



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, healthy food.

Visit <http://www.sfestuary.org/vision/> to learn more about this exciting community-based vision for the North Richmond Shoreline.

November 2017

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Introduction

Vision Statement

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, healthy food.

Goal & Objectives

Overall Goal: Develop a community-informed Vision for climate-ready adaptations along the North Richmond shoreline with a focus on the upland transition zone, environmental justice and resiliency.

Objectives

1. Engage community members in the process, conducting outreach and collecting feedback from local residents to develop an inclusive, community-based vision.
2. Improve understanding of human uses of the shoreline and primary issues affecting its future.
3. Identify opportunities for urban greening within the shoreline area and projected upland transition zone that provides multiple benefits to the community thereby improving environmental justice
4. Discover early wins, coordinate planning efforts and prioritize projects.

Shoreline Vision Strategies and Actions

Together, we developed a community-informed Vision for climate-ready adaptations along the North Richmond shoreline with a focus on the upland transition zone, environmental justice and resiliency.

1. Protect and conserve open space

Action 1.1: Acquire contiguous shoreline parcels from willing sellers

Action 1.2: Change land use designations along the shoreline where appropriate to Community Area Land Use Classifications consistent with the City of Richmond General Plan.

2. Improve & increase shoreline public access and understanding

Action 2.1: Connect and complete the Bay Trail segments

Action 2.2: Identify opportunities for an improved network of pedestrian access along the shoreline

Action 2.3: Develop interpretive centers at Point Pinole Regional Shoreline and the West County Wastewater District

3. Advance community revitalization with urban greening and compatible improvements

Action 3.1: Support compatible uses within the transition zone.

Action 3.2: Design & construct renewable energy pilot projects

4. Restore & enhance a diversity of habitats and living resources

Action 4.1: Complete the Giant Marsh Living Shorelines project

Action 4.2: Pursue opportunities for restoration and recreation consistent with Strategy #1

Action 4.3: Monitor successful recent projects and integrate adaptive management practices.

Action 4.4: Develop nature-based shoreline infrastructure that integrates treated wastewater at the West County Wastewater District treatment facility

5. Build capacity for equity, environment, and economic development among stakeholders

Action 5.1: Establish a standing Working Group

Action 5.2: Pursue local alternative energy production and manufacturing

Action 5.3: Increase local co-operative food production and markets

Action 5.4: Develop a knowledgeable workforce for green jobs through hands-on training and environmental education.

Action 5.5: Develop economic incentives for businesses and homeowners to reduce impervious surfaces, install stormwater LID and contribute to urban greening.



N. Richmond Shoreline Vision Project Study Area

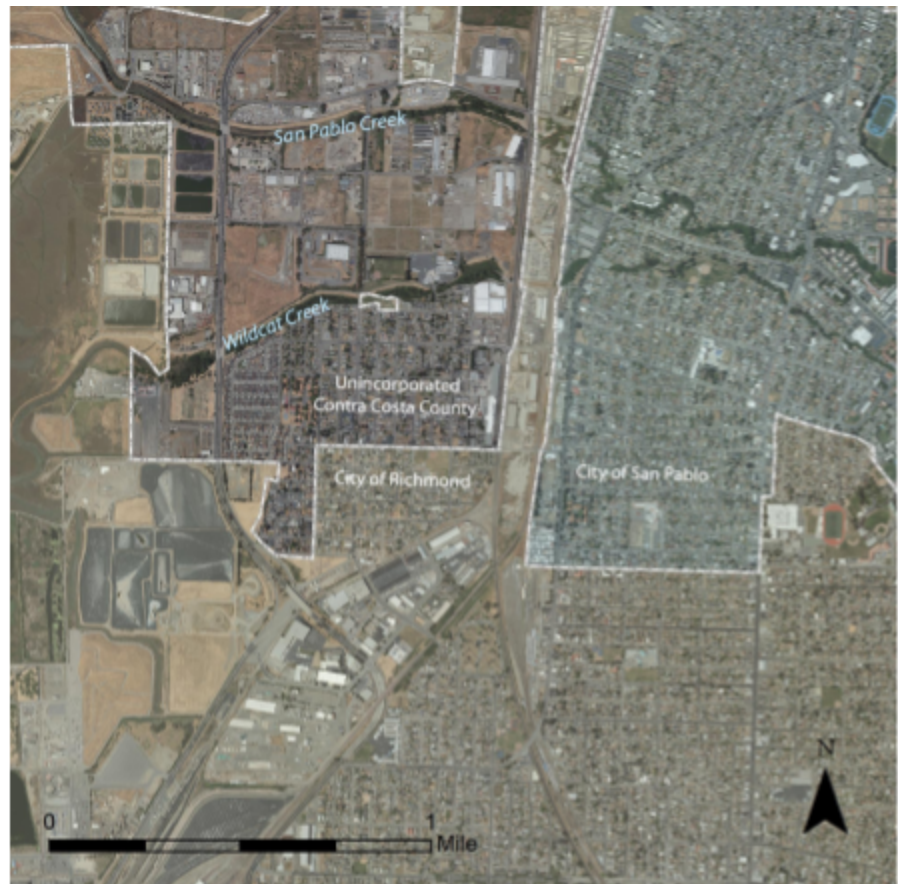
Vision Project Area

The North Richmond Shoreline Vision project area includes the area from Point Pinole to the Wildcat Creek Marsh. It encompasses unincorporated areas of Contra Costa County as well as portions of the City of Richmond.

Critical infrastructure within the project area includes the West County Wastewater District, railroads, major streets including the Richmond Parkway. The area is also directly adjacent to the Chevron Refinery, which owns a majority of Wildcat Marsh.

The study area encompasses the shoreline **transition zone**, a buffer zone along the shoreline between tidal wetlands and uplands that includes areas of former marsh, low upland slopes. The transition zone is an important area of connection between the Bay and watersheds. It provides corridors of movement for wildlife, along with important habitat and protection for sensitive species. This same transition zone also supports human activities such as housing, recreation, transportation, commerce and industry.

Today this area is highly urbanized, particularly with industrial uses, storage facilities, public utilities and other land uses with large amounts of impervious surface which interrupt valuable ecological services. Such land uses and regional transportation corridors have isolated residents from the shoreline and each other. Intentional planning and development could improve walkability, livability, community health and the local economic stability, revitalizing the neighborhood and creating a more resilient landscape.



The study area includes City of Richmond and Unincorporated parts of Contra Costa County

Project Background

North Richmond Shoreline Vision Process

The North Richmond Shoreline Vision process was initiated by the San Francisco Estuary Partnership and



Stakeholders visit the N. Richmond shoreline January 2017

The Watershed Project in January 2017. The process consisted of stakeholder meetings in which leaders collected community input; individual meetings with a variety of interested parties; site visits, shoreline analysis, and extensive review of existing planning efforts. Stakeholders included landowners, public agencies, residents, community service providers and community-based organizations with an interest in North Richmond.

This Vision is intended to expand current efforts.

Some of the plans and documents that played a formative role in this process include:

- North Richmond Shoreline Specific Plan
- Richmond General Plan 2030
- Contra Costa County Specific Plan
- Adapting to Rising Tides Contra Costa County Vulnerability Assessment
- Restoration Design Group Recommendations for Habitat Conservation of the North Richmond Shoreline
- Rheem Creek Watershed Assessment and Conceptual Restoration Plan
- Baylands Ecosystem Goals Update
- Point Pinole Regional Park Master Plan
- West County Wastewater District Master Plan

Stakeholder meetings included multiple community mapping exercises, a shoreline field trip and interactive discussion about the future of the North Richmond shoreline. Appendix A lists stakeholder organizations that participated in the process.

Past & Future Drivers of Change

The North Richmond shoreline transition zone includes diverse shoreline features such as baylands, creeks, parks & open space, Bay Trail access, industrial uses, railroads, major streets, neighborhoods, and public facilities. These spaces play a crucial role for sensitive species, ecological processes, and also provide enjoyment and quality of life benefits for residents and visitors. The landscape has been impacted by several drivers of change, creating significant challenges for future planning. Predicted sea level rise and flooding is set to exacerbate these issues. Some of the major challenges to a healthy resilient transition zone includes:

- Fragmented baylands
- Urbanization
- Altered stream corridors
- Sea level rise

Baylands

The Baylands have undergone considerable fragmentation, though some components of this historical ecological landscape persist:

- Tidal Marshes remain at the mouths of San Pablo and Wildcat Creeks, and a major tidal and seasonal wetland restoration project was undertaken at the Dotson Family Marsh, just south of Point Pinole.
- Tidal Flats still abound throughout most of their historical distribution, and the intertidal and shallow subtidal areas support some of the most healthy and robust intertidal and subtidal eelgrass, oyster, and macroalgal beds in the bay. The largest eelgrass bed in the bay is located offshore between Point San Pablo and Point Pinole.

However, much of the Baylands has been lost due to diking, draining or filling for development. Across the entire Bay “(b)etween 1800 and 1998, 79 percent of tidal marshes (150,000 acres) and 42 percent of tidal flats (21,000 acres) were lost” (Goals Project 2015).

Today, most of the Chevron refinery (in what was once Castro Cove), the railyards, most of the West County Wastewater Treatment Plant, as well as portions of the North Richmond neighborhood are on former tidal marshes. West Contra Costa Landfill and the Richmond Rod & Gun Club are on former mudflats.

Transition Zones

Between the Baylands and the uplands lies a transition zone that was historically composed of wet meadows and alluvial fans but has seen significant development. Transition zones support many important ecosystem services. These areas provide refuge for marsh wildlife and allow terrestrial wildlife to access the marsh for food and other resources. These areas support gradients in environmental variables such as salinity, soil moisture, and temperature that can be important to supporting adaptation within wildlife populations, and can also support unique habitat types (e.g. alkali wetlands, salt pannes) that further contribute to landscape complexity. Importantly they provide space for marshes to migrate landward as sea level rises.

