

6. PHASE 2 PREFERRED ALTERNATIVE AND OTHER NEPA/CEQA ALTERNATIVES

This chapter describes the Preferred Alternative for the Phase 2 actions at the U.S. Fish and Wildlife Service's (USFWS) Don Edwards San Francisco Bay National Wildlife Refuge (Refuge). It also identifies the Environmentally Preferred Alternative (a National Environmental Policy Act (NEPA) requirement) and the Environmentally Superior Alternative (a California Environmental Quality Act (CEQA) requirement).

The Preferred Alternative would be implemented at four geographically distinct pond clusters within the Refuge. Three of those pond clusters are within the larger Alviso pond complex. These are the Alviso-Island Ponds (or simply, the Island Ponds), the Alviso-Mountain View Ponds (the Mountain View Ponds), and the Alviso-A8 Ponds (the A8 Ponds). The fourth is the Ravenswood Ponds, which are within the Ravenswood pond complex.

The various action alternatives at each of these pond clusters are described in detail in Chapter 2 and analyzed thoroughly in Chapter 3. The potential for Cumulative Impacts is discussed in Chapter 4. Chapter 5 presents other NEPA and CEQA considerations. This chapter is organized as follows:

- Section 6.1 is about the Preferred Alternative.
 - Section 6.1.1 identifies and provides an overview of the Preferred Alternative, its main components, and the process by which it was developed and selected.
 - Section 6.1.2 discusses in detail how the Preferred Alternative at the Island Ponds was developed from the action alternatives presented in the Draft EIS/R. It also describes what minor modifications, if any, were made to those action alternatives and explains why they were made. This section also includes a discussion of how the Preferred Alternative at the Island Ponds fits into the impact analysis presented in the Draft EIS/R.
 - Section 6.1.3 provides an analogous discussion for the Mountain View Ponds.
 - Section 6.1.4 provides an analogous discussion for the A8 Ponds.
 - Section 6.1.5 provides an analogous discussion for the Ravenswood Ponds.
 - Section 6.1.6 presents a summary of the significance determinations for the Preferred Alternative.
- Section 6.2 presents and discusses the Environmentally Preferred Alternative.
- Section 6.3 presents and discusses the Environmentally Superior Alternative.

6.1 Phase 2 Preferred Alternative

6.1.1 Identification of the Phase 2 Preferred Alternative

This section identifies the Preferred Alternative, as it would be implemented at each of the four pond clusters evaluated for Phase 2 at the Refuge ponds. The federal and state lead agencies (the USFWS and the State Coastal Conservancy, respectively) along with the Project Management Team and other project partners did not specify a Preferred Alternative in the Draft EIS/R for Phase 2. Instead, by waiting until this Final EIS/R to make that decision, they were able to incorporate input received from the public, regulatory agencies, and other stakeholders on the Draft EIS/R's alternatives and impact analyses to

factor into the decision about the Preferred Alternative. Many of the comments on the Draft EIS/R contained statements supporting or opposing particular components of the alternatives in the document.

Those comments informed and shaped the selection of the Preferred Alternative from individual components from the various action and no-action alternatives presented in the Draft EIS/R, as well as minor adjustments and some recombination of them into a complete Preferred Alternative. Further, as was described in the 2007 EIS/R and other project planning documents, the SBSP Restoration Project's approach has been to take the lessons learned from each project phase and from the ongoing applied studies and other scientific research and monitoring and allow them to inform future phases. These observations and results were also used to shape the selection of components to form the Preferred Alternative.

Finally, the selection of what to include in the Phase 2 Preferred Alternative was shaped by a sense of how the SBSP Restoration Project's goals and objectives could be met while minimizing the environmental impacts associated with various parts of the project implementation. Many of these potential impacts were from the volumes of fill that would need to be imported and placed into the ponds for habitat enhancements or for levee improvements. Even though these impacts were found to be less than significant in the Draft EIS/R, the realization that the purpose and need of the project could be met while further reducing the impacts drove many of the decisions. Other decisions were driven by feasibility, constructability, or regulatory constraints. The details of these are discussed for each pond cluster in the following sections.

The Phase 2 Preferred Alternative provides a variety of habitat enhancements at all four Phase 2 pond clusters. It also includes maintained or increased flood protection and additional public access and recreation features at two of the pond clusters. **Figures 6-1 through 6-4** illustrate the Preferred Alternative as it would be implemented at each of the Phase 2 pond clusters. This document uses the phrasing "the Preferred Alternative at the Island Ponds" (choosing one pond cluster as an example) to refer to the pond cluster-specific parts of the Preferred Alternative.

These pond cluster-specific choices are discussed in detail in the following sections. Here, however, is a summary of the four parts of the Preferred Alternative as it would be implemented:

- The Preferred Alternative at the Island Ponds is Alternative Island B with one restoration component of Alternative Island C included.
- The Preferred Alternative at the Mountain View Ponds is essentially Alternative Mountain View B, with the substitution of one habitat enhancement from Mountain View C and the addition of one public access component also from Mountain View C. There is also a modification of one of the levee improvement features presented in the two action alternatives.
- The Preferred Alternative at the A8 Ponds is Alternative A8 B, except that the top elevation of the proposed transition zones has been increased to provide greater erosion protection.
- The Preferred Alternative at the Ravenswood Ponds is similar to Alternative Ravenswood B, in its restoration goals and features for Ponds R3, R4, R5, and S5, but it also includes an additional habitat transition zone and a trail on the eastern edge of Ponds R5 and S5, all of which were included in Alternatives Ravenswood C and D.

The Preferred Alternative, as well as all of the elements of it at each pond cluster, is made up entirely of the individual components that were presented and analyzed in the Draft EIS/R and that are included again in this Final EIS/R, in Chapters 3-5. The combinations of those components are somewhat different than those presented in the Draft EIS/R's action alternatives, but there are no new components, new analyses, new significant impacts, or new mitigation measures. In a few cases, minor clarifications and refinements to the individual components were made either in response to suggestions in the comments received or to guidance from regulatory agencies. In others, design improvements and enhancements have been made since the Draft EIS/R was initially circulated. These enhancements would improve the restoration and flood protection goals and/or would increase the likelihood of successfully achieving the project goals. These changes do not increase, and in most cases decrease, the potential for significant environmental impacts. For example, there could be less earth moved or a smaller footprint. These clarifications or refinements are noted in the text and tables in each of the following sections.

6.1.2 Preferred Alternative at the Island Ponds

Description and Explanation

Table 6-1 compares Alternative Island B and Alternative Island C with the Preferred Alternative at the Island Ponds, which is illustrated in **Figure 6-1**. As can be seen, the Preferred Alternative at the Island Ponds is much like Alternative Island B, as it was described in the Draft EIS/R, with a few minor modifications and one component from Alternative Island C.

Alternative Island B was chosen as the starting point for the Preferred Alternative at the Island Ponds because it would achieve all of the project's Phase 2 goals and objectives for this pond cluster with a reduced level of impacts compared to Alternative Island C. Alternative Island C included changes to levees around Ponds A20 and A21, as well as to the existing pond bottom within the center of Pond A19. Alternative Island B has none of these actions, all of which necessitate a greater degree of earth moving and construction as well as habitat disturbance. Further, the benefit of that added level of effort in Alternative Island C was questioned because Ponds A21 and A21 are achieving their restoration goals without further action. Therefore, most of the additional actions in Alternative Island C were discarded, and the Preferred Alternative includes the Alternative Island B components with changes as discussed in the following paragraphs.

As in Alternative Island B, the Preferred Alternative includes the two breaches on the north side of Pond A19 and removal of most of the western levee of Pond A19 and the eastern levee of Pond A20. This levee removal to the elevation of the strip of marsh between the two ponds would create a larger area of connected aquatic habitat. Also, as in Alternative Island B, there would be extensive lowering of portions of Pond A19's northern levee. However, in a variation from what was described in the Draft EIS/R, this lowering would be only to mean higher high water instead of to mean high water, as was assessed in that document. In the Preferred Alternative at the Island Ponds, portions of those levees would be left at the starting elevation to provide more high-tide refugia and roosting or nesting areas.

The Draft EIS/R describes that material from levee breaching, lowering, and removal would be sidecast into the ponds to fill borrow ditches and thereby speed the ponds' transition to marsh plain elevation. It was suggested in the comments to make that general concept more specific by adding ditch blocks. Ditch blocks are built by placing fill material inside of the historic borrow ditches to direct tidal flows into the center of the ponds instead of allowing them to flow around the interior perimeter. The Preferred

Alternative calls for the targeted placement of material from levee breaching or other modification into specific locations along the borrow ditches. This material would then be compacted to form several ditch blocks in those channels. This is a more specific version of the plan to sidecast levee material into the ponds, as described in the Draft EIS/R.

One component from Alternative Island C would be partially included in the Preferred Alternative. Alternative Island C included widening of the two existing breaches on the southern levee of Pond A19. In the Preferred Alternative, only the westernmost of those two existing breaches would be widened. The methods for doing so would be as described in the Draft EIS/R and shown in **Figure 6-1**.

Finally, the exact location of the levee breaches and the lowering on the north side of Pond A19 would be selected to avoid individual small spikerush (*Eliocharis parvula*) plants that have been observed on this levee in recent years.

Summary of Impact Analysis from Chapter 3

The Preferred Alternative at the Island Ponds is extremely similar to Alternative Island B. The potential for adverse environmental impacts from this portion of the Preferred Alternative, as well as the expected benefits, would therefore be almost identical to those discussed for Alternative Island B in Chapters 3-5 of the Draft and Final versions of this EIS/R. The significance determinations were either “No Impact” or “Less than Significant.” The differences are discussed in the following paragraphs.

