

SUPPLEMENTAL INFORMATION REPORT FOR THE
SOUTH SAN FRANCISCO BAY SHORELINE PROJECT

Santa Clara County, California

Pursuant to the National Environmental Policy Act of 1970 (42 U.S.C. § 4321)

U.S. Army Corps of Engineers

13 November 2020



U.S Army Corps of Engineers
San Francisco District



U.S. Fish and Wildlife Service

This page intentionally left blank.

Table of Contents

Table of Contents	i
Acronyms	iii
Figures.....	iv
Tables.....	iv
1.0 Introduction.....	1
2.0 Supplemental Information Report.....	2
3.0 Changes to the Proposed Action (Recommended Plan)	3
3.1 Reach 1.....	4
Separated Pedestrian Trail	4
Alignment Change	4
Additional Excavation of a Forced Main (Storm Drain) and Culverts.....	4
Crown Resurfacing	4
3.2 Reaches 2 & 3	5
Riprap Armoring changed to Toe Slope Berm	5
Levee Footprint Change.....	6
3.3 Reaches 4 & 5	7
Updated Levee Alignment	7
Tie in to Coyote Creek Levee	8
Raising of PG&E Power Lines	9
3.4 Project-Wide Changes	9
Changes to Western Snowy Plover Buffer Distance and Take.....	9
Hauling of Fill during Peak Hours.....	10
Increased Hauling Distance for Fill Delivery.....	10
Rodent Control and Erosion Measures	10
4.0 Revised Impact Analysis.....	11
4.1 Land Use and Planning.....	11
4.2 Aquatic Biological Resources.....	11
4.3 Terrestrial Biological Resources.....	12
4.4 Transportation.....	14
4.5 Air Quality	14
4.6 Recreation	19

4.7 Public Utilities and Service Systems	19
4.8 Cumulative Impacts	19
Nearby Projects	20
5.0 Conclusions.....	22
6.0 References.....	23
Appendix A: Public Comments	24

Acronyms

AMM – Avoidance and Minimization Measures

BA – Biological Assessment

BAAQMD – Bay Area Air Quality Management District

BMP – Best Management Practice(s)

BO – Biological Opinion

CA – California

CAA – Clean Air Act

CEQ – Council on Environmental Quality

CEQA – California Environmental Quality Act

CO – carbon monoxide

CPUC – California Public Utility Commission

CWA – Clean Water Act

EIR – Environmental Impact Report

EIS – Environmental Impact Statement

FID – Final Integrated Document: Environmental Impact Statement (NEPA) and Environmental Impact Report (CEQA)

EPA – Environmental Protection Agency

FRMP – flood risk management project

kV – kilovolt

LOS – level of service

N/A – not applicable

NEPA – National Environmental Policy Act

NO₂ – nitrous dioxide

NO_x – oxides of nitrogen, NO or NO₂

NPI – not previously identified

PG&E – Pacific Gas and Electricity

PI – previously identified

PM_{2.5} – particulate matter, 2.5 micron size
 PM₁₀ – particulate matter, 10 micron size
 PED – Pre-construction Engineering and Design
 Project – South San Francisco Bay Shoreline Project
 QAPP – Quality Assurance Project Plan
 Refuge – Don Edwards San Francisco Bay National Wildlife Refuge
 ROG – reactive organic gases
 RWF – San Jose - Santa Clara Regional Wastewater Facility
 RWQCB – San Francisco Bay Regional Water Quality Control Board
 SBSPRP – South Bay Salt Pond Restoration Project
 SFID – Supplementary Final Integrated Document
 SIR – Supplemental Information Report
 SMHM – Salt Marsh Harvest Mouse
 SO₂ – sulfur dioxide
 USACE – US Army Corps of Engineers
 USFWS – US Fish and Wildlife Service

Figures

Figure 1. Project Reaches 3
 Figure 2. Reach 1 Proposed Action Changes..... 5
 Figure 3. Reaches 2 & 3 Updated Levee Footprint and Sacrificial Berm 6
 Figure 4. Reaches 4 & 5 Updated Levee Alignment 8
 Figure 5. Locations for the raising of the proposed levee and power line..... 9

Tables

Table 1. Estimated Annual Construction Emissions for Alternative 3 16
 Table 2. Yearly Emissions Analysis from Increased Hauling Distance 16
 Table 3. Estimated Maximum Daily Construction Emissions for Alternative 3 18
 Table 4. Daily Emissions Analysis from Increased Hauling Distance 18

1.0 Introduction

The South San Francisco Bay Shoreline Project (project) is a multi-purpose flood risk management, ecosystem restoration and recreation project located in the Alviso neighborhood of San Jose, California (CA). The lead agency under the National Environmental Policy Act (NEPA) is the U.S. Army Corps of Engineers, San Francisco District (USACE), with the U.S. Fish and Wildlife Service (USFWS) as the co-lead agency. The joint non-Federal sponsors include the Santa Clara Valley Water District (Valley Water) and the California State Coastal Conservancy (State Coastal Conservancy). Valley Water is the lead agency under the California Environmental Quality Act (CEQA). The December 2015 Final Integrated Feasibility Study and Environmental Impact Statement/Environmental Impact Report (EIR), combined into a Final Integrated Document (FID) for the project (USACE 2015), and its accompanying Clean Water Act (CWA) § 404(b)(1) alternatives analysis describe the selected plan and its environmental impacts. This document is a Supplemental Information Report (SIR), and its purpose is to provide updates and clarifications on changes that have been made to the project since the publication of the FID and the environmental effects of those changes.

2.0 Supplemental Information Report

This Supplemental Information Report (SIR) was written in order to ensure through application of a revised impact analysis that individual and cumulative impacts from changes to the proposed action are in compliance with NEPA. The changes to the proposed action have largely resulted from design refinements and consideration of factors that were unknown at the time of publication of the FID. The Council on Environmental Quality (CEQ) regulations provide direction regarding the review of an EIS and preparation of a Supplemental EIS (SEIS). The CEQ regulations Section 1502.9(c) states: "Agencies: (1) Shall prepare supplements to either draft or final environmental impact statements if:

- i. The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
- ii. There are significant new circumstances or information relevant to environmental concerns and bearing upon the proposed action or its impacts."

None of the supplemental information presented in this report reveals significant environmental impacts not already identified in the EIS. As described below, USACE has determined that the changes to the proposed action are not substantial relative to the originally proposed action and do not constitute significant new circumstances or information bearing upon the proposed action or its impacts. Therefore, USACE has concluded that a SEIS is not necessary and this SIR is sufficient.

Section 3.0 of this SIR describes the updates to the proposed action in greater detail and Section 4.0 presents the revised impact analysis. Section 5.0 provides USACE's conclusions.

3.0 Changes to the Proposed Action (Recommended Plan)

The following comprise the known changes-to-date to the project description for the proposed action from how it was described in the FID. Some are specific to individual portions of the project, while others apply to the entire project.

In order to simplify how different parts of the project are referenced, the concept of reaches was introduced starting in the Pre-construction Engineering and Design (PED) phase. There are five project reaches in total and Reaches 2 & 3 and Reaches 4 & 5 will be grouped together into two separate construction contracts. Please see the below map which shows the reaches, with Reaches 2 & 3 and Reaches 4 & 5 grouped together, as they correspond across the project footprint.

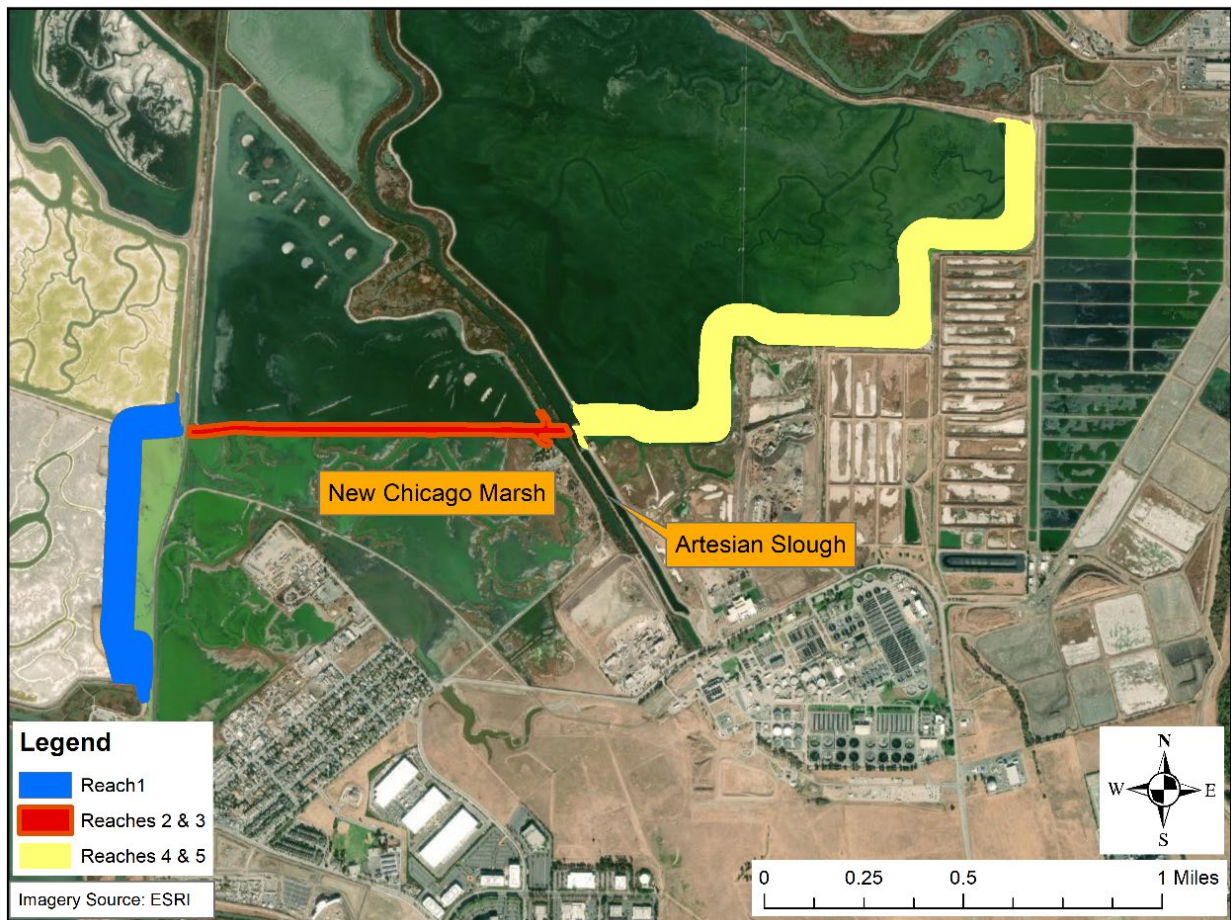


Figure 1. Project Reaches (original alignment shown)

3.1 Reach 1

Separated Pedestrian Trail

In the FID, the proposed action included a pedestrian path co-located with a maintenance road on the levee crest that would be utilized by both pedestrians and service vehicles for levee maintenance. In order to limit trail closures in the Alviso Marina County Park during project maintenance, the levee at the southern terminus of Reach 1 has been designed to be wider to accommodate both a service road and a grade-separated pedestrian path. This widening of the levee will extend the levee footprint width by 10 feet into the Alviso Marina marsh area and require the additional removal and take of approximately 0.1 acres of salt marsh habitat that would have been available for use by federally listed species. While this change in design has expanded the permanent footprint of the levee, the temporary construction impact area remains the same as shown in the FID. The new footprint for the grade-separated pedestrian trail can be seen in Figure 2 below.

