CLIMATE RESILIENCY PROJECTS

CONTRA COSTA COUNTY HAZARDOUS MATERIALS COMMISSION: OPERATIONS COMMITTEE MEETING FRIDAY, JUNE 13, 2025



Presented By:
Andrew Clough, WCW, General Manager
Joe Neugebauer, WCW, Environmental Services Manager
Tim Mollette-Parks. Partner. Mithun

MEETING AGENDA



WCW & OUR COMMUNITY



VISION



CLEAN & GREEN PROJECT



COMMUNITY ENGAGEMENT & PARTNERSHIPS



NORTH RICHMOND LIVING LEVEE & COLLABORATIVE SHORELINE PROJECT



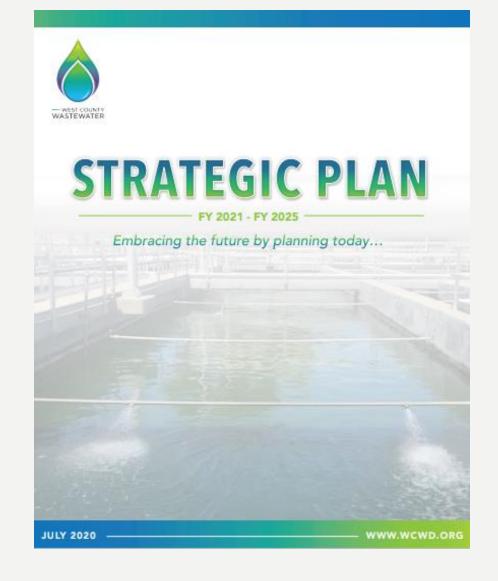
Q&A

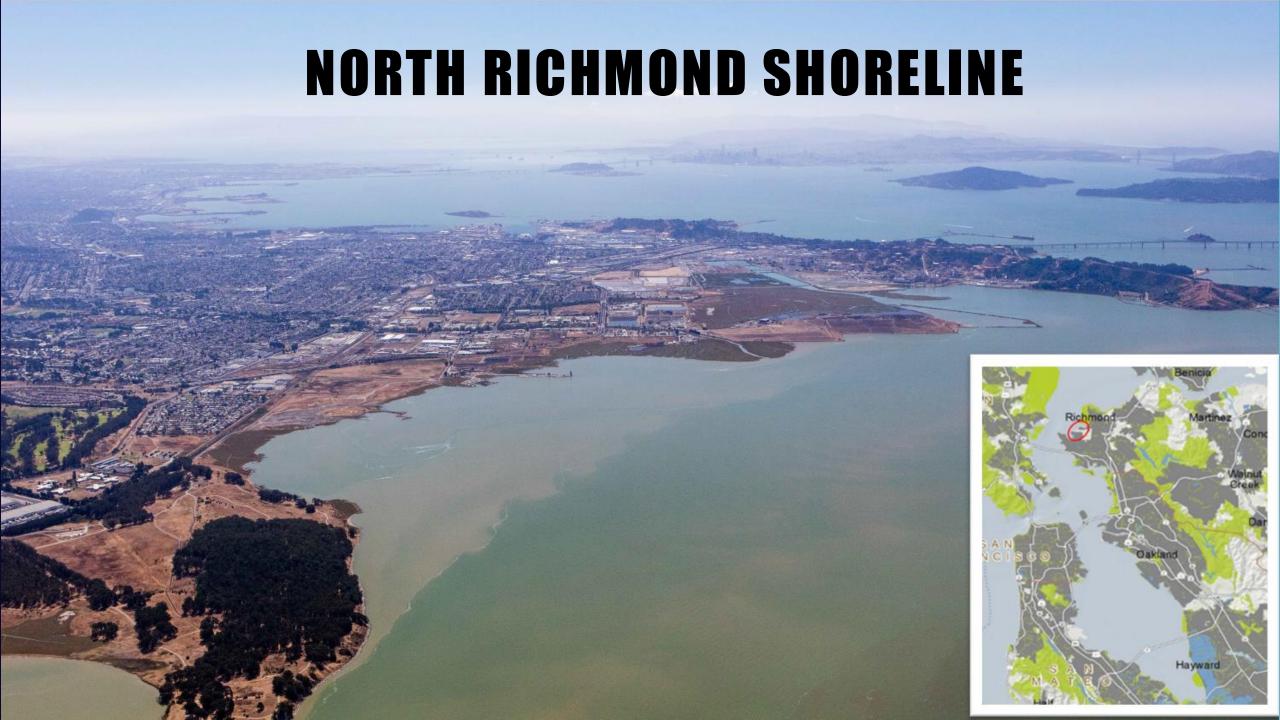
WEST COUNTY WASTEWATER



VISION

Create a holistic plan for environmental stewardship through efficient wastewater management, extensive community engagement, inspirational leadership, and integrated partnerships

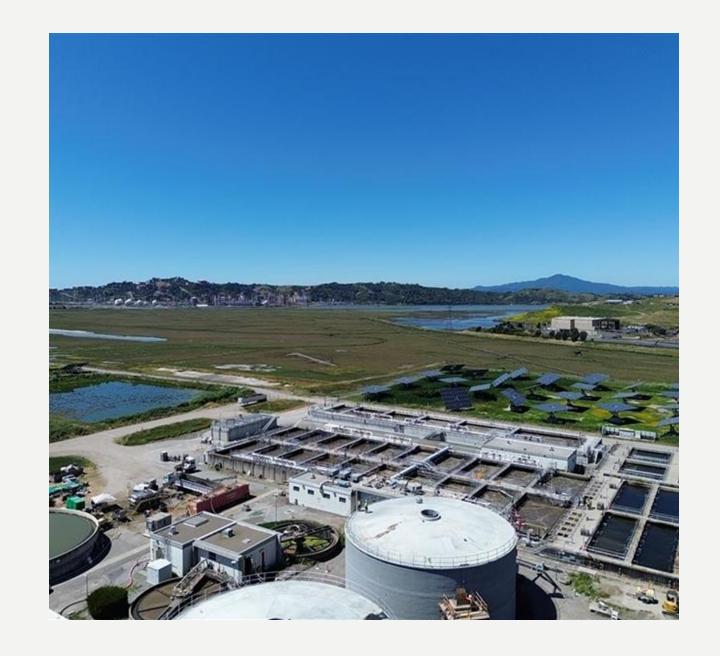






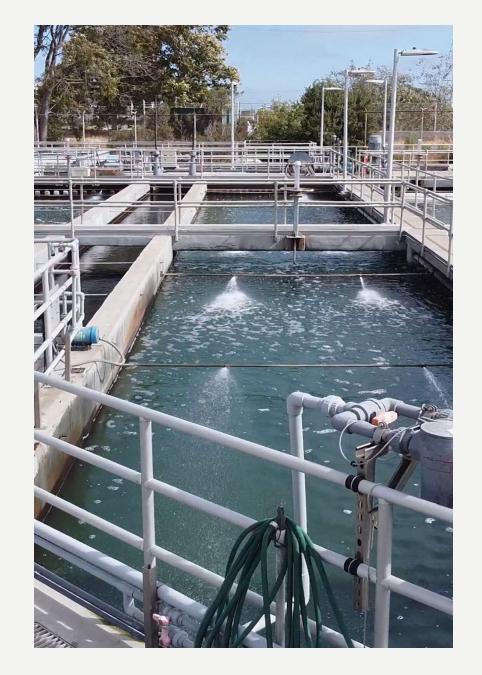
CLEAN & GREEN PROJECT

- Creating green power resiliency and reliability
- \$83 million in net program savings
- 4.2 million kWh of energy reduction per year
- 93% reduction in greenhouse gas emissions
- Internship Program
- Class A biosolids: Reduced disposal cost and new revenue stream



CLEAN & GREEN PROJECT

- I.I MW of On-Site Solar Power Generation
- 3.1 MW of Battery Storage
- Creation of Microgrid
- LED Lighting and EV Chargers
- Resource Recovery Plant Optimization
- Grit Separation System, Rotary Drum Thickeners, High Efficiency Aeration Blower, New Digesters, 450 kW Cogeneration System, Sludge Dewatering System, Sludge Thermal Dryer System
- Equalization Basin Expansion
- Produce Class A Biosolids













PROJECT HISTORY

2016

San Francisco Estuary Partnership and Watershed Project support the community in developing the North Richmond Shoreline Vision Plan

2018

RbD elevates and connects ongoing community-led work, including the shoreline resilience ideas identified in 2016



2021

Funding received from San Francisco Bay Restoration Authority (SFBRA) for Community Co-creation of an adaptation plan for multi-benefit, nature-based resilience in the face of raising sea levels



2024

Design team continues supporting grant pursuits, assisting in securing additional SFBRA for further co-design, documentation and initial environmental studies.



The design team engages with North Richmond neighbors as part of Resilient by Design (RbD) furthers

2017



Design team remains engaged with the community after RbD, supporting community leaders in pursuing grant funding to advance the co-design and long-term leadership for shoreline

2020





Potential federal construction funding for Phase 1 Living Levee is identified in the Water Resources Development Act

Completion of the Collaborative Shoreline Adaptation Plan, and concept design for the Phase 1 project: the North Richmond Living Levee

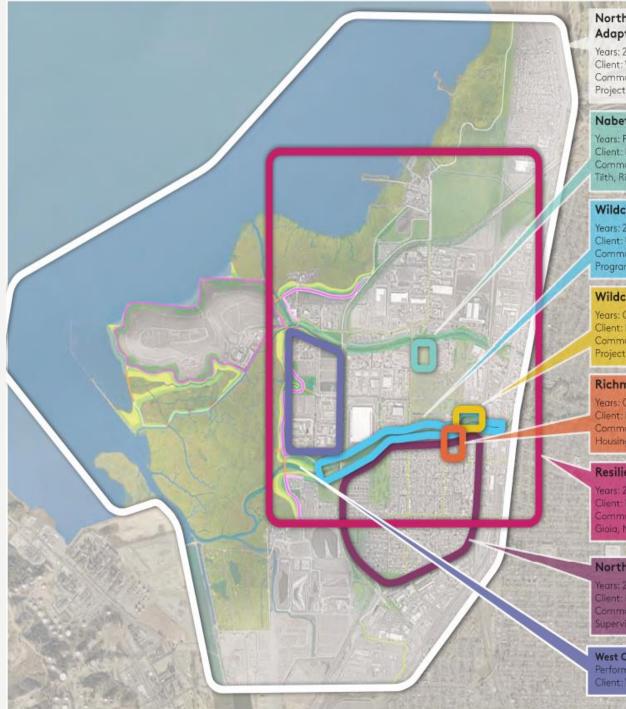
2023

NORTH RICHMOND SHORELINE LIVING LEVEE STAKEHOLDER GROUP



- Regular meetings since September 2019, with lead from San Francisco Estuary
 Partnership and West County
 Wastewater
- Position Nature-Based Adaptations for external funding opportunities
- Provide information, support to WCW
 Project Management Team throughout conceptual design process for a Prototype Living Levee & Shoreline Adaptation Planning effort

