

APPENDIX G

PUBLIC ACCESS AND RECREATION RESOURCES TECHNICAL APPENDIX

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This Appendix provides a summary of the recreation and public access features associated with the South Bay Salt Pond (SBSP) Restoration Project, Phase 2 Eden Landing Ecological Reserve (ELER) area actions, review of applicable plans and policies of regulatory agencies and project stakeholders, evaluation of trail use demand, and identification of key components and design guidelines for recreation and public access facilities that may be completed as part of this project, including strategies for design consistent with stakeholder and regulatory requirements. The project impacts associated with recreation and public access features are presented in Chapter 3.6, Recreation Resources, of the main text.

This Appendix contains information on the following components:

- Regulatory Framework;
- Existing Recreation and Public Access Facilities;
- Recreation Regulatory Permit Requirements;
- Phase 1 Recreation and Public Access Features;
- Phase 2 Recreation and Public Access Alternatives;
- Projected Trail Use; and
- Recreation and Public Access Design Guidelines.

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1. INTRODUCTION

A primary goal of the South Bay Salt Pond (SBSP) Restoration Project is to provide recreation and public access. The vision of the project is to help establish an interrelated trail system, provide wildlife viewing and interpretative opportunities, create small watercraft launch points, and allow for waterfowl hunting.

Phase 1 actions at Eden Landing included identification, design and implementation of trails and other public improvements at locations within each pond complex. This included several miles of new trails, interpretive features, and a kayak launch that were added to the northern half of the Eden Landing Ecological Reserve (ELER or Reserve).

Recreation and public access features to be evaluated as part of Phase 2 Action Alternatives, as well as information regarding uses in the surrounding vicinity were collected through several methods, including: stakeholder meetings and associated project information presentations; review of Geographic Information Systems (GIS) data compiled for this project; personal communications; site tours; research and review of existing plans, policies, regulations, codes, and reports; and baseline information contained in the SBSP Restoration Project Initial Stewardship Plan (ISP) and the SBSP Restoration Project Recreation and Public Access Phase I Existing Conditions Report, which is incorporated by reference.

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2. PHYSICAL SETTING

The Phase 2 project area includes the ponds in the southern half of the Reserve. All of the Eden Landing pond complex ponds are owned and managed by the California Department of Fish and Wildlife (CDFW) as part of the Reserve. In between some of the CDFW-owned lands, the Alameda County Flood Control and Water Conservation District (ACFCWCD) owns a stormwater channel, a stormwater detention basin, and a section of existing high marsh. There are also some private inholdings – including ponds, levees, and other lands – owned by Cargill. To the east, there are other parcels and facilities owned by ACFCWCD, Union Sanitary District, a private landfill operation company, the city of Union City and a mix of other private owners. Some of these lands may be considered for placement of public access facilities as part of Phase 2 actions.

Most of the recreation and public access facilities would be located on existing levees on or adjacent to the Phase 2 area, and would be located on lands owned by CDFW, Cargill, and/or Alameda County.

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3. REGULATORY SETTING

A detailed discussion of the regulatory framework for the SBSP Restoration Project area was provided in the project's Recreation and Public Access Existing Conditions Report. A summary of updated regulations related to recreation and public access is provided herein.

The portions of the SBSP Restoration Project Phase 2 at Eden Landing that are covered in the Draft Environmental Impact Statement/Environmental Impact Report (EIS/R) are primarily governed by the applicable codes, regulations, and policies of the State of California and California Department of Fish and Wildlife (CDFW), with additional regulation by the San Francisco Bay Conservation and Development Commission (BCDC). Together, these entities compose the primary legal and managerial framework with which to guide existing and proposed recreation and public access for the SBSP Restoration Project Phase 2. In some cases, public access facilities may be implemented on lands owned and/or managed by Alameda County Flood Control and Water Conservation District (ACFCWCD), East Bay Regional Park District (EBRPD), or private entities such as Cargill, for which an agreement to operate and manage public access would be needed. Such facilities would be subject to regulatory review by other local agencies, depending on precise alignment.

Additionally, the policies and guidelines of region-wide, recreation-related plans of agencies such as the Association of Bay Area Governments (ABAG) Bay Trail and, as well as county and city recreation and public access plans also influence the development of future recreation and public access facilities on SBSP Restoration Project, Phase 2 area lands; they are also summarized herein.

3.1 Recreation-Related Review and Permits

Proposed recreation components may be subject to various state and federal regulations that would require approvals and/or permits for proposed recreation and public access development.

CDFW will be the primary internal reviewer and approver of public access and regulatory facilities implemented on its lands. There are some options for a trail route that would be placed on lands not owned by CDFW. This includes the trail connection from northern Eden Landing to the Phase 2 area, as well as portions of several trail routes at the perimeter of the Phase 2 area. For those routes to be implemented, the owners of those parcels (e.g., Cargill, Alameda County) would have to sell, donate or enter into an agreement with the lead agency or implementing entity for public access, such as easement, memorandum of understanding or license agreement, for trail construction, use and/or management. The landowners would also review and approve the designs, plans, and other details.

Depending on the location of the proposed recreation and public access facilities located outside of the ELER (e.g., those on private and/or City or County –owned lands), local and regional jurisdictions may have regulatory review authority. In addition, the lead agency may partner with local or regional groups (e.g., EBRPD) to execute specific recreation-related agreements for implementation of public access components. Depending on the location and type of facilities to be built, agencies that may have review and/or permit requirements over proposed recreational components include the cities of Hayward and/or Union City, EBRPD and Alameda County.

Table G-1 provides a summary of the types of permits or agreements that may be required to carry out specific construction or maintenance activities associated with recreation and public access development.

Table G-1. Recreation-Related Regulations and Permit Summary

ADMINISTERING AGENCIES	DESIGN REVIEW/AGREEMENT/PERMIT	REGULATION
USFWS	Issues “no effect” or “not likely to affect” letter.	Consultation with USACE under Section 7
	Protects against destruction of migratory bird nests and possession of migratory bird “parts.”	Migratory Bird Treaty Act
	Federal Lead Agency	National Environmental Policy Act
CDFW	State Lead Agency; Project Applicant	California Environmental Quality Act
BCDC	Conducts reviews and issues permits for filling, dredging, substantial change in use, or development activities within the shoreline band, at the salt ponds or managed wetland areas, including recreation-related projects.	McAteer-Petris Act
RWQCB	Issues water quality certification.	Section 401 of the Clean Water Act, Porter-Cologne Water Quality Act
USACE	Issues Nationwide or Individual Permit to perform dredge or fill activities in the Waters of the U.S., including wetlands.	Section 404 of Clean Water Act
	Issues permit to create obstructions or fill of navigable waters of the U.S. (bridges)	Section 10 of the Rivers and Harbors Act of 1899
	Alteration of federal flood control levees (Bridge at ACFCC)	Section 408, Operations and Maintenance
United States Coast Guard	Navigable waterways (bridges)	Section 9, Coast & Harbors Act
EBRPD	Review if project partner for implementation: consultation regarding temporary closure of EBRPD trails, if needed	Master Plan and Trails Plan consistency
Alameda County	Construction of facilities on County-owned land (Responsible Agency)	Grading, encroachment, use agreement
Union City and/ or Hayward	Construction of facilities on land within the City limits that is not within County or State owned lands (Responsible Agency)	Grading, encroachment, use agreement possible design or recreation review

ACFCC = Alameda Creek Flood Control Channel

BCDC = San Francisco Bay Conservation and Development Commission

CDFW = California Department of Fish and Wildlife

EBRPD = East Bay Regional parks District

RWQCB = San Francisco Bay Regional Water Quality Control Board

USACE = United States Army Corps of Engineers

USFWS = United States Fish and Wildlife Service

3.2 Regulatory and Managerial Framework

CDFW is the primary land-owning and managing agency in the SBSP Restoration Project, Phase 2 area.

The San Francisco Bay Conservation and Development Commission (BCDC) will issue a permit for the project.

Union City, Alameda County and EBRPD own adjacent recreation facilities that could be built on or connect directly to trails and recreation facilities that would be constructed as part of the project. Minor encroachment permits may be needed for construction at access or connection points. In addition, there are plans, studies and policy documents for the area in and around Phase 2 of the SBSP Restoration Project that contain guidelines and recommendations for recreation and public access facilities.

3.2.1 CDFW Eden Landing Ecological Reserve

CDFW is the owner of Eden Landing, and as an ecological reserve, the Eden Landing pond complex is governed by laws and directives that guide public use and recreation on State ecological reserves. The State's ecological reserve system was authorized by the California Legislature in 1968 and is designed to conserve areas for the protection of rare plants, animals, and habitats, and to provide areas for education and scientific research. The reserves also provide recreational opportunities for wildlife viewing, outdoor education, hunting, and fishing, subject to regulation. At ELER, bicycles and horseback riding are allowed only on designated trails.

The Phase 1 Eden Landing area (northern ponds) includes the following recreation and public access facilities:

- Approximately 13,000 feet of Bay Trail, installed and managed by EBRPD. This Bay Trail segment is closed ten days per year to accommodate hunting.
- Other trails including 5,000 feet of year round trail, and 8,000 feet of seasonally closed trail, and a spur trail to the Bay shoreline. Part of the loop trail in northern Eden Landing is closed seasonally from March through mid-September to avoid wildlife disturbance.
- Accessible watercraft/kayak launch.
- Interpretive exhibits and signage.
- Benches and site furnishings.
- A paved parking area at the Eden Landing Road trailhead provides 24 parking spaces, of which one is designated for disabled use. The parking area receives consistent use, although no counts or intercept surveys of visitor use have been conducted by CDFW. Trail count data is available for this area from information collected by EBRPD and is summarized in appendix trail counts. There is an overflow parking area of equivalent size that has not been used since completion¹.

Recreation use currently within the Eden Landing Phase 2 area includes the existing Alameda Creek Regional Trail segment at the western end of the Alameda Creek Flood Control Channel (ACFCC) and limited to seasonal waterfowl hunting (currently 10 days per year with written permission from CDFW).

¹ John Krause, Pers. Comm. September 2016.

² Trail Count data provided by Sean Dougan, EBRPD email corres. 9/16

In the overall ELER, CDFW allows hunting in some of the ponds within the ELER. ELER conducts ten hunt days per year, with a capacity of 100 hunters. There has been consistent participation, with 44-130 hunters during each of the 2015-2016 hunt days.

There are several existing hunting blinds dispersed throughout the Phase 2 area. Most of these blinds are remnant facilities that were constructed prior to the property becoming part of the Reserve. CDFW has an informal policy to allow waterfowl hunters to maintain the facilities, as long as they do not interfere with wildlife (such as proximity to nesting areas) but does not actively maintain the facilities. One accessible hunting blind is provided within Pond 5EC. This blind is used consistently by one to four disabled users on hunt days.

Other uses and policies related to recreational use at ELER include:

- Horses could be allowed on “designated” trails within ELER, however, no trails are formally “designated”, and no equestrian use is currently allowed.
- Bicycles are allowed only on designated trails.
- Dogs are allowed associated with hunting, and may be allowed on leash.

Relationship to Phase 2 Actions

Hunting. Since the acquisition in 2003, CDFW has permitted limited waterfowl hunting on specified dates (currently 10 days annually between November and January, providing entry by written permission from CDFW at a hunter check station) within the ELER lands in the Phase 2 area, as well as areas north of OAC that were part of the Phase 1 actions. Restoration actions within the Phase 2 area will likely change the use and configuration of the current pond system, affecting the physical area available for such recreation activities, and/or the character of the recreation experience. For instance, managed ponds provide the best conditions for waterfowl hunting, so an increase in tidal ponds may reduce the physical area available for waterfowl hunting.

Only a portion of the southern Eden Landing ponds (those within the “Open Hunt Zone”) is currently open to hunting. With implementation of Phase 2 actions, there could be a considerable loss of hunting opportunities in those managed ponds that transition to tidal marsh habitat. Managed ponds at northern Eden Landing would remain, and hunting opportunities would continue to be available in those managed ponds and existing tidal areas. North Creek marsh in northern Eden Landing, which has been open to full tidal action for approximately 10 years, has been a popular waterfowl hunting area, as are fully tidal areas within OAC, and the outboard Whale’s Tail Marsh and mouth of Mount Eden Creek areas. More isolated marsh areas are accessed by hunters using small boats or kayaks, while some remaining berms and perimeter levees provide access by foot for hunting along and within such tidal areas.

Where existing blinds are removed to facilitate Phase 2 restoration activities, installation of new blinds (to facilitate hunting) by CDFW would be consistent with Reserve policies in areas where the use or management changes. Should access to the disabled access blind cease due to project design, it would be relocated to a similar location to provide an equivalent recreation experience, where feasible and available. Relocated blinds could reduce hunter access for others or contribute to overcrowding if quotas remain the same.