Alignment Change

A slight realignment starting directly north of the separated pedestrian trail was made in order to align the levee in a straight line path to the “shoulder”; a change from the original alignment that was included in the FID. The triangular area to the east of the new alignment would create approximately 1.29 acres of nesting area for snowy plover. Please see Figure 2 below for more information.

Additional Excavation of a Forced Main (Storm Drain) and Culverts

An additional change in the proposed action at the southern reach 1 terminus is the need for excavation to remove and possibly replace several pipes that cross the levee in the vicinity of the Alviso Marina. There is a 24-inch diameter forced main (storm drain) pipe that will be excavated, removed, and replaced with a new pipe that meets USACE levee design standards. In addition, the construction contractor will explore the existence of three 60” diameter concrete culverts also near the southern levee terminus; if in use the contractor would replace the culvert pipes to meet USACE design standards, and if not in use, the contractor will remove them and the void would be backfilled with levee fill material. Please see Figure 2 below for the location of the storm drain and culverts to be excavated.

Crown Resurfacing

The final change for the proposed action in Reach 1 will be a slight increase in work area of approximately 100 feet beyond the previously identified start of the levee at the southern terminus along the levee crest (crown) to repair the haul route as it transitions to the Alviso Slough Trail levee. This is shown on Figure 2 as “crown resurfacing” and will largely consist of repairing damage to the existing Alviso Slough Trail levee caused by truck traffic from construction associated with the Shoreline Project and regrading the transition between the two levees. This action is intended to meet road repair best management practices (BMP) for the construction of the project. Please see Figure 2 below for the approximate location of the crown resurfacing.

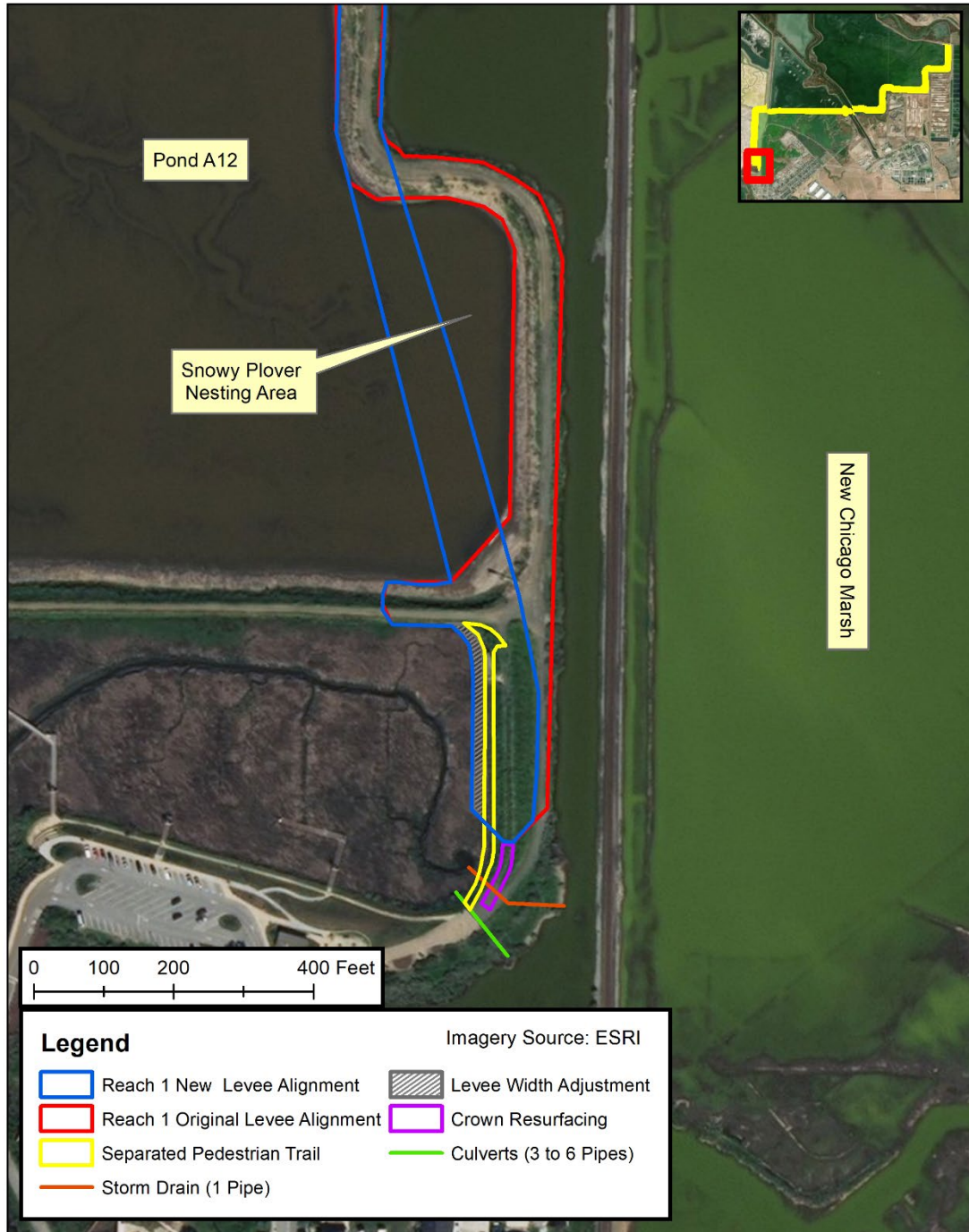


Figure 2. Reach 1 Proposed Action Changes

3.2 Reaches 2 & 3

Riprap Armoring changed to Toe Slope Berm

Originally, the proposed action for Reaches 2 & 3 called for the placement of stone at the toe of the waterside slope of the levee in Pond A16 to armor the levee from erosive forces, mainly from

wind. A change in design of the levee has been made which eliminates the need for riprap and utilizes onsite fill material instead to create a berm in front of the toe slope of the levee. This toe slope berm will offer adequate protection from erosive forces that could threaten the levee structure, while additionally providing substrate for plant colonization which would result in an increase in native plant cover.

Levee Footprint Change

The levee footprint at the eastern terminus has been reduced, to better connect with the Artesian Slough closure structure, while the western terminus has been extended in order to better support the intersection with the UPRR closure structure.

Changes to the proposed action from reducing the riprap for the toe slope, and the new design of the eastern and western termini will result in a net reduction in the volume of fill being placed in Pond A16. The final levee footprint is also shifted north by several feet in order to reduce impacts to endangered species in New Chicago Marsh. See Figure 3 below for the details of this change.



Figure 3. Reaches 2 & 3 Updated Levee Footprint and Sacrificial Berm

3.3 Reaches 4 & 5

Updated Levee Alignment

The levee alignment in the proposed action in the FID followed the existing Pond A18 berm and did not include any of the legacy lagoons that are part of the San Jose – Santa Clara Regional Wastewater Facility (RWF) due to a lack of real estate availability. The project’s Clean Water Act Section 401 Water Quality Certification from the San Francisco Bay Regional Quality Control Board (RWQCB) required that the project re-initiate discussions with the City of San Jose to pursue a more landward alignment in Reaches 4 and 5 (RWQCB 2017). After a value engineering analysis of environmental and engineering factors, the last approximately 4,000 feet of the levee were determined to be suitable for this landward shift.

This change in the levee alignment has significant benefits to the project because it increases the acreage of wetlands created while also providing a construction cost savings, as well as large quantities of ecotone fill for the project. While the levee realignment will increase future project benefits, it also increases the levee footprint.

The levee realignment to include the RWF lands requires the additional removal of approximately 6.9 additional acres of pickleweed (*Salicornia pacifica*) above what was included in the FID, which grows in small patches and is included in largely a mix of upland grasses and ruderal vegetation which make up the typical emergent wetland habitat found in the legacy lagoons. Pickleweed removal would be performed by hand, following the avoidance and minimization measures (AMMs) from the FID to reduce effects to salt marsh harvest mouse (SMHM). Figure 4 below shows the levee realignment (blue) relative to the alignment under the original proposed action (red), as well as existing pickleweed habitat which would be removed to allow for construction. The realignment is expected to create approximately 20.8 acres of additional tidal marsh habitat which will include pickleweed in order to replace what is lost during construction, for an estimated net increase of approximately 13.9 acres. The exact acreage of tidal wetland creation is dependent on the final design of the ecotone, which is still under development. Changes in habitat due to these project changes have been included in the USFWS Biological Opinion Amendment #1 for the project (USFWS 2020a).