BUILDING LASTING RELATIONSHIPS THAT CONTINUE **OUTSIDE OF THE PROJECT**



North Richmond Collaborative Shoreline Adaptation Plan

Years: 2022-2024

Client: West County Wastewater

Community Connections: Creeks Councils, Watershed

Project, Shoreline Working Group

Nabeta Land Vision Richmond Our Power

Years: Present

Client: Richmond Our Power Coalition

Community Connections: Our Power Coalition, Urban

Tilth, Rich City Rides

Wildcat Creek Trail Vision Plan

Years: 2018

Client: Urban Tilth

Community Connections: Contra Costa Watersheds

Program, Urban Tilth, Verde School PTA

Wildcat Creek Sediment Basin and Fish Ladder

Years: Current

Client: FlowWest Engineers, County Flood Control District Community Connections: Verde School PTA, Watershed

Richmond Lands Tiny Home EcoVillage

Years: Current

Client: Richmond Lands Community Land Trust

Community Connections: NRMAC, Supervisor Gioia, County

Resilient by Design: North Richmond

lient: Resilient by Design

Community Connections: WCW, Urban Tilth, Supervisor

North Richmond Quality of Life Plan

opervisor Gloig's Office

West County Wastewater Master Plan Program EIR

Performed by ESA Client: WCW

COMMUNITY PARTNERSHIPS



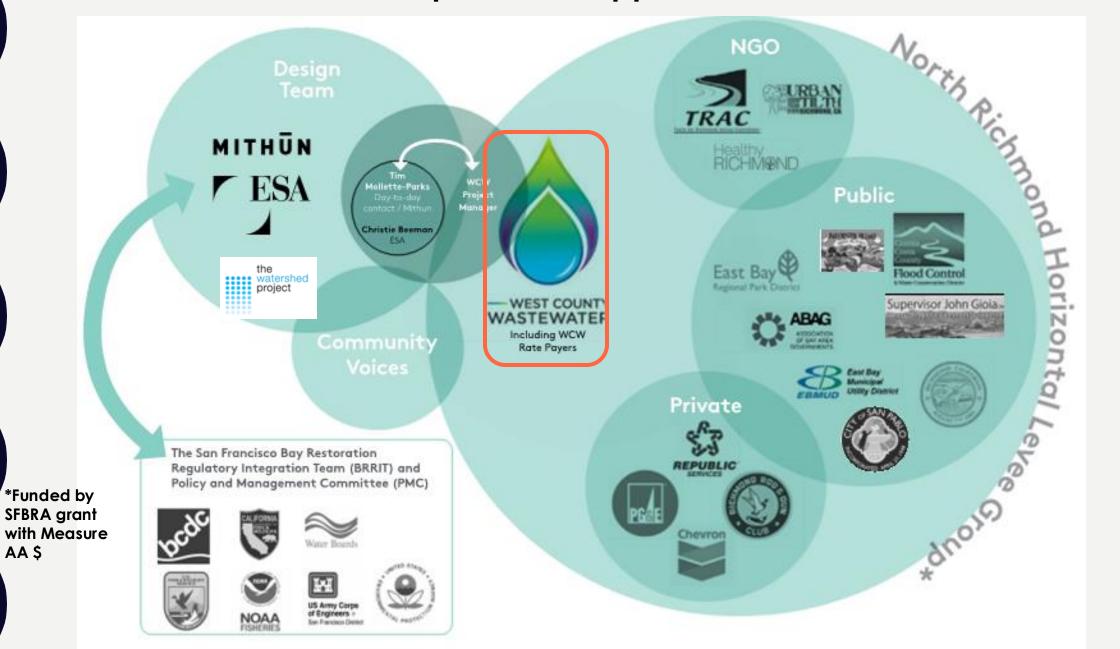








Partnerships-based Approach



AA\$





Outreach

Adaptación de la costa de North Richmond:



Los miembros de la comunidad:

- -Trabajarán aproximadamente de 1 a 2 horas a la semana entre febrero y septiembre de 2022, con un receso de verano durante julio y agosto.
- -Completarán tareas incluyendo: coaprendizaje, recopilación y análisis de datos, participación de la comunidad, preparación de materiales y participación y dirección de reuniones.
- -Participarán en uno de los grupos de trabajo comunitarios siguientes: Imaginando soluciones, Encuesta comunitaria, o Sostenibilidad y crecimiento.

Los miembros de la comunidad recibirán un pago máximo de \$1,000 por el proyecto (\$50 por reunión)

La fecha límite de solicitud es el 31 de enero de 2022!!!

Realizaremos un webinar para proporcionar más información y responder cualquier pregunta el lunes 24 de enero de 6 a 7 pm.

Un enlace al webinar está disponible en TheWatershedProject.org/Shoreline.

Para más información y para aplicar, visite TheWatershedProject.org/Shoreline o contacte a Eunice Quintanilla a eunice@thewatershedproject.org o 707-726-2829 (mensaje de texto o llamada).



North Richmond Shoreline Adaptation Project:



Community Members can participate by:

- -Work approximately 1-2 hours a week between February and September 2022, with a summer break during July and August.
- Complete tasks such as co-learning, gathering and analyzing data, conducting community engagement, preparing materials, and participating in and leading meetings.
- -Participate in one of the following community workgroups: Envisioning Solutions, Community Survey, or Sustainability and Growth.

Community members will receive a maximum payment of \$1,000 for the project (\$50 per meeting).

The application deadline is January 31st, 2022!!!

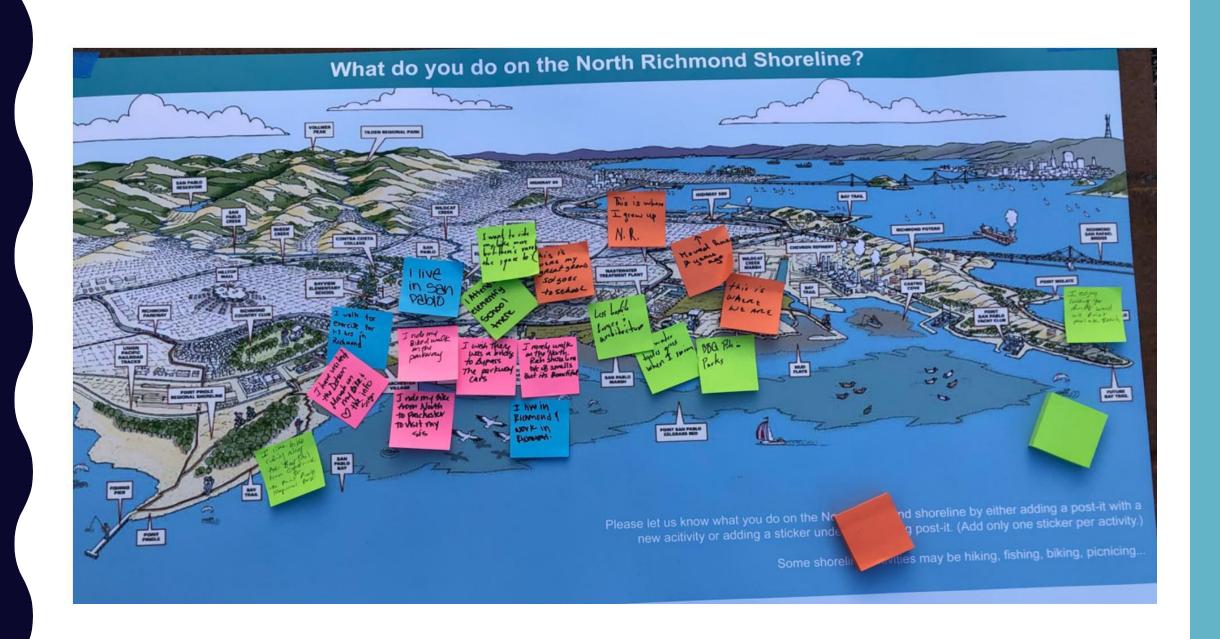
We will hold a webinar to provide more information and answer any questions on Monday, January 24th, 6-7 pm.

A link to the webinar is available at TheWatershedProject.org/Shoreline

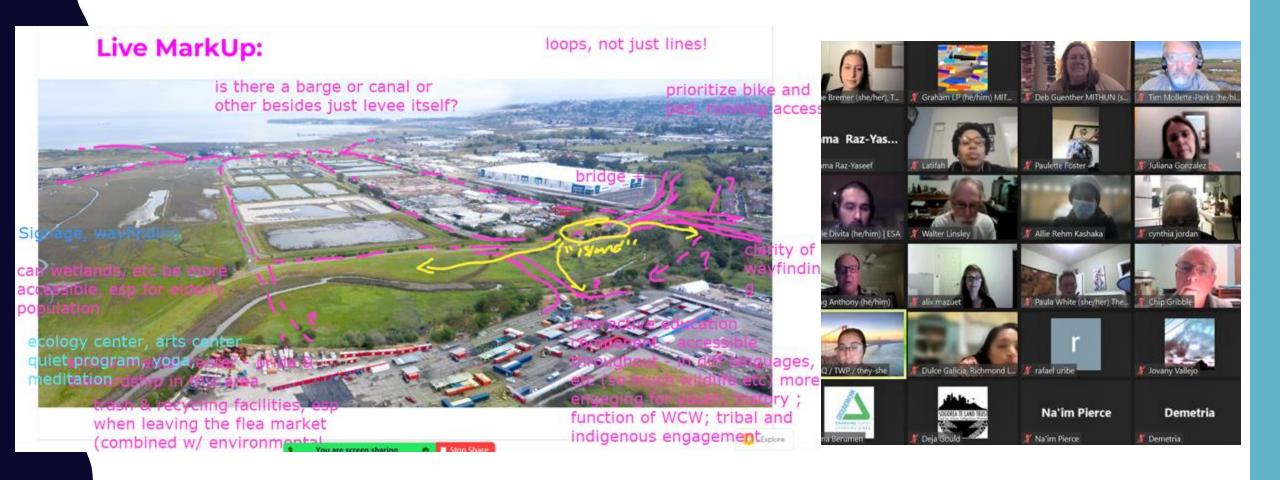
For more information and to apply, visit TheWatershedProject.org/Shoreline or contact Eunice Quintanilla at eunice@thewatershedproject.org or 707-726-2829 (text or call).



