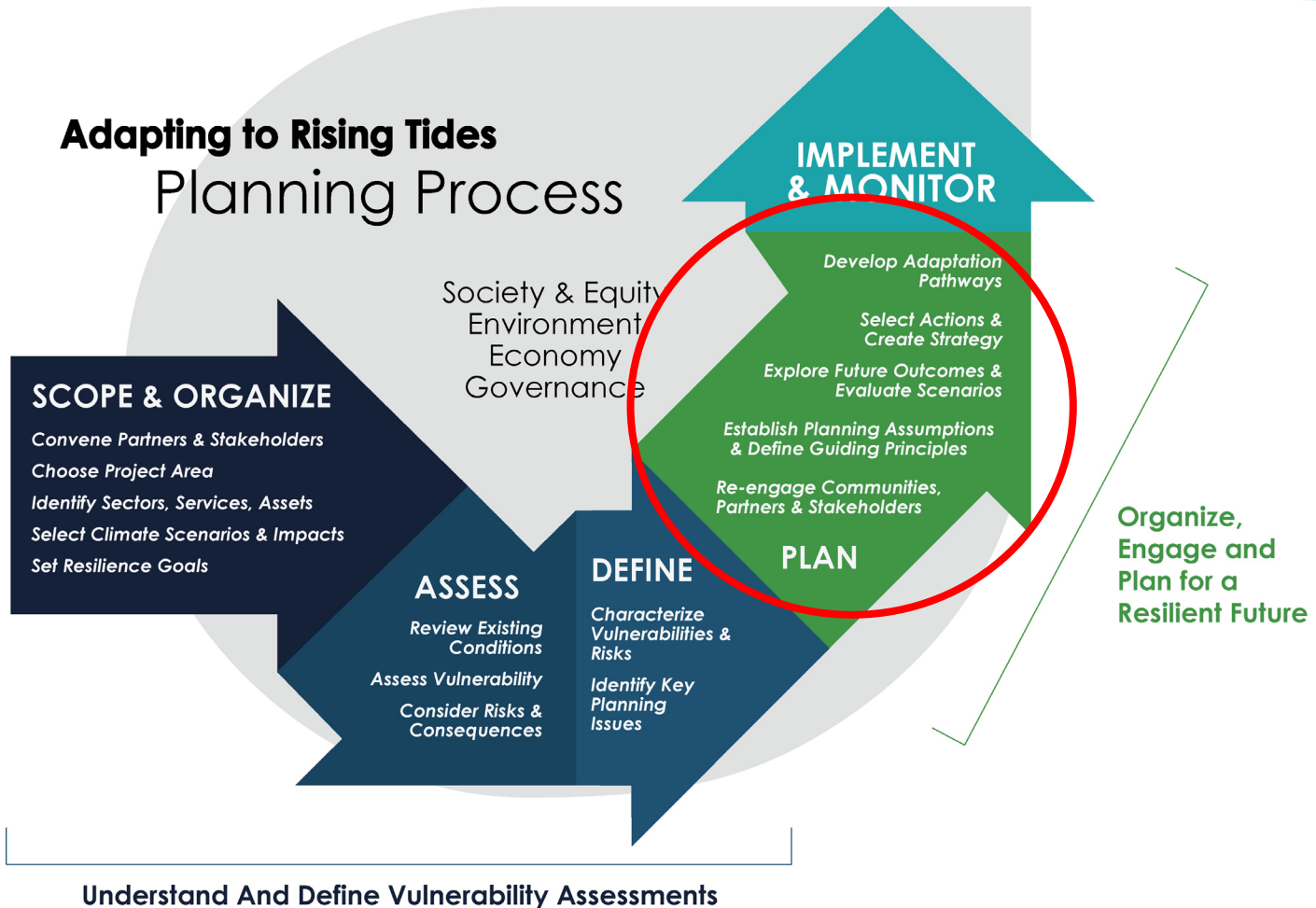
Potential Oakland Gateway Area PCA

INDIVIDUAL

The ART Process

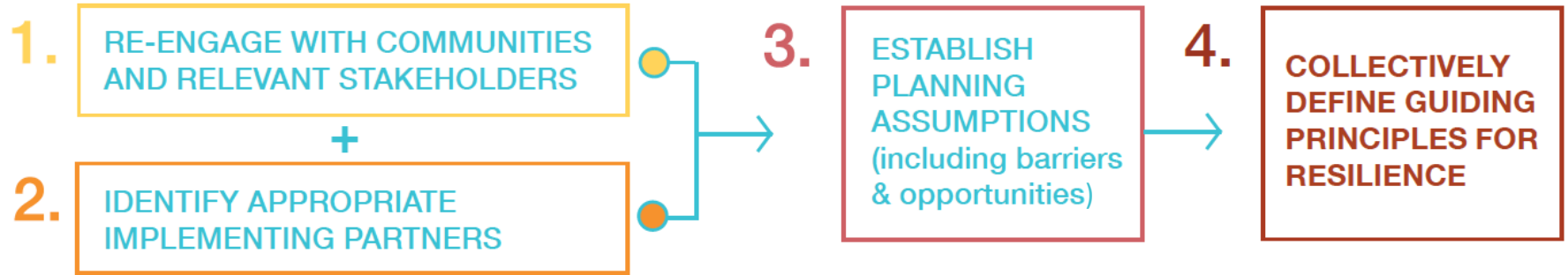


Expanded ART Process



Goals of Adaptation Guidance

- ✓ Provides a series of steps to translate vulnerability assessments into interconnected adaptation actions based on a collaborative vision of risk reduction
- ✓ Help users understand how to decide how actions work together to reduce risk on multiple fronts to create a comprehensive "suite" of actions
- ✓ Get users thinking about how actions sequence over time, taking uncertainty into account – what actions they can or should take today to begin preparing for adaptation even if "impacts" may occur later (adaptation pathways)?
- ✓ Encourage best practices regarding community engagement and the need for planning to be more inclusive for local solutions
- ✓ Provide a toolkit that emphasizes land use, capacity building, program creation, and funding/financing, not just built projects



5. EXPLORE FUTURE OUTCOMES - WHAT COULD THE SHORELINE LOOK LIKE?



- PROTECT
- AVOID OR RETREAT
- ADAPT
- PREPARE

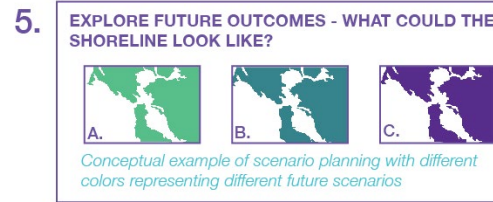
Conceptual example of scenario planning with different colors representing different future scenarios

6. SELECT ACTIONS AND CREATE A STRATEGY FOR PREFERRED SCENARIOS

- CAPACITY BUILDING
- PLANS AND POLICIES
- PROGRAMS AND OPERATIONS
- FUNDING AND FINANCING
- BUILD A PROJECT

7. EVALUATE STRATEGIES (A SUITE ACTIONS) TO UNDERSTAND BENEFITS AND TRADEOFFS

- FEASIBILITY
- SOCIAL BENEFITS
- ECONOMIC BENEFITS