Public Access. For other recreation facilities added as part of Phase 2 implementation, use and operation would be prescribed by the managing authority and regulatory permit conditions. For instance, for portions of any trail designated as Bay Trail “spine” (the primary segment connecting Pond 20B in north Eden Landing with the Alameda Creek Regional Trail), it is expected that bicycles would be allowed, and the trail would be open year-round with the exception of waterfowl hunt days. As is the current practice, the Bay Trail spine would be closed to general use on waterfowl hunt days (currently 10 days per year) to ensure public safety. In addition, hunters are allowed to drive on portions of the Bay Trail spine to reach areas more remote from the sole entry allowed at the hunter check station. Any other trails (such as those that provide point access) might be similarly subject to seasonal closures or other restrictions. Equestrian use, which is allowed on the EBRPD’s Alameda Creek Regional Trail, may be regulated or restricted within the Phase 2 area. Management of dog use would likely be coordinated with policies on adjacent non-Refuge trails that connect to any new trail constructed for Phase 2.

3.2.2 San Francisco Bay Conservation and Development Commission

BCDC is a California state planning and regulatory agency with regional authority over the San Francisco Bay (or Bay) and the Bay’s shoreline. The McAteer-Petris Act (California Government Code 66600 – 66682) is the key legal provision under California state law that preserves San Francisco Bay from indiscriminate filling and to regulate shoreline public access. The McAteer-Petris Act requires that any person or governmental agency wishing to place fill in, or to extract materials exceeding 20 dollars in value from, or make any substantial change in use of any land, water, or structure within the area of BCDC’s jurisdiction must secure a permit from BCDC.

BCDC administers the *San Francisco Bay Plan* (Bay Plan) for the long-term use of the Bay, reviews applications for projects that fall within BCDC jurisdiction. With respect to the ELER, the Bay Plan states: “The California Department of Fish and Game manages and proposes to restore 5,500 acres of salt ponds and adjacent tidal habitats added to the Eden Landing Ecological Reserve to a mix of tidal and managed pond habitats. The proposed restoration use would be in accord with Bay Plan policies and provides excellent wildlife compatible recreation opportunities.”

Salt Pond Restoration

The BCDC amended the salt pond section of the San Francisco Bay Plan on August 18, 2005. The amendment focuses on the significance of salt ponds to Bay wildlife, on the opportunity for salt ponds to be restored to tidal action, and on the need to maximize recreation and public access opportunities while avoiding significant adverse effects on wildlife. Policy 5 of the amendment addresses the need for comprehensive planning of any development proposal in a salt pond that (1) integrates regional and local habitat restoration and management objectives and plans and (2) provides opportunities for collaboration among different stakeholders (e.g., agencies, landowners, other private interests, and the public). Relevant to recreation resources is the need to incorporate provisions for recreation and public access opportunities appropriate to the land’s use, size, and existing/and/or future habitat values in the planning process.

Public Access Design Guidelines

The San Francisco Bay Plan identifies the *Shoreline Spaces: Public Access Design Guidelines for San Francisco Bay* (handbook) as a guide to siting and designing public access. The handbook, published by BCDC, functions as a design resource for development projects along San Francisco Bay’s shoreline, and includes recommendations for site planning, designing, and developing attractive and usable public access

areas. The handbook also covers in-lieu public access and management issues associated with maintenance of public access areas. The handbook discusses general planning principles, and specifies that “the design of public access areas should create a sense of place based on the site’s unique shoreline characteristics, the aesthetic quality of the proposed development, and the intensity and nature of the proposed use” (BCDC 2005). The handbook identifies the following seven public access objectives and provides recommendations on how these objectives could be accomplished:

- Make public access public.
- Make public access usable.
- Provide, maintain, and enhance visual access to the Bay and shoreline.
- Maintain and enhance the visual quality of the Bay, shoreline and adjacent developments.
- Provide connections to and continuity along the shoreline.
- Take advantage of the Bay setting.
- Ensure that public access is compatible with wildlife through siting, design, and management strategies.

The handbook also identifies eighteen public access improvements that could be implemented with any given project. These improvements must be implemented in a manner consistent with the San Francisco Bay Plan’s public access policies, and some are required as part of the BCDC’s permit decisions. Included in these improvements are stormwater management systems, roads and highways along the shoreline, designated public access parking and staging areas, in-car Bay viewing, pedestrian and bicycle bridges, gathering and seating areas, site furnishings, signage/comprehensive sign programs, methods to avoid adverse effects on wildlife, shoreline erosion control, shoreline edge treatments that provide a closeness to the water, trail design, public access across launch ramps, shoreline planting, pedestrian and vehicular railings, fishing facilities, point access at ports and water-related industrial areas, and interpretative elements and public art. Although these are not legally enforceable standards, they are advisory and aimed at enhancing shoreline access and use.

Relationship to Phase 2 Actions

BCDC would have jurisdiction in the Eden Landing Phase 2 recreation and public access components and administer permit conditions related to their authority, as appropriate. As discussed above, a BCDC permit is required for filling, dredging, and substantial change in use of land, water, or structures within the area of BCDC’s jurisdiction. Typical BCDC permit conditions include requirements for public access and other improvements, as related to the construction, installation, use, and maintenance of public access areas. Permit conditions might also include making a commitment to ongoing management and monitoring of public access improvements. Recreation and public access facilities would be evaluated for compliance with the State’s climate change policies, including sea-level rise.

Recreation and public access facilities included in Phase 2 actions would be evaluated by BCDC for compliance with Bay Plan and ABAG Bay Trail Plan and policies. Where a proposed alignment does not fully comply with policies such as sea-level rise, alternate design strategies may be appropriate, and may include features such as:

- Constructing a trail footprint of sufficient width to allow raising the trail in the future (and have a trail with sufficient functional width).
- Reserving additional lands on the sides of unimproved trail for dedicated future trail improvements.
- Dedicating an alternate alignment where the trail would be located in the future. For instance, according to the Reserve Manager, the Mt. Eden Creek spur trail is intended to replace the ABAG Bay Trail planned spur trail along OAC out to the Bay at Whale's Tail Marsh (J. Krause, pers.comm. 2016).

3.2.3 San Francisco Bay Trail (Bay Trail)

The Bay Trail, administered by Association of Bay Area Governments (ABAG), is a planned recreational corridor that, when complete, will encircle San Francisco Bay and San Pablo Bay with a continuous network of bicycling and hiking trails. It will connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major toll bridges in the region. To date, approximately 310 miles of the alignment – over 60 percent of the Bay Trail's ultimate length – have been completed.

Relationship to Phase 2 Actions

Segments of the Bay Trail are located near the Eden Landing Phase 2 project area, including a segment of the Bay Trail that was added in northern Eden Landing as part of Phase 1 of the SBSP Restoration Project. Many of the public access facilities that would be constructed as part of the project could connect to these existing trail segments. Some new trail segments being considered as part of Phase 2 actions are not currently segments of the Bay Trail but could be considered to become part of the Bay Trail network in the future, if appropriate.

The Bay Trail Plan includes a shoreline spur to the Bay at Old Alameda Creek (OAC), as well as a bridge across ACFCC to access Coyote Hills Regional Park. The spur trail on Mt. Eden Creek, constructed under Phase 1 of the SBSP Restoration Project, was included along the managed ponds in northern Eden Landing to provide a similar experience for trail users and because it was anticipated that a spur trail along OAC would be problematic because of potential tidal breaches and adjacent species conservation concerns.

Although not a regulatory agency, ABAG has an interest in the project as a partner and potential funding source. The Bay Trail Plan has been prepared in consultation with local governments, and is periodically amended and updated in consultation with them. BCDC considers the Bay Trail Plan in making determinations as to whether a project is consistent with their policies on public access.

3.2.4 San Francisco Bay Area Water Trail (Water Trail)

The Water Trail was authorized by the San Francisco Bay Area Water Trail Act, which was signed into state law in September 2005. The Water Trail is a network of access sites (or "trailheads") that enables people using non-motorized small boats or other beachable sailcraft, such as kayaks, canoes, dragon boats, and stand-up paddle and windsurf boards, to safely enjoy single and multiple-day trips around San Francisco Bay.

Relationship to Phase 2 Actions

Non-motorized boat launch facilities constructed in the Phase 1 actions at northern Eden Landing are designated as existing Water Trail sites; they have launch facilities that are used for non-motorized small boat access and are open to the public. No additional Water Trail facilities are planned for Phase 2.

3.2.5 East Bay Regional Park District (EBRPD)

The East Bay Regional Park District (EBRPD) is a system of public parks and trails in Alameda and Contra Costa counties. The EBRPD owns and manages over 120,000 acres of open space, protected habitat, and other parklands. The 2013 District Master Plan provides the guidance for future expansion of parks trails and services. On the Master Plan, the Project Area is labeled Alvarado Wetlands, and potential trails 1B (San Francisco Bay Trail - Coyote Hills to Hayward Shoreline) and 11 (Old Alameda Creek Trail) are within the site. Policies related to trail development include:

- PRPT9: Regional Trails will connect regional parks or trails to each other, to parks and trails of other agencies, or to areas of unusual scenic beauty; vista points, San Francisco Bay, Delta or lake shoreline, natural or historic resources, or similar area of regional significance...
- PRPT10: The District encourages the creation of local trail networks that provide additional access points to the regional parklands and trails in order to provide loop trail experiences and to connect the regional system to the community. The District will support other agencies in completing local trail networks that complement the Regional Trail system and will coordinate with local agencies to incorporate local trail connections into District brochures.
- PRPT11: Regional trails may be part of a national, state, or Bay Area regional trail system. The District will cooperate with other agencies and organizations to implement these multi-jurisdictional efforts.
- PRPT18: The District will coordinate with other agencies and organizations involved in planning for jointly managed regional trails or trails that extend beyond the District's jurisdiction. When applicable, the District will use planning and environmental studies done by or in cooperation with other agencies for trail planning and development.

EBRPD is the owner and operator of Coyote Hills Regional Park, located south of Eden Landing, and Hayward Regional Shoreline, located north of Eden Landing. EBRPD also operates the Alameda Creek Regional Trail under an agreement with the ACFCWCD and manages the Bay Trail "spine" in the northern Eden Landing area, but not the "spur" trails and non-motorized launch.

Relationship to Phase 2 Actions

At the present time, no formal arrangements exist between CDFW and EBRPD for maintenance and shared responsibility of trails and other public access features in the Phase 1 or Phase 2 project area.

3.2.6 Alameda County Flood Control and Water Conservation District (ACFCWCD)

ACFCWCD is part of Alameda County Public Works Agency, responsible for maintaining the area's flood control facilities, including channels, levees, pumps and infrastructure related to flood control and stormwater management. The ACFCWCD provides planning, design and inspection of flood control

projects, maintains flood control infrastructure, reviews new developments and supports watershed enhancement and education. ACFCWCD does not construct or manage trails, and would need to enter into an agreement with another entity for trail management, making them responsible for construction, maintenance, and operations of the trail, including patrol policing and emergency response. Flood control channels and creeks in the Phase 2 project area are in Zone 3A.

Relationship to Phase 2 Actions

Some of the proposed trail route options are located on County lands, including levees, access roads, ponds and the 20-tide gate structure crossing on OAC.

3.2.7 Cargill, Inc.

Cargill Inc. owns and operates lands in the Phase 2 project area including Pond Cargill Pond 3C (CP3C), Cal Hill and Turk Island. Proposed Trail Route 2 would be located on the existing Cargill owned levee only if an agreement with Cargill and all stakeholders were reached, or if they no longer owned the property.

Relationship to Phase 2 Actions

In order to proceed, an agreement with Cargill would be needed for construction, operation and management to open these lands to public access.

3.2.8 City of Hayward

ELER is within the city limits of Hayward, as are portions of County-owned lands west of Westport Way. Facilities that are located within the Reserve would not be subject to regulation by the City, since they are state lands.

Relationship to Phase 2 Actions

There are no existing or proposed recreation or public access facilities in the area that conflict with adopted City of Hayward plans.

3.2.9 City of Union City

The eastern and southern part of the Eden Landing Phase 2 project area, including County and Cargill-owned lands is within the Union City limits. In 2004, Union City (Alta Planning 2004) commissioned a study analyzing the feasibility of a Bay Trail segment from the EBRPD trail in northern Alameda County to the Alameda Creek Regional Trail (**Figure G-1**). Some of the trails proposed for the Phase 2 actions include portions of the trail segments analyzed as part of this study, including the northern Eden Landing segment along OAC, and portions of Trail Route Option 3.

In addition to access at Union City Blvd., the study identified five Community Connectors, “an important part of the Bay Trail system, ensuring that residents of neighborhoods located near the primary Bay Trail alignment have ready access to the regional trail network.” These community connectors were located at OAC south levee, Horner Street, Whipple/Benson Road, Mariner Park, and Westport Way. These routes have been incorporated into the City’s Bicycle and Pedestrian Plans, as well as those of Alameda County.

**Figure G-1. Union City Bay Trail Feasibility Study Preferred Alignment
(source: Alta Planning, 2004)**



Figure 3-3
Preferred Alignment Map

Relationship to Phase 2 Actions

Depending on the alignment selected, recreation and public access improvements completed as part of the project (but outside the boundaries of the Reserve) may be subject to review and approval by the City of Union City.