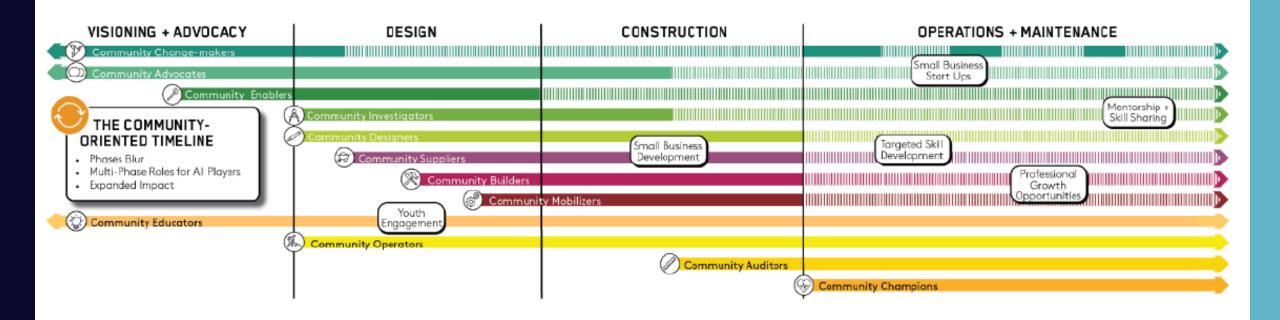




Online Workshops: Understanding Priorities for Access, Amenities, Activities & Restoration



Workforce Development: Thinking beyond construction to community stabilization and wealth-building



Tribal Engagement



TRIBAL STORIES FROM THE COAST AND WATERSHEDS OF NORTH RICHMOND, CALIFORNIA



Welcome to the showcase of the Confederated Villages of Lisjan Coastal Stories, created by The Watershed Project as part of the North Richmond Shoreline Adaptation Project.



Working with the team to develop concept designs for one or more site installation(s) to honor sites of cultural concern within the concept study area

Building an indigenous storytelling website

- Two site visits with members of the Confederated Villages of Lisjan (Ohlone)
- Zoom meetings and discussions to arrive at shared understanding of role as cultural advisors on the project
- Agreement to provide feedback and help develop interpretive material, including interviews with tribal members



Education and Interpretation









THANK YOU, SAN FRANCISCO BAY RESTORATION AUTHORITY (SFBRA) FOR ALL YOUR SUPPORT!







"WE ARE A DISINVESTED, BUT NOT A DISINTERESTED COMMUNITY"





BUILDING ON THE LEGACY IN NORTH RICHMOND





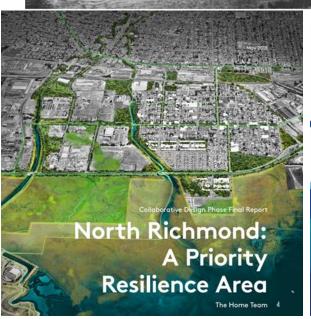




North Richmond Shoreline VISION

A community-based approach to planning for the upland transition zone

The North Richmond Shoreline should be managed, restored and protected to sustain multiple benefits including ecosystem services, community health, economic stability, local jobs, educational opportunities, safe places for recreation, vibrant natural habitat and a source of clean healths food.













PROJECT SITES



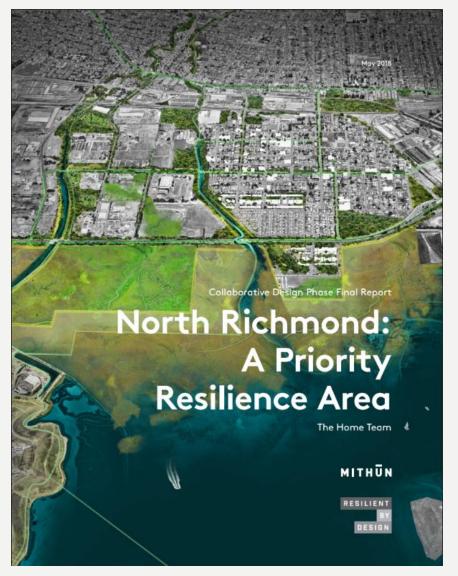


Resilient by Design

Goal: connect international expertise with local communities to inspire innovative designs and collaboration

Process (2017-2018):

- Public call for vulnerable sites
- Design Team selection
- Collaborative Research Phase
- Assign Teams to sites
- Collaborative Design Phase
- Final Designs