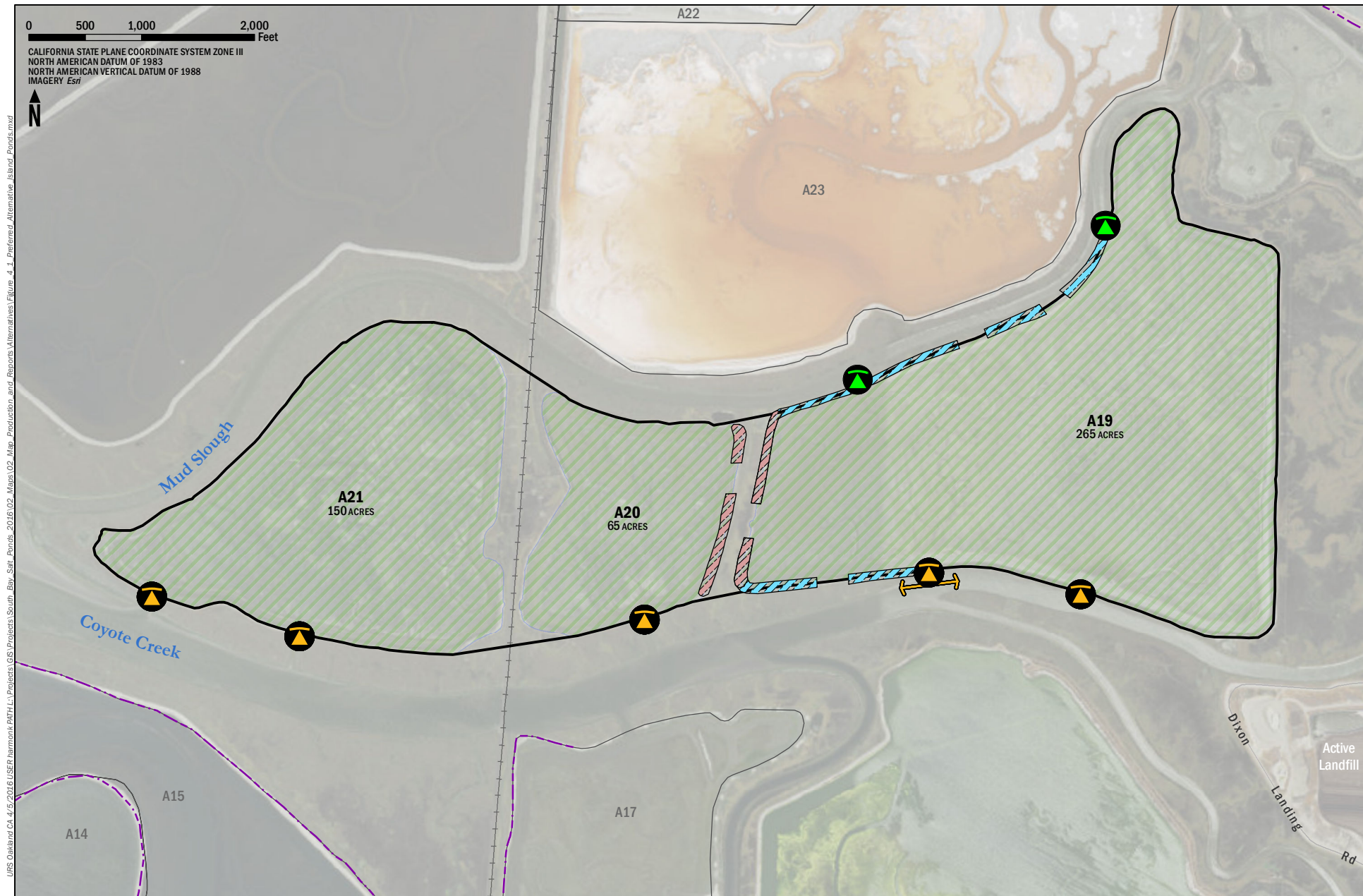
As explained in Table 6-1 and in the preceding section of text, part of one component from Alternative Island C will be included in the Preferred Alternative at these ponds. The Draft EIS/R analyzed and disclosed the potential impacts of widening both the southern-side breaches in Pond A19 to increase circulation into and out of the pond. In Alternative Island B, those breaches were unchanged. The Preferred Alternative at the Island Ponds includes a midpoint between those extremes by only widening one breach (the western one). The potential impacts from the construction work itself would thus be reduced relative to those presented in Alternative Island C, which were also less than significant.

Both action alternatives in the Draft EIS/R included lowering sections of existing levees to mean high water. In the Preferred Alternative, the linear extent of that lowering would be the same as that presented for Alternative Island B. However, the Preferred Alternative would change the degree of levee lowering to mean higher high water. This would result in less earth moving, a shorter construction period, and overall reduced short-term environmental impacts relative to those presented for the action alternatives, while providing greater potential for long-term high-tide refugia for special-status wildlife species.

A similar reduction in impacts, while creating the same type of long-term habitat enhancements, would come from the decision for the Preferred Alternative to not lower or remove all of the designated portions of those levees. Instead, there would be small portions of the existing levees left unchanged to act as habitat islands, bird roosting areas, and high-tide refugia. The result would be slight reductions in the magnitudes of effects that were noted from earth-moving and other construction activities, as well as for the potential impacts on various guilds and species of birds that might roost or nest on the existing levees. While those impacts were found to be less than significant, this change would reduce them further and bring additional habitat benefits for birds and terrestrial species while not substantially reducing the benefits from lowering and removing the rest of those levees, as described.

Table 6-1. Comparison of Alternatives at the Alviso-Island Ponds

ALTERNATIVE ISLAND B	ALTERNATIVE ISLAND C	PREFERRED ALTERNATIVE AT THE ISLAND PONDS
Breach north side of Pond A19 in two places.	Breach north side of Pond A19 in two places.	As described in Alternatives Island B and C: breach north side of Pond A19 in two places. <i>Clarifications and refinements: Locate breaches to avoid small spikerush plants. Sidecast material into ponds to fill borrow ditches, build ditch blocks, and create raised areas. Lower levees only to mean higher high water instead of mean high water.</i>
Lower or remove much of Pond A19's northern and southern levees.	Lower or remove much of Pond A19's northern and southern levees.	As described in Alternatives Island B and C: lower or remove much of Pond A19's northern and southern levees west of the western breaches. <i>Clarifications and refinements: Lower levees only to mean higher high water instead of mean high water. Leave several high sections of existing levees to serve as high-tide refugia. Sidecast material as described above.</i>
Remove Pond A19's western levee and Pond A20's eastern levee to connect these two ponds.	Remove Pond A19's western levee and Pond A20's eastern levee to connect these two ponds.	As described in Alternatives Island B and C: remove Pond A19's western levee and Pond A20's eastern levee to connect these two ponds. <i>Clarifications and refinements: Leave several high sections of existing levees to serve as high-tide refugia. Sidecast material as described above.</i>
Do not breach north sides of Ponds A20 and A21.	Breach the north sides of Ponds A20 and A21.	As described for Alternative Island B: do not breach north sides of Ponds A20 and A21.
Do not lower or remove Pond A20's northern or southern levees.	Lower portions of Pond A20's northern and southern levees.	As described for Alternative Island B: do not lower or remove Pond A20's northern or southern levees.
Do not widen existing breaches on Pond A19's southern side.	Widen existing breaches on Pond A19's southern side.	A scaled-down version of that described in Alternative Island C: widen only the westernmost of the two existing breaches on south side of Pond A19. Sidecast material as described above.
Do not excavate pilot channels within Pond A19.	Excavate two pilot channels within Pond A19.	As described for Alternative Island B: do not excavate pilot channels within Pond A19.



LEGEND

- Proposed breach
- Existing breach
- Expand existing breach
- Railroad
- Removed levee
- Lowered levee
- Tidal marsh
- Pond boundary
- Existing trail

The final modification involves the placement of the breach locations on the north side of Pond A19. As noted in Table 6-1 and in the preceding section, these choices were made to avoid the need to relocate or risk affecting individual small spikerush plants. The small spikerush is not a listed species under the federal or California Endangered Species Act, but it is comparatively rare. Selecting the breach locations to avoid individuals of this species would eliminate the need to relocate the individuals and thus further reduce the potential for adverse impacts. This is a design decision that provides an additional layer of protection for this species and does not change the impact significance determinations.

This discussion demonstrates that the impacts of the portion of the Preferred Alternative that would be implemented at the Island Ponds is generally similar to, but in some cases somewhat less than, that presented for Alternative Island B in the earlier chapters of this EIS/R. Where its impacts would vary from those discussed in Alternative Island B, they are similar to – but reduced in magnitude from – those presented for Alternative Island C.

6.1.3 Preferred Alternative at the Mountain View Ponds

Description and Explanation

Table 6-2 compares Alternative Mountain View B and Alternative Mountain View C with the Preferred Alternative at the Mountain View Ponds, which is illustrated in **Figure 6-2**. As can be seen, the Preferred Alternative for the Alviso-Mountain View Ponds is much like Alternative Mountain View B, as it was described in the Draft EIS/R, with a few minor modifications and components drawn from Alternative Mountain View C as it was described in the Draft EIS/R. The proposed modifications would further reduce the less than significant environmental impacts relative to those presented in the Draft EIS/R while still achieving the project's goals.

Alternative Mountain View B was chosen as the starting point for the Preferred Alternative at the Mountain View Ponds because it could achieve the project's Phase 2 goals and objectives for this pond cluster with a reduced level of impact relative to that presented in Alternative Mountain View C and because of feasibility and regulatory difficulties that would have been realized if the full version of Alternative C had been pursued.

The main difference between Alternatives Mountain View B and Mountain View C in the Draft EIS/R was the inclusion of Charleston Slough into the Phase 2 actions. In the portion of the Preferred Alternative at the Mountain View Ponds, the connection of Charleston Slough to Pond A1 is not included. There are several reasons for this decision.

Restoration of approximately half of Charleston Slough to tidal marsh is a regulatory requirement for the City of Mountain View under a permit from the San Francisco Bay Conservation and Development Commission (BCDC). It is not a decision to be made by either the City of Mountain View or the SBSP Restoration Project. The inclusion of Charleston Slough in Phase 2 of the SBSP Restoration Project (instead of as a separate project to be undertaken by the city) was initially considered because such a joint effort would reduce the financial cost, the temporary environmental impacts associated with construction, and the permanent environmental impacts of having an improved levee between two restoring marshes. Linking the two areas would also increase the ecological function and habitat connectivity of the two marshes.

However, in the public comments on the Draft EIS/R, a number of regulatory agencies expressed concern about the potential effects on steelhead and other estuarine fish under Alternative Mountain View C. At

the center of this concern is the question of whether the combined elements of the initial proposal for Alternative Mountain View C in the Draft EIS/R would have an impact on these fish. The increased connectivity between Stevens Creek, Pond A1 and Pond A2W was planned to provide additional nursery habitat for outmigrating steelhead and good general use habitat for other estuarine fish. However, these changes would have necessitated moving the water intake for the Shoreline Park sailing lake. That relocation into the breach at the southwest corner of Pond A1 would have the potential to entrain some of these fish.

In coordination with the National Marine Fisheries Service (NMFS), the SBSP Restoration Project has concluded that without a fish screen in place at the new water intake location, the effects could rise to the level of a significant impact and “take” of a species listed under the Endangered Species Act. A fish screen would thus likely be a required part of this project component. However, the limited area available for the water intake would be inadequate to accommodate the enlarged size of the new intake and screen necessary to provide adequate flows to the sailing lake. That technical and logistical infeasibility, combined with the very high initial capital cost and ongoing operations and maintenance costs, make it impracticable to include the fish screen for the water intake at this new location. Yet under Alternative C, without the water intake at the breach location, it is not clear that the City of Mountain View could meet the Shoreline Park sailing lake’s water demand.

Therefore, most of the actions from Alternative Mountain View C that include linking Charleston Slough to Phase 2 of the SBSP Restoration Project were discarded. The Preferred Alternative includes the Alternative Mountain View B components with a few components described and analyzed under Alternative Mountain View C and other minor design changes as listed in the following bullets.