Today's tidal-terrestrial interface, or the lower boundary of the transition zone, is defined using a specific elevation and defining a contour on a 1m resolution lidar derived DEM (USGS 2010) . Local mean higher high water plus 0.31 meters (MHHW + 1') per the methodology developed by Robinson, A., Fulfroost et. al, 2016 (found at <http://www.sfestuary.org/vision/>). .

Stream Corridors, Alluvial Fans, and Former Wet Meadows

Wildcat, San Pablo, and Rheem Creeks still flow, although with significantly altered outlets to San Pablo Bay. Like the majority of urban creeks, the lower reaches have been lined with constructed levees designed for flood protection of the adjacent low lying areas (their natural floodplains). However, in the late 80's, when the Wildcat and San Pablo flood control channels were developed, local advocates insisted on an innovative design of setback levees with a ecologically functioning meander low-flow channel. The eastern levee on Lower Wildcat supports the Wildcat Creek pedestrian and bicycle trail. Contra Costa County Flood Control District is currently raising and reinforcing the levees along San Pablo Creek.

Near the creeks, within the historical stream corridor and alluvial fan, there are a number of land uses, including about a fifth of North Richmond neighborhood homes, low density commercial (warehouses, storage facilities, equipment rental yards, rail and junk yards). and public development (West County Wastewater plant). Almost all the remaining Richmond northern shoreline was historically wet meadow. This includes the western half of Parchester Village, and most of North Richmond, the West County Wastewater plant, railroad and industrial areas.



Future System Drivers

Sea level rise will threaten to convert current tidal marshes, and today's preserved or restored transition zone could provide the opportunity for marsh migration. The shoreline will be subject to greater wave action as water depths increase, allowing larger waves to propagate inshore. Increasing wave action will also accelerate the erosion of the remaining marsh edges, resulting in the narrowing and potential loss of marshes.

In some locations, there is still opportunity for the transition zone to connect directly to the wetlands allowing migration space for marshes and allowing them to continue to support ecosystem functions

and services. Development that directly abuts the shoreline limits migration space. The low-lying developed areas protected by levees will become increasingly difficult to protect as sea levels rise although there are some adjacent areas at appropriate elevations that could allow for the migration of baylands.

The Adapting to Rising Tides Program recently completed a [Vulnerability Assessment for Contra Costa County](#). The final report walks through the critical vulnerabilities that this section of the shoreline is facing. Some of the key findings from this assessment include the following key planning issues and ways they will be significantly affected by sea level rise.

- 1) Water-dependent Industries
- 2) Employment sites
- 3) Creek-side communities
- 4) Access to services
- 5) Ad-hoc Flood protection
- 6) Parks and Open Space

The Vulnerability Assessment provided a number of example responses associated with these key planning issues and vulnerabilities. The strategies proposed in the Vision are consistent with this Assessment, while providing a finer level of detail specific to the North Richmond community.

Communities and Land Uses

The Richmond Parkway is a major transportation corridor that runs roughly through the middle of the transition zone, and separates most of the residential uses to the east from the shoreline and heavy industry to the west. The shoreline study area is comprised of a mix of Residential, Commercial/Industrial, and Open Space/Recreational land uses.

East of the Parkway sits: the North Richmond and Shields-Reid communities; a mixture of undeveloped parcels; recycling and household hazardous waste facilities, Verde Elementary School; North Richmond Ballpark; greenhouses and agricultural operations; and various construction material and commercial storage facilities.

West of the Parkway sits: the Parchester Village community; West County Wastewater Treatment facility; Richmond Pump Station, commercial storage facilities, the Golden Bear Transfer station, the

West Contra Costa Landfill, Bay View Reuse and Recycling, Green Waste Recycle Yard, and the West Country Recycling Center, Richmond Flea Market; undeveloped shoreline parcels, the Richmond Rod and Gun Club, the Bay Trail, and Point Pinole Regional Park.

Adopted in 2012, The City of Richmond General Plan 2030 envisions the North Richmond Shoreline *“as a low-intensity hub for office and light industrial businesses that are compatible with surrounding habitat and open space resources. Privately-owned properties located near the Richmond Parkway are designated Low Intensity Business/Light Industrial and publically owned properties located along the shoreline are designated Open Space.”* Within the City of Richmond jurisdiction of the study area, the General Plan provides for these land uses:

1. **Community Areas**, which includes open space; parks and recreation; public, cultural and institutional; and agriculture. This classification is typical of shoreline parcels at low elevations
2. **Business and Industry**, which includes business/light industrial; marine and waterfront commercial; and industrial. This classification spans from the uplands of the marshlands to the BNSF railroad tracks, and some parts of North Richmond.
3. **Residential Neighborhoods**, which includes low and medium density residential and neighborhood mixed use. This classification includes Parchester Village and North Richmond.

Further, the North Richmond Shoreline Specific Plan (NRSSP) guides the characteristics of new development such that it *“improves the area’s overall image, benefits community residents, and allows a reasonable intensity of development within a framework of conservation and access to the Bay. Natural resources in the area should be protected and enhanced by ensuring that development minimizes its impact on adjacent sensitive shoreline, wetlands, and habitat areas.”*

The Contra Costa County General Plan establishes allowable land uses within the unincorporated areas of North Richmond. Current designations include multiple and single-family residential; heavy and light industry; watershed and open space. The County has the flexibility to establish conditions of approval to ensure new development is consistent with the community vision represented here and in Richmond’s planning frameworks.

Residential Communities

North Richmond Shoreline communities include the North Richmond/Shields-Reid neighborhoods

(unincorporated County/City of Richmond respectively) and Parchester Village (City of Richmond).

The North Richmond/Shields-Reid neighborhood is bounded to the west by the Parkway to the south and east by railways, and by Wildcat Creek to the north. It is racially diverse with a higher than statewide average poverty rate, which is especially severe for the African-American community. Residents live in close proximity to the Chevron Refinery, three chemical plants, two rail yards, and the capped 230' high West County Sanitary Landfill, which is now an active refuse transfer station.

Parchester Village, west of the Richmond Parkway, sits adjacent to Dotson Family Marsh, the Richmond Country Club and Point Pinole Regional Park. Despite its proximity to these bucolic settings, it is bounded to the east and west by elevated railways and to the south by commercial-industrial lots. It is a historically black community in the northern area of the City of Richmond. The housing tract was developed in the 1950s by Fred Parr and was intended to be a racially integrated development, the first of its kind in the state of California. However, at the time few white families bought in, resulting in a nearly all black community. Since then it has diversified with a currently growing Latino population.

Environmental Justice

The fertile alluvial fan once graced by farms and productive greenhouses is now economically depressed, blighted with brownfields, illegal dumping and neglected vacant lots. Flooding and poor drainage, coupled with a lack of stormwater infrastructure exemplify historic environmental justice challenges the community faces. North Richmond Shoreline communities face high exposure to toxins and pollution, limited access to healthy foods, and insufficient local employment options.

As a response to these long standing conditions, many community members are actively organizing to advocate for elements such as a local economy based on the cooperative model. Additionally, City of Richmond and Contra Costa County officials have worked closely with community advocates on various projects and plans to address environmental inequities and plan for future issues. Shoreline access and improvement projects, community gardens and a full-scale farm, and walkable watershed plans are some of the ways that government agencies have worked with community members to develop projects that address environmental inequities in North Richmond. Although many plans have been developed and await funding or approval, there remains much work to be done to ensure that the residents of North Richmond are adequately protected from catastrophic events and environmental degradation.

Communities in Richmond and North Richmond are collectively in the 80-100th percentile for highest pollution rates in California due to diesel pollution, brownfield contamination sites, and toxic releases, according to [CalEnviroScreen](#). Diesel pollution sources include trains, trucking and Parkway traffic to and from local industrial businesses. Brownfield sites are mostly privately-owned former or current industrial areas that have stored materials or were dumpsites, and they often contaminate other areas as chemicals leach off site. Toxic releases in the immediate Richmond and North Richmond vicinity have historically come from the Richmond Chevron Refinery, General Chemical and Reaction Productions. Major accidents in the last two decades include:

- Chevron Crude Unit Fire (2012) - caused 15,000 people to seek medical attention
- Reaction Productions accident (2008) - major toluene spill near Parchester Village
- Chevron flaring incident (2003) - caused 26 people to seek medical attention.

Many groups such as the Asian Pacific Environmental Network and Communities for a Better Environment have been working with local residents to organize to protect local communities from future impacts.

Park Access and Equity

Access to parks and positive outdoor experiences helps improve mental health and reduce the effects of toxic stress. The creeks and shoreline are an integral part of the unique sense of place and the community's connection to the land. Seniors who live all of their lives in Parchester Village reminisce of spending days fishing and exploring nearby nature as children, and lament that their grandchildren cannot enjoy the freedom and access they enjoyed growing up. Many community groups are working actively to reconnect children and nature through stewardship programs and hands-on outdoor activities. Improving access is key to facilitating the sense of independence and discovery that lead to a life-long appreciation of the environment, environmental careers, and advocacy to preserve and protect special places such as these. The Pacific Institute Report ["Measuring What Matters"](#) is an excellent resource on linking park access and equity.

Access to Healthy Food

North Richmond shoreline communities can be described as "food deserts", meaning residents struggle to find affordable fruits, vegetables, whole grains, milk and other healthy foods. Historically,

agricultural practices centered around flower cultivation rather than food production. Legacy contamination is a concern for food production in native soils. In addition, many of the residential blocks have shallow lots, requiring a potential grocery store or large food venue to acquire several parcels to achieve the square footage necessary.