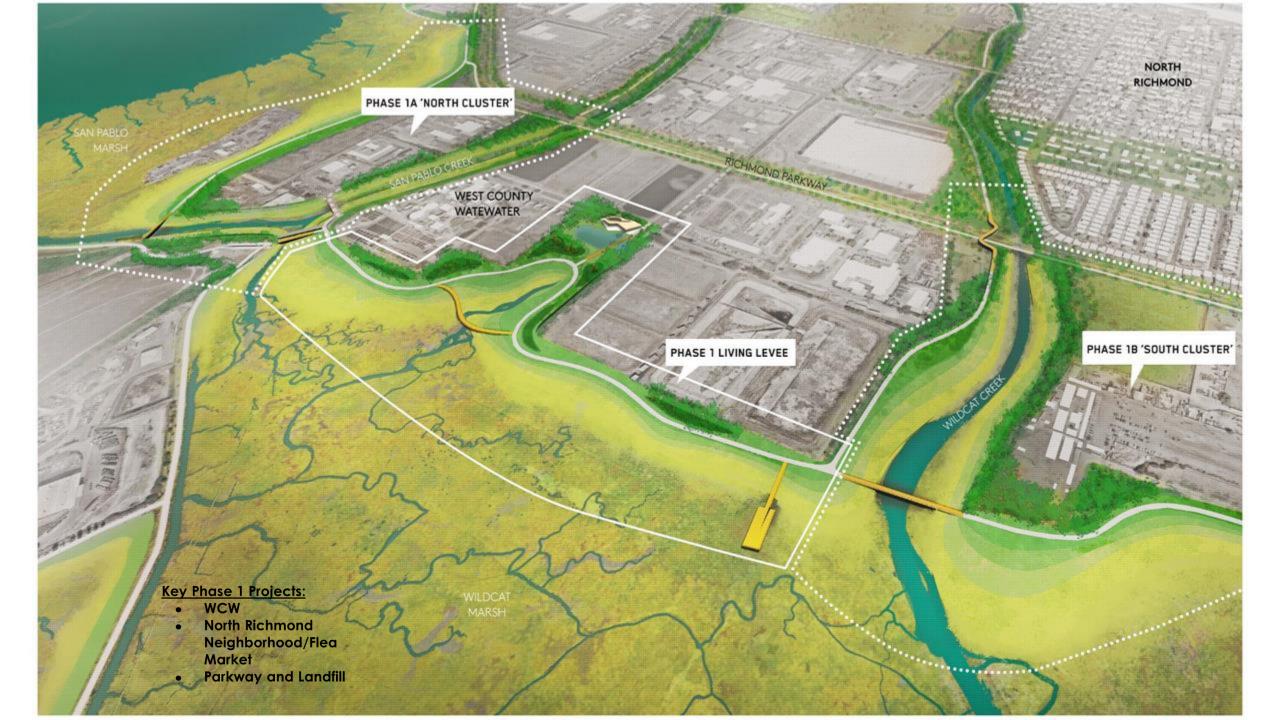


November 2023

May 2018

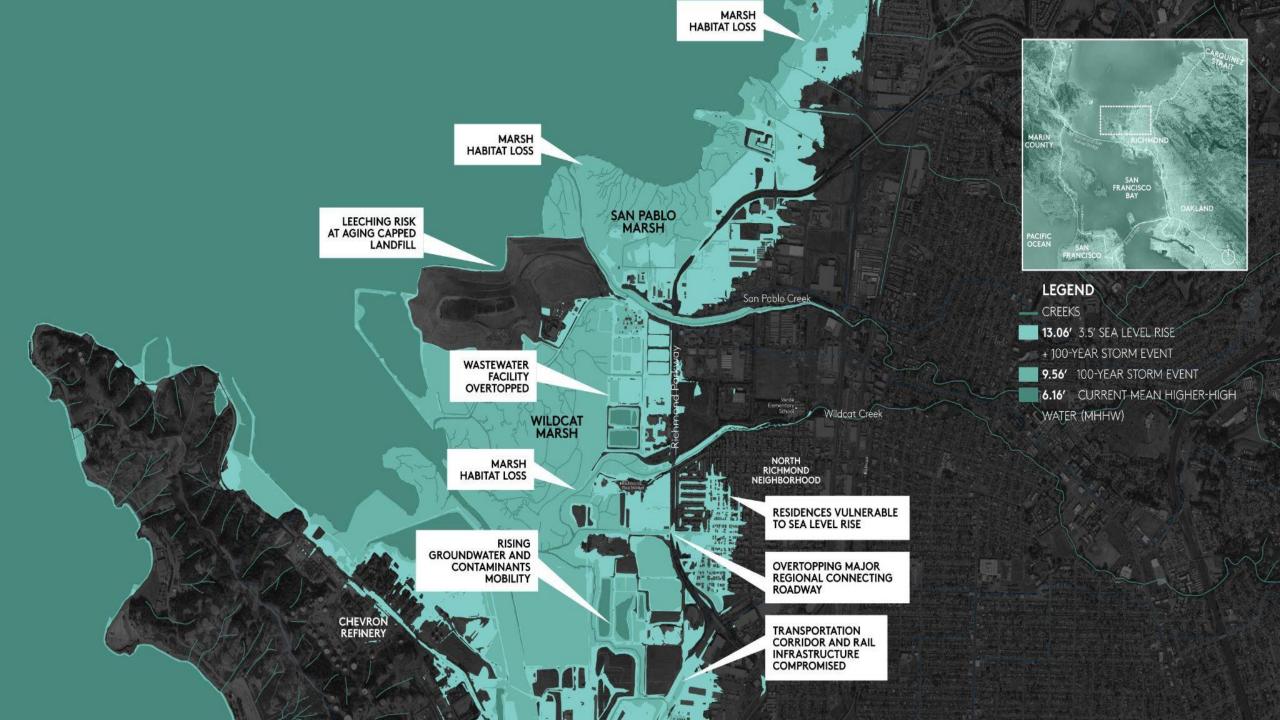


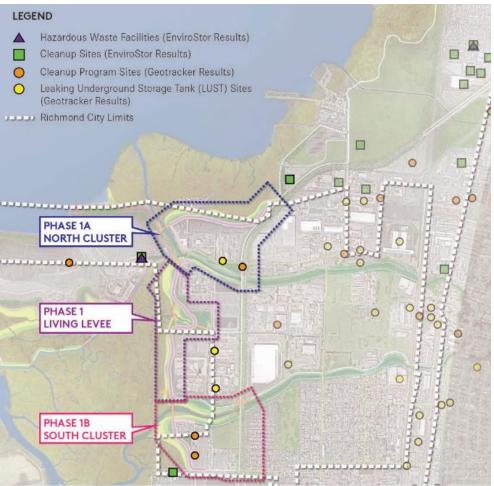




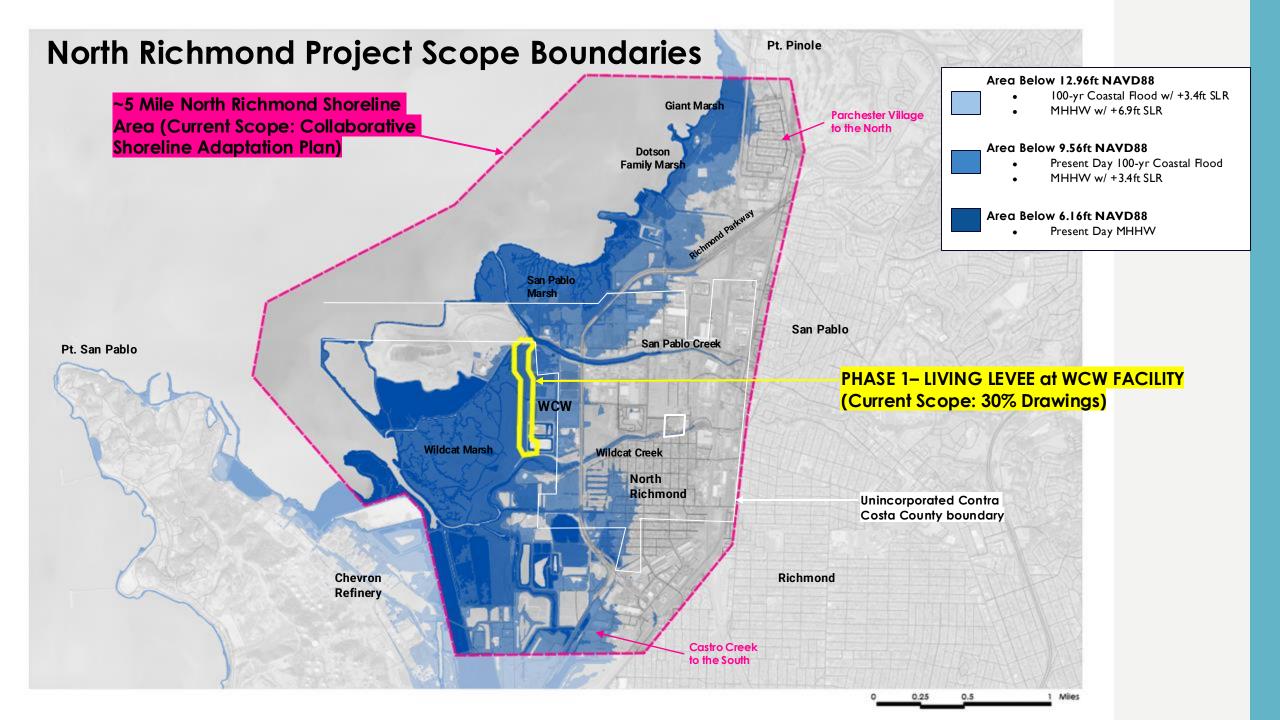




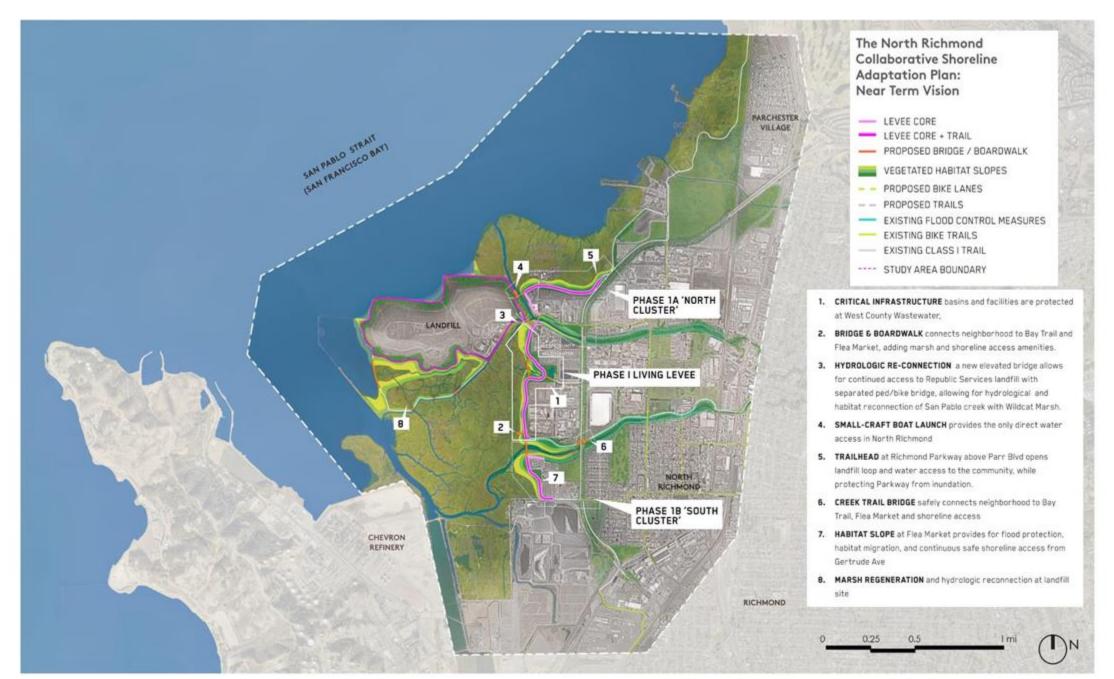


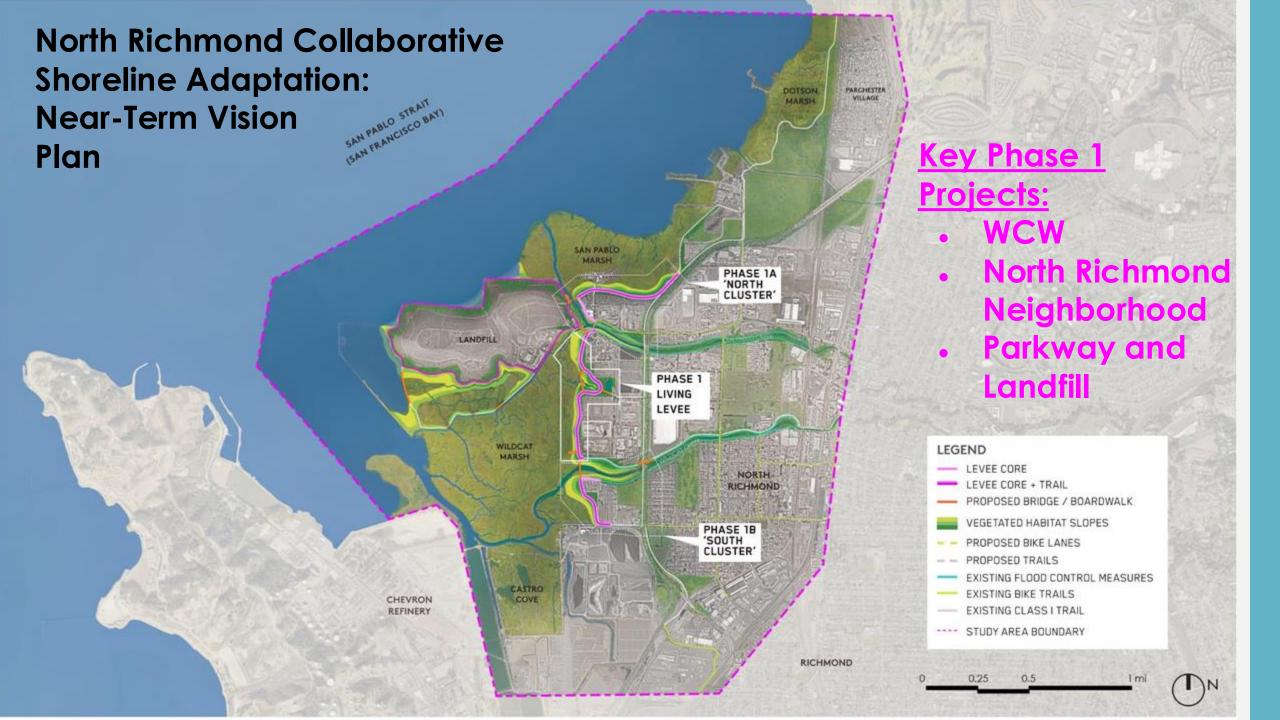


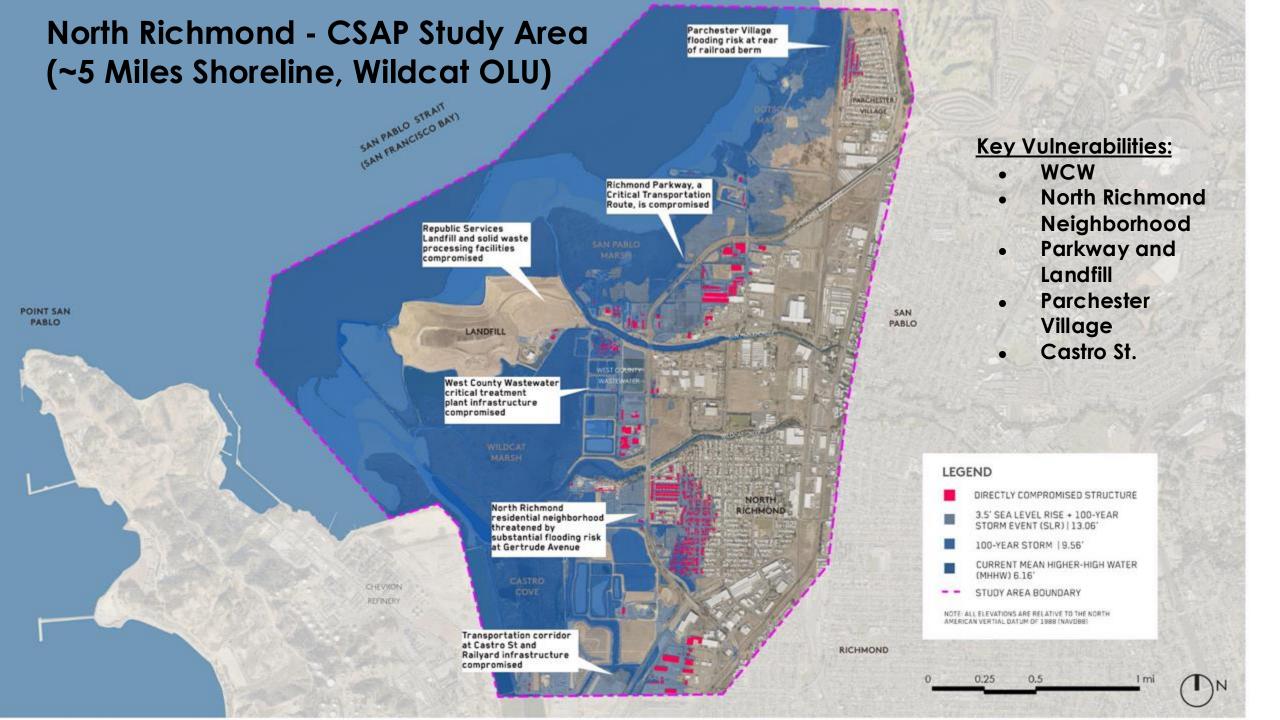
As part of this scope of work, Mithun has included Kleinfelder on our tearn. Their background in analysis and design for contamination concerns will add critical nuance to the approach, particularly in the Phase 1A and 1B Cluster areas, where remediation strategies were an dentified scope gap in the previous planning effort.

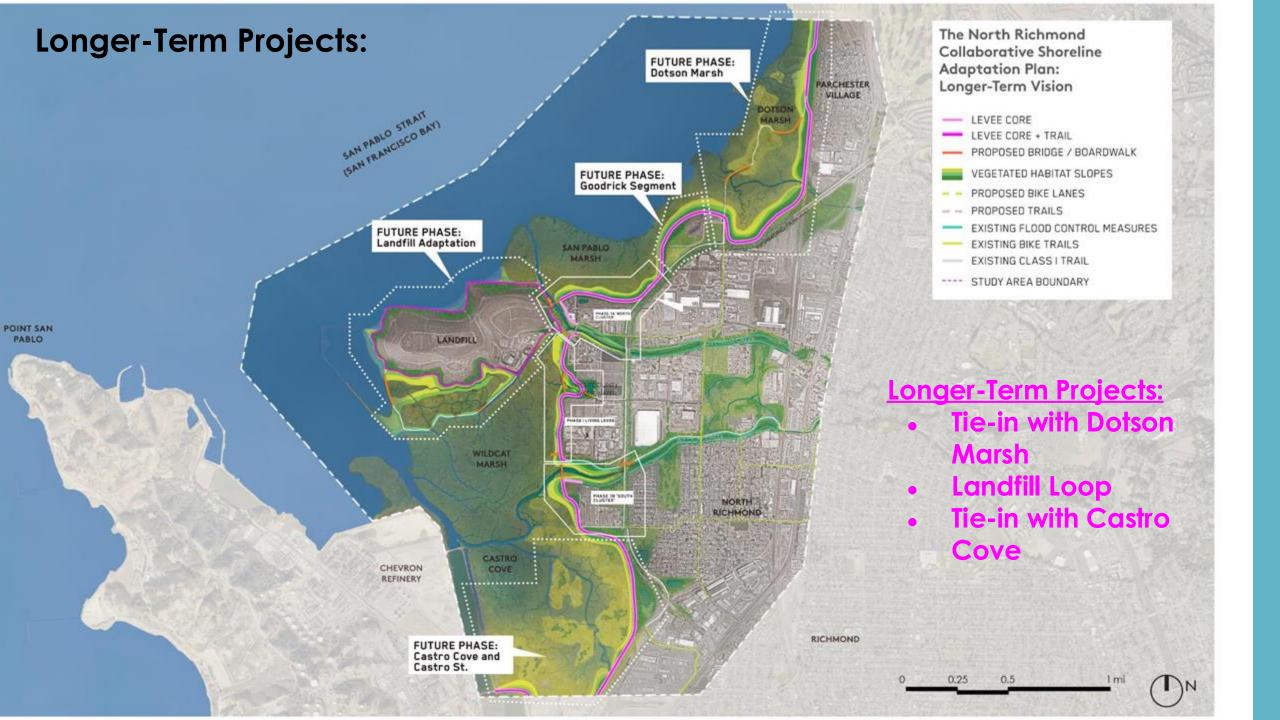


North Richmond Collaborative Shoreline Plan: Near Term Vision













Complement existing habitat and tidal zones, in preparation for future sea level rise.

Avoid impacts to existing tidal habitats at the water's edge.

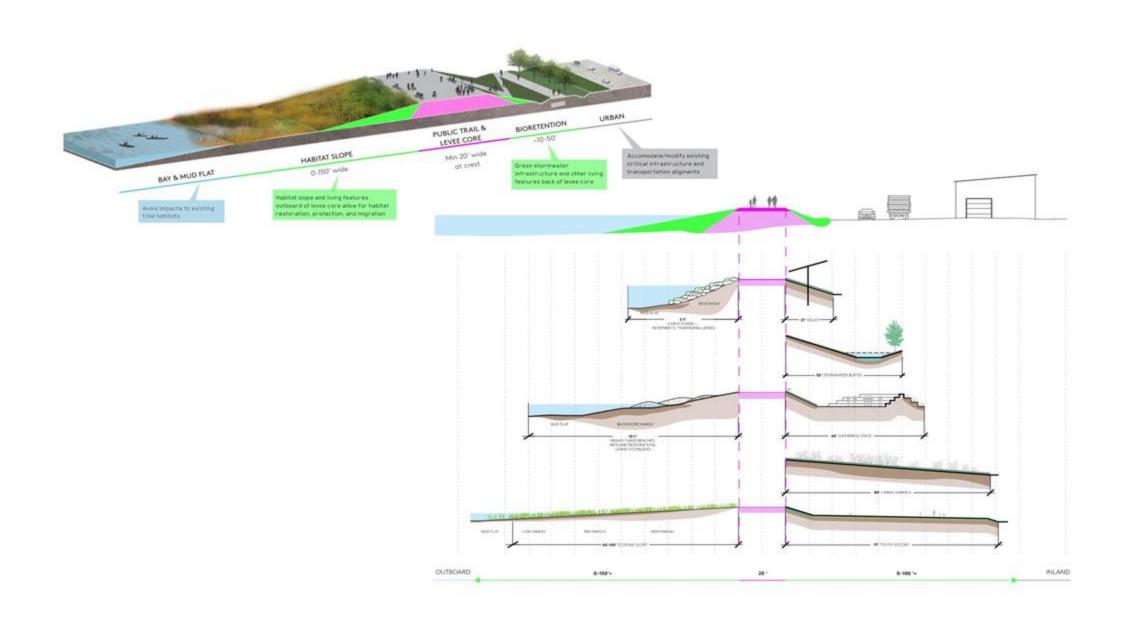
Allow for habitat restoration, protection, and migration.

Gentler, wider slope creates more opportunities for transition zone habitats, while narrower, steeper slope might be better in some areas to protect/preserve existing tidal habitats.

Public trail on levee core.