3.2.10 Alameda Countywide Bicycle and Pedestrian Plans

The Alameda County Transportation Commission (ACTC) plans, funds and delivers transportation programs to expand and improve access and mobility in Alameda County. They administer funds from local state and federal funding sources, including Measures B and BB, vehicle registration, Clean Air funds, State Transportation Improvement Program and federal programs.

The Countywide Bicycle and Pedestrian Plans (2012), adopted by the ACTC identify specific investments and strategies to maintain, manage, and improve the non-motorized transportation network in Alameda County. The bicycle and pedestrian plans incorporate the ABAG Bay Trail components (ACTC central and south) within the Eden Landing Phase 2 area, including the Bay Trail spine (with notation that final alignment is to be determined), a spur trail on OAC, and a bridge across ACFCC. The plans also include a new connection to the city street network in the general vicinity of the 20-tide gate structure.

Relationship to Phase 2 Actions

Coordination with ACTC would be needed if the project partnered with them for funding of bicycle and pedestrian improvements. .

3.2.11 Other Planning Efforts

Other plans that guide or influence development of recreation and public access facilities for the SBSP Restoration Project area are summarized below.

The CDFW and USFWS published the South Bay Salt Pond Restoration Project Interim Stewardship Plan (ISP) in June 2003². The ISP described the interim operation and maintenance of the former Cargill ponds prior to the development of the long-term plan. A Draft Environmental Impact Statement / Environmental Impact Report (EIS/R)³, published in December 2003, was conducted to evaluate the environmental impacts that could occur with implementation of the ISP. The Final EIR/EIS for the ISP was published in March 2004.

The ISP summarized relevant regional plans that support open space, recreation, and public access uses. It did not provide policies or regulations associated with management of recreation or open space; rather, it references those documents that provide guidance on wetland restoration and address recreation and public access. The ISP indicates that many of the land use and open space elements for the county and cities are outdated, and land use planning documents and programs often supersede the documents and programs of local jurisdictions with respect to planning, protection, and restoration of lands within the Estuary. The ISP reviewed versions of the respective plans including BCDP's San Francisco Bay Plan⁴, the San Francisco Estuary Project's (SFEP) Comprehensive Conservation Management Plan (CCMP)⁵,

² Life Science!, June 2003, *South Bay Salt Pond Restoration Project Initial Stewardship Plan*.

³ EDAW, Et. al., December 2007, *South Bay Salt Pond FEIS/R*.

⁴ San Francisco Bay Conservation and Development Commission, 1968, amended October 2006, *San Francisco Bay Plan*.

⁵ San Francisco Estuary Project, 2007, *Comprehensive Conservation Management Plan*.

the Baylands Ecosystem Habitat Goals Report⁶, the San Francisco Bay Joint Venture (SFBJV) Implementation Strategy⁷, and the Bay Trail Plan⁸ for their wetland restoration goals and objectives, some of which include support for recreational opportunities. The ISP was eventually integrated into and superseded by the programmatic planning process for the SBSP Restoration Project as a whole, which included a separate joint NEPA/CEQA process and environmental document. This Final EIS/R was published in 2007 and included the program-level environmental impacts and mitigation measures as well as those for the Phase 1 project actions.

These early plans, as well as others that provide guidance on development of recreation and public access components in or near the SBSP Restoration Project's Eden Landing Phase 2 area are summarized in **Table G-2** and should be considered during implementation of recreation and public access features to ensure consistency and coordination between projects.

Table G-2. SBSP Restoration Project Public Access Plans and Projects Considered in ISP

RELATED PLANS	AGENCY IN CHARGE	PLAN ESSENCE AND RELEVANCE TO RECREATION
Baylands Ecosystem Habitat Goals Report (1999)	San Francisco Bay Area Wetlands Ecosystem Goals Project	The Report is a guide for restoring the Baylands and adjacent habitats of the San Francisco Estuary. It recommends the types, extent, and distribution of habitats needed to sustain healthy wetlands ecosystems in the South Bay and the assessment of opportunities and constraints for public access during the design phase of all restoration activities.
SFBJV Implementation Strategy (2001)	SFBJV	The Strategy builds on the science-based recommendations of the Goals Project and establishes acreage goals for wetlands restoration, including bay habitats, seasonal wetlands, and creeks and lakes. The Implementation Strategy recognizes the contribution of recreation activities at wetlands.
Public Access and Wildlife Compatibility Staff Report, 2008	BCDC	A study to review the effects on wildlife from recreation and public access with strategies for minimizing adverse impacts through siting, design and management of public access.
The Bay Trail Plan	Association of Bay Area Governments (ABAG)	The Plan proposes to develop 500 miles of regional hiking and bicycling trails around San Francisco Bay and San Pablo Bay that connect more than 90 parks and publicly accessible open spaces and future water trails. (Portions of the proposed Bay Trail shown near the Phase 2 area are shown as conceptual alignments to be analyzed prior to final design.)
Wildlife and Public Access Study Preliminary Findings	Bay Trail Project	Scientific investigation of the potential effects of recreational trails on shorebirds and waterfowl that use mudflat foraging habitat adjacent to San Francisco Bay.

Note: Please refer to the South Bay Salt Pond Restoration Project Recreation and Public Access Existing Conditions Report.

3.2.12 Accessibility Regulations

Access to project facilities by people of all abilities is subject to regulations and standards set forth by the United States Access Board (<https://www.access-board.gov/>). The United States Access Board is an independent federal agency that promotes equality for people with disabilities, and develops and maintains design criteria for the built environment. The United States Access Board has developed standards for facilities as part of the Americans with Disabilities Act (ADA), which ensures access to the built environment for people with disabilities.

⁶ Monroe, M. et al, SFEI, 1997, *Baylands Ecosystem Habitat Goals Report*.

⁷ San Francisco Bay Joint Venture (SFBJV), 2001, *Implementation Strategy*.

⁸ Association of Bay Area Governments, 1999, *Bay Trail Plan*.

Americans with Disabilities Act

The United States Congress enacted the Americans with Disabilities Act (ADA) in 1990 to address discrimination against individuals with physical and mental disabilities. The ADA Standards establish design requirements for the construction and alteration of facilities subject to this law. These enforceable standards apply to places of public accommodation, commercial facilities, and state and local government facilities.

Title 24, California Building Code

The State of California has adopted a set of design regulations for accessible facilities that incorporate state mandates and federal ADA guidelines. These provisions are contained in the California Code of Regulations, Title 24, Part 2, California Building Code (CBC)⁹. CBC contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. The 2016 CBC will become effective on January 1, 2017 and is updated every three years.

Relationship to Phase 2 Actions

Recreation and public access facilities that are built as part of Phase 2 will need to comply with Title 24 and ADA accessibility regulations. This will be reviewed as part of permitting actions for project construction.

3.3 Existing Recreation and Public Access Facilities

The existing recreation and public access facilities in and near the Eden Landing Phase 2 ponds are shown on **Figure G-2**. Existing recreation and public access facilities in and near the project area (as well as facilities proposed by projects or general, master, or recreation plans other than the SBSP Restoration Project) are described in **Table G-3**. This list is not meant to be comprehensive or exhaustive of every public access opportunity or recreational resource, but it is intended to give a sense of the existing conditions regarding recreation and public access in the vicinity of Eden Landing.

⁹ California Code of Regulations, Title 24 Part 2, July 2016.

Figure G-2. Recreation and Public Access in the Vicinity of the Phase 2 Area

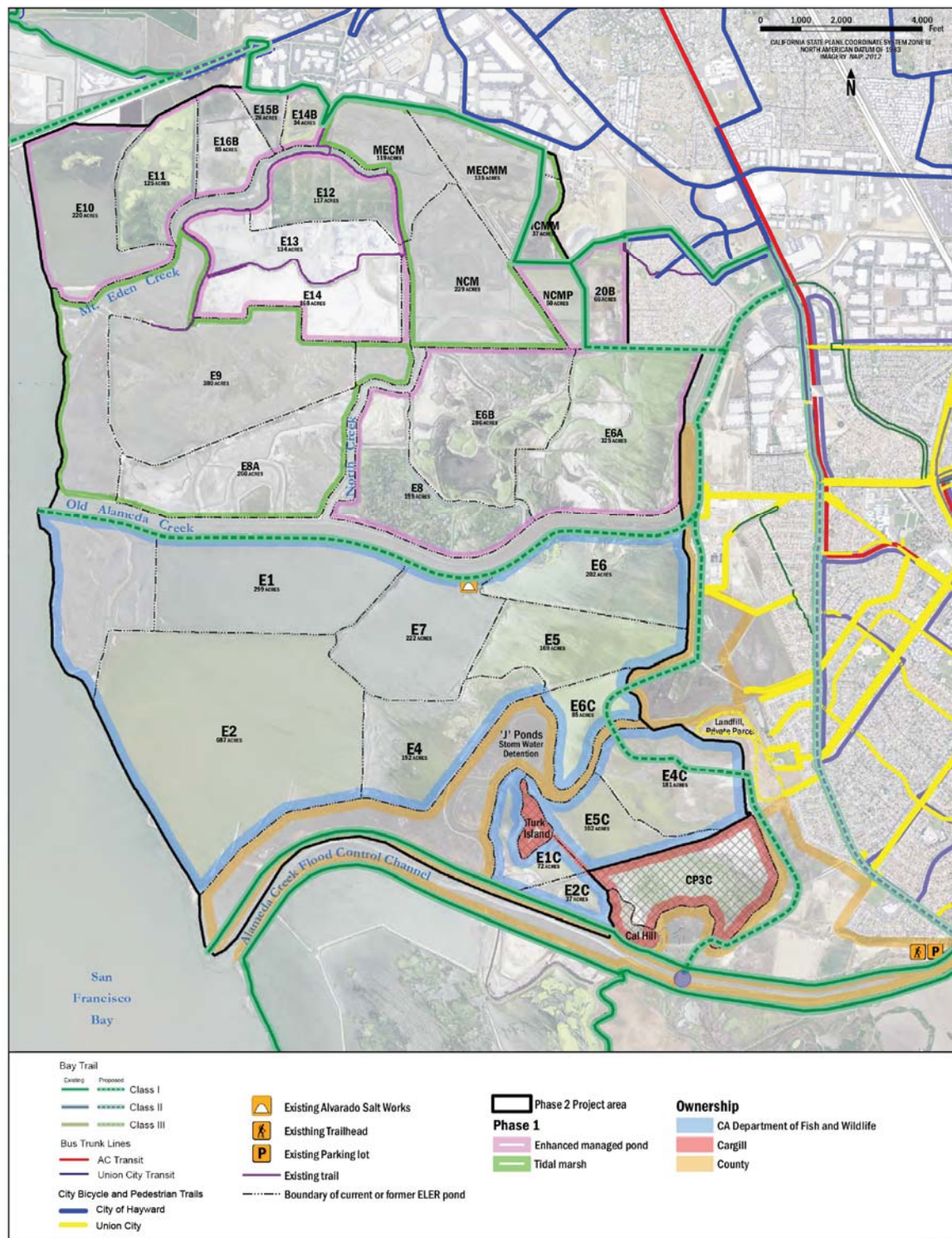


Table G-3. Existing Public Access and Recreation at or near Eden Landing

RECREATIONAL FEATURES	NEARBY LOCATIONS
Trails	<ul style="list-style-type: none"> Phase 1 of the SBSP Restoration Project added year-round and seasonal trails inside of northern Eden Landing (a Bay Trail spur). The nearest segment of the Bay Trail on open space is in northern Eden Landing over a mile to the north of the Phase 2 project area. City streets used for Bay Trail access are approximately 0.5 mile to the east. The Alameda Creek Regional Trail is an EBRPD-managed pair of trails on both levees of the ACFCC, one of which is on the southern border of Eden Landing. The Coyote Hills Regional Park is to the south of the ACFCC and includes several trails.
Boating	Phase 1 of the SBSP Restoration Project added a launch for non-motorized boats (e.g., kayaks) along Mt. Eden Creek, which drains into San Francisco Bay from northern Eden Landing.
Access Points and Staging Areas	<p>Northern Eden Landing</p> <ul style="list-style-type: none"> The Phase 1 actions (trails and non-motorized boat launch in northern Eden Landing) are connected to the existing Bay Trail parking lot and staging area. <p>Alameda Creek Regional Trail</p> <ul style="list-style-type: none"> There is a parking area and a trail access point on the north side of the Alameda Creek Regional Trail east of the Phase 2 project area. This access includes equestrian staging. <p>Eden Shores Access</p> <ul style="list-style-type: none"> Bay Trail connector via Eden Shores neighborhood, Hayward
Historic Features	<ul style="list-style-type: none"> Oliver Salt Works at the northwest end of Pond E13 Union City Salt Works at the northwest end of Pond E6
Waterfowl Hunting	CDFW allows limited waterfowl hunting, currently 10 annually specified days within the season, by issuing written permission at a hunter check station for certain portions of Eden Landing.
Dog Use	Dogs are allowed for retrieval use in hunting areas during waterfowl hunting season. Dogs are allowed on leash on the Alameda Creek Regional Trail. Dogs are precluded from certain sections of the Bay Trail, including areas within Eden Landing, per EBRPD regulations.
Equestrian Use	Horses are allowed on Alameda Creek Regional Trail.
Fishing	Fishing by boat is allowed in the Bay and sloughs and from shore in areas designated by CDFW.
Active Recreation	<ul style="list-style-type: none"> Gordon E. Oliver Eden Shores Park, Hayward, located 1,000 feet east of a project proposed trail, has basketball, tennis, playfields, parking area and picnic facilities Sea Breeze Park, Union City, located 700 feet east of the project proposed Route 3 and 3,000 feet east of Routes 1 and 2, has ball fields, play area, picnic facilities and parking area.

that certain trails shown on the maps in the 2007 EIS/R might not be feasible to implement in consideration of the project's wildlife habitat-related goals.