Community groups such as Urban Tilth and Communities United to Restore Mother Earth (CURME) have reclaimed several lots within North Richmond to increase access to fresh, healthy vegetables. Several of these lots are accessible to neighborhoods free of charge and offer frequent educational workshops with the goal of empowering residents with the knowledge and resources to grow edible and medicinal plants. The Shields Reid Community Center, operated by the City of Richmond Community Services Department, recently installed a community garden at its site using Love Your Block grant funding. Urban Tilth, in partnership with County Supervisor John Gioia, is now based out of a newly developed three-acre urban farm located within walking distance to Verde Elementary and the Wildcat Creek pathway. The Verde Elementary Partnership Garden, established over 20 years ago, provides schoolchildren and various community groups access to healthy soil where many staple crops are produced for local consumption. Despite of the many environmental and socio-cultural challenges faced by individuals and community members hoping to increase access to healthy foods, strong partnerships have proven instrumental to help ensure that future generations can access and grown their own healthy foods.

Open Space and Recreation

Public recreation along the North Richmond Shoreline is centered around Point Pinole Regional Shoreline park, including the Dotson Family Marsh and the San Francisco Bay Trail.

Point Pinole Regional Shoreline Park is 2,560 acres with many picnic areas and hiking trails with views of San Pablo Bay, Mt. Tamalpais, San Francisco and on clear days, the Golden Gate Bridge. From the point itself extends the Point Pinole Pier where anglers pursue Sturgeon, Striped Bass and other bay species. This park feels remote and visitors find unique opportunities to view terrestrial and marine wildlife and enjoy unexpected experiences in nature.

The San Francisco Bay Trail, a pedestrian and bikeway intended to encircle the San Francisco and San Pablo Bays, runs from Wildcat Creek to Point Pinole, including the Landfill Loop, which circumnavigates

the closed and covered former West County Landfill; as well as the Wildcat Creek Marsh Trail, which leaves from the Wildcat Creek Staging Area and follows the creek out to the wetlands.

The Bay Trail Plan also calls for a segment on the southern levee of San Pablo Creek connecting the Wildcat Creek Trail with the spine Bay Trail along the Richmond Parkway. The Wildcat Creek Trail is a spur to the Bay Trail that currently connects lower Wildcat Creek to Davies Park in San Pablo. This trail is planned to one day extend to Alvarado/Wildcat Canyon Regional Park.

There are two parks with recreational fields for organized sports in the area: Shields-Reid Community Park and the A's Ballfield, both on Fred Jackson Way. Along with Pt. Pinole Regional Park, these parks are where popular community events occur throughout the year. These include Earth Day, Hood Day, Coastal Clean-Up Day (where local families and youth handpick plastic waste and garbage out of the marshes), the Audubon Society's shorebird census, and other neighborhood gatherings and celebrations. The North Richmond Shoreline Festival takes place in Pt. Pinole Regional Shoreline park, where families and individuals come out to bird watch, take nature walks, fish and see live entertainment.

Community Trends and Concerns

Community Engagement Process

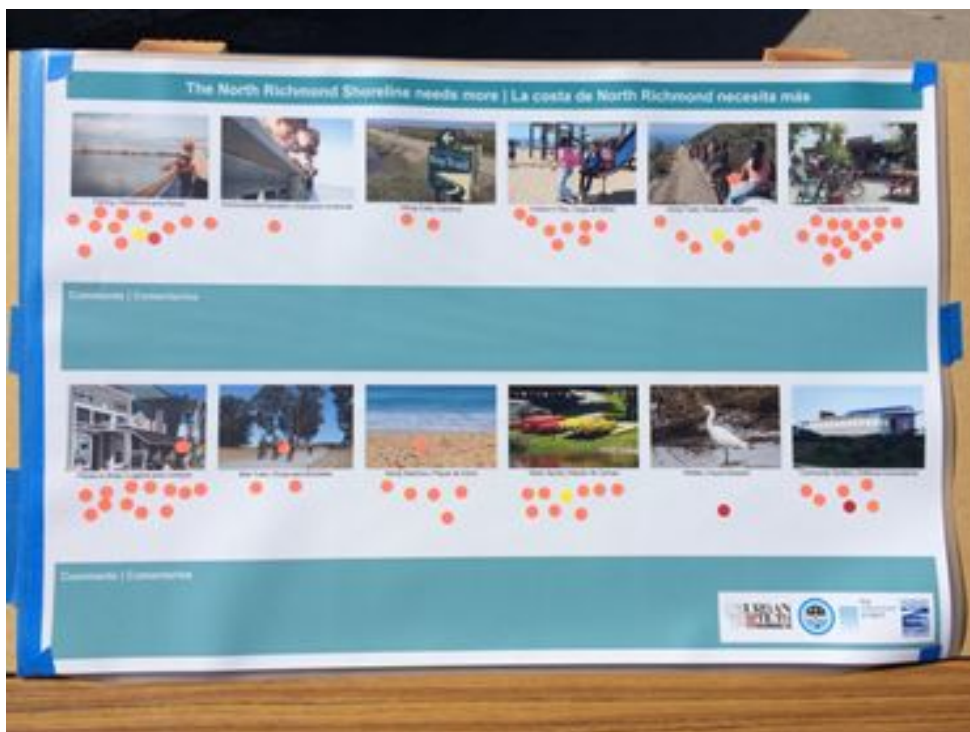
Developing this updated Vision for the North Richmond Shoreline included an outreach and engagement component to gather input on current uses and future preferences from an array of stakeholders: local residents, community leaders, non-governmental organizations, and public agencies. The project team hosted three meetings of key stakeholders (see List of Stakeholders Engaged Appendix B). This group served as the Visioning Advisory Committee, helping to identify existing development plans, land use policies, and strategies for incorporating community priorities. Project staff conducted interviews with community leaders to hear their perspective on community issues and needs. To gather information directly from local residents and shoreline users, The Watershed Project developed a set of engaging and interactive mini-surveys deployed at various community events and gatherings. Including interviews and presentations to local advisory committees, businesses, youth programs, community leaders, and NGOs, over 330 people contributed to this Vision. The Watershed Project completed a report with detailed methodology and findings from this process, which can be accessed from the project website (<http://www.sfestuary.org/vision/>).

Community Concerns Survey Findings



The three surveys were designed to better understand the community's existing and desired future relationship with the shoreline, barriers to public use, and gather opinion on priority community concerns. The event venue type affected the survey responses depending on whether the venue was community-focused or natural resource/environment-focused. For example, the Dotson Family Marsh dedication was comprised mostly of

non--residents interested such as environmental professionals, local agency representatives, and visitors from various neighborhoods. The vast majority of outreach was conducted at community-based venues, which directly reached local residents.



The *What Do You Do?* survey asks about the existing activities that currently draw visits to the shoreline. Responses indicate that walking & hiking (including dog-walking), bike riding, observing nature and horseback riding are major attractions for shoreline users. Point Pinole Regional Park appears to be the place for the greatest amount and range of activities reported, including fishing, bird watching, and swimming.

The *What Do You Want?* survey asks what would make the shoreline a likely place where people would visit. Survey results show a strong interest in hiking trails, wildlife, and environmental education across all participant types. However, at natural resource/environmental events, responders indicated preferences for hiking trails, wildlife, sandy beaches, and interpretive centers. At community-based events, responders indicated preferences for sandy beaches, children's play, restaurants, and fishing.

The *Barriers & Livability* survey collects opinion on barriers that discourage local visitation and priority concerns for the community. From this survey, it appears that the biggest barrier to use of the shoreline by local residents is an understanding of its uses. Many (strongly) agree they would visit the shoreline more often if they knew of more things to do there. Respondents also pointed out a need for improved walking and public transit access to the shoreline. In terms of community livability, the highest scoring concerns are air/water pollution and lack of local jobs.

North Richmond Shoreline Residential Concerns

Please help us to better understand concerns around the North Richmond Shoreline by filling in one circle per statement to express whether you strongly agree, agree, disagree, or strongly disagree.

I would visit the North Richmond Shoreline more if...

- I knew of more things to do there
- there was more public transit to there
- there was more walking access to there
- there was more car parking near there

In the future near the North Richmond Shoreline I am concerned about...

- Rising home prices and rents
- Flooding damage to homes/businesses
- Not enough local jobs
- Air or water pollution

For more info about this survey, please contact Jesse Brown, jesse@thewatershedproject.org

We could make the North Richmond Shoreline better by...

Adding exercise area every so often

North Richmond Shoreline users appreciate the opportunity to walk along the shoreline, and they see the shoreline as a place to gather and spend time with family and friends. Based on the main responses to what they want to see more of on the shoreline (1. sandy beaches, 2. hiking trails, and 3. restaurants), it is important to create a vision that incorporates a diversity of potential destinations for the community to enjoy, including natural and commercial uses.

The surveys revealed that the largest barrier for residents visiting the shoreline is a lack of knowledge regarding shoreline activities, lack of walking access to those points of interest, and lack of public transit access. As a way to mitigate this problem a comprehensive community trail mapping and trail network could be development to connect the residential neighborhoods to the shorelines parks and amenities. Way findings might be installed to guide community members and regional visitors to the shorelines points of interest and access points. And a strategy for local tours (such as YMCA hosted walks) or increased bus routes could be explored with local transit authorities.

On and near the shoreline, North Richmond residents are most concerned about environmental justice issues such as clean air and clean water and risk of flood damage. Also great numbers express concern about lack of local jobs and risks of gentrifications. The recommendations are to make sure that potential developments along the shoreline include community employment options during construction and after completion.

Green Collar Jobs are encouraged and should be accommodated as part of the community training options. This could include a long list of options such as marsh restoration technician, creek restoration technician, urban farmer, interpreter ranger, gardener, parks ranger, land manager, nursery technician, plant biologist, marine biologist, wetlands biologist, environmental educator, among others.