- ENVIRONMENTAL IMPROVEMENTS
- GOVERNANCE
- DISASTER LIFECYCLE
- REGIONAL OR NEIGHBORING IMPACTS



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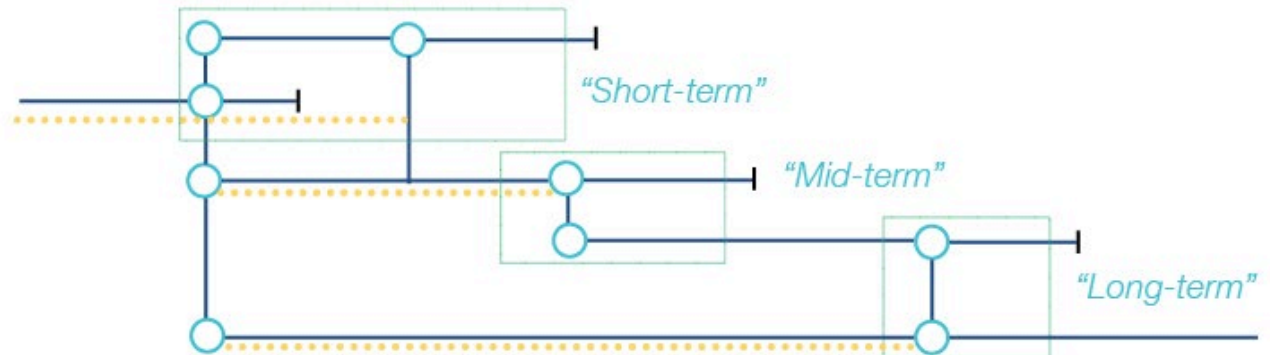
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8. PUT THE PIECES TOGETHER TO CREATE ADAPTATION PATHWAYS

STRATEGY OPTIONS

- Action 1 for Strategy A
- Action 2 for Strategy A
- Action 3 for Strategy B
- Action 4 for Strategy C
- Action 5 for Strategy C

TIMELINE, TOTAL WATER LEVELS, OR NEAR, MID, LONG-TERM





How does this coordinate with other guidance?

In effort to improve coordination among other groups doing similar work, we scheduled meetings and participated in ongoing efforts:

- ✓ SFEI/Point Blue - Adaptation Framework
- ✓ CalOES – APG 2.0 Public Webinars (3)
- ✓ OPC – Sea Level Rise Potential Adaptation Guidance
- ✓ BCDC's Climate Change Policies Implementation Team
- ✓ BayCAN – South Bay Meeting
- ✓ SBI Adaptation Planning/East Palo Alto Parent Academy
- ✓ San Mateo Climate Collaborative – Sea Level Rise Task Force

Adaptation Catalogue

- ✓ Comprehensive catalog of actions you can take to reduce risk and advance adaptation
- ✓ Includes a wide range of tools – not just built flood control projects
- ✓ Covers all types of approaches: adapt, protect, avoid or retreat, and prepare
- ✓ Designed to work in “packages,” not standalone
- ✓ Pulls from many existing sources, including CSCC, Adaptation Atlas, and past ART projects

Next Steps

✓ Will publish in Spring/Summer 2020:

- Guidance Document
- Worksheets/templates
- Adaptation Catalogue