4.2 Managed Pond Emphasis

Recreation and public access components. This alternative included continuation of the Bay Trail spine generally along the eastern edge of ELER, including a bridge over ACFCC. This alternative included two loop trail segments, at OAC (including a bridge) and south of Pond E4C. A neighborhood connector was included at Westport Way. Recreation facilities included three viewing platforms: at the northeastern edge of Pond E6A, at OAC and Pond E2C.

4.3 Tidal Habitat Emphasis

Recreation and public access components. This alternative included completion of the Bay Trail spine, generally along the eastern edge of ELER, including a bridge over ACFCC. One loop trail segment through the southern ponds, and a spur trail to the Alvarado Salt Works was proposed. Recreation facilities included three viewing platforms: at the northeastern edge of Pond E6A, at the Alvarado Salt Works, and overlooking the J-Ponds.

4.4 Programmatic Public Access Features Not in Phase 2

The programmatic portions of the 2007 EIS/R included the following recreation and public access features that were not included in Phase 1 and are not included in the current plans for the Phase 2 actions, although some of these features could be included, depending on final design:

- Wildlife viewing platform at the northwest corner of Pond E6A (in northern Eden Landing).
- Wildlife viewing platform within the Southern Ponds.
- Bay trail access connection to Union City in the vicinity of Westport Way (this is included as part of Route 3).
- Potential trail alignments along the north and west side of Pond E6C, rather than only on the south side.
- Bay Trail alignment along the east side of Pond E4C and Cargill CP3C (instead, one proposed alignment has shifted further west and wraps around the Southern Ponds; another stays east and terminates at Westport Way).

Note that the Action Alternatives under consideration for Phase 2 at Eden Landing include substitutes for many of these features that were not included in these alternatives. For example, there is a proposed wildlife viewing platform along the Alameda Creek Regional Trail adjacent to the Southern Ponds and not far from the location on the map of Programmatic Alternative C. Similar adjustment to the various portions of the Bay Trail spine through southern Eden Landing have been made to resemble the trail options shown in the 2007 EIS/R. Adjustments to portions of the Bay Trail spine through southern Eden Landing have been made to reflect restoration options and are equivalent to those shown in the 2007 EIS/R.

5. PHASE 2 EDEN LANDING RECREATION AND PUBLIC ACCESS ALTERNATIVES

5.1 Overview

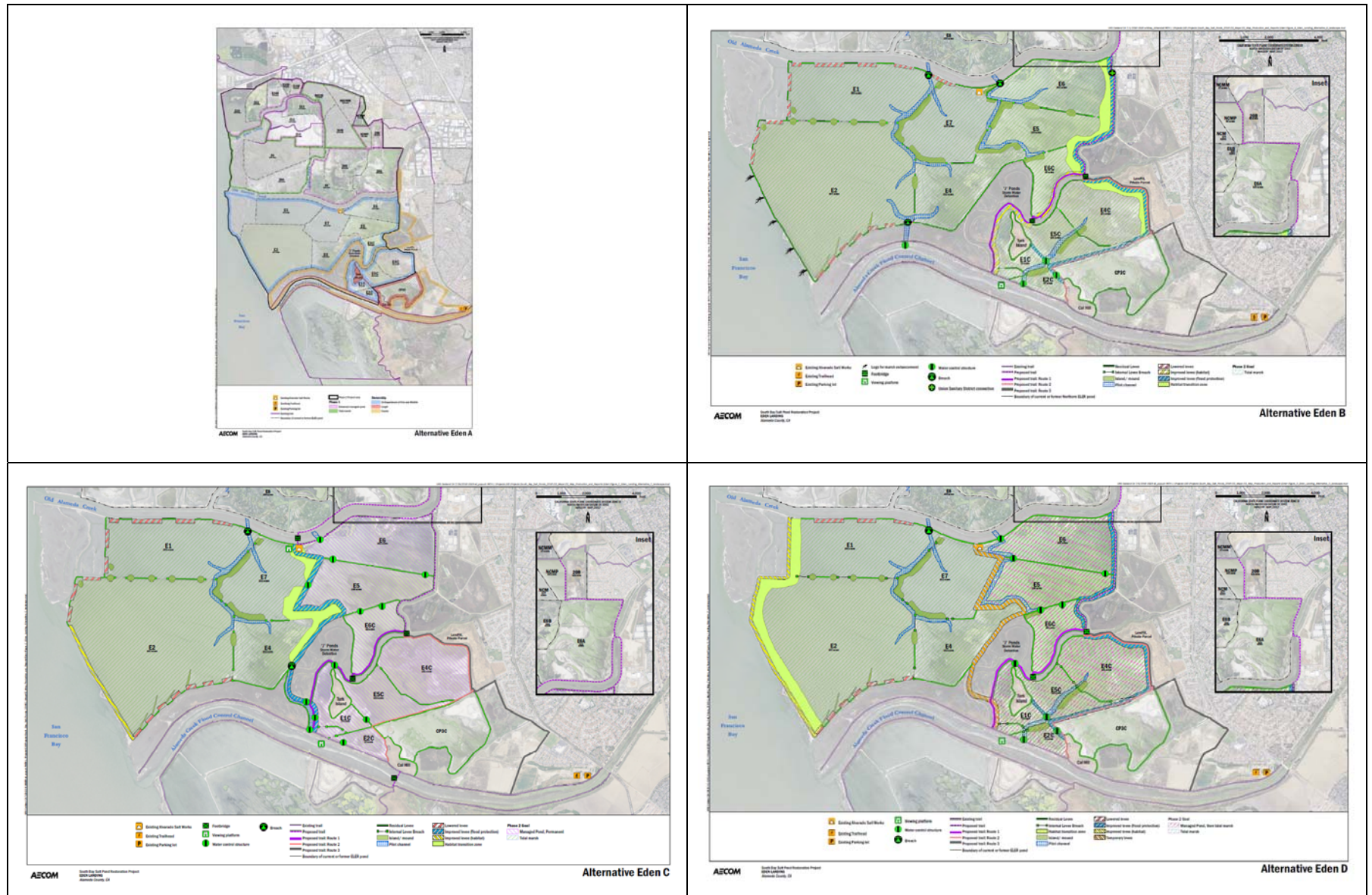
The Phase 2 project area at Eden Landing includes all eleven CDFW-owned ponds in the southern half of Eden Landing; the levees surrounding each pond; the fringing marsh outside of these levees; the ACFCWCD-owned storm water detention ponds and high marsh, portions of the OAC channel, the northern levee of the AC FCC, and some Cargill-owned levees bordering CDFW's ponds. Also, a Union Sanitary District outflow pipe and East Bay Discharge Authority (EBDA) treated wastewater force main immediately adjacent to the border of Eden Landing is also included in the project area, as well as connections to Alameda County Water District's (ACWD) Aquifer Reclamation Program (ARP) wells. Existing Pacific Gas and Electric (PG&E) power transmission and distribution lines are also included in the project area. Recreation and public access facilities are also evaluated that would be located on lands owned by ACFCWCD and Cargill, as well as construction access that would occur across land owned by Union Sanitary District, City of Union City, and Alameda County.

The Eden Landing Phase 2 Action Alternatives propose restoration, flood management, and recreation/public access activities in the southern half of Eden Landing. Existing trails, trailheads, access points and viewing platforms in the surrounding areas that are not within the project area would remain unchanged; however, some existing trail facilities may be subject to temporary closure or relocation during project construction. The Action Alternatives focus on different restoration and flood risk management options: (1) restoring the entire area to predominantly tidal marsh; (2) restoring a mix of tidal marsh and managed ponds; and (3) a two-stage restoration that would restore the area to tidal marsh through an adaptive management process. Three recreation and public access route options are also evaluated within the context of the Action Alternatives. The proposed recreation and public access features would construct a segment of the Bay Trail spine through southern Eden Landing to close an existing gap in the Bay Trail. The recreation and public access features would provide access to existing parks and trails by adding two local connector trails, and would also provide interpretive amenities. The new recreation and public access facilities would provide access to CDFW lands that would not occur without the project. At a minimum, the Action Alternatives include construction of a Bay Trail spine segment to provide partial-to-complete closure of a gap in the Bay Trail. This trail is proposed along one of three routes being evaluated in the Action Alternatives. Additional spur trails could also be implemented, as shown in Alternative Eden C; these trails would not be considered the primary Bay Trail spine.

Two construction access points have been identified to accommodate site construction, via the Horner/Veasby Street access, and via Westport Way in the vicinity of Sea Breeze Park. The SBSP Restoration Project intends to coordinate with EBRPD, the City of Union City, and other adjacent landowners (including Union Sanitary District and ACFCWCD) regarding these access points as "community connections" that would provide ongoing public access connections through agreement with the underlying property owners. Although physical improvement of the access roads or trails for construction purposes (such as leveling, widening and/or surfacing) may be necessary, it is anticipated that physical improvements needed to convert this access for trail use would be minimal, such as surfacing, signage and entry gates.

The proposed recreation and public access features are shown in Chapter 2 – Alternatives of the Draft EIR/S and reproduced in **Figure G-4**.

Figure G-4. Eden Landing Phase 2 Alternatives



5.2 Alternative Eden A (No Action)

Under Alternative Eden A, no new public access or recreation features would be completed. Existing trails, the non-motorized boat launch, and other features in northern Eden Landing would be retained and managed by CDFW, as would the EBRPD's Alameda Creek Regional Trail along the north and south ACFCC levees. The latter of these would continue to be separately maintained by EBRPD. Seasonal hunting in portions of Eden Landing would continue. The existing Bay Trail spine would continue to have a gap between the current trail near the Eden Shores development (along the eastern edge of northern Eden Landing) and the Alameda Creek Regional Trail adjacent to ACFCC and Coyote Hills Regional Park.

5.3 Recreation and Public Access Components Included in all Action Alternatives

Each of the Action Alternatives includes extending the Bay Trail from the existing trail in northern Eden Landing near the Eden Shores development to the southeast corner of Pond E6C. The Bay Trail would extend approximately 16,000 feet from the junction of Pond NCMP and Pond 20B, south and east along the border of ELER, across the 20-tide gate structure in the OAC channel and on the ACFCWCD levee near Veasy Street and USD into southern ELER. It would then continue on CDFW levees to the southeast corner of Pond E6C. There would be no restoration, levee improvements or flood risk management measures implemented in the northern ponds associated with completion of this trail segment. Fencing, infrastructure or other improvements may be needed to protect ACFCWCD facilities, as discussed in Appendix G.

The existing levees in this portion of northern Eden Landing are at elevations 7 to 9 feet (North American Vertical Datum of 1988 or NAVD88) for interior levees, and 10 feet along OAC, with a crest width of 9 to 12 feet. The USD/ACFCWCD levee is at elevation 14 to 16 feet (NAVD88) with a surfaced width of 12 feet or more. Levees on the east side of Ponds E5 and E6 are at elevations 12 feet (NAVD88) and above, with a minimum crest width of at least 12 feet, and the east side of Pond E4C is at elevation 11 feet (NAVD88) with a surfaced width of 6 feet or less.

Trail Route Options. From this location, the trail would continue on one of three routes:

- Route 1: CDFW Property only; 7,400 linear feet; to be placed on existing or improved levees.
- Route 2: CDFW & Cargill Property (subject to sale, easement, or use agreement with CDFW or another cooperating partner); 10,500 linear feet; to be placed on the eastern and southern levees of the Southern Ponds, where they wrap around the CP3C and Cal Hill or provide access to Turk Island.
- Route 3: CDFW & Alameda County Property; approximately 5,200 linear feet; to be placed on the CDFW-owned levee on the eastern side of Pond E4C and then route onto County lands to the east onto existing sidewalks in Union City at Westport Way. The eastern portion of this trail would be located on 1,000 feet of existing 10 to 12 foot-wide access road to be improved for trail use, terminating at Westport Way, at approximate elevation 7 to 8 feet.
- Each of the Action Alternatives would include one new viewing platform on the Alameda Creek Regional Trail.