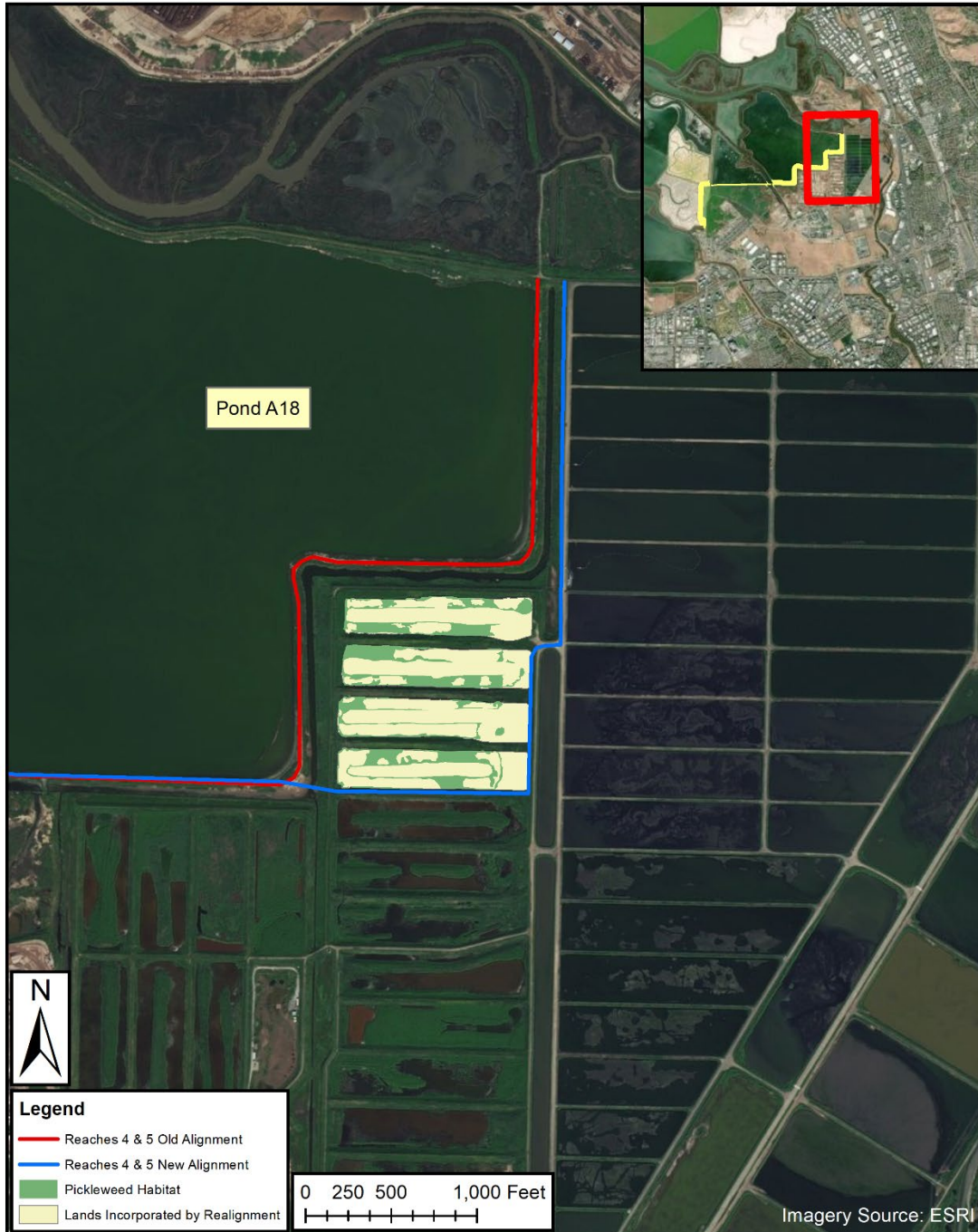


Figure 4. Reaches 4 & 5 Updated Levee Alignment

Tie in to Coyote Creek Levee

In the FID, the design for the Reach 5 tie in to the existing Coyote Creek levee system was along the existing Pond A18 berm. As part of the levee realignment described above, the centerline of the levee has shifted approximately 90 feet to the east to coincide with the existing levee that protects the active wastewater lagoons. Figure 4 shows the updated alignment that will be

carried forward for the project. Due to the large footprint of the original levee, this tie-in to the existing Coyote Creek levee does not increase the project footprint.

Raising of PG&E Power Lines

While the FID acknowledged that there would be impacts to the Pacific Gas and Electric (PG&E) transmission towers associated with the proposed action, it assumed that there was adequate vertical clearance between the levee and the lines themselves. The two 115 kV lines that cross Reaches 4 & 5 at approximately Station 130 + 00 will need to be raised by approximately 10 feet to meet the clearance requirements from the California Public Utilities Commission (CPUC). Figure 5 shows plan and profile views of the lines to be raised.

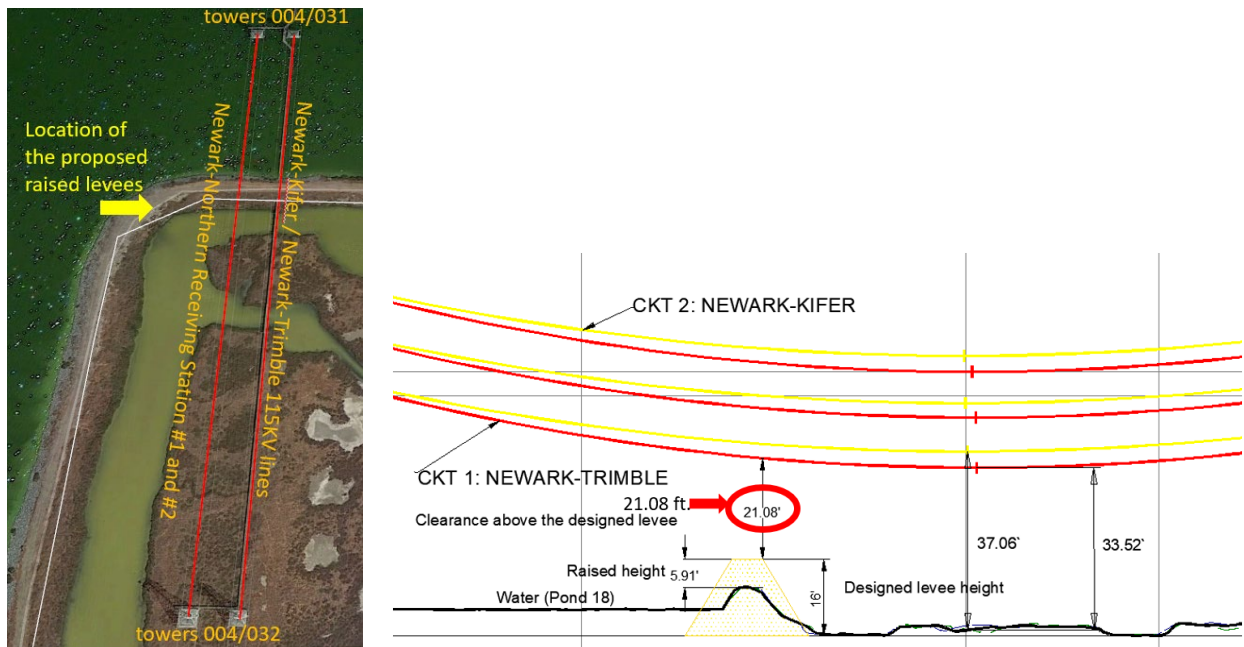


Figure 5. Locations for the raising of the proposed levee and power line

3.4 Project-Wide Changes

Changes to Western Snowy Plover Buffer Distance and Take

In the FID, actively used Snowy Plover (*Charadrius nivosus*) nests are given a 600 foot buffer distance for construction activities, while hauling of fill and passing construction vehicles were allowed a 300 foot buffer distance; a buffer distance for broods was not included. In the original Biological Opinion, a maximum take of 2 breeding pairs was allowed. Changes to the proposed action are to decrease the buffer distance for active construction to 300 feet, to create a buffer distance of 300 feet for broods, and to increase the maximum take to 18 breeding pairs. These project changes have been included in the USFWS Biological Opinion Amendment #2 for the project (USFWS 2020b).

Hauling of Fill during Peak Hours

The FID adopted an AMM that precluded the project from hauling fill during peak commute hours due impacts to traffic at roadways and intersections. However, a subsequent analysis has shown that the proposed action can accommodate a total of 22 additional truck trip cycles, 11 each during both morning and afternoon peak commute hours without exceeding the Level of Service (LOS) impact thresholds identified in the FID. Truck trip cycles include the round trip to deliver fill from the source location to the project site. An analysis with further details is included in the transportation section below.

Increased Hauling Distance for Fill Delivery

In 2014 the non-Federal Sponsor for the project, Valley Water, completed an air quality analysis to quantify emissions expected during construction of the proposed action. The analysis used the assumption that the source of fill material to build the levee and ecotone would come from other projects which would stockpile the fill material within 2 miles of the construction site. New information shows that the likely sources of fill will be further away. Conservatively, the USACE assumes sources will be 30 miles away, a 15 time increase in distance.

Rodent Control and Erosion Measures

In order to ensure burrowing rodents do not compromise levee stability after it is built, physical rodent control measures may be integrated into the levee construction such as a chain link fabric. The chain link fabric would be placed beneath the top soil that is put on top of the levee, allowing the roots from vegetation to grow their roots down through the mat or fabric. In locations where an ecotone will be built overtop a levee, a turf reinforcement mat may be used to ensure stability of the slope during the interim period before ecotone construction. Whereas in locations where an ecotone would not be constructed, a chain link fabric may be used.

4.0 Revised Impact Analysis

The FID describes in detail the environmental baseline for each resource type, and the project's effects on that resource. For this SIR, only resources with potentially changed impacts due to the changes to the proposed action described herein are evaluated below. Resource categories with no anticipated potential changes to the effects already described in the FID's EIS include: Geology, Soils, and Seismicity; Hydrology and Flood Risk Management; Surface Water and Sediment Quality; Hazards and Hazardous Materials; Aesthetics; Public Health; and Cultural Resources.