For the last 20 years the community has voiced their concern about displacement and environmental justice. A long-term plan for dealing with sea level rise adaptation in communities at risk, like North Richmond, should include a management plan for pollutants from Chevron and other industries placed along the shoreline.

A long term affordable housing plan should also be accommodated near the transition zone to accommodate residents from areas that are likely to be affected by sea level rise in the next 20 years.

Community Leader Concerns Findings

The survey findings are further reinforced by the issues raised during individual stakeholder interviews. Lack of public access and environmental education came through as significant barriers to use of this resource by its closest communities. Several people suggested providing a definition of the shoreline to local residents before conducting the surveys, as many would not know what it is nor have never visited. This statement was proven correct when querying survey responders, many of whom do not recall ever visiting despite living in such close proximity. Another strong theme from community leaders is need for economic development, including jobs and job training programs. The current industrial and institutional entities along the shoreline do not employ great numbers of the local community. Jobs and job training programs are needed. This area is recognized as a “food desert” with few options for buying fresh and nutritious groceries. There is also a lack of recreational fields for organized sports such as soccer and baseball.

Key Recommendations Based on Community Concerns

The findings of the surveys and interviews reinforce many of the recommended strategies and outcomes suggested in this updated Vision. These include improving and increasing shoreline access and understanding (Strategy 2), supporting dynamic shoreline uses compatible with community needs (Strategy 3), and building capacity for equity, environment, and economic development (Strategy 5). Specific recommended actions include:

- Support a network of improved access for residents, including completing the Bay Trail and improve shoreline linkages to interior trails like the Wildcat Creek Trail and proposed San Pablo Creek Trail to promote greater local use
- Add Environmental Interpretive centers, kiosks, and Bay Trail signage to promote greater shoreline understanding and appreciation
- Establish a standing Shoreline Advisory Working Group of stakeholders to review and recommend land use zoning designations, future development proposals, and other priority issues to City Council and County Board of Supervisors. These issues include securing and locating:
 - Production of and marketplaces for fresh, healthy foods
 - Occupational job training center

-
- Opportunities for local employment.
 - Recreational ball fields

Proposed Strategies and Actions

After community input, stakeholder meetings and shoreline analysis, the following strategies are proposed as implementable approaches to protection of the transition zone. These strategies are intended to maximize opportunities for: community enhancements with equity considerations in mind, landscape connectivity, flood protection and habitat enhancement benefits for communities along the shoreline.

The strategies presented here are not mutually exclusive. For example, the acquisition strategy presented here is intended to be implemented in conjunction with restoration. The map below presents a number of areas within the transition zone related to the strategies proposed. Considered comprehensively, these proposed strategies were developed to maximize equity, economy and environment benefits and were developed based upon input provided in the following forums.

- Community stakeholders meetings
- Individual meetings with stakeholders
- Review of existing plans, recommendations & vision documents for the shoreline
- Trends from community input process

N. Richmond Shoreline Vision -- Restoration and Urban Greening Potential

The restoration potential map shows a number of zones for consideration when making future decisions about the North Richmond shoreline. The zone mapped marks the edges of the study area, as defined by the upland transition zone.

Major Restoration Opportunity are areas defined to maximize ecosystem services and promote further landscape connectivity along the shoreline. These are areas that are largely on undeveloped parcels. Given the myriad of challenges that will become increasingly present on existing infrastructure, the findings of this Vision promote acquisition, conservation and restoration of undeveloped parcels along the shoreline.

Existing Creekside Riparian Forest including the main creek corridors of San Pablo and Wildcat Creek. Creek corridors provide special opportunities for ecological connections to uplands and thus are important to conserve and enhance through restoration and urban greening.

Existing and Restored Tidal Marsh marks are the areas along the shoreline that have been restored, or are protected or conserved as tidal marsh.

Urban Greening and Community Uses describes the areas of the shoreline that are developed and where urban greening solutions will be critical to address the needs identified by residents in this report.



Strategy #1: Protect and Conserve Open Space

- **Action 1.1: Acquire contiguous shoreline parcels from willing sellers**
- **Action 1.2: Support change in land use designations along the shoreline to “Community Area Land Use” consistent with the City of Richmond General Plan land use classifications.**

The North Richmond shoreline provides a unique opportunity to encourage a more continuous shoreline from Point Pinole to Point San Pablo through acquisition, protection and enhancement of a number of undeveloped parcels. These parcels should be acquired from willing sellers to support community area land use classifications. According to the City of Richmond General Plan, community area land uses include open space, parks and recreation, public, cultural & institutional, and agriculture.

An acquisition strategy for the shoreline can benefit the transition zone by identifying areas to protect and providing opportunities for compatible uses that support community vitality, protect habitats and support a landscape vision that is resilient to future conditions. There are several benefits to natural shorelines, including reducing incoming wave heights, protecting existing shoreline structures from the wind, waves, and tidal energy. The transition zone buffers neighboring communities from sea level rise and storm surge while protecting sensitive species and habitats.

Acquisition of undeveloped parcels is part of strategy to establish more robust methods of flood protection for North Richmond residents. Ad-hoc flood protection that was not designed to protect communities from flooding provides a significant amount of the flood protection for North Richmond, especially Parchester Village (BCDC, 2017). As flooding increases, the insufficient flood protection in these communities will exacerbate this disproportionate burden.

The City of Richmond is moving to formalize its Change Area 12 designations for the Northern Shoreline as described in the General Plan 2030. This would expand the Community Area Land Use zones and shift further from heavy industrial to low intensity business/light industrial. This Vision supports the City of Richmond formally adopting these land use classification changes. It is recommended that the County similarly align its land use designations when the next County General Plan update occurs. The Vision further supports similar land use designations within unincorporated areas of the County.

Strategy #2: Improve & increase shoreline public access and understanding

- **Action 2.1: Connect and complete the Bay Trail segments, including extending the trail on the southern levee of San Pablo Creek inland to Fred Jackson Way in North Richmond.**
- **Action 2.2: Identify opportunities for an improved network of pedestrian access along the shoreline**
- **Action 2.3: Develop interpretive centers at Point Pinole Regional Shoreline and the West County Wastewater District**

Community input during the visioning process pointed to a need for improved public access, and enhanced recreation opportunities for residents. Key findings from that process drove the Actions listed here to closing gaps in the Bay Trail, improving a network of pedestrian and bicycle access to the shoreline for local residents, and adding Environmental Interpretive centers to promote greater public awareness.

The Bay Trail is a planned 500-mile walking and cycling path around San Francisco and San Pablo Bays running through all nine Bay Area Counties, 47 cities, and across the region's seven toll bridges. The Bay Trail provides community benefit to North Richmond and Parchester Village neighbors, including improved access to the shoreline, safer recreational routes to and around the shoreline and recreation opportunities at the shoreline. The community input process pointed to improved walking trails as one of the top shoreline access needs. The Bay Trail is also considered an alternative transportation corridor and is included in Richmond's Bicycle Plan, Contra Costa County's Bike/Ped Plan, and MTC's Regional Bicycle Plan.

Local groups, most notably the Trails for Richmond Action Committee (TRAC), have worked closely with the City of Richmond, East Bay Regional Park District (Park District), San Francisco Bay Trail Project, the private sector and the Metropolitan Transportation Commission/Association of Bay Area Governments to complete sections of the Bay Trail along the North Richmond shoreline. In Spring 2017, the Park District completed two new projects that opened 1.9 miles of new Bay Trail that provided a North-South pedestrian and bicyclist route through 2,560-acre Point Pinole Regional Shoreline, including 1.5 miles of trail between the new Dotson Family Marsh staging area. There still remains some segments of the Bay Trail to complete, most notably on the southern levee of San Pablo Creek and west of Goodrick Avenue.



Through direct engagement of community members and local governments, TRAC has proposed a trail alignment to complete those sections.

Input from residents highlighted the need for a comprehensive system of trails for pedestrian and bike access for users to enjoy the shoreline, including Wildcat Creek Trail overpass and a multi-use trail on the southern levee of San Pablo Creek connecting Fred Jackson Way in North Richmond with the shoreline. A pedestrian/bicycle overpass of the Richmond Parkway would connect Wildcat Creek Trail users with the Bay Trail and the Park District Wildcat Creek Marsh staging area. The existing creek trail underpass of the Parkway is chronically filled with mud and stagnant water blocking safe use passage. This condition is a major barrier to non-vehicular public access to the shoreline. The County's proposed conditions of approval for development adjacent to the proposed east side landing of the overpass are tied to provision of a berm at the elevation necessary for FEMA levee certification. The Park District is the lead agency in planning and funding the overpass. The Wildcat Creek Trail is intended to eventually traverse North Richmond, San Pablo, and Richmond connecting Tilden Park to the San Pablo Bay. Partners in improved access could include Contra Costa County, the City of Richmond and the Park District.

Resident input further pointed to a need for improved signage about how to access the shoreline, environmental education and park programming as well as facilities and amenities. This could include:

- Wayfinding to amenities and to the shoreline
- Student field trips and resident tours
- Public transit improvements
- Improved amenities, including trash cans and bathrooms

There are two opportunities for interpretive centers currently being considered for the shoreline. The Park District is currently in planning phases for a Visitor Center at Point Pinole Regional Shoreline. The Park District has completed the study to determine the building site, and they are currently seeking additional funding for design drawings and construction. The West County Wastewater District is considering an interpretive center adjacent to Wildcat Marsh and off the Bay Trail and in conjunction with ecological enhancements to their property. The interpretive center would include public parking and would focus on water reuse and treatment through their facility. The West County Wastewater District Board recently approved a contract to an architecture firm to begin pre-design of the Center.