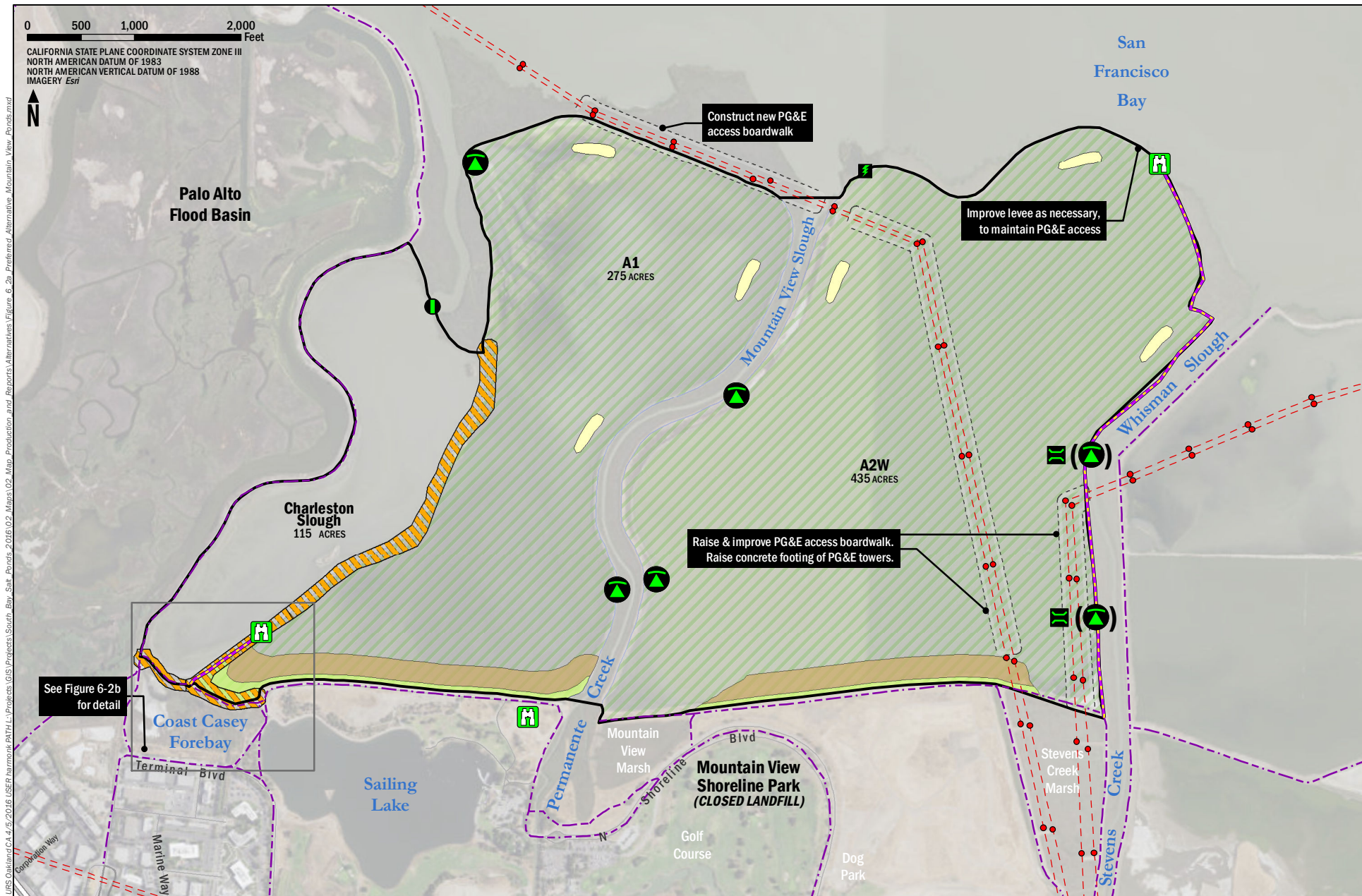
- In the Preferred Alternative, the changes to the Coast Casey Forebay levee and its associated structures (including the existing trail and viewing platform, utility access, access to the pump station building, etc.) would be largely as described for Alternative Mountain View C, except for those related to the new location for the sailing lake’s water intake. For reference, **Figure 6-2a** and its inset map, **Figure 6-2b**, show the extent of the improved levee.
- The improved Coast Casey Forebay levee would be as wide as described for Alternative Mountain View C, but would be to an elevation 8 inches higher than that described in the Draft EIS/R.
- The breaches into Pond A1 for the Preferred Alternative would be as described for Alternative Mountain View C except the breach near Pond A1’s southwest corner would not be implemented. There would be only two breaches into Pond A1, as shown on **Figure 6-2**.
- The habitat transition zone in Pond A2W would be as described for Alternative Mountain View C, which would not extend all the way across the southern border of the pond.
- The number of proposed habitat islands constructed in each pond has been reduced from eight per pond to three to five islands per pond.
- Alternative Mountain View C included a public access trail on the existing levee along the eastern and northern borders of Pond A2W. As shown on **Figure 6-2**, the Preferred Alternative at the Mountain View Ponds includes a shorter version of this trail, which would end at a viewing platform at the northeast corner of the pond instead of extending all the way to the northwest corner.

Table 6-2. Comparison of Alternatives at the Alviso-Mountain View Ponds

ALTERNATIVE MOUNTAIN VIEW B	ALTERNATIVE MOUNTAIN VIEW C	PREFERRED ALTERNATIVE AT THE MOUNTAIN VIEW PONDS
Do not include Charleston Slough in tidal marsh restoration.	Include Charleston Slough in tidal marsh restoration.	As described for Alternative Mountain View B: do not include Charleston Slough in tidal marsh restoration.
Raise and improve western levee of Pond A1.	Lower and breach western levee of Pond A1.	As described for Alternative Mountain View B: raise and improve western levee of Pond A1.
Breach the west side of Pond A1 at one location.	Breach Pond A1 at three locations.	Largely as described for Alternative Mountain View C: breach Pond A1 at more than one location. <i>Clarifications and refinements: breach at only two of the three locations in that alternative.</i>
Do not breach Charleston Slough and connect it to Pond A1.	Breach Charleston Slough and connect it to Pond A1 (necessarily includes the italicized listed subcomponents below).	As described for Alternative Mountain View B: do not breach Charleston Slough to connect it to Pond A1. <i>Clarifications and refinements: include only the subcomponents from Alternative C as listed below.</i>
	<i>§ Open Charleston Slough to full tidal exchange, by breaching the northern levee or by removing the tide gate structure itself, to allow vegetation to colonize the mud flats surrounding the slough's main channel.</i>	<i>§ Not included.</i>
	<i>§ Raise and improve the western levee of Charleston Slough, which separates it from the Palo Alto Flood Basin.</i>	<i>§ Not included.</i>
	<i>§ Raise the Coast Casey Forebay levee along southern border of Charleston Slough and associated sailing lake water intake and pump station structures.</i>	<i>§ Raise the Coast Casey Forebay levee along southern border of Charleston Slough and necessary utilities.</i>
	<i>§ Add a primary water intake for the Mountain View Shoreline Park sailing lake at the breach in the levee between Charleston Slough and Pond A1.</i>	<i>§ Not included.</i>
	<i>§ Lower western levee of Pond A1.</i>	<i>§ Not included.</i>
	<i>§ Rebuild the existing viewing platform along the Coast Casey Forebay levee; rebuild the existing trail and replace benches and signage along the improved western levee of Charleston Slough.</i>	<i>§ Rebuild the existing trail, viewing platform, benches, and signage along the Coast Casey Forebay levee.</i>
	<i>§ Armor levee on landward side of breach between Pond A1 and Charleston Slough.</i>	<i>§ Not included.</i>

Table 6-2. Comparison of Alternatives at the Alviso-Mountain View Ponds

ALTERNATIVE MOUNTAIN VIEW B	ALTERNATIVE MOUNTAIN VIEW C	PREFERRED ALTERNATIVE AT THE MOUNTAIN VIEW PONDS
Construct bird habitat islands in Ponds A1 and A2W.	Construct bird habitat islands in Ponds A1 and A2W.	As described for Alternatives Mountain View B and C: construct bird habitat islands in Ponds A1 and A2W. <i>Clarifications and refinements: plan is for 3-5 bird habitat islands in each of Ponds A1 and A2W, a lower number than in the Draft EIS/R.</i>
Construct habitat transition zones across entire southern extent of Ponds A1 and A2W.	Construct a habitat transition zone across entire southern extent of Pond A1 but only across central portion of A2W.	As described for Alternative Mountain View C: construct a habitat transition zone across entire southern extent of Pond A1 but only across central portion of Pond A2W.
Breach Pond A2W at four locations.	Breach Pond A2W at four locations.	As described for Alternatives Mountain View B and C: breach Pond A2W at four locations.
Armor the two eastern breaches of Pond A2W and add railcar bridges over the two breaches for Pacific Gas and Electric Company (PG&E) access.	Armor the two eastern breaches of Pond A2W and add railcar bridges over the two breaches for PG&E access and recreational trail access.	As described for Alternative Mountain View C: armor the two eastern breaches of Pond A2W and add railcar bridges over the two breaches for Pacific Gas and Electric Company (PG&E) access and recreational trail access.
Raise concrete footings of PG&E towers in Pond A2W; elevate existing PG&E access boardwalk in Pond A2W; construct new sections of boardwalk from Pond A2W to connect to existing boardwalk over Bay outside of the Palo Alto Flood Basin.	Raise concrete footings of PG&E towers in Pond A2W; elevate existing PG&E access boardwalk in Pond A2W; construct new sections of boardwalk from Pond A2W to connect to existing boardwalk over Bay outside of Palo Alto Flood Basin.	As described for Alternatives Mountain View B and C: raise concrete footings of PG&E towers in Pond A2W; elevate existing PG&E access boardwalk in Pond A2W; construct new sections of boardwalk from A2W to connect to existing boardwalk over Bay outside of Palo Alto Flood Basin.
Add viewing platform in Shoreline Park south of Pond A1.	Add viewing platform in Shoreline Park south of Pond A1.	As described for Alternatives Mountain View B and C: add viewing platform in Shoreline Park south of Pond A1.
Construct spur trail on improved western levee of Pond A1 to a viewing platform.	Construct spur trail on improved western levee of Pond A1 to a viewing platform at the armored breach.	As described for Alternative Mountain View B: construct spur trail on improved western levee of Pond A1 to a viewing platform.
Do not add a spur trail from Bay Trail spine along Charleston Slough's northern levee	Add a spur trail from Bay Trail spine along Charleston Slough's northern levee to a viewing platform at or near the breach location.	As described for Alternative Mountain View B: do not add a spur trail from Bay Trail spine along Charleston Slough's northern levee to a viewing platform.
Do not add a recreational trail on eastern or northern levee of Pond A2W.	Add recreational trail on eastern and northern sides of Pond A2W to a bay side viewing platform near PG&E turnaround point.	As described for Alternative Mountain View C: add recreational trail to levee around Pond A2W to a bayside viewing platform on the outer corner of Pond A2W. <i>Clarifications and refinements: trail would be shorter and end at northeast corner of Pond A2W instead of the PG&E turnaround at the northwest corner.</i>



LEGEND

- | | | | | | | |
|-----------------------|-------------------------------------|---------------------------|-----------------|----------------|---------------|----------------------------------------------------------------------------|
| Existing control gate | Proposed armored breach (two sides) | PG&E turnaround | PG&E tower | Raised levee | Tidal marsh | Habitat Transition Zone
High marsh habitat
Intertidal habitat |
| Proposed breach | Bridge | Proposed viewing platform | PG&E power line | Habitat island | Pond boundary | |
| | | | Phase 2 trail | | | |
| | | | Existing trail | | | |

AECOM

South Bay Salt Pond Restoration Project

Figure 6-2a
Preferred Alternative Mountain View Ponds



LEGEND

- Existing pipeline
- Existing general feature

┌ Extent of levee improvements

Habitat Transition Zones at the Mountain View Ponds

As noted above, the Preferred Alternative would include habitat transition zones at the Mountain View Ponds. At the request of the San Francisco Bay Regional Water Quality Control Board, **Table 6-3** presents estimates of the areas and volumes of fill of the habitat transition zones proposed for the Phase 2 action alternatives at the Mountain View Ponds, as well as an estimation of what portion of each of them would be placed at elevations above mean higher high water (MHHW). Fill placed to build transition zones below that tidal elevation would be converting ponds to tidal wetlands, which are another form of waters of the U.S. and of the State of California., but fill placed above that elevation would be converting waters to uplands, which has regulatory implications. The potential impacts of this fill are discussed in full in the appropriate sections of Chapter 3. These estimates are based on the material volumes presented in the preliminary design memorandum for this pond cluster (Appendix M to the Draft EIS/R) and are based on simplifying assumptions using the average pond bottom elevation. The lengths are measured along the MHHW elevation and are thus specific to this exercise; slightly different numbers are presented in Chapter 2.