4.1 Land Use and Planning

The FID describes the proposed action's relationship with existing land use plans from local jurisdictions. It concludes that the impacts are minor from land conversion, beneficial from providing flood risk management, and generally do not conflict with land use policies. The change to the proposed action for the realignment in Reach 1 would cause a change in land use by reducing the aquatic area of Pond A12 while creating 1.29 acres of snowy plover nesting area. Creation of the snowy plover nesting area is consistent with the land uses for this area, and is supported by the landowner, USFWS; because snowy plover habitat in this area is scarce and would benefit the species (USFWS 2017). The other change to the proposed action which would cause a change in land use is from the Reaches 4 and 5 realignment, due to the conversion of legacy biosolid lagoons to wetlands. However, this change is consistent with the RWF Master Plan, which describes those lagoons being converted to wetlands. Thus, the conclusion that the proposed action will confer only minor impacts and not conflict with land use policies remains the same, despite the changes to the action described herein.

4.2 Aquatic Biological Resources

The conclusion reached in the FID was that the proposed action would have short-term impacts on wetlands and others waters of the United States, but, over time, marsh restoration activities would result in large increases in tidal wetland area. This conclusion remains unchanged as a result of the changes to the proposed action described in this document.

The changes to the pedestrian path in Reach 1 will result in a 0.09 acre increase in the permanent footprint of the levee while staying within the original temporary disturbance footprint shown in the FID. This effect is small in comparison to the 2,900 acres of tidal marsh that will be restored through implementation of the project. All appropriate AMMs will continue to be followed to minimize the impact on the aquatic environment. Changes to the marina marsh habitat effects were included in an amended Biological Assessment and associated USFWS Biological Opinion (Amendment #1) for the project (USFWS 2020a). The additional excavation for the storm drain and culvert pipes would not increase the construction footprint for the project within sensitive habitat. Any impacts to endangered species from the excavation for the storm pipes would be temporary and not significant and would not result in an additional take as it relates to federally

protected species. The crown resurfacing for the Reach 1 southern terminus would not increase the construction footprint for the project within sensitive habitat. Any impacts to endangered species would be temporary and not significant and would not result in an additional take as it relates to federally protected species.

Refinements during the design process of Reaches 2 & 3 have resulted in some small changes to the alignment from the reduction of the eastern terminus and the extension of the western terminus. The levee alignment has been shifted slightly to the north and the overall area of fill has been reduced by approximately 1 acre (See Figure 3). The reduction of the eastern terminus of the levee will reduce fill in Waters of the U.S., and the extension of the eastern terminus will result in an increase in fill in A16, though still contributes to a net negative placement of fill when considered with the other alignment changes. Additionally, the riprap on the Pond A16 side of the levee has been replaced with a toe slope berm. Overall, these changes will result in a reduction in the volume of fill being placed in Pond A16. There are no new impacts to federally protected species that could be expected to result from these changes to the Reaches 2 & 3 levee alignment. The impacts of this change are discussed further in Section 4.3 below. The changes to Reaches 2 & 3 do not result in any changes to the effects determination for aquatic biological resources.

The alignment change in Reaches 4 & 5 will reduce the amount of low quality emergent wetland habitat from the biosolid lagoons, used by SMHM, and will result in an increase in the amount of wetland habitat restored by the project. The end result would be an estimated potential net increase of approximately 14 acres of high quality habitat after project completion. These changes do not change the overall effects determination and in general increase the proposed actions' benefits to aquatic biological resources.

4.3 Terrestrial Biological Resources

The conclusion in the FID was that the proposed action would have short-term impacts on terrestrial lands, but, over time, restoration activities would result in increases in terrestrial habitat area. This conclusion remains unchanged as a result of the changes to the proposed action described in this document.

The alignment change in Reach 1 would change 1.29 acres of low grade aquatic habitat from Pond A12 into a flat area suitable for snowy plover nesting. Pond A12 does not currently provide aquatic habitat for endangered species, though it does contain some pickleweed on the banks, which may provide habitat for the SMHM. This removal of pickleweed would result in a temporary impact, until the ecotone revegetation is complete, which would replace the pickleweed removed during construction with new colonies of pickleweed growing in a tidally influenced salt marsh. The minimization measures included in the FID would be followed for any removal of pickleweed, such that the Reach 1 levee realignment would not result in any new impacts to terrestrial biological resources, and will not change the overall effects determination for the project (USFWS 2017).

The change in the Reaches 2 and 3 levee alignment to be placed further north, further into Pond A16, caused the limits of construction (construction footprint) to include the southern parts of the Pond A16 bird islands. In order to ensure this shift to the alignment does not result in any decrease to the size of the islands, they will be restored back to their dimensions as before construction. The change in Reaches 2 and 3 from a riprap armored slope to a toe slope berm will provide benefits to terrestrial biological resources. It will facilitate migration of shorebird chicks which hatch on the nesting islands in Pond A16 and would cross the Reaches 2 & 3 levees into New Chicago Marsh, because the continuous slope from a berm would be easier to cross than angular rock used for rip rap. Short term impacts from construction for birds that migrate from the Pond A16 nesting islands are described in the FID, along with minimization measures which include preconstruction surveys and establishment of buffers around active nests. With the inclusion of these minimization measures, the construction-related impacts of the Reaches 2 & 3 levees on population and habitat trends of upland bird species were found to be less than significant in the FID, a conclusion that remains unchanged from this SIR. The toe slope berm would also make it easier for levee grasses and salt marsh plants to establish as outlined in the revegetation plan. The toe slope berm will consist of onsite materials and not result in any new impacts to terrestrial biological resources, and will not change the overall effects determination for the project.

The change to the buffer distance for active construction from 600 feet to 300 feet for snowy plovers and the increase to the take statement were made by the USFWS in the most recent BO (USFWS 2020b) after consideration for the species, to ensure that the project would not cause undue harm or that it could cause extinction of the species. These changes to the proposed action were supported by the habituated nature of the birds to construction, and the success snowy plovers had in hatching eggs and forming broods with their young while project activities were commencing. These project changes will not result in increased harassment to the species. Based on the population size USFWS determined that any mortality would not jeopardize the species. Therefore, these project changes will not change the effects determination for terrestrial biological resources or the overall effects determination for the project.

The change to include a rodent control barrier was made for several reasons, including practicability and the protection of the SMHM. In the FID, control of burrowing rodents was planned using rodenticide, which is harmful to the SMHM. This would largely become unnecessary with a physical barrier in place (e.g. turf reinforcement mat or chain link fabric). Plants growing on the levee surface would still be able to grow their roots through the mat or fabric, adding further stability to the top soil of the levee. The turf reinforcement mat or chain link fabric would be made from materials that do not leach chemicals into the surrounding soil, and no contact with infiltrating water would be able to reenter the environment due to the levee above and below. The use of one of these rodent control measures will not change the effects determination for terrestrial biological resources or the overall effects determination for the project.

4.4 Transportation

The conclusion reached in the FID was that the proposed action would have short-term impacts on transportation. This conclusion remains unchanged as a result of the changes to the proposed action described in this document.

In order to ensure additional truck trip cycles for the hauling of fill during peak hours would not create additional significant impacts beyond those envisioned in the original FID, a supplementary traffic analysis was performed. Based on Table 4.9-13 in the FID, the freeway segments State Route 237 (SR 237) McCarthy Boulevard to Zanker Road, SR 237 Zanker Road to North First Street, and SR 237 Lafayette Street to Great America Parkway have a roadway capacity of 4,600 passenger-car trips or less during peak hours. Other freeway segments identified in the FID have a roadway capacity between 6,900 to 10,000 passenger-car trips. According to page 4-438 to 4-439 of the FID, the jurisdictional specific impact thresholds state that new project generated trips could not increase more than 1 percent of the freeway capacity for freeway segments operating at a Level of Service (LOS) E or F or deteriorate freeway segment operations from LOS D or better to LOS E or F. Since SR 237 McCarthy Boulevard to Zanker Road and SR 237 North First Street to Great America Parkway freeway segment has a roadway capacity of 4,600 passenger-car trips, the maximum project trips allowed before exceeding the 1 percent capacity threshold is 46 passenger-car trip cycles. As identified in the Final EIR/FID, 13 worker trip cycles were evaluated during peak hours, which reduces the potential increase from 46 to 33 passenger trip cycles. According to page 4-448 of the FID, 1 truck trip cycle is equivalent to 1.5 passenger-car trip cycles. Therefore, a total of 33 new project passenger-car trip cycles or 22 truck trip cycles would be within the 1 percent capacity threshold. The freeway segments would be able to accommodate up to a maximum of 11 truck trip cycles during the AM peak hour and 11 truck trip cycles during the PM peak hour periods. Therefore, through this analysis it was determined a total of 22 truck trip cycles, 11 each during both AM and PM peak hours would be able to haul fill material to the project site. These additional 22 truck trip cycles for the hauling of fill would therefore not exceed capacity thresholds or degrade roadway performance, and would not change the effects determination for traffic or the overall effects determination for the project.

4.5 Air Quality

Included in the FID, an air quality assessment was conducted in order to ensure the project was in compliance with the Clean Air Act (CAA), and concluded that temporary impacts to air quality would result from the proposed project, this conclusion remains unchanged through this SIR.

The air quality analysis from the FID was performed according to 40 CFR 93 which ensures that *de minimis* thresholds for Federal actions are not exceeded for criteria air pollutants. Particulate matter (PM) which has categories for 2.5 and 10 micron sizes, reactive organic gases (ROG) or nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and carbon monoxide (CO) all have thresholds of 100 tons per year. See Table 1 below for the estimated annual construction emissions from the FID. In addition there are also thresholds set by regional air quality management districts, such

as the Bay Area Air Quality Management District (BAAQMD). The BAAQMD daily thresholds for air quality are presented in Table 3 in addition to the estimated maximum daily construction emissions from the FID.

The following supplemental air quality analysis was performed with respect to daily and yearly thresholds used for CAA due to the change in emissions from the increased levee/ecotone fill hauling distance from 2 miles to 30 miles; to ensure there is no change in impacts disclosed in the FID from changes in the proposed action. The emissions for the increase in truck trip cycles from the transportation analysis do not increase the total amount of trips above what was included in the air quality analysis in the FID, and do not therefore add additional emissions which need to be accounted for in this supplementary analysis.