Strategy #3: Urban greening and community uses

-
- **Action 3.1: Support compatible uses within the transition zone.**
 - **Action 3.2: Design & construct renewable energy pilot projects**

Given the dynamic nature of the transition zone both spatially and temporally, the Vision considers opportunities for “light touch” shoreline uses within certain subzones, including urban greening. While some subzones of the transition zone are needed strictly for species protection or to support ecosystem function, other subzones may support human uses that represent lower impact activities on the shoreline. This Vision supports urban greening and community uses that can provide better connectivity to open space and restored habitats. Urban greening and community uses are largely consistent with the Community Area Land Use classifications described in the City of Richmond General Plan, and can also include green jobs centers and housing in-board of the Richmond Parkway and up the watershed. The Community Area Land Use designation includes:

- Open Space, including wetlands, creek corridors, and private lands deed-restricted for open space preservation
- Parks and Recreation, including publically owned local and regional parks, and small-scale recreation supporting uses such as rental shops, bike repair facilities, small restaurants, interpretation centers and museums
- Public, Cultural and Institutional, including community centers, libraries, museums, hospitals and schools
- Agriculture, including grazing, crop production, farming and community gardens.

Consideration of dynamic uses in transition zone planning can ensure community benefits, especially in disadvantaged communities. Potential benefits include economic development opportunities, improved access to the shoreline and to community services, and a better environment in which to live and work. However, it is important to consider this designation in light of sea level rise. This Vision does not support construction of permanent, immovable structures within areas that are predicted to face future flooding, and encourages uses that can be either moved or sacrificed to future rising tides. In line with equity goals, this Vision also encouraging hiring locally for all new projects where possible.

A special district is exploring producing renewable energy in the area. Goals of the project are for the special district to become more carbon neutral and test out a new method of green energy production. The pilot project would use green waste from the area to produce renewable energy. The project would install a compact modular gasification unit and use wood chips from a fuels management program.

Since the unit is modular, it can be moved to other locations when the project is completed. Electricity produced will either power nearby facilities or be sold back to a utility provider. This multi-benefit project achieves both green waste disposal and local energy production. In addition, one by-product is biochar, which is a premium compost material. To understand the effectiveness of this approach, the special district has worked with a local technology partner to evaluate the greenhouse gas reduction effects.

Pilot projects like this provide multiple benefits to shoreline communities. This potential project is an example of a dynamic shoreline use that is movable in the event of an extreme storm or gradual sea level rise impacts. In addition, the pilot project supports local energy production. As a special district, they will be eligible to participate in a Community Choice Energy (CCE) program and provide renewable energy to the region. CCE programs provide local green jobs and cost-effective renewable energy.

Strategy #4: Restore & enhance a diversity of habitats and living resources and promote nature-based infrastructure projects

- **Action 4.1: Complete the Giant Marsh Living Shorelines project**
- **Action 4.2: Pursue opportunities for restoration and recreation consistent with Strategy #1**
- **Action 4.3: Monitor successful recent projects and integrate adaptive management practices.**
- **Action 4.4: Develop nature-based shoreline infrastructure that integrates treated wastewater from the West County Wastewater District treatment facility**

Restoration and enhancement of the shoreline can improve the quality of recreation and enjoyment of the shoreline for residents while providing flood protection and habitat benefits. The Adapting to Rising Tides Contra Costa Vulnerability Assessment identified ad-hoc flood protection as a key planning issue. Ad-hoc flood protection applies to shoreline parks and open spaces that act as a first line of defense against flooding while also remaining vulnerable to early impacts of sea level rise. It represents areas that have not been specifically designated or maintained for providing flood protection. Future impacts from climate change such as higher extreme high tides and more frequent exposure to the tides as sea levels rise can decrease the ability of these ad-hoc systems to maintain flood protection benefits.

Several restoration and enhancement opportunities exist along the North Richmond shoreline. These projects are advancing water quality, living shorelines, stream & creek enhancements, flood protection

and improved recreational access. The North Richmond Shoreline Vision is intended to build off these existing efforts.

Giant Marsh Living Shorelines Project

The State Coastal Conservancy's San Francisco Bay Living Shorelines Project at Giant Marsh is located within the Point Pinole Regional Shoreline in the City of Richmond. The overall goal of the pilot project is to restore ecological function and ecosystem resilience through the creation and enhancement of a range of biologically rich shoreline habitats, from the subtidal to the estuarine-terrestrial transition zone.

The multi-habitat Project at Giant Marsh integrates subtidal habitat restoration of native oyster (*Ostrea lurida*) and native eelgrass (*Zostera marina*) beds with designs that test the use of natural structures to buffer and protect adjacent tidal wetland sites, and areas of the San Francisco Bay shoreline vulnerable to sea level rise and shoreline erosion. The proposed integrated enhancement project aims to increase vertical habitat structure and prey availability for multiple species while also testing new approaches to climate adaptation and shoreline protection in the face of sea level rise. The Project will generate new information on the success of living shorelines approaches, and information will be shared broadly to encourage additional landowners and partners to develop living shorelines approaches on the North Richmond Shorelines.

Lower Rheem Creek/Dotson Family Marsh

Until recently, the East Bay Regional Parks District has been working with the US Army Corps of Engineers (USACE) to undertake the Rheem Creek channel realignment and naturalization project through the restored Dotson Family Marsh area. Due to cost-share needed for the District to participate through USACE's 1135 process, the District will pursue other options for restoration of Rheem Creek. The restoration project will be an example of restoring floodplain access to a levee- confined flood control channel (creek), and improving habitat connectivity to the restored marsh without affecting flood protection.

Green Street Projects

The County and the City of Richmond are working with the San Francisco Estuary Institute to identify feasible green street project locations and most cost effective density of locations to achieve targeted water pollution reductions. The County Public Works Department in partnership with Urban Tilth, The Watershed Project, and the Neighborhood House of North Richmond is concurrently working on a suite

of green street projects and community beautification initiatives underway in North Richmond. The Fred Jackson Way First Mile, Last Mile project will install a bicycle lane and bioretention retrofits from Gertrude Ave to San Pablo Creek. A bioretention basin is planned at Brookside and Fred Jackson Way.

The County is preparing its Stormwater Resources Plan, that identifies all potential project eligible for State Proposition 1 Grant funding. This Vision supports bringing the multiple benefits of green streets (improved water quality, reduced urban heat islands, improved community aesthetics and pedestrian safety) to the North Richmond and Parchester communities.

Creosote piling removal

There are multiple derelict creosote piling removal projects that the State Coastal Conservancy, City of Richmond, and other partners are leading on the North Richmond Shoreline. Creosote is a complex mixture of chemicals, many of which are toxic to fish and other marine organisms, causing impacts such as mutations in developing herring eggs. Because of concerns over toxicity, use of creosote treated pilings was banned in 1993 by the California Department of Fish and Wildlife. Future planned efforts at the North Richmond shoreline include:

- The San Francisco Bay Creosote Removal and Pacific Herring Restoration Project is located at the Red Rocks Warehouse site, on the north side of Point San Pablo. Project implementers are the State Coastal Conservancy in collaboration with the City of Richmond, and the National Fish and Wildlife Foundation. Phase One occurred from 2014 to 2016 where more than 480 tons of debris, including 460 derelict creosote pilings, were successfully removed. Phase Two of the project will be conducted in Spring 2018, and includes a Living Shorelines Restoration component, the goal of which is to restore intertidal and subtidal habitat while using new approaches to natural shoreline protection.
- The Conservancy has been working with the City of Richmond, the San Francisco Bay Conservation and Development Commission, NOAA, and additional partners on planning for the removal of Terminal Four, which includes a large derelict warehouse, pier, and approximately 2,500 creosote and/or concrete pilings, at Point San Pablo in Richmond. This is the largest derelict structure in the bay, and removal of it will enhance habitat, including oyster and eelgrass populations that are already present at the site. The removal is planned to occur in Fall of 2019 or 2020.

-
- There are 1,500 additional derelict pilings at Castro Point, the former Marina/ferry terminal just north of the Richmond Bridge. These pilings have been mapped and initially assessed, and they are also a priority for future removal.

These projects are informed by the San Francisco Bay Subtidal Habitat Goals Project (Conservancy 2010, www.sfbaysubtidal.org). The Subtidal Habitat Goals Project was a collaboration between the Conservancy, San Francisco Bay Conservation and Development Commission (BCDC), NOAA, and the San Francisco Estuary Partnership (SFEP) which culminated in the 50-year conservation plan for how to move forward with science-based research, protection, and restoration of subtidal habitats in the San Francisco Bay. The report states that one long-term strategy for the Central Bay and the Richmond shoreline is to restore subtidal habitats like oyster and eelgrass beds near sites where creosote pilings are being removed, to replace the lost physical structure and provide natural substrate to attract spawning Pacific herring.

Lower Wildcat Creek Improvements

The US Army Corps of Engineers is in planning stage for a package of improvements to Lower Wildcat Creek to address the sediment detention basin by Verde Elementary School, and the fish ladder immediately upstream of the basin. Wildcat Creek is one of the most sediment transporting creeks in the Bay Area. Both the fish ladder and sediment basin fill up quickly during winter storms. Salmonids are unable to navigate the fish ladder when it is choked off with debris. Because this is a USACE project, the County Flood Control District, as the local co-sponsor, is seeking funding for the non-federal cost-share requirement.

Opportunities & Constraints for Restoration of the North Richmond Shoreline

The Adapting to Rising Tides Vulnerability Assessment lists initiating wetland restorations that protect and enhance the benefits of these systems such as flood risk reduction, habitat, biodiversity, and water quality.