Table 6-3. Estimated Dimensions of Habitat Transition Zones at the Mountain View Ponds

HABITAT TRANSITION ZONE	LENGTH (FEET)	FOOTPRINT AREA (ACRES)	VOLUME (CUBIC YARDS)
Total Dimensions			
Pond A1 Habitat Transition Zone	3,900	21.3	88,000
Pond A2W Habitat Transition Zone	2,600	15.8	81,500
Dimensions Above Mean Higher High Water			
Pond A1 Habitat Transition Zone	3,900	4.4	4,818
Pond A2W Habitat Transition Zone	2,600	2.7	3,472

Summary of Impact Analysis from Chapter 3

The Preferred Alternative at the Mountain View Ponds is similar to Alternative Mountain View B. The potential for adverse environmental impacts from this portion of the Preferred Alternative, as well as the expected benefits, would be similar to those discussed for that action alternative in Chapters 3-5 of the Draft and Final versions of this EIS/R. The significance determinations were either “No Impact” or “Less than Significant.” The differences are discussed in the following paragraphs.

Regarding changes to the plans for the Coast Casey Forebay levee, in both action alternatives, approximately half of that levee, which runs along the southern border of Pond A1 and Charleston Slough and which is owned by the City of Mountain View, would have been raised and improved. In Alternative Mountain View C, that levee raise would have extended the entire length of that levee to elevation 14 feet NAVD88 and would have included raising and improving many of the existing appurtenant structures in and around that levee and/or the access to them. In Alternative Mountain View B, the levee would not have been raised to that height, nor would the improvement have extended the full length of that levee. The Preferred Alternative substitutes the Mountain View C improvements for those limited improvements in Alternative Mountain View B. The reasons for this are that raising and improving only one half of a

levee would be less effective and efficient at flood protection and would not maintain the integrity of the existing infrastructure in and around the levee (e.g., the water intake and pumping systems).

This change would bring a range of effects related to areas and volumes of fill, construction duration and emissions, material import, etc. that would be between those described in the Draft EIS/R for Alternative Mountain View B and Alternative Mountain View C. Since the significance determinations regarding impacts from Alternative Mountain View C were also found to be “Less than Significant” or “No Impact”, this part of the Preferred Alternative would also not have significant impacts or require new mitigation measures.

Another proposed change to the Coast Casey Forebay levee would be to add 0.7 feet (8.4 inches) of elevation to bring the proposed top elevation to 14.7 feet NAVD88. This is to comport with recent recommendations and guidance from the U.S. Army Corps of Engineers (USACE) and the Santa Clara Valley Water District (SCVWD) to better adapt to projections for sea-level rise, as resulted from the USACE and the SCVWD’s work on the first phase of the Shoreline Study Project in the South Bay. In Alternative Mountain View C in the Draft EIS/R, the base and foundation of the levee improvements would have been widened enough to support a levee up to 16 feet elevation NAVD88, so the change from 14.0 feet to 14.7 feet elevation would not require additional widening or increase the impacts associated with it.

This change would require additional volumes of material to be imported to the Mountain View Ponds site. However, there are several other changes being made to the Preferred Alternative at the Mountain View Ponds that would reduce the amount of material required such that the total amount of imported fill would be less relative to that presented for either of the two action alternatives. Those reductions would come from the reduced length of the habitat transition zone in Pond A2W, the reduction in numbers of islands per pond from eight to a maximum of five (actual range is three to five), and from the decision to not include Charleston Slough and thus need to improve major portions of the Palo Alto Flood Control Basin levee (these changes are discussed in following paragraphs). The estimates of the previous and revised material volumes are presented in **Table 6-4**.

Given that the total volume of material has decreased, while the footprint, areas of waters filled, and other changes would be similar or reduced from those presented in Alternative Mountain View C, these changes to these aspects of the Preferred Alternative would result in impacts that are less than or equal to those presented in the Draft EIS/R.

Table 6-4. Material Volumes for Selected Components at the Alviso-Mountain View Ponds, by Alternative

COMPONENT	ALTERNATIVE MOUNTAIN VIEW B	ALTERNATIVE MOUNTAIN VIEW C	PREFERRED ALTERNATIVE AT MOUNTAIN VIEW PONDS
Habitat Islands in Ponds A1 and A2W	92,000 cy for 16 total islands	92,000 cy for 16 total islands	58,000 for up to 10 total islands (3-5 per pond)
Pond A2W Habitat Transition Zone	125,700 cy	81, 500 cy	81, 500 cy
Raise levee between Pond A1 and Charleston Slough to SBSP Restoration Project-level	10,400 cy	n/a	10,400 cy

Table 6-4. Material Volumes for Selected Components at the Alviso-Mountain View Ponds, by Alternative

COMPONENT	ALTERNATIVE MOUNTAIN VIEW B	ALTERNATIVE MOUNTAIN VIEW C	PREFERRED ALTERNATIVE AT MOUNTAIN VIEW PONDS
Raise west levee of Charleston Slough and Coast Casey Forebay levee to 14 feet elevation (both levees combined)	n/a	155,000 cy	0 cy ²
Extra material to raise Coast Casey Forebay levee to 14.7 feet elevation	n/a	n/a	40,000 cy (estimated)
Total (for Changing Components Only)	228,100	328,500	189,900 cy

¹ cy = cubic yards

² In Alternative Mountain View C, the material total for these two levee raises was designed and presented together. In the Preferred Alternative, only one of these components is included, so the Coast Casey Forebay levee is presented separately in the next row.)

The Preferred Alternative includes Alternative Mountain View C's proposed habitat transition zone in Pond A2W instead of the one proposed for Alternative Mountain View B. This decision was made to allow for future hydraulic and habitat connections to be made between Pond A2W and the City of Mountain View's existing mitigation marshes that exist south of its two southern corners. Either transition zone option would bring ecological and habitat benefits to species and help protect the closed landfill behind the central portion of the pond, but the selected version keeps more options open for future improvements, requires less fill in the Bay, and needs less material to be imported for Phase 2. All of these factors mean that the potential impacts from this component of the Preferred Alternative would be less than significant, as they were in Alternative Mountain View C.

Both action alternatives in the Draft EIS/R included habitat islands for the near-term use of pond-dependent birds. The preliminary designs for these islands assumed that up to 8 islands would be built in each pond. However, ongoing research by the SBSP Restoration Project's science team and by the U.S. Geological Survey indicate that three to five islands per pond is where the highest restoration values can be realized; additional islands beyond that number bring fewer benefits to the bird guilds and species for which they are intended. They also increase the demand for fill material and increase the total area and volume of fill placed in the Bay. The Preferred Alternative includes three to five islands per pond, depending on the material available. This would achieve the same ecological benefits for birds and other species discussed in the Draft EIS/R at levels of impacts that would be reduced relative to those presented in that document, which were determined to be less than significant, even at the higher number of islands.

Regarding the shorter public access trail on the eastern levee of Pond A2W, some of the above-described habitat islands would be built along the northern margin of Pond A2W. Ending the recreational trail before it approaches the islands would reduce the recreational impacts on the birds that are expected to use the islands while still adding a new public access trail approximately 1 mile long that would provide the experience of being adjacent to the open bay. Again, the proposed benefits (here, a recreational benefit) would be achieved at a lower risk of environmental impact than what was determined to be less than significant.

This discussion demonstrates that the impacts of the portion of the Preferred Alternative that would be implemented at the Mountain View Ponds is generally similar to, but in some cases somewhat less than,

that presented for Alternative Mountain View B in the earlier chapters of this EIS/R. Where its impacts would vary from those discussed in Alternative Mountain View B, they are similar to – but reduced in magnitude from – those presented for Alternative Mountain View C.

6.1.4 Preferred Alternative at the A8 Ponds

Description and Explanation

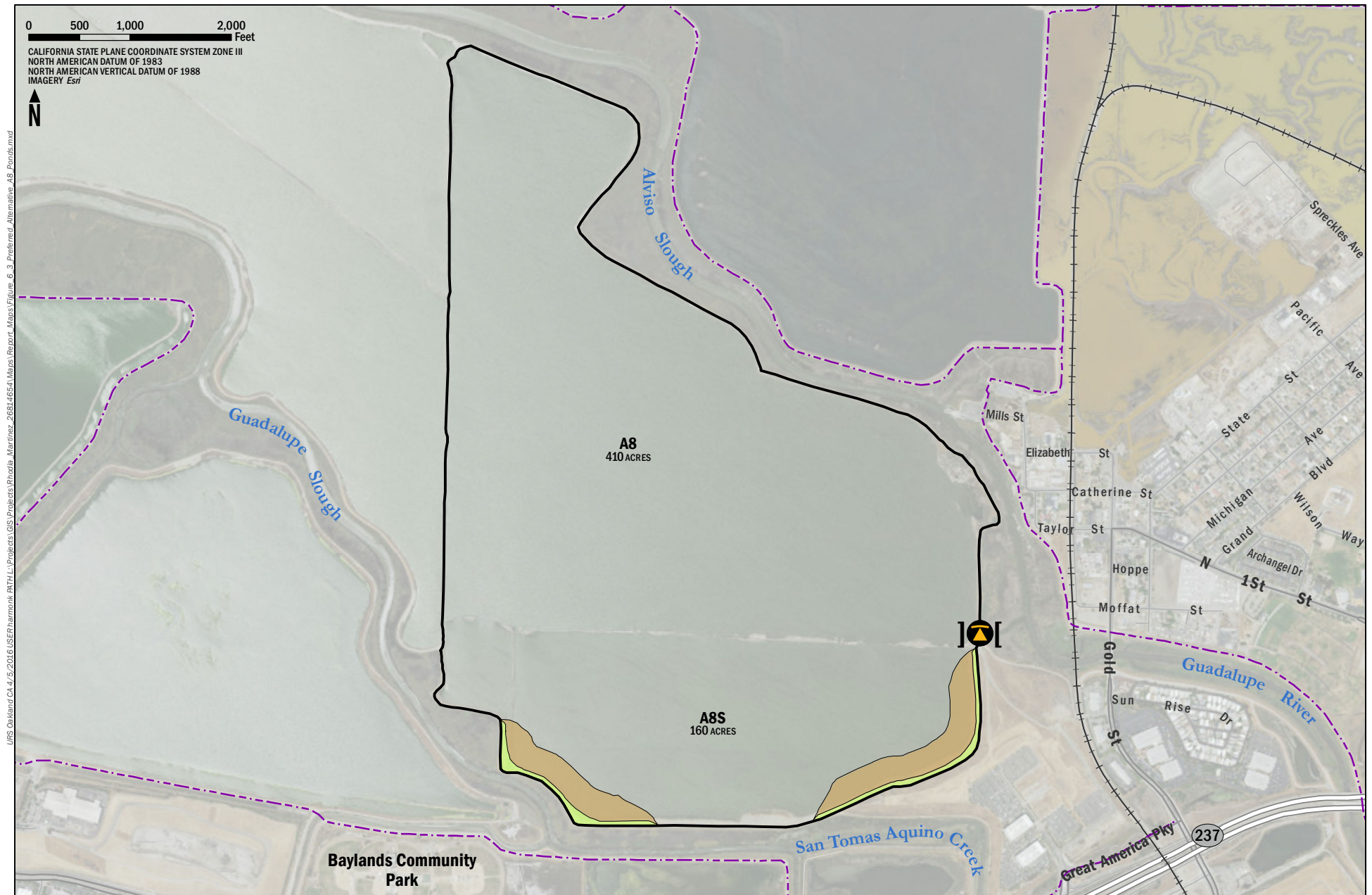
The Preferred Alternative at the Alviso-A8 Ponds, which is illustrated in **Figure 6-3**, is identical to Alternative A8 B, which was the only action alternative discussed in the Draft EIS/R for this pond cluster. Alternative A8 B included building habitat transition zones at the southwest and southeast corners of these ponds to provide all of the various benefits such transition zones provide. These include habitat complexity and diversity, erosion protection for the landfill and levees behind them, and sea-level rise adaptation. The only component of that action alternative modified for the Preferred Alternative is increasing the tops of the proposed habitat transition zones from elevation 7.5 feet NAVD88 to 9 feet NAVD88 for increased erosion protection. There is, however, also a corrected estimate for the volume of material to construct these transition zones.