4.5.1 Federal Thresholds

The EPA sets yearly de minimis thresholds on emissions of criteria pollutants, as described above. In order to ensure these yearly thresholds would not be exceeded due to the assumed increase in the levee/ecotone fill hauling distance for the proposed action, a supplementary analysis was performed. To quantify this increase in emissions quantities from the increased fill hauling distance over a yearly total the 2018 modeling year was used, as this had the most emissions previously estimated in any one year from the original air quality analysis in order to provide an estimate of the most emissions expected in any one year of construction for the project. The steps below were followed:

- 1) Sum the hauling emissions from the various construction activities that were modeled to take place in 2018, the year modeled to have the most emissions.
- 2) Multiply the summed emissions quantities from only hauling 2 miles by 15 to get the total emissions from a 30 mile haul distance.
- 3) Subtract the emissions for hauling that were previously calculated based on a 2 mile distance from the result in step one (1) to ensure they are not double counted when adding the result to the total emissions.
- 4) Add the increased emissions calculated from step four (4) to the 2018 total emissions quantities from the FID, as shown in Table 1 (from Table 4.10-10 of the FID).
- 5) Compare these newly calculated maximum yearly emissions quantities to the yearly thresholds set by the EPA, as shown in Table 1 (from Table 4.10-10 of the FID) to ensure that the increased hauling distance would not result in effects that were not previously disclosed and mitigated for under the FID.

Table 1. Estimated Annual Construction Emissions for Alternative 3 (Taken from Table 4.10-10 in the project FID)
(values are in tons per year)

Year	ROG	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	PM ₁₀ Total	Fugitive PM _{2.5}	Exhaust PM _{2.5}	PM _{2.5} Total	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO ₂ e
Year	tons/yr										MT/yr					
2017	3.7828	41.8761	27.2318	0.0483	2.3841	1.6591	4.0431	1.2582	1.5263	2.7845			4,447.956			4,475.147
													5			0
2018	5.3515	57.5046	39.7119	0.0780	5.0850	2.2172	7.3022	2.6893	2.0398	4.7291			7,064.956			7,108.644
													4			0
2019	4.8690	47.6926	40.0151	0.0735	4.2866	1.8229	6.1095	2.2338	1.6771	3.9109			6,538.081			6,577.324
													2			2
2023	1.1211	6.9167	13.6355	0.0217	1.1254	0.2363	1.3617	0.5473	0.2174	0.7648			1,869.368			1,879.004
													7			7
2024	0.8372	5.6154	7.9152	0.0185	1.0356	0.2087	1.2443	0.5308	0.1920	0.7228			1,601.741			1,611.427
													6			8
Total	15.9615	159.6054	128.5096	0.2399	13.9166	6.1442	20.0608	7.2594	5.6526	12.9121			21,522.10			21,651.54
													44			77

Table 2. Yearly Emissions Analysis from Increased Hauling Distance (values are in tons per year)

	Reach and Construction Activity	ROG	NO _x	CO	SO ₂	PM ₁₀ Total	PM _{2.5} Total	Total CO ₂	
Step 1	Sum of all hauling emissions from 2018	Reach 2 Placement	0.02	0.08	0.33	0.00	0.01	0.00	14.95
		Reach 3 Degrade	0.04	0.16	0.66	0.00	0.01	0.00	30.48
		Reach 3 Placement	0.06	0.27	1.08	0.00	0.02	0.01	49.58
		Reach 4 Degrade	0.09	0.37	1.50	0.00	0.02	0.01	68.84
		Reach 4 Placement	0.02	0.09	0.36	0.00	0.02	0.01	16.56
	Total	0.23	0.97	3.93	0.00	0.08	0.03	180.41	
Step 2	Multiply 2018 hauling emissions by 15	N/A	3.45	14.50	58.92	0.03	1.13	0.38	2706.12
Step 3	Subtract original yearly emissions from Step 2 result	N/A	3.22	13.54	54.99	0.03	1.05	0.36	2525.71
	2018 Total Emissions Quantities from the Project EIS		5.35	57.50	39.71	0.08	7.30	4.73	7064.96
Step 4	Add the Step 3 result to the yearly average emissions quantities	N/A	8.57	71.04	94.70	0.11	8.35	5.08	9590.67
	EPA Federal Yearly Thresholds		100	100	100	100	100	100	N/A
Step 5	Compare the result of Step 4 to the Federal Yearly Emissions Thresholds- NPI=exceedance not previously identified in the EIS and still is not exceeded with increased haul distance; PI=exceedance previously identified in the EIS	N/A	NPI	NPI	NPI	NPI	NPI	NPI	N/A

Based on the results of the supplementary analysis, the increase in hauling distance is not expected to result in emissions quantities that will exceed the yearly thresholds as set by the EPA, affirming that the conclusion reached in the FID is still unchanged, that there will be no impacts to the Federal Yearly Thresholds as a result of construction of the Project.

4.5.2 Bay Area Air Quality Management District Thresholds

The BAAQMD also sets daily emissions thresholds for sources of pollutants. The emissions inventory that was performed for the air quality analysis for the FID quantified the expected amount of emissions for different air pollutants during the construction of the project and it was found that during peak construction phases the daily thresholds set by the BAAQMD for reactive organic gases and oxides of nitrogen were expected to be exceeded. Mitigation measures are discussed in section 4.10.3 of the FID in order to decrease the impact to air quality of these exceedances, though it was concluded that there would be some days with exceedances that could not be mitigated for.

To quantify the increase in emissions quantities from the increased hauling distance from 2 to 30 miles to compare to BAAQMD's daily thresholds, the steps below were followed:

- 1) Multiply the emissions quantities from only hauling 2 miles by 15 to get the total emissions from a 30 mile haul distance.
- 2) Subtract the emissions for hauling that were previously calculated based on a 2 mile distance from the result in step one (1) to ensure they are not double counted in the daily maximum emissions.
- 3) Add the increased emissions calculated from step two (2) to the daily maximum emissions quantities expected during peak construction for the project which are found in Table 4.10-7 of the FID.
- 4) Compare these newly calculated maximum daily emissions quantities to the daily thresholds set by the BAAQMD, similar to Table 4.10-9 of the FID, to ensure that the increased hauling distance would not result in effects that were not previously disclosed and mitigated for under the FID.

Table 4 shows the results from each step's calculations and summarizes the findings after comparing whether a particular pollutant was previously identified (PI) for exceeding the BAAQMD daily threshold or if the pollutant was not previously identified (NPI) to exceed the threshold but is still lower than the threshold even with the increased haul distance. Several emissions thresholds did not have a daily maximum at the time the air quality analysis was performed, these are marked as not applicable (N/A) in this supplementary analysis since there was no comparison that could be made.

Table 3. Estimated Maximum Daily Construction Emissions for Alternative 3 (Taken from Table 4.10-9 in the project FID)
(values are in pounds per day)

Year/Measurement	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
2017	50	550	347	0.6	35	27	64,709
2018	64	690	464	0.9	45	33	94,267
2019	60	623	439	1.0	44	32	93,843
2023	14	91	147	0.3	11	6	27,371
2024	11	73	92	0.2	9	6	23,123
Peak Day	64	690	464	1.0	45	33	94,267
Significance Threshold	54	54	None	None	82*	54*	None
Significance	S	S	LTS	LTS	LTS	LTS	LTS

* Thresholds for PM₁₀ and PM_{2.5} are for emissions from exhaust from construction equipment. The emissions listed in the table combine particulate matter from construction exhaust and fugitive dust.

Table 4. Daily Emissions Analysis from Increased Hauling Distance (values are in pounds per day)

	ROG	NO _x	CO	SO ₂	PM 10 Total	PM2.5 Total	Total CO ₂	
	Hauling Emission Quantities (pounds per day)	4.6	22.7	69.1	0.050	1.2	0.5	5062.2
Step 1	Hauling Emission Quantities multiplied by 15 (pounds per day)	69.5	340.1	1036.5	0.8	18.5	7.2	75932.5
Step 2	Subtract original emissions quantities from Step 1 Result (pounds per day)	64.9	317.5	967.4	0.7	17.3	6.7	70870.3
	Peak daily emissions quantities from the Air Quality Analysis in the EIS for Alternative 3 (pounds per day)	64.0	690.0	464.0	1.0	45.0	33.0	94267.0
Step 3	Add Step 2 result to the original peak daily emissions quantities from step 2 (pounds per day)	128.9	1007.5	1431.4	1.7	62.3	39.7	165137.3
	BAAQMD Daily Emissions Thresholds (pounds per day)	54.0	54.0	none	none	82.0	54.0	none
Step 4	Compare the result of Step 3 to the BAAQMD Daily Emissions Thresholds- NPI=exceedance not previously identified in the EIS and still is not exceeded with increased haul distance; PI=exceedance previously identified in the EIS and mitigated for	PI	PI	N/A	N/A	NPI	NPI	N/A

Based on the results, exceedance of ROG and NO_x emissions were previously identified in the FID, and therefore the increase to the emissions does not change from the effects that were previously disclosed by the FID. For CO, SO₂, and Total CO₂ there were no daily emissions thresholds set that could be used to compare values for how the increased haul distance could have exceeded a daily threshold value. For PM₁₀ and PM_{2.5} we see that emissions were not previously identified to exceed the daily threshold in the air quality analysis for the FID, and that with an increased hauling distance of 30 miles these daily thresholds are still not exceeded. For a full list of the BAAQMD threshold values please see Table 4. Therefore, the analysis shows that there is an increase in PM emissions levels as compared to the levels modeled for the FID. However, these PM levels still do not exceed the BAAQMD's daily thresholds, therefore, while there is an increase in PM emissions, those emissions do not change the significance determination from the FID.

4.6 Recreation

The FID concluded that the project would result in impacts that are less than significant and would not result in adverse long-term impacts on recreation facilities or resources. The one change to the proposed action that has the potential to affect recreation is the addition of the grade separated pedestrian trail in Reach 1. The addition of the pedestrian trail to the side slope of the levee will allow recreation access to continue during maintenance activities when the levee road is being used. It also maintains the trail alignment currently found in the Alviso Marina County Park. This change does not change the conclusion that the project's impacts to recreation are minor and short term, nor does it change the overall effects determination.

4.7 Public Utilities and Service Systems

The FID concluded that impacts associated with access to electrical towers, stations, and line and clearance requirements for power lines would be less than significant. Through the project design process it was identified that the power lines will need to be raised in Reach 4. Raising the power lines is expected to cause only a short term loss of service, and therefore this project change does not change the conclusion from the FID that the project's impacts to public utilities and service systems are minor and short term.

