

California Department of Transportation

San Francisco-Oakland Bay Bridge East Span Seismic Safety Project

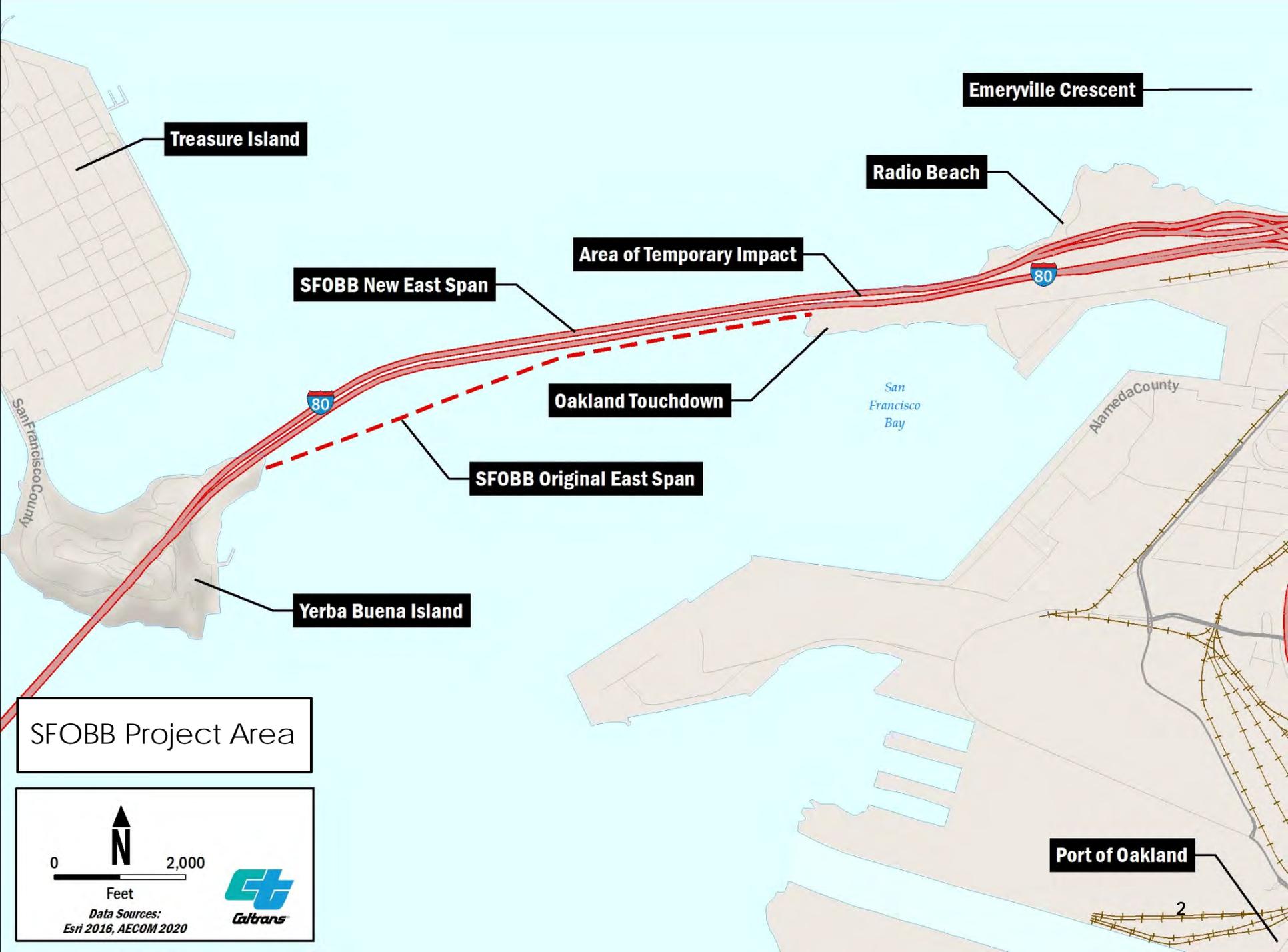
BCDC Permit No. 2001.008.46

Shorebird Roosting Habitat Mitigation

BCDC Commission Hearing

May 21, 2020





Treasure Island

Emeryville Crescent

Radio Beach

SFOBB New East Span

Area of Temporary Impact

Oakland Touchdown

SFOBB Original East Span

Yerba Buena Island

SFOBB Project Area



Data Sources:
Esri 2016, AECOM 2020



Port of Oakland