- Each of the Action Alternatives would include improvements to the project construction access roads at two locations to allow neighborhood access to the trail.

This section describes each of these route options within the context of the restoration and flood management alternatives being evaluated.

Route 3 Modifications. During the scoping process for the Phase 2 project at southern Eden Landing, an additional trail segment for Route 3 was under consideration. As discussed above, Route 3 includes a segment that connect from the bridge over the ACFCWCD channel, around Pond E4C, and then along the 1,000 feet of improved access road to Westport Way. From there, however, an additional trail segment would have turned south through County-owned lands located behind houses on Monterey Drive, and wrap around to Union City Boulevard. The trail would have used Union City Boulevard sidewalks for about 700 feet, and then ACFCWCD access roads (at elevation 9 feet [NAVD88], with a width of at least 8 to 10 feet) for about 3,000 feet until it connected with the Alameda Creek Regional Trail.

This route was identified as the preferred alignment in the Union City Bay Trail Feasibility Study, with the caveat that this segment could be one of the most challenging, with potential wetland/biological impacts, berm/fill geotechnical and structural issues, right of way ownership, and cost, including either extensive fill and retaining wall, or construction of a boardwalk behind Monterey Drive (estimated at 1.4 to 2.9 million in 2005 dollars). Due to the range of potential environmental issues and costs associated with this segment, Route 3 was subsequently shortened to terminate at Westport Way. The additional trail segment (south of Westport Way) would not be precluded if implemented as a future, separate project by local agencies, but would not be implemented as part of Phase 2 actions.

5.4 Alternative Eden B

Alternative Eden B focuses on restoring much of the Phase 2 area to tidal marsh. In this alternative, the existing levee along the eastern edge of the project area would be raised and improved, as would the levees along the northern and western edges of CP3C. Levees would also be improved for habitat separation purposes along the western edge of Pond E1C and the southern edge of Pond E6C. Trails south of OAC would be located on levees improved for habitat or flood risk management purposes, and would be constructed of sufficient width to comply with Bay Trail guidelines, with a minimum top width of 18 feet.

Recreation/Public Access Alternative Eden B, Route 1

Minimum trail width: 18 feet (south of OAC) **Trail elevation:** minimum 12 feet (south of OAC)

Route B1 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 7,400 feet southwesterly on the improved habitat levees, terminating at the Alameda Creek Regional Trail east of the J-ponds. One 300-foot long pedestrian bridge would be constructed crossing the J-ponds at the southwestern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along the Alameda Creek Regional Trail.

Anticipated shoreline views would be predominantly of tidal marsh, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

Recreation/Public Access Alternative Eden B, Route 2

Minimum trail width: 18 feet (south of OAC) **Trail elevation:** minimum 12 feet (south of OAC)

Route B2 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 10,500 feet south and west along Pond E4C improved levee, west/south along CP3C levee and connect with the Alameda Creek Regional Trail on the west side of Cal Hill (owned by Cargill). One 250-foot long pedestrian bridge would be constructed crossing the J-ponds at the southeastern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Anticipated shoreline views would be predominantly of tidal marsh, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

Recreation/Public Access Alternative Eden B, Route 3

Minimum trail width: 8 to 10 feet (south of OAC) **Trail elevation:** 7 to 8 feet

Route B3 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue south along Pond E4C improved levee, then east along an existing access road that terminates at Westport Way. No new Bay Trail facilities would be built south of Westport Way. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Anticipated shoreline views would include tidal marsh, managed lands, and landscaped urban areas, with water views expected at OAC and along the Alameda Creek Regional Trail.

5.5 Alternative Eden C

Alternative Eden C focuses on a combination of tidal marsh and permanently managed ponds. This would be accomplished by constructing a mid-complex levee bisecting the project area, with a habitat separation levee along a portion of the existing Bay shoreline. Trails would be located on existing and unimproved levees at current widths and elevations, except for a 1,000-foot long section west of Pond E1C. Where the trail is located adjacent to managed ponds or other habitat areas, operations and maintenance (O&M) agreements would be used to permit routine maintenance (J. Krause, pers. comm. 2016), however, the ability to provide maintenance and reconstruction may be constrained in the future due to potential wildlife or habitat disruption.

Alternative Eden C includes several features for improved recreation and public access; these would be completed in addition to any of the Alternative Eden C trail route options:

- A 600-foot long bridge over ACFCC near Pond E2C to connect with the existing Bay Trail that continues to the south. This bridge would be high enough in the center to allow periodic channel dredging as well as high enough over its entire length to allow 100-year floods to pass beneath the bridge. The bridge would be intended to be accessible to pedestrians and bicycles and not necessarily by maintenance vehicles.

- A new Bay Trail spur trail to the former site of the Alvarado Salt Works. This spur trail would run along the northern edge of Pond E6 to a viewing platform and interpretive feature that would be included there to explain the history and the remnant structures there. The mid-complex levee would be built to the west of the former salt works site so that its degradation would not be accelerated. From this point, a 500-foot long bridge would cross over the OAC channel, and a parallel trail would run eastward, back to the Bay Trail spine, along the southern levees of Pond A8 and E6A to form a loop. The total length of this trail loop is approximately 13,500 feet.

Recreation/Public Access Alternative Eden C, Route 1

Minimum trail width: 8 feet (south of OAC) **Trail elevation:** minimum 8 to 9 feet

In addition to the recreation features described above, Route C1 includes continuation of the Bay Trail from its current trail within the Phase 1 area on CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 7,400 feet southwesterly on an existing levee, terminating at the Alameda Creek Regional Trail east of the J-ponds. One 300-foot long pedestrian bridge would be constructed crossing the J-ponds at the southwestern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Trail improvements would include clearing, grading, and/or surfacing the existing levee surface as needed to be appropriate for trail use, but no levee reconstruction, widening or raising for the trail elevation would be completed, except for a 1,000-foot long section to be located on the improved levee west of Pond E1C. This route would be protected from flooding and sea-level rise impacts by the improved levee further west.

In some areas, the trail would be located on unimproved levees that may deteriorate over time, necessitating maintenance such as topping or reconstruction to provide usable trail width and elevation.

Anticipated shoreline views would be predominantly of managed ponds and the improved levee, with water views expected on the 1,000-foot long segment of improved levee, at OAC and at the Alameda Creek Regional Trail terminus.

Recreation/Public Access Alternative Eden C, Route 2

Minimum trail width: 8 to 10 feet (south of OAC) **Trail elevation:** minimum 8 to 9 feet

In addition to the recreation features described above, Route C2 includes continuation of the Bay Trail from its current trail within the Phase 1 area on CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 10,500 feet south and west along Pond E4C existing levee, west/south along the existing CP3C levee and connect with the Alameda Creek Regional Trail on the west side of Cal Hill (owned by Cargill). One 250-foot long pedestrian bridge would be constructed crossing the J-ponds at the southeastern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Trail improvements would include clearing, grading, and/or surfacing the existing levee surface as needed to be appropriate for trail use, but no levee reconstruction, widening or raising for the trail elevation

would be completed. This route would be protected from flooding and sea-level rise impacts by the improved levee further west.

In some areas, the trail would be located on unimproved levees that may deteriorate over time, necessitating maintenance such as topping or reconstruction to provide usable trail width and elevation.

Anticipated shoreline views would be predominantly of managed ponds, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

Recreation/Public Access Alternative Eden C, Route 3

Minimum trail width: 8 to 10 feet (south of OAC) **Trail elevation:** 7 to 8 feet

In addition to the recreation features described above, Route C3 includes continuation of the Bay Trail from its current trail within the Phase 1 area on CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue south along Pond E4C improved levee, then east along an existing access road that terminates at Westport Way. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail. This option would also include the bridge across AC FCC.

Trail improvements would include clearing, grading, and/or surfacing the existing land surface as needed to be appropriate for trail use, but no levee widening or raising for the trail would be completed. This route would be protected from flooding and sea-level rise impacts by the improved levee further west.

Anticipated shoreline views would include managed ponds, lands and landscaped urban areas, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

5.6 Alternative Eden D

Alternative Eden D provides a two-stage approach to tidal restoration, to be accomplished by constructing an improved habitat levee at the existing Bay shoreline, as well as a temporary levee bisecting the project area. In this alternative, the Inland and Southern Ponds are intended to eventually become salt marsh subject to tidal action but may be retained as managed ponds, if ongoing Adaptive Management Plan (AMP) monitoring of pond-associated wildlife shows that it is necessary. A new habitat levee and habitat transition zone would be built at the existing Bay shoreline, but the existing levees that currently provide access to the western side of Eden Landing would be breached, and no public access or recreation facilities would be provided in that area.

Recreation/Public Access Alternative Eden D, Route 1

Minimum trail width: 8 feet (south of OAC) **Trail elevation:** minimum 8 to 9 feet

Route D1 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 7,400 feet southwesterly on an existing levee, terminating at the Alameda Creek Regional Trail east of the J-ponds. One 300-foot long pedestrian bridge would be constructed crossing the J-ponds at the southwestern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Trail improvements would include clearing, grading, and/or surfacing the existing land surface as needed to be appropriate for trail use, but no levee reconstruction, widening or raising for the trail elevation would be completed.

In some areas, the trail would be located on unimproved levees that may deteriorate over time, necessitating maintenance such as topping or reconstruction to provide usable trail width and elevation.

Anticipated shoreline views would include managed ponds transitioning to tidal marsh, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

If Alternative Eden D1 is selected for implementation, it is likely that portions of the route along the existing J-ponds and E6C levees will eventually be lost due to settlement, deterioration and sea-level rise. The portion of the trail that is located on the temporary levee could be retained as a spur trail (this portion of the levee would need to be retained), and/or improvements considered to create a loop trail through Turk Island and along the improved levee along E1C.

Recreation/Public Access Alternative Eden D, Route 2

Minimum trail width: 18 feet (south of OAC) **Trail elevation:** minimum 12 feet

Route D2 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue an additional 10,500 feet south and west along Pond E4C improved levee, west/south along CP3C levee (owned by Cargill) and connect with the Alameda Creek Regional Trail on the west side of Cal Hill (Cargill). These levees would be improved for flood risk management. One 250 foot long pedestrian bridge would be constructed crossing the J-ponds at the southeastern tip of Pond E6C. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Anticipated shoreline views would be predominantly of managed ponds, transitioning to tidal marsh, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

Recreation/Public Access Alternative Eden D, Route 3

Minimum trail width: 8 to 10 feet (south of OAC) **Trail elevation:** 7 to 8 feet

Route D3 includes continuation of the Bay Trail from its current trail within the Phase 1 area on existing CDFW and Alameda County facilities 16,000 feet to the southeast corner of Pond E6C.

From there, it would continue south along Pond E4C improved levee, then east along an existing access road that terminates at Westport Way. One viewing platform with interpretive exhibits would be constructed along Alameda Creek Regional Trail.

Anticipated shoreline views would include managed lands transitioning to tidal marsh, and landscaped urban areas, with water views expected at OAC and at the Alameda Creek Regional Trail terminus.

5.7 Other Recreation Features Considered in Phase 2

Other recreation and public access features were included in the Phase 1 and programmatic analyses, and are also considered some of the Phase 2 alternatives:

- Alternative C, described above, includes a 600-foot bridge over the ACFCC at the Alameda Creek Regional Trail to connect with the Bay Trail within Coyote Hills Regional Park. This bridge is not now included in all of the route options, but potentially could be included in any of the implementation scenarios, as it would be located on an existing improved levee with no restoration or flood risk management actions that would preclude implementation.
- The loop/Bay Trail spur to Alvarado Salt Works would not be feasible under Alternative B due to the proposed levee breaches and reconfiguration, but could be implemented as a trail spur. This loop could be completed as part of Alternatives Eden C or Eden D, but no levee improvements on either side of OAC are proposed in those alternatives.
- Community Connector to allow neighborhood access from Union City to the Bay Trail would be completed as part of the project and all of the Route options.

5.8 Consistency with Public Access Policies

Table G-4 outlines the Action Alternatives for consistency with recreation and public access policies of the three primary reviewing agencies with public access policies applicable to the project: BCDC, ABAG's Bay Trail, and EBRPD. In this table, the different route options are evaluated against those policies and evaluated as being consistent (Y), not being consistent (N), or whether the policy or standard does not apply (N/A). The asterisks with the "N" conclusions refer to further explanations in the notes below the table.