4.8 Cumulative Impacts

The FID determined that the Project had potential to contribute to cumulative effects for tidal flood risk, adverse effects to habitat in New Chicago Marsh, loss of nesting habitat for western snowy plover, loss of pond habitat used by pond-specialist bird species, views from Alviso, and noise; and included measures to address these if possible. In order to ensure that changes to the proposed action as presented in this SIR, when considered together with nearby construction projects and the potential contributions to cumulative effects already disclosed in the FID, do not cumulatively result in significant impacts that were not already described in the FID, the following cumulative impacts analysis was conducted.

Nearby Projects

Since the release of the FID a new project has begun in order to restore legacy biosolid lagoons which are located adjacent to the project. Subsequent to their effective restorative clean up, the lagoons will be integrated into the Shoreline project with the levee realignment in Reach 4. On August 29, 2019, the RWQCB issued a Site Cleanup Order to the City of San Jose to remove the biosolids in the legacy biosolid lagoons; thus creating the opportunity to include this land in the project through a levee realignment. This order was issued because biosolids contain elevated quantities of several heavy metals including chromium, cadmium and lead that make them unsuitable for use as wetland soils. The berm material surrounding the biosolids, however, was ultimately found to be suitable for reuse in the Project's ecotone. In order to be fully restored, soil tests of the lagoon sediments after removing the biosolids must not exceed thresholds for various contaminants per the Water board's criteria, and if so must be treated further until soil tests do not exceed contaminant thresholds (RWQCB 2019). After restoration, the soil will be clean and incorporation of this land into the shoreline project would not result in any significant impacts, especially to the aquatic or biological environment from residual heavy metals.

In addition to the activities to restore the lagoons that are to be included within Reach 4 via the levee realignment, adjacent lagoons outside of the revised shoreline project footprint will also be restored by consolidating all of the biosolids into one location and capping. The fill material composing the interior berms of the lagoons receiving the relocated biosolids will be graded over the consolidated biosolids and a protective cap will get placed on top. The protective cap will create an impermeable layer in order to prevent any water from passing through the biosolid material. The surface will be stabilized as needed to prevent wind or water erosion (Cornerstone 2020). The restoration to clean up the biosolids lagoons is covered under NEPA in a Decision Document performed by the Regulatory Division of the USACE San Francisco District titled: "City of San Jose-Santa Clara Regional Wastewater Facility- Legacy Biosolids Cleanup Project" (USACE 2019). While restoration of the 4 lagoons to be included in the project will be completed before construction of Reaches 4 & 5, the lagoons outside the project footprint are anticipated to be completed after Reaches 4 & 5 have been constructed. After consideration of all applicable resource categories, it is expected that any remediation of biosolids in the surrounding area would only reduce the risk for cross contamination between the two project sites, such that the City of San Jose-Santa Clara Regional Wastewater Facility- Legacy Biosolids Cleanup Project is not expected to cause any cumulative impacts across any resource categories.

Potential cumulative impacts discussed in the FID address impacts from actions of nearby projects from 2003 to 2040 and included past land-use, the South Bay Salt Pond Restoration Project (SBSRP), the RWF Master Plan, transportation, population growth, and others. As a part of the SBSRP, maintenance of the Pond A13 and Pond A15 levees is scheduled to begin in late 2020 and finish in April 2021, before project construction begins for Reach 1. Resource categories were reevaluated in order to determine if the SBSRP levee maintenance would result in cumulative impacts; no cumulative impacts across any resource categories are expected as a result of the project, a conclusion that is unchanged from the FID. After evaluation of these actions, both past and present, and those potential cumulative impacts that were disclosed in the FID, it was determined that the changes to the proposed action presented in this SIR would not

cause cumulative impacts across any resource categories or exasperate any potential cumulative impacts that were already disclosed in the FID. To date, no other major construction in the vicinity of the project is being planned which could contribute to cumulative effects. Future projects, which are as of yet unknown, should include the project FID and this SIR in any cumulative impacts analysis which are carried out for compliance under NEPA.

5.0 Conclusions

As shown in this SIR, the revised impact analysis from section 4 supports the USACE determination that the changes to the proposed action are not substantial relative to the originally proposed action and do not constitute significant new circumstances or information bearing upon the proposed action or its impacts. This finding supports the conclusion that an SIR is appropriate to document these project changes instead of an SEIS, as described in the first requirement of the CEQ regulations Section 1502.9(c) which states: "Agencies Shall prepare supplements to either draft or final environmental impacts statements if: i. The agency makes substantial changes in the proposed action that are relevant to environmental concerns."

The results of the revised impact analyses from section 4 have shown that the changes to the proposed action described in this SIR will not result in significant impacts either individually or cumulatively which are not already identified in the FID and associated EIS, nor entail significant new circumstances or information relevant to environmental concerns and bearing upon the proposed action or its impacts. This finding supports the conclusion that a SIR was appropriate instead of an SEIS, as described in the second requirement of the CEQ regulations Section 1502.9(c) which states: "Agencies: (1) Shall prepare supplements to either draft or final environmental impacts statements if: ii. There are significant new circumstances or information relevant to environmental concerns and bearing upon the proposed action or its impacts."

Should future, currently unforeseen changes to the proposed action be necessary, those changes would require additional evaluation to determine if a subsequent SIR or SEIS would be necessary. Any such evaluation would also consider the information contained in this report to ensure that any future impacts analyses are performed while considering the entirety of information as it pertains to this project.

6.0 References

- Cornerstone Earth Group, 2020. Interim Closure Plan: Phase 1 Biosolids Removal and Consolidation. January 28, 2020
- RWQCB, 2019. San Francisco Regional Water Quality Control Board Biosolid Lagoons Clean up Order. Order Number R2-2019-0026. August 29, 2019.
- USACE, 2019. Memorandum For Record. Decision Document for the City of San Jose-Santa Clara Regional Wastewater Facility- Legacy Biosolids Cleanup Project. CE SPN-R-S File Number, SPN 2019-00387.
- USFWS, 2015a. South Bay Shoreline Flood Risk Management Project Biological Opinion for USACE. April 15, 2015.
- USFWS, 2015b. South Bay Shoreline Flood Risk Management Project Biological Opinion for the Don Edwards Refuge Center. April 15, 2015.
- USFWS, 2017. South Bay Shoreline Flood Risk Management Project Informal Consultation to Amend the Biological Opinion. December 20, 2017.
- USFWS, 2020a. South Bay Shoreline Flood Risk Management Project Biological Opinion for USACE Amendment 1. April 22, 2020.
- USFWS, 2020b. South Bay Shoreline Flood Risk Management Project Biological Opinion for USACE Amendment 2. August 6, 2020.

Appendix A: Public Comments



Benjamin Pearl
Plover and Tern Program Director
San Francisco Bay Bird Observatory
524 Valley Way
Milpitas, CA 95050

October 30, 2020

Mr. Jason Emmons
Physical Scientist, Environmental Planning Branch
SPN IA PRT Team Lead & Mission Manager
USACE San Francisco District
450 Golden Gate Ave 4th floor, San Francisco, CA 94102

Hello Mr. Emmons,

I am contacting you regarding the recently released Supplemental Information Report for the South San Francisco Bay Shoreline Project (project). I wanted to address the proposed changes to the project related to Snowy Plover breeding success near the project footprint, nest buffer size, brood buffer size, permitted take of Snowy Plovers, and levee realignment at pond A12. These proposed changes were justified by a recent amendment to the original Biological Opinion produced by USFWS on August 6, 2020 (08ESMF00-2012-F-0450-R002). Based upon my reading of the amendment, the decisions were based almost exclusively upon monitoring data collected in a narrow section of A12 during the 2019 breeding season. If so, I believe this did not incorporate the best science available, as the San Francisco Bay Bird Observatory (SFBBO) has monitored this pond and all others in Alviso since 2003, and more importantly, has previously conducted research to assess trail disturbance to breeding Snowy Plovers in the San Francisco Bay (Recovery Unit 3, RU3).

Improper use of the term fledging success

In justifying the Biological Opinion amendment to allow changes to the project proposed by USACE, USFWS discussed the fledging success of nests <600 feet from active work compared to >600 feet. However, when discussing Snowy Plover breeding, the term fledging success measures the proportion of hatched chicks that survive to reach flight capability, and can only be measured by color banding chicks and tracking them for approximately 28-33 days or until observed flying (Warriner et al. 1986). Since the monitors did not track fledging success, this term should be replaced with hatching success, which measures the proportion of nests that survived to hatch.

Misrepresentation of nesting habitat selection and breeding success in pond A12

Monitors for the project conducted monitoring activities in a limited area during only a portion of the breeding season, and as such, this limited dataset can't accurately depict Snowy Plover nesting habitat selection in A12. The USFWS itself noted the lack of data, writing that "This

information, albeit limited, indicates that for this project area: (1) plover nesting and brood activity occurs closer to active construction work and at a greater level of activity than anticipated in the incidental take statement of the 2015 BiOp”(p.2). This statement fails to consider the comprehensive Snowy Plover monitoring that SFBBO conducted in all Alviso Ponds in 2019, including habitat conditions that severely limited available breeding habitat. In April and May, the only available breeding habitat in Alviso (excluding A16 nesting islands, which Snowy Plovers have shown minimal affinity for since being constructed) was located in the portion of New Chicago Marsh (NCM) located south and east of the railroad (Pearl et al. 2019). SFBBO monitored 10 Snowy Plover nests in NCM during this time frame, however from May 15-22, 2019, rising water levels caused eight of these nests to be flooded out (Pearl et al. 2019). After the flooding event, breeding habitat was no longer available in NCM, but soon thereafter, appropriate breeding habitat became available in A12 due to active dewatering as part of the project. At the time, this represented the only suitable breeding habitat available in both Alviso and Santa Clara County as a whole. Snowy Plovers often re-nest quickly after failed nesting attempts (Warriner et al. 1986), thus it is likely that Snowy Plovers whose nests were flooded out in NCM re-nested quickly in A12. Although A12 had been partially dewatered, in early June not all areas were suitable yet for nesting due to remaining water and predator presence. California Gulls and unidentified gulls were the most frequently observed predators on A12 in 2019 (Pearl et al. 2019), and once dewatering began, were frequently observed roosting and foraging in the western, central and southern portions of the pond where water levels were higher. The lack of suitable habitat outside of A12, patchy suitable nesting habitat in A12, and presence of numerous predators in parts of the pond likely resulted in Snowy Plovers nesting closer to the project footprint than might otherwise have been expected in June.