Current tidal wetlands provide valuable habitat that could be enhanced. There are multiple small habitat areas that include small but potentially viable populations, such as the steelhead run on Wildcat Creek. Populations of rare tidal marsh plants, including soft bird's-beak and salt marsh owl's-clover, could be restored. On a larger scale, there is potential to restore a continuous corridor of tidal marsh adjacent to the Bay between Wildcat Creek Marsh and San Pablo Creek Marsh. Current tidal wetlands should be

protected, and their surroundings should be managed to keep them nourished with sediment, prevent wave erosion, to help them keep pace with sea level rise

Nontidal areas that are in the historical baylands, especially places that are adjacent to existing tidal wetlands, should be considered either as opportunities for restoration of tidal habitats (similar to the Dotson Family Marsh), or restoration to transition zone - possibly including the construction of horizontal levees where appropriate. Any additional permanent construction on, or excavation of the historical baylands should be avoided.

Many large, unpaved areas exist just above the tidal marsh. These areas should be considered major opportunities for the restoration of the transition zone. Where possible, transition zone should be restored with 500 meters of the upper edge of the tidal marsh. Residential neighborhoods falling within this zone are not good target for major restoration efforts, as the priority is to preserve and protect these areas. Prior to any restoration, it should be determined whether specific parcels contain critical infrastructure or are affected by legacy contamination from past land uses.

Various opportunities exist along streams within the study area. Riparian corridors along Rheem and San Pablo Creeks could be enhanced to support wildlife movement and healthy aquatic habitat..

In the short term, on San Pablo and Wildcat Creek, the existing alignment of the flood risk management levees and the land uses of the corridor are likely to remain as they are integral to the economic prosperity of the area. Wildlife corridors consisting of open space and tree cover (or even hedge cover) should be established connecting the riparian corridors of both creeks together within the present mosaic of land uses. Over the longer term, as sea levels rise, there are stretches of these corridors where the levees could be further set back to allow some natural flooding and deposition of sediment to occur. Vacant low-lying uplands in the floodplains could be used as retention areas to relieve the upstream flooding of developed areas that may otherwise occur from storms of increasing intensity coupled with rising sea levels.

Nature-based shoreline infrastructure opportunities

A horizontal levee is a type of nature-based shoreline infrastructure that helps prepare areas adjacent to the marsh to support marsh migration as sea level rises while at the same time providing more immediate benefits of supporting transition zone habitat and reducing wave energy at the shoreline edge. The site of the horizontal levee would be at the West County Wastewater District treatment facility. The West County Wastewater District (WCWD) provides wastewater disposal services to 16.9

square miles of Contra Costa County, including the unincorporated areas of Contra Costa County, portions of the City of Richmond, San Pablo and Pinole. WCWD serves a population of 92,976 residents, as well as industrial, commercial and public customers (BCDC, 2017). This action would create a gently sloping horizontal levee on fill landward of Wildcat Marsh and bayward of the existing flood risk management levee. These seepage terraces could:

- create a wetland-upland transition zone habitat that is missing in many parts of the Bay due to the presence of steep-sided levees;
- act as buffers to sea level rise allowing marsh migration across broad, gently sloped transition zones; and
- could provide additional ecosystems services such as carbon sequestration and wastewater effluent polishing.

To create the horizontal levee, a seepage terrace would be constructed with the top at the same elevation as the existing flood risk management levee crest, and the bottom intersecting with the existing high marsh (at about mean higher high water). Rather than placing fill directly on existing marshes, there appears to be a strip of fill higher than marsh elevation which lies between the flood risk management levee and the outboard marsh. Depending on the area available, this could result in a 30:1 to 50:1 slope. The slopes, rather than being planar, would include some variation in planform to create benches and shallow depressions to form pannes at a variety of elevations. The intent would be to create a seepage terrace with some topographic complexity, as subtle differences in elevation, soils, and drainage promote vegetation diversity.

The seepage terrace would be planted and hydro-seeded with a native seed mix. This would be an engineered equivalent of lowland floodplain wet meadow habitat (lowland wet grassland and sedge-rush meadows) of broad, flat alluvial fans that historically graded into the tidal marshes along the North Richmond shoreline and other parts of San Francisco Bay. When such slopes have been created in the Bay in the past they have been invaded by pepperweed (*Lepidium*) and other non-native plant species such as mustard and fennel. Irrigating with freshwater and creating a salinity gradient across the slope would allow native species to establish quicker and compete more effectively against invasive plants. Treated wastewater could be allowed to seep through the seepage terrace to support the wet meadows. Groundwater, soil, and vegetation interactions of wet meadows could support important carbon and biogeochemical nutrient transformation and sequestration processes that are currently limited in diked baylands and tidal marshes disconnected from groundwater discharges.

Establishment of transition zone vegetation will involve topsoil preparation and active revegetation using techniques designed to increase target-native vegetation and inhibit weed invasion. Topsoil preparation must consider factors to restore conditions that facilitate establishment of a sustainable, native-dominated target plant community; these include soil salinity, organic matter content, texture, the existing weed seed bank, and seed bed enhancement (e.g., scarification, imprinting, mulch). Active revegetation (planting, seeding, and intensive weed control maintenance) will be required to establish the target plant communities dominated by native graminoids and forbs due to the anticipated rapid, invasive weed recruitment and competition.

To reduce the initial amount of fill required it might be possible to construct the transition zone in stages phased in line with the observed rate of sea level rise, the availability of dredged material and financial resources. An initial, smaller berm could be built at the toe of the seepage terrace, followed over time by filling behind the berm as material becomes available to bring the transition areas to final grade. An alternative might be to maintain a 3:1 slope to a horizontal bench located one-foot above MHHW. The levee bench could receive fine grading to create backshore pans and a 30:1 to 50:1 slope will continue downward from the bench to marsh elevation. Additional fill would be placed on the bench as required to maintain its position in the tidal frame with sea level rise. The elevation of the upland slope could be modified to keep up accelerated sea level rise by the hydraulic placement of thin splays of sediment or by changes in the vegetation species to maximize peat production.

Performance criteria could be based on the establishment of natural upland plant communities in the near term, the use of the seepage terrace by marsh species, and amount of marsh migration and loss of tidal marsh width over the longer term. If brackish marshes are located on the seepage terrace, then a water supply would need to be maintained. Any transitional/upland habitat would be vulnerable to invasive species and require vegetation management. Appendix F provides a more detailed analysis of benefits and challenges associated with this proposed approach. On September 6, 2017 the WCWD Board agreed to enter into a Partnership with SFEP to further explore ideas for this design concept.

Strategy #5: Build capacity for equity, environment, and economic development among stakeholders

- Action 5.1: Establish a standing North Richmond Shoreline Advisory Working Group
- Action 5.2: Pursue local alternative energy production and manufacturing

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- Action 5.3: Increase local co operative food production and markets
 - Action 5.4: Develop a knowledgeable workforce for green jobs through hands-on training, apprenticeships, and environmental education.
 - Action 5.5: Develop economic incentives for businesses and homeowners to reduce impervious surfaces, install stormwater LID and contribute to urban greening.

In completing this Vision process, project staff noticed a significant divide between stakeholders working on community engagement and social equity issues, and those working on conservation and restoration of the shoreline. This tension speaks to the need for further dialogue among residential, business, and institutional stakeholders who should all be at the table for future planning processes. This ongoing dialogue could be in the form of a Working Group that meets quarterly to share information, coordinate efforts, and strive for consensus recommendations. This Advisory Working Group would set its own agenda and schedule, but would likely review and recommend land use zoning designations, design guidelines, future development proposals and locations, and other priority issues to City Council and County Board of Supervisors. These priority issues include supporting and advancing the community's:

- emerging cooperative economy, particularly in the realm of healthy food production and distribution
- demand for local jobs and job training opportunities, which can be partially addressed in emerging renewable energy and agricultural production; in parks and environmental management and improvement projects; and through local occupational training
- desire and need for programmatic solutions to shoreline access, recreational ball fields, as well as incentives for affordable housing, low impact development, and green infrastructure

Near Term Opportunities

- 1** Horizontal Levee and Interpretive Center at West County Wastewater District
- 2** Interpretive Center at Point Pinole Regional Shoreline
- 3** Bay Trail Gap Closures and Richmond Parkway Overpass on Wildcat Creek Trail
 - 3a. Atlas Road to the Richmond border
 - 3b. Richmond Parkway to Goodrick Avenue
 - 3c. San Pablo Creek Southern Levee
 - 3d. Richmond Parkway Overpass at Wildcat Creek Trail
- 4** Giant Marsh Living Shorelines Project
- 5** Wildcat Creek Improvements (Fish Ladder and Sediment Basin)
- 6** Fred Jackson First Mile, Last Mile Green Street / Watershed Connections Project
- 7** Rheem Creek Realignment through Dotson Family Marsh



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Near Term Opportunities

As we adapt to sea level rise in the Transition Zone, there are a number of near-term implementable actions and specific projects outlined in the Vision that are already in various planning stages but have further project development needs (such as community input, funding, final design documents, permits) to advance to implementation.

1. Horizontal levee and Interpretive Center at West County Wastewater District

Explore planning, design, and construction of nature-based shoreline infrastructure, and an associated Environmental Center supporting environmental education and public outreach programs. The effort is looking at placing a horizontal levee at Wildcat Marsh, adjacent to the Bay Trail.

2. Interpretive Center at Point Pinole Regional Shoreline

Engage the public through a new visitor center that will serve as the primary point of contact for park visitors, with interpretive and educational functions, community facilities, and a regional recreational resource center. Site developments include multiple interpretative gathering areas, an amphitheater, trail links, bus drop off, and parking.

3. Bay Trail Gap Closures and Richmond Parkway Overpass on Wildcat Creek Trail

Improve public access by closing 2.1 miles of Bay Trail gaps on the northern shoreline including: Atlas Road to the Richmond border; Richmond Parkway to Goodrick Avenue; San Pablo Creek Levee; and Richmond Parkway Overpass at Wildcat Creek Trail.

4. Giant Marsh Living Shorelines Project

Enhance multiple habitats through the San Francisco Bay Living Shorelines Project. The project integrates subtidal habitat restoration of native oyster and native eelgrass beds with designs that test the use of natural structures to buffer and protect adjacent tidal wetland sites, as well as areas of the shoreline that are vulnerable to sea level rise and erosion.