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SFOBB Project Update

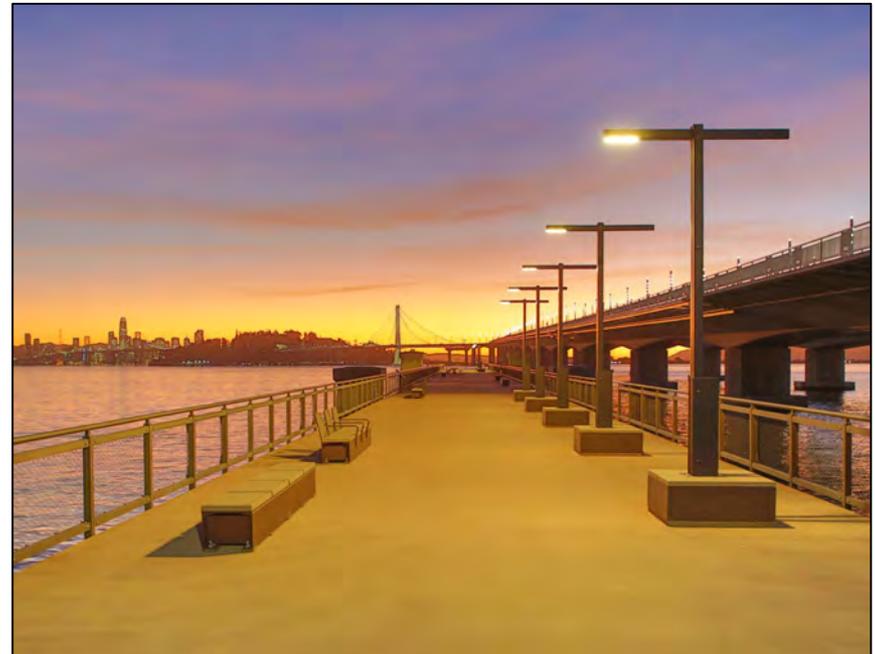
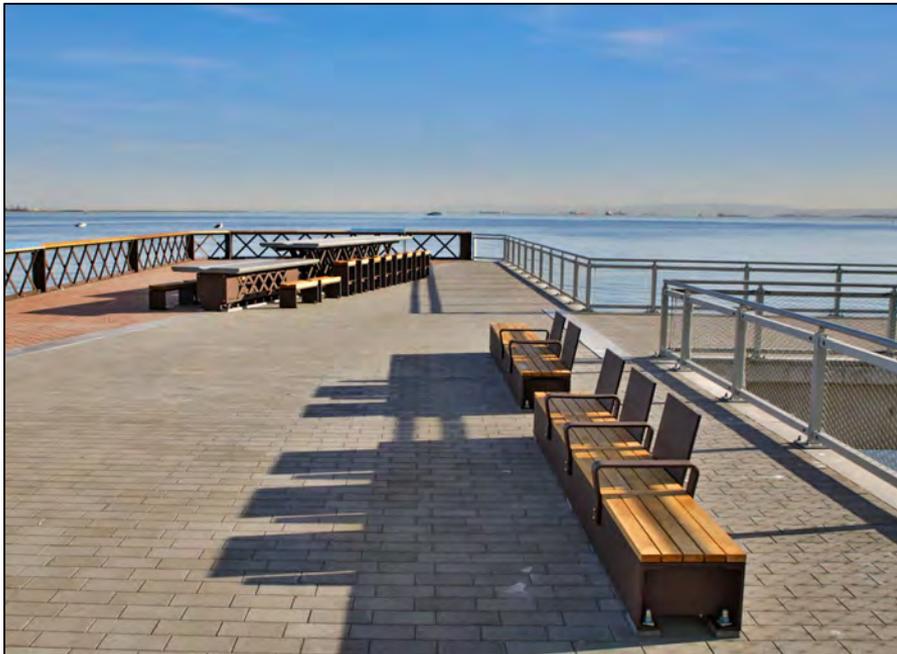
- New East Span Opened Labor Day 2013
- Original East Span Removal Completed December 2018
- New Public Access Features:
 - Bimla Rhinehart Public Vista Point on Yerba Buena Island
 - Public Pier at Judge John C. Sutter Shoreline Park in Oakland
 - Oakland Parking lot
 - Openings anticipated in Summer 2020
- Completing Caltrans Commitments to BCDC in Permit No. 2001.008.46