USFWS claimed that Snowy Plovers nests “exhibit a fledging (hatch) success rate no less than, but rather greater than, those nests >600 feet from active work” (p.2), noting that all six nests monitored in 2019 were close to or within the project footprint, and of these, two hatched. However, this assertion can't reasonably be made since the monitors didn't survey outside of the project footprint, which represents only approximately 17% of the total pond area. Although SFBBO did not locate any additional nests in A12 outside of the six in the project footprint, in August 2019 five broods of varying ages were observed foraging in the western and central sections of the pond (Pearl et al. 2019), well outside of the project footprint. This information indicates that at least five successful nests went undetected, and it is likely that these nests were located >600 feet from the project footprint in sections of the pond that had dried since documented nesting began in A12 in early June. Based upon this information, it appears that Snowy Plover nest hatching success was much greater at a distance >600 feet from the project footprint compared to <600 feet from the project footprint.

Necessary buffer distance for nests and broods is underestimated

Concerning the change in nest buffer size, it's unclear how the presence of one successfully hatched nest within 490 feet of the project footprint justifies a reduction in the nest buffer from 600 feet to 300 feet. Past research conducted by the SFBBO in support of the South Bay Salt Pond Restoration Project found that breeding Snowy Plovers in the South Bay Salt Ponds, including the Alviso Pond Complex, flushed off of their nest at an average distance of 479 feet

(SE=62 feet, n=31) when approached by trail disturbance (Trulio et al. 2011). As such, the best available science concerning disturbance to incubating plovers in the salt ponds indicates that the buffer should be reduced to no less than 541 feet.

Snowy Plover broods are very sensitive to disturbance, and research on sandy beaches has found that human disturbance can reduce Snowy Plover chick survival by up to 72% (Ruhlen et al. 2003). In the closely related Piping Plover, human disturbance at a distance of 525 feet altered chick behavior, resulting in reduced foraging and brooding, and contributed to increased chick mortality and population decline (Flemming et al. 1988). Without an appropriately sized buffer, Snowy Plover broods will likely face greatly reduced survival due to project construction activity. The fact that one brood was observed in August within 250 feet of construction activity does not provide evidence that other broods in all Alviso ponds are comfortable with disturbance at or greater than 300 feet. The science is clear, Snowy Plovers require at least 541 feet of buffer from disturbance (Trulio et al. 2011). Of the five broods observed on the pond in August, only one was observed within 250 feet of active construction, while the broods from both known hatched nests in the project footprint appeared to seek foraging habitat located farther away from active construction. Therefore, based upon the best available science, the majority of broods avoided coming within 600 feet of the active construction zone, as has also been found in other plover species avoiding disturbance (Finney et al. 2005). The lone brood observed within 250 feet of the project area was likely spacing out to avoid conflict with other broods, as Snowy Plover males are known to be highly defensive of their broods, and can attack other broods (Pearl et al 2015). In August of 2019, there was minimal water remaining in the pond to provide foraging habitat, with the exception of large channels where gulls would likely be foraging. Thus, there may have been high competition among Snowy Plover broods to secure access to safe foraging areas, resulting in dispersal of broods throughout the pond.

Unrealistic estimate of Snowy Plover pairs in project footprint

In the Biological Opinion amendment, the USFWS accepted, without considering the many years of SFBBO population monitoring data available, USACE's estimate that "36 breeding pairs of plovers would be present within the construction footprint" (p. 2). This is an extremely high and unrealistic estimate for several reasons. The habitat in Alviso along the project footprint is not uniform, with only A12 and A18 (if dewatered during the breeding season) likely to provide suitable breeding habitat. More importantly, all available data indicate that there are not even 36 breeding pairs in the Alviso Ponds. During breeding window surveys conducted from 2005-2019 at Alviso, the maximum number of breeding adult Snowy Plovers observed across all ponds was 21 adults in 2016, with only one adult observed during the 2019 breeding window survey (Pearl et al. 2019). Due to the seasonal nature of Snowy Plover habitat, breeding window surveys conducted in mid-May may not fully encapsulate breeding effort within a given area, therefore nest totals may shed further light on the breeding population in Alviso. In 2019, SFBBO monitored 17 nests in the complex (10 in NCM, 6 in A12, 1 in A16) and documented six broods (all in A12) from undetected successful nests (Pearl et al. 2019). If each of the 23 total nests were initiated by unique pairs, there would only be 23 pairs total breeding in the Alviso Complex. However, as previously noted, Snowy Plovers often re-nest quickly after failed nesting attempts, and due to the length of the breeding season, are capable of hatching

and fledging multiple broods each season (Warriner et al. 1986). Therefore, the number of breeding pairs is likely considerably less than 23 breeding pairs.

Underestimated impact of proposed allowed take to Snowy Plover population viability

Since the best available science clearly shows that there will not be 36 breeding pairs in the project footprint, allowing take of 18 pairs, as USACE has requested and USFWS has approved, would have devastating impacts on Snowy Plover recovery. The most recent population viability analysis conducted for the Pacific Coast Population of Snowy Plovers found that metapopulations from Point Reyes and south, including RU3, act as a source population for sink populations to the north of Point Reyes (Hudgens et al. 2014). Simulations of the deterministic metapopulation model constructed for the analysis found that mean population size was much more sensitive to declines in adult survival compared to fecundity or juvenile survival. Furthermore, recent research across the Pacific Coast, including from RU3, found that both Snowy Plover females (89%) and males (94%) showed high levels of natal site fidelity by breeding in the metapopulation in which they hatched (Stenzel et al. 2020). As such, the low level of emigration from other regions would not be sufficient to mitigate the loss of 18 pairs to a metapopulation that already experiences poor annual breeding success (Pearl et al. 2019). Therefore, allowing take of 18 pairs of Snowy Plovers, which represents 19% of the population of 190 adults in RU3 (Pearl et al. 2019), would pose a major setback to achieving the RU3 goal of 500 adults (USFWS 2007), greatly reduce the ability of the RU3 metapopulation to act as a source population, and resultantly, place the species viability in jeopardy.

Proposed realignment in Reach 1 is inadequate to support breeding Snowy Plovers

In regard to the Alignment Change proposed in section 3.1, the addition of 1.21 acres of salt panne habitat to the Alviso Impoundment (Impoundment) is unlikely to result in increased Snowy Plover breeding activity in this area. Since 2003, when SFBBO began monitoring Snowy Plover breeding in RU3, including all potential habitat in the Alviso Pond Complex, only four total nests have been found in the Impoundment, including two in 2008 (Robinson et al. 2008) and one each in 2009 (Robinson-Nilsen et al. 2009) and 2013 (Robinson-Nilsen et al. 2013). The Impoundment is often inundated with water, and thus does not frequently provide appropriate breeding habitat for Snowy Plovers (pers. obs.). In order to ensure that breeding habitat is available, water management, whether via a water control structure or manual pumping, would be necessary annually to drain the pond.

Even if water levels are managed to provide dry salt panne habitat, Snowy Plovers are unlikely to breed on the Impoundment due to its close proximity to the public trail. As previously mentioned, Snowy Plovers in RU3 have been found to flush off their nest at an average distance of 479 feet (SE= 62 feet). The majority of the Impoundment, including at the proposed realignment, measures less than 400 feet in width. Unless realignment increases the Impoundment width to at least 541 feet across the Impoundment, and likely wider due to the frequent train activity along the eastern edge of the Impoundment, it is unlikely that Snowy Plovers would breed in this pond regularly. Furthermore, the raised railroad tracks along the eastern edge provide an ideal place for predators to perch. Common Ravens, which are considered one of the main threats to Snowy Plover recovery in RU3 and across the range,

have been frequently observed roosting on the railroad tracks between the Impoundment and A16 (Pearl et al. 2019). Therefore, even if Snowy Plovers were to breed in the Impoundment, they would likely experience low hatching and fledging success, creating an ecological trap. While Snowy Plovers are in need of additional breeding habitat due to widespread loss of habitat as part of this and other tidal marsh restoration projects in RU3, attracting them to breed in subpar habitat would contribute to already low rates of breeding success and could further jeopardize the viability of this species both locally and rangewide.

Thank you very much for your responses and consideration.

Regards,

Benjamin Pearl
Plover and Tern Program Director
San Francisco Bay Bird Observatory

Reference List

- Finney, S.K., J.W. Pearce-Higgins, and D.W. Yalden. (2005) The effect of recreational disturbance on an upland breeding bird, the golden plover *Pluvialis apricaria*. *Biological Conservation*, 121, 53–63.
- Flemming, S. P., R.D. Chiasson, P.C. Smith, P.J. Austin-Smith, R.P. Bancroft. 1988. Piping plover status in Nova Scotia related to its reproductive and behavioral responses to human disturbance. *Journal of Field Ornithology* 59(4):321-330.
- Pearl, B., K. Tokatlian, and J. Scullen. 2015. Western Snowy Plover Monitoring in the San Francisco Bay Annual Report 2015. Unpublished report. San Francisco Bay Bird Observatory, Milpitas, CA.
- Pearl, B., A. Chen, and Y. Wang. 2019. Western Snowy Plover Monitoring in the San Francisco Bay Annual Report 2019. Unpublished report. San Francisco Bay Bird Observatory, Milpitas, CA.
- Robinson-Nilsen, C., J. Demers, and C. Strong. 2008. Western Snowy Plover Numbers, Nesting Success, Fledging Success and Avian Predator Surveys in the San Francisco Bay, 2008.
- Robinson-Nilsen, C., J. Demers, and C. Strong. 2009. Western Snowy Plover Numbers, Nesting Success, Fledging Success and Avian Predator Surveys in the San Francisco Bay, 2009.
- Robinson-Nilsen, C., K. Tokatlian, J. Scullen, and C. Burns. 2013. Western Snowy Plover Monitoring in the San Francisco Bay Annual Report 2013. Unpublished report. San Francisco Bay Bird Observatory, Milpitas, CA.
- Ruhlen T.D., S. Abbot, L.E. Stenzel., and G.W. Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *J. Field Ornithol.* 74: 300–304.
- Stenzel., L.E., E.P. Gaines, D.J. Lauten, K. Castelein, J. Miller, A. Clark, T. Wooten, E. Feucht, B. Pearl, M. Lau, C. Sundstrom, R. Orr, and P. Knapp 2020 Report. Philopatry, Natal Dispersal, and Other Movements of the Western Snowy Plover Metapopulation in 2018. Unpublished report. Point Blue Conservation Science, Petaluma, CA.
- Trulio, L., C. Robinson Nilsen, J. Sokale, and K. Lafferty. 2011. Report on Nesting Snowy Plover Response to New Trail Use in the South Bay Salt Pond Restoration Project. Unpublished report.
- U.S. Fish and Wildlife Service. 2007. Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). In 2 volumes. Sacramento, California. xiv + 751 pages.
- Warriner, J. S., J. C. Warriner, G. W. Page, and L. E. Stenzel. 1986. Mating system and reproductive success of a small population of polygamous Snowy Plovers. *Wilson Bulletin* 98:15-37.