Habitat Transition Zones at the A8 Ponds

As noted above, the Preferred Alternative would include habitat transition zones at the A8 Ponds. At the request of the San Francisco Bay Regional Water Quality Control Board, **Table 6-5** presents estimates of the areas and volumes of fill of the habitat transition zones proposed for the Phase 2 action alternatives at the A8 Ponds, as well as an estimation of what portion of each of them would be placed at elevations above MHHW. Fill placed to build transition zones below that tidal elevation would be converting ponds to tidal wetlands, which are another form of waters of the U.S. and of the State of California, but fill placed above that elevation would be converting waters to uplands, which has regulatory implications. The potential impacts of this fill are discussed in full in the appropriate sections of Chapter 3. These estimates are based on the material volumes developed for the preliminary design memorandum for this pond cluster (Appendix N to the Draft EIS/R) and then modified and corrected as described in Section 6.1.4.3 below. They are based on simplifying assumptions using the average pond bottom elevation. The lengths are measured along the MHHW elevation and are thus specific to this exercise; slightly different numbers are presented in Chapter 2.

Summary of Impact Analysis from Chapter 3

The portion of the Preferred Alternative that would be implemented at the A8 Ponds is the same as that described and analyzed for Alternative A8 B in the Draft and Final EIS/R. Therefore, the impacts of that part of the Preferred Alternative at the A8 Ponds are very similar in nature and magnitude. The significance determinations were all either “No Impact” or “Less than Significant.”



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| | Existing reversible armored notch | | Railroad | | Habitat Transition Zone |
| | Existing trail | | Pond boundary | | High marsh habitat |
| | | | | | Intertidal habitat |

Table 6-5. Estimated Dimensions of Habitat Transition Zones at the A8 Ponds

HABITAT TRANSITION ZONE	LENGTH (FEET)	FOOTPRINT AREA (ACRES)	VOLUME (CUBIC YARDS)
Total Dimensions			
Southwest Habitat Transition Zone	2,100	13.1	94,600
Southeast Habitat Transition Zone	2,300	14.8	95,400
Dimensions Above Mean Higher High Water			
Southwest Habitat Transition Zone	2,100	2.3	2,936
Southeast Habitat Transition Zone	2,300	2.4	3,024

As described in Chapter 2, however, there is a corrected estimate for the volume of material as well as a design change in this portion of the proposed Preferred Alternative. The corrected estimate and the increase in the top elevation of the habitat transition zones (from 7.5 to 9 feet) have increased the volume of material that is needed to construct the transition zones. The combined total after these changes make the volume of material to construct the proposed habitat transition zones 190,000 cubic yards. However, these two changes do not cause any new significant impacts, increase the degree or magnitude of any significant impacts (none were identified), or necessitate any new mitigation measures. The reasons for this are that:

- The impacts analysis in the Draft EIS/R already assumed the “worst-case scenario” for number of truck trips required to impact the fill material. That document used the maximum feasible number of truckloads that could be safely brought to the site each day (i.e., the number of trucks that can physically access the site during the construction hours). Therefore, the increase in material volumes would necessarily increase the number of days required to import and place the material, but not the numbers per day or per hour.
- There would be no increase in impacts related to traffic, noise, or air quality, the regulations and the significance thresholds for which are evaluated on a daily basis. The daily or hourly totals would not be increased by this change; only the number of days on which they would occur.
- The overall greenhouse gas emissions will increase, but, as described in Section 3.17, the proposed project has extremely low net emissions and is not close to crossing a significance threshold.
- The footprint area and volume of fill in waters of the U.S. and the State will increase, but these are beneficial forms of fill that are largely self-mitigating, even at their increased magnitudes.
- The other effects would be as described in the Draft EIS/R. Preferred Alternative at the Ravenswood Ponds.

Description and Explanation

Table 6-6 compares the three action alternatives (Alternatives Ravenswood B, C, and D) with the Preferred Alternative at the Ravenswood Ponds, which is illustrated in **Figure 6-4**. As can be seen, the Preferred Alternative for the Ravenswood Ponds is much like Alternative Ravenswood B, as it was described in the Draft EIS/R, with a few minor modifications and two components drawn from

Alternative Ravenswood C and D. The proposed modifications would further reduce the minimal amounts of environmental impacts, relative to those presented in the Draft EIS/R, while still achieving the project's goals.

Alternative Ravenswood B was chosen as the starting point for the Preferred Alternative at the Ravenswood Ponds because it could achieve the project's Phase 2 goals and objectives for this pond cluster with a reduced level of impact relative to the other action alternatives and because of feasibility and regulatory difficulties that would have been realized if the other action alternatives had been pursued.

The largest difference between the three action alternatives is the restoration and flood protection actions that were being considered for Ponds R5 and S5 (and the small forebay to S5). In Alternative Ravenswood B, these two small ponds would be combined, fitted with water control structures, and enhanced to be shallow managed ponds for dabbling ducks and small shorebirds. In Alternative Ravenswood C, they would be graded and managed to simulate intertidal mudflats. And in Alternative Ravenswood D, they would be deeper managed ponds and would also be connected to a diversion channel for peak flows of stormwater runoff from a neighboring project. That project was the City of Redwood City's Bayfront Canal and Atherton Channel (BCAC) Project.

The intertidal mudflat option for Ponds R5 and S5, described in Alternative Ravenswood C, was determined to be of less ecological restoration benefit than the shallow managed ponds that were described for Alternative B, and would also be substantially harder to operate and maintain. The connection with the BCAC Project proposed under Alternative Ravenswood D had to be eliminated because its inclusion presented both regulatory and environmental constraints. It would have been necessary to control and monitor the quality of the stormwater runoff that would be occasionally diverted into Ponds R5 and S5. The SBSP Restoration Project as well as multiple regulatory agencies that reviewed the Draft EIS/R noted that a water quality monitoring and control plan would be necessary to ensure that the water diverted into the ponds would not have adverse impacts to the pond environment. Such a water quality control and monitoring plan was not developed and circulated to the regulatory agencies. Without the information provided by a water quality monitoring and control plan, the SBSP Restoration project cannot fully analyze the impacts of the BCAC Project. This precluded Alternative Ravenswood D's restoration plan for Ponds R5 and S5 being included in the Preferred Alternative for Phase 2. However, this does not preclude future implementation of the BCAC Project, subject to appropriate water quality monitoring and control plans and appropriate NEPA and CEQA processes.

For those reasons, the Preferred Alternative at Ravenswood is similar to Alternative Ravenswood B, which includes the enhancement of Ponds R5 and S5 as shallow water ponds. The Ravenswood portion of the Preferred Alternative would also include all other aspects of what was presented for Alternative Ravenswood B in the Draft EIS/R, plus three components from the other action alternatives included in the Draft EIS/R and several minor modifications to further reduce impacts, all of which are described in the following list. The consequences of these changes are described in the following section.

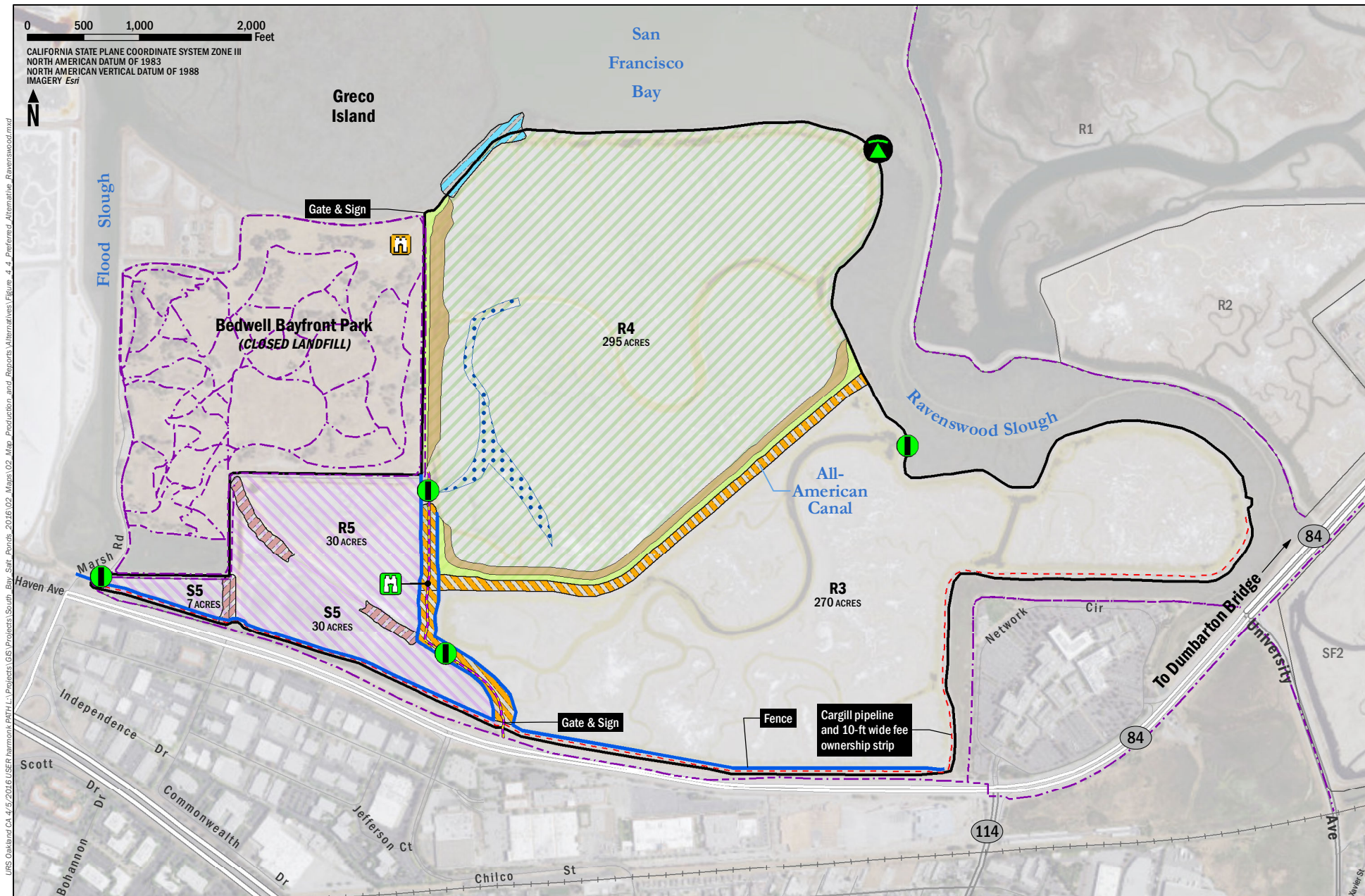
- As described in Alternatives Ravenswood C and D, the water control structure between Pond R3 and Pond S5 would be included.
- As described in Alternatives Ravenswood C and D, the habitat transition zone extending from the All-American Canal into Pond R4 would be included.