American Society of Landscape Architects

Northern California Chapter

2020 Merit Award Winner



SFOBB Compensatory Mitigation Overview

Project Approach: Avoid impacts. When unavoidable, then minimize the impacts. Where appropriate provide compensatory mitigation.

Mitigation	Funds Disbursed	Fund Purpose
Salmonids	\$3.5 million	<u>Salmonid Habitat Restoration</u> . Transferred to NMFS/NFWF to administer grants for salmonid restoration projects.
	\$500,000	<u>Pile Driving Fish Impact Study</u> . Caged fish study, hydroacoustic, and bird predation monitoring to analyze impacts of pile driving on fish.
Eelgrass	\$1 million	<u>Bay-wide Eelgrass Research</u> . Funds used to conduct eelgrass research, Bay-wide eelgrass survey and mapping, genetic research, and ecosystem models
	\$2.5 million (\$2.9 million with interest)	<u>Eelgrass and Sand Flat Restoration</u> . Approximately \$1 million spent on pilot project to restore eelgrass and sand flats. Balance plus accrued interest transferred to NMFS for Bay-wide eelgrass restoration efforts.
Wetland Restoration	\$8 million (\$8.8 million with accrued interest)	<u>Skaggs Island Restoration</u> . Funds transferred to the U.S. Navy in 2009 for help in acquisition, contaminant clean-up, and restoration of approximately 3,300 acres of historic baylands at Skaggs Island.
Additional Mitigation	\$600,000	<u>Long Fin Smelt Mitigation</u> : Four acres of mitigation offset potential impacts to long fin smelt from the Pier E3 Demonstration Project.
TOTAL	\$16,100,000+	

SFOBB Project Features to Avoid and Minimize Impacts

Consistent partnership with regulatory agencies

Construction of Cormorant Nesting Platforms on New East Span

Large-scale stormwater capture/treatment system

Minimization of impacts during bridge construction and dismantling

- Seasonal work windows for fish and bird species
- Nesting bird monitoring and avoidance program
- Pile driving and blasting marine energy attenuation (bubble curtain)
- Controlled blasting using microcharges
- Innovative removal of original SFOBB east span with limited temporary piles
 - 2,540 temporary piles approved for the SFOBB dismantling, only 187 used
- Continuous resource monitoring to avoid impacts and reporting to agencies through life of project

Removal of fill in the Bay,

- Removal of SFOBB original east span and piers



Shorebird Roosting Island Mitigation



BCDC Permit Shorebird Roosting Habitat Requirements 2001

BCDC Permit Authorization I-A(4)(d): Shorebird Roosting Habitat

- Construct shorebird roosting habitat

BCDC Permit Special Condition II-F(7): Creation of Bird Roosting Habitat

- Develop plan for shorebird habitat creation
- Construct 500 square feet of habitat north of Oakland Touchdown
- Monitor and report shorebird usage for 3 years

BCDC Amendment No. 12 (2005)

Authorized

Authorization I-A(4)d:

- Provide 500 square feet of shorebird roosting habitat above Mean Sea Level, approximately 200 feet offshore of the Oakland Touchdown to a height of 6.5 feet NGVD29 (*9.19 feet NAVD88*).
- Fill in the Bay
 - 734 cubic yards of 1-ton rock
 - 4,047 square feet area