USACE Response to the Comment Letter Submitted by Benjamin Pearl:

Dear Mr. Pearl,

Thank you for the submission of your comment letter for the South San Francisco Bay Shoreline Supplemental Information Report. Our responses will follow the same layout as your comment letter for ease of reference.

Regarding the paragraph titled, “Improper use of the term fledging success.” For the term fledging success, you point out that in order to use the term for snowy plovers, monitoring must be performed to observe them as flying. As commonly used, when a bird successfully fledges it leaves the nest, having feathers, and if it can fly as a part of its developmental stage, it would do so. However, when a snowy plover fledges (leaves the nest), it becomes a part of a brood, foraging on the ground as it continues to grow. The discrepancy in the use of the term stems from how the snowy plovers developmental stages are not fully captured by this more generic term. The use of this term was intended to make the distinction between hatchlings still in the nest, versus those that had left the nest. This is also consistent with the use of the term “fledging success” in the USFWS Biological Opinion. Therefore, USACE will continue to use the term fledging success, following from its usage in the USFWS Biological Opinion.

Regarding the paragraph titled, “Misrepresentation of nesting habitat selection and breeding success in pond A12.” Your comment highlights the possibility for flooding in nearby, otherwise suitable habitat. Given this, along with construction creating dry and flat areas of potentially more suitable habitat, the conclusion was reached that plovers may be inclined to use the construction areas for nesting. This conclusion was evidenced by the limited data presented and there was a lack of other construction monitoring reports or applicable studies that could be used at the time of completion of the Biological Opinion. Your analysis of the preferred locations for plover nesting included the likely reasons for their nesting near construction equipment. For example, you mention, “The lack of suitable habitat outside of A12, patchy suitable nesting habitat in A12, and presence of numerous predators in parts of the pond likely resulted in Snowy Plovers nesting closer to the project footprint than might otherwise have been expected in June.” This reasoning may be true, and suggests that in otherwise normal years not as many nests may be expected within 600 feet of active construction. However, there is no guarantee that these conditions will not be present in the future when the larger construction effort is underway, which could make construction areas the best alternative when preferred suitable habitat is unavailable. The fledging success rate statement that “...no less than, but rather greater than, those nests >600 feet from active work.” from page 2 of the USFWS Biological Opinion was prefaced by, “This information, albeit limited, indicates that for this project area:...” Therefore, this statement was only in reference to the project area and not the greater Pond A12 area. You are correct that no monitoring was done past the 600 foot buffer of the construction footprint, and that is why the statement on fledging success is constrained to only address success within the construction footprint. The usage of this relation to describe the fledging success within the project area will therefore not be amended.

Regarding the paragraph, “Necessary buffer distance for nests and broods is underestimated.” You rightly cited different studies that have documented how human disturbance, namely beach go-ers at Point Reyes (Ruhlen et al. 2003) and trail disturbance (Trulio et. al 2011), for which the snowy plover exhibits a natural fear, have affected snowy plover breeding success,. The same cannot be said for large construction equipment which does not have a human form, or other animal form which it recognizes, along with the proximity of the nesting and brooding activity seen in the project area. Although broods mostly stayed outside of a 300 foot buffer from construction activities within the project area, there were recorded instances from the biological monitoring of the project of broods coming within 300 feet; with disturbances to brooding activities successfully reduced by the use of biological monitors who stopped work activity until the brood exited the 300 foot buffer. Although competition may increase during certain years due to habitat availability, a 300 foot buffer was found to be appropriate because of their habituated behavior for nesting and brooding within 300 feet of construction equipment, and the demonstrated success of biological monitors to decrease impacts to individuals within that 300 foot buffer.

Regarding the paragraph, “Unrealistic estimate of Snowy Plover pairs in project footprint.” The estimate of 36 breeding pairs within the construction footprint was based on the density that was observed during the 2019 construction activities, expanded across all reaches for the project, and thus the 36 breeding pairs can be used as an upper limit of what could be expected. This estimation is necessary given the lack of information and scientific studies to address how the snowy plover utilizes construction areas when there is a lack of preferred habitat. As you have written in your letter, the number of breeding pairs that would use the construction areas is highly dependent on the amount of suitable habitat, which can fluctuate from year to year depending on water level. It is possible that such an estimate of 36 breeding pairs could be present within the construction footprint if surrounding habitat became unavailable.

Regarding the paragraph, “Underestimated impact of proposed allowed take to Snowy Plover population viability.” From your comment, in quoting the article Stenzel et. al. 2020, it is evident that the sub-population RU3 is more sensitive to mortality of its adult members. While the take statement does include mortality, a take is also considered disturbance to a breeding pair such that abandonment of a nest or brood would be considered take, and since each breeding pair is not tracked, one breeding pair could contribute to more than one instance of take per breeding season. Therefore, the take of 18 breeding pairs will not necessarily result in mortality, such that the loss of one generation of new chicks may result, but the adults are more likely to survive. The conclusion that the project will jeopardize the species by this allowance of potential take of 18 breeding pairs is therefore not supported, because the adult population is less likely to be impacted.

Regarding the paragraph, “Proposed realignment in Reach 1 is inadequate to support breeding Snowy Plovers.” The 'Snowy Plover Nesting Area' included in Reach 1 construction was created due to a levee realignment, and rather than leave the land with no clear purpose, it was decided it could be used as a snowy plover nesting area as a beneficial use of this resource. Fill material would be added into the area and made flat, such that it would no longer resemble a salt panne.

Although this location and size are not ideal, if this area provides even a lower quality habitat compared to other locations, due to the variable availability of more ideal habitat in the area, it could still provide a benefit for the species.

Thank you again for your comment letter. The information you presented, in part included some new information, and was indeed valuable to update our understanding of the snowy plover species based on the most recent science. Although the new information you presented did serve well to illustrate your points, it did not include information that demonstrates an inaccuracy in the amended Biological Opinion. The amended Biological Opinion that was issued by USFWS acknowledges an effect to the species by the project, with a conclusion that it would not likely end in jeopardy for the species. After reviewing your comments, USACE has made a determination that it will not reinitiate consultation with the USFWS for the Biological Opinion for the project. Your work for the restoration of the snowy plover population is appreciated, and any future studies you could send to keep us informed of the latest science regarding the species would be welcome.

The Following Comments were provided by the City of San Jose, they were copied from the Microsoft Word Document as submitted and placed in sequential order for ease of reference:

Comment 1: “For the Cities USACE IP for Phase I it states that the Cities permanent impact on wetlands totals 0.91 acres and occurs in L9-L12 0.91. The City calculated that the total temporary and permanent impacts for Phase I would be 9.54 acres per our IP application from Dec 2019. It seems that between our IP and this document there is a discrepancy of approximately 1.7 acres of impacted acres of pickleweed.”

USACE Response to Comment 1: Thank you for your comment. The amount of pickleweed habitat was calculated using the GIS layer for pickleweed contained in the biosolid lagoons as provided by the City of San Jose, via their contractor ESA Associates. From that layer, the amount calculated was 1.7 acres less than that from the USACE IP. This discrepancy may have resulted from different calculation methods or updated geospatial data. The word “approximately” has been added in order to allow for this minor fluctuation in reporting the acreages.

Comment 2: In the 2015 USFWS Biological Opinion for this project, on p. B-460, there is an expectation that the Army Corps will replace any modified or removed water control structures. "Construction of the FRM levee on the existing Pond A18 levee footprint will modify the structures that convey water in and out of the non-tidal wetlands east of Artesian Slough and south of Pond A18. These wetlands contain extensive pickleweed and are thus expected to support resident SMHM. The proposed project will replace any modified or removed water control structures so that flow in and out of these wetlands can continue and existing conditions within the wetlands will be maintained." Will the water control structure in the tie-in to the Coyote Creek Levee directly east of the existing Pond A18 levee be replaced or was it deemed unnecessary to replace it for hydrological purposes?

USACE Response to Comment 2: The existing ditch that begins at the Coyote Creek Levee and runs in a southerly direction along Reach 5 is currently within the footprint of the levee and ecotone that will be built for Reach 5, and will not be replaced during construction. It was found that the water entering the wetland area East of Artesian Slough is supplied from the San Jose/Santa Clara Regional Wastewater Facility Plant's outfall channel through a set of two culverts, such that removing the ditch and the associated water control structures will not cause a dewatered condition in this wetland area, or other areas that would depend on this water course as a source.

Comment 3: "Will the new [levee] alignment affect the road inside RSM lagoon area? We will be dredging those lagoons in 2023."

USACE Response to Comment 3: The levee alignment would not impact any roads outside the land easements that are secured for the project, which would leave the road inside the RSM lagoon area unaffected.

Comment 4: "Please say more about the design of the tie-in to the Coyote Creek levee at the new location coinciding with the existing levee that protects the active wastewater lagoons."

USACE Response to Comment 4: The current design for Reach 5 is only at a 30% design level. As such, more detailed information on the tie-in, more than what was already included in the FID and this SIR, is not available at this time.

Comment 5: In reference to the Regional Wastewater Facility Master Plan: "Please change reference to San Jose/Santa Clara Regional Wastewater Facility Plant Master Plan."

USACE Response to Comment 5: Thank you, this suggestion has been incorporated into the SIR.