Table 6-6. Comparison of Alternatives at the Ravenswood Ponds

ALTERNATIVE RAVENSWOOD B	ALTERNATIVE RAVENSWOOD C	ALTERNATIVE RAVENSWOOD D	PREFERRED ALTERNATIVE AT THE RAVENSWOOD PONDS
R5/S5 as shallow managed ponds.	R5/S5 as intertidal mudflats.	R5/S5 as deeper managed ponds for Bayfront Canal & Atherton Channel connection.	As described for Alternative Ravenswood B: R5/S5 as shallow managed ponds.
No connection from Bayfront Canal into S5's triangular forebay.	No connection from Bayfront Canal into S5's triangular forebay.	Connect S5's triangular forebay to Bayfront Canal.	As described for Alternatives Ravenswood B and C: no connection from Bayfront Canal into S5's triangular forebay.
Improve All-American Canal levee.	Improve All-American Canal levee.	Improve All-American Canal levee.	As described for Alternatives Ravenswood B, C and D: improve All-American Canal levee. <i>Clarifications and Refinements: extend levee improvements around to southern margin of S5.</i>
No All-American Canal habitat transition zone.	All-American Canal habitat transition zone.	All-American Canal habitat transition zone.	As described for Alternatives Ravenswood C and D: All-American Canal habitat transition zone.
Bedwell Bayfront Park habitat transition zone.	Bedwell Bayfront Park habitat transition zone.	No Bedwell Bayfront Park habitat transition zone.	As described for Alternatives Ravenswood B and C: Bedwell Bayfront Park habitat transition zone.
No Pond R4 Northwest habitat transition zone.	No Pond R4 Northwest habitat transition zone.	Pond R4 Northwest habitat transition zone.	As described for Alternatives Ravenswood B and C: no transition zone in northwest corner of Pond R4.
Remove parts of Ponds R5 and S5 internal levees.	Remove parts of Ponds R5 and S5 levees.	Remove all of Ponds R5 and S5 internal levees.	As described for Alternatives Ravenswood B and C: remove parts of Ponds R5 and S5 internal levees.
Do not grade and partially fill Ponds R5/S5.	Grade and partially fill Ponds R5/S5.	Do not grade and partially fill Ponds R5/S5.	As described for Alternatives Ravenswood B and D: do not grade or fill Ponds R5/S5.
Ponds R4/R5 water control structure.	Ponds R4/R5 water control structure.	Ponds R4/R5 water control structure.	As described for Alternatives Ravenswood B, C and D: Ponds R4/R5 water control structure.
No water control structure between Ponds R3/S5.	Ponds R3/S5 water control structure.	Ponds R3/S5 water control structure.	As described for Alternatives Ravenswood C and D: Ponds R3/S5 water control structure.
Pond R3/Ravenswood Slough water control structure.	Pond R3/Ravenswood Slough water control structure.	Pond R3/Ravenswood Slough water control structure.	As described for Alternatives Ravenswood B, C and D: Pond R3/Ravenswood Slough water control structure.
Pond S5/Flood Slough water control structure.	Pond S5/Flood Slough water control structure.	Pond S5/Flood Slough water control structure.	As described for Alternatives Ravenswood B, C and D: Pond S5/Flood Slough water control structure.
Pond R4 pilot channel.	Pond R4 pilot channel.	No Pond R4 pilot channel.	As described for Alternatives Ravenswood B and C: Pond R4 pilot channel.

Table 6-6. Comparison of Alternatives at the Ravenswood Ponds

ALTERNATIVE RAVENSWOOD B	ALTERNATIVE RAVENSWOOD C	ALTERNATIVE RAVENSWOOD D	PREFERRED ALTERNATIVE AT THE RAVENSWOOD PONDS
Pond R4 east breach.	Pond R4 east breach.	Pond R4 east breach.	As described for Alternatives Ravenswood B, C and D: Pond R4 breach. <i>Clarifications and Refinements: move breach to the northeast corner of the pond instead of on its eastern edge.</i>
No Pond R4 northwest breach.	Pond R4 northwest breach.	No Pond R4 northwest breach.	As described for Alternatives Ravenswood B and D: no breach at northwest corner of Pond R4.
Lower Pond R4 northwest levee.	Lower Pond R4 northwest levee.	Do not lower Pond R4 northwest levee.	As described for Alternatives Ravenswood B and C: lower Pond R4 levee. <i>Clarifications and Refinements: lower only to mean higher high water instead of mean high water.</i>
Ponds R5 and S5 bird habitat island.	Ponds R5 and S5 bird habitat island.	No bird habitat island Ponds R5 and S5.	As described for Alternatives Ravenswood B and C: Ponds R5 and S5 bird habitat island; add toppings to enhance it.
Viewing platform near Pond R5.	Viewing platform near Pond R5.	Viewing platform near Pond R5.	As described for Alternatives Ravenswood B, C and D: Viewing platform near Pond R5. <i>Clarifications and Refinements: move this platform to a location near the midpoint of the R5/S5 loop trail that would also be added.</i>
No additional public access trail at northwestern corner of Pond R4.	Pond R4 boardwalk trail at northwest corner.	Pond R4 trail on northwest levee.	As described for Alternative Ravenswood B: no additional public access trail at northwestern corner of Pond R4.
No Pond R4 viewing platform.	Pond R4 viewing platform.	Pond R4 viewing platform.	As described for Alternative Ravenswood B: no viewing platform at northwest corner of Pond R4.
No loop trail around Ponds R5 and S5 to connect to Bay Trail.	Complete loop trail around Ponds R5 and S5 to connect to Bay Trail.	Complete loop trail around Ponds R5 and S5 to connect to Bay Trail.	As described for Alternatives Ravenswood C and D: complete loop trail around Ponds R5 and S5 to connect to Bay Trail. <i>Clarifications and Refinements: add low symbolic deterrent fencing along entire length of new trail.</i>



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| | Proposed breach | | Proposed viewing platform | | Railroad | | Cargill pipeline | | Lowered levee | | Pilot channel | | Pond boundary | | Habitat Transition Zone |
| | Proposed water control structure | | Existing viewing platform | | Existing trail | | Fence | | Improved levee | | Tidal marsh | | Managed pond | | High marsh habitat |
| | | | Phase 2 trail | | Removed levee | | | | Intertidal habitat | | | | | | |

*Pending property rights/easements

AECOM

South Bay Salt Pond Restoration Project

Figure 6-4
Preferred Alternative Ravenswood Ponds

- As described in Alternatives Ravenswood C and D, the trail along the improved eastern levees of Ponds R5 and S5 would be included. Symbolic deterrent fencing and signage would be added to remind trail users to stay on the trail and out of the restoration areas on either side.
- The lowering of the levee at the northwest corner of Pond R4 was included in Alternative Ravenswood B. It would have been lowered to mean high water. Under the Preferred Alternative at the Ravenswood Ponds, it would be lowered only to mean higher high water.
- In a minor change from Alternative Ravenswood B, the proposed viewing platform would be relocated from the edge of Bedwell Bayfront Park to a new trail that would be added onto the improved eastern levees of Ponds R5 and S5.
- A second minor change to the restoration design would include the addition of sand or shell toppings to the bird habitat island that would be in the center of the R5-S5 pond group.
- The location of the breach into Pond R4 from Ravenswood Slough would be relocated from the eastern border of the pond (the location discussed for all three action alternatives) to the northeast corner of Pond R4.
- The levee improvements discussed in all three action alternatives included raising the small levees around the All-American Canal and the eastern border of Pond R5. The Preferred Alternative at Ravenswood includes an extension of those improvements along the eastern border of Pond S5 to provide more ability to separately manage water levels and quality in Ponds R3 and the combined R5/S5 managed ponds.

Several components that were included in the other action alternatives were not included because, while they may have provided one form of benefit for one resource type, they would have had larger adverse impacts on other resources. One example of this is the trail at the northwest corner of Pond R4 (considered under Alternatives Ravenswood C and D), which would have added a public access feature but would have had a greater (though still less than significant) impact on marsh-dependent wildlife species.

Habitat Transition Zones at the Ravenswood Ponds

As noted above, the Preferred Alternative would include habitat transition zones at the Ravenswood Ponds. At the request of the San Francisco Bay Regional Water Quality Control Board, **Table 6-7** presents estimates of the areas and volumes of fill of the habitat transition zones proposed for the Phase 2 action alternatives at the Ravenswood Ponds, as well as an estimation of what portion of each of them would be placed at elevations above MHHW. Fill placed to build transition zones below that tidal elevation would be converting ponds to tidal wetlands, which are another form of waters of the U.S. and of the State of California, but fill placed above that elevation would be converting waters to uplands, which has regulatory implications. The potential impacts of this fill are discussed in full in the appropriate sections of Chapter 3. These estimates are based on the material volumes presented in the preliminary design memorandum for this pond cluster (Appendix N to the Draft EIS/R) and are based on simplifying assumptions using the average pond bottom elevation. The lengths are measured along the MHHW elevation and are thus specific to this exercise; slightly different numbers are presented in Chapter 2.