5. Wildcat Creek Improvements (Fish Ladder and Sediment Basin)

Replace the dysfunctional fish ladder that blocks salmonid passage and improve sediment basin immediately upstream of Verde Elementary School.

6. Fred Jackson First Mile, Last Mile Green Street / Watershed Connections Project

Provide urban greening through the North Richmond Watershed Connection, which will serve to create a healthy, walkable, green connection between San Pablo Creek and Wildcat Creek in North Richmond. The project will implement coordinated urban greening elements on streets, parks, creek trails, and an urban farm to enhance the health of the creeks and watershed while improving the community's access to their environment.

7. Rheem Creek Realignment through Dotson Family Marsh

Realign and restore about 1/2 mile of Rheem Creek, and connect it with restored Dotson Family Marsh to create improved aquatic habitat through the marsh.

Moving Forward

This is an ambitious Vision for the near-term (through 2025) and mid-term future (through 2050) of the North Richmond Shoreline. Sea level rise projections do not currently appear to be a concern for developers looking to reap immediate profits along this scenic shoreline. The Vision looks to both the City of Richmond's intent to adopt Change Area 12 Land Use designations and local special districts with the capability to acquire undeveloped parcels to preserve the open spaces available outboard of the Richmond Parkway. The current exploratory North Richmond annexation effort to the City will determine if the County or City would be the appropriate entity for further land use re-designations to ensure a holistic planning approach for the area.

Appendix A: References

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Appendix B: Stakeholders Engaged in the Shoreline Vision Process

Britt Thorsnes, East Bay Regional Parks District
Bruce Beyaert, Trails for Richmond Action Committee
Bruce Brubaker, Trails for Richmond Action Committee
Cameron Martin, Citizens for East Shore Parks
Cece Sellgren, Contra Costa County Public Works
Daryl Smith, Republic Services
Doug Brewer, Republic Services
Dr. Connie Portero
Dr. Henry Clark, West County Toxics Coalition
Ed McCormick, West County Wastewater District
Janie Holland, Community Housing Development Corp
Jim Hanson, California Native Plant Society
John Gioia, Contra Costa County Supervisor
John Steere, Contra Costa County Public Works
Karla Cuero, East Bay Regional Parks District
Ken Cook, West County Wastewater District
Lana Martarella, Citizens for East Shore Parks, North Richmond Shoreline Open Space Alliance
Lina Velasco, City of Richmond
Marilyn Latta, State Coastal Conservancy

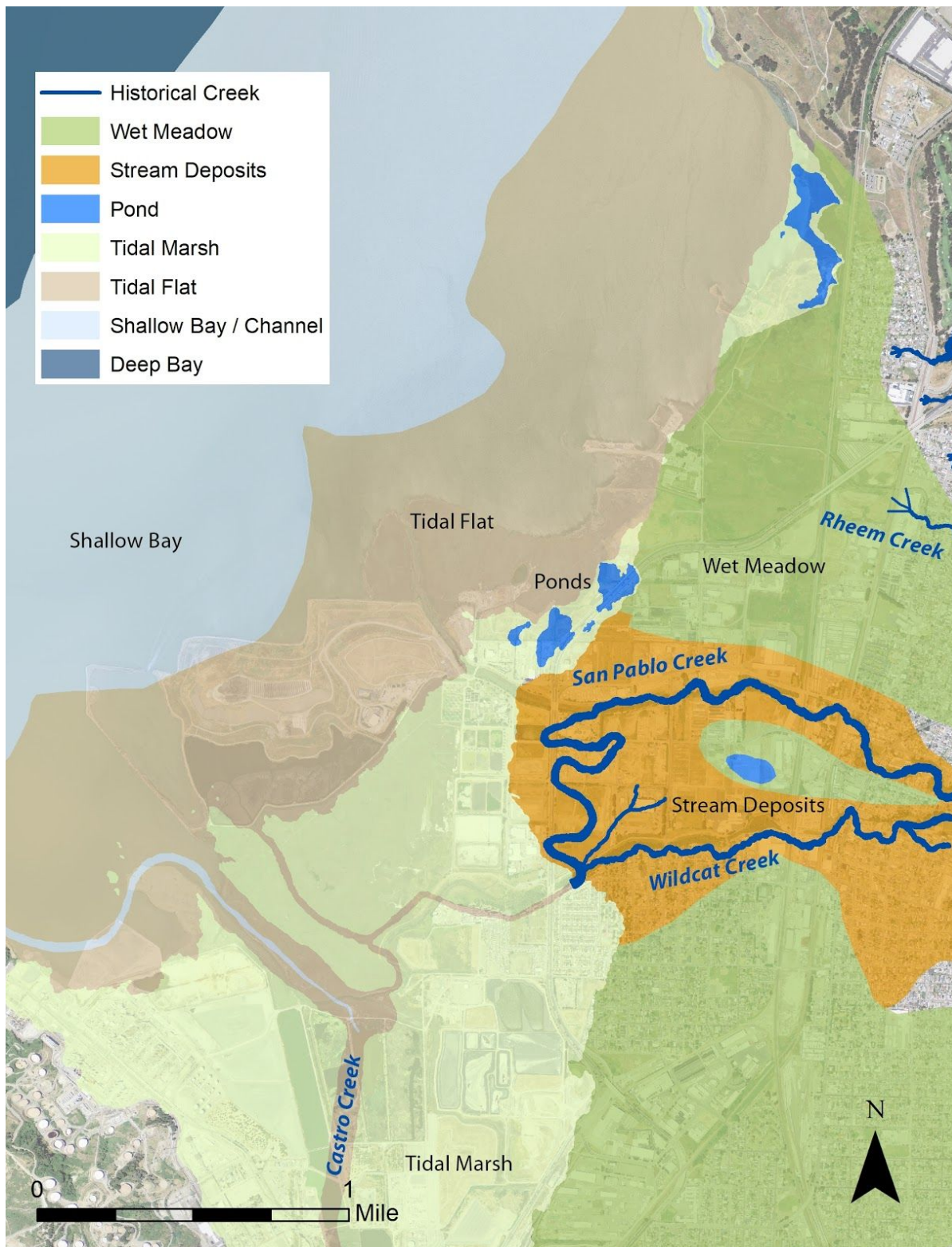
Michael Kent, Contra Costa County Public Health
Nikki Muench, The Watershed Project
Patrick Phelan, City of Richmond
Paul Detjens, Contra Costa County Flood Control District
Rich Walkling, Restoration Design Group
Robert Cheasty, Citizens for East Shore Parks
Robert Mitchell, City of Richmond
Robert Rogers, Contra Costa County
Robin Freeman, North Richmond Shoreline Open Space Alliance
Sandra Hamlat, East Bay Regional Parks District
Sequoia Erasmus, Office of the Mayor, Richmond
Shirley Dean, Citizens for East Shore Parks
Tanya Pulido, Neighborhood House of North Richmond
Tanya Pulido, Neighborhood House of North Richmond
Tim Jensen, Contra Costa County Flood Control District
Whitney Dotson, East Bay Regional Parks District

Project Team Members

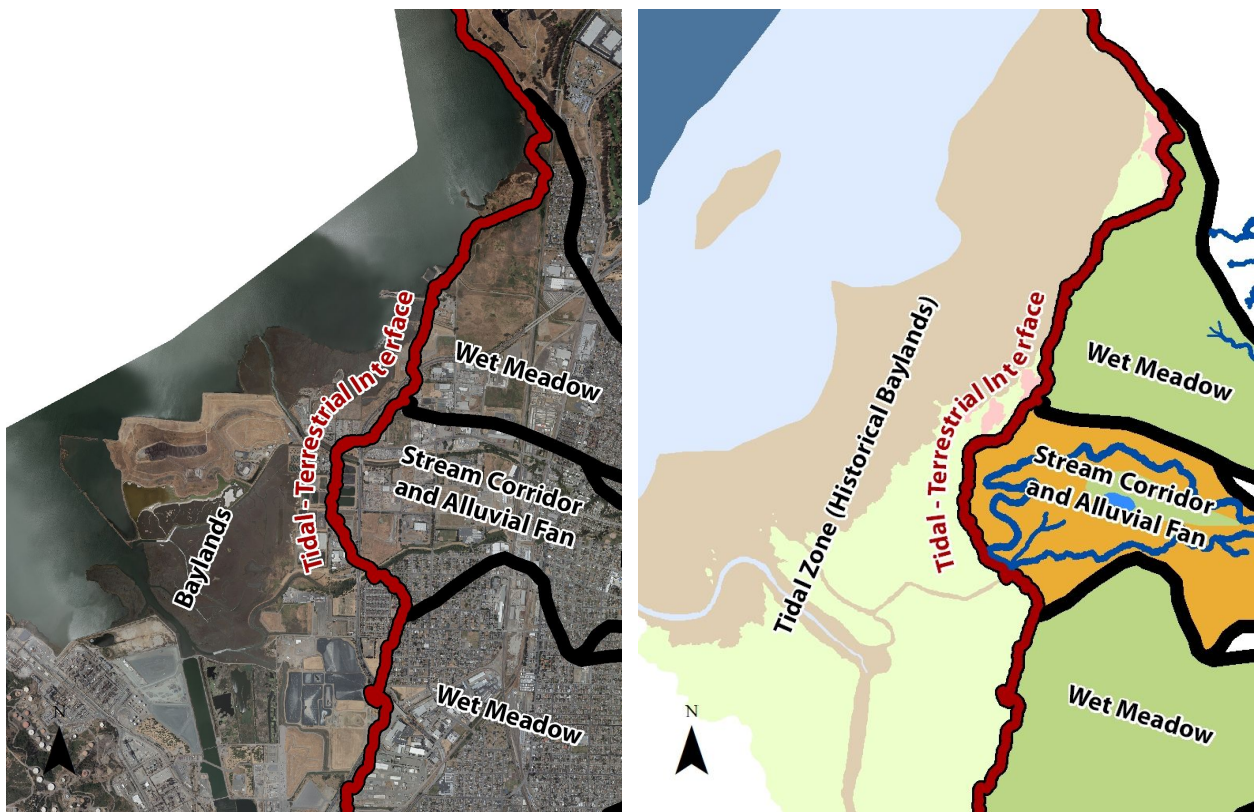
April Robinson, SFEI
Caitlin Sweeney, SFEP
Heidi Nutters, SFEP
Jeanine Strickland, The Watershed Project
Jeremy Lowe, SFEI
Jesse Brown, The Watershed Project
Josh Bradt, SFEP
Juliana Gonzales, The Watershed Project