Background: Shorebird Roosting Habitat Mitigation Timeline

- **2001** - BCDC Issues permit for SFOBB Project, includes shorebird roosting habitat creation as mitigation for temporary impacts
- **2003** - Interagency working groups
- **2004** - Riprap island conceptual design alternative selected
- **2005** - BCDC Amendment 12 authorizes riprap island
- **2006 to 2008** - Caltrans progresses riprap island design
- **2009** - Design concerns emerge; discussed with BCDC, NMFS, and GG Audubon
 - Continued subsidence of island over time
 - Poor resiliency to rising sea levels
 - Proximity to eelgrass habitats and Essential Fish Habitat
 - Shallow water depths and need for new dredging to access area
 - No permits/authorizations from USACE, RWQCB, CDFW, or NMFS to authorize placement of fill/impacts to resources

Background: Mitigation Fund Transfer (2010 -Present)

- Mitigation fund transfer option identified to satisfy shorebird mitigation in 2010
 - Concept supported by BCDC and Sierra Club
- Caltrans Explores Offsite Mitigation Alternatives
- Shorebird habitat creation projects considered:
 - Berkeley Pier in coordination with CDFW (2010; again in 2017)
 - Albany Beach (2013)
 - EBRPD Hayward Regional Shoreline (2016)
 - EBRPD Managed Sites: East Shore State Park, Brooks Island, Gateway Park, Crown Beach, Pt. Isabel, and Emeryville Crescent (2016-2018)
 - Port of SF Pier 64 (2017-2018)
 - SFOBB Pier Retention for Bird Islands (2017)
 - Port of Oakland – Add Bird Islands to Oakland Middle Harbor (2018)
 - MLK Reg. Shoreline East Island Enhancement (2018)

Mitigation Fund Transfer - Current Proposal

- Department partnered with EBRPD to develop concept on East Island within the MLK Jr. Regional Shoreline
- Caltrans to provide \$775,000 in funding to EBRPD
 - EBRPD to design, construct, and maintain project independent of Caltrans
 - State Coastal Conservancy fund transfer proposed as contingency back-up alternative

Martin Luther King Jr. Regional Shoreline



- Located in San Leandro Bay
- Includes Arrowhead Marsh, New Marsh, and surrounding uplands
- Contains mosaic of habitats: tidal mud flats, tidal marsh, ponds, uplands, seasonal wetlands, and two roosting islands (West and East Islands)
- Supports more than 90 species of bird, including more than 20 species of shorebird

High Quality Forage Habitat Within a 5-Mile Radius of East Island

San Francisco Bay

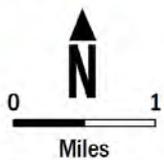
5-Mile Buffer of East Island

High Quality Forage Habitat

- Marsh
- Marsh Flat
- Panne
- Bay Flat
- Wetlands

Potential Forage Habitat

- Lagoon



Esri Imagery, 2017
AECOM, 2019; Caltrans, 2019
CARI BAARI v2.1, SFEI, 2017



Martin Luther King Jr. Regional Shoreline Shorebird Sanctuary



- Shorebird Sanctuary (New Marsh)
 - Constructed in 1998 by Port of Oakland
 - Part of MLK Jr. Regional Shoreline Wetlands Project
 - BCDC Permit No. M1996.056.00 was issued to the Port for the Project and later transferred to EBRPD
- East Island Existing Conditions
 - ~44,000 ft²
 - Elevation ~7.5 ft NAVD88 and MHHW is 6.5 ft NAVD88; island inundated during seasonal high tide events
 - Ruderal upland habitat limits habitat potential
 - Vegetated with invasive weeds



Arrowhead Marsh

EBRPD MLK Jr. Regional Shoreline Park

New Marsh

Oakland International Airport

East Island

MLK Jr. Regional Shoreline Park: Location

■ Potential Project Location
 □ Proposed Mitigation Project

0  1,000
 Feet

Data Sources:
 Esri 2016, AECOM 2020



Proposed Shorebird Mitigation: East Island

Project Components:

- Raise Island Elevation to:
 - Restore High Tide Refuge
 - Build Resiliency for Sea Level Rise
- Enhance ~20,000 ft² of Island for Shorebird Roosting and Nesting Habitat with Sand and Oyster Shell
- Restore ~24,000 ft² of Tidal Marsh
- 3 Years Monitoring
- Weed and Predator Abatement



**Shorebird Roosting Island
Habitat Creation**

Restored to Tidal Marsh

Proposed Shorebird
Mitigation: East
Island

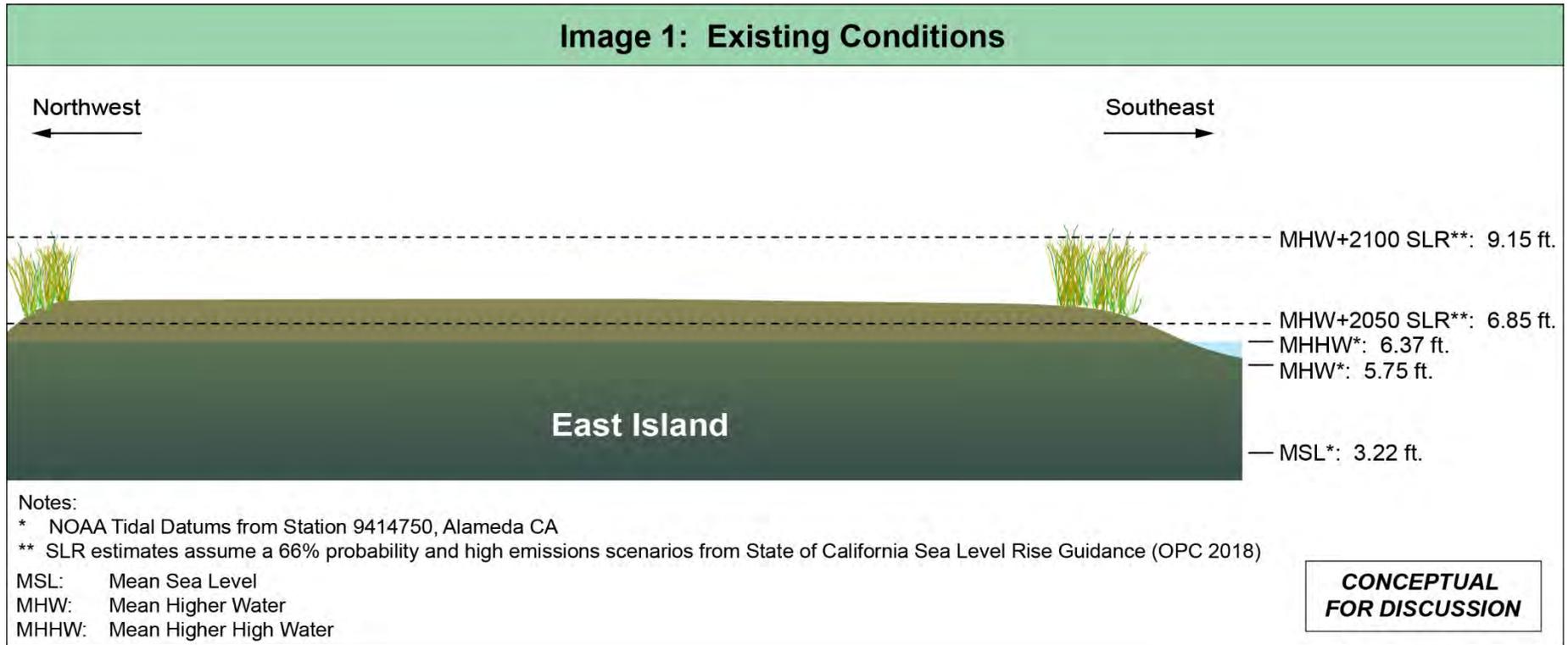
 Enhanced Shorebird Habitat
 Restored to Tidal Marsh