Provide access and community amenities, in combination with flood protection via calibration of levee core height and material. Green stormwater infrastructure and other 'living' features at the back of levee core manage for urban runoff such as drainage and groundwater Accommodate or modify existing critical infrastructure and transportation alignments.

Living Levees: A Flexible Band



Habitats





LIVING SHORELINE

Apply nature-based features to provide coastal protection and habitat



RIPARIAN

Preserve and expand natural corridors along creek channels



ECOTONE

Create or enhance gently sloped transitions between tidal and riparian habitats and adjacent uplands



TIDAL WETLAND

Restore tides to diked ponds, remove unneeded historic shoreline fill



GRAVEL BEACH

For shorelines with larger wave exposure. To reduce erosion of marsh habitats and to protect critical infrastructure



SEASONAL WETLAND

Create wetland habitats in areas where stormwater runoff is concentrated for water quality and habitat benefits



ESTABLISH NATIVE VEGETATION

Seeding and planting appropriate native plant species

INVASIVE PLANT MANAGEMENT

Managing and eradicating invasive plants

SMALL-SCALE HABITAT

NATURAL STRUCTURES

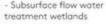
- wood habitat structures
- oyster reefs & refugio

MANUFACTURED

- Owl burrows
- bird/bat boxes

NATURE-BASED WATER TREATMENT

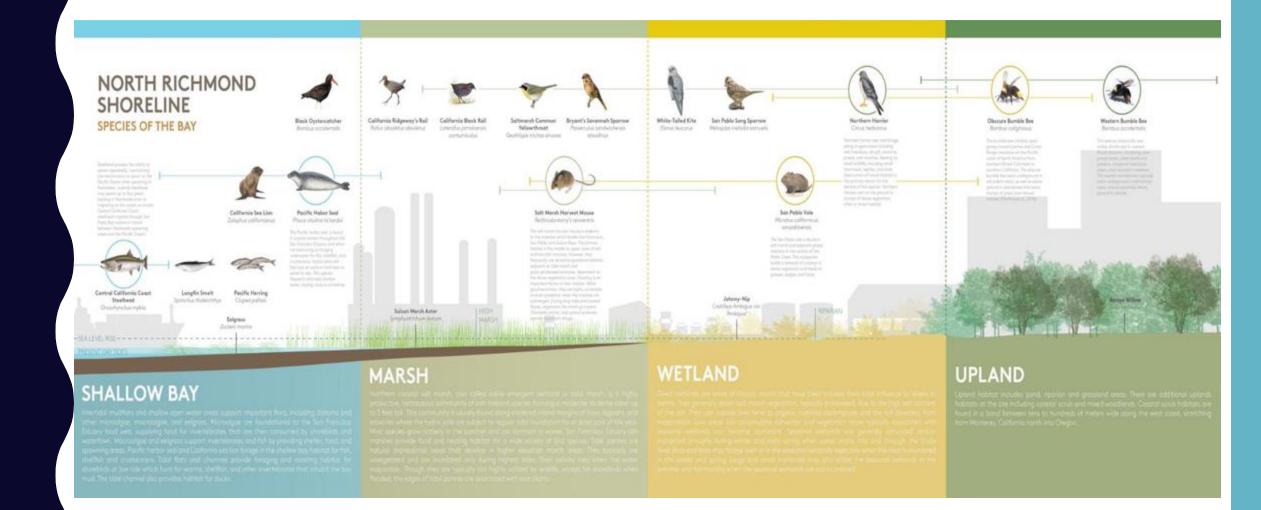
- Stormwater swales
- Wetland water
- treatment ponds
- Subsurface flow water