Table 6-7. Estimated Dimensions of Habitat Transition Zones at the Ravenswood Ponds

HABITAT TRANSITION ZONE	LENGTH (FEET)	FOOTPRINT AREA (ACRES)	VOLUME (CUBIC YARDS)
Total Dimensions			
Bedwell Bayfront Park Habitat Transition Zone	2,500	10.5	44,600 ¹
All-American Canal Habitat Transition Zone	5,200	15.7	39,400
Dimensions Above Mean Higher High Water			
Bedwell Bayfront Park Habitat Transition Zone	2,500	2.7	1,527
All-American Canal Habitat Transition Zone	5,200	5.7	3,037

¹ The habitat transition zone adjacent to Bedwell Bayfront Park has a smaller footprint than the one adjacent to the All-American Canal, but it has a greater volume because it needs to fill a very large borrow ditch and former slough channel.

Summary of Impact Analysis from Chapter 3

The Preferred Alternative at the Ravenswood Ponds is similar to Alternative Ravenswood B. The potential for adverse environmental impacts from this portion of the Preferred Alternative, as well as the expected restoration benefits, would therefore be similar to those discussed for Alternative Ravenswood B in Chapters 3-5 of the Draft EIS/R. In addition, there are more habitat enhancement and public access benefits that can be added to the Preferred Alternative from Alternatives Ravenswood C and D without creating a significant impact or requiring new mitigation measures. The significance determinations from all three action alternatives in the Draft EIS/R were either “No Impact” or “Less than Significant.” The differences are discussed in the following paragraphs.

As noted above, the Preferred Alternative adds some components from Alternatives Ravenswood C and D. These components were described in the Draft EIS/R, and their potential effects on the resources with which they would interact are expected to be very similar to the conclusions made in that document. The placement of a water control structure between Pond R3 and Pond S5 would have relatively minor marginal construction impacts but would greatly enhance the restoration benefits and allow management of water levels to give Refuge staff more ability to avoid water quality problems, algal blooms, or other adverse impacts, all of which were discussed in the Draft EIS/R.

Similarly, the habitat transition zone from the All-American Canal would bring better long-term habitat complexity and help reduce erosion of the levee behind it, thus adding to flood protection. There would be more material needed to build this second transition zone than would be needed for an unmodified Alternative Ravenswood B, but Alternative Ravenswood C included both of these two habitat transition zones, and the relevant potential impacts were still found to be less than significant. The main impacts associated with import of fill are on traffic and air quality, largely from the hauling trucks. However, these impacts were less than significant for Alternative Ravenswood C and are expected to be similar for the Preferred Alternative at Ravenswood.

The selection of Alternative Ravenswood B as the starting point for the portion of the Preferred Alternative that would be implemented at the Ravenswood Ponds enabled the entire length of the eastern levees of these two small ponds to be raised and improved between the southeast corner of Bedwell Bayfront Park and the Refuge’s southern border with the existing Bay Trail spine. This would both separate them from Pond R4 (to be restored to a tidal marsh) and Pond R3 (to be enhanced for nesting

western snowy plover), as described in the action alternatives, and allow a public access trail to complete a loop around Ponds R5 and S5. This short additional segment of levee improvements would require a small increase in the volume of imported fill material, but, as was described for the Preferred Alternative at the Alviso-A8 Ponds, the maximum daily truckloads of imported fill were already assumed in the impact analysis. This additional material would mean a slightly longer construction period (both for import and placement of material) but would not create any new significant impacts.

The northern and western portions of the R5/S5 loop trail already exist in Bedwell Bayfront Park, and the southern portion of it is the Bay Trail spine just outside of the Refuge, between it and State Route 84. This loop trail would connect these two existing trails on Refuge lands. Both ends of the trail would be gated and signed as required by the USFWS for public access use of its Refuge lands. The signs would include details of the rules prohibiting dogs on Refuge lands. Both sides of the trail would include a “symbolic deterrent fence” made up of short (2-3 foot tall) posts placed approximately 10 feet apart and connected by chains to serve as a visual reminder to trail users to stay on the trail and not enter the restoration marsh or enhanced managed ponds alongside it. This is a minor design change, and there are no new significant impacts from adding it because the levee on which it would be placed would be improved as part of the Preferred Alternative.

The viewing platform previously described in all action alternatives as being alongside Pond R5 would be moved to the approximate midpoint of this new trail to keep it on Refuge property and to improve the viewers’ experience by giving them close-up looks at a restoring tidal marsh in Pond R4, a shallow water managed pond in Ponds R5 and S5, and a seasonally wet Pond R3 that would be enhanced and managed for snowy plover. Since the levee on which this platform would be built was going to be improved as part of Alternative Ravenswood B, there are no new significant impacts from relocating this feature.

There would also be three minor modifications to the restoration components that were described in the action alternatives for the Ravenswood Ponds. All three of these alternatives included a breach along the eastern edge of Pond R4 to connect it with Ravenswood Slough. In the Preferred Alternative, that breach would be moved to the northeast corner of the pond to reduce the length of existing fringing marsh that would be removed to connect the pond to the slough. The size of the breach is unchanged, and it still connects the same two water bodies; this is a relatively minor design change. This change also reduces the amount of removed habitat in a marsh that is frequented by the California Ridgway’s rail and the salt marsh harvest mouse, which are both special-status species. Preliminary hydrodynamic analysis indicates that the change in location would not adversely affect tidal flows in and out of the pond because there is a large, existing borrow ditch that will efficiently carry flows to the large historic slough trace that is present at the originally proposed breach location. The placement of levee material taken from the breach into the borrow ditch to form a ditch block on the opposite side of the breach would facilitate this redirection of flows. Some of the material from breaching was going to be used to generally fill borrow ditches, as described in the Draft EIS/R. The inclusion of ditch blocks is a specification of that same general concept and would introduce no new impacts. Overall, therefore, the impacts of this change would be less than those described for Alternative Ravenswood B and would bring the same types of restoration benefits.

Alternative Ravenswood B described lowering the northwest levee of Pond R4 to mean high water. In the Preferred Alternative, this levee would still be lowered, but only to mean higher high water instead of to mean high water. This would reduce the hydraulic connectivity between Pond R4 and Greco Island via West Point Slough, but it would preserve the utility of that portion of levee for roosting birds and high-tide refugia for salt marsh harvest mouse and other wildlife. The change would bring a reduced impact

from construction activities relative to those presented in the Draft EIS/R because there would be less earthmoving.

Finally, the addition of sand or shell topping to the habitat island that Alternative Ravenswood B described as being left in the interior of the combined S5-R5 pond group is a very minor design specification that brings no adverse environmental impacts and would enhance the habitat quality of that island as it could be used by western snowy plovers.

This discussion demonstrates that the impacts of the portion of the Preferred Alternative that would be implemented at the Mountain View Ponds is generally similar to, but in some cases somewhat less than, that presented for Alternative Mountain View B in the earlier chapters of this EIS/R. Where its impacts would vary from those discussed in Alternative Mountain View B, they are similar to – but reduced in magnitude from – those presented for Alternative Mountain View C.

6.1.5 Significance Determinations for the Phase 2 Preferred Alternative

Table 6-8 presents the results of the significance determinations by impact for the Phase 2 Preferred Alternative. For reference, the table also presents the significance determinations made in Chapter 3 for each enumerated impact and for each action and no action alternative at each pond cluster.

The impact analysis and significance determination conducted for this Final EIS/R identified the potentially significant impacts listed below. These are those impacts that could not be reduced to a less-than-significant level, even after implementation of project-specific mitigation measures or because no appropriate project-level mitigation measures exist that would have that effect. In these rare cases, these impacts are significant.

- **Phase 2 Impact 3.6-1:** Provision of new public access and recreation facilities, including the opening of new areas for recreational purposes and completion of the Bay Trail spine. One of the thresholds of significance for this impact included not providing “maximum feasible public access, consistent with the proposed project.” While the Phase 2 actions would add several new public access and recreation features at two pond clusters, others had to be removed from implementation under Phase 2 because of concerns over recreation-based impacts on sensitive wildlife species. These impacts are Potentially Significant, however, because the question of “consistent with the proposed project” cannot be answered with certainty at this time. It is possible that these features could have been implemented without disturbing wildlife, in which case the decision not to add them would have failed to achieve maximum feasible access. It is also possible that the decision was correct, and that those public access features would not have been consistent with the project goals of “wildlife-compatible recreation.” Careful monitoring under the AMP would be used to measure wildlife responses to public access features and consider their addition in future project phases, if consistent with the project.
- **Phase 2 Impact 3.6-5:** Result in the temporary construction-related closure of adjacent public parks or other recreation facilities, making such facilities unavailable for public use during construction activities. These impacts are Significant and Unavoidable at the Alviso-Mountain View Ponds and at the Ravenswood Ponds, where existing parking areas, park access, and some trails would necessarily be temporarily closed during portions of the construction work. This is a matter of public safety in combination with the need to bring materials and equipment through existing city parks to reach the project ponds themselves.

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
3.2 Hydrology, Flood Management, and Infrastructure													
Phase 2 Impact 3.2-1: Increased risk of flooding that could cause injury, death, or substantial property loss.	LTS	LTS	LTS	LTS	LTS	LTS/B	LTS	LTS	LTS	LTS	LTS	LTS/B	LTS
Phase 2 Impact 3.2-2: Alter existing drainage patterns in a manner which would result in substantial erosion or siltation on- or off-site.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.2-3: Create a safety hazard for people boating in the project area.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.2-4: Potential effects from tsunami and/or seiche.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.3 Water Quality and Sediment													
Phase 2 Impact 3.3-1: Degradation of water quality due to changes in algal abundance or composition.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.3-2: Degradation of water quality due to low dissolved oxygen levels.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.3-3: Degradation of water quality due to increased methylmercury production or mobilization of mercury-contaminated sediments.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.3-4: Potential impacts to water quality from other contaminants.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.3-5: Potential to cause seawater intrusion of regional groundwater sources.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.4 Geology, Soils, and Seismicity													
Phase 2 Impact 3.4-1: Potential effects from settlement due to consolidation of Bay mud.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.4-2: Potential effects from liquefaction of soils and lateral spreading.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.4-3: Potential for ground and levee failure from fault rupture.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.4-4: Potential effects from consolidation of Bay mud on existing subsurface utility crossings and surface rail crossings.	LTS	LTS	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	LTS	LTS
3.5 Biological Resources													
Phase 2 Impact 3.5-1: Potential reduction in numbers of small shorebirds using San Francisco Bay, resulting in substantial declines in flyway-level populations.	LTS	LTS	LTS	NI	LTS/B	LTS	NI	LTS/B	NI	LTS	LTS/B	LTS	LTS/B
Phase 2 Impact 3.5-2: Loss of intertidal mudflats and reduction of habitat for mudflat-associated wildlife species.	LTS	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS/B	LTS	LTS
Phase 2 Impact 3.5-3: Potential habitat conversion impacts to western snowy plovers.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-4: Potential reduction in the numbers of breeding, pond-associated waterbirds (avocets, stilts, and terns) using the South Bay due to reduction in habitat, concentration effects, displacement by nesting California gulls, and other Project-related effects.	LTS	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS
Phase 2 Impact 3.5-5: Potential reduction in the numbers of non-breeding, salt-pond-associated birds (e.g., phalaropes, eared grebes, and Bonaparte's gulls) as a result of habitat loss.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-6: Potential reduction in foraging habitat for diving ducks, resulting in declines in flyway-level populations.	LTS	LTS	LTS	NI	LTS	LTS	LTS	LTS	NI	LTS/B	LTS	LTS/B	LTS
Phase 2 Impact 3.5-7: Potential reduction in foraging habitat for ruddy ducks, resulting in declines in flyway-level populations.	LTS	LTS	LTS	NI	LTS	LTS	LTS	LTS	NI	LTS/B	LTS	LTS/B	LTS
Phase 2 Impact 3.5-8: Potential habitat conversion impacts on California least terns.	NI	NI	NI	NI	LTS	LTS	LTS	LTS	NI	LTS/B	LTS/B	LTS/B	LTS