 0 50
 Feet

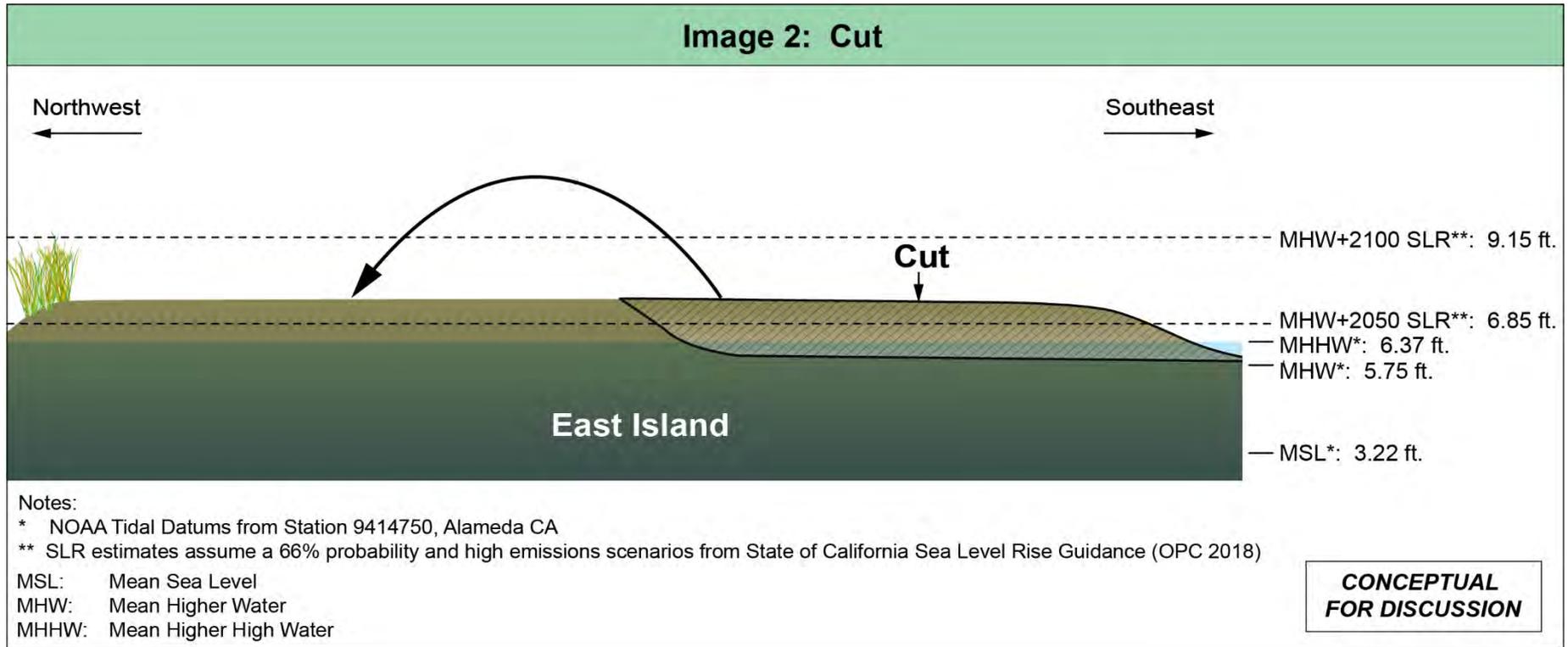
Data Sources:
 Google Earth 2018, AECOM 2020