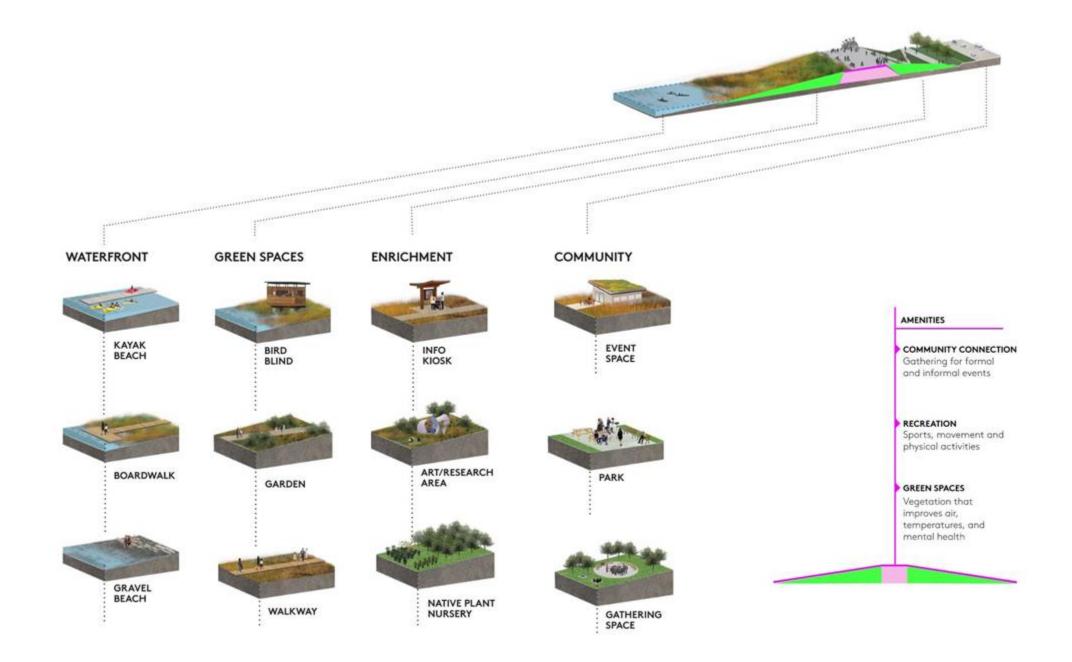


Protect open space and apply ecological enhancements to restore habitat

Habitats



Amenities



PHASE I – LIVING LEVEE AT WEST COUNTY WASTEWATER

SECTION "A" WILDCAT MARSH BOARDWALK & TRAIL ACCESS

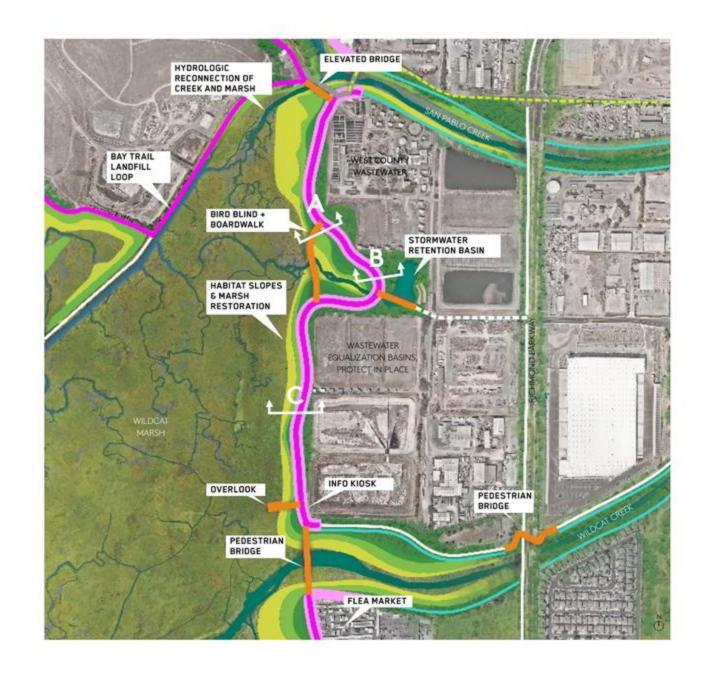
SECTION "B" STORMWATER RETENTION

SECTION "C" EQUALIZATION BASIN

SEE SECTION ENLARGED EXHIBITS ON FOLLOWING PAGES. SEE APPENDIX FOR DESIGN DETAILS.

- LEVEE CORE
- LEVEE CORE + TRAIL
- PROPOSED BRIDGE / BOARDWALK
- VEGETATED HABITAT SLOPES
- - PROPOSED BIKE LANES
- -- PROPOSED TRAILS
- EXISTING FLOOD CONTROL MEASURES
- EXISTING BIKE TRAILS
- EXISTING CLASS I TRAIL
- ---- STUDY AREA BOUNDARY

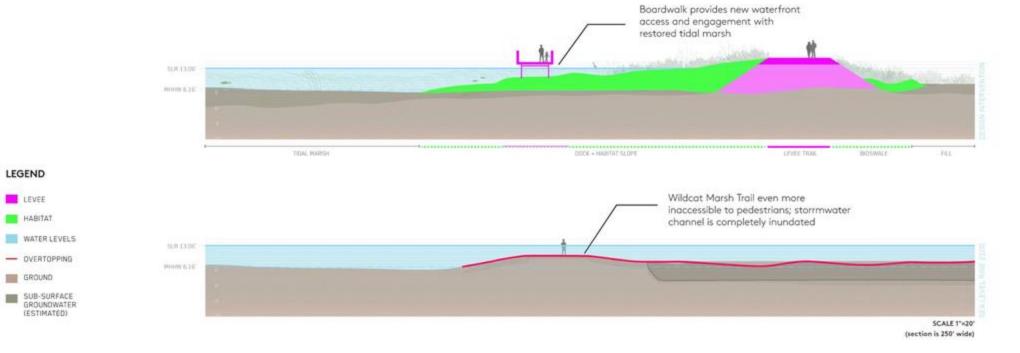




A Wildcat Marsh Boardwalk & Trail Access

OPENING THE WATERFRONT



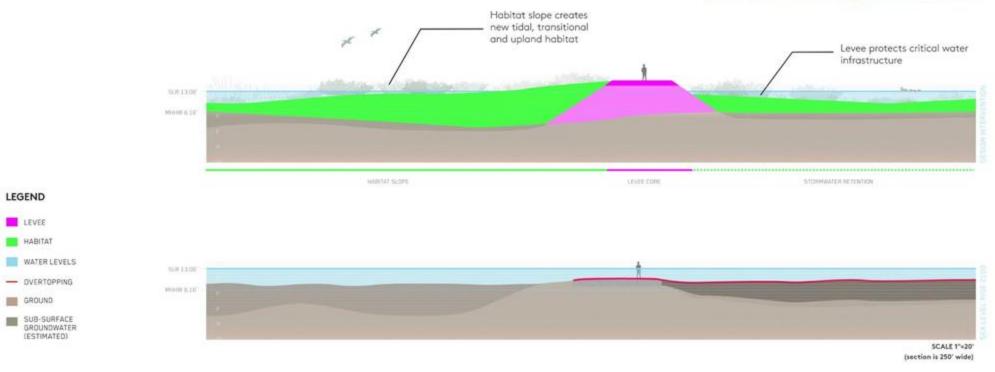


Stormwater В Retention

PROTECTING WATER AND **ADDING HABITAT**

LEGEND LEVEE





C Equalization Basin

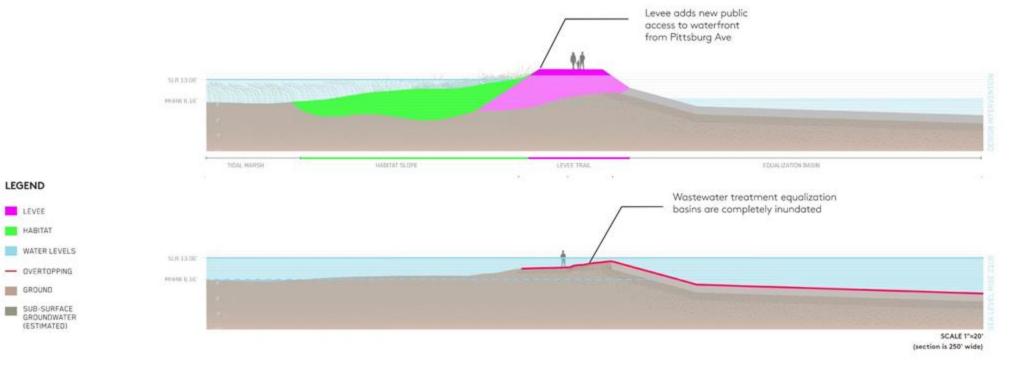
LEGEND

LEVEE HABITAT

GROUND

INTEGRATING PERMANENT PUBLIC ACCESS WITH INFRASTRUCTURE





PHASE 1A: "CLUSTER NORTH" CONCEPT DESIGN

SECTION "A" REPUBLIC SERVICES
SECTION "B" SMALL-CRAFT LAUNCH
SECTION "C" MARSH RE-CONNECTION
SECTION "D" RICHMOND PARKWAY