Table G-4. Phase 2 Consistency with BCDC, Bay Trail and EBRPD Recreation and Public Access Policies

POLICY	EDEN A	TRAIL ROUTE OPTIONS								
		EDEN B			EDEN C			EDEN D		
	--	1	2	3	1	2	3	1	2	3
BCDC										
1. Maximum feasible public access	N	Y*	Y*	N*	Y	Y	N	Y*	Y*	N*
2. Maximum feasible access to waterfront, except where inconsistent with public safety or significant use conflicts	N	Y*	Y*	N*	Y	Y	N	Y*	Y*	N*
3. Provide public access to natural areas and consult with agencies for appropriate location and type of access	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
4. Site, design and manage access to prevent significant adverse effects on wildlife	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y
5. Site, design and manage access to avoid significant adverse impacts from sea-level rise ***	N/A	Y	Y	Y	Y	Y	Y	N	Y	Y
6. Permanently guarantee public access and make viable in event of sea-level rise or provide equivalent access	N	Y	Y	N**	Y	Y	N**	N	Y	N**
7. Public access should be consistent with environment, encourage diverse Bay-related activities, be barrier-free, and maintained	N	Y	Y	N**	Y	Y	N**	Y	Y	N**
8. Fill may be allowed if necessary for	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y

Public Access and Recreation Resources Technical Appendix

POLICY	EDEN A	TRAIL ROUTE OPTIONS								
		EDEN B			EDEN C			EDEN D		
	--	1	2	3	1	2	3	1	2	3
public access in some areas										
9. Access to and along the waterfront should be provided and connect to the nearest public thoroughfare. Provide diverse and interesting public access experiences	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
10. Roads near water edge should be scenic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11. Cooperate to provide appropriate regional trail system, such as Bay Trail	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y
12. Use Public Access Design Guidelines in project review	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y
13. Integrate public access early in restoration projects	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y
14. Support scientific study on public access effects on wildlife	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y
ABAG Bay Trail										
1. Locate the Bay Trail as close to the Bay shoreline as feasible	N/A	Y	N	N	N	N	N	N	N	N
2. Create a Bay Trail that provides views of the Bay and/or a “Bay” experience	N	Y	N	N	N	N	N	N	N	N
3. Design a Bay Trail that is physically separated from streets and roadways in order to provide a safe trail experience for users.	N	Y	Y	N	Y	Y	N	Y	Y	N
4. Align the Bay Trail to provide usable and logical connections with shoreline parks	N/A	N*	N*	N*	Y	Y	Y	N*	N*	N*
EBRPD										
PRPT9. Connect regional trails to parks, shorelines and other areas of regional significance	N	N*	N*	N*	Y	Y	Y	N*	N*	N*
PRPT 10. Create local trail networks that provide additional access points to regional parks and trails	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
PRPT11. Cooperate with other agencies to implement multi-jurisdictional efforts.	N/A	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y = Yes; N = No; N/A = Not Applicable

* This option does not include shoreline access via an ACFCC bridge, but does not preclude future implementation by another entity. Shoreline access would be precluded along OAC in Alternatives B and D due to levee breaching.

** This option includes public access on lands that are not owned by the Project Lead Agency. While no agreement between such a project proponent and respective landowners currently exists for permanent trail implementation, this project does not preclude the possibility of such a project from being developed and implemented.

*** This consistency analysis focuses on Phase 2 action alternatives. Levee improvements to existing levees in northern Eden Landing may also be needed to address sea-level rise as part of the common trail improvements proposed for all trail route options.

Consistency with recreation and public access goals and policies, especially as they relate to the provision of shoreline or waterfront access, may vary depending on the habitat or flood risk management alternative ultimately selected. Many of these policies include considerations for implementation feasibility, avoiding adverse impacts on wildlife, the selection of appropriate locations for public access features, or other constraints. Selection of recreation and public access features must be balanced with other project goals,

and an alternative could be consistent with these policies even while not providing every public access feature shown in previous project documents and would not prevent implementation in future phases. In addition, trail route options on lands that are not part of the Reserve may be precluded if permanent access agreements or easements are not obtained, in which case, an alternate alignment would need to be provided in order to fully meet Project and regulatory goals and policies for recreation and public access, including completion of the Bay Trail spine.

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6. PROJECTED TRAIL USE

The purpose of this section is to provide an estimate of the expected usage of the proposed project trail system and recreational facilities within and immediately adjacent to the Phase 2 ELER. The trail segment options proposed for Phase 2 include implementation of a segment of the Bay Trail spine with one alternative also containing a recreational spur trail and providing a bridge over ACFCC, to link the trail network in Eden Landing to the Bay Trail spine south of the ACFCC. The Bay Trail and associated recreational amenities would serve several purposes, as they would provide a non-motorized transportation connection from one neighborhood location to another in the Hayward-Union City area, and would also provide additional access to facilities for hiking and exercise, wildlife viewing, and other activities within ELER.

Based on a trail user satisfaction survey completed for the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge) to the south of ELER (Sokale and Trulio 2013), recreational trail users who would be expected to use the ELER trails are likely to be primarily local (live within 5 to 10 miles of the trail), and may drive or bicycle to the trailhead parking from where they live. In addition, a small but significant percentage of the potential recreational facility users would work in the immediate area and would likely use the trail system during work hours, such as lunch time or after work walks.

The Sokale and Trulio 2013 trail user satisfaction survey found slightly higher trail use during weekends than during week days, and slightly higher trail use during the late spring, summer, and early fall months when weather is good, rather than during the late fall and winter months when weather is more likely to be cool or wet. The trail user survey also found that trail user priorities included keeping the trail clean and well maintained with good signage and facilities such as parking, restrooms, and benches. The 568 visitors who completed surveys were less interested in historical and natural history interpretive signs and panels, and overlooks than in facilities for active hiking.

Some Refuge trail use information applicable to the Phase 2 actions at Eden Landing is also reported in the Sokale and Trulio trail user satisfaction survey, which allows for extrapolation and a rough approximation of the number of new trail users expected as a result of the ELER project public use improvements. Between 750,000 and 900,000 people were estimated to have visited the Refuge annually between 2009 and 2011, and a majority of these visitors used the 30 miles of trails within the 30,000-acre Refuge, especially the trail system near the Visitor Center and Environmental Education Center (EEC) parking areas (Sokale and Trulio 2013). This equates to approximately 25 to 30 visitors annually per acre of Refuge, or about 25,000 to 30,000 visitors annually per mile of trail. This information does not consider that a disproportionate amount of trail use likely occurs in the 1 or 2 miles of trail immediately surrounding the main visitor center in Fremont and the EEC in Alviso, but, along with other sources of information, provides a rough guide that can be used to gauge Phase 2 ELER trail use.

Important points to make in comparing the Refuge with the ELER is that the Refuge is considerably larger, has more miles of trails, and has a Visitors Center with exhibits and interpretive information, while no visitor center is proposed at Eden Landing. However, ELER does provide facilities such as a kayak launch platform, while a comparable facility is not provided at the Refuge. There is a small boat launch at the Alviso Marina, very near the Refuge's EEC, however.

In addition, as noted earlier, the Phase 2 trails within ELER will be part of the Bay Trail and available for both recreational uses and commuter bicycle use, although without the ACFCC bicycle/pedestrian bridge,

the link between adjacent areas is not as direct and is more circuitous than on-street bicycle/pedestrian travel routes between Hayward and Union City.

For general discussion purposes, if trail users at Don Edwards are computed on a per mile of use intensity and spread out equally each day throughout the year, there would be a daily use of about 68 to 82 people per day per mile of trail. Each of the three Bay Trail spine routes being considered has different amounts of trail that would be completed. Consistent with the ELER project construction cost estimate, this analysis used 10,000 linear feet or about 2 miles of trail. Based simply on extrapolating trail mileage, this equates to about 136 to 164 recreational trail users per day. Considering that recreational trail use would be more concentrated during the better-weather months of the year, with slightly more trail use on weekends, daily recreational trail use is likely to be in the range of 150 to 250 people per day during periods of highest use, with average daily use throughout the year in the range of 100 to 125. Annual recreational trail use would be in the range of 36,500 to 40,000 users.

Another way of extrapolating the Refuge trail use estimates and applying them to Eden Landing is based on facility size. The total area of the Refuge is about 12 times larger than ELER. At a use rate of 25 to 30 persons per acre per year, the annual usage at Eden Landing would be in the range of 62,500 to 75,000.

Actual trail count data are available from EBRPD for the Phase 1 project at northern Eden Landing (S. Dougan, EBRPD, email with trail database attachment, Sept. 2013). This traffic count data was obtained using a TRAFx automated trail traffic counter system, with the sensor/counter embedded under the trail surface (www.trafx.net). Trail count data for a portion of the Bay Trail located near the Gordon E. Oliver Eden Shores Park in Hayward, in the southeast corner of the Phase 1 area, indicated average daily use of about 19 trail users (2012 data). Recorded monthly trail use at this location ranges from 252 to 2195, with average daily use of 19 trail users (2012 data). Trail use is much higher near the Phase 1 parking lot, located near the intersection of Eden Landing Road and Arden Road, with monthly totals ranging from 1460 to over 2,000 and averaging 126 users per day (2012 data). Trail use was slightly higher on weekdays than on weekends, and with the highest use periods in the spring and early fall months. The majority of use was between 10 AM and 2 PM, but some use extended until after 7 PM during the spring and summer months.

Importantly, these counts were done before the completion of the Phase 1 actions at Eden Landing, and use of those Phase 1 amenities (the spur trail to the viewing platform, the seasonal loop trail, the interpretive features, and the kayak launch). Anecdotally, usage of and visitation to northern Eden Landing has increased since these features were opened to the public, but no new quantitative data is available.

Trail count data available from EBRPD for recreational trails at Hayward Marsh show average daily uses in the range of 150 to 200 (2012 & 2013 count data) , at Hayward Landing in the range of 120 to 150 (2012 & 2013 data) and at the San Lorenzo Trail Bridge of 145 to 160 users per day (2012 & 2013 data).

Based on a review of all of the above information, it is reasonable to expect between 100 and 150 recreational trail users per day.

In addition to a recreational trail use component, the Bay Trail through ELER will also provide a transportation component, as an alternative and more pleasant mode of transportation between two neighborhoods, or a travel destination. This use also needs to be accounted for in the overall Trail Use Estimate.

ACTC has been conducting bicycle and pedestrian counts along major streets for all of the cities and major unincorporated areas in the County since 2002. Although not trail systems, counts conducted along Thornton Avenue and Willow Street in Newark indicate daily travel by bicycle and pedestrians of about 25 people per day. More heavily used bikeways such as Paseo Padre and Mowry Ave in Fremont have counts of about 219 per day and for Decoto Road near Alvarado Niles Road, 107 bicycler users in 2010.

Expected use of this segment of the Bay Trail by bicyclists can also be estimated using US Census and demographic information on bicyclists and residential population estimates with 0.5 to 1.5 miles of a proposed bicycle route, based on a method developed by the National Highway Research Program. This method, (which provides low-range, mid-range and high-range estimates) was 31,057 per year, or 85 per day for the mid-range estimate.

Based on reviewing all of the above, an estimated 50 to 100 bicyclists may use the Bay Trail as a transportation route between Hayward and Union City on a daily basis, with slightly more on weekends. Added to the recreational trail use estimate of 100 to 150 users per day, this would put total daily usage of the new facilities at Eden Landing in the range of 150 to 250 daily users.

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7. RECREATION AND PUBLIC ACCESS DESIGN GUIDELINES

This section provides guidance regarding the physical design of recreation and public access features, such as trails, viewing platforms, signage, and site furnishings. This section also identifies construction protocols that will be implemented as part of the project to minimize disturbance to adjacent areas and avoid disruption of sensitive species during construction. Trail design issues include:

- Design strategies to comply with BCDC public access policies
- Accessibility
- San Francisco Bay Trail Design Guidelines and Toolkit
- Community Connectors
- ACFCWCD Facilities
- Recreation and Public Access Facilities

Where feasible, all recreation and public access facilities must be designed to be accessible. In addition, BCDC policy requires that public access facilities be designed to be viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby.

7.1 Design Strategies to Comply With BCDC Public Access Policies

BCDC review of public access facilities will likely focus on three areas: design to maximize shoreline access, resilient design of public access facilities, and design to minimize wildlife conflicts.

Design to Maximize Shoreline Access

Phase 2 actions would essentially move the Bay shoreline to the east, eventually replace some or all managed ponds with tidal marsh. Point access to the shoreline will continue to be provided in all alternatives via the Alameda Creek Regional Trail, as well as the trail spur that was added as part of Phase 1.

Design Strategies to Address Sea Level Rise for Public Access Facilities

For this project, which is likely to be affected by future sea level rise and storm activity during the life of the project, BCDC requires that public access facilities:

- Be set back far enough from the shoreline to avoid flooding;
- Be elevated above expected flood levels;
- Be designed to tolerate flooding; or
- Employ other means of addressing flood risks.

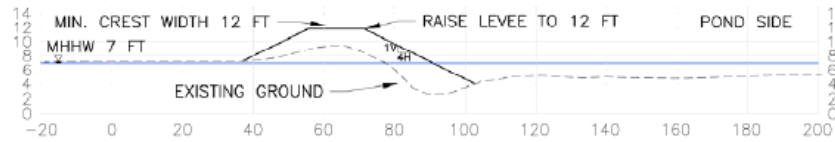
Trails on Improved Flood Risk Management or Habitat Levees. As described in the Alternatives Figure 4.2 of the Phase 2 Design Memorandum, proposed levees to provide flood risk management or habitat enhancement are to be a minimum elevation of 12 feet NAVD88 with a 12-foot crest width, with 4:1 side slopes. If these improved levees also have trail improvements, the crest width at this elevation should be at least 24 feet to accommodate a twelve-foot trail at year 2100, this would allow sufficient width for topping to raise the trail elevation in the future with sufficient width. This may require steeper side slopes, use of retaining walls, rails or other features in the future to ensure trail user safety (**Figure G-5**).