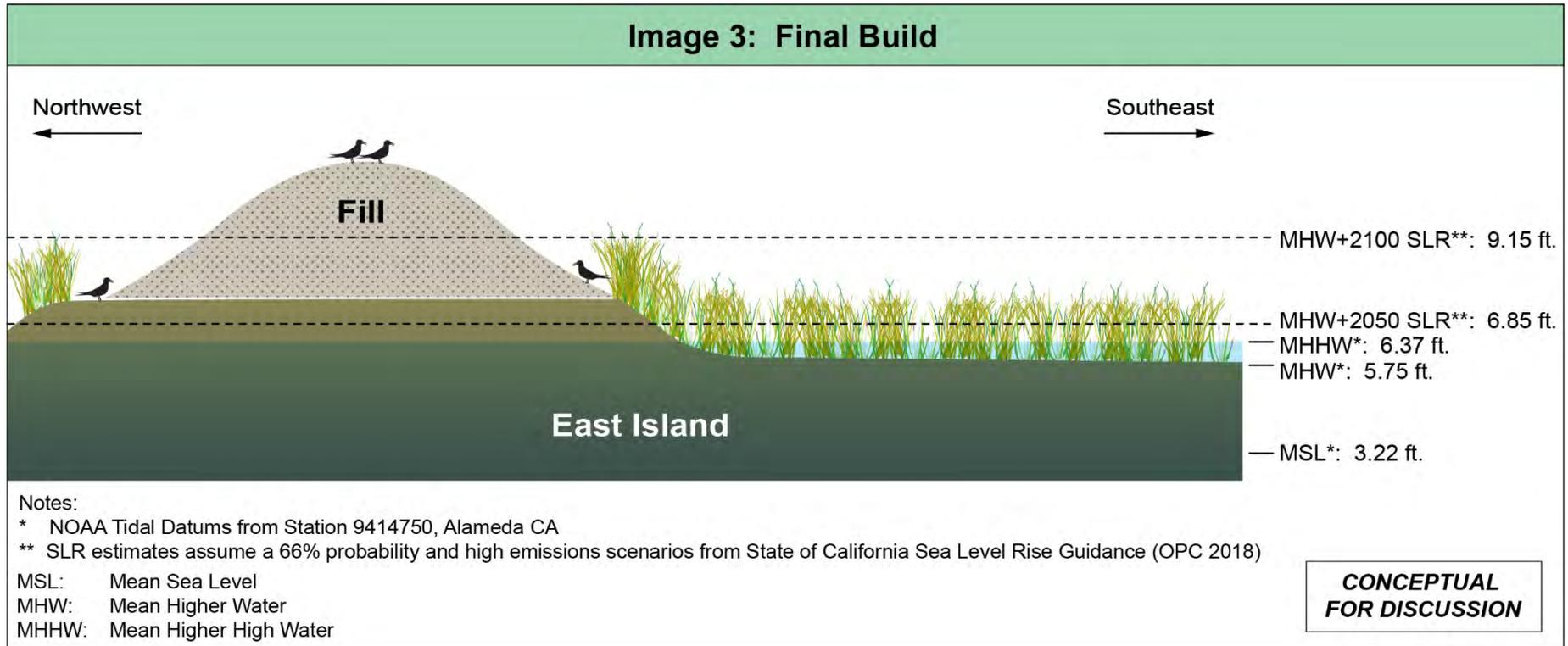
Proposed East Island Concept and SLR



Proposed East Island Concept and SLR



Proposed East Island Concept and SLR



Proposed Shorebird Mitigation: Comparison

Component	Current SFOBB Permit	Proposed East Island
Habitat at Fill Location	Bay Waters Near Eelgrass	Ruderal Shoreline Band
Fisheries Impacts	Likely Substantial (In Essential Fish Habitat)	Not Likely
Shorebird Habitat Created	500 sf above MSL	~20,000 sf above MSL (40X > SFOBB Required Mitigation) (5,000 sf resilient to SLR to 2100)
Tidal Wetland Restored	No, loss of 500 sf of tidal surface waters; and 4,047 sf of fill in submerged Baylands	Yes, ~24,000 sf of new tidal marsh
New Fill or In-Situ Beneficial Re-Use	New Fill (Rip Rap)	Beneficial Re-Use (Bay Mud)