SEE SECTION ENLARGED EXHIBITS ON FOLLOWING PAGES

LEVEE CORE

LEVEE CORE + TRAIL

PROPOSED BRIDGE / BOARDWALK

VEGETATED HABITAT SLOPES

PROPOSED BIKE LANES

PROPOSED TRAILS

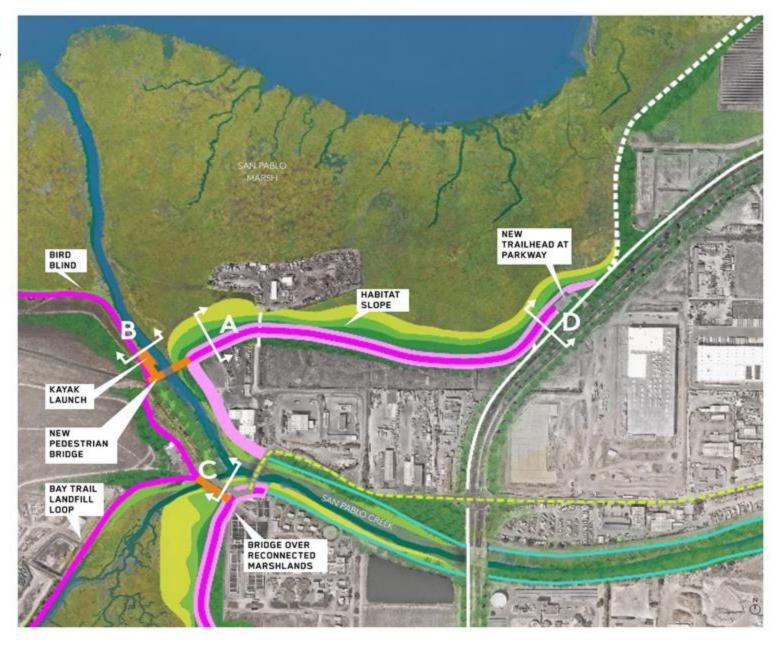
EXISTING FLOOD CONTROL MEASURES

EXISTING BIKE TRAILS

EXISTING CLASS I TRAIL

STUDY AREA BOUNDARY



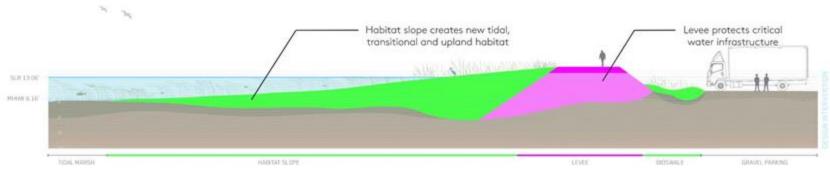


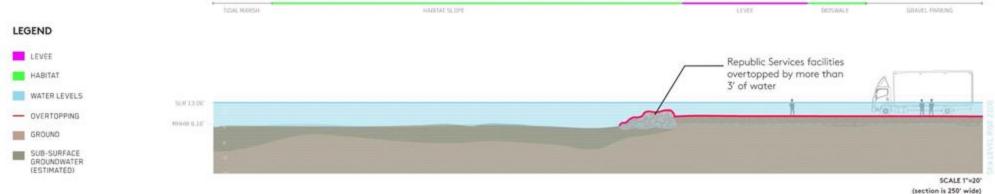
A Republic Services

INTEGRATING HABITAT ADAPTATION, PERMANENT PUBLIC ACCESS WITH CURRENT FACILITIES







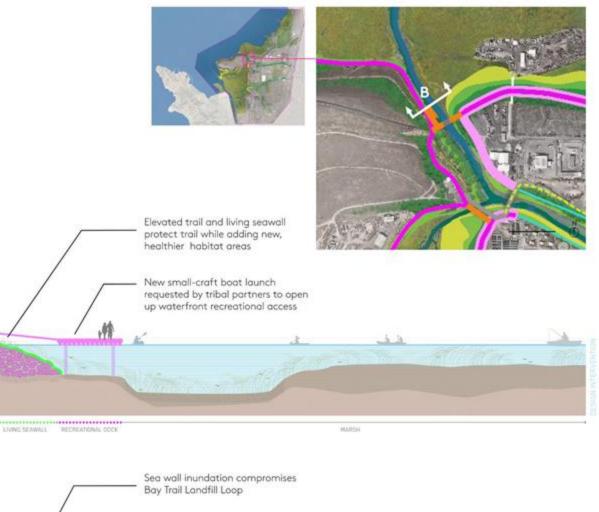


B Small-Craft Launch

ELEVATING PERMANENT PUBLIC ACCESS WITH RECREATIONAL ASSETS

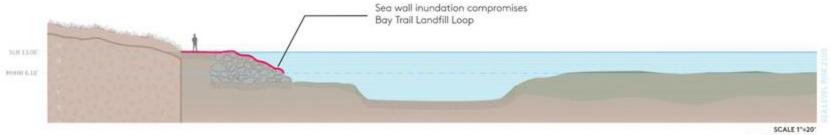
518 13.00 MHM 6.16

LANDELL.



LEGEND





(section is 250' wide)

C Marsh Re-Connection

RECONNECTING HABITAT CORRIDORS AND HYDROLOGICAL FLOWS; INSTALLING PERMANENT, SAFE PUBLIC ACCESS

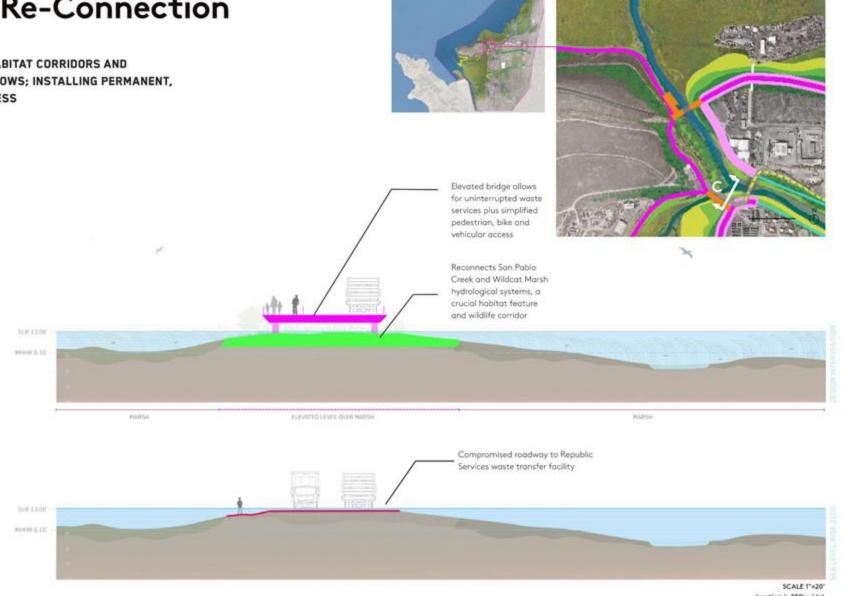
LEGEND

LEVEE.

HABITAT. WATER LEVELS

GROUND SUB-SURFACE GROUNDWATER (ESTIMATED)

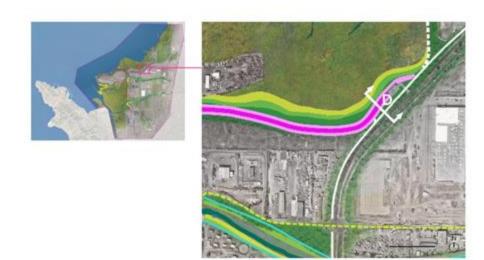
- OVERTOPPING

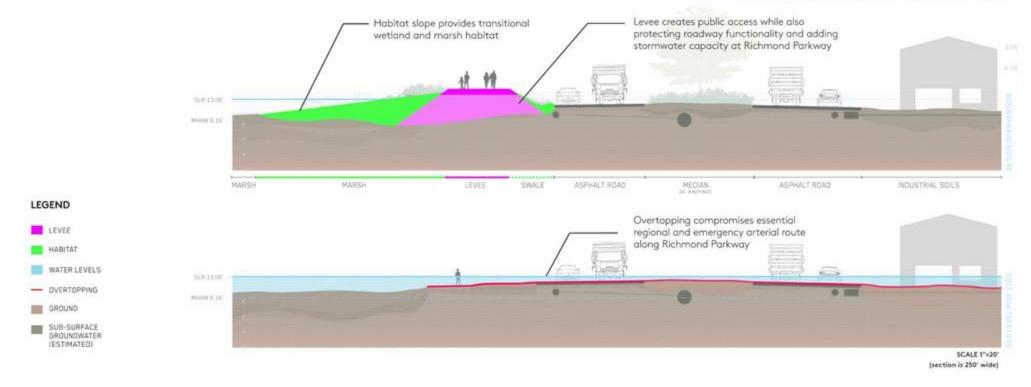


(section is 250' wide)

D Richmond Parkway

PROTECTING A CRITICAL TRANSIT CORRIDOR





PHASE 1B: "CLUSTER SOUTH" CONCEPT DESIGN

SECTION "A" MARKET-TO-TRAIL CONNECTION

SECTION "B" RIPARIAN HABITAT

SEE SECTION ENLARGED EXHIBITS ON FOLLOWING PAGES

LEVEE CORE + TRAIL

PROPOSED BRIDGE / BD

PROPOSED BRIDGE / BOARDWALK

VEGETATED HABITAT SLOPES

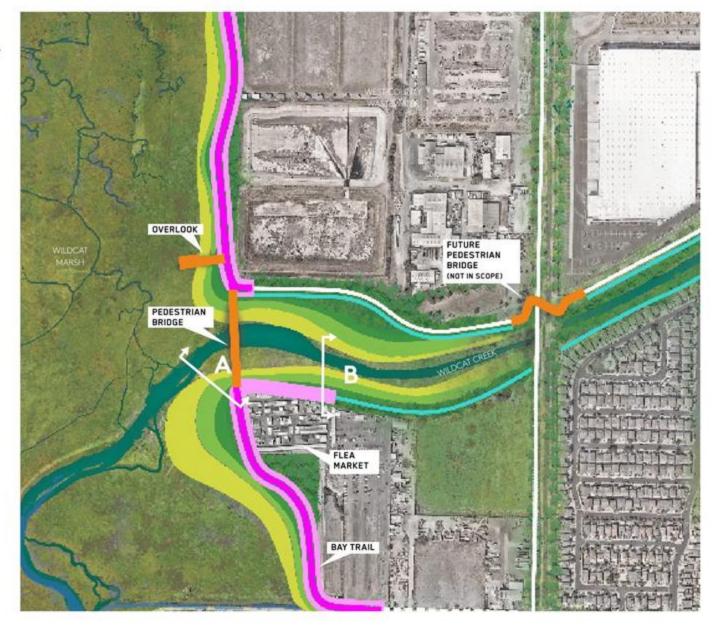
PROPOSED BIKE LANES
 PROPOSED TRAILS

EXISTING FLOOD CONTROL MEASURES

EXISTING BIKE TRAILS
 EXISTING CLASS I TRAIL

---- STUDY AREA BOUNDARY





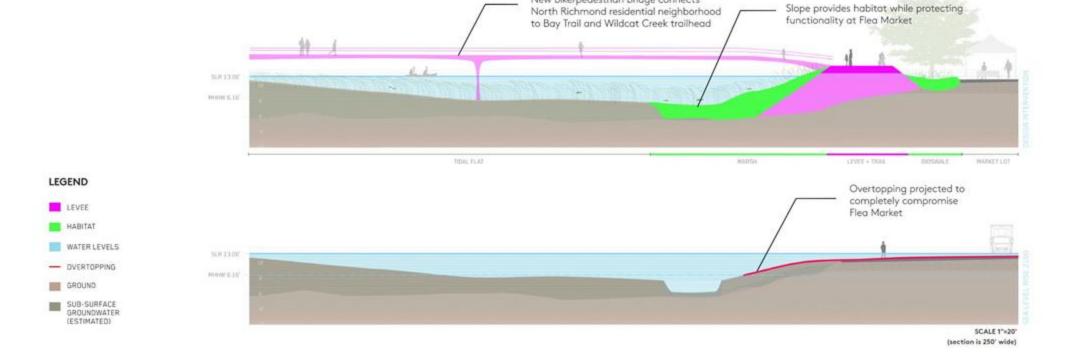
A Market-to-trail connection

INSTALLING PERMANENT, SAFE PUBLIC ACCESS;