Figure G-5. Typical Improved Trail Section

Design:

- Top elevation: Raised levees will have a minimum crest elevation of 12 feet NAVD88.
- Top width: Raised levees will have a minimum crest width of 12 feet.
- Side slope: The improved levees will have side slopes of 4:1 (H:V).

A typical cross-section of the proposed levee raising is shown in Figure 4.2.

**Figure 4.2. Proposed Levee Raising – Typical Section**

Trails on Existing Pond Levees. The existing pond levees are generally underlain by former tidal marsh and were created beginning in the early 1900's by dredging and placing Bay Mud soils on the drained and diked lands to create the berms to prevent tidal waters from entering the salt production areas, and are generally at an elevation of 8 to 10 feet¹⁰, though many of the levees around the external border of the pond complex are higher (in the range of 11 to 12 feet elevation). Portions of the proposed trail extension in northern Eden Landing, Trail Route Option D1, and the OAC levee loop trail would be located on such pond levees. (Trail Route Option C1 would also be located on an unimproved levee, but would be protected by a habitat levee further west). If design resilience is a project design goal, trail segments that are subject to flood influence and sea level rise would need to be built at a minimum elevation of 12 feet and/or designed to accommodate future overtopping. The trail would need to have the following width at construction to allow a 12-foot wide trail during the facility's design life (2050), assuming 2:1 side slopes that are geotechnically stable, as shown in **Table G-5**.

Table G-5. Adaptive Management Trail Construction Width

EXISTING LEVEE ELEVATION (FEET NAVD88)	LEVEE ELEVATION YEAR 2050 (FEET NAVD88)	TRAIL CONSTRUCTION WIDTH (FEET)	YEAR 2050 TRAIL WIDTH (FEET)
8	12	28	12
9	12	24	12
10	12	20	12
11	12	16	12
12	12	12	12

If the trail is intended to meet the 18-foot wide Bay Trail guidelines (Option D2), or if 3:1 or 4:1 side slopes are implemented, then additional width should initially be reserved for future remedial actions. For example, in Option D1, some berms are currently a maximum of 10-12 ft. wide at elevation 7- 8, so a future trail could not be accommodated within the current berm footprint, and adjacent habitat would preclude future adaptive actions.

¹⁰ SBSP Levee Assessment, Geomatrix 2005.

Consideration should be given to locating the Bay Trail spine and other public access features on improved levees (such as in Alternative Eden B, or on the flood risk management levee in Alternative Eden C) to avoid the temporal width and elevation challenges described herein.

Geotechnical issues related to the placement of public access facilities on these unimproved levee berms is discussed in Section 3.2 – Hydrology and Section 3.4 – Geology and Soils.

Design to Minimize Wildlife Conflicts

An important component of providing public access near sensitive wildlife areas is to limit the potential impact of human intrusion and trespass into sensitive areas. The selection of public access alternatives to be considered as part of project evaluation has included extensive input from regulatory agencies as well as site-specific studies. All proposed trails are located on existing levees, and several project alternatives include the creation of habitat transition zones to increase habitat diversity, but these features would also provide a buffer between trails and areas that may become habitat to sensitive species in the future.

A study conducted in 2014 to determine the effects of human disturbance on waterbird nesting at SBSP Pond SF2 concluded there was no pattern of disturbance associated with public access facilities, including trails, viewing platforms, restrooms, and interpretive elements, which are all located at least 300 feet from nesting habitat features.

In 2013, the SBSP Restoration Project sponsored an experimental study of shorebird response near trails. Recommendations from that study that could be applied to project design include:

- Locate trails 150 feet from foraging habitat where feasible.
- Incorporate wide borrow ditches in the restored areas to provide a buffer between levees.
- Place trails in areas of high human demand, rather than areas with infrequent use.
- Provide consolidated areas without trails.
- Increase the quantity and quality of forage in restoration areas that are not near trails.

A similar study conducted in 2012 focused on human disturbance in proximity to nesting western snowy plover habitat, and concluded that flushing was seven times higher than background flushing; however, the consequences of this flushing were unknown. Other conclusions were that locating trails 500 feet from nesting habitat reduced flushing to background levels, and that bird response could vary depending on whether the trails were new or existing trails.

The Phase 2 Action Alternatives were developed with a focus on flood risk management and habitat enhancement. Of the more than 2,000 acres at southern Eden Landing site, recreation and public access features range from 7 to 10.8 acres (if all options shown in Alternative C are implemented)¹¹. This represents less than one-half of one percent of the Phase 2 area, and less if recreation and public access improvements are built on the off-site route options. Additionally, several public access features shown in the 2007 EIS/R were eliminated, which would further reduce potential wildlife impacts due to human use.

¹¹ Eden Landing Phase 2 Preliminary Design Memorandum, August 2016.

7.2 Accessibility

To meet the Federal Accessibility criteria, trails must provide a firm and stable surface, with sufficient width, gradient and vertical clearance for unobstructed passage. Trails that connect facilities such as parking areas, restrooms, and viewing platforms are considered “Outdoor Recreation Access Routes”, with a minimum 48-inch clearance width with additional passage (60-inch minimum width at 200 foot intervals) in California. A minimum of 60 inches unobstructed tread width is typical for public access facilities to meet accessibility. The trail section must have a firm and stable surface with no gaps or obstructions of more than one-half inch. Typical trail surfaces may include concrete, asphalt, or compacted aggregate to meet accessibility requirements.

The trail must have maximum cross slope of 2 percent and 5 percent longitudinal grade. Short ramps are allowed for up to 30-inch rise to accommodate grade transitions. Since the site is relatively flat, all trails should be built in compliance with accessibility guidelines without design exceptions.

Site furnishings such as benches, viewing scopes, and interpretive panels must be designed and oriented to avoid creating an obstacle and to facilitate the intended use.

Recommendations

New trail segments that are to be considered part of the Bay Trail should be designed (where feasible) in compliance with Bay Trail Guidelines. These guidelines were substantially updated with the new version released in June 2016. (www.baytrail.org/pdfs/BayTrailDTK_082616_web.pdf)

The trail should be surfaced with a durable material that complies with universal access needs. Paving designs should be selected that provide permeability, where appropriate, and that fit with the shoreline setting. In some locations, it will be appropriate to remain as “natural” as feasible, using permeable materials and construction methods. Trails in segments that will be routinely utilized by motorized vehicles for access and maintenance should be paved.

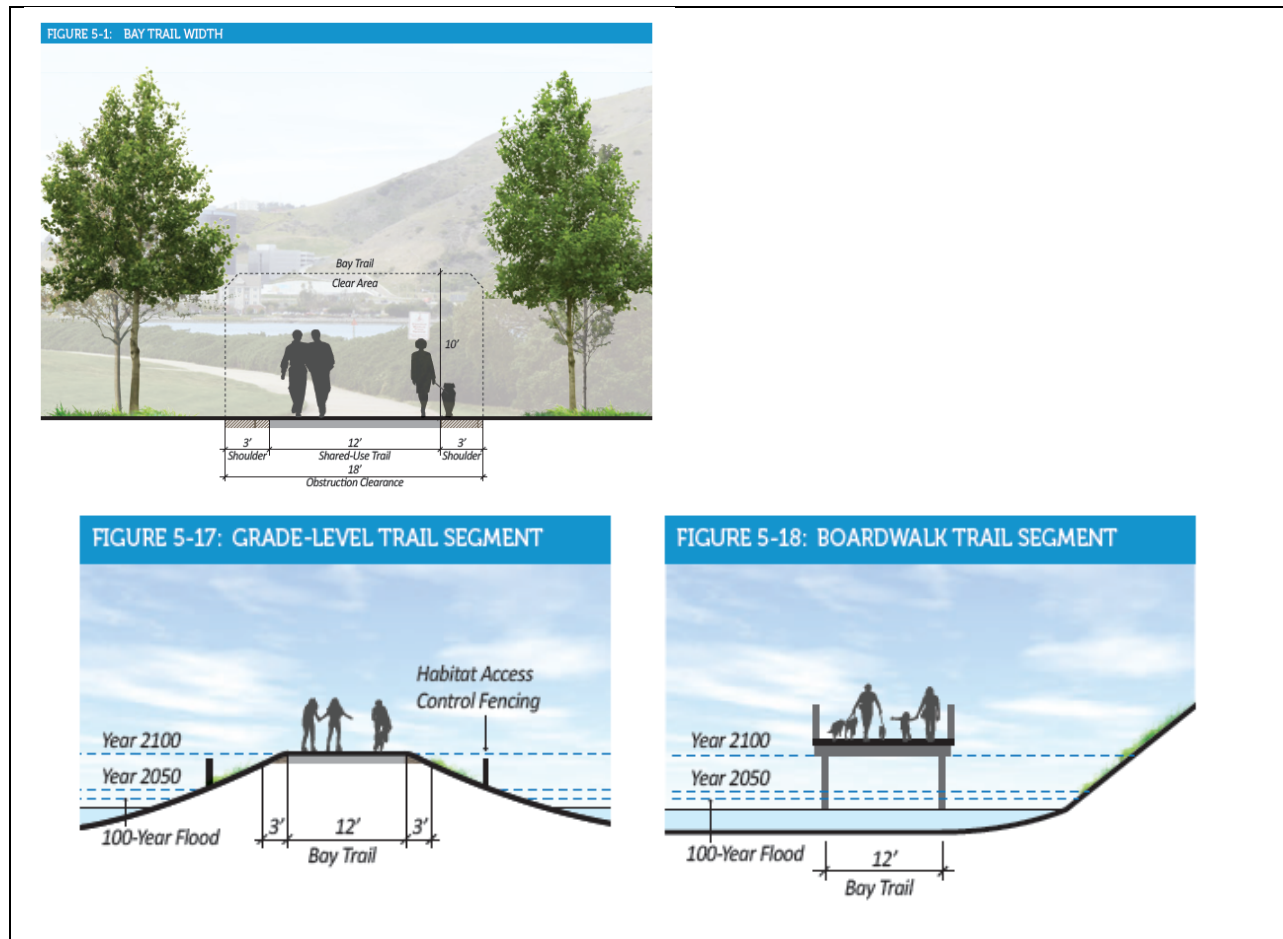
The trail should generally be elevated slightly above the adjacent grade to allow construction of a uniform trail surface without obstacles. During the design of each trail segment, the design of facilities should consider levee slope stability, erosion potential, and pathway drainage. In general, trails on levee segments should be crowned to minimize erosion risk.

7.3 Bay Trail Design Guidelines

Consistency with the Bay Trail Plan design guidelines will be needed for segments that are incorporated into this regional trail system. Guidelines adopted in June 2016 for the Bay Trail emphasize that “*Bay Trail users should be able to enjoy a Bay experience.*” and recommend a minimum 18-foot wide trail commitment consisting of a 12-foot wide trail surface with three-foot shoulders (wider in high use areas). Due to the length and lack of community trail connections, this width should be sufficient. The guidelines further recommend that the elevation of the Bay Trail should be elevated to accommodate future sea level rise.¹² See **Figure 5-6** for examples.