Letitia Grenier, SFEI
Micha Salomon, SFEI
Nathan Bickart, Urban Tilth
Paula White, The Watershed Project
Phaela Peck, The Watershed Project
Robin Grossinger, SFEI
Sara Gurdian, The Watershed Project
Scott Dusterhoff, SFEI
Sharon Gibbons, The Watershed Project

Appendix C: Historical Ecology of North Richmond



Historically, the ecological landscape of Richmond's northern shoreline was defined by a mosaic of habitat types as shown in the map above (adapted from SFEI 1998 and Holmes and Nelson 1914). A large tidal marsh spanned much of the area between the Point Molate and Point Pinole and extended the length of lower Castro Creek. The adjacent uplands supported extensive areas of wet meadows fed by numerous small streams that originated in the hills to the east. The riparian corridors associated with these streams provided spawning and rearing habitat for steelhead. Some terminated in willow groves. Four overlapping zones, each consisting of several habitats, are important to consider: the baylands of marshes and mudflats, the stream corridors and alluvial fans of San Pablo and Wildcat Creeks, the wet meadows, and the tidal-terrestrial interface - the lower boundary of the transition zone.



The Baylands

The historical baylands included the shoals of San Pablo Bay and a broad intertidal mudflat nearly a mile wide at low tide. South of the mudflat, several major marsh channels and a dense network of smaller ones flowed in and out through the tidal marsh with the ebb and flood of the tides. The boundary between the vegetated marsh and unvegetated mudflat closely matches the normal high tide line, called

mean higher high water (MHHW). This means the mudflats and marsh channels flood twice daily while the marshes flood only on the higher tides of the year.

Changes to the historical baylands have resulted in a new configuration of landscapes. The tides, though slowly rising, still ebb and flood much as they did historically. The diking and draining of the tidal marshes together with land use changes have changed the area and location where tidal waters are able to flood. Like much of the urbanized Bay Area, homes, industry, and infrastructure has been built on top of fill, which raises the land above the baylands. Most of the Chevron refinery, some of the West County Wastewater plant and the western edge of North Richmond are all built on fill placed on top of the historical tidal marsh. The West Contra Costa Sanitary Landfill and the Rod and Gun Club are built on fill, but over historical mudflat rather than marsh. New tidal marshes have grown at the mouths and inside the levees of the San Pablo and Wildcat Creek flood control channels. In addition, 60 acres of tidal wetland were restored at the Dotson Family Marsh, (formerly Breuner Marsh) part of Point Pinole Regional Park. The restoration has returned tidal flows to portions of the historical baylands that had not seen tidal action for decades or more.

Today's tidal marsh near the mouth of Wildcat Creek is a very important exception to the pattern of landscape change; the current marsh is in the same location as the historical one. Every effort should be made to preserve the integrity and functions of this marsh. The majority of the marsh is located on a parcel owned by Chevron, and a strip along the edge is owned by West County Wastewater.

The Stream Corridor

Historically San Pablo and Wildcat Creeks merged together shortly before flowing in a tidal channel through the marsh, then emptied into San Pablo Bay¹. The zone around and between those creeks, called the stream corridor, was a dynamic floodplain containing freshwater wetlands, riparian vegetation and centuries of stream deposits. These stream deposits created a small fertile floodplain and nourished the

¹ Though early maps including the USCS t-sheet (date) show the confluence of Wildcat and San Pablo Creeks upstream of the tidal marsh, there is evidence that earlier the two creeks did have separate outlets to the Bay, and that San Pablo Creek's outlet was blocked by a plug of sediment that resulted from increased erosion due to cattle grazing in the watershed (Collins et al. 2001).



marsh. Flows of freshwater and sediment from the Creeks mixed with the tidewaters of San Pablo Bay forming an ecologically rich estuary.

Today landscape changes have altered the dynamics of the stream corridor. Like most urban creeks, levees were built to prevent natural flooding from inundating land near the creeks and preventing the deposition of stream sediments in the floodplain. The creeks themselves persist within their confined channels, and each supports an ecologically important riparian corridor. Transportation infrastructure crosses the creeks in several places, including the Richmond Parkway, Fred Jackson Way, and two railroad crossings.

The Wet Meadows

Both north and south of the San Pablo and Wildcat Creek stream corridor were large wet meadows. Wet meadows consist of mostly seasonal freshwater wetlands. They were historically widespread along the

coastal plain near the historical Bay shore; existing adjacent to historical tidal marshes in North Richmond, Petaluma, Santa Clara Valley, Napa and elsewhere. Typically, groundwater emerged in these wet meadows through seeps and springs, forming a distinct habitat that stayed green through the dry summer and was often muddy and hard to cross during the wet winter. In northern Richmond, Rheem Creek and several other small streams used to flow into the wet meadow but did not have the power to carve a channel through to the Bay, and their flows spread across the meadow.

Tidal-Terrestrial Interface

The tidal terrestrial interface is where the wet meadow, and stream corridors of the coastal plain met the baylands. It marks where the baylands becomes the transition zone. Historically and in reference systems, certain widths of transition zone are associated with important ecological functions including movement corridors and high tide refuge for wildlife.

Appendix D: West County Wastewater District Project Addendum

Benefits

Increased resilience: This measure would provide long gentle slopes with a gradient 1:30 to 1:50, which is more similar to natural upland slopes than steep sided levees. These shallower slopes would allow tidal marshes to migrate landward rather than be squeezed against steeper levee slopes. The measure will help maintain tidal marsh ecosystem services, such as wave attenuation, for a longer period of time with rising sea levels by allowing landward migration. This migration will assist in flood risk management along the shoreline by reducing wave runup and overtopping, and might delay the need to construct higher levees. The non-engineered shallow slopes of the seepage terraces should be relatively stable during seismic events, unlike steeper sloped levees.

Ecological compatibility: The long-extinct natural “wet meadows” associated with alluvial fan transition zones on the North Richmond shorelines, are not the same as the artificial “seasonal wetlands” familiar in modern diked baylands and former agricultural fields. Seasonal wetlands found on disturbed sites are typically dominated by non-native annual weeds and pasture grasses. Natural seasonal floodplain wetlands (represented by rare remnants) include lowland (alluvial) grasslands dominated by native creeping perennial grasses, sedges, and rush meadows (with associated native perennial forbs) in clay-silt loam soils, and riparian scrub on coarser alluvium with greater permeability, locally associated with relict or active stream distributary channel banks. They are generally associated with fluctuating, shallow groundwater and wet-season flooding (ponding or sheetflow). This now-rare groundwater seep-dependent transition zone would provide important seasonal terrestrial habitat for the endangered Salt Marsh Harvest Mouse spring foraging habitat and increasingly important terrestrial high tide refuge, particularly as sea level rises.

Co-benefits: There are a number of co-benefits that might be realised. Carbon will be sequestered by the vegetation on the upland slopes. The reuse of treated wastewater on the seepage terraces might reduce the need to pump treated effluent around the Bay, reducing the energy demand, decreasing GHG emissions and reducing seismic vulnerability of the existing infrastructure.

Challenges:

Permitting: There will be permitting challenges if existing tidal marsh habitat is converted by placing fill to create uplands and brackish wetlands. Mitigation may be required for impacts to existing wetlands habitats onsite. Any discharge of treated wastewater effluent would need to be permitted.

Sources of fill and water: The construction and maintenance of the seepage terraces would require large volumes of fill material. Water or land access would be required to allow the placement of fill. Unsorted dredged or upland material would be suitable as the slope is not an engineered structure and is relatively flat. In addition, clean capping soils, up to a thickness of 3 feet, would be required to accommodate the rooting zone of the upland native species.

Cost: Costs will depend on the volume of fill used, the distance fill travels to reach the site, and the amount of grading required. Additional costs for vegetation planting, other features such as a freshwater swale, and maintenance and monitoring would also need to be considered. The slope may be constructed in phases, as described above, to reduce initial costs.



Contributing Partners

Citizens for East Shore Parks
City of Richmond Office of the Mayor
City of Richmond Planning Department
Community Housing Development Corp
Contra Costa County Board of Supervisors
Contra Costa County Flood Control District
Contra Costa County Public Health
Contra Costa County Watershed Dept
East Bay Regional Parks District
Neighborhood House of North Richmond
North Richmond Shoreline Open Space Alliance
Restoration Design Group
State Coastal Conservancy
Trails for Richmond Action Committee
West County Toxics Coalition
West County Wastewater District

San Francisco Estuary Partnership

The San Francisco Estuary Partnership (SFEP) was established in 1988 by the State of California and the U.S. Environmental Protection Agency under the Clean Water Act's National Estuary Program. The Partnership is a collaboration of local, state, and federal agencies, NGOs, academia and business leaders working to protect and restore the San Francisco Bay-Delta Estuary. SFEP builds partnerships and leverages federal funding with millions of dollars in state and local funds for regional-scale restoration, water quality improvement, and resilience-building projects. sfestuary.org