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.5-9: Potential loss of pickleweed-dominated tidal salt marsh habitat for the salt marsh harvest mouse and salt marsh wandering shrew, and further isolation of these species' populations due to breaching activities and scour.	LTS/B	LTS/B	LTS/B	NI	LTS/B	LTS/B	NI	LTS/B	NI	LTS/B	LTS/B	LTS/B	LTS/B
Phase 2 Impact 3.5-10: Potential construction-related loss of or disturbance to special-status, marsh-associated wildlife.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-11: Potential construction-related loss of or disturbance to nesting pond associated birds.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-12: Potential disturbance to or loss of sensitive wildlife species due to ongoing monitoring, maintenance, and management activities.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-13: Potential effects of habitat conversion and pond management on steelhead.	LTS/B	LTS/B	LTS/B	NI	LTS/B	LTS	NI	LTS	NI	NI	NI	NI	LTS/B
Phase 2 Impact 3.5-14: Potential impacts to estuarine fish.	LTS/B	LTS/B	LTS/B	NI	LTS/B	LTS	NI	NI	NI	LTS/B	LTS	LTS/B	LTS/B
Phase 2 Impact 3.5-15: Potential impacts to piscivorous birds.	LTS/B	LTS/B	LTS/B	NI	LTS	LTS	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS/B
Phase 2 Impact 3.5-16: Potential impacts to dabbling ducks.	LTS/B	LTS/B	LTS/B	NI	LTS	LTS	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS
Phase 2 Impact 3.5-17: Potential impacts to harbor seals.	LTS/B	LTS/B	LTS/B	NI	LTS/B	LTS/B	NI	NI	NI	NI	NI	NI	LTS/B
Phase 2 Impact 3.5-18: Potential recreation-oriented impacts to sensitive species and their habitats.	LTS	LTS	LTS	NI	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-19: Potential impacts to special-status plants.	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.5-20: Colonization of mudflats and marsh plain by non-native <i>Spartina</i> and its hybrids.	LTS	LTS	LTS	LTS	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-21: Colonization by non-native <i>Lepidium</i> .	LTS	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-22: Increase in exposure of wildlife to avian botulism and other diseases.	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.5-23: Potential impacts to bay shrimp populations.	LTS/B	LTS/B	LTS/B	NI	LTS/B	LTS/B	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS
Phase 2 Impact 3.5-24: Potential impacts to jurisdictional wetlands or waters.	LTS	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS
Phase 2 Impact 3.5-25: Potential construction-related loss of, or disturbance to, nesting raptors (including burrowing owls).	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
3.6 Recreation Resources													
Phase 2 Impact 3.6-1: Provision of new public access and recreation facilities, including the opening of new areas for recreational purposes and completion of the Bay Trail spine.	NI	LTS	LTS	PS	PS	LTS/B	NI	NI	PS	PS	LTS/B	LTS/B	PS
Phase 2 Impact 3.6-2: Permanent removal of existing recreational features (trails) in locations that visitors have been accustomed to using and that would not be replaced in the general vicinity of the removed feature.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Phase 2 Impact 3.6-3: Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	LTS	LTS	LTS

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.6-4: Result in substantial adverse physical impacts associated with the provision of new or physically altered park and recreational facilities, or result in the need for new or physically altered park and recreational facilities, the construction of which could cause significant environmental impacts.	NI	NI	NI	NI	LTS/B	LTS/B	NI	NI	NI	LTS	LTS/B	LTS/B	LTS/B
Phase 2 Impact 3.6-5: Result in the temporary construction-related closure of adjacent public parks or other recreation facilities, making such facilities unavailable for public use.	NI	NI	NI	NI	SU	SU	NI	NI	NI	SU	SU	SU	SU
3.7 Cultural Resources													
Phase 2 Impact 3.7-1: Potential disturbance of known or unknown cultural resources.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.7-2: Potential disturbance of the historic salt ponds and associated structures which may be considered a significant cultural landscape.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
3.8 Land Use and Planning													
Phase 2 Impact 3.8-1: Land use compatibility impacts.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.9 Public Health and Vector Management													
Phase 2 Impact 3.9-1: Potential increase in mosquito populations.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.10 Socioeconomics and Environmental Justice													
Phase 2 Impact 3.10-1: Displace, relocate, or increase area businesses, particularly those associated with the expected increase in recreational users.	NI	LTS/B	LTS/B	NI	LTS/B	LTS/B	NI	LTS/B	NI	LTS/B	LTS/B	LTS/B	LTS/B
Phase 2 Impact 3.10-2: Change lifestyles and social interactions.	NI	LTS/B	LTS/B	NI	LTS/B	LTS/B	NI	LTS/B	NI	LTS/B	LTS/B	LTS/B	LTS/B

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.10-3: Effects disproportionately placed on densely populated minority and low-income communities or effects on racial composition in a community.	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE	NDE
3.11 Traffic													
Phase 2 Impact 3.11-1: Potential short-term degradation of traffic operations at intersections and streets due to construction.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTSM	LTSM	LTSM	LTSM
Phase 2 Impact 3.11-2: Potential long-term degradation of traffic operations at intersections and streets during operation.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.11-3: Potential increase in parking demand.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.11-4: Potential increase in wear and tear on the designated haul routes during construction.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
3.12 Noise													
Phase 2 Impact 3.12-1: Short-term construction noise effects.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-2: Traffic-related noise impacts during construction.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-3: Traffic-related noise effects during operation.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-4: Potential operational noise effects from O&M activities.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-5: Potential vibration effects during construction and/or operation.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.13 Air Quality													
Phase 2 Impact 3.13-1: Short-term construction-generated air pollutant emissions.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.13-2: Potential long-term operational air pollutant emissions.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
Phase 2 Impact 3.13-3: Potential exposure of sensitive receptors to TAC emissions.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.13-4: Potential odor emissions.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
3.14 Public Services													
Phase 2 Impact 3.14-1: Increased demand for fire and police protection services.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
3.15 Utilities													
Phase 2 Impact 3.15-1: Reduced ability to access PG&E towers, stations or electrical transmission lines.	NI	NI	NI	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	LTS
Phase 2 Impact 3.15-2: Reduced clearance between waterways and PG&E electrical transmission lines.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	LTS
Phase 2 Impact 3.15-3: Reduced structural integrity of PG&E towers.	NI	NI	NI	LTS	LTS	LTS	NI	NI	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.15-4: Changes in water level, tidal flow and sedimentation near storm drain systems.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.15-5: Changes in water level, tidal flow and sedimentation near pumping facilities.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.15-6: Changes in water level, tidal flow and sedimentation near sewer force mains and outfalls.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Phase 2 Impact 3.15-7: Disrupt Hetch Hetchy Aqueduct service so as to create a public health hazard or extended service disruption.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Phase 2 Impact 3.15-8: Disruption of rail service due to construction of coastal flood levees and tidal habitat restoration.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Phase 2 Impact 3.15-9: Reduced access to sewer force mains due to levee construction.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Table 6-8. SBSP Restoration Project Phase 2 EIS/R Summary Impact Table

IMPACT	ALTERNATIVES												
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD				PREF ALT
	A	B	C	A	B	C	A	B	A	B	C	D	
3.16 Visual Resources													
Phase 2 Impact 3.16-1: Alter views of the SBSP Restoration Project Area.	LTS	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS/B	LTS/B	LTS/B	LTS
3.17 Greenhouse Gas Emissions													
Phase 2 Impact 3.17-1: Construction-generated GHG emissions.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS	LTS
Phase 2 Impact 3.17-2: Operational GHG emissions.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.17-3: Conflicts with applicable GHG emissions reduction plan, policy, or regulation.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Notes:

Alternative A at each pond cluster is the No Action/No Project Alternative.

B = Beneficial; LTS = Less Than Significant; LTSM = Less Than Significant With Mitigation; NDE = No Disproportionate Effect; NI = No Impact; PS = Potentially Significant; SU = Significant and Unavoidable

The levels of significance for the impacts listed above assume that the program-level mitigation measures from the 2007 EIS/R and the elements of the Adaptive Management Plan are integral components of the Phase 2 project alternatives, and that management responses would be implemented based on ongoing monitoring and applied studies.

6.2 Environmentally Preferred Alternative

The Environmentally Preferred Alternative is defined by the Council on Environmental Quality as the alternative that best meets the criteria of Section 101(b) of NEPA (42 United States Code [USC] 4331)¹. The environmentally preferred alternative is a NEPA term for the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment, but it also means the alternative that best protects, preserves, and enhances historical, cultural, and natural resources. The SBSP Restoration Project would provide benefits such as increased and improved tidal marshes and other habitats, additional public access and recreation opportunities, reduced risk of unplanned levee failure, and added potential for carbon sequestration. None of these benefits would be realized under the No Action Alternative.

Informed in part by the public and agency comment on the Draft EIS/R as well as ongoing monitoring and research from the Adaptive Management Plan, the USFWS has made a preliminary identification of the Environmentally Preferred Alternative. The Phase 2 Preferred Alternative is the Environmentally Preferred Alternative. As required by the regulations implementing NEPA, the USFWS will formally identify the Environmentally Preferred Alternative in its Record of Decision for Phase 2 of the project.

6.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 addresses the selection of the Environmentally Superior Alternative among the alternatives proposed. That section states that, if the environmentally superior alternative is the No Project Alternative, then the EIR must also identify an environmentally superior alternative among the other alternatives. However, as noted above, and explained in this Final EIS/R, the environmentally superior alternative is not the No Project Alternative. The SBSP Restoration Project's Phase 2 action alternatives would bring numerous benefits, none of which would be realized under the No Project Alternative.

Under the various action alternatives considered, the only potentially significant and unavoidable impacts remaining pertain to recreation and public access resources. In one of these impacts, there would be temporary closures of recreation and public access facilities during construction. In the other, the addition of less than the maximum feasible number of public access and recreation features crosses a threshold of significance established for the 2007 EIS/R. Yet even in that instance, there is still an increase in the number of public access and recreation features, but less than the maximum possible addition. These significant and unavoidable impacts would be realized under any of the action alternatives, and one of them (failure to provide maximum possible new public access features) would be realized and of greater

¹ The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (Sec. 101 (b)), as follows:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

magnitude even under the No Action Alternative. All other potential impacts were either non-existent or less than significant. Therefore, CEQA does not require identification of an environmentally superior alternative.

Nevertheless, informed in part by the public and agency comments received on the Draft EIS/R as well as ongoing monitoring from the Adaptive Management Plan, the SCC has made a preliminary identification of the Environmentally Superior Alternative. The Phase 2 Preferred Alternative is the Environmentally Superior Alternative. Implementing the Preferred Alternative would most effectively and efficiently meet the project goals while minimizing impacts on the natural environment, the built environment, and human communities; and also comply with environmental regulatory requirements.