¹² Bay Trail Design Guidelines and Toolkit, 2016

Figure G-6. Bay Trail Guidelines (source: Bay Trail Design Guidelines and Toolkit, 2016)



The Bay Trail Design Guidelines and Toolkit contains strategies for design of recreation and public access facilities to minimize public access and wildlife compatibility conflicts. This includes:

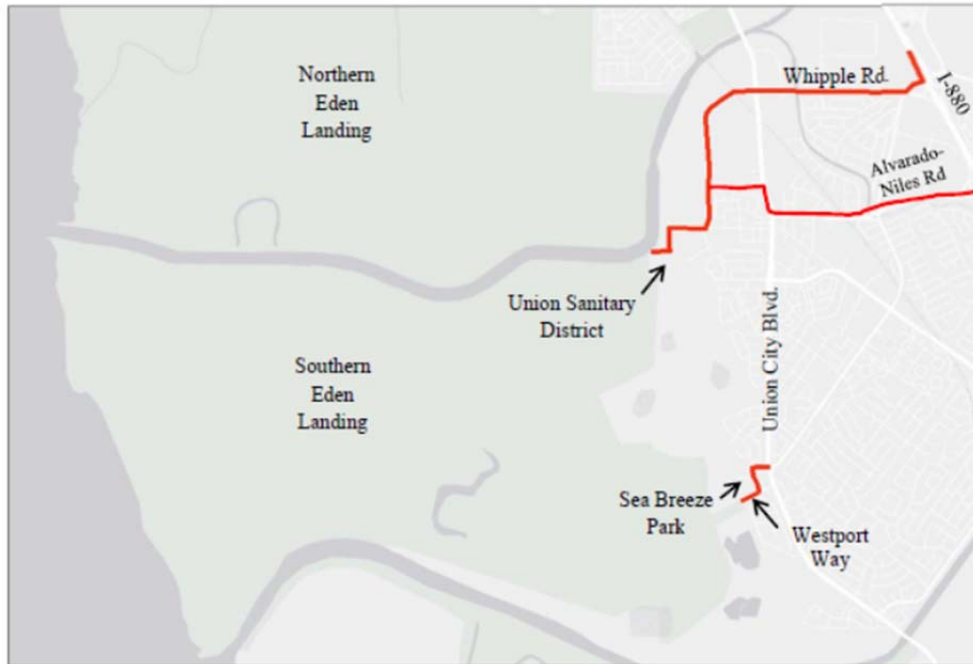
- Alignment, to provide a fulfilling, varied and interesting access experience
- Parking and staging area siting
- Education, such as interpretive signs
- Observation Points at strategic locations
- Reducing opportunities for raptor perching
- No/minimal lighting
- Physical and visual separation, such as:
 - Wildlife friendly fencing
 - Upland buffers
 - Moats and wetlands
 - Strategic vegetation buffers

Many of these strategies have been incorporated into the preliminary Phase 2 designs, and additional features may be incorporated into the precise design to sensitively incorporate public access into the restoration.

7.4 Community Connectors

Several of the adopted community and regional plans highlight the need for neighborhood connections to the trail (**Figure G-7**). The two existing trailheads that serve this area are over six miles apart, with one existing connector that serves the Eden Shores neighborhood.

Figure G-7. Project Construction Access Roads, Community Connectors



Two construction access points have been identified to accommodate site construction, via the Horner/Veasby Street access, and via Westport Way in the vicinity of Sea Breeze Park. The SBSP Restoration Project intends to coordinate and enter into agreements with the underlying property owners such as EBRPD, the City of Union City, and other adjacent landowners (including Union Sanitary District and ACFCWCD) to formalize these access points as Community Connectors that would provide connections to the Bay Trail. . Since physical improvement of the access roads or trails for construction purposes (such as leveling, widening and/or surfacing) may be necessary, it is anticipated that physical improvements needed to convert this access for trail use will be minimal, such as surfacing, signage and entry gates.

7.5 ACFCWCD Facilities

Some segments of the proposed trail would occur on Alameda County lands. This section excerpts portions of the Union City Bay Trail Study that identified specific design strategies (**Figure G-8**) to address ACFCWCD concerns regarding access and public safety around their facilities. Although some of this information may be dated, it is included for reference so that these issues can be addressed during the later stages of project design.

20-Tide Gate Structure

Issues identified in the Union City Bay Trail Feasibility Study related to the 20-Tide Gate structure include:

- Edge treatment to warn trail users away from the structure edge
- Address risk and liability concerns
- Facilitate maintenance
- Provide safety features without structural elements
- Allow for ease of maintenance, operations, and heavy vehicle use of structure by ACFCWCD.

The preliminary design strategy developed in 2004 included striping, pavement detectors, curbing and collapsible bollards. These issues and design options should be revisited as part of final project design to meet current construction, accessibility and safety standards.

Figure G-8. Trail Design on ACFCWCD Structures



Photo Rendering, Union City Bay Trail, 20-Tide Gate Structure

rendering is representative and is NOT TO SCALE. 8/27/04

NOTE: Carsonite posts, curb segments, warning striping, raised pavement markers to be used equally on both sides.

Source: Alta Planning 2004

Trails on ACFCWCD Levees

In addition to the 20-Tide Gate structure preliminary design, the 2004 feasibility study also discussed the use and design of trails on ACFCWCD levees, which are used by heavy equipment to transport dredge materials. This discussion identified the following design issues that should be addressed as part of final project design (applies only to ACFCWCD levees):

- Gravel surfacing of levees for drainage and public access
- Installation of security fencing and controlled access at the Alvarado Pump Station

- Construction of bridges for maintenance vehicle access¹³
- Modification of existing vehicle gates at trail entry points to facilitate bicycle and pedestrian access, including modification of access gates at other connecting levees

7.6 Recreation and Public Access Facilities

Bridges and Boardwalks

Several of the trail route options would necessitate bridges to provide a complete trail connection. Depending on the location, these might be used by ACFCWCD, EBRPD, and/or Alameda County Mosquito Abatement District. These agencies have requested that any bridges be designed to accommodate light duty vehicles. The project presently proposes pedestrian and bicycle access only on the bridges over the ACFCC and the OAC, but the bridges over the ACFCWCD-owned channel to the J-ponds would be designed to accommodate access by maintenance and emergency vehicles. Any bridges should be designed for the marine environment. Detailed foundation and structural recommendations as part of a comprehensive geotechnical investigation and structural analysis would be completed as part of the final construction plans.

EBRPD also noted that ACFCWCD requires bridges across channels that they maintain to be designed to accommodate dredging equipment, such as a removable center section. Such bridges have been constructed across Sulphur Creek and San Lorenzo Creek within Hayward Regional Shoreline.. A bridge over ACFCC would need to conform to regulations for federal flood levees.

If a boardwalk is constructed for any of the trail routes under consideration, it should be built using strong and durable materials requiring a minimum of maintenance and capable of supporting lightweight vehicle loads. Non-corrosive piers or pilings and connector would likely be needed for the boardwalk foundation system, and coated or sealed to avoid leaching of material into adjacent aquatic environment.

Bridge location and connectivity. The Action Alternatives presented in the Phase 2 analysis represent preliminary design concepts that will be refined and finalized as part of the project design and implementation process. The precise location of bridges and other structures to provide trail connections should be determined based on optimal resource use (placement of levees for flood risk management or habitat enhancement), minimizing wildlife conflicts, and placement of structures at the narrowest crossing location that will otherwise meet project goals. For the Pond E6C bridges, shifting the bridge crossing to the narrowest channel crossing, and providing short levee improvements on the opposite side could reduce bridge length (and cost) significantly, especially since geotechnical improvements will be necessary on both sides of the channel for abutments and access.

For a bridge across ACFCC, consideration could be given to locating the bridge crossing further east, where the channel is more trapezoidal with a narrow channel transition zone. In this area, the overall bridge length could be reduced to approximately 400 feet, with significant cost and habitat savings. This alignment would necessitate utilizing some of the Alameda Creek Regional Trail to make a direct connection, but could be considered as a viable choice for effectively meeting Project goals.

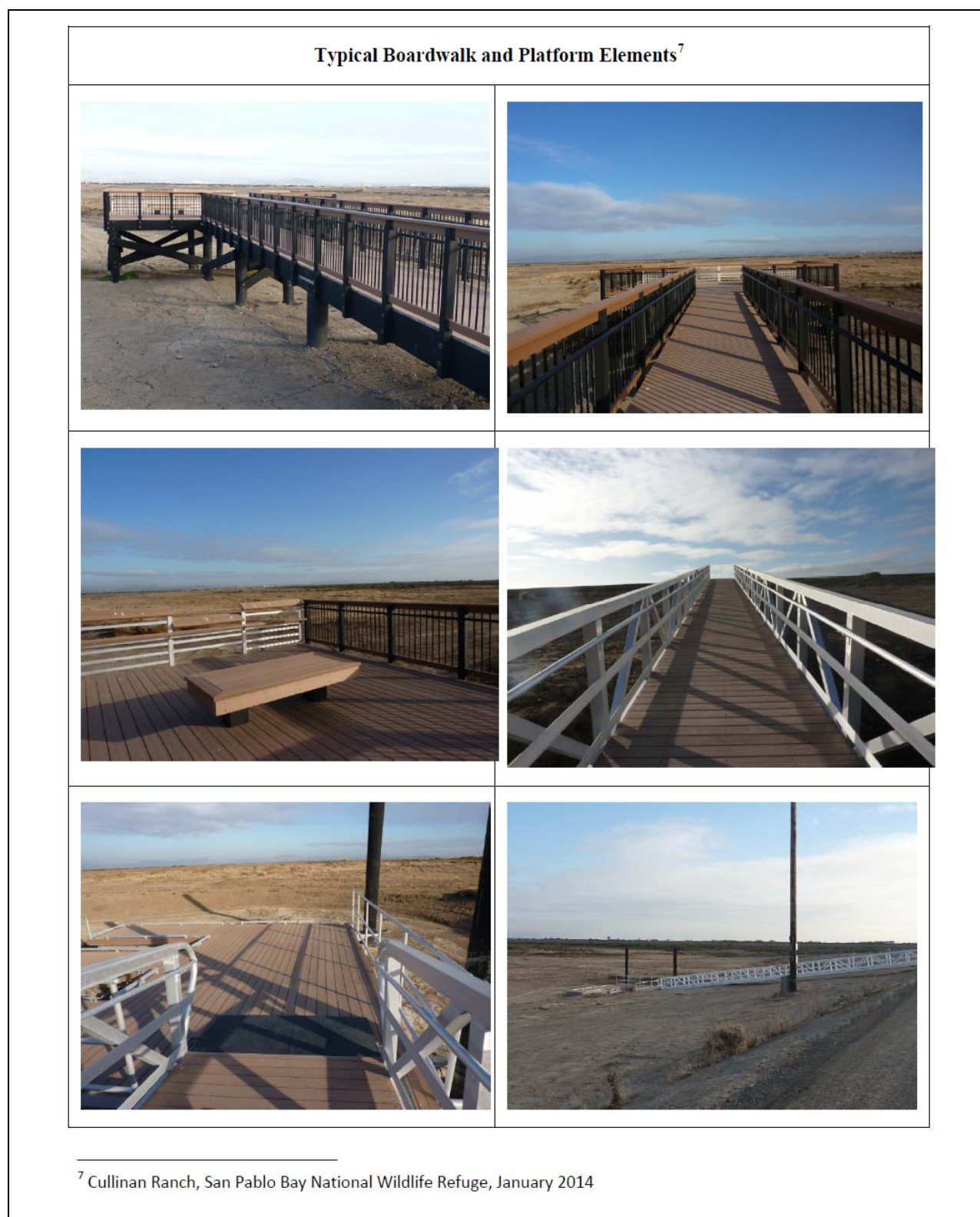
¹³ EBRPD identified the need for vehicle access on any project bridges, although the project currently proposes access for pedestrian/bicycle loads only.

Viewing Platforms

At least one viewing platform is proposed at southern Eden Landing. The viewing platform would generally be constructed within or adjacent to the existing levee/upland footprint. Since the viewing platform would be constructed along the existing Alameda Creek Regional Trail, it would need to be designed to meet current guidelines for Outdoor Recreation Access Routes regarding accessibility. A second viewing platform is under consideration at the site of the Alvarado Salt Works in Pond E6 along the OAC; this feature could be constructed if the spur trail and/or the loop trail from the Bay Trail spine is/are selected. Additional viewing platforms, if included, would also need to meet accessibility guidelines. The final design may include consideration of providing additional viewing platforms, including raised facilities, especially where views of the Bay or tidal areas are obscured by adjacent levees.

Facilities that were installed in fall 2013 at Cullinan Ranch, which is part of San Pablo Bay National Wildlife Refuge, are shown on **Figure G-9**. These facilities include prefabricated aluminum ramps, dock platforms, a viewing platform, a permeable trail, and other facilities that incorporate composite materials and may be appropriate.

Figure G-9. Facilities at Cullinan Ranch, San Pablo Bay National Wildlife Refuge



Signage, Wayfinding and Site Furnishings

Signs, interpretive elements, benches, viewing scopes and other built features must be located to provide adequate usable space as well as vertical clearance. These elements should not be placed within the area designated as a trail or access route.

Caltrans' *California Manual on Uniform Traffic Control Devices* (Caltrans 2014) includes advisory, warning, directional, and informational signs for bicyclists, pedestrians, and other users. Signage for the project should be consistent with all regulatory agencies.

Sign design should be consistent throughout the project, and sign elements should be grouped and designed to minimize visual intrusion. Sign elements may include more than one agency's signs as well as directional and informational elements. In accordance with accessibility regulations, it may be appropriate to provide information about a trail's length, running slope, width, cross-slope, and other characteristics to enable people to make informed decisions about using trails based on the characteristics of the trails. Signs along the levee tops should be minimized to avoid creation of raptor perches.

In general, all signs should be located 2 to 4 feet from the edge of the trail surface, have a minimum vertical clearance of 8.5 feet when located above the trail surface, and be a minimum of 4 feet above the trail surface when located on the side of the trail. All signs should be oriented so that trail users can see them clearly.

Phase 2 site design themes and prototypical site furnishings were developed as part of Phase 1 actions and should be continued, where appropriate, to provide a common design scheme. Typical facilities (developed for and implemented in Phase 1) are shown on **Figure G-10**.

Figure G-10. Typical Recreation and Public Access Facilities



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