PROTECTING AN ESSENTIAL COMMUNITY ASSET







New bike/pedestrian bridge connects

Looking North Over WCW



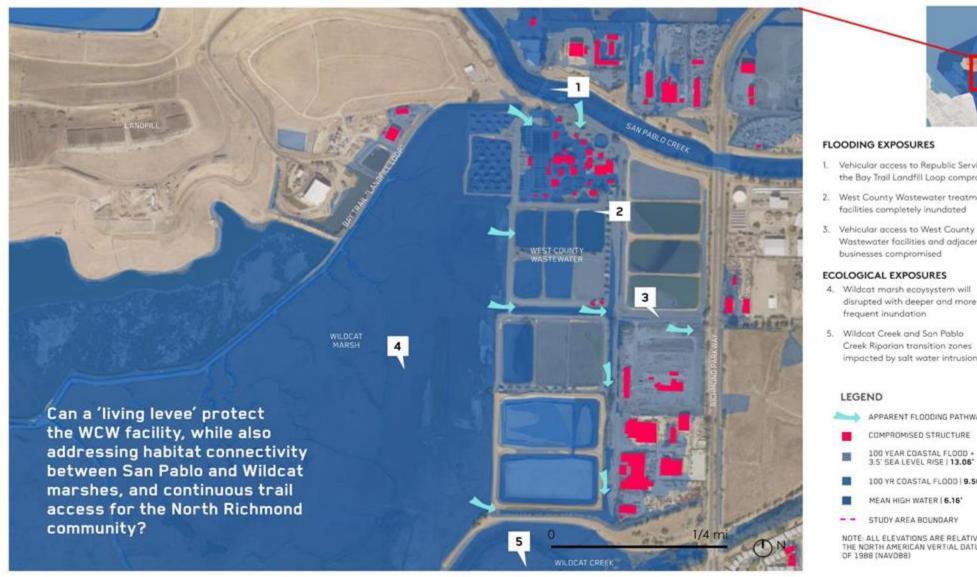
Looking South at San Pablo Marsh



Looking West Over North Richmond



Enlarged View: Inundation at West County Wastewater Vicinity





- 1. Vehicular access to Republic Services and the Bay Trail Landfill Loop compromised
- 2. West County Wastewater treatment facilities completely inundated
- Wastewater facilities and adjacent
- 4. Wildcat marsh ecoysystem will disrupted with deeper and more
- Creek Riparian transition zones impacted by salt water intrusion.

APPARENT FLOODING PATHWAY

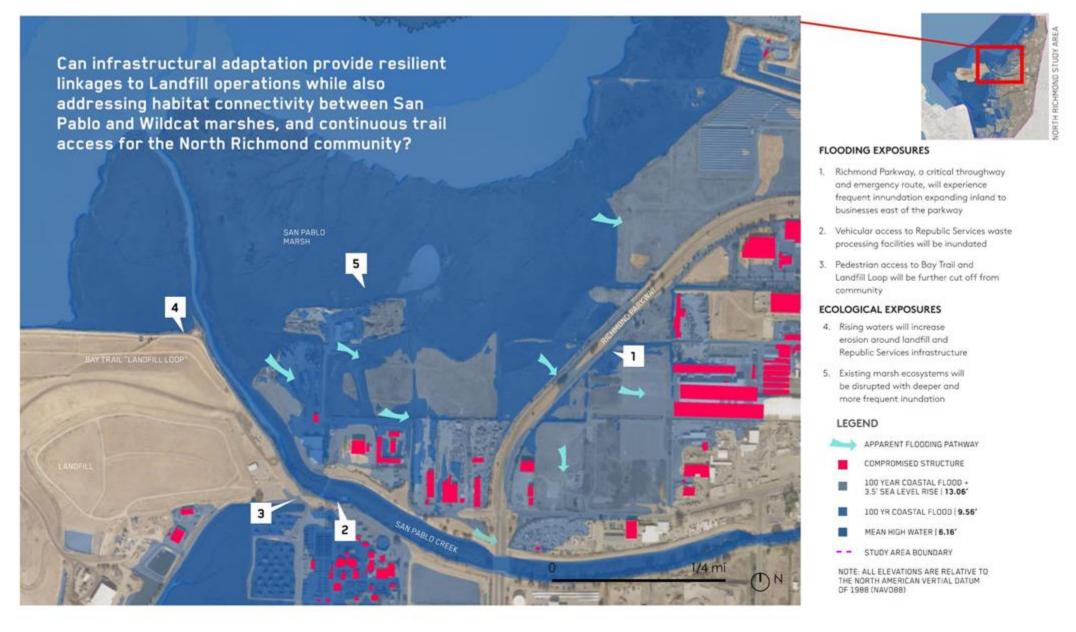
COMPROMISED STRUCTURE

100 YEAR COASTAL FLOOD + 3.5' SEA LEVEL RISE | 13.06'

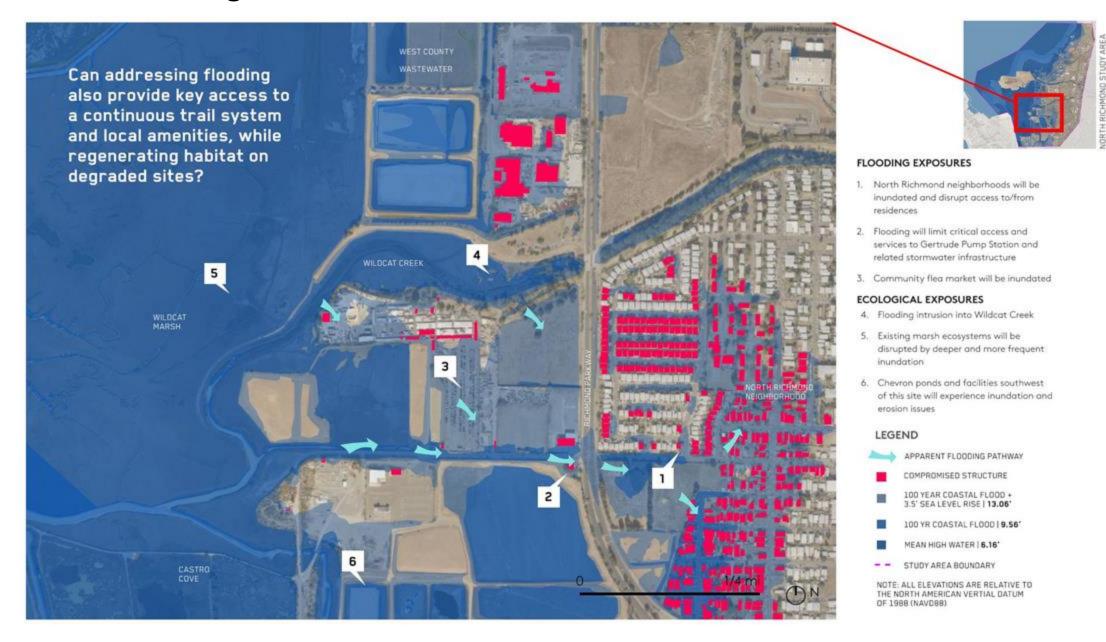
100 YR COASTAL FLOOD | 9.56'

NOTE: ALL ELEVATIONS ARE RELATIVE TO THE NORTH AMERICAN VERTIAL DATUM

Enlarged View: Inundation at San Pablo Marsh & Richmond Pkwy

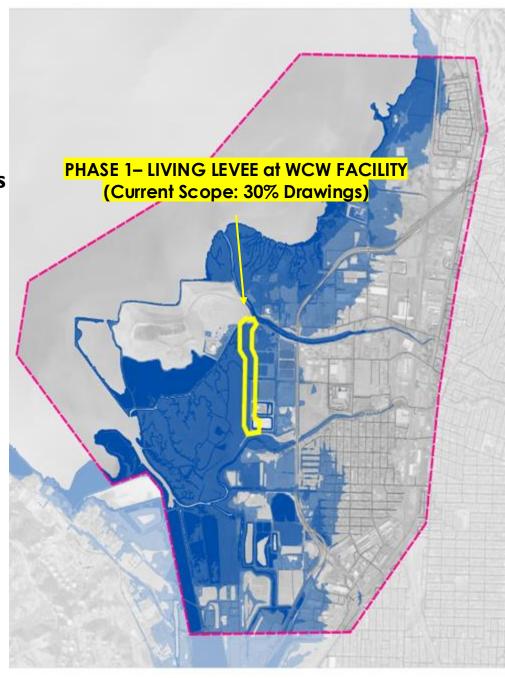


Enlarged View: Inundation at North Richmond



<u>Phase 1 Living Levee Project Deliverables</u>

- I. Habitat Assessment
- 2. Preliminary Geotechnical Recommendations
- 3. Preliminary Plumbing and Irrigation Recommendations
- 4. 30% Design Drawings
- 5. Probable Construction Costs
- 6. 30% Design Memo
 - Goals and Objectives
 - Background Info
 - o Design Criteria
 - Flood Protection
 - SLR Resilience
 - Levee Geometry
 - Stormwater
 - Description of Project Elements
 - Recommended Future Studies
 - Data Gaps, and Unresolved Questions





In Memoriam...





QUESTIONSP