Shorebird Signage

- Informational Signage already installed by East Bay Regional Park District at Oakland Touchdown
 - Notifications for visitors to avoid disturbance to birds
 - Large informational graphic noting the area's birds and wildlife habitats

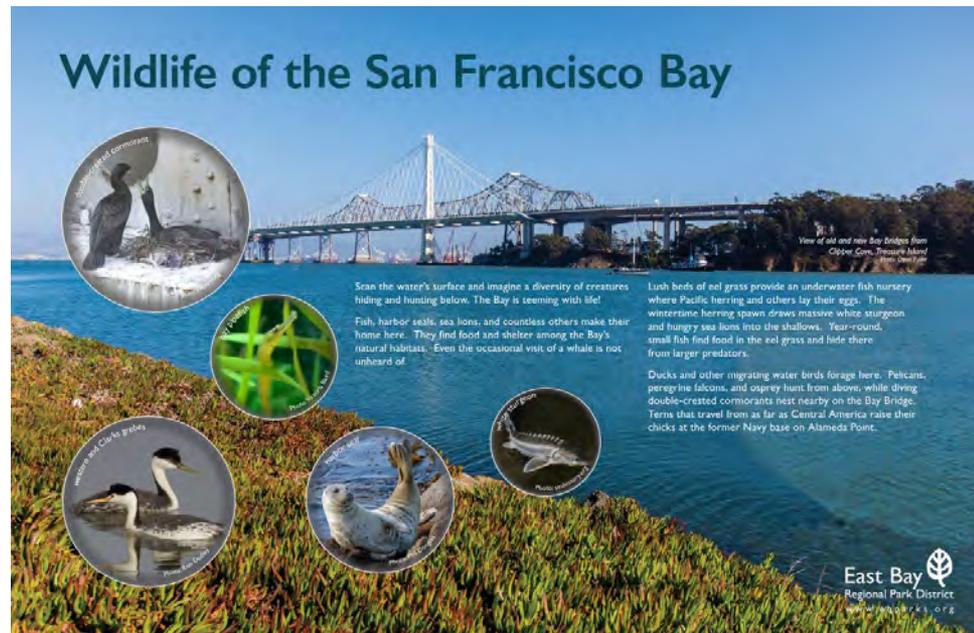
PLEASE RESPECT SHOREBIRDS

Birds use this Shoreline to Feed

YOU CAN HELP BY AVOIDING THE FLOCKS

East Bay Regional Park District

Wildlife of the San Francisco Bay



The graphic features a background image of the San Francisco Bay with the Bay Bridge. It includes several circular inset images: a bird on a nest, green eelgrass, a duck, a seal, and a fish. Text blocks describe the Bay's diverse life, including fish, seals, and birds, and the importance of eelgrass beds.

View of old and new Bay Bridges from Clifton Court, Treasure Island

Scan the water's surface and imagine a diversity of creatures hiding and hunting below. The Bay is teeming with life. Fish, harbor seals, sea lions, and countless others make their home here. They find food and shelter among the Bay's natural habitats. Even the occasional visit of a whale is not unheard of.

Lush beds of eel grass provide an underwater fish nursery where Pacific herring and others lay their eggs. The waterside herring spawn draws massive white sturgeon and hungry sea lions into the shallows. Year-round, small fish find food in the eel grass and hide there from larger predators.

Ducks and other migrating water birds forage here. Pelicans, peregrine falcons, and osprey hunt from above, while diving double-crested cormorants nest nearby on the Bay Bridge. Terns that travel from as far as Central America raise their chicks at the former Navy base on Alameda Point.

East Bay Regional Park District
www.ebrpd.org

Closing Summary Key Points

This amendment will:

- Create 40x more shorebird roosting habitat than currently required
- Create habitat that is resilient to sea level rise
- Avoid impacts on special aquatic sites (eelgrass, sandflat)
- Create new tidal marsh habitat
- Avoid new fill in the Bay
- Better serve 20+ species of shorebird, including individuals that inhabit the SFOBB area
- Replace a “grey” habitat development with a “green” solution
- Provide funding for maintenance, management, and monitoring



Thank you